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A Study on Customer's Satisfaction towards Broadband Internet Services

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A B S T R A C T

As the market for high-speed Internet and cellular communication services reaches maturity, communication services have shown a limit to growth based on the number of subscribers. On the other hand, demand for the wireless Internet service is growing explosively. Recently, much attention has been paid to portable Internet as a solution not only to surpass limits of high-speed Internet, wireless LAN, and cellular communications, but also to accommodate increasing demands for wireless Internet services. In this article, we introduce the Wireless Broadband Internet (WiBro), considered the first system that bridges the wired and wireless realm by providing high-speed portable Internet access anywhere at any time at low access cost and high data rates.

Keywords: Customer's Satisfaction, Broadband Services.

1. Introduction of the study

Communication is required in every field of life. Communication is the process of sharing information and ideas between two or more parties. Effective communication occurs only if the sender and receiver understand the exact information or an idea that is intended for transmission. Information spreads more widely and more rapidly than ever before. In modern days technologies change the life style of the people in various fields. Broadband internet connection has provided new dimensions to life. Internet connection enables us a great source to search for information about anything on earth. It made communication across the borders absolutely hackle free and cheap. Now we can talk to or chat with a person sitting thousands of miles away. Necessary information flow has also become very easy, all due to the internet.

2. Statement of the problem

Wireless broadband internet services face's several issues, including slow or unstable connections, limited network coverage, and security concerns. Additionally, the high cost of subscription plans and low data allowances can make it difficult for consumers to access the internet consistently and affordable. As internet usage continues to grow, there is an increased demand for reliable and efficient wireless broadband services that can meet the needs of consumers and businesses alike. Therefore, the challenge is to improve the quality of wireless broadband internet services, expand network coverage, and enhance security measures while also offering affordable and flexible subscription plans to ensure that everyone has access to reliable and high-speed internet.

3. Objectives of the study

➢ To identify and evaluate the key factors that contribute to customer satisfaction, including network speed, pricing, customer service, ease of use and overall value for money.

➢ To study the Socio – Economic profile of the respondents.

➢ To understand the Internet services provided by the services providers in India.

➢ To identify the factors that motivate the consumer to choose internet service.

➢ To analysis the consumer satisfaction towards the internet services providers of various companies.

4. Scope of the study

The present study is made to find out the perception and expectation of the customers from service provider. It also aims at analyzing the extent of satisfaction level of the customers with respect to selected wireless broadband services providers in Coimbatore city. The study also provides suggestions to the service providers, which would help to retain their customers in the market.

5. Research Methodology

The methodology of the study includes:

- ➤ Sample size
- ➤ Area of the study
- ➤ Data Collection
- ➤ Sample size
- ➤ Statistical tools

5.1 Sample Size

The sample size is collected from 160 respondents around Coimbatore City. It is the study of customer's satisfaction towards Broadband Internet Service.

5.2 Area of the Study

The survey was conducted in Coimbatore City with 160 respondents.

5.3 Data Collection

The data serves as the bases for analysis. Data collection is the process of collecting and analyzing information on relevant variables in a predetermined, methodical way so that one can respond to specific research questions, test hypotheses, and assess results.

Data collection is of two types:

- ➤ Primary Data
- ➤ Secondary Data

Primary data

Primary Data is the data that has been collected from the respondents who were using broadband internet connection. The research is focused on Satisfaction of the customer.

Secondary data

Secondary data is the data that has been collected from websites, books, journal etc.

5.4 Statistical Tool

Tools used for the study were following:

1. Simple Percentage Analysis
2. Ranking Analysis
3. Chi-square Analysis

6. Review of Literature

- ➤ **Raul L. Katz (2018)** published **"The Impact of the Broadband Internet On Employment".** First, broadband construction programs create direct, indirect, and induced jobs under attractive multipliers. Second, deployment of broadband in emerging countries enables them to attract employment from industrialized economies. Third, broadband Internet in advanced economies leads to the emergence of businesses that were previously non- existent.

- ➢ **Min Chen & Yiming Miao (2019)** published **"Simulation of Broadband Internet of Things".** This chapter introduces two aspects of broadband network simulation and broadband Internet of Things: (1) bandwidth extension of the Internet of Things itself, namely transmission of sensing data through multi-path routing; (2) Integration of Internet of Things and broadband communication, namely transmission of sensing data through a backbone network.

