

STUDY ON CONSUMER BEHAVIOUR IN RELATION TO SMARTPHONE MARKET



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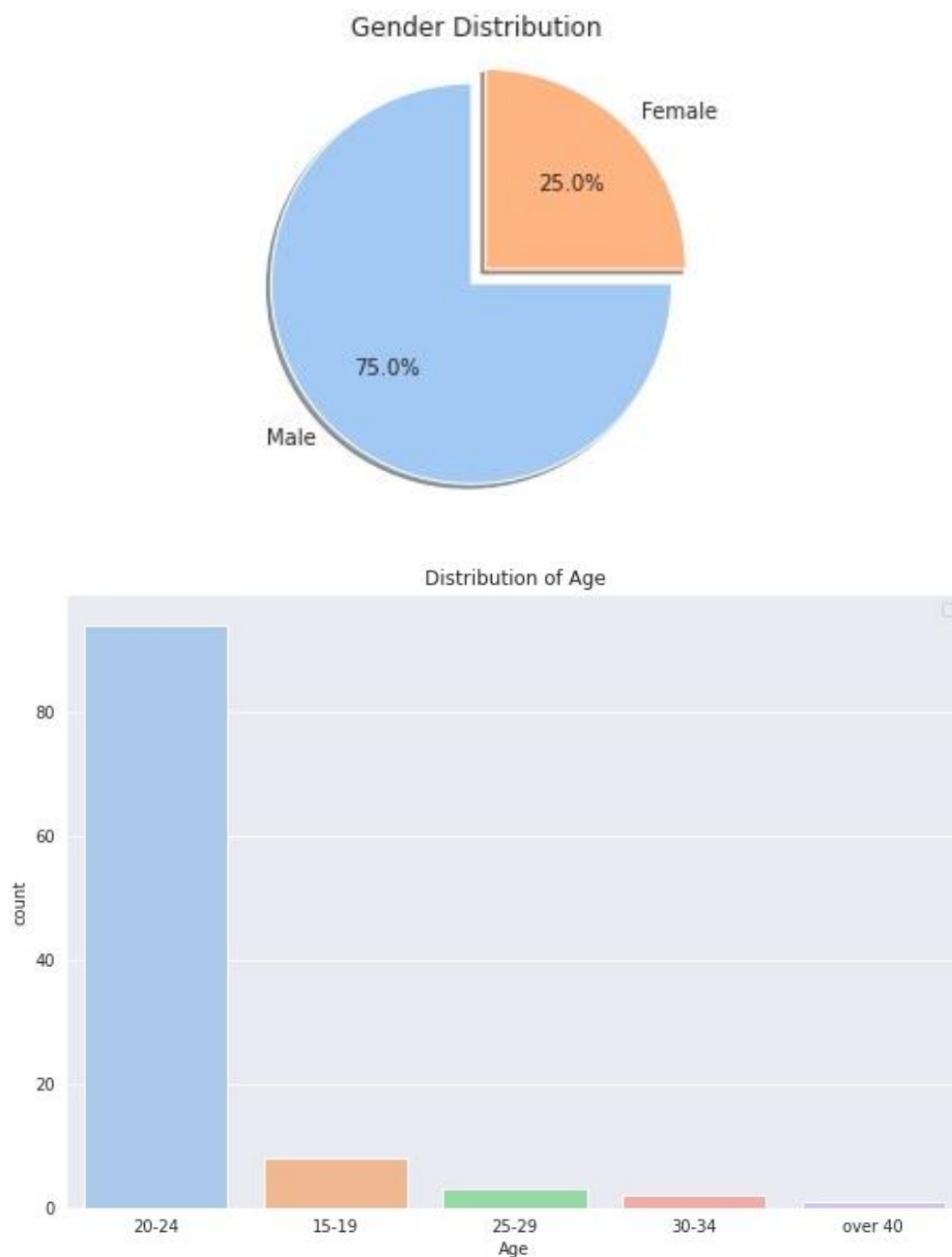
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A. Objectives Of The Study:

- 1) Understanding Consumer Behavior.
- 2) Understanding Brand Preference and Importance.
- 3) Understanding the preference of Operating System.
- 4) Understanding the behavior of Complement Goods of Smartphones.

B. Research Methodology:

1)Population: Our surveyed population consists of 25% female and 75% male and most of the samples belong to the age group of 20-25



2)No of Sample size: 108

3)Collection of data: Google forms

4)Primary data: responses from Google form

5)Secondary data: None

6)Analysis tool: Excel, Python (Matplotlib, Pandas, NumPy, Seaborn,), Google Colab.

Chapter 1

C. Theoretical Framework:

Market: A set up where two or more parties engage in exchange of goods, services and information is called a market. Ideally a market is a place where two or more parties are involved in buying and selling.

The two parties involved in a transaction are called seller and buyer.

The seller sells goods and services to the buyer in exchange of money. There has to be more than one buyer and seller for the market to be competitive.

