IJRAR.ORG E-ISSN: 2348-1269, P-ISSN: 2349-5138

INTERNATIONAL JOURNAL OF RESEARCH AND ANALYTICAL REVIEWS (IJRAR) | IJRAR.ORG

An International Open Access, Peer-reviewed, Refereed Journal

DATA VISUALIZING ON BLOOD BANK DISTRIBUTION ACROSS INDIA

A TABLEAU EXPLORATION OF BLOOD BANKS IN INDIA

Dr.B.V.Subba Rao[1], K.Riteesh[2], A.Vasanth Kumar[3], A.Palkish[4]

[1]Professor & Head,[2]II B.Tech ,[3]II B.Tech ,[4]II B.Tech

[1]Department of Information Technology,

[1]Prasad V. Potluri Siddhartha Institute of Technology, Vijayawada , India

Abstract : This paper explores the distribution of blood banks in Andhra Pradesh (AP) and India using Tableau, a popular data visualization tool. Interactive dashboards and charts allow us to visualize the no of blood banks present in these areas. This research demonstrates that Tableau holds the potential to not only offer an initial entry point for scholars interested in understanding the blood distribution and donation system in India but also for Tableau to provide a potential starting point for transparency and accountability in this domain and ultimately improvements to public health infrastructure and response mechanisms covering much broader public health and public administration concerns generally.

IndexTerms **- Data visualization, Blood Bank, Tableau, Tree Map, Packed Bubble.**

I. INTRODUCTION

This tutorial uses Tableau – a powerful data visualization tool. We'll analyze and visualize the distribution of blood banks across India and Andhra Pradesh. Recognizing the value of visualization in data understanding, particularly in the case of healthcare infrastructure, this study will use Tableau's interactive features to create compelling visualizations by which to observe the number of blood banks across these regions. Through the power of visualization, and particularly through Tableau's capabilities in this sphere, we hope to raise awareness, and in doing so help in the optimization of blood donation and distribution networks, in India in general, and in Andhra Pradesh.

II. RESEARCH MEHTODOLOGY

2.1 Data Collection

The data for this research work was drawn from two major sources. NBTC (National Blood transfusion council) was a direct source of information for any questions regarding which blood banks are registered. The information this contained was the waypoints, venues, types of those venues such as blood donors and disease victims among others. This data is recognized as authoritative, and its reliability should support the analysis of the workings of blood banks and this from state level all the way up to national level. Conventionally, Press Information Bureau has helped tremendously by supplying such information through exhibitions and government given releases. BloodBankTimes, newsletter sponsored by the local community addressed the national stage by reporting on blood collection and distribution guidelines and unravelling key developments, blood donation drives, and policy developments in the blood transfusion sector. Not as intensive by the data from the National Blood Transfusion Council, these press releases were designed to compliment the analysis by presenting a more extensive perspective of blood banking activities in India.

2.2 Population and Sample

Our population under study refers to all registered blood banks, not only those of Andhra Pradesh but also of India. Blood samples to be analyzed should represent a small but diverse segment of what is referred to as the 'Blood Bank' system via the selection of various places from different geographical locations and no less importantly from different institutions. The manuscript sample in the undertake will include and differentiation of blood bank features - administration type (government , private, charitable), location (urban, rural) and operational levels.

2.2 Resource Allocation Strategies

The strategy adopted for this study was based on the utilization of data visualization techniques. Among the techniques was an increased use of Tableau to do analysis. The process of cartography has taken the front-line position as the most important way to grasp the spatial structure of the blood banks spread over entire Andhra Pradesh and other states of India. Through

interacting with these maps, the plotting of these locations made it easier for us to visualize the blood bank distribution patterns, evaluate any inadequate coverage or over supply of blood donation facilities, and identify the problematic areas. The medical geography-inspired interventions and resource allocation strategies made it easier to collect blood samples from patients and distribute them to many geographical regions in an equitable manner.

Along with the geographical maps, the temporal trends were analyzed which looked at the time patterns that governed the blood collection, utilization, and other key metric measurements. Through the display of slopes over time using line graphs and time series plots, we were able to identify seasonal fluctuations, long-term trends, and factors that may be triggering blood supply-on-demand dynamics. We determined that seasonal fluctuations are influenced by various factors such as temperature changes or holiday seasons. Long-term trends are much more predictable and can be used as an indicator of future supply needs. This kind of analysis helped us to zero in on times of surge in demand, assess the outcome of current blood donation campaigns, and predict the future numbers for transfusion needs. Also, efficiency metrics were applied for the purpose of the assessment of blood bank performance, in particular turnaround time, amount of wastage and stock management. Infographic displaysing of these metrics gave stakeholders a tool of reference by which to improve their operational procedures, trim down waste, and achieve higher service efficiency.

