



An Anlysis Of Various Age Group Frequencies To Access The Internet In India

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Abstract

Mobile phone is the best friend of the present generation. Mostly people use the smart phone. Smart phone cannot function without internet. So, internet is the primary requirement for the smart phone user. This paper shows the growth and frequency of internet user in India. It focuses on the frequency of access of internet usages by gender, by age group and by cause in India. This research also found that there is a huge discrimination by gender and by age group in India. Correlation, frequency, growth rate and mean analysis were done to find the effects of certain parameters which effect the growth of internet user in India. Paper analysis also finds the correlation with total internet access with face-book and social network user in India. Internet growth rate is closely linked with subscription rate through internet mode. Youth is a big market for use of internet in India.

Key words: Correlation analysis, CAGR, mean analysis, social network, Tele-density, penetration etc.

Introduction

India is second largest country followed by China in world. India is the six largest economy on the basis of GDP in the world and on the basis of Purchasing Power Parity (PPP) it is third largest economy in the world. India had the second largest internet using population followed by China in the world. Upto 2020, India had almost 700 million internet users in the nation. It very well might be extended to develop more than 974 million users by 2025. India is very fast growing economy in internet user. It is not growing only in urban areas but it is growing very fastely in rural areas also. With the access of internet user social network user will stood at 376.1 million in 2020 and it is expected to be almost 448 million in 2023. In 2023, the number of face-book users in India is relied upon to arrive at 444.2 million from 313.60 million of 2019. It is showing a consistent growth in the in the social media platform's user base in India. India is biggest Face-book user on the planet. There were around 195 million Face-book users in May 2016, against 191 million in U.S.A and 90 million in Brazil. At present near to 50 percent population is accessing social network. It is estimated that by 2025 the penetration of social networks would be 67 percent of India's population. India is number one in the user of Face-book. Looking forward we see online channels staying solid this year and taking a 45 percent share in the Indian smart phone market in 2020.

According to the report of Internet and Mobile Association of India (IAMAI), "Digital in India", March 31st, 2019, India had 504 million monthly active internet users. Out of absolute internet population, 433 million are of the age of 12 years or more and 71 million

are in the age bunch 5-11 years who access the web on gadgets of their relatives. The report likewise noticed that almost 70% of the active internet users are daily users with nine out of 10 users in metropolitan India getting to the web at least once per week.

According the research report of Nokia in 2018, mobile data usage in India jumped 144 percent (y-o-y) to 2360 peta-bytes, with average consumption per user in 4 G broadband reaching 11 (GB) gigabytes per month in Dec. 2017. Data consumption in the country continued to be driven by video, which contributed up to 65 to 75 percent of total mobile data traffic.

According to Sandhya Keelery, in the report 'Internet usages in India- Statistics & Facts' found that data usage per smart-phone per month will triple 21 EB per month (one billion GB) by 2025. On an average Indian used around 12 GB data monthly. It is highest consumption globally. It is projected that use of data by 2025 may be increased around 25 GB per month.

In 2019 more than 73 percent of India's complete web traffic came from cell phones. Simultaneously, the number of ladies who approach web is a lot of lower than men in the nation and the inclination is considerably more clear in rural India. Essentially web use is lower among more established grown-ups in the nation because of web education and innovative ability. In rural India, a sizeable part doesn't approach the web and gives an enormous occasion to growth which will add to an expansion in the overall internet population over the next few years.

Research methodology

Present study is based of secondary data. Data has been collected from TARI& Telecom Statistics India 2019. In the present paper we analysis the data through chart, mean value, growth rate, percentage methods and correlation methods etc.

HYPOTHESES

H1: Face-book User is related to Mobile Phone Internet User.

H2: Social Network User is related to Mobile Phone Internet User.

H3: Face-book User is related to Social Network User.

Correlation method, Correlation coefficient

$$r_{xy} = \frac{\sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^n (x_i - \bar{x})^2 \sum_{i=1}^n (y_i - \bar{y})^2}}$$

1. Here x_i is Mobile Phone Internet Subscribers; y_i is Face-book Subscribers. If we apply our observed values in this formula we will get 0.992 at the 0.01 levels (2-tailed).
2. Here x_i is Mobile Phone Internet Subscribers; y_i is Social Network Subscribers. If we apply our observed values in this formula we will get 0.995 at the 0.01 levels (2-tailed).
3. Here x_i is Social Network Subscribers; y_i is Face-book Subscribers. If we apply our observed values in this formula we will get 0.992 at the 0.01 levels (2-tailed).

