INTRODUCTION

1.1 OVERVIEW

We analyze the global structure of the worldwide air transportation network, a critical infrastructure with an enormous impact on local, national, and international economies. We find that the worldwide air transportation network is a scale-free small-world network. In contrast to the prediction of scale-free network models, however, we find that the most connected cities are not necessarily the most central, resulting in anomalous values of the centrality. We demonstrate that these anomalies arise because of the multi community structure of the network. We identify the communities in the air transportation network and show that the community structure cannot be explained solely based on geographical constraints and that geopolitical considerations have to be taken into account. We identify each city's global role based on its pattern of intercommunity and intracommunity connections, which enables us to obtain scale-specific representations of the network.

1.2 PURPOSE

Air transport is one of the fastest modes of travel. Aeroplanes can carry people, mail and lightweight goods to distant places in the shortest time possible. They also prove to be extremely useful during the times of natural calamities, wars and other emergencies.

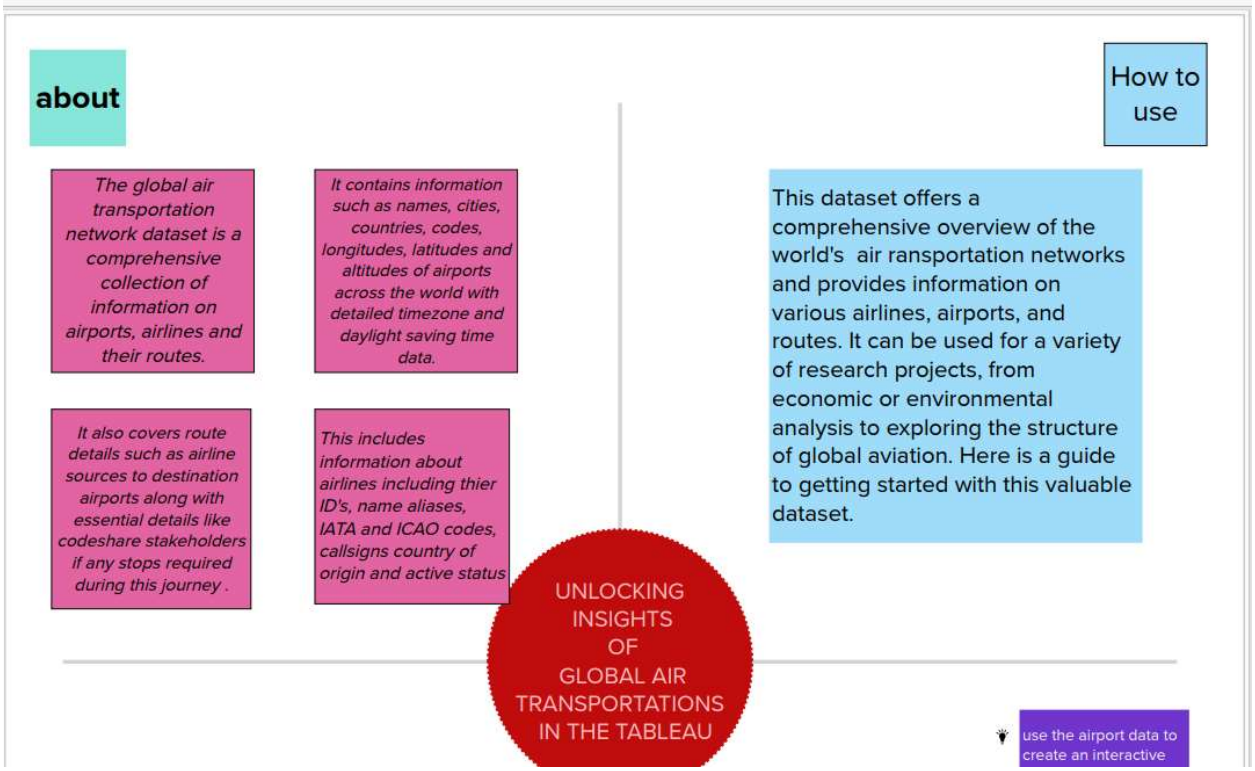
By facilitating tourism and trade, it generates economic growth, provides jobs, increases revenues from taxes, and fosters the conservation of protected areas.

. air travel contributes to increasing consumer benefits and choices, creating jobs, and generating numerous socio-economic benefits. Aviation supports USD 2.7 trillion in global economic activity and 65.5 million jobs.

