

SURVEY ON TRENDS, PREFERENCES AND SATISFACTION LEVELS ON E-COMMERCE WEBSITES



SURVEY ON TRENDS, PREFERENCES AND SATISFACTION LEVELS ON E- COMMERCE WEBSITES



SESSION 2023-24

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The project report titled

**“SURVEY ON TRENDS, PREFERENCES AND SATISFACTION
LEVELS ON E-COMMERCE WEBSITES”**

Submitted by **SHASHWAT ANAND** (Exam roll no.-
21220STA048) for the partial fulfillment of the B.Sc.
(hons.) in statistics for the session 2023-2024, has been
originally completed by him under my supervision. I
recommend this project report for the evaluation.

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ABSTRACT

This project aims to conduct a comprehensive survey to analyze the evolving trends, user preferences, and satisfaction levels pertaining to e-commerce websites. With the exponential growth of online shopping, understanding consumer behavior and satisfaction becomes crucial for businesses to thrive in the competitive market. The survey will encompass various aspects including website usability, product selection, payment options, customer service, and overall shopping experience. Through data analysis and interpretation, this study intends to provide valuable insights for e-commerce companies to enhance their platforms, optimize user experience, and ultimately drive customer satisfaction and loyalty in the digital marketplace.

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CHAPTER 1

INTRODUCTION **AND OVERVIEW**



1.1:- RATIONALE OF THE STUDY

The rationale behind studying trends, preferences, and satisfaction levels on e-commerce websites is multifaceted. Firstly, understanding consumer behavior in the digital marketplace helps e-commerce businesses tailor their offerings to meet customer expectations, leading to increased sales and customer retention. Secondly, identifying emerging trends allows companies to stay ahead of the competition and innovate their platforms to adapt to changing consumer demands. Finally, assessing satisfaction levels provides valuable insights into areas for improvement, enhancing overall user experience and fostering brand loyalty. By conducting this study, the project aims to provide actionable data that can drive strategic decision-making for e-commerce businesses.

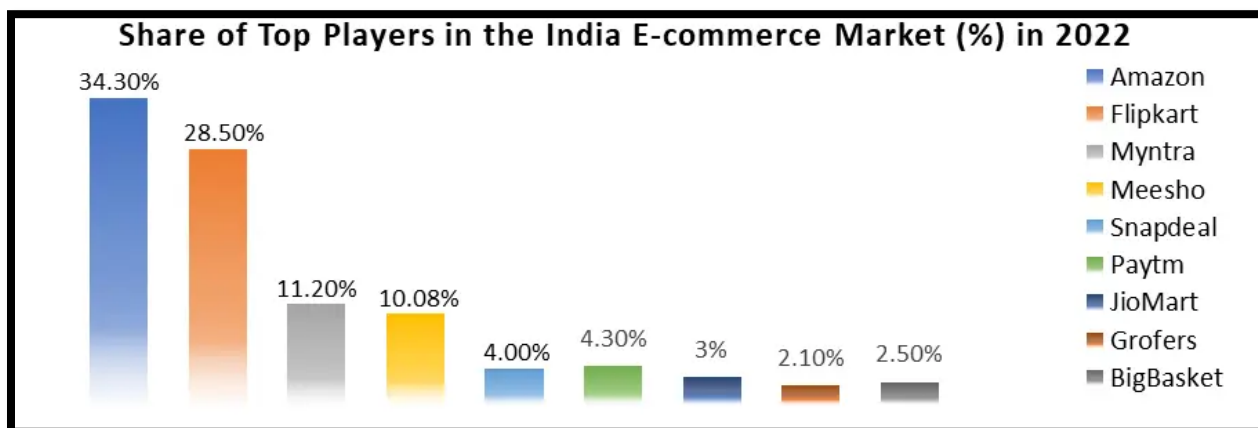
1.2.- INTRODUCTION TO THE E-COMMERCE

1.2.1:- WHAT IS E-COMMERCE ?

E-commerce (electronic commerce) is the activity of electronically buying or selling of products on online services or over the Internet. It has become one of the most popular methods of making money online and an attractive opportunity for investors. E-commerce has evolved to make products easier to discover and purchase through online retailers and marketplaces. Independent freelancers, small businesses, and large corporations have all benefited from ecommerce, which enables them to sell their goods and services at a scale that was not possible with traditional offline retail.

1.2.2:- RISE OF E-COMMERCE IN INDIA

The Indian e-commerce industry has been on an upward growth trajectory. In FY 2022-23, Government e-marketplace (GeM) registered its highest ever Gross Merchandise Value of \$2011 Bn. GeM has achieved a cumulative GMV of more than 4.5 Lakh Cr until 23rd Jul 2023 (since inception). Hence, considering the saving estimates as reported above, GeM has facilitated savings worth more than INR 40,000 Cr since its inception. As per TRAI's Indian Telecom Services Performance Indicators Jul-Sept 2023, the internet penetration in India as of Sept 2023, is over 918.19 Mn, and the number of telecom subscribers as of Feb 2024 is over 1197 Mn.

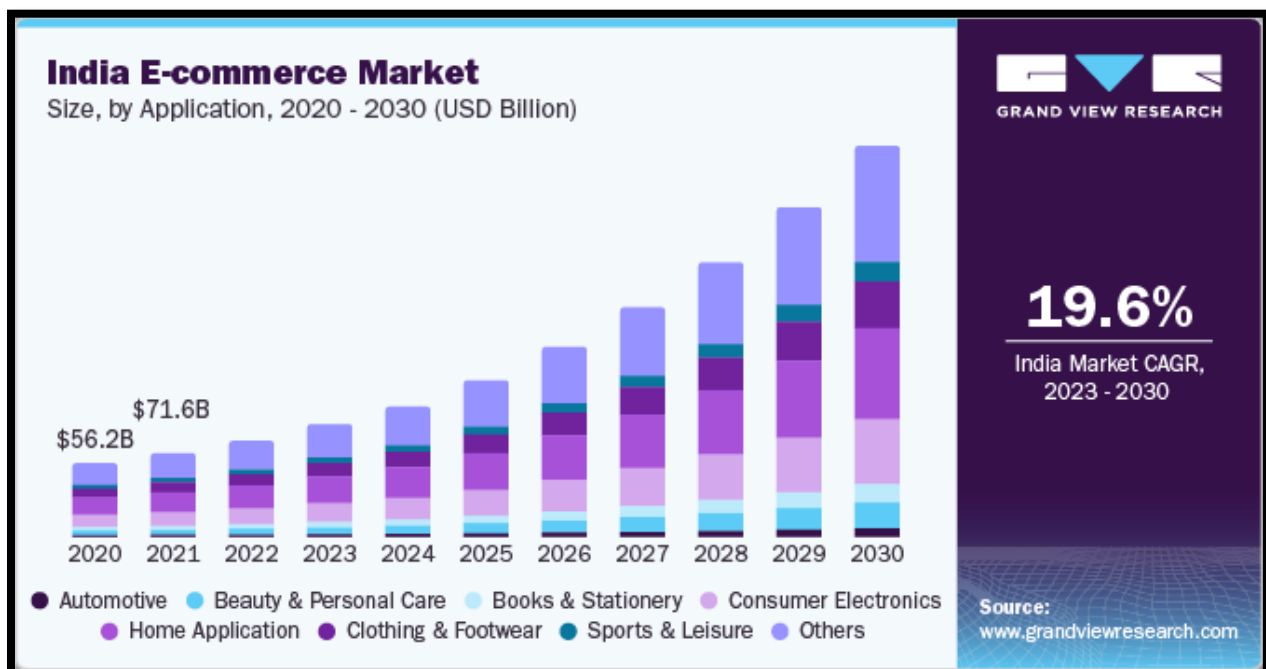


The e-commerce industry in India is growing on levers such as increased smartphone penetration, increased affluence and low data prices, providing impetus for e-retail growth. With over 900 Mn users, India is the 2nd largest internet market in the world with 125.94 Lakh Cr UPI transactions in 2022.

Close to 100% of pin codes in India have seen e-commerce adoption. More than 60% of transactions and orders in

India come from tier two cities and smaller towns. The e-commerce trend is gaining major popularity even in tier-2 and tier- 3 cities as they now make up nearly half of all shoppers and contribute three of every five orders for leading e-retail platforms. The average selling price (ASP) in tier-2 and smaller towns is only marginally lower than in tier-1/metro cities. Electronics and apparel make up nearly 70% of the e-commerce market, when evaluated against transaction value. Other new upcoming categories within e-commerce include ed-tech, hyperlocal and food-tech.

ONDC, a network launched by the Government of India in 2022, aims to provide equal opportunities to MSMEs to thrive in digital commerce and democratize e-commerce. In 2022, Indian e-commerce and consumer internet companies raised \$15.4 Bn in PE/VC funding, 2x increase from \$8.2 Bn in 2020.



1.2.3:- MERITS AND DEMERITS OF E-COMMERCE

MERITS

1. Reduced overhead costs

Running an e-commerce store is a lot more cost-effective than running a physical store. You don't have to rent commercial real estate — instead, you can pay an affordable fee for web hosting. You don't have to invest in security for your commercial property, plus you don't have to worry about paying rent for a warehouse or hiring employees. With an e-commerce store, typical costs include your domain name, your web hosting, and the cost of building your website, as well as your inventory. That being said, most e-commerce websites spend some money on marketing as well.

2. No need for a physical storefront

There are so many difficult aspects to running a physical storefront and using e-commerce means you don't have to face most of those obstacles. Renting a commercial property can be expensive, especially if you're in a big city. You also have to pay for electricity, water, and internet to ensure your space is up to code and can handle your business. There's also security to consider; if you want your physical storefront to be secure, you'll need to invest in cameras and other surveillance equipment. With an e-commerce store, you can simply build your website and start selling your products online without worrying about setting up a physical storefront and spending as much money.

3. Ability to reach a broader audience

Perhaps the biggest advantage of e-commerce is the fact that it allows you to reach a massive audience. Your physical storefront can only get so many visitors in a day, especially if you live in a smaller town or a rural area. With an e-commerce store, you can reach potential customers all throughout the world and show them your products. Even if you're not selling your products overseas, you can still reach shoppers all the way across the United States to boost your sales. This expanded reach has even allowed a handful of smaller e-commerce stores to become massive brands over time.

4. Scalability

Of the advantages and disadvantages of a business using e-commerce, scalability is one of the most practical advantages for long-term growth. If you have a physical storefront, your business can only grow so much before you have to move to a larger storefront. You also have to move inventory and equipment from one location to another, which makes it even harder to scale your store with the growth of your business. With e-commerce, your website and store can grow as your business does, and you don't have to spend a fortune moving to a new physical space.

5. Track logistics

Keeping track of logistics is an essential part of **e-commerce and retail marketing**, and it's significantly easier with e-commerce than it is with a physical storefront. You can outsource fulfillment logistics so your customers can enjoy benefits like 2-day shipping and easy returns

processing. You also have an electronic record of everything, which makes it easy to track sales and look for trends that help you grow your business over time.

DEMERITS

1. Potential security threats

When you're doing business online, there's always the potential for security threats. Poor website security can allow unauthorized users to gain access to your website and look at sensitive data. In rare cases, issues with payment processors may lead to data breaches that put customers' credit and debit card information at risk. A big part of learning [how to build e-commerce websites](#) is learning how to make sure that website is secure, which is why some business owners prefer to hire a professional.

2. Competition

There's a lot of competition in the world of e-commerce because it's so easy for anybody to create an online store. This is one of the biggest e-commerce disadvantages because it means you have to work extra hard to make sure you're promoting your store and driving traffic to your website. Certain niches are also very crowded, so you may have a tough time selling your product depending on your industry and products. Ultimately, the success of your store is determined by how hard you work to build your online presence.

3. IT issues

There are no tech issues that can keep you from accepting cash at a physical store, but IT issues can be a big problem

for e-commerce websites. If your website suddenly crashes or you're having a problem with your payment processor, that downtime could potentially cost you money and customers. What's even worse is that fixing these IT issues could cost you even more. Keeping it simple can help you avoid some of the potential IT issues that come with e-commerce, but tech problems are something to be aware of.

4. Shipping logistics

Running a physical storefront is simple because all you have to do is sell products to customers when they come in to shop. If you want to sell products over the phone or through a catalog, you can use a simple shipping service to send out a few packages each week. With an e-commerce store, you have to figure out all of the **shipping logistics** because every purchase will have to be shipped. It can be difficult to figure out a seamless shipping solution for your business, and you don't want to end up in the red due to high shipping costs.

