DATA ANALYTICS AND VISUALISATION

SGST VAT FRAUD, RAJASTHAN

DASHBOARD CREATION USING TABLEAU

Introduction

Goods and Services Tax (GST) is an indirect tax or consumption tax imposed in India on the supply of goods and services. It is a comprehensive multistage, destination based tax. The tax came into effect from July 1, 2017 through the implementation of One Hundred and First Amendment of the Constitution of India by the Indian government. The tax replaced existing multiple flowing taxes levied by the central and state governments.

What is Input Tax Credit under GST?

When you buy raw materials as inputs to create and sell your product, you pay tax on the material or input. So when you are required to pay tax on the finished good or output, you can take the deduction of the tax that you have already paid on such inward materials and just pay the balance as the net tax liability.

Input tax credit can be explained as follows:

Suppose you are a manufacturer: you produce product A, for which you need materials say B and C. When you purchase material B and C, the price which you paid will include taxes. When you manufacture and sell your final product A, the taxes paid while purchasing B and C, can be claimed as a credit. This is input tax credit claimed. The taxes paid to the govt on account of sale of product A is output tax.

Tax payable on Final Product is Rs 100

Tax paid on input is Rs 50

You can claim INPUT CREDIT of Rs 50 and you only need to pay to the government only the balance which is Rs 50 as output tax.

Fraud in claiming the SGST ITC

Input tax credit is an option in the GST which allows taxpayers to claim credit for the taxes paid on purchase. Many people started exploiting the loophole, wherein the government was paying the amount without verification, by overstating the SGST ITC amount. According to the report, traders buy fake bills which enable them to claim input tax credit on the supply which never happened. The GST-Intelligence Unit, unearthed a racket which used fake bills to claim input tax credit worth Rs 450 crore.

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About

I will be creating a dashboard to highlight important aspects and trends in the data given related to the SGST VAT Fraud, in the state of Rajasthan.

Dataset Received

I was given the subset of the original data being collected by the State, pertaining to the amount being claimed by the dealers as the SGST ITC. Since the data was sensitive and confidential, certain fields were masked to avoid any misuse. It's well structured in the form of relational table. The dataset had 5654 records, with 11 fields, including TIN, GSTN of the dealer, SGST ITC claimed, RCO VAT Paid, Difference in ITC Claimed, Zone, Circle, Ward etc.

