

# **A STUDY OF BRAND CHOICE OF LAPTOPS BY MANAGEMENT AND ENGINEERING STUDENTS (A CASE STUDY OF ROHTAK, BAHADUR GARH CITY)**

*Pinki,*

Assistant Professor,  
Deen Dayal Upadhyaya College,  
University of Delhi, India.

## **ABSTRACT**

Laptop market is a highly competitive market in the present scenario. Due to rapid changes in the field of technology day by day new laptop brands comes in to existence. Also, the consumer desires and expectations are moving on. It becomes difficult to survive for laptop manufacturers if they don't move fast with growing needs of consumers. This study presents a brief overview of Indian Laptop industry. The present paper highlights the laptop usage in study from student's point of view. The research paper further makes an attempt to identify and evaluate various factors which influence purchase intent of management and engineering students. Finally present paper comes with some simple and practical suggestions to improve laptop features and that will help laptop manufacturers to develop brand management strategies and to make proper positioning of their brands.

**Keywords:** Laptop Usage, Students Learning, Impact Factor, Students Perception

## INTRODUCTION:

Whether it is a growing craze or the emergence of a new breed of technology-conscious Laptop market is going to flourish in India. The need for anytime-anywhere access to information is pushing laptop demand in the market due to their convenience in terms of portability, flexibility and adaptability. In every field of life like, hospitality, railways, metro trains, corporate houses, academics, professionals etc. we found the use of laptop/computers for different purposes.

Laptops are current day demand that simplify work and life as well. It contributes towards the upliftment of performance, work easiness by introducing the home office concept and provide a creative insight for the work. India's developing economy notifies positive impact of this technology and continuously moving towards growth. Initially laptop market started functioning as a niche market but now it has various market segmentations as per their market demand. India is considered as the third fastest growing laptop market with a compound annual growth rate of 21.9 % in the Asia- Pacific region from last few years.

In 2005 Laptop sale was accounted as 2% in India as compare to world laptop market. Near about 1.2bn computers were in use worldwide at the end of 2008 .However, it has been expected that the global laptop market will be double by 2013. Increasing laptop demands also set a target to manufacturers to work as per consumer's expectations.

## MAJOR LAPTOP BRANDS AND MANUFACTURERS:

We found various Laptops brands available in the market at different prices, size and features. Some of the well renowned Laptop brands and manufacturers are listed below:

Major Laptop Brands	Product Line Depth
Acer/Gateway/eMachines /Packard Bell	Travel Mate, Extensa, Ferrari and Aspire; Chromebook
Apple	MacBook, MacBook Air and MacBook Pro
Dell	Alienware, Inspiron, Latitude, Precision, Studio, Vostro and XPS
Toshiba	Dynabook, Portege, Tecra , Satellite, Libretto
Sony	Sony Vaio
Lenovo	IdeaPad, Thinkpad and the Essential B and G Series
Samsung	SENS: N, P, Q, R and X Series
Hewlett-Packard / Compaq	HP Pavilion, HP Envy, HP ProBook, HP EliteBook, Compaq Presario
HCL (INDIA)	Me Laptop, Me Netbook, Leaptop and MiLeap
Panasonic	Toughbook, Satellite, Let's Note (Japan only)
LG	Xnote
Asus	Asus Eee, Lamborghini, Asus G Series(ROG)

The major players usually provides good service support, well-executed documentation and driver downloads that will remain available for many years after a particular laptop model is no longer produced.

**Figure 1: Factors Responsible for increased Laptop Sale at a Glance**



## OBJECTIVES OF THE STUDY:

The primary objective of the present study is to study the laptop brands preferred by the engineering and management students. Secondary objectives for the present study are as follows:

- 1) To determine the laptop usage in the study from the engineering and management students point of view.
- 2) To identify & evaluate the factors impact on laptop purchase decision of the students.