We calculate the correlation value between various variable in this paper. Mobile Internet Subscribers, Face-book & Social Network subscribers. It also shows the same positive vale between Mobile Internet, Social Network and Face-book subscribers that means there is correlation between them.

CAGR= Compound Annual Growth Rate

$$\text{CAGR} = (\text{end}/\text{start})^{1/n} - 1$$

$$\text{CAGR} = (\text{Current Value} / \text{Base Value})^{1/n} - 1$$

n= number of years

End= Current Value

Start= Base Value

Table No-1: Number of Face book, Social Network & Mobile Internet users in India from 31st March 2015 to 31st March 2019 with a forecast until 2023 (in Millions)

Year	Face-book User	Social Network User	Mobile Internet User
2015	135.6	142.23	242.92
2016	165.57	168.10	281.81
2017	248.3	296.30	361.60
2018	281.0	326.10	390.90
2019	313.6	351.40	420.70
2020	346.2	376.10	448.20
2021	378.9	400.30	469.30
2022	411.5	422.70	486.70
2023	444.2	447.90	500.90
Mean	302.76	325.68	400.34
CAGR	14.09	13.59	8.37

Source: DOT compiled data, TARI & Telecom Statistic India 2019.

Table: 2 Correlations

		Face-book	Social net work user
Face-book	Pearson Correlation	1	.986**
	Sig. (2-tailed)		.000
	N	9	9
Social net work user	Pearson Correlation	.986**	1
	Sig. (2-tailed)	.000	
	N	9	9

** . Correlation is significant at the 0.01 level (2-tailed).

Table: 3 Correlations

		Face-book	Phone internet
Face-book	Pearson Correlation	1	.992**
	Sig. (2-tailed)		.000
	N	9	9
Phone internet	Pearson Correlation	.992**	1
	Sig. (2-tailed)	.000	
	N	9	9

** Correlation is significant at the 0.01 level (2-tailed).

Table: 4 Correlations

		Phone Internet	Social Net Work User
Phone internet	Pearson Correlation	1	.995**
	Sig. (2-tailed)		.000
	N	9	9
Social net work user	Pearson Correlation	.995**	1
	Sig. (2-tailed)	.000	
	N	9	9

** Correlation is significant at the 0.01 level (2-tailed).

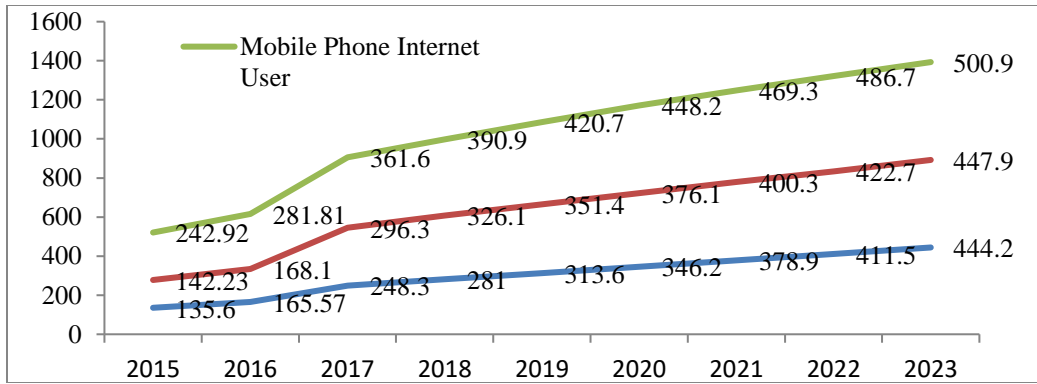
Table: 5 Correlations

		Internet User	Mobile Phone Internet User
Internet user	Pearson Correlation	1	.969**
	Sig. (2-tailed)		.000
	N	9	9
Mobile Phone Internet User	Pearson Correlation	.969**	1
	Sig. (2-tailed)	.000	
	N	9	9