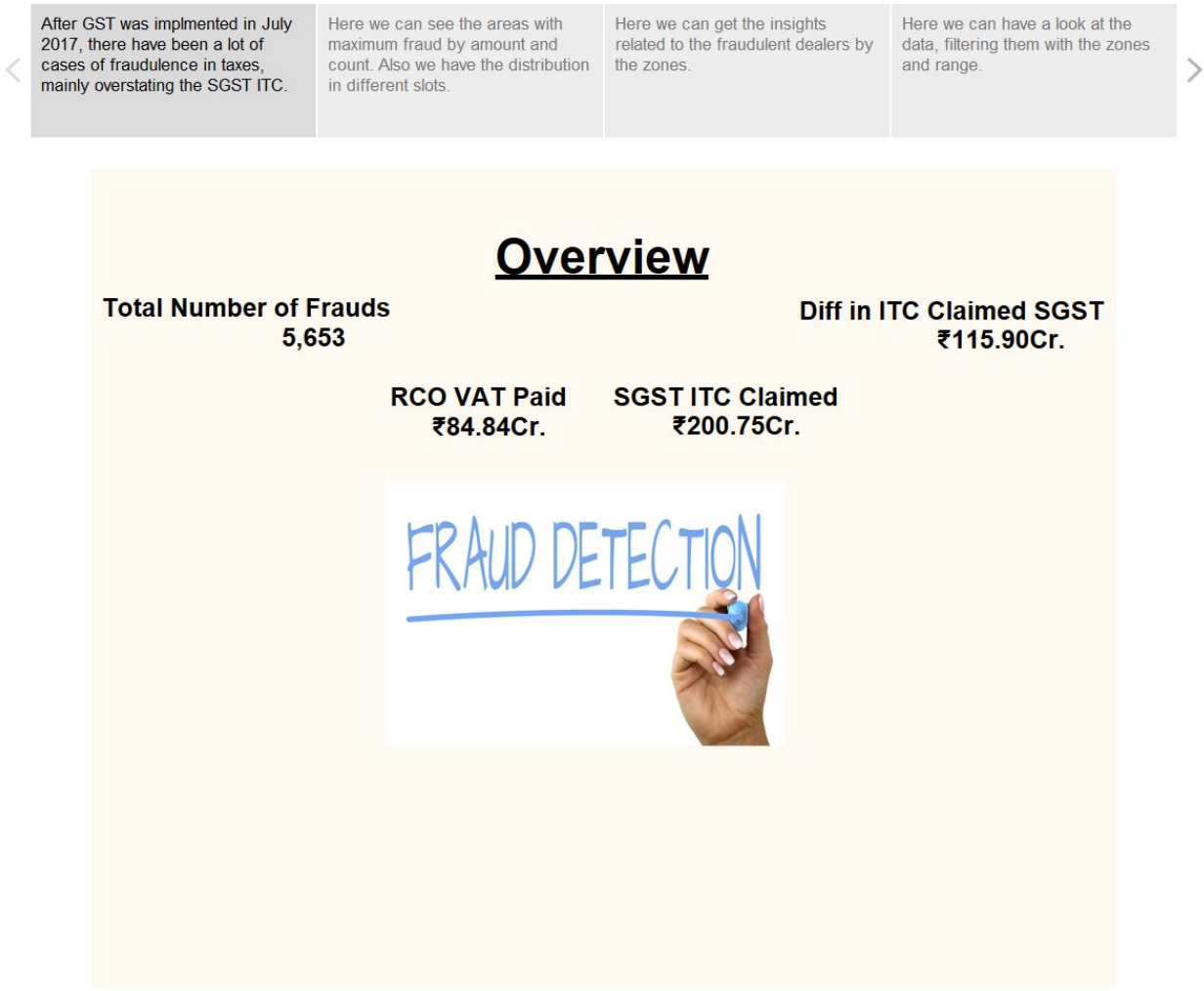
Software Used

I will be using Tableau, which is an advanced data analytics and visualisation software. This sophisticated software is a third party tool and allows the quick creation of highly interactive dashboards. Tableau queries relational databases, online analytical processing cubes, cloud databases, and spreadsheets to generate graph-type data visualizations. It can also extract, store, and retrieve data from an in-memory data engine. In 2008, Tableau was named a Codie award winner for "Best Business Intelligence Solution" by the Software and Information Industry Association.

Dashboard

Since the data in the provided dataset was quite diverse and multidimensional, I made use of a different type of graphs, charts and maps. I also made a story using different dashboards to highlight varied aspects of the data for better visualisation and readability.

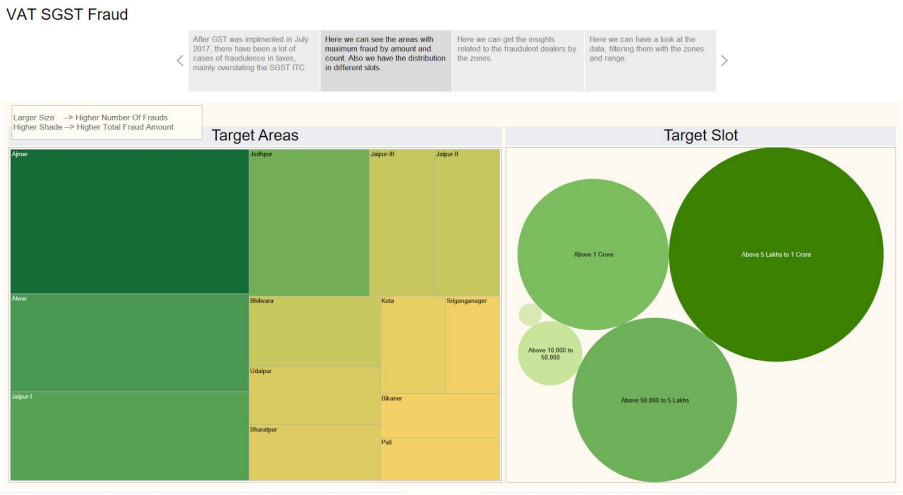
- Firstly to highlight the overview, I made a short summary of the entire data, showing the total count of the frauds, the amount to be recovered by the state etc. I choose simple text tables to keep things minimal. I also added an image to make it more appealing.



- For the second dashboard, I focused on the areas which can be targeted by the government, for speedy and efficient recovery of the revenue. For this I made use of this powerful mapping technique called the tree maps and the packed bubbles.

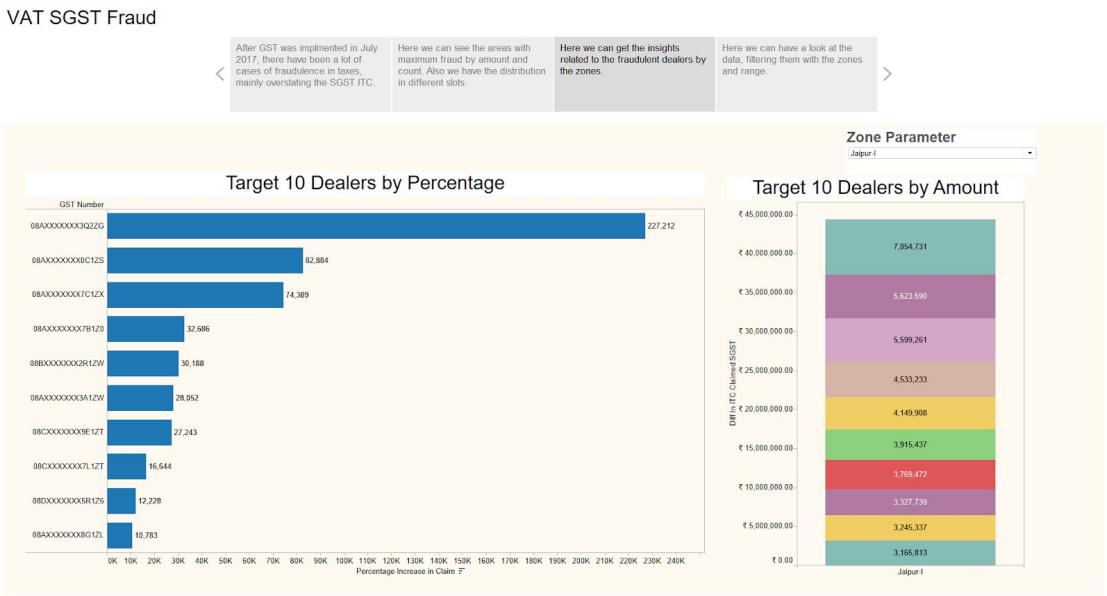
  Tree maps showed various zones in the State as boxes, whose size was proportional to the count of dealers committing the fraud. Colour gradient was used to indicate the amount that has to be collected.