## REVIEW OF LITERATURE:

Ray, S. (2009) The study highlights the adoptability of Wi-Fi connectivity as a necessity in Hospitality, Airlines, Schools, Colleges and various other places. It also notifies that laptop market is boosting due to price reduction and ultra-slim laptops. Punyatoya, P. This article presents a brief literature review of the concept of brand personality and its relationship to consumer brand preference and purchase intention. Rungtanachai, Chompu-in-wai and Toni L. Doolen This research focused on studying the impact of using laptops in a required undergraduate-level engineering course at Oregon State University (OSU) in Winter 2004 and Winter 2005. The individual usage of laptops with wireless capability both inside and outside classrooms in Winter 2005 was found to positively impact student learning outcomes and assist in the achievement of class learning objectives. No significant differences in attitudes were found in either year. Student attitudes towards laptops and the usage of laptops were unchanged by the introduction of laptops in both years. Mellon, C. Present a study on laptop usage rate inside and outside the classroom and the respective effect of laptop usage in improving student's performance level and improving work quality. Moses, P. et al (2008) The study focus on empowering the teachers with the latest technology through training and concluded that laptop usage in the study as an instructional tool is an effective media to enhance students learning. Kay, R. H. and Lauricella, S. highlights the impact of unstructured vs. structured use of laptops for 177 university students and revealed that structured use of laptops resulted in significantly more time spent on note taking and academic activities and significantly less time spent on sending personal emails, instant messages and playing games during class. Fried, C.B. Examine in his study the impact of laptop usage in the class and noticed a favourable improvement in students work. Grimes, D. & Warshauer, M. also conducted a study on the students of three different schools of California by mean of one-to-one laptop program and found that in second after introducing this program the students perform better than non-laptop user students. Vuojärvi, H. In this study qualitative interview data with twenty students (identified and selected by quantitative survey) was analyzed using the grounded theory approach during which a multi-aspect domestication process was identified. Results highlight the importance of a structured way of organizing laptop initiatives in universities.

In a survey on 200 students conducted in winter 2005, a slight replacement was notified in students behaviour. Students start preferring Laptop computer in place of desktop due to its portability feature.

## RESEARCH METHODOLOGY:

### RESEARCH DESIGN:

Following Methodological steps are followed for conducting the research:

#### 1) LITERATURE / INTERNET SURVEY:

This study started with the literature survey via various journals, magazines that helped to comprehend the various facts of the Laptop Industry. Also, internet survey was conducted to understand the latest occurrences in the industry.

#### 2) 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 and only two open-ended questions. The entire questionnaire was standardized and formalized.

Questionnaire for present study has been divided into three parts-

##### a) EXPLANATORY INFORMATION:

It was provided by researcher to respondents to explain the purpose of the study.

**b) STUDENT'S PERSONAL INFORMATION:**

This part consisted questions with the sole purpose of gathering personal details of the students regarding their names, educational stream, gender and residential status.

**c) BASIC INFORMATION:**

The second section consisted of ten questions ,first question pertaining to 'top of the mind awareness/recall of laptop brand', 'brand of laptop presently being used', ' brand of laptop they intend to purchase if they are not using one at present", second question is related to the laptop usage in their study were measured on 5 point Likert Scale where 1 represented strongly disagree and 5 denoted strongly agree, third and fourth questions were asked to know about the students preference level towards laptop size and price range. Fifth question was asked to evaluate the purchase criteria. In the sixth question, eleven statements on different parameters of the brand were asked which consumer considers while deciding the brand of the laptop. Impacts of various factors were considered on a rating scale where 1 represented always and 5 denoted never.

**3) DESIGN OF SAMPLE SURVEY:**

In this study, the target sample size was 150 students, in the age group of 19 years and more, and was students of different management and engineering colleges from Rohtak and Bahadur Garh city. Random sampling method was adopted in this study where students were approached directly and requested to fill the questionnaire.

**4) DATA COLLECTION METHOD:**

Primary data was collected by means of a structured questionnaire to conduct the study and arrive at conclusions based on the findings.

**5) DATA TABULATION/VALIDATION:**

After the data collection the data was tabulated in a SPSS worksheet and then edited, coded and verified for validity. During the survey, 180 respondents were interviewed from the target group, as mentioned earlier. Out of them, around 30 records were discarded due to inconsistencies and incompleteness.

**6) DETERMINATION OF THE DATA ANALYSIS METHODS:**

In this study simple statistical technique has been used. Percentage of respondents has 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)Graphic Representation

Further, Chi-square test for independence was conducted to unearth possible dependency between variables.

**7) INTERPRETATION OF THE RESULT:**

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

**LIMITATION OF THE STUDY:**

Some limitations of the present study were as follows:

**1. Sample Size:**Sample size is limited to 150 respondents only which may not be representatives of universe. A large sample could not be taken due to limited time.

**2. Unwillingness and inability of the respondents to provide information:**Especially question regarding the demographical factors. Many persons were unable to answer accurately due to ignorance of facts.