III. PROPOSED SYSTEMS

This study offers insights into the blood donation stats in Andhra Pradesh and India, including count numbers based on gender, percentage rates of donation, and related metrics. The rather extensive data comprises not only addresses but also features various categories, some contact numbers, numerous districts, email IDs, the occasional names of blood banks, types of blood banks (which are crucial), and latitude and longitude coordinates. By visualizing this rather overwhelming data, authorities can attempt to implement perhaps targeted strategies to hopefully improve blood donation drives and ensure a somewhat adequate blood supply across the vast state. These centers supposedly play an arguably pivotal role in, well, not just ensuring a regular supply of blood for potential medical emergencies and treatments, but also for saving people.

IV. TECHNOLOGIES USED

4.1 Microsoft Excel: Microsoft Excel still remains a very flexible and convenient tool for data managing, analysis and visualization, and it is used by various operating systems such as Windows, MacOS, Android and iOS. Data analysis becomes more manageable with these powerful features such as pivot tables, graphs and macros program which enable you to work with numerical and statistical data easily Excel's simple interface and potent data analysis features stay crucial elements for its widespread utilization among users who are in search for visualization output that could aid in the decision-making process.

4.2 Tableau Software: The software from Tableau, known as the industry's trendsetter in Business Intelligence, provides a smooth experience where Excel data is transferred by dragging and dropping. Transforming data into data visualization, which involves charts, maps, pie charts, and dashboards in graphical form, is one the remarkable features of Tableau. This makes the complex data analysis simple and aids in the processes of decision making. This is achieved via its user-friendly design, and data exploration that takes advantage of interactive visualizations, where users can get informed effectively and derive insights.

4.3 Files: As finish of data analysis, Tableau offers creating results in various formats that can be saved, including Tableau-specific files formats like bookmarks (.twb), workbooks (.tbm), data extracts (.tde), and also packaged data sources (.tds). This creates a folder for each filed type inside the My Tableau Repository directory, which is the place where the analytical output files are saved with the correct extension corresponding to its file type in the folder, thus establishing an organized arrangement for storing files.

4.4 Dashboard: A dashboard assumes a role of a single workspace made for exhibition of a bunch of spreadsheets with data and fine arts, thus supporting for-the-time comparison, monitoring, and presenting the information in the graphic form. Dashboard integration of several data view types such as text fields and web pages, along with images, give a comprehensive view of the data. This is essential in data analysis and presentation to the users to enhance their decision making.

4.5 Maps: To plot data on the map in Tableau, either specific location names with corresponding latitude and longitude values have to be provided in the data source or geo-spatial codes have to be created, which require correct articulation of the latitude and longitude as well as the amount of detail in the data. This guarantees the right spatialization depiction of geographical information as well as how a dataset is visualized that helps in unearthing the underlying regional trends, patterns and relationship.

4.6 Server: Besides Tableau Desktop, Tableau Server is also an important tool for publishing the worksheets made therein since it allows to share such data with only authorized users in a secure environment. Uploading worksheets into the secure server will help the organizations, team work, and sharing of data processes. The data’s governance and security will be done effectively.