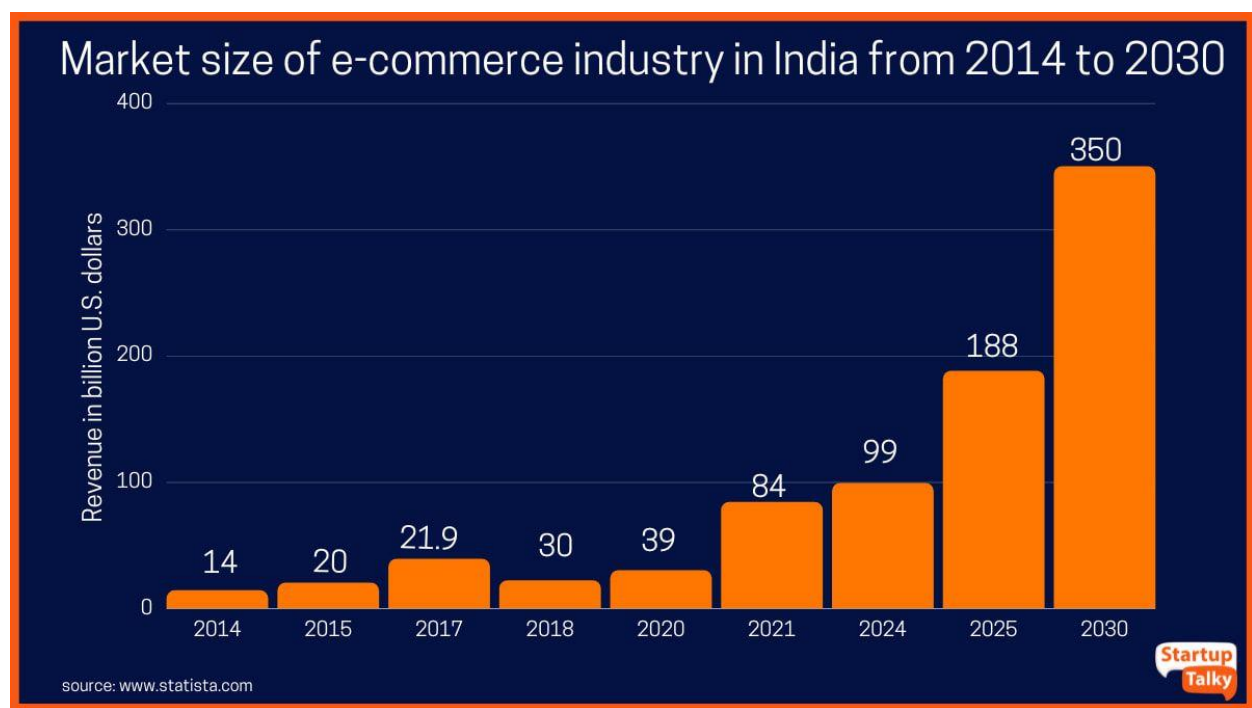
5. Limited connection with customers

You don't get a chance to connect with customers on a personal level when you're running an e-commerce store. Some people may prefer that, but you can't offer the same personal touch when you make a sale online.

1.2.4:- FUTURE OF E-COMMERCE IN INDIA

The future of ecommerce is rapidly evolving, with new technologies and changing consumer behaviors driving growth and innovation. Nowhere is this more apparent than in India, where ecommerce has become an

increasingly important part of the retail landscape. According to India Brand Equity Foundation (IBEF), India is expected to be the fastest-growing ecommerce market in the world in the coming years, with sales projected to reach more than US\$ 300 billion by 2030. Ecommerce has opened up new opportunities for businesses to reach a larger audience and expand their reach beyond traditional brick-and-mortar stores. As the ecommerce market in India continues to evolve, it is clear that it will play a significant role in the country's economy and retail landscape.



CHAPTER 2

RESEARCH

METHODOLOGY



STATEMENT OF THE PROBLEM

"The study goal is to analyze current trends, consumer preferences, and satisfaction levels regarding e-commerce websites. The research aims to identify factors influencing consumer behavior, including website, product variety, pricing strategies, and overall shopping experience. By conducting a comprehensive survey, the study intends to provide insights that can guide e-commerce businesses in enhancing their platforms to better meet consumer needs and improve overall customer satisfaction."

OBJECTIVES OF THE STUDY

- ✓ 1:- To find out which category of products are mostly purchased online.
- ✓ 2:-To find out the most popular e-commerce websites for purchasing as well as selling.
- ✓ 3:-To find out the interdependency between different category of products and the gender of people.
- ✓ 4:-To find out some of the main reasons behind people hesitates to purchase online.
- ✓ 5:-To find whether some factors of online shopping affect people their decision to shop online.
- ✓ 6:-To find whether there is significant association between purchase frequency and place of residence.
- ✓ 7-To find out which payment method while shopping online is most in use.
- ✓ 8:-To find how often people read product reviews or not.
- ✓ 9:-To find out the preference of people when it comes to brands of products.
- ✓ 10:-To find out how often people use wishlist features for future references.
- ✓ 11:-To find out whether people using any e-commerce websites to sell their own products. If yes, websites they prefer.

- ✓ 12:-To find out whether increasing growth of e-commerce leads to a loss for a local shopkeepers.
- ✓ 13:-To find out whether people are concerned about their personal and financial info while shopping online.
- ✓ 14:-To find out what lead to enlighten people about e-commerce and its usage.
- ✓ 15:-To find whether customer service is important while shopping from a particular e-commerce websites.

AREA OF THE SURVEY

According to the aim of the survey the area for sample collection would be broader, But I have restricted the area to the undergraduate science students of Banaras Hindu University.

SAMPLING TECHNIQUES

A group of units or elements which have well defined characteristics under study, called population. The population may be finite or infinite , a finite population in which unit of population is finite and an infinite population is one in which member of population is infinite. A sample is a finite subset of statistical individuals in a population and a number of individuals/units in a sample is called a sample size. On the basis of sample, we can estimate about the population parameter in which we are interested. The sample was selected by using random sampling as sampling technique & Sample size collected for survey is 137

DATA COLLECTION

The data has been collected through random sampling, from the sample respondents through the schedule with the help of the questionnaire which was distributed online.

DATA ANALYSIS AND REPORTING

Data analysis involves summarizing the Raw data and interpreting their meaning which provides clear answer to questions in which we are interested. For this purpose, I have used software named as **MS-EXCEL** & **MS- WORD**. Then I analysis and interpret the data using statistical tools (bar chart, histogram and pie chart) available in **MS EXCEL** and also uses **Chi-square test**.

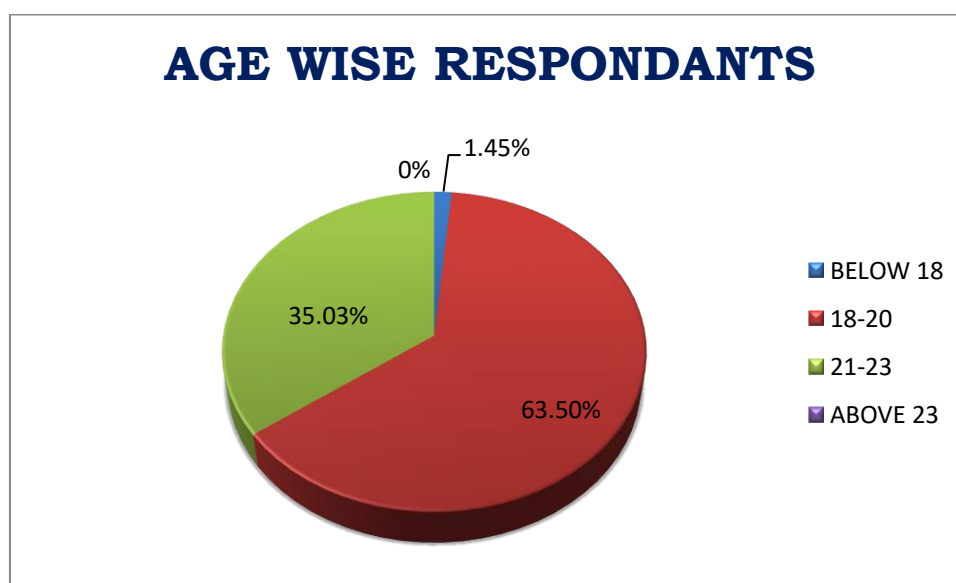
CHAPTER 3

TABULATION AND **GRAPH** **INTEPRETATION**



1:- AGE WISE RESPONDENTS

AGE	FREQUENCY	%
BELOW 18	2	1.45%
18-20	87	63.50%
21-23	48	35.03%
ABOVE 23	0	0%
TOTAL	137	100%

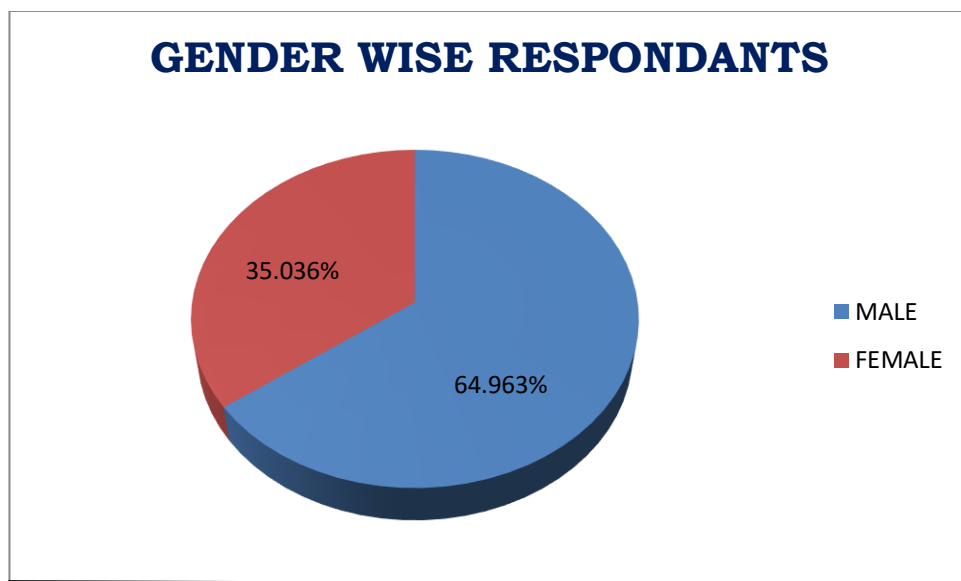


INTEPRETATION :-

The primary data is collected from 137 respondents.
1.45% of the respondents are of age group below 18.
63.50% of the respondents are of age group 18-20.
35.03% of the respondents are of age group 21-23.
0% of the respondents are of age group above 23.

2:-GENDER WISE RESPONDENTS

GENDER	FREQUENCY	%
MALE	89	64.963%
FEMALE	48	35.036%
TOTAL	137	100%

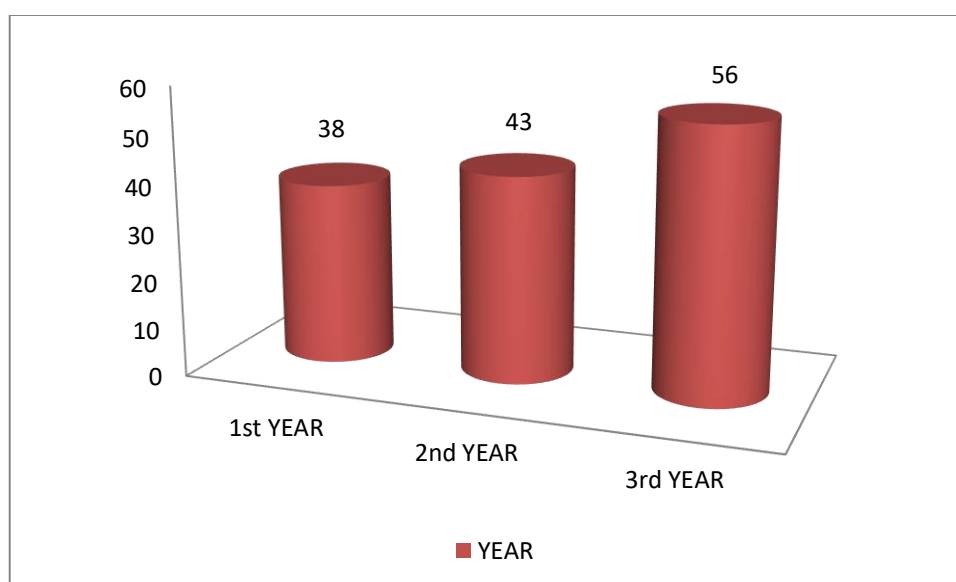


INTEPRETATION:-

The primary data is collected from 137 respondents.
35.036% of the respondents are female.
64.963% of the respondents are male.

