

# NETWORK STRENGTH COMPARISON BY REGION

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## ABSTRACT

This paper gives an overview of Network Comparison and its Security. Security measures taken on different protocols, standards, techniques and systems are discussed in this paper. A brief introduction about the security and the protocols are also given. For visualisation, we have used Power BI for the comparison of datasets. We have compared the network speeds of airtel, Jio, Vodafone and idea. Airtel is the fastest network in India, and the number 1 network in India is Reliance Jio. Reliance Jio topped the 4G speed chart with data download rate of 20.8 megabit per second (Mbps), while Vodafone was ahead of others in upload speed at 6.5 Mbps in November, according to the latest data update of telecom regulator Trai. Jio recorded more than double the download speed of its closest competitor Vodafone. Vodafone recorded download speed of 9.8 Mbps in November, according to Trai's data updated on December 10. It was followed by Idea and Bharti Airtel with download speed of 8.8 Mbps and 8 Mbps, respectively. Although airtel is the fastest 4G network in India, majority of the people subscribe to Reliance Jio network because of its affordable and cheap data plans with long day plan validity.

**KEYWORDS:** Network Comparison, Network analysis, Power BI analysis, Prediction of better Network. BI with Internet

## I. INTRODUCTION

Power BI is a Data Visualization and Business Intelligence tool that converts data from different data sources to interactive dashboards and BI reports[1]. It's useful to give any huge data in simple and understandable form. Thus, nowadays power bi helps to create an attractive report. Network, which means more than one computer is connected to share and exchange files. The network to the computer can be linked through cables, telephone and infrared rays. There are many networks like Airtel, Jio, and etc. It helps to transfer information to any computers and data can be extracted from google.

## II. PROBLEM STATEMENT

Network strength and network responsibility square measure are the two major considerations of this generation of mobile network users in Asian countries. Over the past decade, the country has seen a sharp increase of mobile network users. Majority of the population has upgraded to 4G technology. This survey aims to provide a comparison that is informative from the user's point of view. This paper gives a survey of comparison between 2 of the foremost vital 4G providers in Asian country i.e. Bharti Airtel and Reliance Jio, based mobile application - internet speed [2] at intervals in the southern region of India.

## III. METHODOLOGY PROPOSED

India has the second largest variety of telecommunications networks in the world comprising of 8 billion subscribers. A significant portion of the market is shared by Airtel, Vodafone and Reliance Jio. One-half of the overall users is shared by between Airtel (29.8 percent) and Jio (19.6 percent). The stylish ways and quality of service that Airtel provided were one among the various reasons for its longevity within the Indian market. By providing high-speed 4G property and unlimited voice calls exploitation phonation net Protocol (VoIP) technology, it forced its competitors to rethink their approach to the Indian Telecommunication market

### 3.1 DATASET

This solution can be taken out with the exact data speed of different networks in a particular region. This dataset contains data type, region, data speed and network names. The data set is fully checked and the duplicate values are removed. This data set clearly explains the network's strength and service providers. Power BI helps to visualise the high level data in simple charts and plots. Network strength in each region is collected through surveys and a database is created accordingly. Power Business Intelligence tool is used for predicting the future trends in the network field.