**2. Time constraints:**Time available at the disposal was not enough. Therefore it was not feasible to go in depth and choose wider area.

**3. Limitation regarding analysis:** Due to limited resources and time, a deeper statistical analysis like analysis of variance, rank correlation could not be carried out.

**DATA ANALYSIS AND INTERPRETATION:**

The null hypothesis was framed, which states that the attributes are uncorrelated in the population. Brand

awareness was tested by applying top of the mind recall technique. Detailed frequency analysis was conducted to understand people's preference on laptop price range and how much they are ready to spend. Finally different brand were compared to know which company is fulfilling the consumer's desire in better way.

### RESPONDENT CHARACTERISTICS:

A Sample size of 150 students were taken, out of them 73% (110 students) were Engineering students and 27% (40 students) were management students from different colleges of Rohtak and Bahadurgarh city. This sample consist of 55% (82 students) male and 45% (68 students) female. Out of total 150, 33% (49 students) were from rural areas and 67 % (101 students) were from urban areas. Also 53% (80 students) were having a laptop and 47% (70 students) were not.

### TESTING OF HYPOTHESIS:

The chi-square test for independence was conducted to determine the statistical significance of hypothesis. Chi-square is based on the observed versus expected frequencies when data is compared with a large value indicating that a statistically significant relationship exists between two variables and the sig. value/p-value is less than 0.05.

### RESEARCH QUESTION 1:

Is there a relationship between the demographics of the students and the brand of laptop preferred?

H<sub>10</sub> The brand of laptop preferred is independent of the educational level of the students. H<sub>20</sub> The brand of laptop preferred is independent of the residential status of the students.

**Table 1: Cross Tabulation for H<sub>10</sub>**

Streams of Students	Laptop Brand								Total
	Dell	HP	Compaq	Sony	Lenova	Samsung	Acer	Others	
Engineering students	40	16	9	18	3	4	8	12	110
Management students	18	8	5	3	1	3	2	0	40
<b>Total</b>	<b>58</b>	<b>24</b>	<b>14</b>	<b>21</b>	<b>4</b>	<b>7</b>	<b>10</b>	<b>12</b>	<b>150</b>

**Table 2: Chi Square Test for H<sub>10</sub>**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.878 <sup>a</sup>	7	.262
Likelihood Ratio	12.033	7	.099
Linear-by-Linear Association	3.791	1	.052
N of Valid Cases	150		

At 5% level of significance, the chi-square cut off is 14.067. The observed statistic (8.878) falls in the acceptance region, which leads to the acceptance of H<sub>10</sub>. Also the p-value is .262, which is more than 0.05, showing the acceptance of null hypothesis.

### H<sub>20</sub>RESULT:

At 5% level of significance, the chi-square cut off is 14.067. The observed statistic (6.927) falls in the acceptance region, which leads to the acceptance of H<sub>30</sub>. Also the p-value is .437, which is more than 0.05, showing the acceptance of null hypothesis.

### RESEARCH QUESTION 2:

Is there a relationship between the demographics of the students and the laptop use in their studies?

H<sub>30</sub> Use of laptop in studies is independent to the educational level of students.

**Table 3: Cross Tabulation for H3<sub>0</sub>**

Streams of students	What do you think laptop is useful in your study?					Total
	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree	
Engineering students	51	47	7	2	3	110
Management students	16	15	9	0	0	40
<b>Total</b>	<b>67</b>	<b>62</b>	<b>16</b>	<b>2</b>	<b>3</b>	<b>150</b>

**Table 4: Chi Square Test for H3<sub>0</sub>**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.439 <sup>a</sup>	4	.051
Likelihood Ratio	9.775	4	.044
Linear-by-Linear Association	.460	1	.498
N of Valid Cases	150		

At 5% level of significance, the chi-square cut off is 9.4877. The observed statistic (9.439) is less than the chi square cut off, which leads to the acceptance of H3<sub>0</sub>. Also the p-value is .051, which is more than 0.05, showing the acceptance of null hypothesis.

### RESEARCH QUESTION 3:

Does a relationship exist between the demographics of the students and the factors affecting their purchase decision?

H4<sub>0</sub> Factors effecting purchase decisions are independent to the educational level of Students.

H5<sub>0</sub> Factors effecting purchase decisions are independent to the gender.

H6<sub>0</sub> Factors effecting purchase decisions are independent to the residential status.

