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An Empirical Study to Explore the Factors Affecting the Purchase Behaviour of Laptop

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ABSTRACT: The computers have journeyed a long way since their birth from a humble beginning as a complex mechanical calculating machines which were available only to a few large institutions, today it has become ubiquitous complex electronic systems which is capable of handling large amount of data processing and executing complex calculation in short time and optimized manner. Adding fuel to this fire, the requirement for better, powerful, compact, faster and higher memory computer systems grew, smaller and portable computer systems called laptops was introduced. These wonderful machines were a great help to the user owing to their compactness and capabilities. In the present age of information, laptops have proved to be an individual's best friend.

There are many features the individual buyer looks for while purchasing a laptop. These list of factors are growing day by day, these increasing list factors is becoming important for manufacturers and marketers of laptops. So constant focus in this area is the order of the day, in analyzing the purchase decisions, consumer buying pattern, frequency, expected features etc, are very important for computer manufacturers to spotlight and boost the individual company's sales and market share. It's the present day stipulate to run hand with the latest technology. Such advanced technology not only simplify students task but it also appear to boost up morale of the students. Students found themselves connected with the entire world with the help of Laptops and by mean of this they are able to contribute a lot for their education, career and entertainment.

This study is carried out to examine the factors affecting purchase intention and the behavior of buyers while purchasing laptops. The research is based on primary data. The questionnaire method was considered appropriate for collecting the data. The questionnaire was designed to collect the required information from respondents. Samples of 50 responses were collected out of which finally 43 responses which were complete in all respects were considered for analysis. Respondents from various educational backgrounds have been considered. The data from questionnaire were transferred to excel sheets. The obtained data has been processed for the computation of percentage, frequency, means and standard deviation and ranks. The statistical techniques such as factor analysis have been applied with the help of Statistical Package for Social Science.

The outcome of the research study exposes that while purchasing laptops, students make buying decisions by considering the highest priority to actual attributes, brand image, followed by cost, previous experience and as well as the Word-of-Mouth. Results of the study further suggest that students prefer purchasing laptops through store outlets rather than online purchase. From the study

it can be concluded that mostly the professional courses students such as management and engineering students are using the laptop more rigorously as compared to other courses students.

Key Words: *Purchase behavior, Laptops, Factors affecting, Students choice, Online purchase, Retail outlets.*

INTRODUCTION: The computers have become integral part of human life today, the growth history clearly showcases that they have come a long way from their birth, from a complex mechanical calculating machines which affordable only few institutions to being ubiquitous complex electronic systems which has capability and capacity of handling large voluminous data and also in executing complex calculation in a short time span and economical manner in the today's world. Their immense power and performance has been growing at an incredible pace which has made them as must-have infrastructure for every business from a retail shop to airlines to name a few. Considering the requirement for better, powerful, compact, faster and higher memory computer systems, the smaller and portable computer systems called laptops was introduced. In the present age of information, laptops have proved to be an human's best friend. Laptops are a unambiguous need than a luxury, in today's pandemic and fast paced world. They are playing an important role among students and working professionals for performing various task, education and entertainment. Like Heart's importance to human body, laptop computer is playing a vital role in day to day operations. Their feature of compactness when compared to desktop computers gives the individual user the convenience to work, share and stay connected while in transition.

There are many features which need to be considered while purchasing a laptop. Analyzing the purchase decision of consumer buying pattern, frequency, advanced features etc., are very important for computer manufacturing companies to focus on successive sales and development. The ever decreasing price of the computer systems has only added fuel to the current trend. All these notable factors have augmented the weight of computers in the business world.

The size of the global laptop market in 2017 was estimated at US \$ 101.67 billion. It is expected to grow at a compound annual growth rate (CAGR) of 0.4% throughout the forecast period. In terms of volume, the market is expected to show a compound annual growth rate (CAGR) of 1.0% during the matching period. Increasing disposable income, increasing world population, increasing Internet penetration, and increasing consumer awareness of the emergence of new technologies are one of the major growth stimuli for the market. Many consumers today prefer cross-functional devices that offer integrated functionality and functionality on the same device. This has facilitated the development of multifunctional devices. Laptops can be used for a variety of purposes, from business to education and entertainment. In addition, large investments, the availability of cheap devices in mass production, and a wide range of applications are aimed at boosting the market.

