

“AN EMPIRICAL ASSESSMENT OF SMART PHONE USAGE AMONGST STUDENTS AND PROFESSORS”

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ABSTRACT

Smart phones are becoming a more integrated and prevalent part of people's daily lives due to their highly powerful computational capabilities, such as email applications, online banking, online shopping, and bill paying.

This Research work is emphasized particularly on Smartphone usage of the students and professors of the Parul Campus located nearby Waghodia village which falls under Vadodara District in Central Gujarat. During research 200 respondents with equal stratum of the predefined quota of 50 respondents were assessed who have experience in using and owning Smartphone, using a structured questionnaire, with closed-ended questions, employing a convenient sampling technique.

The outcome of research supports the earlier research work that the students are more addicted to use smart phone than professors, it also reveals gender and preference of Smartphone are significantly dependent and the students are willing to spend more money on purchasing smart phone compare to professors. Study found that age of respondents and their level of smart phone usage Novice, Intermediate, Advanced and Expert respectively was significantly independent, and the students and professors are unaware about the safety measure like SAR (Specific Absorption Rate) and IMEI (International Mobile Equipment Identity) which shows their intermediate behavior towards Smartphone.

KEYWORDS: Apps, Novice, Specific Absorption Rate, International Mobile Equipment Identity

INTRODUCTION

Smart phones are becoming a more integrated and prevalent part of people's daily lives due to their highly powerful computational capabilities, such as email applications, online banking, online shopping, and bill paying. Thus also began the era of choosing a phone depending upon the requirements of where you worked.

From being a gadget of luxury and sophistication, Smart phones have gone on to become a broad-based phenomenon in the Indian mobile phone market. The numbers speak for themselves. Today, there are more than 27 million Smartphone users in Urban India, which constitutes 9 percent of all mobile users in Urban India. The numbers are higher in the large metros of four million plus population with one Smartphone user among ten mobile users. Interestingly, even in smaller cities with a population of one lakh to 10 lakh, the figure stands at an impressive 6 percent.

Worldwide Mobile Phone Sales to End Users by Vendor in 2013 (Thousands of Units)

Company	2013 Units	2013 Market Share (%)	2012 Units	2012 Market Share (%)
Samsung	444,444.2	24.6	384,631.2	22.0
Nokia	250,793.1	13.9	333,938.0	19.1
Apple	150,785.9	8.3	130,133.2	7.5
LG Electronics	69,024.5	3.8	58,015.9	3.3
ZTE	59,898.8	3.3	67,344.4	3.9
Huawei	53,295.1	2.9	47,288.3	2.7
TCL Communication	49,531.3	2.7	37,176.6	2.1
Lenovo	45,284.7	2.5	28,151.4	1.6
Sony Mobile Communications	37,595.7	2.1	31,394.2	1.8
Yulong	32,601.4	1.8	18,557.5	1.1
Others	613,710.0	34.0	609,544.9	34.9
Total	1,806,964.7	100.0	1,746,175.6	100.0

Source: Gartner (February 2014)

Figure 1

With a base of 27 million users (and growing), insights into how consumers across cities and towns are using their Smartphone will go a long way in helping manufacturers, marketers and advertisers make strategic decisions. No longer can marketers (across the board) ignore the potential of this medium.