(In Question 3, respondents were asked to rate the impact of various factors on their final purchase decision, with the choices being “price,” “product quality/features/design,” “brand image,” “recommendations,” and “ease of purchase”, etc.

**Table 5: Cross Tabulation for H4<sub>0</sub> (i)**

Streams of Students	Price Impact on purchase					Total
	Always	Often	Occasionally	Rarely	Never	
Engineering students	61	32	6	7	4	110
Management students	23	12	4	1	0	40
<b>Total</b>	<b>84</b>	<b>44</b>	<b>10</b>	<b>8</b>	<b>4</b>	<b>150</b>

**Table 6: Chi Square Test for H4<sub>0</sub>(i)**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.215 <sup>a</sup>	4	.523
Likelihood Ratio	4.304	4	.366
Linear-by-Linear Association	.770	1	.380
N of Valid Cases	150		

At 5% level of significance, the chi-square cut off is 9.4877. The observed statistic (3.215) is less than the chi square cut off, which leads to the acceptance of H4<sub>0</sub>. Also the p-value is .523, which is more than 0.05, showing the acceptance of null hypothesis.

### FINDINGS AND SUGGESTIONS:

The findings of the study were as follows:

- 1) This study highlight that out of total 150 students,46% strongly agree,41% agree, 11% not sure, and rest 2 % were shared by disagree & strongly disagree towards the laptop use in their study. It means most of the students were agreeing towards the fact that laptop is helpful in their studies.



- 2) The table shows that factors like Price, Friends/ Family member, Brand image, Features and Technology , After sale service, Availability in your area, Availability of service centre in your area always effect the purchase decision and the factor like Advertisement(TV, News paper), Financial schemes(installment payment etc.), Discount/gift/lucky draw etc, Brand Ambassador(Sportsman, film stars, etc), often effect the purchase decision. Table showing the impact of factors on purchase decision in percentage form as chosen by the students:

Factors	Always	Often	Occasionally	Rarely	Never
Price	56%	29%	7%	5%	3%
Advertisement(TV,News paper)	29%	36%	19%	11%	5%
Financial schemes(installment payment etc.)	20%	23%	21%	19%	17%
Friends/ Family member	45%	17%	25%	11%	2%
Brand Ambassador(Sportsman, film stars, etc	20%	27%	19%	17%	17%
Brand image	57%	21%	11%	6%	5%
Features and Technology	87%	9%	1%	1%	2%
After sale service	63%	19%	13%	3%	2%
Availability in your area	49%	29%	14%	5%	3%
Availability of service centre in your area	56%	23%	13%	6%	2%
Discount/gift/lucky draw etc.	32%	15%	23%	16%	14%

- 3) The study shows that 47% students thinks TV/Internet as a better place for promotional activities effectiveness, 25% students thinks college seminars as an appropriate place, 15% considered shopping malls as a right place, 11% thinks event organizing near schools and colleges as a right one and rest 2% favour for some other place(not specified).
- 4) The study reveals that 42% students thinks dell is satisfying consumer desires in a better way, 23% students thinks HP , 9% says Sony and rest 26% favouring other brands.

### SUGGESTIONS:

Students faced various problems while using laptop like Internet Speed(2G), Battery Backup, window installation,Software,Volume Scaling,Virus,Heavy, costly and it get hot in very short time etc.

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 renewal solar energy to increase battery life, 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.

There is a another recommendation regarding the introduction of voice adaptability feature in laptops, so that we can enter input without the use of Keyboard and Mouse.

One of the suggestion is regarding the shape of Laptop. As per the suggestion Laptop shape should like a paper( Foldable, Thin, Light).Another suggestion is towardsmaking it more portable with a wide screen and improve the processor speed. Also, Software compatibility should be provided within one genuine pack with good operating system and increased RAM size.

### CONCLUSION:

The entire study shows that Laptop usage is very much popular in between the students whether their residential status is urban and rural. 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 the nation.

### SCOPE FOR FURTHER RESEARCH:

Due to various limitations like limited sample size, time shortage etc. the study being carried out only in two cities of Haryana state. Also it focuses upon only Engineering and Management students. Further research

can be carried out at large scale to know about different streams student perception level across the geographical boundaries.