** Correlation is significant at the 0.01 level (2-tailed).

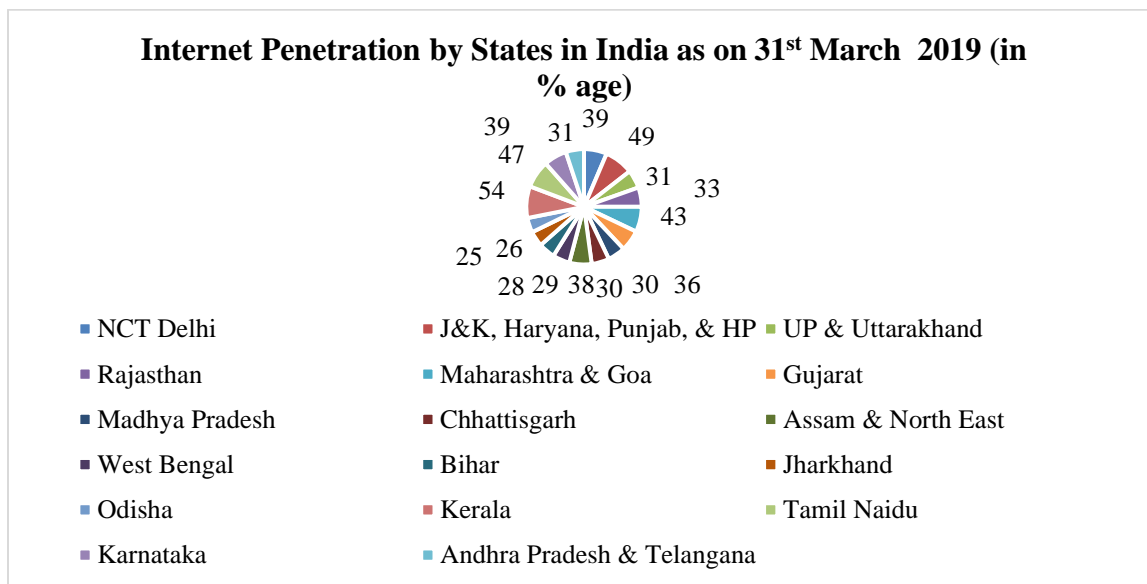
Table No 1 depicts that overall Mobile Phone Internet subscription in India is expected to grow from 11.80% yearly from 2015 to 2023. We have done correlation analysis between Internet subscription rate and face-book user and social network user in India. It has shown below is the correlation graph. Study also shows that during the study period CAGR of Number of Face book, Social Network & Mobile phone Internet users in India came 14.09%, 13.59% and 8.37% respectively.

Chart No-1: Number of Face book, Social Network & Mobile phone Internet users in India from 31st March 2015 to 31st March 2019 with a forecast until 2023 (in Millions)



Source: DOT compiled data, TARI & Telecom Statistic India 2019.
 Correlation is significant 0.986 at the 0.01 levels (2-tailed) between social network and face-book user. Correlation is significant 0.992 at the 0.01 levels (2-tailed) between face-book and internet subscription rate. Correlation is significant 0.995 at the 0.01 levels (2-tailed) between internet subscription rate and social network subscription rate.

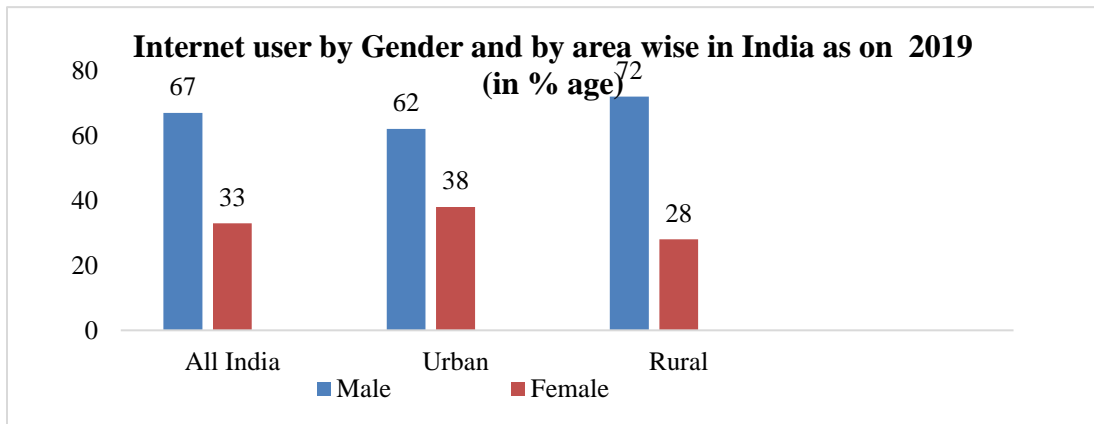
Chart No-2: Internet Penetration by States in India as on 2019 (in % age)



Source: DOT compiled data TARI & Telecom Statistic India 2019.