Types:

1. Perfect Competition

Perfect competition describes a market structure, where a large number of small firms compete against each other. In this scenario, a single firm does not have any significant market power. Stock market can be assumed as a perfect competition.

2. Monopolistic Competition

Monopolistic competition also refers to a market structure, where a large number of small firms compete against each other. However, unlike in perfect competition, the firms in monopolistic competition sell similar, but slightly differentiated products. That gives them a certain degree of market power, which allows them to charge higher prices within a certain range.

An example of monopolistic competition is the market for cereals. There is a huge number of different brands, most of them probably taste slightly different, but at the end of the day, they are all breakfast cereals.

3. Oligopoly

An oligopoly describes a market structure that is dominated by only a small number of firms. That results in a state of limited competition. The firms can either compete against each other or collaborate. By doing so, they can use their collective market power to drive up prices and earn more profit.

To give an example of an oligopoly, let's look at the market for gaming consoles. This market is dominated by three powerful companies: Microsoft, Sony, and Nintendo. That leaves all of them with a significant amount of market power.

4. Monopoly

A monopoly refers to a market structure where a single firm controls the entire market. In this scenario, the firm has the highest level of market power, as consumers do not have any alternatives. As a result, monopolies often reduce output to increase prices and earn more profit. No firm is a perfect monopoly. Google may be considered as an imperfect monopoly.

- a) **Consumer behaviour**: It is the study of how people make decisions about what they buy, want, need, or act in regards to a product, service, or company. It is critical to understand consumer behaviour to know how potential customers will respond to a new product or service. It also helps companies identify opportunities that are not currently met.



Factors affecting consumer behaviour:

1. Psychological Factors

In daily life, consumers are being affected by many issues that are unique to their thought process. Psychological factors can include perception of a need or situation, the person's ability to learn or understand information, and an individual's attitude. Each person will respond to a marketing message based on their perceptions and attitudes. Therefore, marketers must take these psychological factors into account when creating campaigns, ensuring that their campaign will appeal to their target audience.

2. Personal Factors

Personal factors are characteristics that are specific to a person and may not relate to other people within the same group. These characteristics may include how a person makes decisions, their unique habits and interests, and opinions. When considering personal factors, decisions are also influenced by age, gender, background, culture, and other personal issues.

For example, an older person will likely exhibit different consumer behaviours than a younger person, meaning they will choose products differently and spend their money on items that may not interest a younger generation.

3. Social Factors

The third factor that has a significant impact on consumer behaviour is social characteristics. Social influencers are quite diverse and can include a person's family, social interaction, work or school communities, or any group of people a person affiliates with. It can also include a person's social class, which involves income, living conditions, and education level. The social factors are very diverse and can be difficult to analyse when developing marketing plans.

- b) **Consumer needs:** A customer need is a motive that prompts a customer to buy a product or service. Ultimately, the need is the driver of the customer's purchase decision. Companies often look at the customer need as an opportunity to resolve or contribute surplus value back to the original motive.

Product needs:

1. Functionality

Customers need your product or service to function the way they need in order to solve their problem or desire.

2. Price

Customers have unique budgets with which they can purchase a product or service.

3. Performance

The product or service needs to perform correctly so the customer can achieve their goals.

Service needs:

1. Transparency

Customers expect transparency from a company they're doing business with. Service outages, pricing changes, and things breaking happen, and customers deserve openness from the businesses they give money to.

2. Control

Customers need to feel like they're in control of the business interaction from start to finish and beyond, and customer empowerment shouldn't end with the sale. Make it easy for them to return products, change subscriptions, adjust terms, etc.



c) **Goods:** Goods are materials that satisfy human wants and provide utility.

1. Normal goods

Quantity demanded of such commodities increases as the consumer's income increases and decreases as the consumer's income decreases. Such goods are called normal goods.

2. Giffen goods

Giffen good is an inferior good which people consume more of as price rises, violating the law of demand. In case of Giffen good situation, cheaper close substitutes are not available. Because of the lack of substitutes, the income effect dominates, leading people to buy more of the good, even as its price rises.

3.Substitutes goods

Substitute good for another kind insofar as the two kinds of goods can be consumed or used in place of one another in at least some of their possible uses. An increase in price for one kind of good (*ceteris paribus*) will result in an increase in demand for its substitute goods, and a decrease in price (*ceteris paribus*, again) will result in a decrease in demand for its substitutes.

4.Complementary goods

A complementary good or complement good in economics is a good which is consumed with another good; if goods A and B were complements, more of good A being bought would result in more of good B also being bought and vice versa. For example: samosa and chutney. If the demand for samosa increases then the demand for chutney also increases.

