

# INTERNATIONAL JOURNAL OF RESEARCH IN COMPUTER APPLICATION & MANAGEMENT

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## AN EMPIRICAL STUDY OF BRAND PREFERENCE OF MOBILE PHONES AMONG COLLEGE AND UNIVERSITY STUDENTS

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**SHIMLA**

### ABSTRACT

*With the revolution in telecom sector in India, the mobile phone market is becoming more and more competitive. various companies have launched different handsets of mobile phones in the market. These mobile phones are available at various price range and offer variety of services to the customers. Therefore in the light on increasing competition, it is necessary to study the brand preferences of the potential customers regarding various brands available in the market. In this study the preference of customers about the brands of mobile phones and association between various attributes have been studied. For the analysis of data simple percentage and chi-square test has been used. From the analysis it is found that Nokia is the leader in the market as far as brand of the mobile phone is concerned. the study also reveals that there is close relationship between income of family of respondents and spending on mobile phones and there is no relationship between gender and time period of using mobile phones and gender and frequency of changing the mobile phones.*

### KEYWORDS

Cellular phone, Chi-square, Cordless phone, Network & Videoconferencing.

### INTRODUCTION

Wikipedia defines cellular phone as: The Cellular telephone (commonly "mobile phone" or "cell phone" or "hand phone") is a long-range, portable electronic device used for mobile communication. In addition to the standard voice function of a telephone, current mobile phones can support many additional services as SMS for text messaging, email, packet switching for access to the Internet, and MMS for sending and receiving photos and video. Most current mobile phones connect to a cellular network of base stations (cell sites), which is in turn interconnected to the public switched telephone network (PSTN) the exception is satellite phones. Cellular telephones are also defined as a type of short-wave analog or digital telecommunication in which a subscriber has a wireless connection from a mobile telephone to a relatively nearby transmitter. The transmitter's span of coverage is called a cell. Generally, cellular telephone service is available in urban areas and along major highways. As the cellular telephone user moves from one cell or area of coverage to another, the telephone is effectively passed on to the local cell transmitter. A cellular telephone is not to be confused with a cordless telephone (which is simply a phone with a very short wireless connection to a local phone outlet). A newer service similar to cellular is personal communications services (PCS).

### THE GLOBAL CELLULAR MOBILE INDUSTRY

The global mobile phone industry is based on many different manufacturer and operators. The industry is based on advanced technology and many of the manufacturers are operating in different industries, where they use their technological skills, distribution network, market knowledge and brand name. Four large manufacturers of mobile phones are today dominating the global mobile phone industry: Nokia, Sony Ericson, Samsung and Motorola. In addition to these companies there are many manufacturers that operate globally and locally.

### TELECOMMUNICATION HISTORY IN INDIA

Started in 1851 when the first operational land lines were laid by the government near Calcutta (seat of British power). Telephone services were introduced in India in 1881. In 1883 telephone services were merged with the postal system. Indian Radio Telegraph Company (IRT) was formed in 1923. After independence in 1947, all the foreign telecommunication companies were nationalized to form the Posts, Telephone and Telegraph (PTT), a monopoly run by the government's ministry of Communication. Telecom sector was considered as a strategic service and the government considered it best under state's control.

The first wind of reforms in telecommunication sector began to flow in 1980s when the private sector was allowed in telecommunications equipment manufacturing. In 1985, Department of Telecommunication (DOT) was established. It was an exclusive provider of domestic and long-distance service that would be its own regulator (separate from the postal system). In 1986, two wholly government-owned companies were created: the Videsh Sanchar Nigam Limited (VSNL) for international telecommunications.

Mahanagar Telephone Nigam Limited (MTNL) for service in metropolitan areas. In 1990s telecommunications sector benefited from the general opening up of the economy. Also, examples of telecom revolution in many other countries, which resulted in better quality of service and lower traffic, led Indian policy makers to initiate a change process finally resulting in opening up of telecom services sector for the private sector. National Telecom Policy (NTP) 1994 was the first attempt to give a comprehensive roadmap for the Indian telecommunications sector. In 1947, Telecom Regulatory Authority of India (TRAI) was created. TRAI was formed to act as a regular to facilitate the growth of the telecom sector. New national Telecom Policy was adopted in 1999 and cellular services were also launched in the same year.