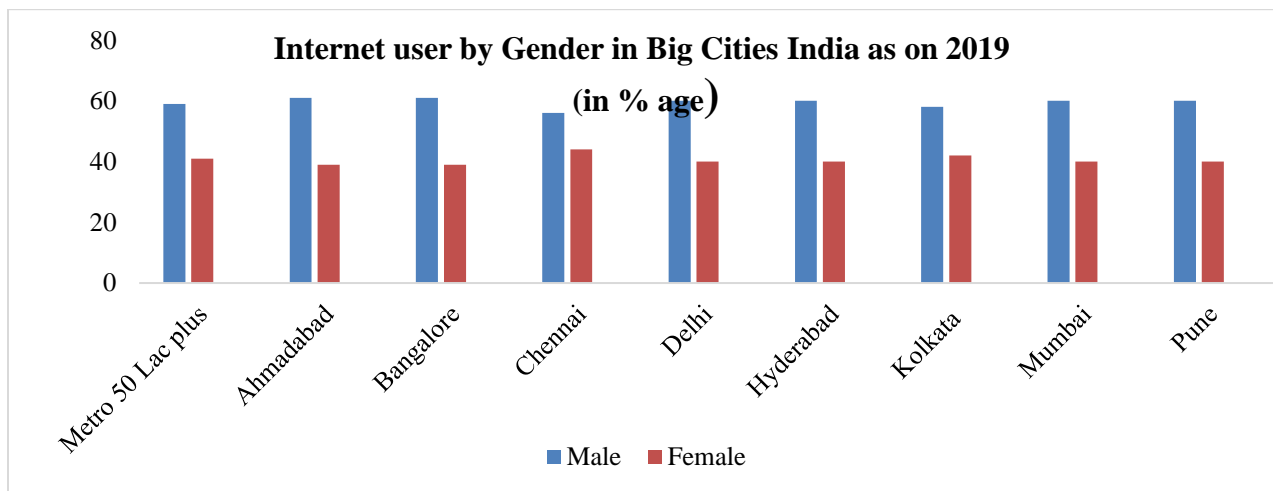
Chart No-2 depicts that on country level internet penetration rate is 36 percent that is not satisfactory. At the state level Kerala has the most elevated internet penetration (54) trailed by J&K, Haryana, Punjab, and HP (49). While Odisha has the lowest internet penetration (25) followed by Jharkhand (26). It shows that advance states have the high internet penetration and backward states have the low internet penetration in India. However, with low (36 percent) internet penetration rate in India is still much heard-room for growth.

Chart No-3: Distribution of Internet user by Gender and by area wise in India as on 2019 (in % age)



Source: DOT compiled data TARI & Telecom Statistic India 2019.

Chart No-4: Distribution of Internet user by Gender in Big Cities in India as on 2019 (in % age)



Source: DOT compiled data & Telecom Statistic India 2019.

Table No-2: Gender- wise Distribution of Internet user by Gender in India as on 2019 (in % age)

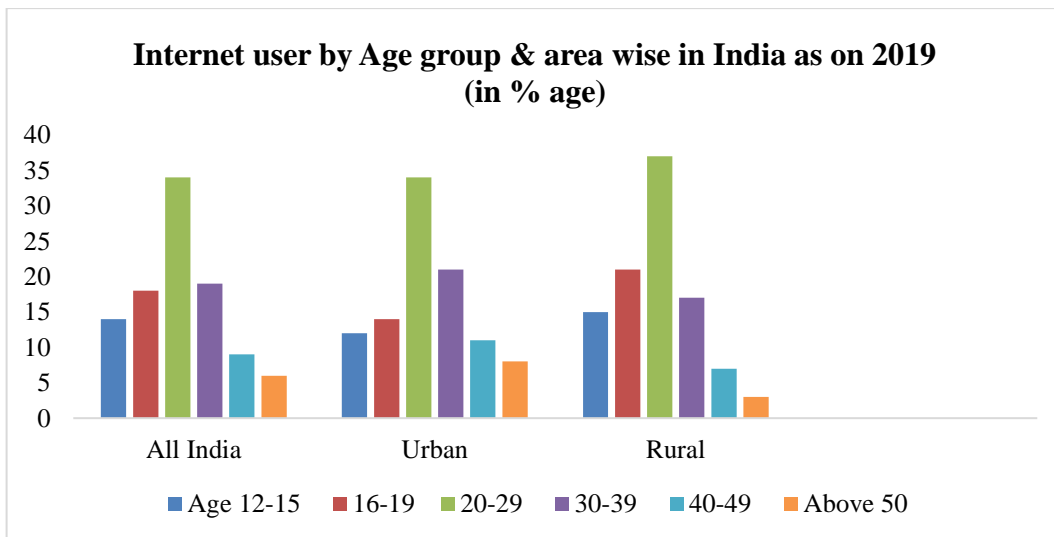
	Male	Female	Total
All India	67	33	100
Urban	62	38	100
Rural	72	28	100
Metro 50 Lac plus	59	41	100