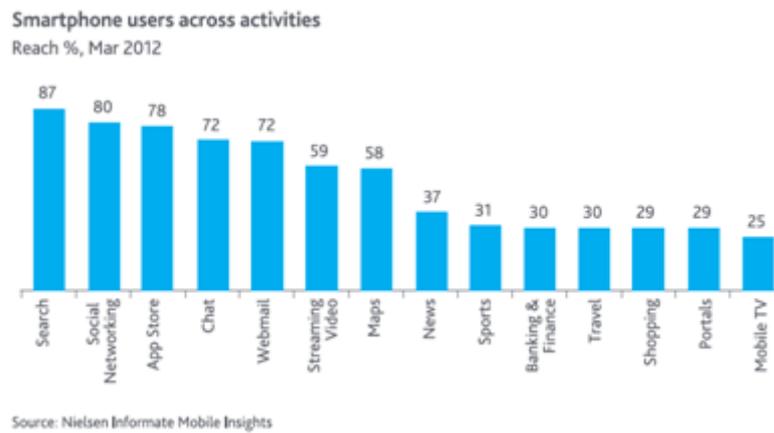


Figure 2

The usage pattern of Smart phones clearly indicates that consumer application goes beyond the basic functions of voice calling and messaging. Based on a panel of Smartphone users, Nielsen Inform ate reports that 87 percent use it for running online searches followed by 80 percent for social networking. While 72 percent Smartphone users are chatting and using webmail, 59 percent stream video and use their devices for maps and navigation. Banking & Finance, travel and shopping account for 30 percent of usage. Accessing mobile television on Smart phones is also an increasing trend in Urban India - 25 percent use their phones for this purpose.

North India leads the Smartphone adoption race From a countrywide perspective, the North zone sees the highest incidence with over one in ten owning a Smartphone. Western India follows with an eight percent incidence in the region, while it is six percent for the South & East Zones.

Greater degree of Smartphone ownership among young adults The survey has found that the highest incidence of Smartphone ownership is among young adults. In fact, the age group of 18 – 24 tops the list with over one in ten owning a Smartphone device. Further, those below the age of 18 and above 40, see ownership figures of just 5 percent. Professional post-graduates most likely to own a Smartphone another interesting finding thrown up by the study is the correlation

between Smartphone usage and education levels. The study has found that those who have completed post graduation in a professional stream are most likely to acquire and use a Smartphone. Seventeen percent fall in this category while the figure is 12 percent for those who are still in college. The figure drops to eight percent for high school students.

The gender gap nearly twice as many men own a Smartphone when compared to women. While one out of every ten men owns a Smartphone, the figure is less than half when it comes to women. However, with increasing user friendliness of operating systems and their deep integration with social networks, we could see the gap coming down in the near future. Smart phones may account for just nine percent of the urban mobile phone market but with the proliferation of apps, video content on the move and increasing dependence on social networks by users to stay ‘connected’, the Smartphone segment simply cannot be underestimated – marketers would need to reevaluate and prioritize consumer outreach media.

LITERATURE REVIEW

The Smartphone are no longer only a tool for communication but a necessary instrument of individuals social and work life. In developing countries, most people have adopted the use of mobile phones in learning processes. It is an attractive tool for communication and interpersonal relations, and has become increasingly used in an educational context. Some people tend to seem depressed, lost and isolated without their mobile phones. The aesthetic design of the BlackBerry Pearl has an impact on emotional reaction of males (Parul Nanda, Jeff Bos: 2008).

The brand name and social influence have an effect on the increasing demand for Smart phones among Malaysian students. The first is confirmed as the most influential factor, followed by the latter. The determinants of demand for Smart phones among Malaysian students’ by emphasizing the dimensions of product features, brand name, product price and social influence. Students’ demand for Smartphone is highly influenced by aspects of the brand name of the Smartphone itself and social influence from friends and family members (Norazah Mohd Suki: 2013).

Penetration, usage concentration and usage diversity indices illustrate how mobile voice has already reached the mass market and consequently relatively small differences in usage intensities among end-users exist. On the contrary, many new services such as multimedia and internet browsing still catch quite explorative instead of sustainable usage. User preferences towards emerging mobile services are more heterogeneous than towards mature services. The distribution of usage in new services is quite skewed, whereas more linear cumulative distributions can be observed with mature services (Hannu Verkasalo, 2008).

The behavioral intention to use was largely influenced by perceived usefulness (PU) and attitude toward using Smartphone. PU and perceived ease of use positively determine attitude toward using Smartphone (*Yangil Park, Jengchung V. Chen, 2007*). The diversity has significant positive effect on both perceived usefulness and perceived ease of use of Smartphone usage (*Jo-Peng Tsai, 2013*).

Moreover, the usage of Smartphone is not restricted to application downloading, surfing the web, chatting etc. The influence of the factors on the intention of the mobile internet users and non-users were different. Surprisingly, the effect of design aesthetics was not significant in all of the groups. Male users were found to be more likely to read e-books on their Smart phones, as are people with higher personal incomes (*Kuo-Lun Hsiao, 2013*).