In addition, the high levels of digital convergence and ongoing product innovation initiatives implemented by major manufacturers will help accelerate device sales during the forecast period. The combination of fast-growing e-commerce and increasing demand for gaming devices could play a key role in increasing demand for devices in the coming years.

However, the surge in smartphones is expected to boost laptop sales over the forecast period. Smartphones include laptops with advanced features such as low price, portability, long battery life, more storage space, cameras, GPS, mobile payments, music, location-based advertising, internet access, seamless communication and more. There are several advantages over. This will encourage consumers to choose smartphones. Depending on the type, the market is divided into traditional laptops and 2-in-1 laptops. In 2019, the traditional laptop segment accounted for more than 90.0% of total market revenue due to increased adoption by end users, especially gamers. Traditional ones offer, among other things, more storage space, more powerful processors, larger screen sizes, and more RAM (random access memory). On the other hand, the 2-in-1 laptop segment is estimated to witness the highest CAGR of 1.0% or more in terms of volume during the prediction interval. This can be due to ongoing design innovations that result in reduced size and increased portability. In addition, this type integrates the capabilities of laptops and tablets into one device, offering benefits such as energy efficient processors, light weight, and increased number of ports.

The market is characterized by fierce competition with the presence of several giants, including Dell, HP Development Company, Apple Inc, and Acer Inc. Some of the major market players are investing heavily in R & D initiatives to manufacture more affordable laptops while keeping up with technological advances and developments.

Device sales in the Asia Pacific region are expected to grow at the highest CAGR in terms of revenue over the forecast period. The government's policy of reducing import tariffs on spare parts is expected to have a positive impact on markets in the region. In addition, increased retail and e-commerce FDI is expected to increase laptop sales in the region, in addition to increased government initiatives such as Make in India, Made in China 2025, and Digital India.

Consumers develop purchasing behavior motivated by a variety of factors. In the case of consumer goods, consumers usually buy based on loyalty to the product, but when compared to durable products, it is a process that involves various processes such as attitude. Subjective norms and perceived behavioral control. This article uses a conceptual background to shed light on consumer buying behavior.

OBJECTIVES OF THE STUDY:

- To study the buying pattern of students while purchasing a laptops.
- To find out factor influencing the buying behaviour of students while purchasing a laptop
- To study which branded laptop is mostly preferred by the students and the underlying factors associated with selection of the laptop purchased.

RESEARCH METHODOLOGY :

The research is based on primary data. The questionnaire method was considered appropriate for collecting the data. Therefore, the questionnaire has been designed to collect the required information from respondents. For this project a sample of 75 respondents from various educational backgrounds have been considered. The data from questionnaire is transferred to excel sheets. The obtained data has been processed for the computation of percentage, frequency, means and standard

deviation and rank. The statistical techniques have been applied with the help of Statistical Package for Social Science.

DESIGN OF QUESTIONNAIRE: The questionnaire for the present study was designed based on the objectives of the study. The questionnaire consisted of mainly closed-questions. The entire questionnaire was standardized and formalized. Questionnaire for present study has been divided into three parts:

- **Explanatory Information:** It was to respondents to explain the purpose of the study.
- **Student's Personal Information:** This part consisted questions with the sole purpose of gathering personal details of the students regarding their age, educational stream, gender and whether they have a laptop.
- **Research Information:** The second part consisted of questions for respondents who do not own a laptop. The questions were pertaining to Factors affecting the purchase, Specification/features affecting the purchase, Brand reliability Brand price and Brand specification these questions were measured via a 5 point likert scale where 1 represented strongly disagree and 5 denoted strongly agree. The next section consisted of questions for existing laptop users. The questions were pertaining to which brand where the respondents currently using and source of their information. Preferences for laptop based on the attributes were also measured via a 5 point likert scale where 1 represented strongly disagree and 5 denoted strongly agree.

SAMPLE DESIGN:

- **Sample size :** In this study, the target sample size was 50 students, in the age group of 16 years and more, and students of different educational streams in Hyderabad city.
- **Sampling type:** Random sampling method was adopted in this study where students were given the link and requested to fill the online questionnaire.

DATA COLLECTION :

- **Primary data:** The primary data was collected by means of a structured questionnaire to conduct the study and arrive at conclusions based on the analysis and findings from the study.
- **Secondary data:** This study started with the literature survey via various journals, magazines that helped to comprehend the various facts of the Laptop Industry.