  Packed bubbles were used to indicate the range in which most number of frauds were committed. Both the maps were linked to allow cross-filtering, for better understanding the situation. This can allow the State to take more informed decisions.

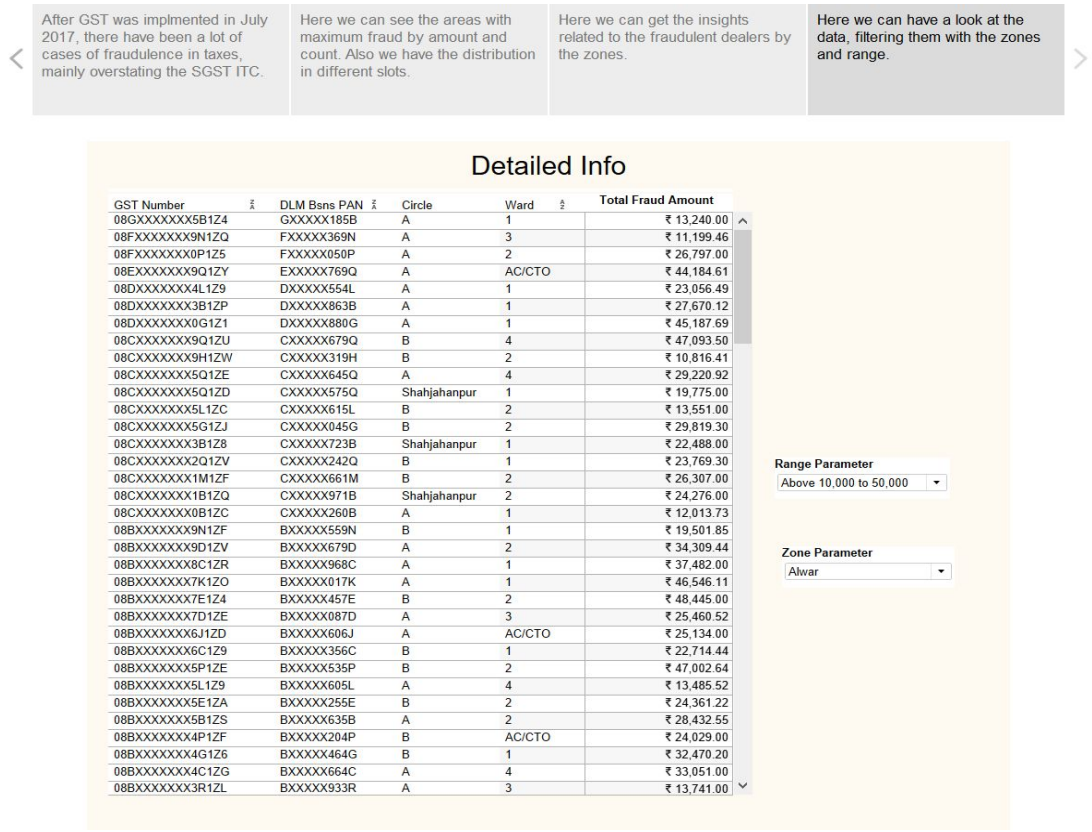


- In the third dashboard, I focused on the dealers that can be targeted by the State. I tried to focus on the dealers, initially by filtering them with respect to different zones. Then I analysed them from two aspects. First by the absolute difference in ITC claimed by any dealer. Second by the percentage increase in the claim with respect to the RCO VAT paid by them.

  I displayed the information of the top ten dealers in any zone, with respect to both aspects. I used horizontal bars to display the top 10 dealers with the maximum difference in ITC claimed and stacked bars for the ones with maximum increase in ITC claim.



- Finally, in the last dashboard I've given the user the flexibility to get the information of various dealers, filtering them by zones and the range on which their ITC claimed falls. I have created text tables to display the information, and used two parameters to impose the filters.



Conclusion

So using the data set provided and using the advanced tool Tableau, I created the dashboard for better visualisation of the data. This allows any end user to easily understand the case. This can also be used as a tool by the State to take better and informed decisions, and make targeted recovery.