Ahmadabad	61	39	100
Bangalore	61	39	100
Chennai	56	44	100
Delhi	60	40	100
Hyderabad	60	40	100
Kolkata	58	42	100
Mumbai	60	40	100
Pune	60	40	100
Mean	59.44	40.56	

Source: DOT compiled data, TARI & Telecom Statistic India 2019.

Table no-2 depicts that 67 percent male and 33 percent female are using the internet in India. In urban and rural area 62 & 72 percent male and 38 & 28 percent female are using internet in country respectively. The analysis shows that female internet user is half of the male internet user and it bias is more evident in rural India. Study fund that on an average 59.44 male and 40.56 female are using internet in India. It indicates that there is a huge gender disparity in internet usage in India.

Chart No-5: Distribution of Internet user by Age group in India as on Dec 2019 (in % age)



Source: DOT compiled data, TARI & Telecom Statistic India 2019.

Table No-3: Distribution of Internet user by Age group in India as on 2019 (in % age)

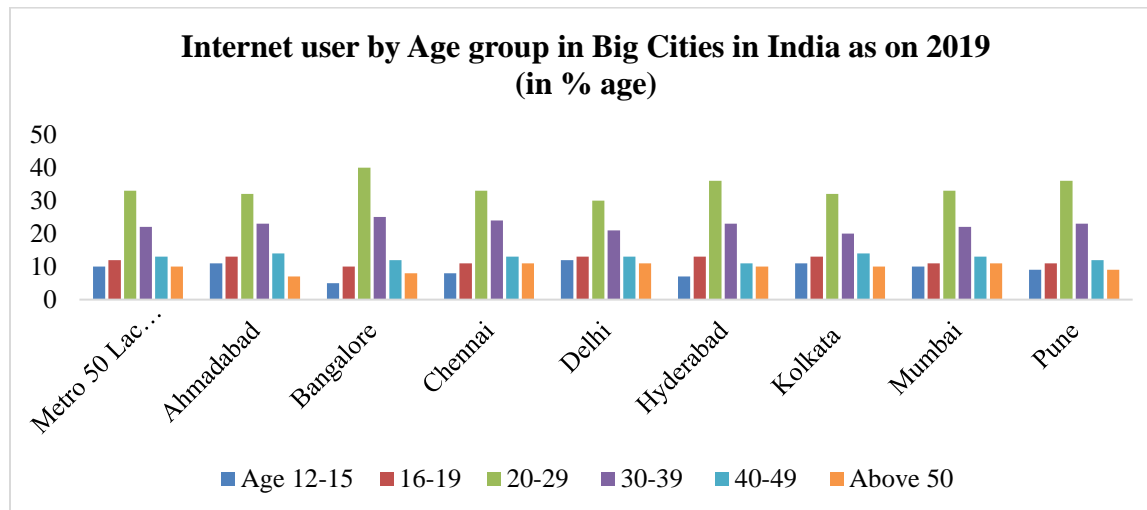
	Age 12-15	16-19	20-29	30-39	40-49	Above 50	Total
All India	14	18	34	19	9	6	100
Urban	12	14	34	21	11	8	100

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Rural	15	21	37	17	7	3	100
Metro 50 Lac plus	10	12	33	22	13	10	100
Ahmadabad	11	13	32	23	14	07	100
Bangalore	05	10	40	25	12	08	100
Chennai	08	11	33	24	13	11	100
Delhi	12	13	30	21	13	11	100
Hyderabad	07	13	36	23	11	10	100
Kolkata	11	13	32	20	14	10	100
Mumbai	10	11	33	22	13	11	100
Pune	09	11	36	23	12	09	100
Total	83	107	300	203	115	87	
Mean	9.22	11.89	33.33	22.56	12.78	9.67	

Source: DOT compiled data & Telecom Statistic India 2019.