DATA ANALYSIS: After the data collection the data was tabulated in an Excel worksheet and then edited, coded and verified for validity. During the survey, 50 respondents have filled the online questionnaire. In this study simple statistical technique has been used. Percentage, Frequency, mean and ranks of responses have been calculated in respect of most of the data collected. The following steps are taken in the present study in order to analyze the data correctly

i) Editing, ii) Tabulating, and iii) Graphical Representation. Factor analysis was conducted to club similar attributes into factors so as to know what exactly the students look for while purchasing a laptop.

Interpretation of the Result:

Finally the results that emerged from the study was analyzed and interpreted and suitable conclusions were drawn from those results.

LIMITATIONS

In the research there are some limitations caused by the following reasons:

- The main limitation of the research is generated from the small size of the sample.
- The scope of generalization is limited because of use of random convenience sampling.
- Some of the respondents were not interested in filling questionnaire; some people were talking this research seriously. Some students were hesitating to fill questionnaire.
- The survey was conducted in the educational institutions and the respondents were randomly given the questionnaire links, thus, the respondents might, intentionally or unintentionally provide inaccurate answers to the questions.
- Respondents did not have a prior idea about all the brands and were still considered for the survey, thereby causing bias and forcing respondents to choose the options randomly.

However, care was taken throughout the study to reduce the negative impact of these limitations essentially the need for further research is recognized.

Factor influencing the students at the time of purchasing laptop:

In the research, I have obtained 9 factors which the respondents find important and influential while buying a laptop. The respondents who were planning to buy a laptop were asked to rate their decision at the time of purchasing on a likert scale of 1 to 5, where 1 stands for strongly disagree and 5 stands for strongly agree.

The table below shows the factors influencing in percentages with respect to the 5 point likert scale.

Table 1: Factors influencing during purchase

Factors	N	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Total
Price is an important factor while purchasing laptop	43	30%	33%	19%	9%	9%	100%
Do you consider looks while purchasing a laptop?	43	21%	47%	16%	5%	12%	100%
After sales service is an important factor	43	56%	26%	7%	5%	7%	100%
Is availability is an important factor while purchasing	43	33%	37%	16%	5%	9%	100%
Warranty is an important factor while purchasing	43	53%	30%	7%	0%	9%	100%
Do you mind buying online?	43	16%	21%	26%	23%	14%	100%
Do you agree well-known brands represent better quality?	43	35%	35%	21%	2%	7%	100%

Will you choose a well-known brand when the other brands offer similar feature or price?	43	33%	47%	9%	7%	5%	100%
Are features more important over brand image?	43	37%	37%	12%	7%	7%	100%

The table below shows the factors influencing the respondents at the time of buying laptop with highest mean of 5.

Table 2: Factor frequency table

Factors	N	Mean
Price	43	3.651163
looks consideration	43	3.604651
After sales service	43	4.186047
Availability	43	3.790698
Warranty	43	4.186047
Buying online	43	3.023256
Well-known brands represent better quality	43	3.883721
Well-known brand over feature or price	43	3.953488
Features over brand image	43	3.906977

Interpretation:

The factors with the highest mean are considered out of which “After sales service”, “Warranty”, are considered as most influential factors. Both having mean values of 4.19.

Factor Analysis: In the research there were 21 attributes given to the respondents for which they were asked to rate each attribute using a rating scale from 1 to 5. Where 1 being strongly Agree and 5 being strongly disagree. Factor analysis was used to club similar attributes into factors so as to know what exactly the consumers look for while choosing a laptop. By the main questionnaire, I tried to measure respondent’s perception towards various attributes that directly or indirectly affect the buying behaviours of people towards buying laptop. Please refer to questionnaire in the appendix. The data collected was analysed using SPSS for identifying the significant factors. Factors with eigen values more than 1 were considered and it explained 70% of the total variation.