Defence: Airways help to monitor the long borders of India. They help to transport ration and soldiers to borders and other remote locations in times of wars and other emergencies. Hence, they play an important role in ensuring defence of the country.

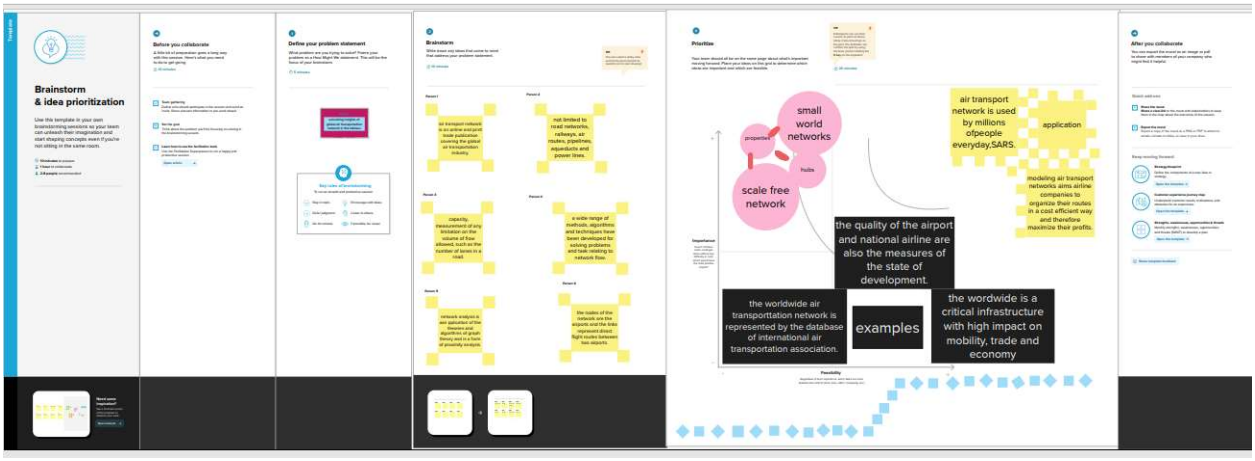