Telecommunication sector in India can be divided into two segments: Fixed Service Provider (FSPs), and Cellular Services. Fixed line services consist of basic services, national or domestic long distance and international long distance services. The state operators (BSNL and MTNL), account for almost 90 percent of revenues from basic services. Private sector services are presently available in selective urban areas, and collectively account for less than 5 per cent of subscriptions. However, private services focus on the business/corporate sector, and offer reliable, high- end services, such as leased lines, ISDN, closed user group and video conferencing.

Cellular services can be further divided into two categories: Global System for Mobile Communications (GSM) and Code Division Multiple Access (CDMA). The GSM sector is dominated by Airtel, Vodafone-Essar, and Idea Cellular, while the CDMA sector is dominated by Reliance and Tata Indicom. Opening up of international and domestic long distance telephony services are the major growth drivers for cellular industry. Cellular operators get substantial revenue from these services, and compensate them for reduction in tariffs on airtime, which along with rental was the main source of revenue. The reduction in tariffs for airtime, national long distance, and international long distance and handset prices has driven demand.

### THE KEY PLAYER IN MOBILE MARKET IN INDIA

1. Nokia
2. Motorola
3. Samsung
4. LG
5. Sony Ericsson

## FEATURES OF INDIAN TELECOM INDUSTRY

- The telecom industry is one of the fastest growing industries in India. India has nearly 200 million telephone lines making it the third largest network in the world after China and USA.
- With a growth rate of 15 percent, Indian telecom industry has the highest growth rate in the world.
- Much of the growth in Asia Pacific Wireless Telecommunication Market is spurred by the growth in demand in countries like India and China.
- India's mobile phone subscriber base is growing at a rate of 82.2 percent.
- China is the biggest market in Asia Pacific with a subscriber base of 48 percent of the total subscribers in Asia Pacific.
- Compared to that India's share in Asia Pacific mobile Phone market is 6.4 percent. Considering the fact that India and China have almost comparable populations, India's low mobile penetration offers huge scope for growth.

## OBJECTIVES OF STUDY

The present study was undertaken with the following objectives:

1. To know about the students preferences level associated with different mobile phones.
2. To know the relationship between the gender and time period of using the mobile phone.
3. To know the relationship between monthly income and spending on mobile phones.
4. To know the relationship between gender and frequency of changing the mobile phones.

## HYPOTHESIS

HO1 : there is no relation between the gender and time period of using the mobile phones.

HO2 : There is no relation between income and spending on mobile phones.

HO3 : There is no relation between gender and frequency of changing the mobile phones.

## METHODOLOGY

The Present study has been undertaken with the objective to understand the brand preferences of mobile phones among the students as variety of mobile phones are available in the market. The present study is a regional study based on primary data.

### SAMPLE DESIGN

The present study brings an empirical investigation; therefore, it deals in depth to all aspects that determine the consumer preference and attitude towards mobile phone in growing mobile phone industry. We selected the 250 student's city and H.P. University, non-randomly for the purpose of study. There are different methods of selecting the non-random sample, but we have used convenience sampling method to carry out the present study. A well designed questionnaire was prepared for obtaining the required information from the sample units. To analyze the gathered information, we used simple percentage method. To test the given hypothesis chi-square test has been used.

## RESULTS AND DISCUSSION

The present study involves the analysis of brand preference of mobile phones among the students of Shimla city. The total sample survey which consisted of 250 respondents was the actual customers of mobile phones. To study the student's preference of different brands of mobile phones the data was collected from three colleges from the city and H.P. University, Shimla.

TABLE 1: DEMOGRAPHIC FEATURES OF RESPONDENTS (N=250)

Particulars	No. of respondents	Percentage
Nokia	155	62
Samsung	6	2.4
Sony Ericson	34	13.6
LG	22	8.8
Motorola	22	8.8
Others	11	4.4
Time period of using the mobile phone	No. of respondents	Percentage
Less than 1 year	48	19.2
1-2 year	75	30
2-4 year	56	22.4
Above 4 years	71	28.4
Frequency of changing the mobile phone	No. of respondents	Percentage
Less than 1 year	59	23.6
1-2 years	88	35.2
2-4 Years	43	17.2
Above 4 Years	60	24
Particulars	No. of respondents	Percentage
Less than 10,000	142	56.8
10,000 -20,000	86	34.64
20,001 – 40,000	15	6
Any Amount	7	2.8
Particulars	No. of respondents	Percentage
Nokia	122	48.8
Samsung	43	17.2
Sony Ericson	42	16.8
LG	11	4.4
Motorola	24	9.6
I-Phone	2	0.8
Blackberry	4	1.6
Other	2	0.8

Table 1 makes it clear that out of 250 respondents 55.6 percent students were male and 44.4 percent were female. The occupation of most of the respondent's family was service, which contributes 43.6 percent followed by business 30.4 percent. Table, also makes it clear that about 40.4 percent respondent's family



income is less than Rs. 15,000 per month and there are only 14.8 percent respondent's who's monthly income is more than Rs. 35,000. Most of Parents of respondents were Post graduates and Graduates. 39.2 percent parents were post graduates ad 35.6 percent were graduates.