Now a days, people use Smartphone for checking routine overall health, supported by one research that Smartphone apps are innovative channels for delivering individual health behavior changes. They offer a range of services

that can improve the daily habits of their users. Smartphone apps allow users to keep up with their diets, exercise routines, and overall health. Based on an extensive review, this paper develops a conceptual model that includes the precursors of actual usage of Smartphone apps that may assist in building healthy eating habits (*Bendegul Okumus, Anil Bilgihan, 2014*). Even though major hospitality companies offer mobile applications, more than a half of respondents responded that they had not used mobile applications from the hospitality firms. The results showed that promotion information was not an only reason to download mobile applications; however, the results also showed that consumers who enjoy using Smart phones and who are confident in themselves are more likely to download the mobile applications (Jun Mo Kwon, 2013). There are significant differences in certain mobile service and application use cases between different demographic groups (*Hannu Verkasalo, Heikki Hämmäinen, 2007*).

METHODOLOGY/APPROACH

Descriptive research design was implicated and data was collected from 200 respondents divided into four stratum containing equal respondents in each. Quota was based on qualification undergraduate, graduate, post graduate valid university students and endorsed professors working in the same college campus, who have experience in using and owning Smart phone, using a structured questionnaire, with closed-ended questions, employing a convenient sampling technique.

RESULTS

Data was analyzed using statistical tool SPSS.19. The following hypothesis was tested using non parametric tests.

Chi-Square

The sample included 200 respondents, result with $X_1 (11, N=200) = 7.171$, $p \text{ value} = 0.785$ which reveals that because of $p \text{ value}$ is greater than 0.05, it does not statistically significant. *Gender and Preference of Smartphone were significantly dependent* and the difference is not due to chance.

- $X_2 (15, N=200) = 24.134$, $p \text{ value} = .063$, which reveals that because of $p \text{ value}$ is less than 0.05, it is statistically significant. *Age of respondents and their level of smart phone usage Novice, Intermediate, Advanced and Expert respectively were significantly independent* and the difference in values are just due to chance.
- $X_3 (7, N=200) = 9.644$, $p \text{ value} = 0.210$, which reveals that because of $p \text{ value}$ is less than 0.05, it is statistically significant. *Gender and willingness of spending money while purchasing Smartphone are significantly independent* and the difference in values are just due to chance.
- $X_4 (3, N=200) = 4.792$, $p \text{ value} = 0.188$, which reveals that because of $p \text{ value}$ is less than 0.05, it is statistically significant. *Levels of Smartphone usage and Awareness about the specific absorption rate are significantly independent* and the difference in values is just due to chance.
- $X_5 (12, N=200) = 30.454$, $p \text{ value} = 0.002$, which reveals that because of $p \text{ value}$ is less than 0.05, it is statistically significant. *Levels of Smartphone usage and speed of using Smartphone are significantly independent* and the difference in values is just due to chance.

Kruskal Wallis Test

Four stratum according to qualification namely under graduate, graduate, post graduate and professors were asked to give response to the question that How many hours do you spend while using Smartphone applications. Due to question was measured using ordinal scale and having more than one population the non parametric test Kruskal Wallis can be appropriate for testing null hypothesis that the medians scores of all the categories are equal with the significant level is 5%. The descriptive statistics shows that data are not normally distributed. The power of Kruskal wallis test is that skewed data can also be analyzed. As Kruskal wallis test assumes that the distribution of the all categories under observation should be equal, the distribution of the categories are positive skewed. The Skewness of all the categories under graduate, graduate, post graduate and professors are 0.485, 0.717, 0.239 and 0.985 respectively. Results of that analysis indicated that the $K(3) = 18.213$, p value is < 0.05 reveals that medians of all the categories are not equal, which seems that the usage hours spent by each category are not equal and 9.15% variance (Chi-square value $18.213 / (200-1) = 9.15\%$) is accounted by the categories.

Limitation of the Study

The research includes data only from 200 respondents within one academic campus only. In addition, non probability sampling technique was used which limits the equal chance of respondent being selected in the sample.