- ➢ **Leonard Barolli (2019)** published **"Advances on Broad-Band Wireless Computing, Communication and Applications"**. This book states that information networks of today are going through a rapid evolution. Different kinds of networks with different characteristics are emerging and they are integrating in heterogeneous networks.

- ➢ **Natalie Greene Taylor (2019)** published **"Information in Contemporary Society".** Broadband Internet connectivity is essential affordance of the "smart" AM production technologies key to U.S. leadership because they enable manufacturers to precisely customize products and supply for increasingly segmented markets.

- ➢ **Prof. Dr. Peter Fleming (2019)** published **"Evolution of 5G Mobile Broadband Technology and Multimedia Services Framework".** This discuss about the Broadband evolution from the earlier stage to current growth. This plays an major role in the modern technology. This Broadband Technology today plays an major role in society.

- ➢ **Bin Lin (2022)** published **"Next Generation Marine Wireless Communication Networks".** This book presents a novel framework design for the next generation of Marine Wireless Communication Networks (MWCNs). The design and development of MWCNs in support of a diversity of marine services.

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1. **Raul L. Katz (2018)** published his book named "The Impact of the Broadband Internet On Employment" On 2018 with a view of expand the broadband services.

2. **Min Chen & Yiming Miao (2019)** published their book named "Simulation of Broadband Internet of Things" On 2019 with two main aspects of services rendered by the Broadband.

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4. **Natalie Greene Taylor (2019)** published the book named "Information in Contemporary Society" under the Book Series of "Lecture Notes in Computer Science" (LNCS, Volume 11420) (ISSN:-1611-3343).

5. **Prof. Dr. Peter Fleming (2019)** published **"**Evolution of 5G Mobile Broadband Technology and Multimedia Services Framework". under the Book Series of " Lecture Notes in Electrical Engineering Book" (LNEE, Volume 561) (ISSN:-1876- 1100). First came to online on 09.05.2019.

6. **Bin Lin (2022)** published "Next Generation Marine Wireless Communication Networks" under the book series of "Wireless Networks" (ISSN:- 2366-1186). First came to online on 26.04.2022.

- ➢ **Love Ekenberg & Mats Danielson (2022)** published **"A Multi-Criteria Approach to Decision Making in Broadband Technology Selection"**. A core purpose of the regulatory framework is to guarantee that most citizens will have access to very fast Internet connections, capable of 100 Mbps download link speed, regardless of where they live.

- ➢ **Lin Cai (2022)** published **"Broadband Communications, Computing, and Control for Ubiquitous Intelligence".** This book reports on the latest advances from both industry and academia on ubiquitous intelligence and how it is enabled by 5G/6G communication technologies. The content of the book will be of interest to students, educators, and researchers in academia, industry, and research laboratories.

7.1 Research gap

A research gap is a question or problem that has not been answered by any of the existing studies of research within your field. Sometimes, a research gap exists when there is a concept or new idea that hasn't been studied at all. Sometimes you'll find a research gap if all the existing research is outdated and in need of new updated research.

The previous research doesn't explored about customer support provided by the service providers and regular network interruption. But now we identified and discussed about the broadband service have been developed and increased the availability of regular data usage without any network interruption and provides a better customer support.

8. Analysis and Interpretation of Data

Data analysis is the process of bringing order structure and meaning to the mass of collected data. The purpose of it is to identify, transform, support decision making and bring a conclusion to research. The data analysis is an important step and heart of research in research work.

The statistical tool is: -

- Simple Percentage method
- Chi-square analysis
- Ranking analysis

8.1 Chi-Square Test Analysis

A CHI-SQUARE is a statistical tool commonly used for testing the independence and goodness of fit. Testing independence determines whether two or more observations across two population are dependent on each other. Testing for goodness of fit determines if an observed No of Respondents distribution matches a theoretical distribution.

Table no 1

Table showing relationship between occupation and Amount Spend on broadband.

