

A STUDY ON CUSTOMER SATISFACTION TOWARDS USB MODEM

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Abstract

The internet is most powerful tool today to access information and gather knowledge on any subject. The internet is an information super-highway freely available to everyone desirous of using it and has seemingly compressed the world into a cyber colony. To use the internet service one should have a computer or a laptop connected with a modem which provides an internet service. Normally those who use laptop computers need a wireless modem to access internet service at anywhere and at any time. Modems are generally classified by the amount of data they can send in a given unit of time usually expressed in bits per second (bit/ or bps).modems can alternatively be classified by their symbol rate, measured in band. This study highlights the trend of wireless modem usage, analyzes the attitude of people towards wireless modem, the brand preference of consumers towards various brands supplied by the operators and also the various factor influencing the satisfaction of the customers of the USB Modem.

Introduction

A **modem** (modulator-demodulator) is a device that modulates an analog carrier signal to encode digital information, and also demodulates such a carrier signal to decode the transmitted information. Modems can be used for any means of transmitting analog signals, from light emitting diodes to radio. Modem plays an important role in using the internet service. A modem is an essential instrument for accessing internet service through a computer. The modem is of two types. First one is connected with the land line telephone wire, and the second one is a wireless type which is connected to a USB port in a computer and it accesses the internet without wire. It also tries to assess influences on the consumer from groups such as family, friends, reference groups, and society in general.

Statement of the Problem

Now a day's internet is almost essential in every one's life. Many operations are made global. Business, banking, finance, marketing, any type of commercial services and communication network service are made easy. Now a day's an ordinary person can use an internet service to book Air ticket, Railway ticket, pay phone bills Electricity bills to education purpose, Job opportunities through online and also buy and sell anything as they require anywhere in the world. To use the internet service one should have a computer or a laptop connected with a modem which provides an internet service It can be accessed anywhere at any place without wire through a wireless modem supplied by various service providers. Mostly this wireless internet service is provided by the existing cellular mobile phone operators through a wireless USB modem supplied by them. One can assess the

consumers' satisfaction by means of attitude surveys to determine the factors influencing their satisfaction. The satisfaction of the customers has been analyzed on the basis of the following five variables, age, gender, education and monthly family income.

An attempt has been made to highlight the trend of wireless modem usage and to analyze the attitude of people towards wireless modem, the brand preference of consumers towards various brands supplied by the operators, and also the various factor influencing the satisfaction of consumers. This will help the people engaged in this field to formulate policies to streamline the growth and also to achieve sustainable growth.

Objectives of the study

- To study and analyze the buying behavior of the respondents towards wireless internet modem.
- To analyze factors influencing the buying behavior relating to wireless internet modems of respondents.
- To find out the customer preference towards various brands of modem.
- To identify the level of satisfaction among various customers.
- To offer suitable suggestions based on findings for improvement.

Methodology

The present investigation has been basically designed as a 'Descriptive Study' with 'survey' as the technique of research. A well structured questionnaire was constructed and validated by the researcher for the collection of primary data. A pilot study has been made with 15 respondents before conducting the original preparation for checking out the viability of the questionnaire. This project is using both primary and secondary data. The primary data are directly collected from the buyers and sellers of the modem in Madurai district. The secondary data were collected from journals, magazines, book, and also from various websites. The researcher has followed the method of multi stage random sampling for collecting data from students and professionals in Madurai city. The study was conducted among 120 respondents comprising, 102 (85%) respondents being Male and remaining 18 (15%) respondents being female

Framework of analysis

The statistical techniques used in this study are percentage analysis, Garret's ranking, Chi-square test analysis.

The following formula was used to find out Garrett's ranking.

$$\text{Percentage position} = \frac{100 (R_{ij} - 0.5)}{N_j}$$

Where,

R_{ij} - Rank given for the i th variables by the j th respondents

N_j - Number of variables ranked by the j th respondents.

The formula for Chi-square test is used to test the association between age, education, occupation and monthly income.

$$\chi^2 = \frac{\sum (O-E)^2}{E}$$

O - Observed Frequency

E - Expected Frequency

$$E = \frac{\text{Row total} \times \text{Column total}}{\text{Grand total}}$$

Degrees of Freedom = (r-1) (c-1)

R - Number of rows

C - Number of columns.

Factors Influencing the Customers Satisfaction

One can assess the human resources of a particular company by means of attitude surveys to determine the factors influencing customers' satisfaction. Similarly, the researcher has made an attempt to analyze the factors influencing the satisfaction of the customers of the USB Modem. The satisfaction of the customers has been analyzed on the basis of such variables as age, gender, education, monthly family income

For measuring the customer satisfaction questions about seven factors are asked and given in the questionnaire. They are User Friendly, High Speed, Easy Handling, External Appearance, Reasonable Charges, Customer care and Convenience of Payment /Recharge. On the basis of the opinion of the customers it has been classified into three categories namely those who have high level, medium level and low level of satisfaction.