V. RESULTS AND DISCUSSION

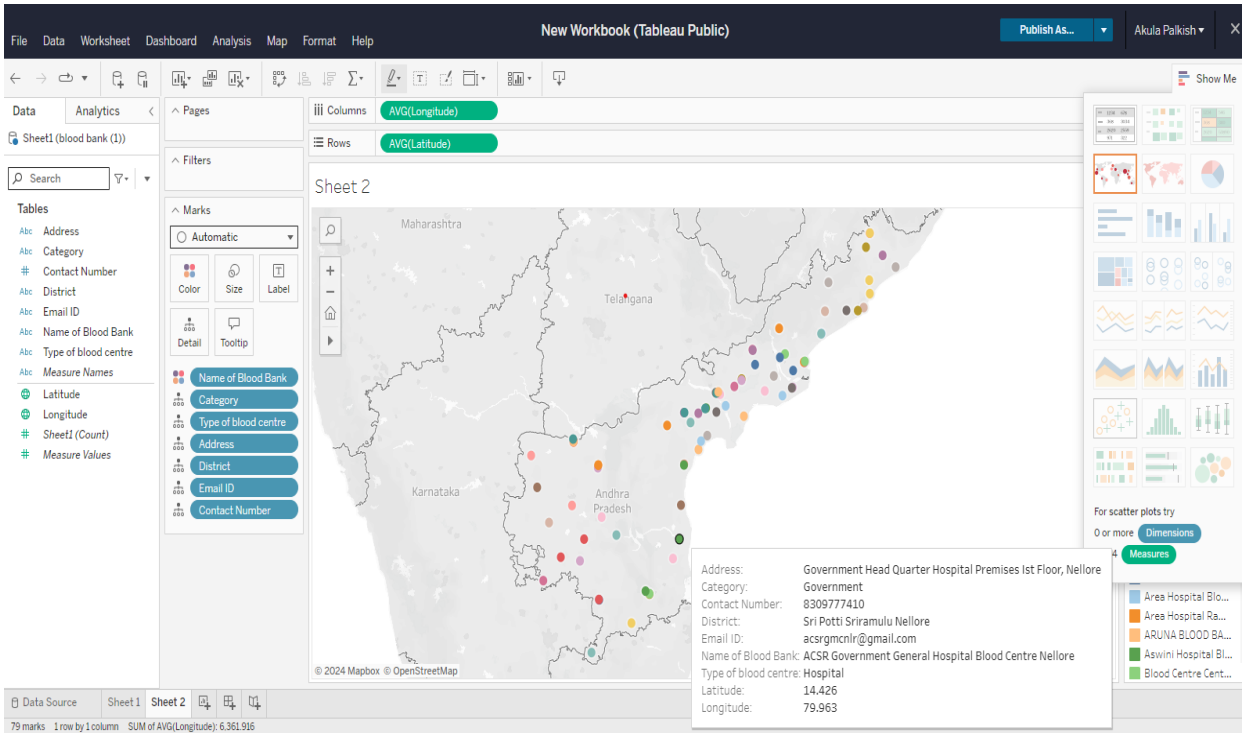


Figure 1.1 shows