Table 3: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.877
Approx. Chi-Square		1260.302
Bartlett's Test of Sphericity	df	210
	Sig.	.000

Table 4: Communalities

	Initial	Extraction
I bought my laptop because it had a great display	1.000	.814
Bigger memory in a laptop is a must	1.000	.826
My laptop works on the best available processor	1.000	.811
I use my laptop to make a style statement	1.000	.816
I bought my laptop because it had a great texture	1.000	.738
I bought my laptop because it was affordable	1.000	.797
Wi-Fi connection is the growing trend in internet connection	1.000	.776
High quality audio is very important for watching movies on laptops	1.000	.869
I feel that the data kept in my laptop is always secure	1.000	.740
The battery backup of a laptop depends on the usage and not on the brand	1.000	.653
I am aware of the features and weaknesses of different OS versions	1.000	.681
I like to try newer and better versions (heavier) of computer games	1.000	.716
I believe that heat dissipaters of the laptops have to be complimented with extra fans for optimal operation	1.000	.706
My laptop has attractive accessories	1.000	.612
Add-on software packages with laptops are a must	1.000	.700
I always shop when a new scheme or offer is on	1.000	.706
Extended service warranty is a redundant offer with a good laptop	1.000	.806
I can travel any distance to buy my favorite laptop	1.000	.763
I believe that a good laptop (from a reliable brand) hardly encounters any glitch	1.000	.821
I do not mind paying extra for a good service	1.000	.848
I need to have freedom of choosing the features in my laptop even if that comes at a price	1.000	.811

Extraction Method: Principal Component Analysis.

Table 5: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.590	64.716	64.716	13.590	64.716	64.716	7.801	37.148	37.148
2	1.357	6.460	71.177	1.357	6.460	71.177	4.920	23.427	60.575
3	1.062	5.055	76.231	1.062	5.055	76.231	3.288	15.657	76.231
4	.740	3.524	79.755						
5	.614	2.923	82.678						
6	.509	2.425	85.102						
7	.492	2.342	87.444						
8	.449	2.136	89.580						
9	.374	1.783	91.363						
10	.262	1.249	92.612						
11	.258	1.229	93.841						
12	.244	1.161	95.002						
13	.219	1.045	96.048						
14	.194	.926	96.973						
15	.158	.752	97.725						
16	.133	.633	98.358						
17	.115	.547	98.905						
18	.099	.471	99.376						
19	.063	.300	99.676						
20	.042	.199	99.876						
21	.026	.124	100.000						

Extraction Method: Principal Component Analysis.

The total variance explained is shown in the table above along with the eigen value at each stage. When the eigen value drops below 1, the factor analysis process is stopped. Since at the **3rd stage**, the eigen value became < 1 , we stopped the process and concluded that there are **3 factors as per the respondents**.