Chapter 2

D. Data Analysis And Interpretation:

1) Understanding Consumer Behaviour:

A) Major Influencers:

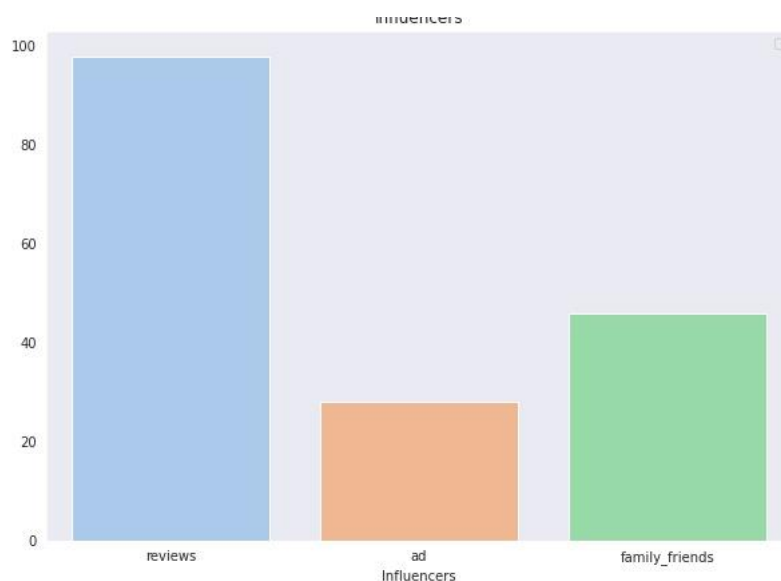
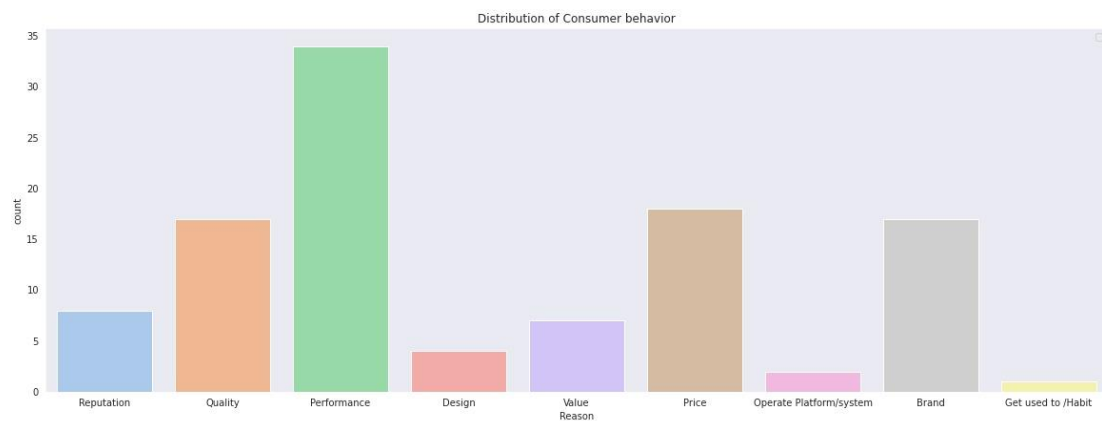
The purchase of any product is influenced by various factors. We selected the three major factors and included it in the questionnaire.

The following plot is plotted.

Since the majority in the population are in the age group of 20-25, they are much influenced by the reviews rather than other factors.

B) Influential Factors:

People have various factors in their mind before they buy any particular products. The major ones are Reputation, Quality, Performance, Design, Value, Price, OS, Brand and Proclivity.



According to our survey, we find that the population is much keen on getting a smartphone with Superior Performance. It makes sense as students would love to play games which require great performance. They need the smartphone at a considerably good price as well. Brand and quality are equally important among the population.

C) Quality Vs Price:

“The quality will remain when the price is forgotten”, said Henry Royce. Quality Vs Price is a never-ending debate and each individual has their own view.

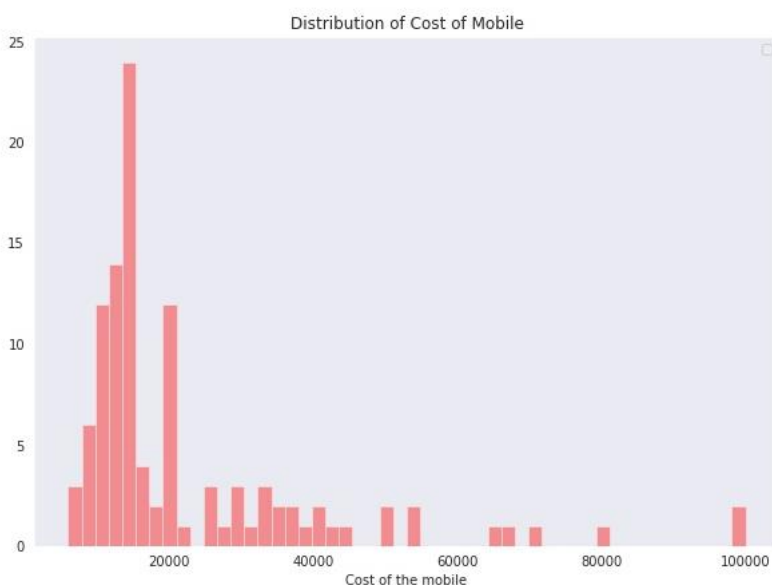


According to our population, High-quality is expected over Cheaper Price. The trend is the same over all brands and sex (M/F). (Note: Graphs attached in annexure)