the details of blood banks in Andhra Pradesh

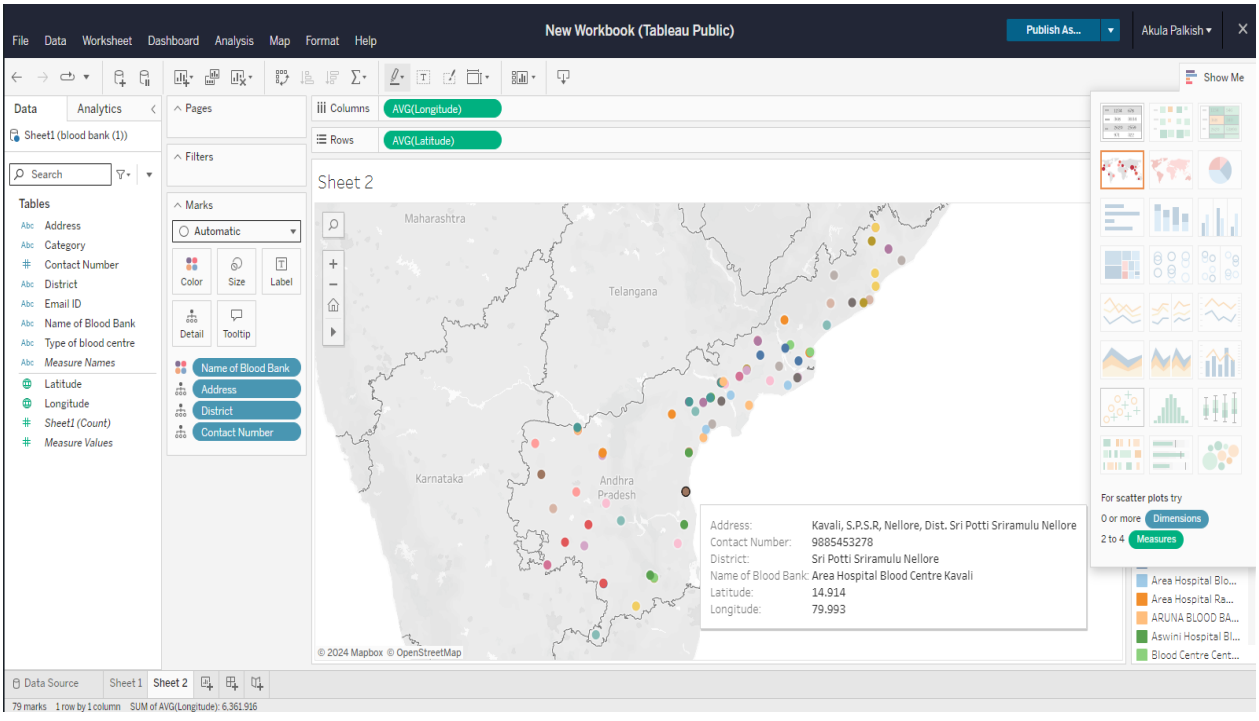
