



A STUDY TO ANALYZE NEED OF CUSTOMERS IN BUYING TELECOM SERVICES (I.E. DATA PACKS) FOR WORK FROM HOME CONSIDERING COVID19 SITUATION FOR NAGPUR REGION.

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ABSTRACT This study is conducted to identify the changes in data consumption of the customers as the work from home is prioritizing due to covid19 situation. The work from home regime, which has been necessitated by the global corona virus outbreak, has forced companies to build or scale their remote working capabilities to meet the needs of a huge chunk of their workforce working from the confines of their homes. This has changed the usage of customers also the telecom services like (data packs) are needed to be changed according to customer's current WFH requirement. Hence, a questionnaire is been designed and survey is conducted with 200 respondents in Nagpur region. From which we concluded that there is a significant change in customers data consumption for work from home considering covid19 situation in Nagpur region with majority of respondents has experienced twice or more than twice the rise in their data usage.

KEYWORDS : Data Consumption, Work From Home, Data Packs

1. INTRODUCTION

- This covid19 pandemic changed the way people work, for especially those who work in the organized sectors. The majority of employees started working from home during the lockdown.
- Due to the increase in the number of employees working from home the Telecom services and the data usage demand is going to increase at much higher rate than usual. Also the data consumption by the common folks will increase which will surge the traffic on the networks.
- The change in usage will derive need to update data plans previously offered by the telcos which will be especially for work from home during the pandemic.

Today's Scenario

- Telco's like BSNL, BhartiAirtel, Vodafone Idea and Reliance Jio have come up with various work from home data plans for their customers, starting from as low as Rs 11 to encourage remote working [ETelecom, April 03, 2020].
- Reliance Jio is the only network operator that introduced a special work from home plan at Rs 251.
- Vodafone had introduced a double data benefits scheme under which three Vodafone prepaid packs now offer 3GB data per day.
- Airtel prepaid plan offering 3GB data per day costs as much as the Vodafone prepaid plan. [IndiaToday, March 24, 2020].

Research Problem

Covid19 has forced the world to adopt social distancing. This has in turn forced most companies to adopt WFH or Work from Home for their employees. Due to which data consumption rate has changes and as a researcher we have to identify the rate of change in the data consumption and how the telcos need to change their data plans/packs according to the derived work from home customer requirement.

Objective

- The main objective of this study is to identify the changes in data consumption (usage) of the customers as the work from home is prioritize due to covid19 situation.
- To study how data packs provided by the service providers need to change due to change in customer needs due to work from home during covid19.

Review Of Literature And Hypotheses Formulation

Hypothesis

- Null Hypothesis:* There is no significant change in customer's data consumption for work from home considering covid19 situation in Nagpur region.
- Alternate Hypothesis:* There is a significant change in customer's data consumption for work from home considering covid19 situation in Nagpur region.

Literature Review

The covid19 in India is a part of the worldwide pandemic of corona virus disease also known as SARS-cov-2 i.e. severe acute respiratory syndrome corona virus. On 30 January 2020, the first case of covid19 was reported in India. As of [7 June 2020] the "Ministry Of Health And Family Welfare" has conformed total of 236657 cases in India. India observed 14-hours of voluntary public curfew at instance of Prime Minister Narendra Modi on [22 March 2020] which was followed by

mandatory lockdown in all major cities and states of the country which affected day-to-day activities and more importantly the work life of entire 1.3 billion population of India.

This pandemic changed the way people work, for especially those who work in the organized sectors. The majority of employees started working from home as per [Economic Times April 30, 2020]: during the lockdown, Indian IT industry made employees "Work from Home" as per government mandate. As a result 90% of employees worked from home with 65% of them from homes in metros and rest 35%. [The Times Of India Business March 16 2020]: TATA group and WIPRO has have recommended in some cases mandated work from home for their employees in response to covid19 outbreak.

Due to the increase in the number of employees working from home the Telecom services and the data usage demand is going to increase at much higher rate than usual. Also the data consumption by the common folks will increase which will surge the traffic on the networks. In a letter to telecom secretary AnshuPrakash, COAI director general Rajan S. Mathews said because of the lockdown/quarantine measures in various parts of the country there will be a sudden surge in demand for online video streaming which is also expected to rise substantially."

In this study the data consumption of the employees (customers) who are working from home due to covid19 pandemic is identified. Also the data packs or plans are needed to change as per need during this pandemic as the usage is going to change.