CONCLUSIONS

The study reveals that though incomes of professors are high but their budget of purchasing smart phone is low whereas student's budget of purchasing smart phone is more compare to professors. While considering the gender, females are ready to spend more on smart phone compare to male. Apart from it most of the respondents prefer more Android operating system compared to IOS, Windows and Symbian. The factors like, camera resolution, screen size are most influencing while purchasing Smartphone and whereas weight and color are having least importance. Samsung brand is most preferable compared to Blackberry, HTC, LG, NOKIA and other brands. Level of Smartphone usage has no significant relations with the concern of respondents towards their mobile security. At last study also reveals that the reasons behind purchasing the Smartphone are Chatting, Music/Video and using Apps and usage hours spend by students and professors are significantly different.

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APPENDICES

Annexure

- **Personal Detail**

- Gender : Male/Female
- Level of study : Under graduation/Graduation/Post Graduation/Professors
- Smartphone Brand : iPhone/Blackberry/Samsung/Nokia/HTC/LG/Sony/Micromax
- Age : 18-21/ 22-25/26-29/30-33/34-37/38-41/41-44

- **Questions**

1. How Much are you willing to Spend While Purchasing Smart Phone?

- 5000 – 10000
- 10000 – 15000
- 15000 – 20000
- 20000 – 25000
- 25000 – 30000
- 30000 – 35000
- 35000 – 40000
- 40000 - Above

2. Operating System in Your Smart Phone

- Android
- IOS
- Windows
- Symbian

3. Level of Smartphone Usage

- Novice
- Intermediate
- Advanced
- Expert

4. Since how Long you are Using Smart Phone

- Less than 5 months
- More than 6 months to 1 year
- 1-2 Years
- 2-3 Years
- 3-4 Years
- 4-5 Years

5. Why do you Purchase Smart Phone? Rate the Following Reasons

HD: Highly Disagree, **SD:** Somewhat Disagree, **NAND:** Neither Agree Nor Disagree

SA: Somewhat Agree, **HA:** Highly Agree

Factors	HD	SD	NAND	SA	HA
	1	2	3	4	5
Trend					
Stay in Touch with Friends					
Web Surfing					
Sending/Receiving Emails					
Playing Games					
Entertainment					
Photo/Video Shooting					
Convenience in using Internet					
Multiple Functionality					

6. Rate the Following Factors According to their Influence in your Purchase Behavior

HD: Highly Disagree, **SD:** Somewhat Disagree, **NAND:** Neither Agree nor Disagree

SA: Somewhat Agree, **HA:** Highly Agree

Factors	HD	SD	NAND	SA	HA
	1	2	3	4	5
Screen Size					
Color					
Weight					
Camera Resolution					
Screen Resolution					
Internal/Extendable Memory					
Appearance					
Sound Clarity					
Inbuilt Application					
Battery Backup					
Brand					
Price					
Connectivity					
Accessories					

7. Usage Hours in a Day

	< 1 Hour	1-2	2-4	4-8	8-10	10-12
Mobile Apps						
Web Browsing						

8. Mobile Activity over Cell Phone Network

	Never	Only in Emergency	Once in a While	Frequently	All the Time
Use the web Browser					
Download Apps					
Music/Video					
Chatting					
Using Apps					
Playing Games					
Using Social Media sites					
Entertainment					
News Reading					
Instant Message					

9. Please Rate your Speed while Using Smart Phones

Much Faster	Slightly Faster	Average Speed	Slightly Low	Very Slow
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10. Rate your Ease of Usage

Much Easier	Slightly Easier	Neither Easier Nor Complex	Slightly Complex	Very Complex
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11. Do you Face any Problem while Using Smart Phone?

- Yes
- No

12. Are you Aware about IMEI? (International Mobile Equipment Identity)

- Yes
- No

13. Have you written down your IMEI Number?

- Yes
- No

14. Are you Aware about SAR Value? (Specific Absorption Rate)

- Yes
- No

15. Does your Smart Phone SAR Value Comply with Indian as Well as International Standards?

- Yes
- No