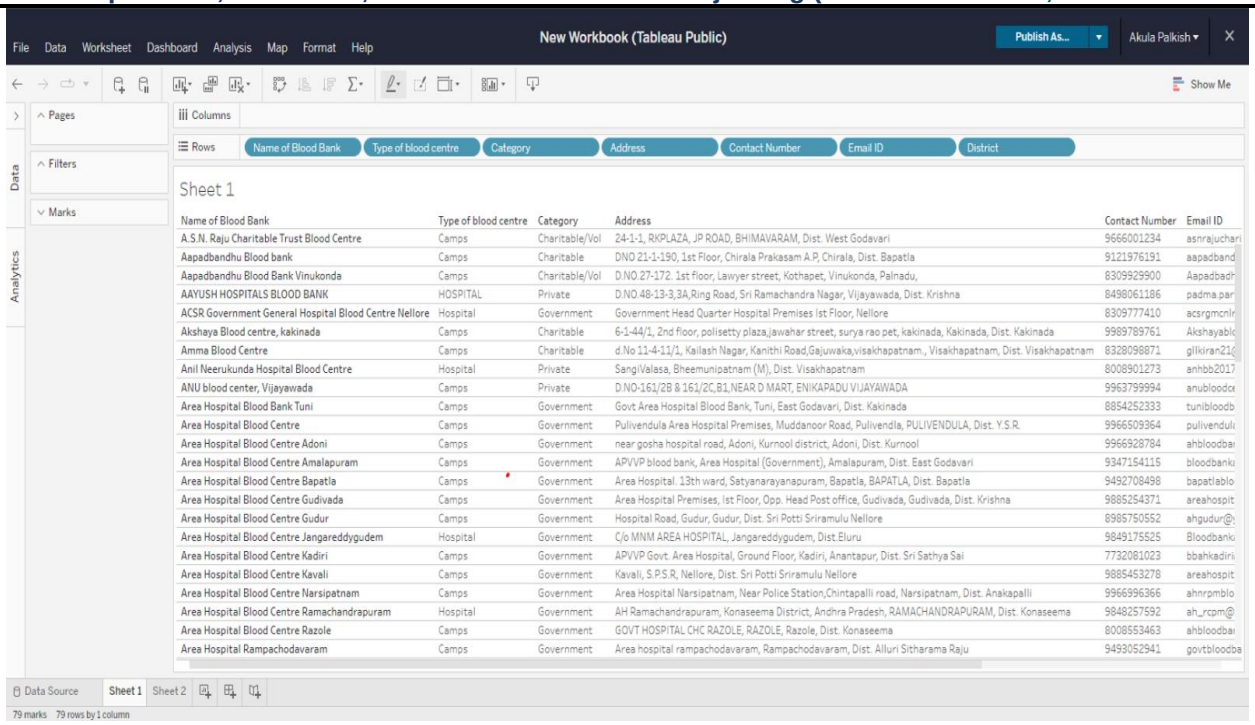
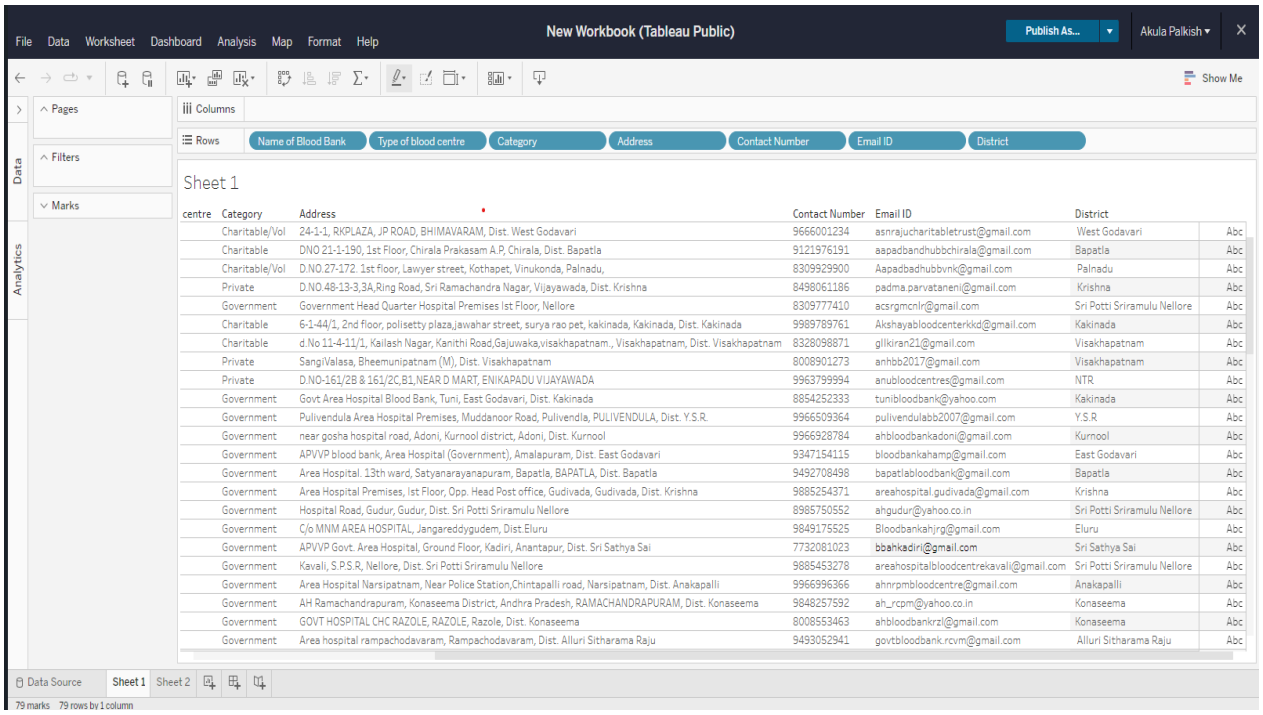