		How much do you spend on your Broadband per month?				Total
		Less than Rs.500	Rs.500 to Rs.800	Rs.800 to Rs.1200	More than Rs.1200	
Occupation	Employee	11	24	11	4	50
	Businessman	6	9	2	4	21
	Professional	4	3	6	4	17
	Others	17	27	22	6	72
Total		38	63	41	18	160

7. **Love Ekenberg & Mats Danielson (2022)** published "A Multi-Criteria Approach to Decision Making in Broadband Technology Selection" under the journal of "Group Decision and Negotiation" (Article No:-31). It was came to online on 06.01.2022.

8. **Lin Cai (2022)** published "Broadband Communications, Computing, and Control for Ubiquitous Intelligence" under the book series of "Wireless Networks" (WN) (ISSN:- 2366-1445). First came to online on 10.08.2022)

Interpretation:

In the above analysis, the calculated Chi-square value (11.495) is less than the table value (16.92) at the level of 5% significance. Hence, null hypothesis H0 is accepted, thus, there is no significant relationship between occupation and amount spend on broadband.

Table no 2

Table showing the relationship between occupation and way of chosen broadband

		How did you choose you broadband providers?				Total
		Friend's recommendation	Advertisement and Notice	Social Media	Other	
Occupation	Employee	15	15	14	6	50
	Businessman	8	4	6	3	21
	Professional	6	5	4	2	17
	Others	20	21	20	11	72
Total		49	45	44	22	160

Interpretation:

In the above analysis, the calculated Chi-square value (1.816) is less than the table value (16.92) at the level of 5% significance. Hence, null hypothesis H0 is accepted, thus, there is no significant relationship between occupation and how did respondents choose their providers.

8.2 Ranking Analysis

A ranking is a relationship between a set of items such that, for any two items, the first is either 'ranking higher than', 'ranked lower than' or 'ranked equal to' the second. In mathematics, this is known as a weak order or total pre order of objects. It is not necessarily a total order of objects because two different object s can have the same rating. The ranking themselves are totally ordered, for example, materials are totally pre ordered by hardness, while degree of hardness are totally ordered. By reducing detailed measures to a sequence of ordinal numbers, ranking make it possible to evaluate complex information according to certain criteria. Thus, for example, an Internet search engine may rank the pages it funds according to an estimation of their

relevance, making it possible for the user quickly to select the pages they are likely to want to see. Analysis of data obtained by ranking commonly requires non-parametric statistics.

Table No: 3

Table Showing the reason to prefer broadband

Reason	4	3	2	1	Total	Rank
Work	52	144	75	44	315	1
E-Business	62	104	105	44	315	1
Price	49	168	63	24	304	3
Offers and Discount	67	110	84	40	301	4
Education	63	130	75	28	296	5
Others	69	102	60	60	291	6
Data Usage	119	62	18	16	215	7

INTERPRETATION

The table shows the ranking order for reason to prefer broadband of the respondents that the Work and E-Business is ranked first and it is followed by Price, Offers and Discounts, Education, Others, and Data Usage.

9. Findings and Suggestions

The objective of the study was to identify and evaluate the key factors that contribute to customer satisfaction, including network speed, pricing, customer service, ease of use and overall value for money. The study has been analysed using techniques of percentage analysis, rank analysis and chi-square analysis. The final chapter is an attempt to summarize the findings of the study based on which few suggestions have been made.

➢   65% of the respondents are in the age group of 18-36 years.

➢   54.4% of the respondents are Male in the category of Gender.

➢   62.5% of the respondents are unmarried

➢   61.9% of the respondents are Under Graduates (UG).

➢   45% of the respondents has other occupations.

➢   60% of the respondents has 2-4 members in the family.

➢   47.5% of the respondents owns Below Rs.30,000.

➢   38.8% of the respondents has Airtel Broadband.

➢   69.4% of the respondents uses Wireless Broadband.

➢   39.4% of the respondents uses the broadband for the past 1 to 3 years.

➢   39.4% of the respondents it has taken 1 to 2 days to activate their subscription.

➢   30.6% of the respondent has chosen the providers due to friend'srecommendation.

➢   39.4% of the respondents has spend Rs.500 to Rs.800 for their broadband plans.

➢   40% of the respondents has the download speed upto 100 mbps.

➢   40.6% of the respondents uses 10 to 50 GB data per month.

➢   44.3% of the respondents has the opinion that not that much it is value for money.