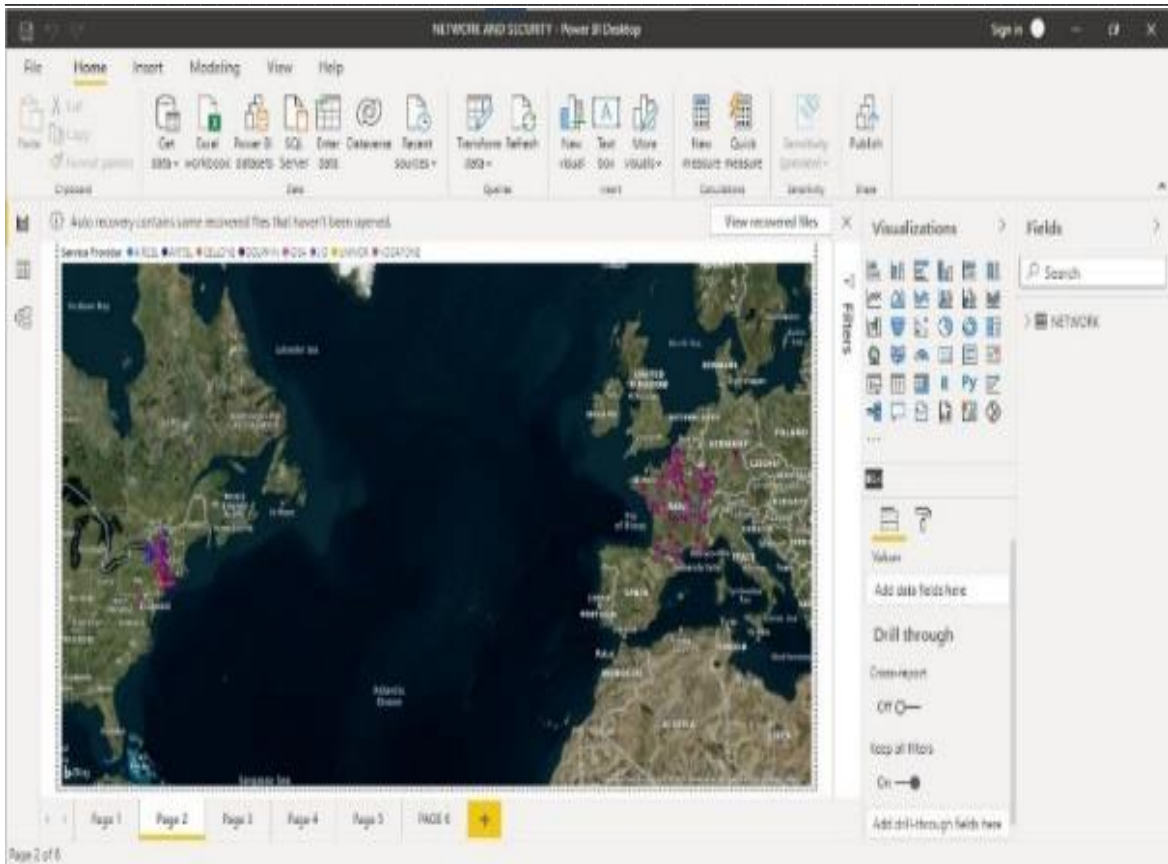


Fig 1. Network's Region visualised Power BI[3]

Power BI exposes the network Strength in particular areas which can give a clear idea of why data speed is more or less in some regions.