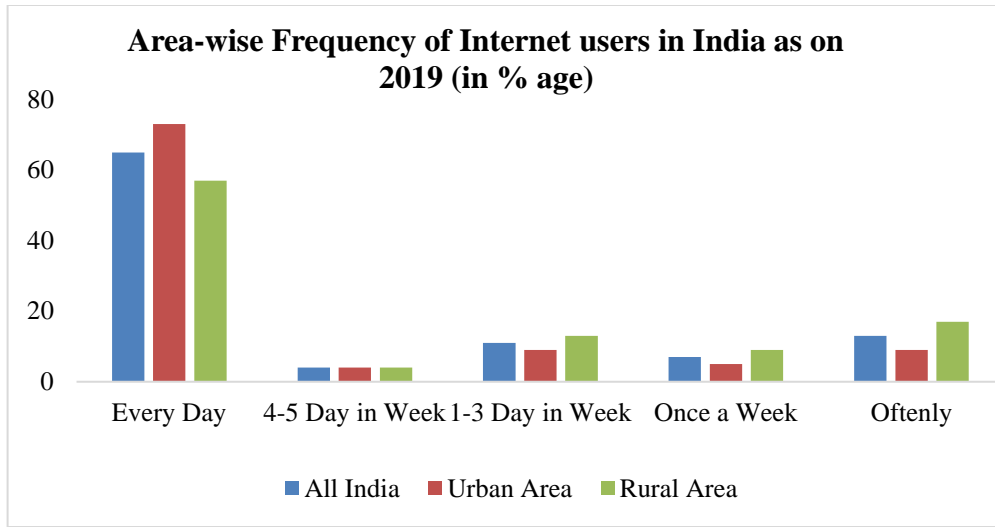
Chart No-6: Distribution of Internet user by Age group in Big Cities in India as on 2019 (in %age)



Source: DOT compiled data, TARI & Telecom Statistic India 2019.

Table no 3 shows that highest percentage (33.33) of internet user comes from the age group 20-29 years in all India, urban area and rural areas. While minimum percentage (9.22) of internet user comes from the age group 12-15 years. It shows that 2.22, 11.89, 33.33, 22.26, 12.78 and 9.67 present people who are using internet in India's comes from the age group 12-15, 16-19, 20-29, 30-39, 40-49, and above 50 years respectively.

Chart No-7: Frequency of Internet users in India as on Dec 2019 (in % age)



Source: DOT compiled data, TARI & Telecom Statistic India 2019.

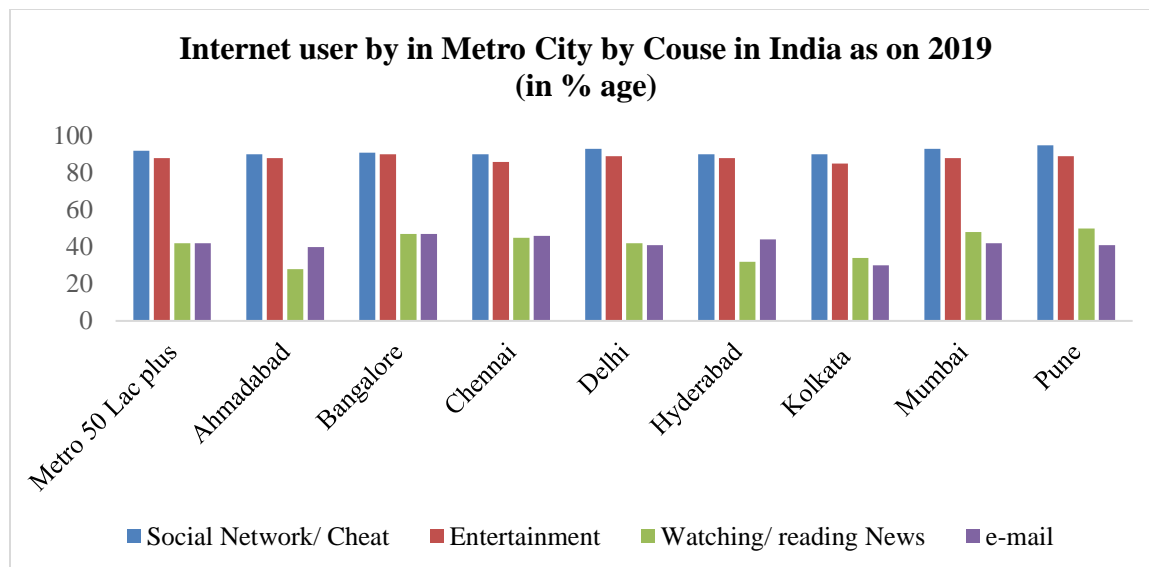
Table No-4: Area-wise Frequency of Internet users in India as on 2019 (in % age)