3:-YEAR WISE RESPONDENTS

YEAR	FREQUENCY	%
1 st YEAR	38	27.73%
2 nd YEAR	43	31.38%
3 rd YEAR	56	40.87%
TOTAL	137	100%

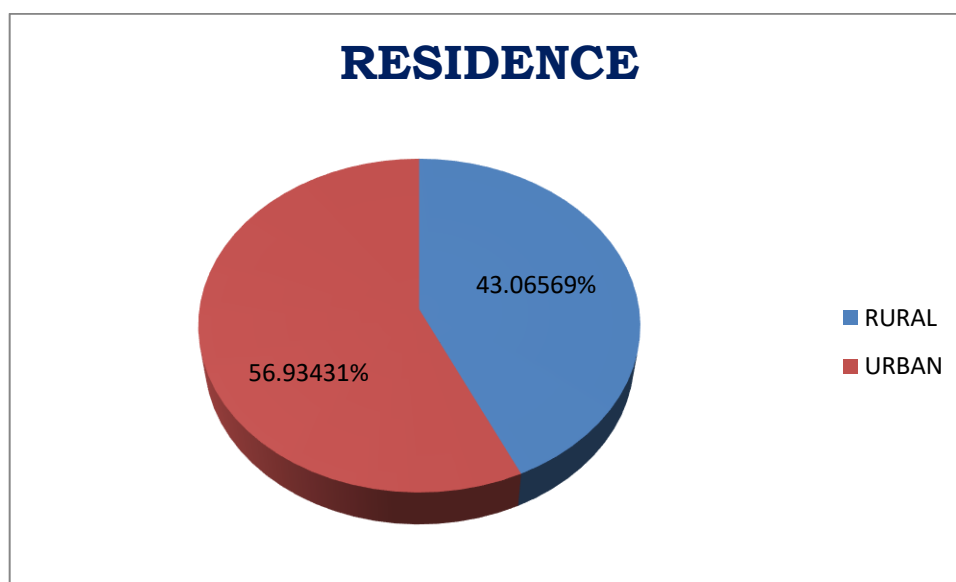


INTEPRETATION:-

The primary data is collected from 137 respondents.
27.73% of the respondents are from 1st year.
31.38% of the respondents are from 2nd year.
40.87% of the respondents are from 3rd year.

4:-FAMILY RESIDENTIAL LOCALITY

RESIDENT	FREQUENCY	%
URBAN	59	43.065%
RURAL	78	56.934%
TOTAL	100	100%

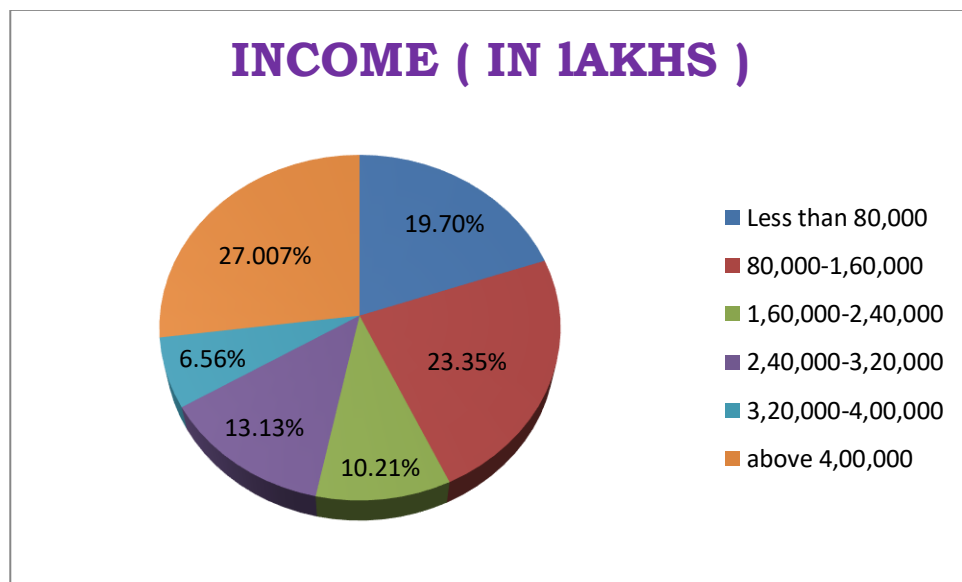


INTERPRETATION:-

The primary data is collected from 137 respondents. 43.06% of the respondents are from Rural locality. 56.93% of the respondents are from Urban locality.

5:-FAMILY YEARLY INCOME

INCOME	FREQUENCY	%
LESS THAN 80,000	27	19.70%
80,000-160,000	32	23.35%
1,60,000-2,40,000	14	10.21%
2,40,000-3,20,000	18	13.13%
3,20,000-4,00,000	9	6.56%
ABOVE 4,00,000	37	27.007%
TOTAL	137	100%



INTEPRETATION:-

The primary data is collected from 137 respondents.

19.70% of the respondents belongs to Less than 80,000 income.

23.35% of the respondents belongs to 80,000-1,60,000 income.

10.21% of the respondents belongs to 1,60,000-2,40,000 income.

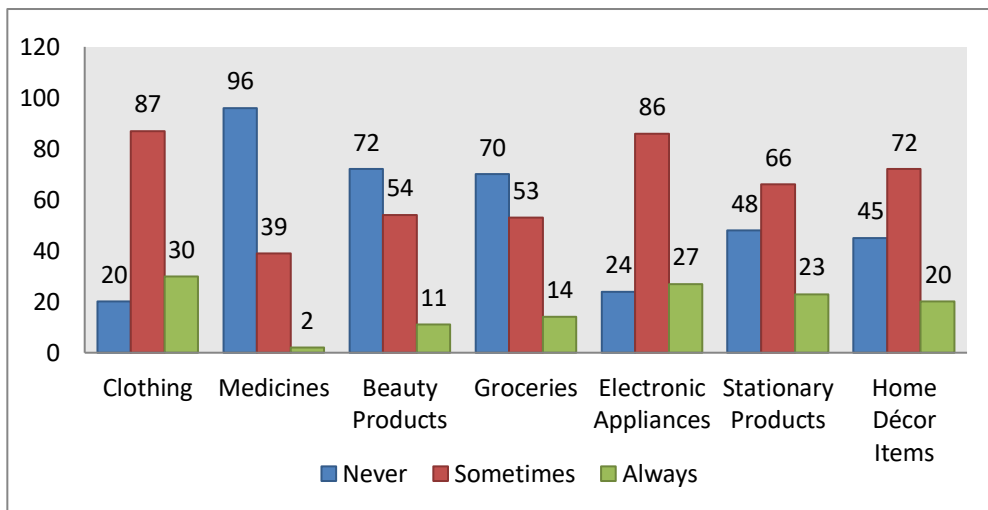
13.13% of the respondents belongs to 2,40,000-3,20,000 income.

6.56% of the respondents belongs to 3,20,000-4,00,000 income.

27.007% of the respondents belongs to more than 4,00,000 income.

6:-PRODUCTS PREFERENCE

PRODUCTS	NEVER	SOMETIMES	ALWAYS
CLOTHING	20	87	30
MEDICINES	96	39	2
BEAUTY PRODUCTS	72	54	11
GROCERIES	70	53	14
ELECTRONIC APPLIANCES	24	86	27
STATIONARY PRODUCTS	48	66	23
HOME DÉCOR ITEMS	45	72	20



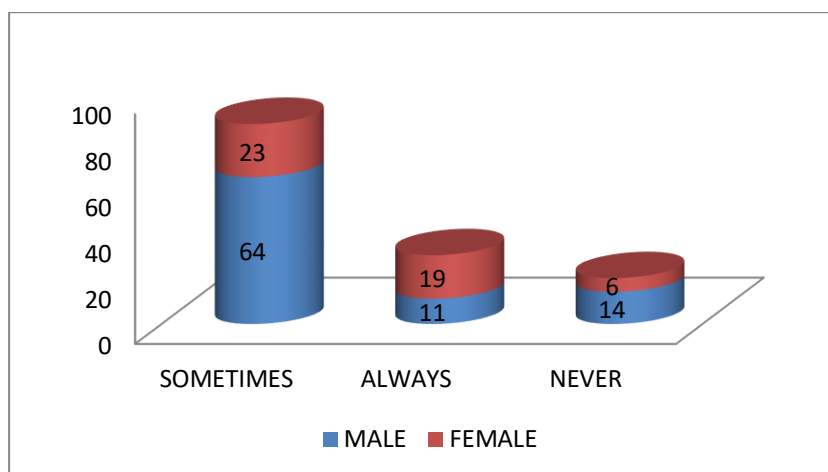
INTEPRETATION:-

- 1:-14.59% never, 63.5% sometimes, 21.89% always purchase clothing.
- 2:- 70.07% never, 28.46% sometimes, 1.45% always purchase medicines.
- 3:- 52.55% never, 39.41% sometimes, 8.02% always purchase beauty prod.
- 4:-51.09 % never, 38.68% sometimes, 10.21% always purchase groceries.
- 5:- 17.51% never, 62.77 % sometimes, 19.70% always purchase elec. Appliances.
- 6:- 35.03% never, 48.17% sometimes, 16.78% always purchase stat. products.
- 7:- 32.84% never, 52.55% sometimes, 14.59% always purchase home décor item.