➢   38.1% of the respondents has given good as their feedback for their service provider.

➢   33.8% of the respondents has says that need to increase the coverage areas.

➢   44.4% of the respondents recommend the broadband for cashback.

➢   30.6% of the respondents has chosen the broadband for Better Pricing.

➢   29.4% of the respondents has faced no internet access for a day.

➢   28.7% of the respondents feels that frequent disconnection is the worstservice failure.

Suggestions

According to the above study the respondents has suggested to expand the network. The customer has suggested to improve the services rendered by the service providers and it will improve the satisfaction level of the consumers. The study measures have been suggested to improve a better customer service support for the broadband. As the coverage area is small so that the customer prefer to expand the broadband coverage area. This study indicates the usage of the broadband service facilities for very age group of peoples for various purpose. The customer likes to reduce the network interruption and no internet access for a day.

Conclusion

Broadband access has rapidly become an important and integral part of today's culture. The Broadband technology solutions to both the business and consumer to deliver the multimedia entertainment, information, and services that are continually becoming a larger part of both our workplace and home environments. The broadband provides a better speed and data usage and that is very useful for the people to obtain more information and data. The broadband plays a major role in E-Business. The future scope for the broadband could be increase if the service providers provides and better service.

References

1. **Raul L. Katz (2018)** published his book named "The Impact of the Broadband Internet On Employment" On 2018 with a view of expand the broadband services.

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Annexure

1. Name

2. Age

o Below 18 Years

o 18 To 35,

o 36 To 50,

o Above 50

3. Gender

o   Male

o   Female

4. Marital Status

o   Married

o   Unmarried

5. Education Qualification

- o   Upto HSC

- o   UG

- o   PG

- o   Others

6. Occupation

- o   Employee

- o   Businessman

- o   Professional

- o   Others

7. No of Family Members

- o   1 to 2

- o   2 to 4

- o   4 to 6

- o   Above 6

8. Monthly Income

- o   Below 30k

- o   30k to 60k

- o   60k to 90k

- o   Above 90k

9. What are the available wireless broadband plans in your area

- o   BSNL

- o   Airtel

- o   Jio

- o   Others

10. What type of broadband network plan u currently have

- o   Wired Broadband

- o   Wireless Broadband

11. How long have you been with your current broadband service provider

- o   Less than one year

- o   1 to 3 years

- o   3 to 5 years

- o   Above 5 years

12. How long did it take the broadband to activate your subscription

- o   Less than a day

- o   1 to 2 days

- o   2 to 5 days

- o   More than 5 days

13. How did you choose you broadband providers

- o   Friend's recommendation

o   Advertisement and Notice

o   Social Media

o   Others

14. How much do you spend on your Broadband per month

- o   Less than 500

- o   500 to 800

- o   800 to 1200

- o   More than 1200

15. What is the download and upload speed offered by the service provider

o   Upto 40 mbps

o   Upto 100 mbps

o   Upto 150 mbps

o   Above 150 mbps

16. What is average monthly data usage

o   5 to 10 GB

o   10 to 50 GB

o   50 to 100 GB

o   Above 100 GB

17. Do you feel that your service plan is value for money

o   Definitely

o   Not that much

o   May be

o   Others

18. How was the services that are rendered by the services providers

- o   Excellent

- o   Good

- o   Average

- o   Poor

19. Why you prefer broadband services

	Strongly Agree	Agree	Neutral	Disagree
Date usage				
Price				
Offers and Discount				
Work				
E-Business				
Education				
Others				

20. What are the improvements that you think your current broadband should be improving on

- o   Increasing the coverage area

- o   Providing better customer support

- o   Reduce the frequency of service interruption

o   Others

21. Reason to recommend your broadband internet service to your friend

o   Offers

o   Cash back for referral

o   Others

22. What is the reason for choosing this broadband provider

o   Better Speed

o   Better Pricing

o   Better Customer Support

o   Other

23. In the list of service failures below which one currently you're facing

o   Frequent disconnection

o   Incorrect billing

o   No internet access for a day

o   Others

24. In the list of service failures below which one would you consider the worst

o   Frequent disconnection

o   Incorrect billing

o   No internet access for a day

o   Slow internet connection

25. Suggestion