**TABLE 2: PREFERENCES OF MOBILE USERS REGARDING MOBILE PHONES (N=250)**

Name of the mobile Phone	No. of respondents	Percentage
Nokia	155	62
Samsung	6	2.4
Sony Ericson	34	13.6
LG	22	8.8
Motorola	22	8.8
Others	11	4.4
Total	250	100

Table 2 shows that about 62 percent respondent's have Nokia handsets followed by Sony Ericson 13.6 percent, LG and Mororola 8.8% each and Samsung 2.4 percent.

**TABLE 3: TIME PERIOD OF USING MOBILE PHONES (N=250)**

Time period of using the mobile phone	No. of respondents	Percentage
Less than 1 year	48	19.2
1-2 year	75	30
2-4 year	56	22.4
Above 4 years	71	28.4
Total	250	100

From Table 3, it clear that 30 percent respondent's are using mobile phones for 1 to 2 year, 28.4 percent are using mobile phones for more than 4 years, 22.4 percent are using for 2 to 4 years and 19.2 percent respondent's are using mobile phones for less than one year

**TABLE 4: FREQUENCY OF CHANGING MOBILE PHONES (N=250)**

Frequency of changing the mobile phone	No. of respondents	Percentage
Less than 1 year	59	23.6
1-2 years	88	35.2
2-4 Years	43	17.2
Above 4 Years	60	24
Total	250	100

About 35.2 percent respondent's claim that they change their mobile phones between 1 to 2 years, 24 percent said that they change mobile phones after 4 years and 23.6 percent said that they change the mobile phones within a period of one year and 17.2 percent respondent's are such that they change mobile phones between 2 to 4 years.

**TABLE 5: WILLINGNESS TO PAY FOR PURCHASING A MOBILE PHONE (N=250)**

Particulars	No. of respondents	Percentage
Less than 10,000	142	56.8
10,000 -20,000	86	34.64
20,001 – 40,000	15	6
Any Amount	7	2.8
Total	250	100

There are 56.8 percent respondents who do not want to spend more than Rs. 10,000 for purchasing a mobile phone, 34.64 percent are ready to spend Rs. 10,000 to 20,000 and 2.8 percent are ready to spend any amount for purchasing a mobile phone.

**TABLE 6: ADVERTISEMENT MOST LIKED BY THE RESPONDENT'S (N=250)**

Particulars	No. of respondents	Percentage
Nokia	122	48.8
Samsung	43	17.2
Sony Ericson	42	16.8
LG	11	4.4
Motorola	24	9.6
I-Phone	2	0.8
Blackberry	4	1.6
Other	2	0.8
Total	250	100

There are 48.8 percent respondents who liked the advertisement of Nokia, 17.2 percent Samsung advertisement 16.8 percent liked the Sony Ericson advertisement.

**TABLE 7: CHI-SQUARE ANALYSIS ON THE RELATIONSHIP BETWEEN GENDER AND TIME PERIOD OF USING THE MOBILE PHONE (N=250)**

Gender	Less than 1 year	1-2 years	2-4 years	Above 4 years	Total
Male	23	38	32	45	138
Female	25	36	25	26	112
Total	48	74	57	71	250

H0 : there is no significant relationship between the gender and time period of using the mobile phone.  
 Ha : there is a significant relationship between the gender and time period of using the mobile phone.

O	E	(O-E)	(O-E) <sup>2</sup>	(O-E) <sup>2</sup> /E
23	26.5	-3.5	12.25	0.46
38	40.8	-15.8	249.64	0.20
32	31.4	6.6	43.56	0.01
45	39.2	-3.2	10.24	0.86
25	21.5	10.5	110.25	0.57
36	33.2	-8.2	67.24	0.24
25	25.5	19.5	350.25	0.01
26	31.9	-5.9	34.81	1.06
		E		3.41

$$X^2 = \sum (O-E)^2 / E = 3.41$$

Number of degree of freedom = (row-1) (column-1)  
 = (2 - 1) (4 - 1)  
 = 3

Table value of X2 at 5 percent level of significant = 7.8

Thus calculated X2 is less than tabulated X2, 3.41 < 7.8. So we will accept null hypothesis that is there is no significant between gender and time period of change the mobile phones.