D) Cost

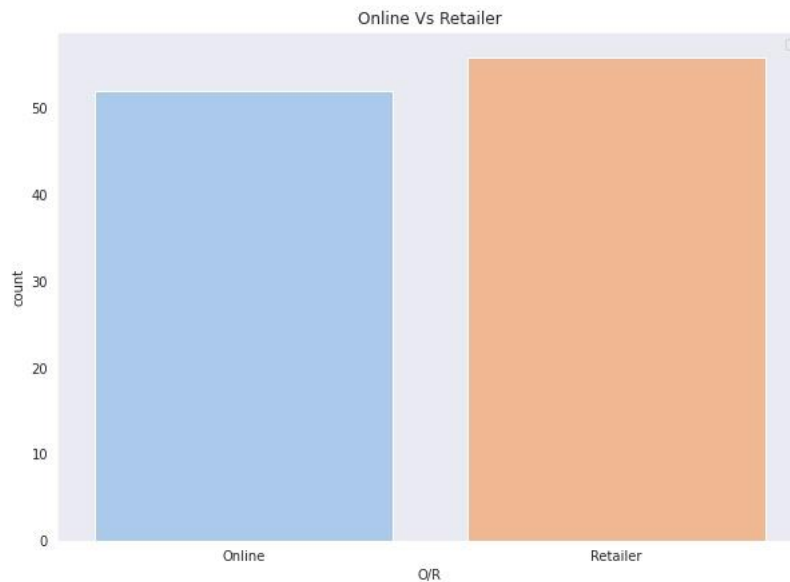
Distribution:

The trend in our population shows that most people purchased their mobile in the range of 15k to 25k.

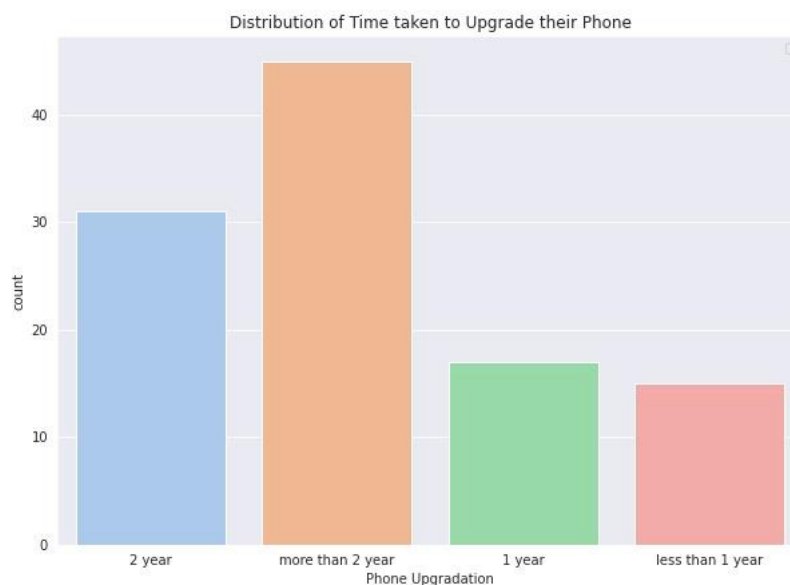


E) Online vs Retailers:

Online shopping is growing at a faster rate but people are still reluctant to buy electronics online especially Smart Phones. The trend in our population shows the same. It's almost equal but retailers do surpass Online shopping. But in very near future Online shopping will dominate.



F) Reliability factor:

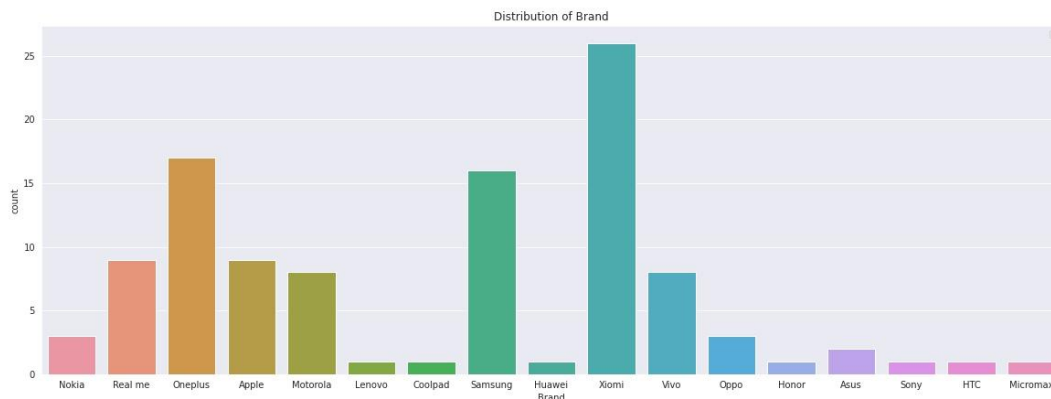


From the graph, we see that most people take at least 2 years to change their mobile. So, the consumers expect their smartphone to be reliable and to long last.