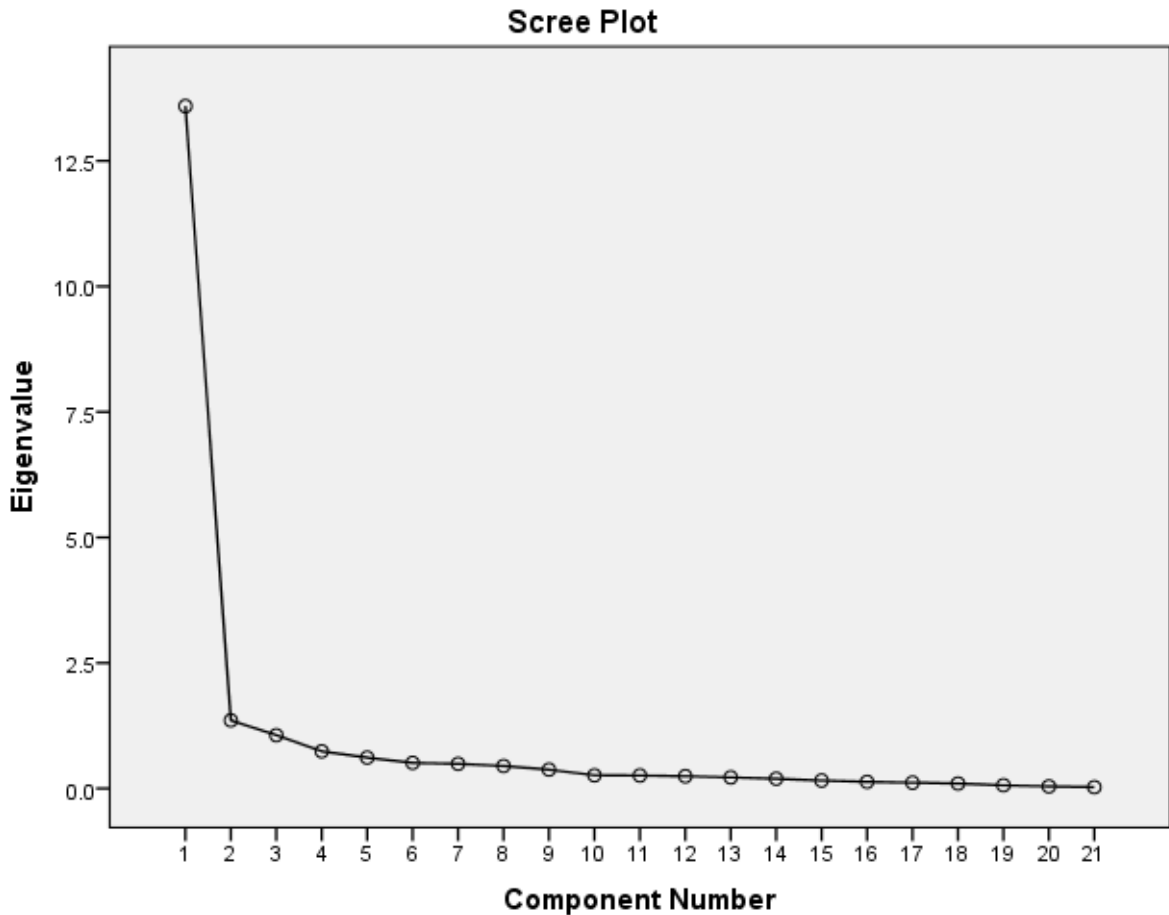


Table 6: Component Matrix^a

	Component		
	1	2	3
I bought my laptop because it had a great display	.776	.404	-.221
Bigger memory in a laptop is a must	.751	.377	-.347
My laptop works on the best available processor	.741	.512	-.008
I use my laptop to make a style statement	.588	.456	.511
I bought my laptop because it had a great texture	.785	.246	.249
I bought my laptop because it was affordable	.872	-.188	-.003
Wi-Fi connection is the growing trend in internet connection	.800	-.090	-.357
High quality audio is very important for watching movies on laptops	.908	-.089	-.193

I feel that the data kept in my laptop is always secure	.813	.191	-.204
The battery backup of a laptop depends on the usage and not on the brand	.791	.117	.117
I am aware of the features and weaknesses of different OS versions	.787	-.020	.247
I like to try newer and better versions (heavier) of computer games	.786	-.285	-.130
I believe that heat dissipaters of the laptops have to be complimented with extra fans for optimal operation	.829	.030	-.130
My laptop has attractive accessories	.782	-.018	-.024
Add-on software packages with laptops are a must	.770	-.304	-.118
I always shop when a new scheme or offer is on	.743	-.328	.217
Extended service warranty is a redundant offer with a good laptop	.875	-.186	.070
I can travel any distance to buy my favorite laptop	.764	-.199	.375
I believe that a good laptop (from a reliable brand) hardly encounters any glitch	.899	-.048	.104
I do not mind paying extra for a good service	.898	-.158	.133
I need to have freedom of choosing the features in my laptop even if that comes at a price	.871	-.185	-.135

Extraction Method: Principal Component Analysis.

a. 3 components extracted.

Table 7: Rotated Component Matrix^a

	Component		
	1	2	3
I bought my laptop because it had a great display	.276	.785	.349
Bigger memory in a laptop is a must	.271	.837	.229
My laptop works on the best available processor	.186	.688	.551
I use my laptop to make a style statement	.136	.242	.859
I bought my laptop because it had a great texture	.412	.404	.637
I bought my laptop because it was affordable	.762	.379	.268

Wi-Fi connection is the growing trend in internet connection	.627	.619	.014
High quality audio is very important for watching movies on laptops	.712	.573	.184
I feel that the data kept in my laptop is always secure	.450	.680	.274
The battery backup of a laptop depends on the usage and not on the brand	.499	.422	.475
I am aware of the features and weaknesses of different OS versions	.596	.263	.506
I like to try newer and better versions (heavier) of computer games	.760	.360	.087
I believe that heat dissipaters of the laptops have to be complimented with extra fans for optimal operation	.576	.554	.259
My laptop has attractive accessories	.578	.435	.297
Add-on software packages with laptops are a must	.763	.334	.080
I always shop when a new scheme or offer is on	.774	.092	.315
Extended service warranty is a redundant offer with a good laptop	.766	.335	.326
I can travel any distance to buy my favorite laptop	.707	.073	.507
I believe that a good laptop (from a reliable brand) hardly encounters any glitch	.690	.401	.429
I do not mind paying extra for a good service	.765	.323	.398
I need to have freedom of choosing the features in my laptop even if that comes at a price	.753	.464	.167

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 15 iterations.