High level satisfaction = Arithmetic mean + Standard deviation (X + σ)
= 30 + 22.84 (52.84 or 53)

Low level satisfaction = Arithmetic mean - Standard deviation (X - σ)
= 30 - 22.84 (7.16 or 7)

Medium level satisfaction = scores varying between high level of satisfaction and low level of satisfaction. Scores are varying between 8

The following table elucidates the classification of the customers on the basis of the level of satisfaction.

Classification of the customers on the basis of the level of satisfaction

S.No	Level of Satisfaction	No of Respondents	Percentage
1	High	36	30.00
2	Medium	61	50.83
3	Low	23	19.17
	Total	120	100.00

Age and the Level of Customer Satisfaction

The category of age wise respondents is classified in three ways. The following table depicts the age and the level of Customer Satisfaction of the sample respondents.

Age and the Level of Customer Satisfaction

S.No	Age	Level of Customer Satisfaction			Total
		High	Medium	Low	
1	Below 20 Years	22	21	5	48
2	21 Years to 40 Years	8	35	13	56
3	Above 41 Years	6	5	5	16
	Total	36	61	23	120

Result of Chi - Square Test

H_0 - There is no relationship between the Age and the Level of Customer Satisfaction.

H_a - There is a relationship between the Age and the Level of Customer Satisfaction.

O	E	O - E	$[O - E]^2$	$[O - E]^2 \div E$
22	14.40	7.60	57.76	4.0111
21	24.40	-3.40	11.56	0.4738
5	9.20	-4.20	17.64	1.9174
8	16.80	-8.80	77.44	4.6095
35	28.46	6.54	42.77	1.5029
13	10.73	2.27	5.15	0.4802
6	4.80	1.20	1.44	0.3000
5	8.13	-3.13	9.80	1.2050
5	3.06	1.94	3.76	1.2299
χ^2				15.7299

Gender and the Level of Customer Satisfaction

The category of gender wise respondents is classified in the two ways. The following table depicts the gender and the level of customer satisfaction of the respondents.

Gender and the Level of Customer Satisfaction

S.No	Age	Level of Customer Satisfaction			Total
		High	Medium	Low	
1	Male	30	55	17	102
2	Female	6	6	6	18
	Total	36	61	23	120

Result of Chi - Square Test

H_0 - there is no relationship between the Gender and the Level of Customer Satisfaction.

H_a - There is a relationship between the Gender and the Level of Customer Satisfaction.

O	E	O - E	[O - E] ²	[O - E] ² ÷ E
30	30.60	-0.60	0.36	0.0118
55	51.85	3.15	9.92	0.1914
17	19.55	-2.55	6.50	0.3326
6	5.40	0.60	0.36	0.0667
6	9.15	-3.15	9.92	1.0844
6	3.45	2.55	6.50	1.8848
χ^2				3.5716

Education and Level of Customer Satisfaction

Education creates better understanding of the product, price, promotion, services, change in their life style, behavior and the like. In the study are the sample respondents on the basis of education are classified in Up to Under Graduate degree, Post Graduate Degree, Professional and Other Courses, Ph.D. Research scholar. The following table highlights the education and the level of customer satisfaction.

Education and the Level of Customer Satisfaction

S. No	Literacy	Level of Customer Satisfaction			Total
		High	Medium	Low	
1	Up to Under Graduate	12	11	5	28
2	Post Graduate	15	37	7	59
3	Professional and Other Courses	6	8	6	20
4	Pursuing Ph. D	3	5	5	13
Total		36	61	23	120

Result of chi - Square Test

H₀ - There is no relationship between the Education and the Level of Customer Satisfaction.

H_a - There is a relationship between the Education and the Level of Customer Satisfaction.

O	E	O - E	[O - E] ²	[O - E] ² ÷ E
12	8.40	3.60	12.96	1.5429
11	14.13	-3.13	9.80	0.6933
5	5.36	-0.36	0.13	0.0242
15	17.70	-2.70	7.29	0.4119
37	29.99	7.01	49.14	1.6385
7	11.30	-4.30	18.49	1.6363
6	6.00	0.00	0.00	0.0000
8	10.16	-2.16	4.67	0.4592
6	3.83	2.17	4.71	1.2295
3	3.90	-0.90	0.81	0.2077
5	6.60	-1.60	2.56	0.3879
5	2.49	2.51	6.30	2.5302
χ^2				10.7615

Monthly Family Income and the Level of Customer Satisfaction

The purchasing power of respondents is based on their level of Income. Therefore, the researcher has analyzed the income level of the respondents who are grouped into below Rs.10,000/-, Rs.10,001 to Rs.15,001 and Above Rs.15,000/-. The following table exhibits the Monthly Family Income and the Level of Customer Satisfaction.