2) Understanding Brand Preference and Importance:

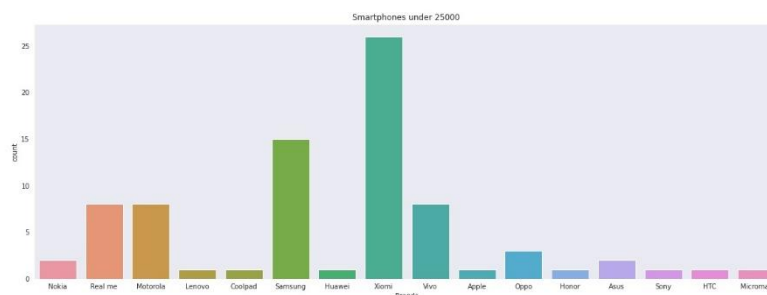
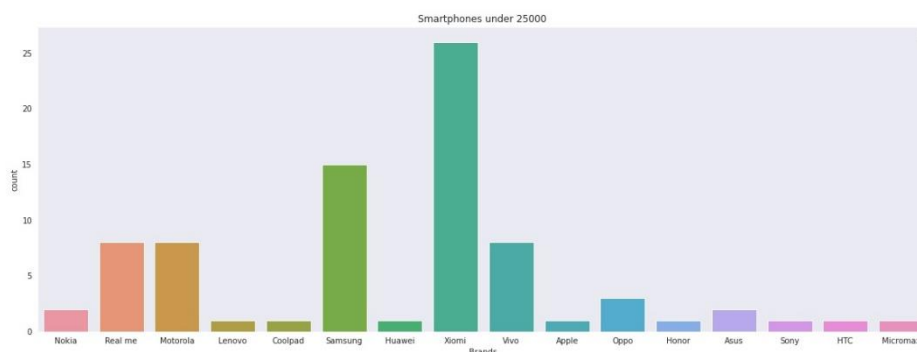
A) Brands Preference:

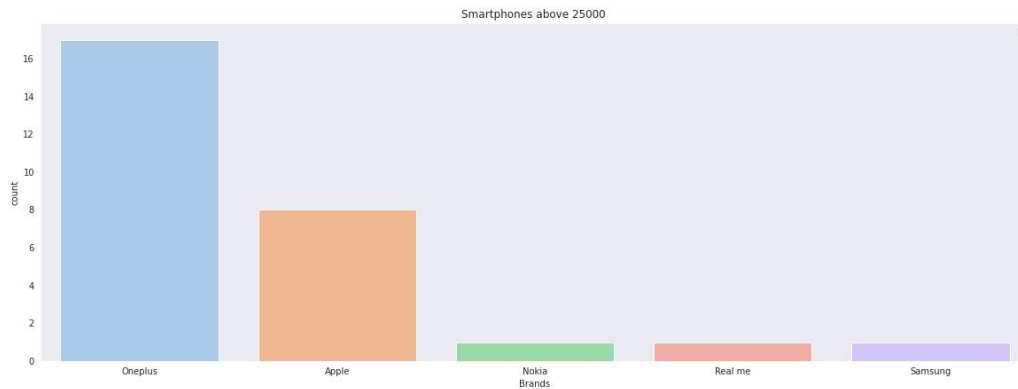
In India, there are numerous brands compete in the smartphone market. Unlike old days when Nokia used to be dominant in the cellular field, there's no single dominant brand in the market now.



The trend stated above is shown in graph as well. There is no single dominant brand but we can see that Xiomi has more consumers than other brands. Samsung and OnePlus entails Xiomi.

But comparing with the price, there's a totally different trend. Let's plot the counts of mobile phone of each brand under and above 25000.