Table 1: Literature Review

Sr. No.	Title of Paper/Article	Name Of Author/Report	Year of Publication	Findings
1.	Understanding COVID-19's impact on the telecom sector	DELOITTE	April 02, 2020	Network usage is skyrocketing with many telcos reporting large spikes. Operators around the world are increasing capacity by borrowing spectrum from competitors.
2.	Work from home data plans by Reliance Jio, Vodafone Idea, Airtel.	ETtelecom	April 03, 2020	Telcos like BSNL, BhartiAirtel, Vodafone Idea and Reliance Jio have come up with various work from home data plans for their customers, starting from as low as Rs 11 to encourage remote working amid the Covid-19 or corona virus pandemic, which led to a country-wide imposed lockdown.

3.	Corona virus lockdown: Work from home boosted employee productivity in customer service, finance segments.	DELOITTE	April 29, 2020	As businesses respond to the crisis, there is significant learning as organizations switched literally overnight to the new way of work. They moved their entire workforce to a remote work model to maintain social distancing norms.
4.	In a letter to telecom secretary AnshuPrakash .	COAI director general Rajan S. Mathews	March 26,2020	“Due to the lockdown/quarantine measures in various parts of the country, a sudden surge in demand for online video streaming is also expected to rise substantially.”

3. Research Methodology
Method of data collection

As it is the primary research, we collect the data within the Nagpur region with 200 respondents by using the questionnaire survey method.

Software used
Excel, SPSS.

Tools/techniques used & Interpretation

We have used the paired sample T-test to analyze the rate of change of data consumption (before the work from home regime and after the work from home regime). The paired sample *t*-test, sometimes called the dependent sample *t*-test, is a statistical procedure used to determine whether the mean difference between two sets of observations is zero.

Like many statistical procedures, the paired sample *t*-test has two competing hypotheses, the null hypothesis and the alternative hypothesis. The null hypothesis assumes that the true mean difference between the paired samples is zero and the alternative hypothesis assumes that the true mean difference between the paired samples is not equal to zero.

In a paired sample *t*-test, the observations are defined as the differences between two sets of values, and each assumption refers to these differences, not the original data values.

4. Data Analysis, Interpretation And Hypotheses Testing

Data Analysis

Table2: Demographic data

Demographics		No. of Respondents	Percentage (%)
Occupation	Student	114	57%
	Employed professional	79	39.5%
	Business	7	3.5%

To analyze if there is a significant change or difference in need of consumers for the telecom services i.e. (data packs) considering the work from home situation arise due to covid19, for Nagpur region.

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T-Test

[DataSet1]

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1. earlier data code	1.93	200	1.077	.078
OS code	2.08	200	1.112	.079

Paired Samples Correlations

Pair 1	earlier data code & OS code	N	Correlation	Sig.
Pair 1	earlier data code & OS code	200	.373	.000

Paired Samples Test

Pair 1	earlier data code - OS code	Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	earlier data code - OS code	-.175	1.228	.087	-.348	-.004	-2.018	199	.045

Figure 1: Paired T-Test

To prove the following

- *Null Hypothesis:* There is no significant change in customer's data consumption for work from home considering covid19 situation in Nagpur region.
- *Alternate Hypothesis:* There is a significant change in customer's data consumption for work from home considering covid19 situation in Nagpur region.

As we have taken 95% confidence level for the two-tail test:

- If level of significance is greater than 0.05, we will accept the null hypothesis.
- If level of significance is less than 0.05, we will reject the null hypothesis that is we will accept the alternate hypothesis.

So it is proven that there is a significant change in need of customers in buying data packs for work from home considering covid19 situation in Nagpur region as the level of significance is **0.045** i.e. less than 0.05 (**LOS<0.05**).

5. Results And Discussions – Findings, Conclusions And Suggestions
Findings

We have taken response from 200 respondents, when asked if there data consumption has changed or not due to work from home **88% i.e. (176 out of 200)** responded with a yes.

5. Does your data consumption on internet have changed due to work from home?
200 responses

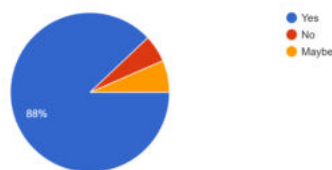


Figure 2: Change in Data consumption on internet

Also the majority **93% i.e. (186)** of the respondents experience the **increase in data consumption** due to work from home regime forced because of covid19 out-break.