PRODUCT PREFERENCE ON GENDER

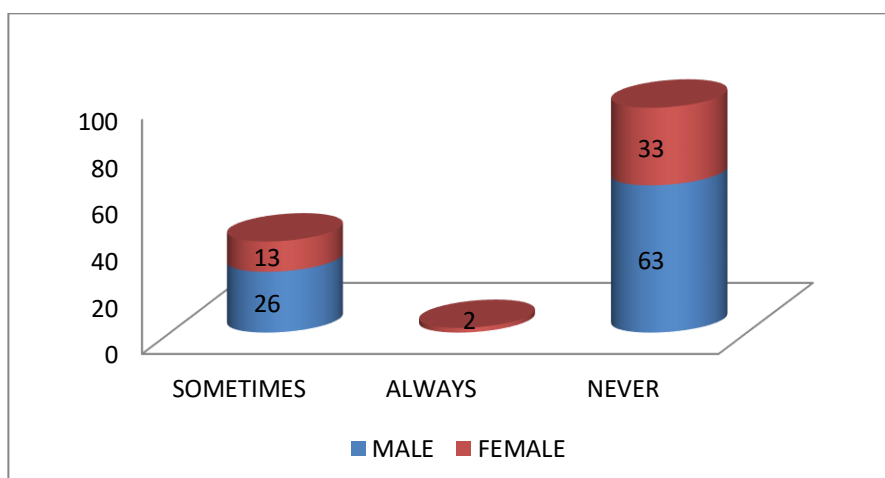
1:- CLOTHING

GENDER	SOMETIMES	ALWAYS	NEVER	TOTAL
MALE	64	11	14	89
FEMALE	23	19	6	48
TOTAL	87	30	20	137



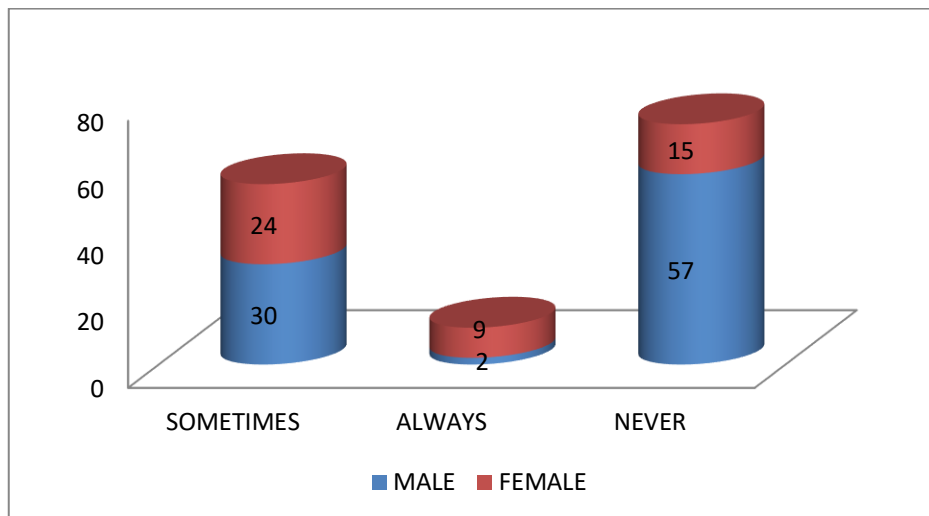
2:- MEDICINES

GENDER	SOMETIMES	ALWAYS	NEVER	TOTAL
MALE	26	0	63	89
FEMALE	13	2	33	48
TOTAL	39	2	96	137



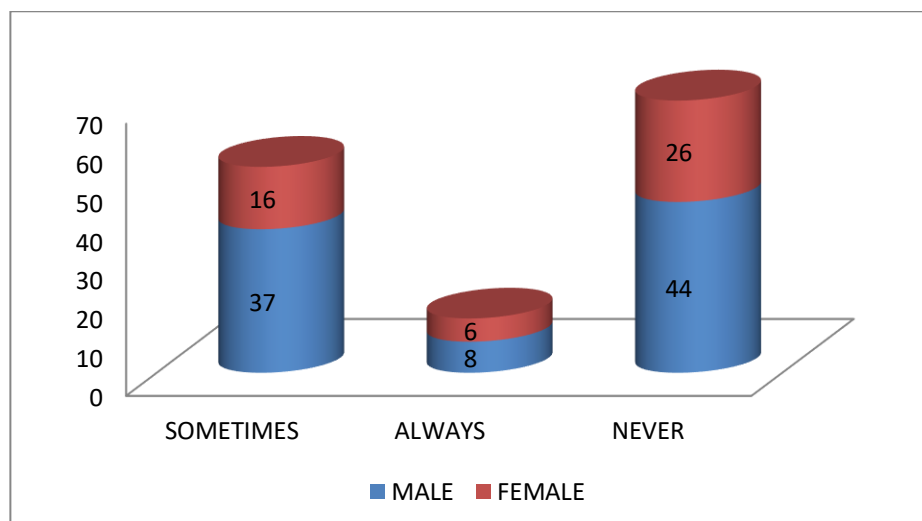
3:- BEAUTY PRODUCTS

GENDER	SOMETIMES	ALWAYS	NEVER	TOTAL
MALE	30	2	57	89
FEMALE	24	9	15	48
TOTAL	54	11	72	137



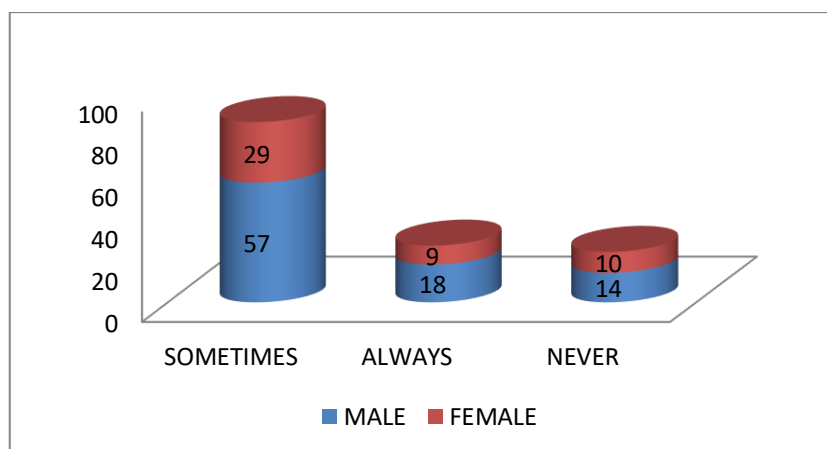
4:- GROCERIES

GENDER	SOMETIMES	ALWAYS	NEVER	TOTAL
MALE	37	8	44	89
FEMALE	16	6	26	48
TOTAL	53	14	70	137



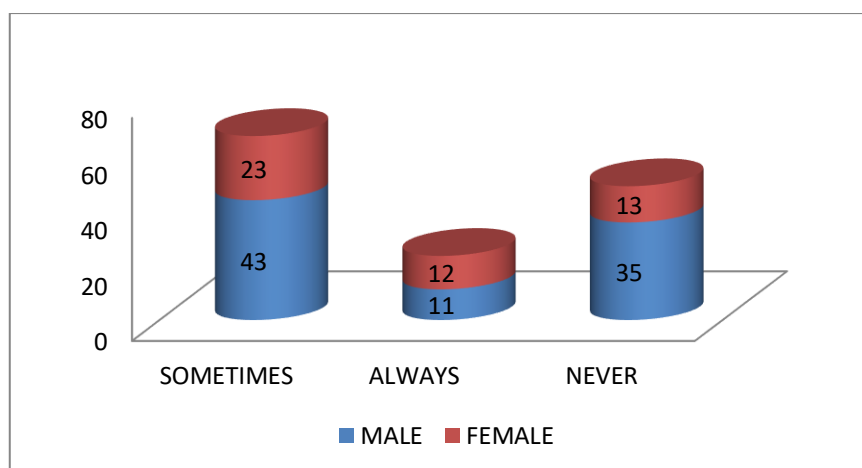
5:-ELECTRONIC APPLIANCES

GENDER	SOMETIMES	ALWAYS	NEVER	TOTAL
MALE	57	18	14	89
FEMALE	29	9	10	48
TOTAL	86	27	24	137



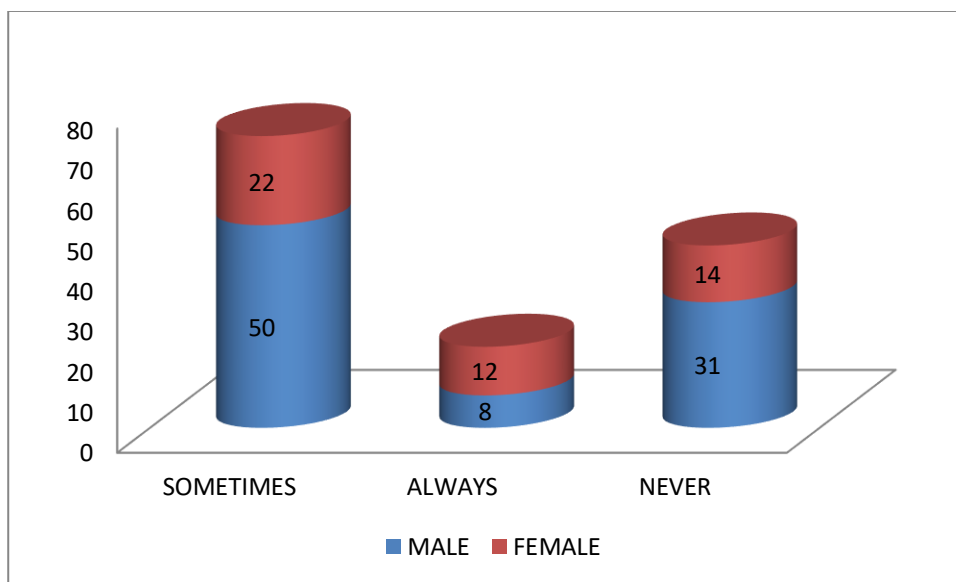
6:-STATIONARY PRODUCTS

GENDER	SOMETIMES	ALWAYS	NEVER	TOTAL
MALE	43	11	35	89
FEMALE	23	12	13	48
TOTAL	66	23	48	137



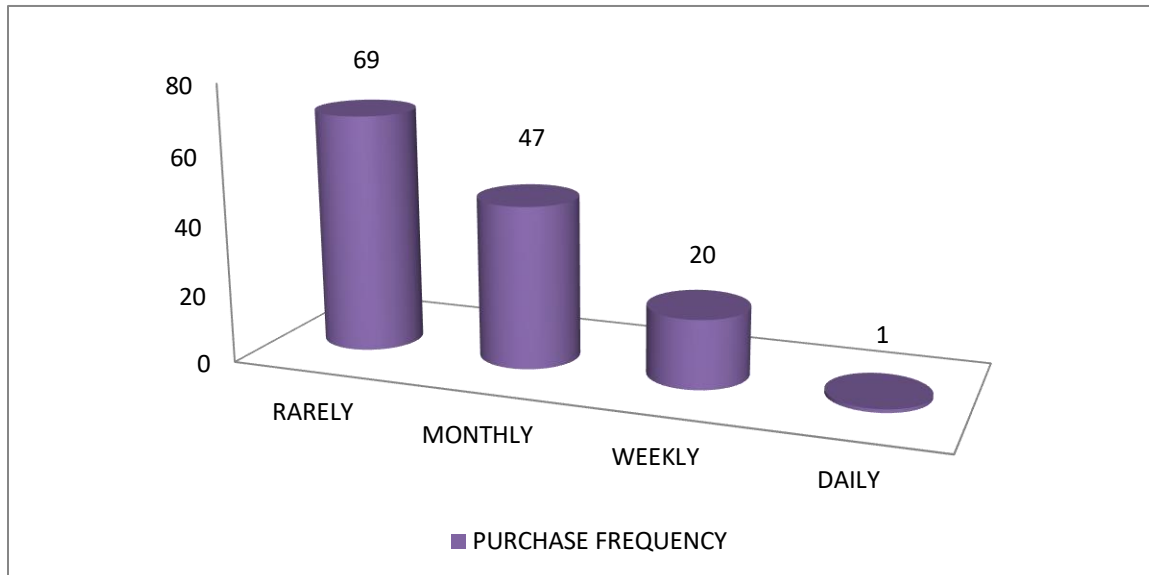
7:-HOME DÉCOR ITEMS

GENDER	SOMETIMES	ALWAYS	NEVER	TOTAL
MALE	50	8	31	89
FEMALE	22	12	14	48
TOTAL	72	20	45	137



7:-PURCHASE FREQUENCY

DURATION\TIME	FREQUENCY	PERCENTAGE
RARELY	69	50.36%
MONTHLY	47	34.30%
WEEKLY	20	14.59%
DAILY	1	0.72%
TOTAL	137	100%

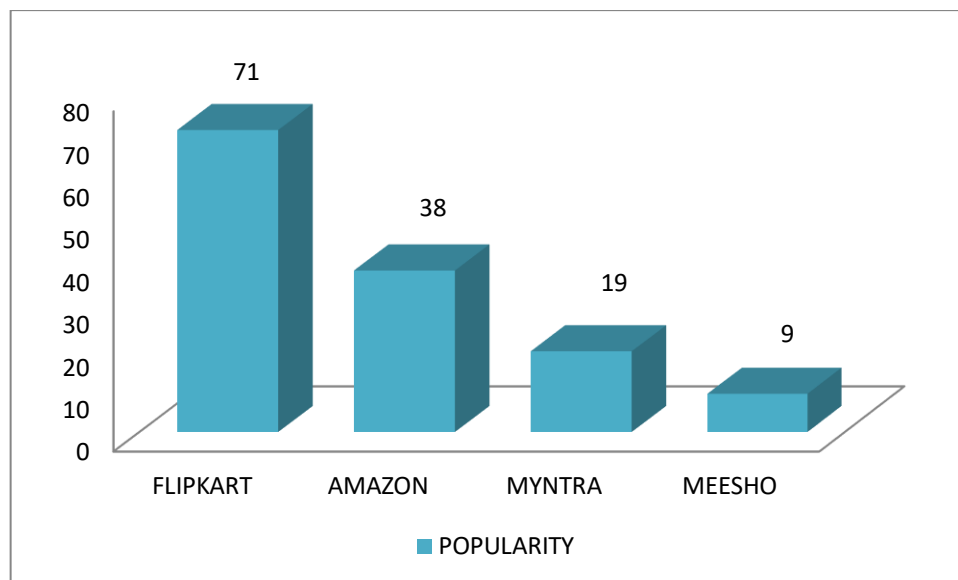


INTEPRETATION:-

The primary data is collected from 137 respondents.
50.36% of the respondents are shopping rarely from online.
34.30% of the respondents are shopping monthly from online.
14.59% of the respondents are shopping weekly from online.
0.72% of the respondents are shopping daily from online.