**TABLE 8: CHI-SQUARE ANALYSIS ON THE RELATIONSHIP BETWEEN MONTHLY INCOME AND SPENDING ON MOBILE PHONES (N=250)**

Income/Spending Amount	Less than 1000	10000 to 20000	20000 to 40000	40000 & above	Total
Less than 15000	66	27	4	4	101
15000-25000	35	23	3	0	61
25000-35000	29	20	1	2	52
35000 & above	10	18	7	1	36
Total	140	88	15	7	250

H0: There is no significant relationship between income and spending on the mobile phones.

Ha: There is a significant between the income and spending on the mobile phones.

O	E	(O-E)	(O-E)2	(O-E)2/E
66	56.56	9.44	89.11	1.58
27	35.55	-8.55	73.14	2.06
4	6.06	-2.06	4.24	0.70
4	2.83	1.17	1.37	0.49
35	34.16	0.84	0.71	0.02
2	21.47	1.53	2.33	0.11
3	3.66	-0.66	0.44	0.12
0	1.71	-1.71	2.92	1.71
29	29.12	-0.12	0.01	0.00
20	18.304	1.70	2.88	0.16
1	3.12	-2.12	4.49	1.44
2	1.456	0.54	0.30	0.20
10	30.16	-10.16	103.23	5.12
18	12.672	5.33	28.39	2.24
7	2.16	4.84	23.43	10.85
1	1.008	-0.01	0.00	0.00
			E	26.78

$$X^2 = \sum (O-E)^2 / E = 26.78$$

Number of degree of freedom = (row-1) (column-1)  
 = (4 - 1) (4 - 1)  
 = 9

Table value of X2 at 5 percent level of significant = 16.92

H0 is rejected since the calculated value of X2 (26.78) more than the table value of X2 (16.92) hence there is a significant relationship between income & spending on mobile phones.

**TABLE 9: CHI-SQUARE ANALYSIS ON THE RELATIONSHIP BETWEEN GENDER AND FREQUENCY OF CHANGING THE MOBILE PHONES (N=250)**

Gender	Less than 1 year	1-2 years	2-4 years	Above 4 years	Total
Male	38	45	23	33	139
Female	21	43	20	27	111
Total	59	88	43	60	250

H0: There is no significant relationship between income and frequency of changing the mobile phones.

Ha: There is a significant between the income and frequency of changing the mobile phones.

O	E	(O-E)	(O-E)2	(O-E)2/E
38	32.8	5.2	27.04	0.82
45	48.92	-3.92	15.37	0.31
23	23.9	-0.9	0.81	0.03
33	33.36	-0.36	0.13	0.00
21	26.2	-5.2	27.04	1.03
43	39.07	3.93	15.44	0.40
20	19.09	0.91	0.83	0.04
27	26.64	0.36	0.13	0.00
			E	2.65

$$X^2 = \sum (O-E)^2 / E = 2.65$$

Number of degree of freedom = (row-1) (column-1)  
 = (2 - 1) (4 - 1)  
 = 3

Table value of X2 at 5 percent level of significant = 7.8

H0 is accepted since the calculated value of X2 (2.65) less than the table of X2 (7.8) hence there is no significant relationship between gender and frequency of changing the mobile phones.

**CONCLUSION AND IMPLICATIONS**

At present, in Indian mobile phone industry, Nokia is the market leader followed by Sony Ericson, LG and Motorola. About 80 percent of mobile users are using mobile phones for more than a year and about 60 percent of respondents accepted that they change their mobile sets within a period of 2 years. There are 56.8 percent of respondents are such that they do not want to spend more than Rs. 10,000 for purchasing a mobile set and only 2.8 percent are ready to spend any amount for buying a mobile phone. At the same time 48.8 percent of respondents liked the Nokia advertisement.

The study also revealed that there is no relationship between the gender and time period of using the mobile phone. From the study it is evident that there is significant relationship between the income and frequency of changing the mobile phones. Lastly the study reveals that there is no relation between the gender and frequency of changing mobile phones.

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