PROBLEM DEFINITION & DESIGN THINKING

2.1 EMPATHY MAP

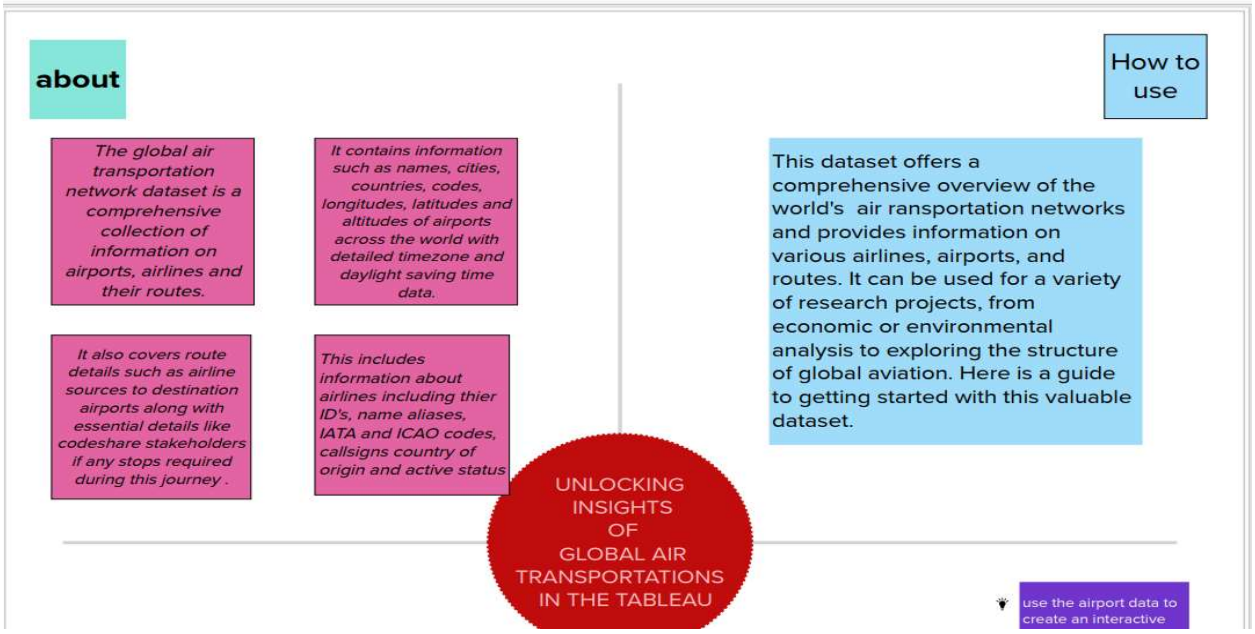


2.2 IDEATION & BRAINSTROMING MAP

GLO AL AIR TRANORTATION



RESULT



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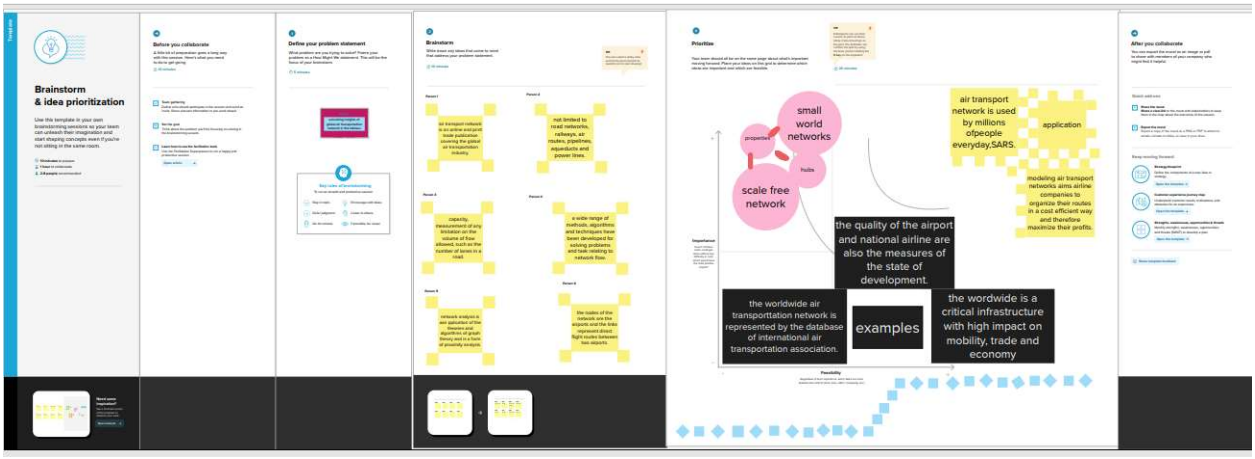