8:-MOST POPULAR E-COMMERCE WEBSITE

WEBSITES	FREQUENCY	%
FLIPKART	71	51.82%
AMAZON	38	27.73%
MYNTRA	19	13.86%
MEESHO	9	6.56%
TOTAL	137	100%

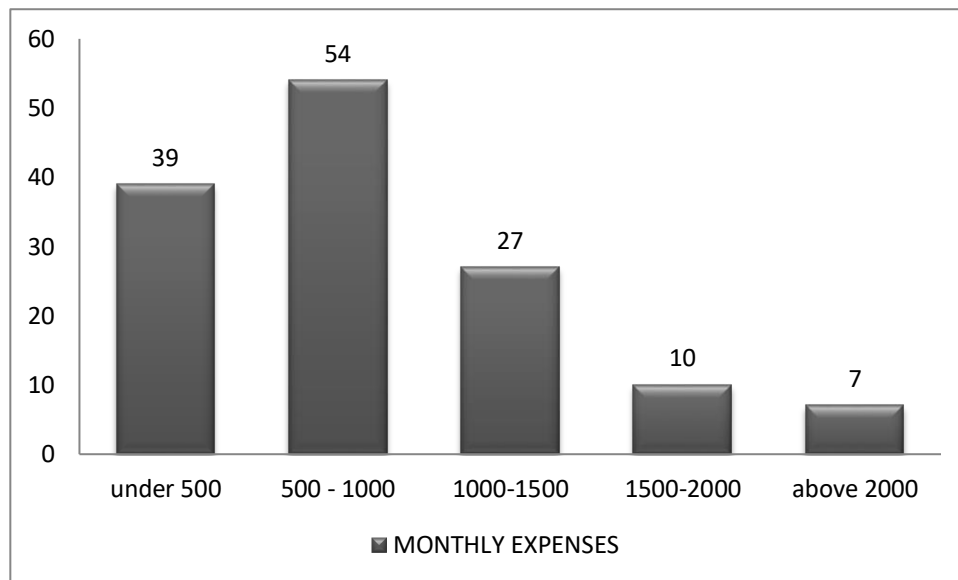


INTEPRETATION:-

The primary data is collected from 137 respondents.
51.82% of the respondents are using Flipkart for purchasing.
27.73% of the respondents are using Amazon for purchasing.
13.86% of the respondents are using Myntra for purchasing.
6.56% of the respondents are using Meesho for purchasing.

9:- EXPENSES ON PURCHASE (MONTHLY)

EXPENSES	FREQUENCY	%
UNDER 500	39	28.46%
500-1000	54	39.41%
1000-1500	27	19.7%
1500-2000	10	7.29%
ABOVE 2000	7	5.1%
TOTAL	137	100%



INTEPRETATION:-

The primary data is collected from 137 respondents.

28.46% of the respondents are spending under 500 monthly on online purchasing.

39.41% of the respondents are spending 500-1000 monthly on online purchasing.

19.7% of the respondents are spending 1000-1500 monthly on online purchasing.

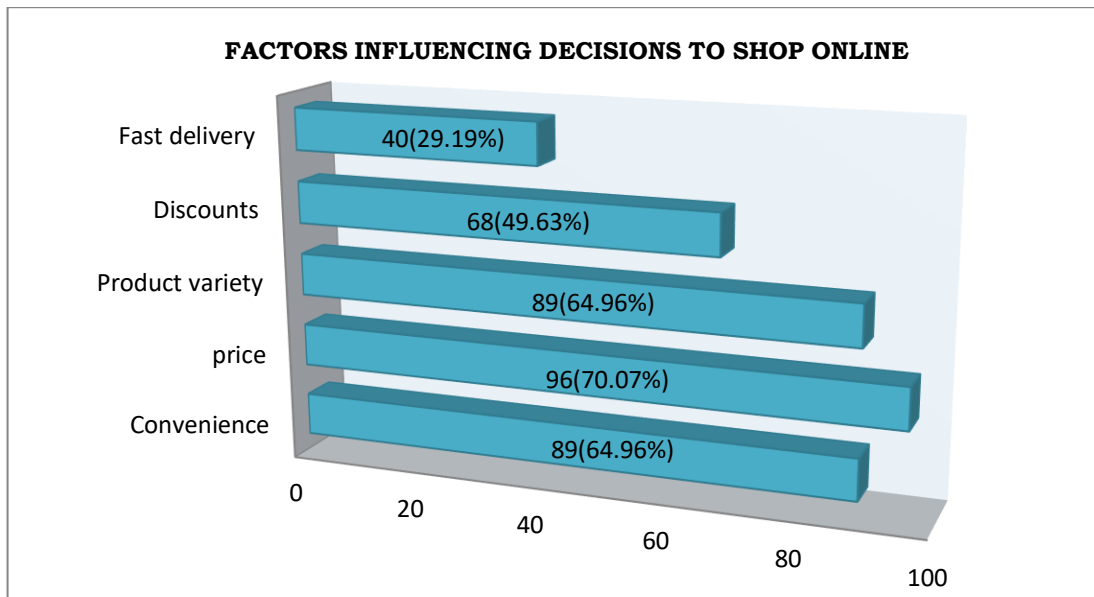
7.29% of the respondents are spending 1500-2000 monthly on online purchasing.

5.1% of the respondents are spending above 2000 monthly on online purchasing.

10:- FACTORS INFLUENCING DECISIONS TO SHOP ONLINE

(MULTIPLE SELECT FACTORS)

FACTORS	FREQ.	%
CONVENIENCE	89	64.96%
PRICE	96	70.07%
PRODUCT VARIETY	89	64.96%
DISCOUNTS	68	49.63%
FAST DELIVERY	40	29.19%



INTEPRETATIONS:-

The primary data is collected from 137 respondents.

64.96% of the respondents shops online because of convenience.

70.07% of the respondents shops online because of reduced price.

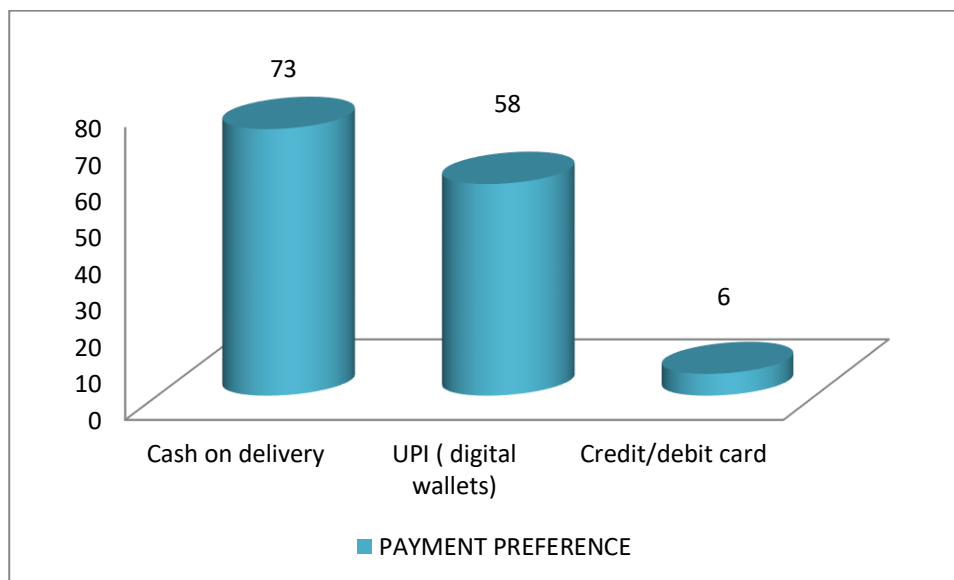
64.96% of the respondents shops online because of prod.variety.

49.63% of the respondents shops online because of discounts.

29.19% of the respondents shops online because of fast delivery.

11:- PAYMENT METHODS WHILE SHOPPING

PAYMENT METHODS	FREQUENCY	%
CASH ON DELIVERY	73	53.28%
UPI (DIGITAL WALLETS)	58	42.33%
CREDIT/DEBIT CARD	6	4.37%
TOTAL	137	100%



INTEPRETATIONS:-

The primary data is collected from 137 respondents.

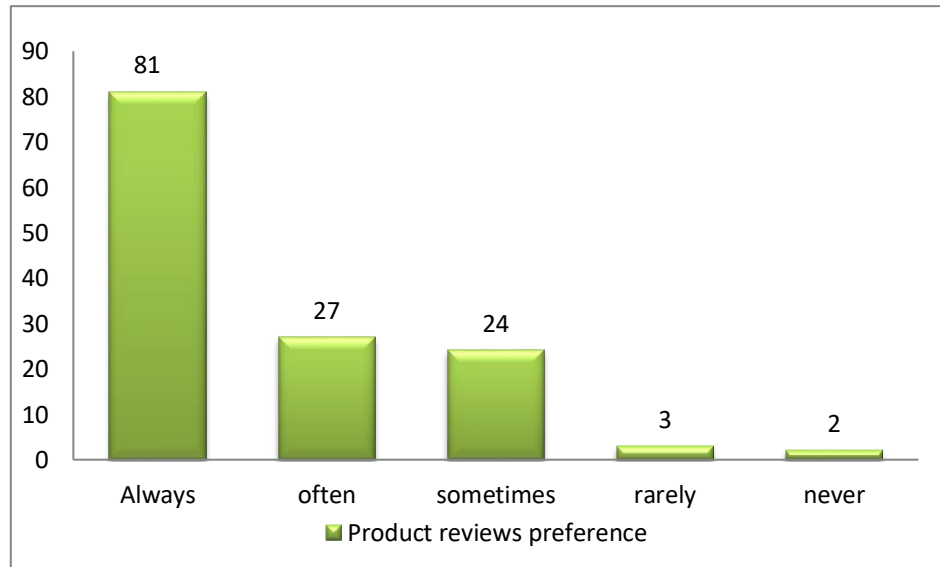
53.28% of the respondents use cash on delivery while online shopping.

42.33% of the respondents use UPI (digital wallets) while online shopping.

4.37% of the respondents use credit/debit card while online shopping.

12:- DO YOU READ PRODUCTS REVIEW BEFORE PURCHASE?

PARTICULARS	FREQUENCY	%
ALWAYS	81	59.12%
OFTEN	27	19.70%
SOMETIMES	24	17.51%
RARELY	3	2.18%
NEVER	2	1.45%
TOTAL	137	100%



INTEPRETATIONS:-

The primary data is collected from 137 respondents.

59.12% of the respondents always reads product reviews before making a purchase.

19.7% of the respondents often reads product reviews before making a purchase.

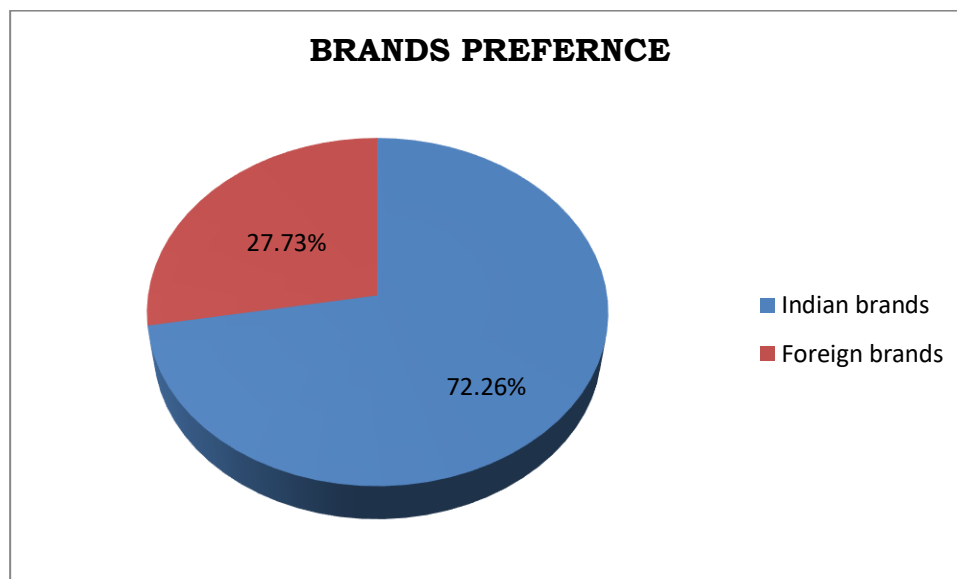
17.51% of the respondents sometimes read product reviews before making a purchase.

2.18% of the respondents rarely reads product reviews before making a purchase.

1.45% of the respondents never reads product reviews before making a purchase.

13:- BRAND CATEGORY PREFERENCE

CATEGORY	FREQUENCY	%
INDIAN BRANDS	99	72.26%
FOREIGN BRANDS	38	27.73%
TOTAL	137	100%

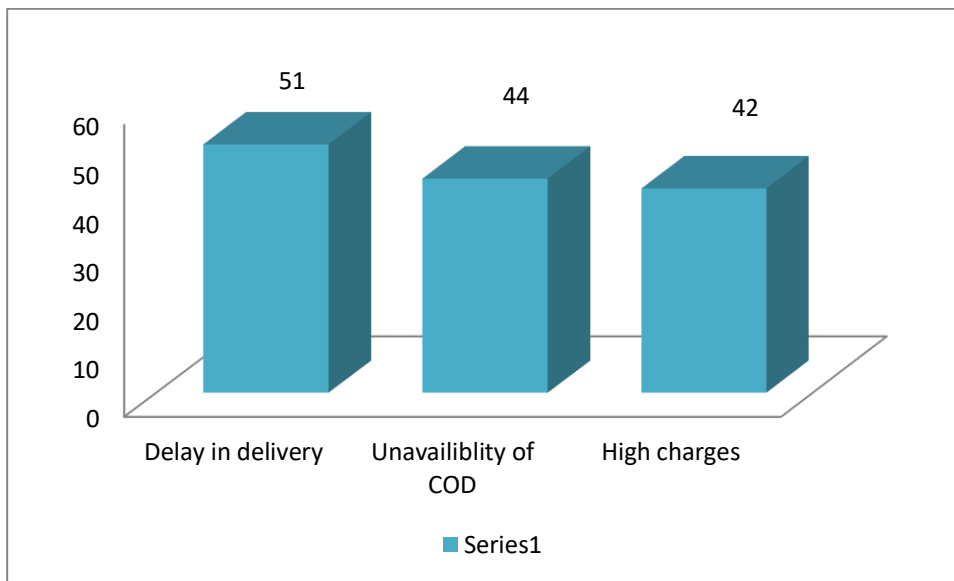


INTEPRETATIONS:-

The primary data is collected from 137 respondents.
72.26% of the respondents prefers Indian brands.
27.73% of the respondents prefers Foreign brands.