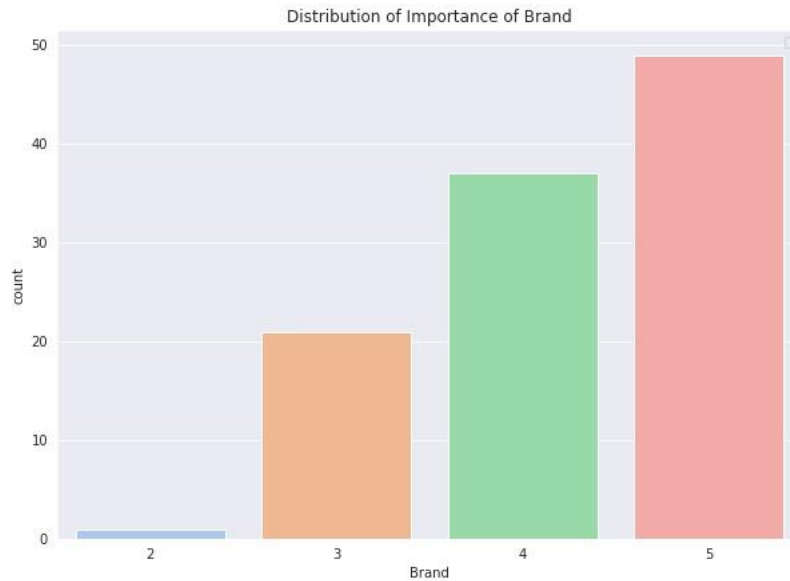


As seen from the above plots, Xiomi dominates the market under 25000 and Oneplus dominates the market above 25000. Both has Samsung and Apple as their successor. Both the Brands are known for providing Superior Quality and Performance at a lower rate.

B) Brand Value:

Brand value is simply the sale or replacement value of a brand. The influence of brand in decision making is plotted below states that for most of the people branding does influence them and most consider is really important as well which is show in the other plot below.





C) Loyalty towards the Brand:

Loyalty is checked whether the consumer purchase smartphone of different brand with similar/better specs at similar price.

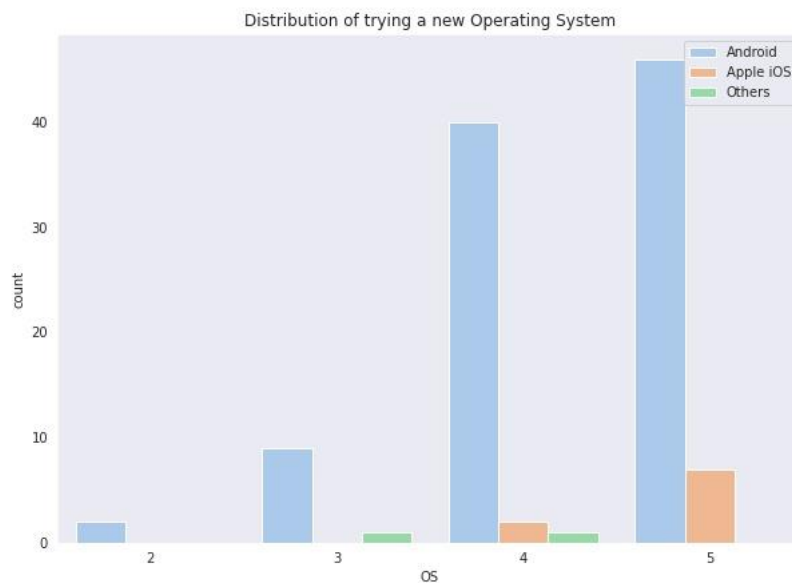
The answers to that is plotted below-



As shown, most are not loyal towards the brand and they buy the smartphone which offers better specs at cheap price.

3) Understanding the preference of Operating System

A) Satisfaction of their OS:

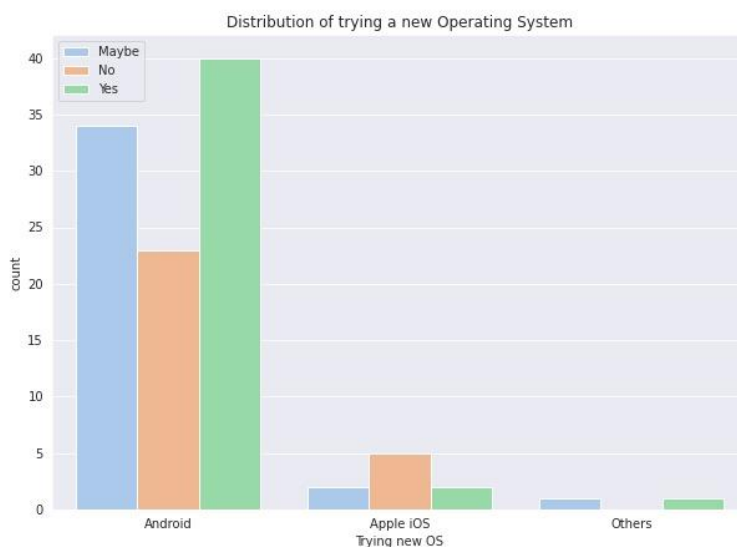


Though less in number of consumers, Apple users are completely satisfied with their Apple iOS which can be seen from the graph whereas Android some android users aren't satisfied with their OS.

B) Loyalty to OS:

The trend must be the same as above since Apple users are too satisfied with Apple iOS.

Let us look at the graph.