6. What impact you have observed?
200 responses

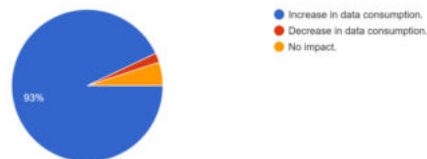


Figure 3: Impact observed

And the rate of change of data consumption (increase in data consumption) which is also proven by the T-test analysis of the respondent's data, with majority thinks that there consumption of data after the work from home regime increased at **twice rate** compared to previous working schedule.

14. At what rate do you think your data consumption has increased?
197 responses

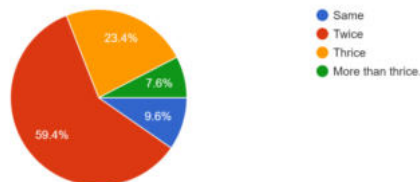


Figure 4: Increase in rate of data consumption

Our finding also shows what the consumers expect from the Telco's

- To increase per day internet data in existing plan.
- To device separate work from home plan.
- To announce special internet offers in wake of the corona virus lockdown.
- To provide data only recharge plans (No calls and message facility).
- To double the date the company earlier used to provide at same price.

- To provide free internet up to some GB.

Where **69.5% i.e. 139** respondents check the (To increase per day internet data in existing plan), followed by **64.5% i.e.129** respondents for (To announce special internet offers in wake of the corona virus lockdown), **52.5% i.e. 105** for (To device separate work from home plan).

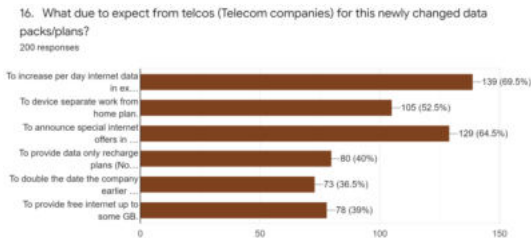


Figure5: Expectation from newly changed data packs/plans

Some unique suggestions from the respondents to Telco's

- To have application specific internet speed.
- Need to find a way by which we can use a defined amount of data for a day in case we didn't use that data, we should be able to use that in the predefined validity period.
- There should be more options in data only packs as many people actually prefer calling over internet connection.

DISCUSSION

This research was carried out to analyze need of customers in buying telecom services (Data Packs) for work from home considering covid19 situation for Nagpur region. In this research we also study how usage of customers has changed due to work from home. Earlier customers (i.e. employees) used to go working in the offices. But nowadays due to covid19 pandemic employees are forced to work from home while keeping social distancing in check so customers data consumption need at home has changed and customers also feel there is the need to change the existing data packs. So we analyzed if there is a significant change or difference in need of consumers for the telecom services i.e. (data packs) considering the work from home situation arise due to covid19, for Nagpur region. The majority **93% i.e. (186)** of the respondents experience the **increase in data consumption** due to work from home regime forced because of covid19 out-break. In this research, we concluded that a significant change in need of customers in buying data packs for work from home considering covid19 situation in Nagpur region. Nowadays Telco's are launching special work from home data packs to satisfy the customers changed needs also they are making changes in their existing data packs.

Limitation

- This study is limited to consumers in Nagpur region only.
- We have only considered the employees that are working from home.
- We have not considered the customers who are not working but still spending more time on internet and there data consumption has changed due to pandemic.

Suggestions & Future Scope

In this research paper we took random 200 respondents who are working from home from the Nagpur region, in future we can do this study for the particular state or also the country instead of just Nagpur city. This will provide more incite for the Telco's as their service is nationwide.

Also this study is conducted while considering pre-covid19 pandemic and during covid19 pandemic times so we can also further extend the study finding for post pandemic (pre, during and post pandemic).

We have only taken into consideration the employees who are working from home but we have not considered the customers who are also consuming more data on other stuff (i.e. entertainment, fitness sessions etc). In future this group of respondent's data can also be of use to Telco's.

CONCLUSION

Covid19 has forced the world to adopt social distancing. This has in turn forced most companies to adopt WFH or work from home for their employees due to which data consumption rate has changes.

From the responses given by the 200 respondents in a survey taken for

this research paper, we have seen that 88% of respondents have experience definite change in their data consumption with 93% felt increase in data consumption.

Online questionnaire helped us gather various responses from the respondents and their data usage before pandemic and during this pandemic. With the help of responses we concluded that there is a significant change in need of customers in buying data packs for work from home considering covid19 situation in Nagpur region with majority of respondents has experienced twice or more than twice the rise in their data usage.

Respondents also feel that there should be change in existing data packs provided by the service providers to cope up with the changed need due to this pandemic.

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