14:- REASONS FOR NOT PURCHASING ONLINE SOMETIMES

REASONS	FREQUENCY	%
DELAY IN DELIVERY	51	37.22%
UNAVAILABILITY OF CASH ON DELIVERY	44	32.11%
HIGH CHARGES	42	30.65%
TOTAL	137	100%

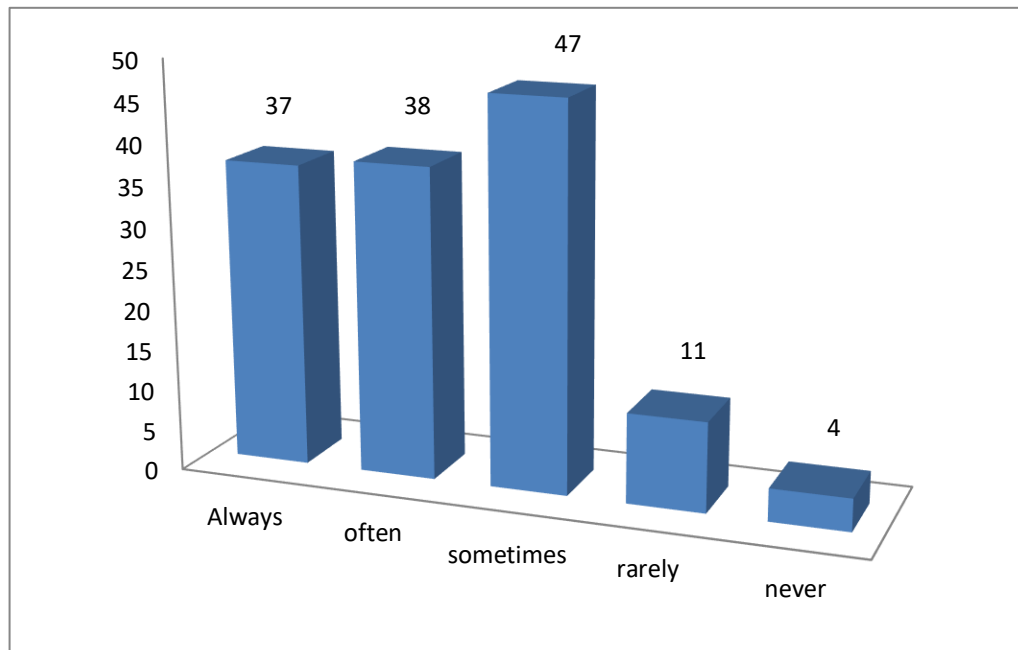


INTEPRETATIONS:-

The primary data is collected from 137 respondents.
37.22% of the respondents sometimes not purchase online because of delay in delivery.
32.11% of the respondents sometimes not purchase online because of unavailability of cash on delivery.
30.65% of the respondents sometimes not purchase online because of high charges.

15:-HOW OFTEN DO YOU UTILIZE WISHLIST FEATURES FOR FUTURE REFERENCES

PARTICULARS	FREQUENCY	%
ALWAYS	37	27.007%
OFTEN	38	27.737%
SOMETIMES	47	34.306%
RARELY	11	8.029%
NEVER	4	2.919%
TOTAL	137	100%

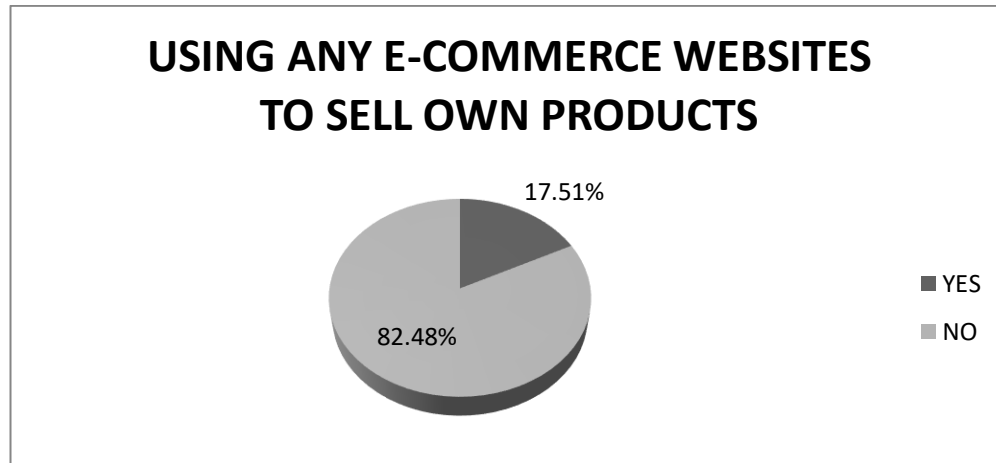


INTEPRETATIONS:-

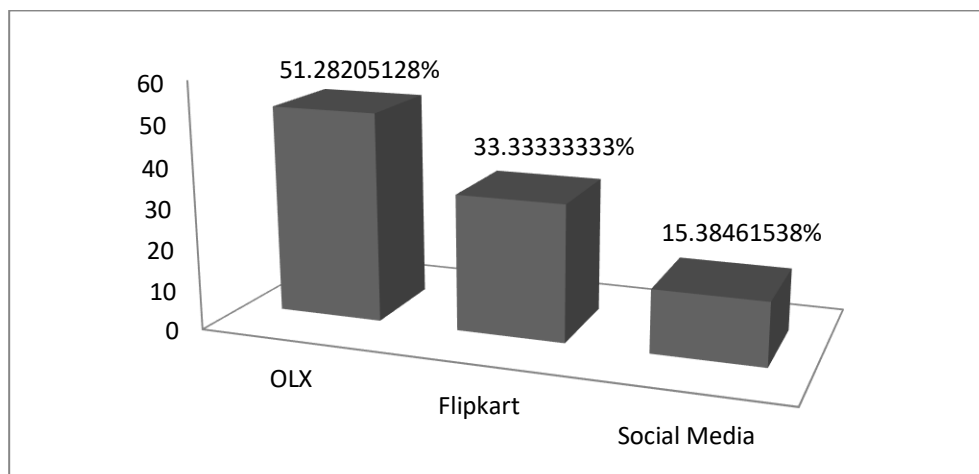
27.007% of the respondents always use wishlist feature for future reference.
 27.737% of the respondents often use wishlist feature for future reference.
 34.306% of the respondents sometimes use wishlist feature for future.
 8.029% of the respondents rarely use wishlist feature for future reference.
 2.919% of the respondents never use wishlist feature for future reference.

16:- DO YOU USE ANY E-COMMERCE WEBSITES TO SELL YOUR OWN PRODUCTS?

YES	24	17.51%
NO	113	82.48%
TOTAL	137	100%



FOR YES, WEBSITES THEY PREFER.....



INTEPRETATIONS:-

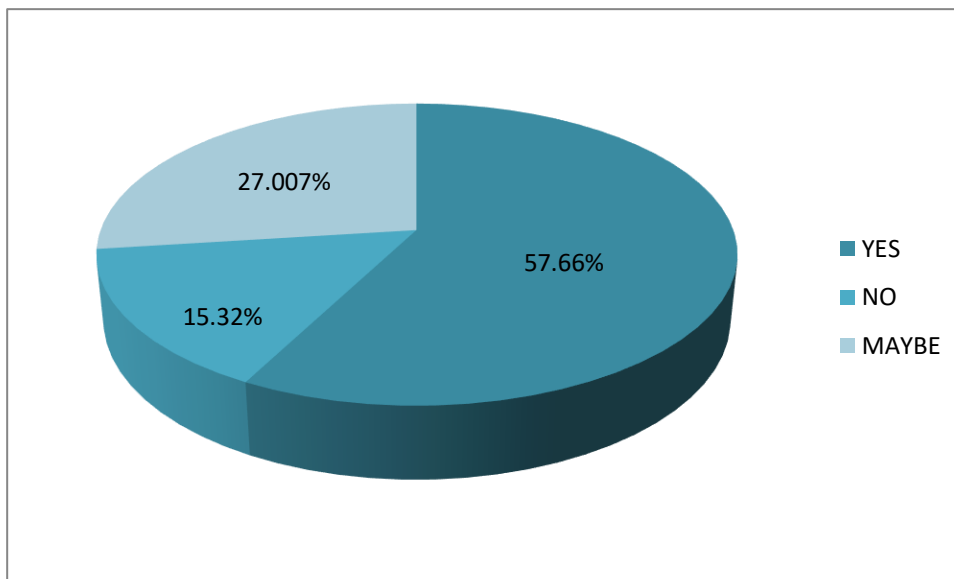
82.48% of the respondents not using any e-commerce websites to sell their own products.

17.51% of the respondents use e-commerce websites to sell their own products.

Out of which, 51.28% opts for OLX, 33.33% for Flipkart and 15.38% opts for social media.

17:- IS INCREASING GROWTH OF E-COMMERCE LEADS TO LOSS FOR LOCAL SHOP-KEEPERS?

PARTICULARS	FREQUENCY	%
YES	79	57.66%
NO	21	15.32%
MAYBE	37	27.007%
TOTAL	137	100%

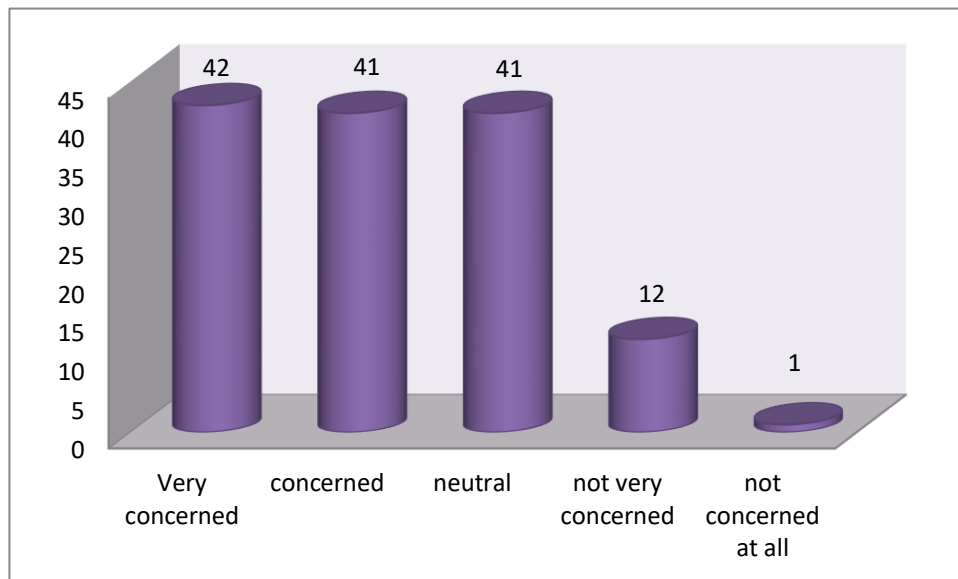


INTEPRETATIONS:-

The primary data is collected from 137 respondents. 57.66% of the respondents thinks that increasing growth of e-commerce leads to loss for local shop-keepers. 15.32% of the respondents thinks that increasing growth of e-commerce not create any loss for local shop-keepers. 27.007% of the respondents says maybe its true that increasing growth of e-commerce leads to loss for local shop-keepers.

18:- CONCERN ABOUT SECURITY OF PERSONAL AND FINANCIAL INFO. WHILE SHOPPING ONLINE

PARTICULARS	FREQUENCY	%
VERY CONCERNED	42	30.65%
CONCERNED	41	29.927%
NEUTRAL	41	29.927%
NOT VERY CONCERNED	12	8.75%
NOT CONCERNED AT ALL	1	0.72%
TOTAL	137	100%



INTEPRETATIONS:-

The primary data is collected from 137 respondents.