## REFERENCES:

- [1] Kotler, P. (2003), Marketing Management.11<sup>th</sup> Ed. New Delhi: Prentice Hall of India Pvt. Ltd.
- [2] Kothari, C.R.(1985)Research Methodology.2<sup>nd</sup> Ed. Delhi: New International(P)Ltd. PP.1-10.
- [3] Shah, A. and Dalal, A.(2009), The Global Laptop Industry :Industry Overview and Analysis.
- [4] MalhotraNareshK(2000),Marketing Research,(4<sup>th</sup> Edition),Pearson Education.
- [5] Punyatoya, P.How Brand Personality affects Products with different Involvement Levels. Indore, Indian Institute of Management. PP 2.
- [6] Aaker, J., Fournier, S., &Brasel, S. A. (2004). Why good brands do bad. Journal of Consumer Research, 31(1), PP1-16.
- [7] Einhorn, H. J., & Hogarth M. R. (1981). Behavioral Decision Theory: Processes of Judgment and Choice. Annual Review of Psychology, 32, 53-58.
- [8] Hill, R. P. (1988). The effects of advertisements on consumers' mood states: an interactive perspective. Advances in Consumer research, 15,PP 131-134.
- [9] Shapley et al., 2010. Laptop use and students achievement, Literature Review (2010), Digital Education Revolution NSW, PP 13.
- [10] Computer Lab Management (CLM).Student Survey - Laptop Use - Winter 2005.
- [11] Chompu-inwai, R. and Doolen, L.(2006) A Methodology for Studying the Impact of Laptops in Engineering Classrooms.36th ASEE/IEEE Frontiers in Education Conference, San Diego, CA.
- [12] Mellon, C. Laptops in Classrooms Isolate Students, Carnegie Mellon University's: Pittsburgh.
- [13] Moses, P. et al (2008)Laptop Use and its Antecedents Among Educators: A Review of the Literature, European Journal of Social Sciences, Vol 7, Number 1 (2008).
- [14] Ray, S. Building a model for purchase decision of Laptops and Price Performance Analysis of Major Players. The Icfai University Press (2009).
- [15] Kay, R. H. and Lauricella, S.(2011).Unstructured vs. Structured Use of Laptops in Higher Education , Journal of Information Technology Education: Vol 10, Innovations in Practice (2011),IIP 32.
- [16] Fried, C.B.(2006)In-class laptop use and its effects on student learning. Computers & Education 50 (2008).PP 906–914,<http://www.elsevier.com/locate/compedu>.
- [17] Grimes, D. & Warshauer, M.(2008) Learning with Laptops: A Multi-Method Case Study. University of California, Irvine. J. Educational Computing Research, Vol. 38(3) 305-332, 2008.
- [18] Gulek, J.C. & Demirtas, H. Learning with Technology: The Impact of Laptop Use on Student Achievement. The Journal of Technology, Learning, and Assessment, Vol 3, Number 2, January 2005.
- [19] Vuojärvi, H.(2010) Domestication of a laptop on a wireless university campus: A case study. Australasian Journal of Educational Technology 2010, 26(2), 250-267.
- [20] <http://www.gse.uci.edu/person/warchauer-m/docs/laptops-jcer.pdf>
- [21] <http://www.hbcse.tifr.res.in/episteme/episteme-1/allabs/david-abs.pdf>
- [22] <http://www.cmu.edu/news/archive/2006/november/nov.-20-laptop-study.shtml>
- [23] [fie-conference.org/fie/2006/papers/1700.pdf](http://fie-conference.org/fie/2006/papers/1700.pdf)
- [24] <http://www.buzzle.com/articles/best-laptop-for-college-students.html>[last updates 8/25/2011]
- [25] [etopmost.com/best-laptops-for-students](http://etopmost.com/best-laptops-for-students)
- [26] <http://www.funkphd.net>
- [27] [jite.org/documents/vol\\_10/JITEv10IIPp033-042kay\\_840.pdf](http://jite.org/documents/vol_10/JITEv10IIPp033-042kay_840.pdf)
- [28] <http://www.mcla.edu/academics/uploads/text-widget/3424.00018/documents/laptop-use-in-the-classroom.pdf>
- [29] [http://www.cmu.edu/teaching/resource/publicationsarchives/studies/whitepapers/laptop\\_study\\_report-2006.pdf](http://www.cmu.edu/teaching/resource/publicationsarchives/studies/whitepapers/laptop_study_report-2006.pdf)
- [30] <http://www.laptopwikipedia.com>
- [31] <http://phys.org/news10165.html#jCp>

----