Monthly Family Income and the Level of Customer Satisfaction

S. No	Income	Level of Customer Satisfaction			Total
		High	Medium	Low	
1	Below Rs.10,000/-	10	12	8	30
2	Rs.10,001 to Rs.15,000/-	12	30	9	51
3	Above Rs.15,000/-	14	19	6	39
	Total	36	61	23	120

Result of Chi - Square Test

H_0 - There is no relationship between the Monthly Family Income and the Level of customer Satisfaction.

H_a - There is a relationship between the Monthly Family Income and the Level of Customer Satisfaction.

O	E	O - E	$[O - E]^2$	$[O - E]^2 \div E$
10	9.00	1.00	1.00	0.1111
12	18.30	-6.30	36.69	2.1689
8	6.90	1.10	1.21	0.1754
12	15.30	-3.30	10.89	0.7118
30	25.92	4.08	16.65	0.6422
9	9.75	-0.75	0.56	0.0577
14	9.90	4.10	16.81	1.6980
19	16.77	2.23	4.97	0.2965
6	6.32	-0.32	0.10	0.0162
χ^2				5.8777

Components wise Analysis of Factors

The satisfaction of the customer has been analyzed on the basis of five variables like Age, Gender, Education and Monthly Family Income. For measuring the customer satisfaction, Questions regarding various factors like User Friendly, High Speed, Easy Handling, External Appearance, Reasonable Charges, Customer Care, and Convenience of Payment / Recharge are asked.

The opinions score under the basis of Highly Satisfied, satisfied, No Opinion, Dissatisfied and Highly Dissatisfied.

The score 5 for Highly Satisfied , 4 for Satisfied, 3 for No opinion, 2 for Dissatisfied and 1 for Highly Dissatisfied are assigned. On their basis, an Analysis is carried out in this section.

Summary of Findings

- Age wise classification of the respondents does influence the level of customer satisfaction. Out of 36 respondents with high level of customer satisfaction, 22 respondents come under the age group of below 20 years Out of 61 respondents with medium level of customer satisfaction, 35 respondents come under the age group of 21 - 40 years.
- Gender of the respondents does not influence the level of customer satisfaction.
- Education level of the respondents influences the level of customer satisfaction. Out of 36 respondents with high level of customer satisfaction, 15 respondents come under the group of education qualification of postgraduate and 12 respondents under the group of up to graduate. Out of 61 respondents with medium level of customer satisfaction, 37 respondents come under the group of education qualification of postgraduate and 11 respondents under the group of up to graduate.
- Monthly family income level of the respondents does not influence the level of customer satisfaction.
- Out of the 120 respondents, 74 respondents use modem regularly,. 46 respondents are not using regularly.
- Out of the 120 respondents, 33 respondents are using for period of Below 1 year, 52 respondents for a period of 2-3 years and 35 respondents are users for 4 years.
- Out of the total 120 respondents, 63 respondents are working a more than 5 hours a day with the internet, 36 respondents are working 6-10 hours. 15 respondents are working 11-20 hours and the remaining 6 respondents are working above 20 hours with the internet.
- Out of the total 120 respondents, 22 respondents have no idea to change the modem and the remaining 98 respondents have an idea to change the modem.
- It is observed from the purpose of using modem 'Educational purpose', 'informative purpose', Business purpose, have occupied the first, second, third, ranks respectively and other two variables official and entertainment purpose have occupied the fourth and fifth rank.

Suggestions

- The Internet Service Providers may reduce Data usage charges.
- They can motivate the buyers by giving some lucrative offers.
- Monthly Charges of Unlimited pack has to be reduced by the companies.
- The cost of the modem can be reduced, so that people of all level can be benefited.
- The service Providers may announce new offers to the customer's benefit.
- Charges on Post Free Usage should be reduced.
- The signal strength can be improved for better performance of the internet.
- The company should improve the customer care facilities. Contacting customer care officials seems to be a tough task today. Companies must facilitate easy access to the customer care. Customer's grievances should be resolved in time.

- The companies may update the various tariff plans to their customers at regular intervals.
- Data charges beyond free usage should not be deducted from the available balance of the main account.

Conclusion

Among the various service providers only certain major brands such as Airtel, Aircell, BSNL, Idea, Reliance, Vodafone, Tata Indicom, MTS, are familiar to the customers. This study reveals that age and education levels influence the level of customer satisfaction

From the research we conclude that Customers with qualification of post graduation are more satisfied than others and customers in the age group of below 20 years are more satisfied than others. The Airtel is most preferred by the customers. It has a wide opportunity to become leader in this segment. This study will help the Internet Service Providers for their further development.

If other Companies implement the suggestion six, they could also become competitive and successful.

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