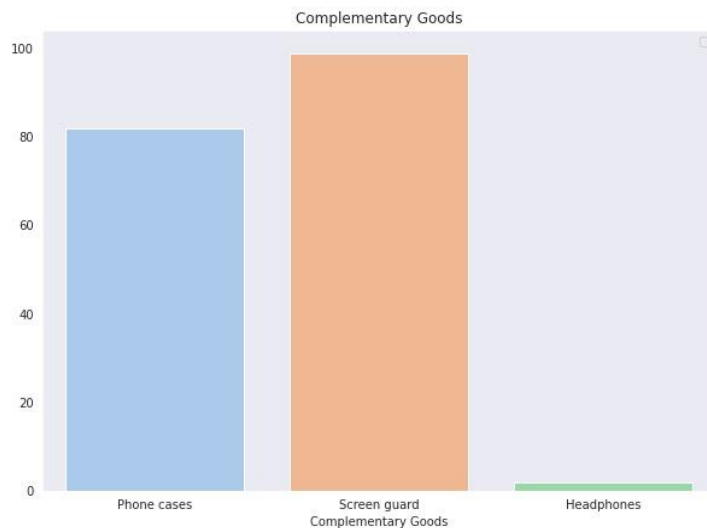
As expected, most of the apple users would love to use Apple iOS whereas Android users are willing to switch their Operating system.

4) Understanding the behaviour of Complementary Goods of Smartphones

In this Section, we'll look at few Complementary Goods of Smartphones.

A) Complementary goods - Positive Correlation:

Screen Guard, Phone Case and Headphones are most important complementary goods and their markets greatly depend on Smartphone market.



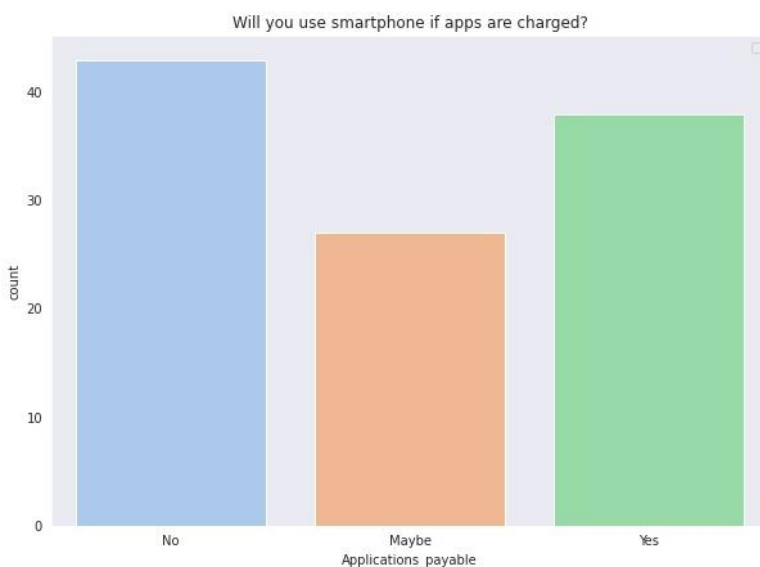
In our population, almost everyone bought Screen Guard and Phone cases along with the Smartphone but not Headphones.

B) Complementary Goods – Negative

Correlation:

Applications are the ones which makes our mobile SMART. They are the most important feature of Smart Phone. Most of the applications are free of cost. We asked a hypothetical question whether will consumers use smartphones if the applications are charged.

The responses are plotted below-



The responses show that consumers are not yet ready to use completely charged apps system. They expect free applications along with their smartphone.

Chapter 3

E. Findings And Conclusion:

- As most of the people who filled the survey belonged to the 20-25 age groups they majorly rely on reviews, as most of them prefer skipping ads and do not totally believe on what they hear from a certain individual.
- The preference for a particular smartphone deals with its performance and high quality at a reasonable price. Most people would prefer spending a little more if the device guarantees their requirements and would continue to use it for at least two years if not more.
- Probably in the coming years people may shift completely to online shopping as it is at the ease of their homes, but sometimes they would prefer having a look at the device before purchasing it, hence it is rather un-decisive to a particular choice.
- Xiomi has been seen to be a customer's favourite, while it ranges in the preferable range of the people buying smartphones. If we consider a range of above Rs. 25000, One Plus seems to dominate the market.
- Brand value does play a major role while deciding to purchase a device, while most of the customers remain loyal to their particular brands. If we consider the operating system, it can be observed that Apple IOS users seem to be overtly delighted with the operating system and wish to continue using it while android users may look for a change.
- Several customers wish the package to include complementary screen guards and phone cases to protect their devices and a few wishing for headphones included.
- In addition, when asked if they would continue using their smartphones if the applications they used had to be paid for, not every individual is ready for such a scenario.
- After analysis it is clear to say that smartphone is an oligopoly. The market is controlled by a handful of markets, not just a single one dominating over the rest.
- Overall, we can say that for a company to improve its sales, in addition to performance and reasonable prices, a decent customer support and satisfaction will enhance its relationship with the customers. It will enable them to attract more buyers. Optimization of the operating system and reaching out to the users will enable them to drastically grow in business.