30.65% of respondents are very concerned about their personal and financial info while shopping online.

29.92% of respondents are just concerned about their personal and financial info while shopping online.

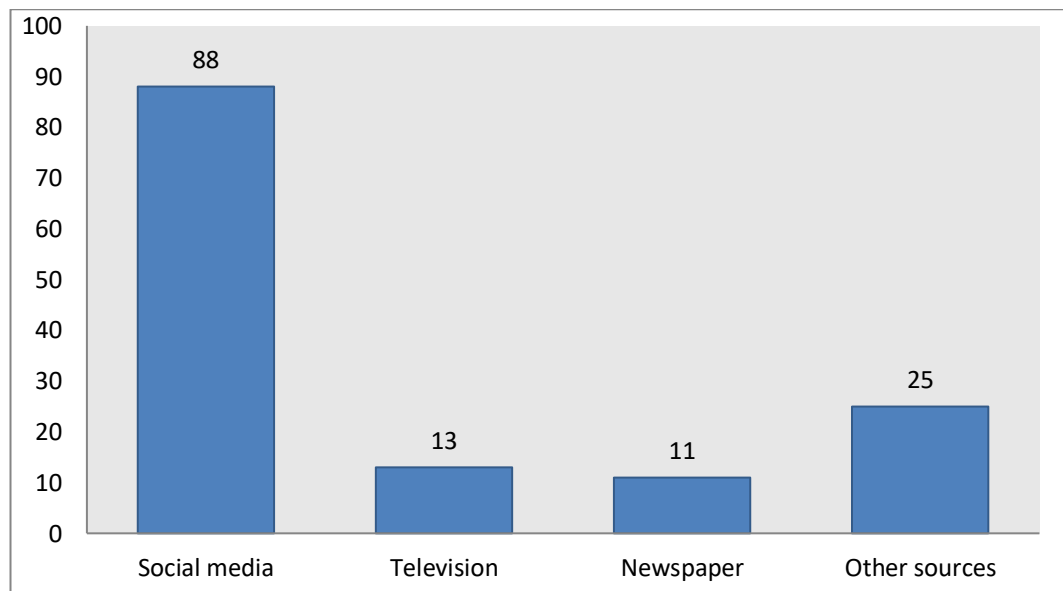
29.92% of respondents are neutral about their personal and financial info while shopping online.

8.75% of respondents are not very concerned about their personal and financial info while shopping online.

0.72% of respondents are not concerned at all about their personal and financial info while shopping online.

19:- SOURCE OF KNOWLEDGE ABOUT E-COMMERCE WEBSITES

PARTICULARS	FREQUENCY	%
SOCIAL MEDIA	88	64.23%
TELEVISION	13	9.48%
NEWSPAPER	11	8.02%
OTHER SOURCES	25	18.24%
TOTAL	137	100%



INTEPRETATIONS:-

The primary data is collected from 137 respondents. 64.23% of the respondents got to know about e-commerce websites from social media.

9.48% of the respondents got to know about e-commerce websites from television.

8.02% of the respondents got to know about e-commerce websites from newspaper.

18.24% of the respondents got to know about e-commerce websites from other sources.

20:- EXPERIENCE ON E-COMMERCE WEBSITES

PARTICULARS	FREQUENCY	%
GOOD	73	53.28%
VERY GOOD	40	29.19%
EXCELLENT	21	15.32%
POOR	3	2.18%
TOTAL	137	100%

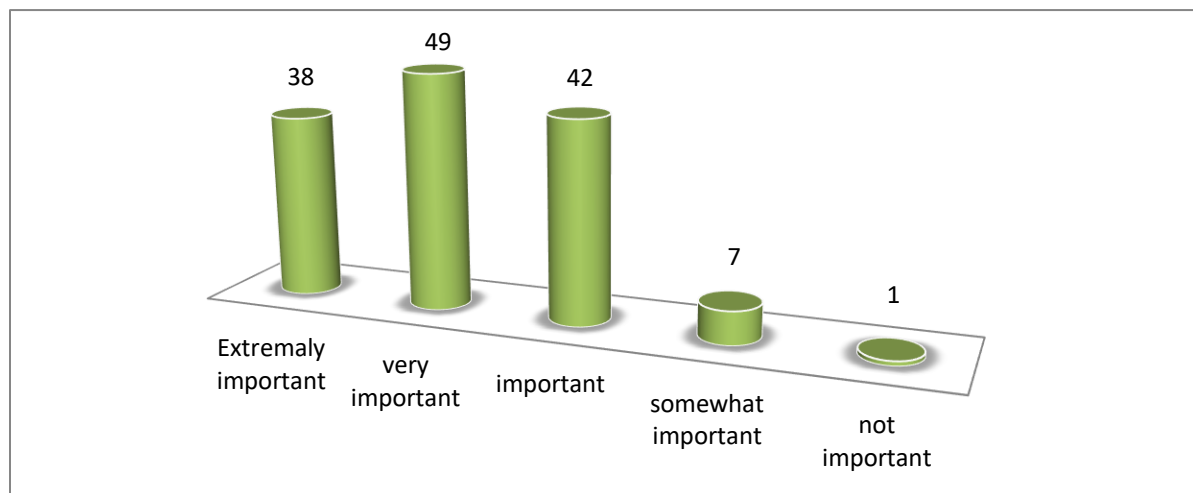


INTEPRETATIONS:-

The primary data is collected from 137 respondents.
53.28% of the respondents has good experience on e-commerce websites.
29.19% of the respondents has very good experience on e-commerce websites.
15.32% of the respondents has excellent experience on e-commerce websites.
2.18% of the respondents has poor experience on e-commerce websites.

21:- IMPORTANCE OF COSTUMER SERVICE WHILE ONLINE SHOPPING.

PARTICULARS	FREQUENCY	%
EXTREMELY IMPORTANT	38	27.73%
VERY IMPORTANT	49	35.76%
IMPORTANT	42	30.65%
SOMEWHAT IMPORTANT	7	5.10%
NOT IMPORTANT	1	0.72%
TOTAL	137	100%



INTEPRETATIONS:-

27.73% of the respondents thinks costumer service is extremely important while shopping online.

35.76% of the respondents thinks costumer service is very important while shopping online.

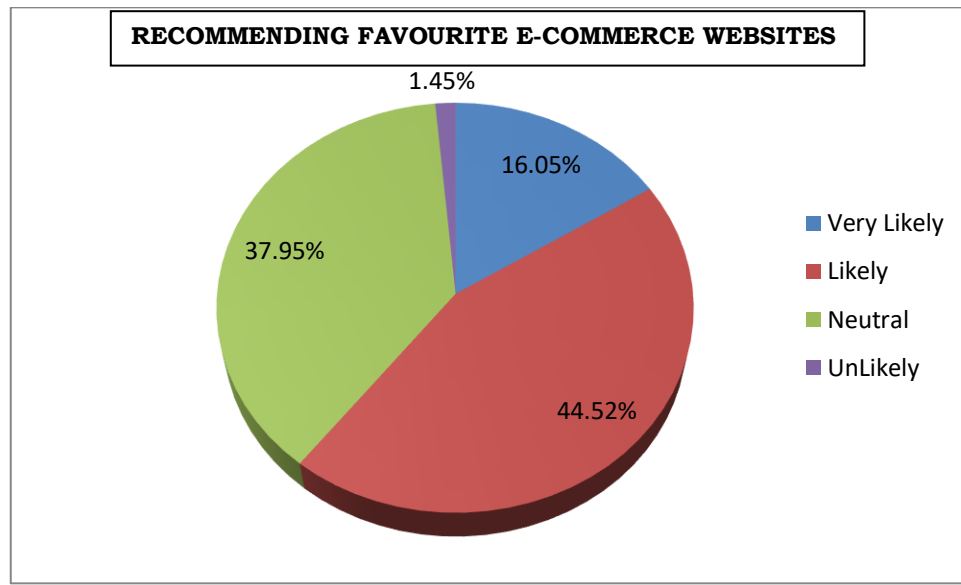
30.65% of the respondents thinks costumer service is important while shopping online.

5.10% of the respondents thinks costumer service is somewhat important while shopping online.

0.72% of the respondents thinks costumer service is not important while shopping online.

22:- RECOMMENDING YOUR FAVOURITE E-COMMERCE WEBSITES TO OTHERS

PARTICULARS	FREQUENCY	%
VERY LIKELY	22	16.05%
LIKELY	61	44.52%
NEUTRAL	52	37.95%
UNLIKELY	2	1.45%
TOTAL	137	100%



INTEPRETATIONS:-

16.05% of the respondents are very likely to recommend their favourite e-commerce website to others.

44.52% of the respondents are likely to recommend their favourite e-commerce website to others.

37.95% of the respondents are neutral while recommending their favourite e-commerce website to others.

1.45% of the respondents are unlikely to recommend their favourite e-commerce website to others.

CHAPTER 4

DATA ANALYSIS **AND** **INTEPRETATION**



Concept of Chi-square

Chi-square test is applied to find out whether the two variables in a bivariate contingency table under the study are dependent or independent.

Our two hypothesis;

Null hypothesis H_0 and Alternate hypothesis H_1 .

H_0 : The two attributes are independent

H_1 : The two attributes are dependent

Computation is done using the formula:-

$$\chi^2 (\text{cal.}) = \sum \sum (O_{ij} - E_{ij})^2 / E_{ij} \sim \chi^2 (r-1)(s-1)$$

Where r and s are the no. of rows and number of columns of the contingency table and $i=1, 2, \dots, r$ and $j=1, 2, \dots, s$. O_{ij} = Observed frequency of (i, j) th cell. E_{ij} = Expected frequency of (i, j) th cell. Where N_{i0} and N_{0j} are marginal totals and N is the total number of observations.

The test statistic follows, under H_0 a chi-square distribution with $(r-1)(s-1)$ degrees of freedom. The null hypothesis can be tested either at 5% or 1% level of significance. If $\chi^2(\text{cal.}) < \chi^2(\text{tab})$, then H_0 may be accepted which shows that the two variables are independent of each other otherwise we may reject the H_0 which shows that the two variables are not independent i.e., dependent of each other. Also, when the observed frequency is less than five, pooling is done to apply the test.

TEST 1

CHI SQUARE TEST FOR INDEPENDENCE OF ATTRIBUTES BETWEEN

GENDER AND ONLINE PURCHASE OF CLOTHES.

H₀ : purchasing Clothes online and Gender are independent.

H₁ : purchasing Clothes online and Gender are dependent.

OBSERVED:-

GENDER	SOMETIMES	ALWAYS	NEVER	TOTAL
MALE	64	11	14	89
FEMALE	23	19	6	48
TOTAL	87	30	20	137

EXPECTED:-

GENDER	SOMETIMES	ALWAYS	NEVER	TOTAL
MALE	56.51	19.48	12.99	89
FEMALE	30.48	10.51	7	48
TOTAL	87	30	20	137

x² VALUE

CALCULATED	13.60
LEVEL OF SIGNIFICANCE	0.05
D.O.F	2
TABULATED	5.99

INTEPRETATIONS:-

The result clearly indicates that the calculated value of χ^2 is 13.60, which is greater than the tabulated value of χ^2 which is 5.99 with degree of freedom 2 at 5% level of significance.

Hence, the null hypothesis is rejected at 5% level of significance.

So, purchasing clothes and gender are dependent

TEST 2

CHI SQUARE TEST FOR INDEPENDENCE OF ATTRIBUTES BETWEEN GENDER AND ONLINE PURCHASE OF ELECTRONICS.

H₀ : purchasing electronics online and Gender are independent.

H₁ : purchasing electronics online and Gender are dependent.

OBSERVED:-

GENDER	SOMETIMES	ALWAYS	NEVER	TOTAL
MALE	57	18	14	89
FEMALE	29	9	10	48
TOTAL	86	27	24	137

EXPECTED:-

GENDER	SOMETIMES	ALWAYS	NEVER	TOTAL
MALE	55.86	17.54	15.59	89
FEMALE	30.13	9.45	8.40	48
TOTAL	86	27	24	137

χ^2 VALUE

CALCULATED	0.56
LEVEL OF SIGNIFICANCE	0.05
D.O.F	2
TABULATED	5.99

INTEPRETATIONS:-

The result clearly indicates that the calculated value of χ^2 is 0.56, which is smaller than the tabulated value of χ^2 which is 5.99 with degree of freedom 2 at 5% level of significance.