### 3.2 NETWORK COMPARISON BY STRENGTH

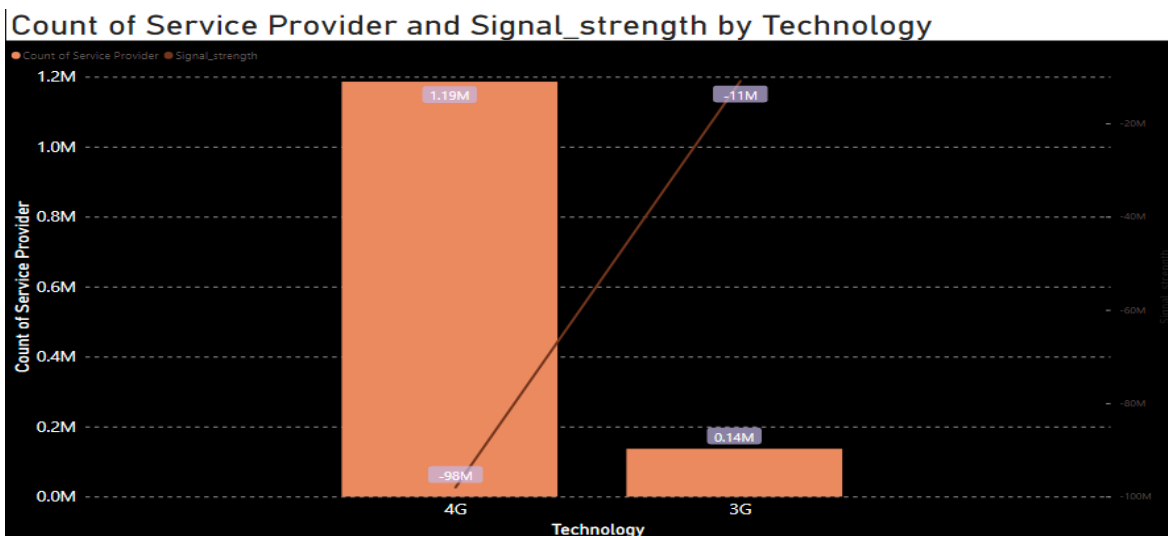


Fig 2. Service Provider and Signal Strength

It visualised the graph using Power BI tool which gives the clear idea about the total count of service providers and the signal strength with technology (technology here refers to 3G and 4G networks). This survey clearly shows that most of the service providers provide 4G as majority technology because of its speed than 3G technology. 4G is better than 3G because of the following reasons: 4G can reach a speed of 50 mbps which is 10 times faster

than 3G. The download speed of 4G is consistent whereas in 3G it takes over time. 4G technology supports high-definition mobile TV, video conferencing and much more. From the above visualization we can infer two things, 4G is preferred by more users because of its above features and most of the service providers provide 4G technology.