F. Bibliography:

- 1) <https://matplotlib.org/3.1.1/contents.html>
- 2) <https://devdocs.io/pandas~0.25/>
- 3) <https://numpy.org/doc/>
- 4) <https://jakevdp.github.io/PythonDataScienceHandbook/04.14-visualization-with-seaborn.html>
- 5) <https://colab.research.google.com/notebooks/intro.ipynb#scrollTo=-Rh3-Vt9Nev9>
- 6) <https://www.google.com/>

G. Questionnaire:

- Click [here](#) to see responses.
- Click [here](#) for cleaned responses used for analysing(After removing invalid responses).
- Scroll down for the questionnaire.

Economics Project - Smart Phone

The aim of this questionnaire is to investigate brand loyalty in relation to Smartphone market within different age groups. All the personal information is used for research purposes and will be strictly confidential as the questionnaire will ask the question about your name.

This questionnaire would be completed in approximately 5-7 minutes, and it would be grateful if you could spend a few minutes to complete it. Please answer the following questions and make sure that you have not missed any one.

*** Required**

1. Name *

2. Gender *

Mark only one oval.

☐ Female

☐ Male

☐ Prefer not to say

☐ Other:

3. Age *

Mark only one oval.

☐ 15-19

☐ 20-24

☐ 25-29

☐ 30-34

☐ 3-40

☐ over 40

4. Which brand of smartphone did you buy for your personal use most recently? *

Mark only one oval.

- ☐ Apple
- ☐ Oneplus
- ☐ Samsung
- ☐ Xiomi
- ☐ Vivo
- ☐ Real me
- ☐ Oppo
- ☐ Motorola
- ☐ Micromax
- ☐ HTC
- ☐ Lenovo
- ☐ Sony
- ☐ Lg
- ☐ Asus
- ☐ Huawei
- ☐ Nokia
- ☐ Other: _____

5. What is the price of the mobile phone you are using currently? *

6. Where did you buy the mobile phone you are using currently? (Enter the name of the city/Online) *

7. Why do you want to buy this brand? *

Mark only one oval.

- ☐ Brand
- ☐ Price
- ☐ Performance
- ☐ Quality
- ☐ Operate Platform/system
- ☐ Design
- ☐ Value
- ☐ Reputation
- ☐ Get used to /Habit
- ☐ Services

8. What is your current operating platform/system? *

Mark only one oval.

- ☐ Android
- ☐ Blackberry OS
- ☐ Apple iOS
- ☐ Symbian
- ☐ Option 5
- ☐ Others

9. How is your satisfaction with your current operating platform/system? *

Mark only one oval.

1	2	3	4	5
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. How important do you think a brand is when you purchase a Smartphone? *

Mark only one oval.

1	2	3	4	5
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. Does brand name influence your decision making in purchasing? *

Mark only one oval.

- ☐ Yes
☐ No
☐ Maybe

12. How long it takes you to upgrade your Smartphone? *

Mark only one oval.

- ☐ less than 1 year
☐ 1 year
☐ 2 year
☐ more than 2 year

13. Will you upgrade your Smartphone to the latest model of the same brand? *

Mark only one oval.

- ☐ Yes
☐ No
☐ Maybe

14. Will you switch to other alternative brands if they offer a similar but cheaper Smartphone? *

Mark only one oval.

- ☐ Yes
☐ No
☐ Maybe

15. How would you rate your commitment with your preference brand? *

Mark only one oval.

1	2	3	4	5
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. Do you think the image of a brand can influence the buying behavior? *

Mark only one oval.

- ☐ Yes
☐ No
☐ Maybe

17. When you plan to purchase a new Smartphone, will you try a new operating platform/system? *

Mark only one oval.

- ☐ Yes
☐ No
☐ Maybe

18. Which one you consider as the most important point when purchase a Smartphone? *

Mark only one oval.

- ☐ High-quality
☐ Lower price

19. Will you prefer buying smartphone with similar specifications at cheap rates provided by brands other than your favorite brand? *

Mark only one oval.

- ☐ Yes
☐ No
☐ Maybe

20. If a smartphone brand provides mobile network service, what do u expect from them? *

Mark only one oval.

- ☐ Unlimited Data for a limited period of time
☐ Data at discounted rate
☐ Less Network charges
☐ Other: _____

21. What's your view on smartphones? *

Mark only one oval.

- ☐ Luxury
☐ Necessity

22. Will you still use smartphones if you have to pay for all the application you use in your mobile? *

Mark only one oval.

- ☐ Yes
☐ No
☐ Maybe

23. What extra accessories do u prefer to buy? *

Check all that apply.

- ☐ Phone cases
☐ Screen guard

Other: ☐ _____

24. What's your family income? *

Mark only one oval.

- ☐ < 1 lakh
☐ 1 - 5 lakh
☐ 5 - 10 lakh
☐ 5 - 15 lakh
☐ > 15 lakh

25. Did reviews influence you? *

Mark only one oval.

- ☐ Yes
☐ No

26. Did family and friends influence you? *

Mark only one oval.

☐ Yes

☐ No

27. Did advertisements influence you? *

Mark only one oval.

☐ Yes

☐ No

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