The attributes important for each factors have a correlation value of $> +0.7$. These have been highlighted in blue colour in the table above i.e. Rotated component matrix.

Table 8: Component Transformation Matrix

Component	1	2	3
1	.726	.549	.415
2	-.686	.539	.488
3	.044	-.639	.768

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

After performing the factor analysis, there are some points which are focused. They are as follows

- As KMO value is 0.877, we can say that the data is adequate as it is greater than 0.5.
- Through the rotated component matrix, the three factors that can be extracted are:
 - ❖ **Convenience factors**
 - ❖ **Technical factors**
 - ❖ **Social status factors.**

FINDINGS & CONCLUSION: In this study the respondents are the students from various educational streams. From the analysis it clearly states that the students pursuing B.Tech and MBA/PGDM have a greater laptop requirement as per their studies and research.

- The research states that Brand reliability, price and specifications are important to how a student perceives a brand. Over all Dell and Apple Mac are perceived as best brands.
- The research also states that price, after sales services, warranty, quality and features over brand image are important factors, which affect the purchase intention of the students.
- The major factors from the factor analysis are Convenience factors, Technical factors and Social status factors.
- The most preferred brand by the students are Lenovo 26%, HP 24% and Dell 22%. The students obtain information regarding laptops mostly from the existing users and their friends.

This study is carried out to examine the factors affecting purchase intention and the behavior shown by customers while purchasing laptops. The results of the study reveal that while purchasing laptops, students make decisions giving the highest priority to actual attributes and brand image, followed by price, past experience and Word-of-Mouth. The study further reveals that students sometimes go for a change when it comes to choosing a brand but the actual attributes and price sensitiveness is always considered to be critical. Results of the study also signify that students prefer purchasing laptops through store outlets rather than purchasing online. From the study it is concluded that mostly management and engineering students are having the need of laptop and rest of them do have but not as compare to management students.

It's the present day demand to run hand with the latest technology. This technology not only simplify students task but it also seem to morale boost up of the students. Students found themselves connected with the entire world with the help of Laptops and by mean of this they can contribute a lot for their career.

SUGGESTION & RECOMMENDATION:

This study recommends companies to invest in technology through R&D and create differentiation at utmost level. This research has been limited to laptop/notebook sector and the factors influencing consumer's purchase decisions in this market, since sectoral differences play a vital role, it is also recommended to replicate this study in distinct sectors.

- The pleasure value and functional value of the brand should be emphasized so as to sustain them in the future.

- The product attributes of the brand should be improvised upon, so as to have a greater market extent.
- A differentiation of laptops should be made on the basis of specific age groups so that the product specifications match the relevant age groups.
- Proper attention should be paid for advertisement planning otherwise it may lead to problem for dealer as well as for company. Company should make policy for fixed end user price for all dealers so that fair game will be played & dealer would not to compromise on their margin.
- Students recommended various features to improve laptop quality like water proof, Laptop having Insurance coverage, Inbuilt Graphic Card, Good Looks, Long Battery Life, Use of fast charging to increase battery backup, Fully secured system from VIRUS and hacking anti threats, Software compatibility according to invention of a new processor, Small size, Good quality graphics card to handle heavy duty software's, Running without need of Battery charging, Improve Sound System, Connectivity and security system, Make it more portable, Light Weight, More Plugs better Wi-Fi, Stylish and stronger body etc.

SCOPE FOR FURTHER STUDY: Similar studies can be conducted with large sample size covering different demographics, cross tabulations can be performed to find the intension of consumers with respect of purchasing the laptops, similar study can be carried out considering various geographical areas, and a comparative study with urban and rural and among the gender will certainly help the marketers and policy makers to understand the customer expectations and factors affecting the buying behaviour while buying a laptop.

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