### 3.3 NETWORK COMPARISON BY REGION

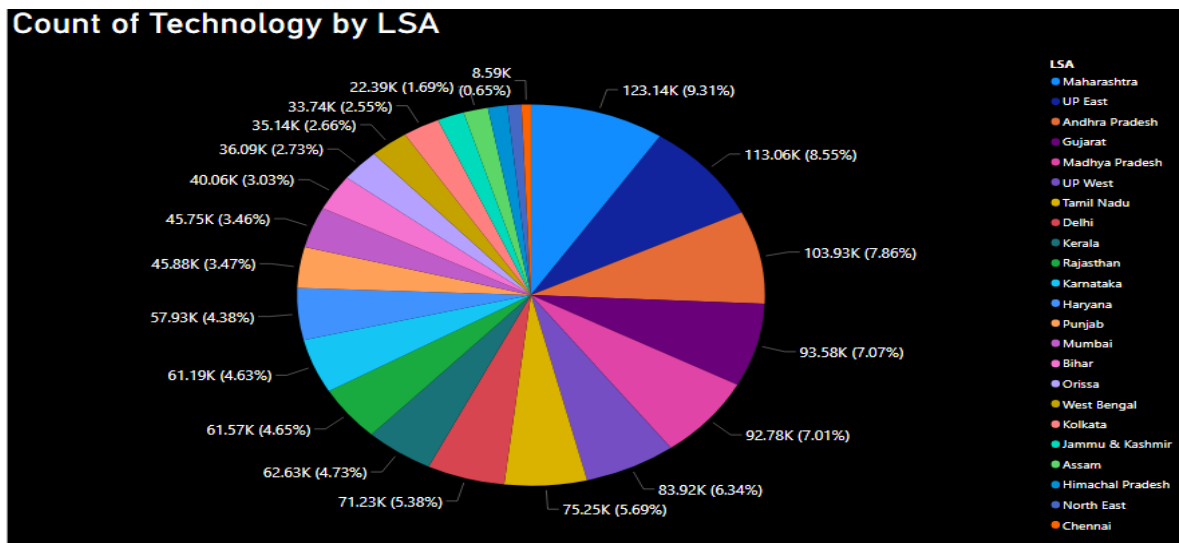


Fig 3. Region wise network data's

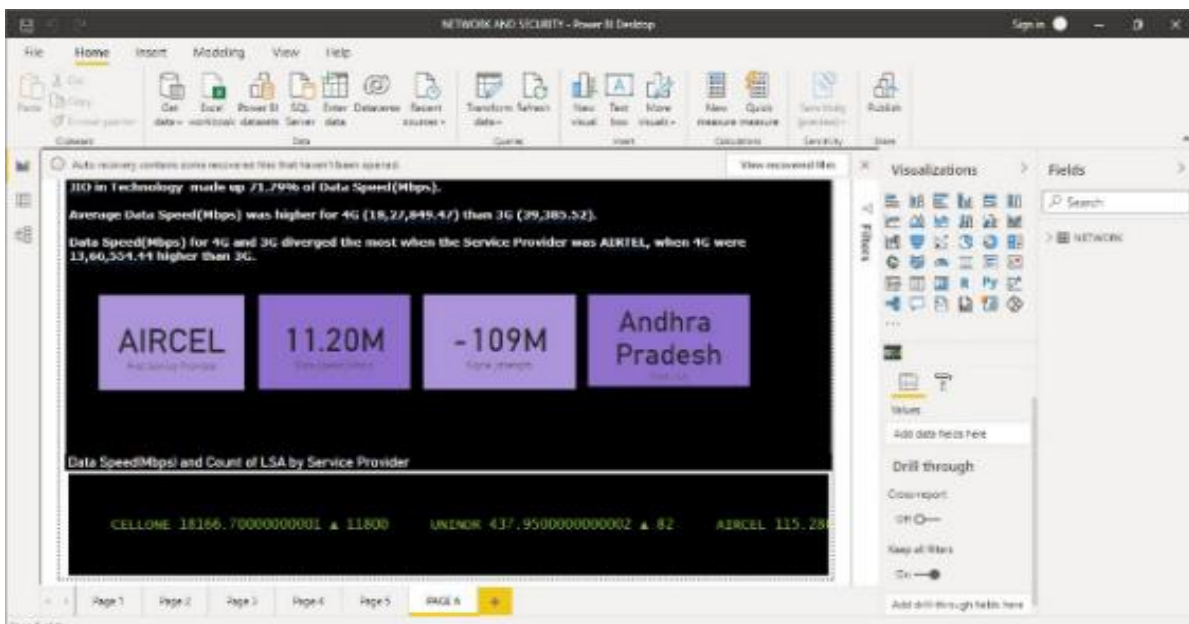


Fig 4. Network Analysis

We have visualised and analysed the above chart using a power BI tool which gives the region wise information about the most preferred technology and most preferred service provider. Andhra Pradesh is the state which prefer the Aircel service provider most. Though Jio provides the high speed data and great deals most of the people prefer Airtel. This is because airtel has a download speed of 13.58Mbps and average upload speed of 4.15Mbps whereas for Jio the download speed is 9.71Mbps and the 3.41Mbps upload speeds. Because of this the Airtel 4G is the most preferred network in many regions. One-half of the overall users is shared between Airtel (29.8 percent) and Jio (19.6 percent). The stylish ways and quality of service that Airtel provided were one among the various reasons for its longevity within the Indian market.

#### IV. CONCLUSION

Using the present survey we have observed that data speeds of JIO are higher for both 3G and 4G compared to AIRTEL as shown in the following table.

ISP	3G	4G
JIO	39,385.52 Mbps	18,27,849.47 Mbps
AIRTEL	28,948.23 Mbps	13,66,554.44 Mbps

It is observed that JIO and AIRTEL most sought service providers than the others. Among the JIO and Airtel many users still prefer AIRTEL due to its popularity.

In future there is a chance of using high frequency network but it could harm birds and even human brain cells. So, we have to choose a network which has lower frequency level.

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