**Hence, the null hypothesis may be accepted at 5% level of significance.
So, purchasing electronics online and gender are independent.**

TEST 3

CHI SQUARE TEST FOR INDEPENDENCE OF ATTRIBUTES BETWEEN PURCHASE FREQUENCY AND PLACE OF RESIDENCE.

H₀ : Purchase frequency and place of residence are independent.

H₁ : Purchase frequency and place of residence are dependent.

OBSERVED:-

RESIDENCE	RARELY	DAILY	WEEKLY	MONTHLY	TOTAL
RURAL	36	0	4	19	59
URBAN	33	1	16	28	78
TOTAL	69	1	20	47	137

EXPECTED:-

RESIDENCE	RARELY	DAILY	WEEKLY	MONTHLY	TOTAL
RURAL	29.71	0.43	8.61	20.24	59
URBAN	39.28	0.56	11.38	26.75	78
TOTAL	69	1	20	47	137

AFTER POOLING:-

oi (observed)	ei(expected)	(oi-ei) ² /ei
36	30.14	1.13
4	8.61	2.47
19	20.24	0.076
34	39.85	0.85
16	11.38	1.86
28	26.75	0.05

χ^2 VALUE

CALCULATED	6.46
LEVEL OF SIGNIFICANCE	0.05
D.O.F	1
TABULATED	3.84

INTEPRETATIONS:-

The degree of freedom is $(4-1)(2-1)=3$, also 2 d.o.f is lost in the method of pooling ,so d.o.f becomes 1.

The result clearly indicates that the calculated value of χ^2 is 6.46, which is greater than the tabulated value of χ^2 which is 3.84 with degree of freedom 1 at 5% level of significance.

Hence, the null hypothesis is rejected at 5% level of significance.

So, Purchase frequency and place of residence is dependent.

TEST 4

CHI SQUARE TEST FOR INDEPENDENCE OF ATTRIBUTES BETWEEN GENDER AND ONLINE PURCHASE OF BEAUTY PRODUCTS.

H0 : Purchasing beauty products and gender are independent.

H1 : Purchasing beauty products and gender are dependent.

OBSERVED:-

GENDER	SOMETIMES	ALWAYS	NEVER	TOTAL
MALE	30	2	57	89
FEMALE	24	9	15	48
TOTAL	54	11	72	137

EXPECTED:-

GENDER	SOMETIMES	ALWAYS	NEVER	TOTAL
MALE	35.08	7.14	46.77	89
FEMALE	18.91	3.85	25.22	48
TOTAL	54	11	72	137

AFTER POOLING:-

oi	ei	$(oi-ei)^2/ei$
30	35.08	0.73
2	7.14	3.70
57	46.77	2.23
33	22.77	4.59
15	25.22	4.14

χ^2 VALUE

CALCULATED	15.41
LEVEL OF SIGNIFICANCE	0.05
D.O.F	1
TABULATED	3.84

INTEPRETATIONS:-

The degree of freedom is $(3-1)(2-1)=2$, also 1 d.o.f is lost in the method of pooling ,so d.o.f becomes 1.

The result clearly indicates that the calculated value of χ^2 is 15.41, which is greater than the tabulated value of χ^2 which is 3.84 with degree of freedom 1 at 5% level of significance.

Hence, the null hypothesis is rejected at 5% level of significance.

So, Purchasing beauty products and gender is dependent.

CHAPTER 5

FINDINGS, **LIMITATIONS AND** **CONCLUSIONS**

CONCLUSION



FINDINGS AND RESULT:-

The results are as follows:-

- ✓ Out of 137 respondents, 64.963% are male and 35.036% are female.
- ✓ Maximum respondents belong to age group 18-20.
- ✓ Nearly 40.87% of respondents are from 3rd year followed by 31.38% from 2nd year and 27.73% from 1st year.
- ✓ Maximum respondents belong from rural background (56.93%).
- ✓ Maximum respondents have family yearly income greater than 4,00,000. (27%)
- ✓ Among respondents, Clothing is the product category which is always preferred mostly while shopping online.
- ✓ Most of the respondents are shopping rarely from online.
- ✓ Flipkart is the most preferred e-commerce website among respondents while shopping online.
- ✓ Most of the respondents are spending 500-1000 monthly on online purchasing.
- ✓ Most of the respondents shops online because of reduced price, followed by convenience and product variety.
- ✓ Cash on delivery is mostly used as a payment method while shopping online.
- ✓ Most of the respondents, nearly 59.12% always reads product reviews before making a purchase.
- ✓ Most of the respondents, nearly 72.26% prefers Indian brands in compared with Foreign brands while shopping online.

- ✓ **Delay in delivery is a major reason behind respondents hesitates while purchasing online.**
- ✓ **Most of the respondents, nearly 34.3% sometimes uses wishlist feature for future reference while shopping online.**
- ✓ **Most of the respondents don't use any e-commerce websites to sell their own products. Among those who uses, OLX emerged as most preferred websites to sell products online.**
- ✓ **Most of the respondents agree on the fact that increasing growth of e-commerce leads to the loss for local shopkeepers.**
- ✓ **Most of the respondents, nearly 31% are very concerned about their personal and financial info while shopping online.**
- ✓ **Nearly, 64.23% of the respondents got to know about the e-commerce from social media, which is highest among all other particulars.**
- ✓ **Most of the respondents, nearly 53.28% has good experience on e-commerce websites while selling and purchasing.**
- ✓ **Nearly 35.76% respondents agree on the fact that costumer service is very important while shopping from a particular e-commerce websites, which is highest among all.**
- ✓ **Most of the respondents are likely to recommend their favorite e-commerce websites to others.**
- ✓ **There is significant association between Gender and online purchase of clothing products. i.e online purchase of clothes and gender is dependent.**
- ✓ **There is significant association between place of residence and purchase frequency of respondents. i.e purchase frequency is dependent on place of residence.**

- ✓ **There is no association between Gender and buying electronics i.e online purchase of electronics is independent of gender.**
- ✓ **There is significant association between gender and purchasing beauty products i.e online purchase of beauty products and gender are dependent of each other.**

LIMITATION:-

Research is never ending process; every research is having limitation, this research is also having some limitation.

Study is limited to 137 respondents of which are college students. So, findings and suggestions given based on the study cannot be extrapolated to the entire population.

In the data collected male and female had not shared equal representation. Also, e-commerce trends evolve rapidly, so findings may become outdated quickly.

E-commerce trends and preferences may fluctuate seasonally due to holidays, sales events, or other factors, which may not be fully captured in the study.

CONCLUSIONS AND SCOPE:-

The project on trends, preferences, and satisfaction levels on e-commerce websites provides valuable insights into consumer behavior.

The project highlights important trends and patterns in e-commerce user behavior, serving as a foundation for further research and strategic decision-making in the rapidly evolving e-commerce landscape. Moving forward, addressing upper limitations will be essential for obtaining comprehensive and actionable insights into

the dynamics of e-commerce consumer preferences and satisfaction levels. Countering down the areas of dissatisfaction such as delay in delivery , unavailability of cash on delivery, businesses can tailor their offerings and user experiences to better meet customer expectations. Furthermore, it's crucial to recognize the significance of understanding e-commerce trends and preferences in the context of a dynamic market environment. By acknowledging the limitations outlined in the project, stakeholders can develop more informed strategies to enhance user experiences, optimize website functionalities, and drive business growth. Under this study, reduced price is a major factor influencing decisions to shop online, so e-commerce companies must optimize cost in order to meet users satisfactions. Users choices also needs to be enhanced through increasing more product varieties . These countered steps will certainly boosts e-commerce giants to stand firm in this competitive market.

Indian E-commerce industry has been on an upward growth trajectory. My analysis will provide help in studying the various aspects from the costumers point of view. It will also help in providing better services in future.

CHAPTER 6:-REFERENCES

- ❖ **S. C. Gupta and V. K. Kapoor : Fundamentals of Mathematical Statistics.**
- ❖ **S. C. Gupta and V. K. Kapoor : : Fundamentals of Applied statistics.**
- ❖ <https://www.investindia.gov.in/>
- ❖ <https://www.grandviewresearch.com/industry-analysis/e-commerce-market>
- ❖ <https://www.statista.com/outlook/emo/ecommerce/india#>
- ❖ <https://en.wikipedia.org/wiki/E-commerce>
- ❖ <https://mailchimp.com/resources/advantages-and-disadvantages-of-ecommerce/>

CHAPTER 7

QUESTIONNAIRE



SURVEY ON TRENDS,PREFERENCES AND SATISFACTION LEVELS ON E-COMMERCE WEBSITES

Greetings! I'm Shashwat Anand ,a third year undergraduate student of department of Statistics, Banaras Hindu University. As part of my final year project I'm conducting a survey on "**Navigating the Digital Marketplace: investigating Consumer Perceptions on E-commerce Platforms**"

I request you to spare your few minutes to fill this form.

Note:- This is completely anonymous survey and all your responses would be kept confidential.

Thank you....

** Indicates required question*

1. Enter your age *

2. What gender do you identify as ? *

Mark only one oval.

- ☐ Male
☐ Female

3. Being an undergraduate science student , select the semester in which you are studying. *

Mark only one oval.

- ☐ 1st semester
☐ 2nd semester
☐ 3rd semester
☐ 4th semester
☐ 5th semester
☐ 6th semester

4. Place of Residence *

Mark only one oval.

- ☐ Rural
☐ Urban

5. Yearly family income *

Mark only one oval.

- ☐ Less than 80.000
- ☐ 80,000 - 1,60,000
- ☐ 1,60,000 - 2,40,000
- ☐ 2,40,000 - 3,20,000
- ☐ 3,20,000 - 4,00,000
- ☐ Above 4,00,000

6. How often do you purchase these products online ? *

(Tick mark accordingly)

N- Never S- Sometimes A- Always

Mark only one oval per row.

	N	S	A
Clothing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Medicines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Beauty products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Groceries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Electronic appliances	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stationary products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Home decor items	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. How often do you shop online? *

Mark only one oval.

- ☐ Rarely
- ☐ Daily
- ☐ Weekly
- ☐ Monthly

8. Which of the following e-commerce websites you use most for purchasing? *

Mark only one oval.

- ☐ Amazon
- ☐ Flipkart
- ☐ Myntra
- ☐ Meesho
- ☐ Other: _____

9. How much money do you spent monthly while purchasing? *

Mark only one oval.

- ☐ under 500
- ☐ 500 - 1000
- ☐ 1000-1500
- ☐ 1500-2000
- ☐ above 2000

10. What factors influence your decision to shop online? *
(Multiple select options)

Check all that apply.

- ☐ Convenience
- ☐ Price
- ☐ Product variety
- ☐ Discounts
- ☐ Fast delivery

11. Generally, what payment method do you prefer while shopping online? *

Mark only one oval.

- ☐ Credit/Debit card
- ☐ UPI (Digital wallets)
- ☐ Cash on delivery

12. How often do you read product reviews before making a purchase? *

Mark only one oval.

- ☐ Always
- ☐ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

13. What do you prefer mostly? *

Mark only one oval.

- ☐ Indian brands
- ☐ Foreign brands

14. What leads you to often not purchase online? *

Mark only one oval.

- ☐ High charges
- ☐ Unavailability of cash on delivery
- ☐ Delay in delivery

15. How often do you utilize features like wishlist , saved items , or carts for future references? *

Mark only one oval.

- ☐ Always
- ☐ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

16. Do you use any e-commerce websites to sell your own products? *

Mark only one oval.

- ☐ Yes
- ☐ No

17. If yes, then which website do you use to sell products?

Mark only one oval.

- ☐ OLX
- ☐ Zoho
- ☐ Flipkart
- ☐ Social media

18. Is it true that increasing growth of e-commerce leads to the loss for the local shop keepers? *

Mark only one oval.

- ☐ Yes
- ☐ No
- ☐ Maybe

19. How concerned are you about the security of your personal and financial information while shopping online? *

Mark only one oval.

- ☐ Very concerned
☐ Concerned
☐ Neutral
☐ Not very concerned
☐ Not concerned at all

20. How did you learn about the e-commerce websites ? *

Mark only one oval.

- ☐ Social Media
☐ Newspaper
☐ Television
☐ Other sources

21. What about your experiences on e-commerce while purchasing & selling ? *

Mark only one oval.

- ☐ Good
☐ Very Good
☐ Excellent
☐ Very poor
☐ Poor

22. How important is customer service in your decision to shop form a particular e-commerce website? *

Mark only one oval.

- ☐ Extremely important
☐ Very important
☐ Important
☐ Somewhat important
☐ Not important

23. How likely are you to recommend your favourite e-commerce website to others ? *

Mark only one oval.

- ☐ Very Likely
☐ Likely
☐ Neutral
☐ Unlikely
☐ Very Unlikely