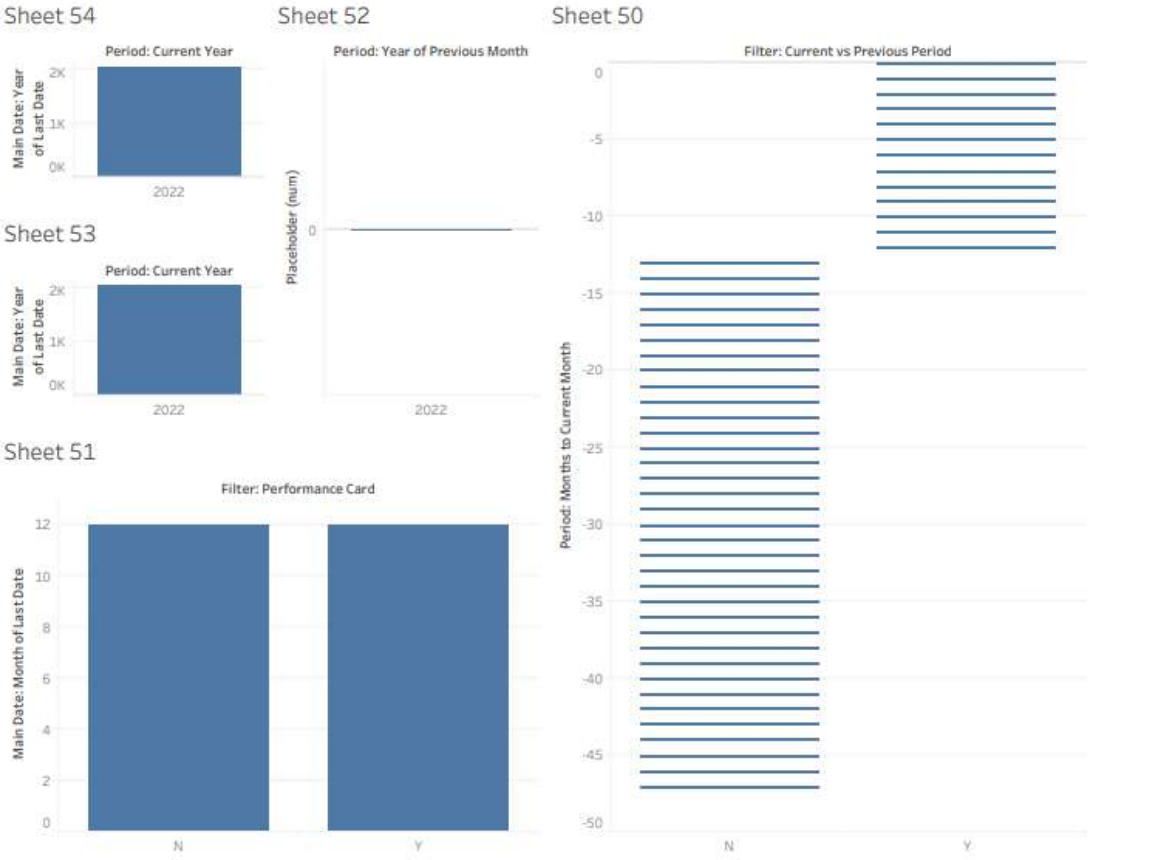

ADVANTAGES & DISADVANTAGES

ADVANTAGE

- ✓ *Fast Service. ...*
- ✓ *Send almost everywhere your freight. ...*
- ✓ *High Standard of Security. ...*
- ✓ *Natural Route. ...*
- ✓ *There is less need for heavy packaging*.

DISADVANTAGE

- ✓ *air transport can involve higher costs than other options, and is not suitable for all goods*
- ✓ *flights are subject to delay or cancellation*
- ✓ *you will need to pay taxes at each airport you use*
- ✓ *fuel and currency surcharges will usually be added to freight costs*
- ✓ *further transportation may be needed from the destination airport to the final destination*

APPLICATIONS

The business requirement of the Global Air Transportation Network- Airports, Airlines, and Routes dataset is to provide stakeholders in the aviation industry with accurate, up-to-date information on the worldwide air transportation network. The dataset is intended to help stakeholders make informed decisions related to business growth, investment, capacity planning, and infrastructure development. Using data analytics and visualization tools like Tableau, the dataset can be analyzed to identify trends and patterns in the air transportation network, providing valuable insights into the state of the industry. This information can be used to optimize routes, improve operational efficiency, and enhance customer experience. Ultimately, the business requirement of the dataset is to enable stakeholders in the aviation industry to gain a competitive advantage by making data-driven decisions. By providing a comprehensive collection of data related to the air transportation network, the dataset can help stakeholders stay ahead of the curve in a dynamic and rapidly changing industry.

CONCLUSION

Socially, the dataset can contribute to the development of air transportation networks that are more efficient, safe, and environmentally sustainable. By providing stakeholders with a comprehensive understanding of the air transportation network, the dataset can help to optimize routes and reduce congestion in the air, leading to improved air quality and reduced carbon emissions. This can contribute to the overall well-being of communities around the world, by making air travel more accessible, affordable, and eco-friendly.

business perspective, the dataset can have a significant impact on the aviation industry. By enabling stakeholders to make data-driven decisions, the dataset can help airlines, airport authorities, tourism boards, and government agencies to identify new business opportunities, optimize capacity planning, and streamline operations. This can lead to increased profitability and competitiveness, as well as improved customer experience. Moreover, the dataset can be used by investors to identify promising sectors and geographic areas for investment in the aviation industry.

FUTURE *SCO*PE

This Global Air Transportation Network dataset is a comprehensive collection of information on airports, airlines and their routes. It contains information such as names, cities, countries, codes (IATA and ICAO) longitudes, latitudes and altitudes of airports across the world with detailed time zone and daylight saving time data. Additionally, this includes information about airlines including their IDs, name aliases, IATA and ICAO codes, callsigns country of origin and active/inactive status. Similarly, it also covers route details such as airline sources to destination airports along with essential details like codeshare stakeholder if any stops required during this journey along with the type of aircraft being used for that particular journey.

APPENDIX

https://public.tableau.com/views/TRAVEL20MANAGEMENT20-20Business20Travel20Air_16958834995680/Dashboard9?:language=en-US&publish=yes&:display_count=n&:origin=viz_share_link