	Every Day	4-5 Day in Week	1-3 Day in Week	Once a Week	Less often than Once a Week	Total
All India	65	04	11	07	13	100
Urban	73	04	09	05	09	100
Rural	57	04	13	09	17	100

Source: DOT compiled data, TARI& Telecom Statistics India 2019

Table no 5 shows that 65, 73 & 57 percent internet user in 2019 belong from all India, urban and rural areas that are using internet daily basis respectively. While 4-5 days in a week internet user is 4 percent in all India, urban and rural areas. While once in a week internet user 7, 5 & 9 percent comes from the all India, urban and rural area respectively. Once in a week internet user percentage is 13, 9 & 17 percent belong from all India, urban and rural area respectively. It shows the areas disparity in India.

Chart No-8: Distribution of Internet user by in Big Cities by Cause in India as on 2019 (in % age)



Source: DOT compiled data, TARI & Telecom Statistic India 2019.

Chart no 8 depicts that in 2019 in big cities 91.56, 87.89, 40.89 and 41.44 percent people are using the internet for social cheat, entertainment, reading news and e-mail respectively.

Result and discussion

Hypothesis Testing

H1: Face-book user growth in India is related to Internet user growth.

Correlation is significant 0.992 at the 0.01 levels (2-tailed) between face-book and internet subscription rate. Correlation value shows significant correlation. Hence proving the above, stating that Face-book user growth rate is dependent of Internet growth.

H2: Social Network user growth in India is related to Internet user growth.

Correlation is significant 0.995 at the 0.01 levels (2-tailed) between internet subscription rate and social network subscription rate. Correlation value shows significant correlation. Hence proving the above, stating that Social Network user growth rate is dependent of Internet growth.

H3: Face-book user growth in India is also related to Social Network user growth.

Correlation is significant 0.986 at the 0.01 levels (2-tailed) between social network and face-book user. Correlation value shows significant correlation. Hence proving the above, stating that Social Network user growth rate is also dependent of Face-book user growth.

In view of the correlation examination done above, we have noticed significance relation between specific factors. The results show that mobile internet, face-book and social network users indicating more significance on Internet. As we discussed before in introduction, the internet facility can improve their riches and wellbeing in an appropriate manner. Anyway there is some ailing in web advancement in India. There are different reasons for not utilizing the internet service by people. The reasons are absence of information on Internet, absence of infrastructure and convictions (genuine beliefs). Majority of female can't get to web since they don't have internet connections at home. Improper electricity supply is also a main reason that makes people unable to access internet.

Conclusion

The calculated correlation value shows us significant positive correlation between Mobile Internet Subscribers and Face-book & Social Network subscribers. It also shows the same positive vale between Social Network subscribers and Face-book that means there is correlation between them. India is a very fast growing market for the latest technology offerings. It has a huge potential for internet growth. Contribution of rural population and female in rural as well as urban are very less. Demand of such people has also played vital role in the growth of Indian economy during the COVID-19 and slows down of world economy. As we have observed the upward trend in the growth of internet access rate, creating social networking application in Hindi and regional languages will enable greater growth of India. Getting the Web-series for women, special application for students and teen-ager in their mother tongue is necessary; Internet could be a driver for immense business growth. Work from Home and online teaching and online coaching classes, special apps for students and professionals also play a dominant role in the growth and frequency of internet in India. Indian government as well as IT researchers ought to perceive this as potential and they should require exertion to manufacture applications and good infrastructure to Indian population.

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