Figure 1.2 shows the longitudes and latitude of blood banks in Andhra Pradesh



Name of Blood Bank	Type of blood centre	Category	Address	Contact Number	Email ID
A.S.N. Raju Charitable Trust Blood Centre	Camps	Charitable/Vol	24-1-1, RKPLAZA, JP ROAD, BHIMAVARAM, Dist. West Godavari	9666001234	asnrajucharitabletrust@gmail.com
Aapadbandhu Blood bank	Camps	Charitable	DNO 21-1-190, 1st Floor, Chirala Prakasam A.P, Chirala, Dist. Bapatla	9121976191	aapadbandhubbchirala@gmail.com
Aapadbandhu Blood Bank Vinukonda	Camps	Charitable/Vol	D.NO.27-172. 1st floor, Lawyer street, Kothapet, Vinukonda, Palnadu,	8309929900	Aapadbadhubbvnk@gmail.com
AAYUSH HOSPITALS BLOOD BANK	HOSPITAL	Private	D.NO.48-13-3,3A,Ring Road, Sri Ramachandra Nagar, Vijayawada, Dist. Krishna	8498061186	padma.parvataneni@gmail.com
ACSR Government General Hospital Blood Centre Nellore	Hospital	Government	Government Head Quarter Hospital Premises Ist Floor, Nellore	8309777410	acsrgmcnlr@gmail.com
Akshaya Blood centre, kakinada	Camps	Charitable	6-1-44/1, 2nd floor, polisetty plaza,jawahar street, surya rao pet, kakinada, Kakinada, Dist. Kakinada	9989789761	Akshayabloodcenterkkd@gmail.com
Amma Blood Centre	Camps	Charitable	d.No 11-4-11/1, Kailash Nagar, Kanithi Road,Gajuwaka,visakhapatnam., Visakhapatnam, Dist. Visakhapatnam	8328098871	gllkiran21@gmail.com
Anil Neerukunda Hospital Blood Centre	Hospital	Private	SangiValasa, Bheemunipatnam (M), Dist. Visakhapatnam	8008901273	anhbb2017@gmail.com
ANU blood center, Vijayawada	Camps	Private	D.NO-161/2B & 161/2C,B1,NEAR D MART, ENIKAPADU VIJAYAWADA	9963799994	anubloodcentres@gmail.com
Area Hospital Blood Bank Tuni	Camps	Government	Govt Area Hospital Blood Bank, Tuni, East Godavari, Dist. Kakinada	8854252333	tunibloodbank@yahoo.com
Area Hospital Blood Centre	Camps	Government	Pulivendula Area Hospital Premises, Muddanoor Road, Pulivendla, PULIVENDULA, Dist. Y.S.R.	9966509364	pulivendulabb2007@gmail.com
Area Hospital Blood Centre Adoni	Camps	Government	near gosha hospital road, Adoni, Kurnool district, Adoni, Dist. Kurnool	9966928784	ahbloodbankadoni@gmail.com
Area Hospital Blood Centre Amalapuram	Camps	Government	APVVP blood bank, Area Hospital (Government), Amalapuram, Dist. East Godavari	9347154115	bloodbankahamp@gmail.com
Area Hospital Blood Centre Bapatla	Camps	Government	Area Hospital. 13th ward, Satyanarayanapuram, Bapatla, BAPATLA, Dist. Bapatla	9492708498	bapatlabloodbank@gmail.com
Area Hospital Blood Centre Gudivada	Camps	Government	Area Hospital Premises, Ist Floor, Opp. Head Post office, Gudivada, Gudivada, Dist. Krishna	9885254371	areahospital.gudivada@gmail.com
Area Hospital Blood Centre Gudur	Camps	Government	Hospital Road, Gudur, Gudur, Dist. Sri Potti Sriramulu Nellore	8985750552	ahgudur@yahoo.co.in
Area Hospital Blood Centre Jangareddygudem	Hospital	Government	C/o MNM AREA HOSPITAL, Jangareddygudem, Dist.Eluru	9849175525	Bloodbankahjrg@gmail.com
Area Hospital Blood Centre Kadiri	Camps	Government	APVVP Govt. Area Hospital, Ground Floor, Kadiri, Anantapur, Dist. Sri Sathya Sai	7732081023	bbahkadiri@gmail.com
Area Hospital Blood Centre Kavali	Camps	Government	Kavali, S.P.S.R, Nellore, Dist. Sri Potti Sriramulu Nellore	9885453278	areahospitalbloodcentrekavali@gmail.com
Area Hospital Blood Centre Narsipatnam	Camps	Government	Area Hospital Narsipatnam, Near Police Station,Chintapalli road, Narsipatnam, Dist. Anakapalli	9966996366	ahnrpmbloodcentre@gmail.com
Area Hospital Blood Centre Ramachandrapuram	Hospital	Government	AH Ramachandrapuram, Konaseema District, Andhra Pradesh, RAMACHANDRAPURAM, Dist. Konaseema	9848257592	ah_rcpm@yahoo.co.in
Area Hospital Blood Centre Razole	Camps	Government	GOVT HOSPITAL CHC RAZOLE, RAZOLE, Razole, Dist. Konaseema	8008553463	ahbloodbankrzl@gmail.com
Area Hospital Rampachodavaram	Camps	Government	Area hospital rampachodavaram, Rampachodavaram, Dist. Alluri Sitharama Raju	9493052941	govtbloodbank.rcvm@gmail.com



centre	Category	Address	Contact Number	Email ID	District	
	Charitable/Vol	24-1-1, RKPLAZA, JP ROAD, BHIMAVARAM, Dist. West Godavari	9666001234	asnrajucharitabletrust@gmail.com	West Godavari	Abc
	Charitable	DNO 21-1-190, 1st Floor, Chirala Prakasam A.P, Chirala, Dist. Bapatla	9121976191	aapadbandhubbchirala@gmail.com	Bapatla	Abc
	Charitable/Vol	D.NO.27-172. 1st floor, Lawyer street, Kothapet, Vinukonda, Palnadu,	8309929900	Aapadbadhubbvnk@gmail.com	Palnadu	Abc
	Private	D.NO.48-13-3,3A,Ring Road, Sri Ramachandra Nagar, Vijayawada, Dist. Krishna	8498061186	padma.parvataneni@gmail.com	Krishna	Abc
	Government	Government Head Quarter Hospital Premises Ist Floor, Nellore	8309777410	acsrgmcnlr@gmail.com	Sri Potti Sriramulu Nellore	Abc
	Charitable	6-1-44/1, 2nd floor, polisetty plaza,jawahar street, surya rao pet, kakinada, Kakinada, Dist. Kakinada	9989789761	Akshayabloodcenterkkd@gmail.com	Kakinada	Abc
	Charitable	d.No 11-4-11/1, Kailash Nagar, Kanithi Road,Gajuwaka,visakhapatnam., Visakhapatnam, Dist. Visakhapatnam	8328098871	gllkiran21@gmail.com	Visakhapatnam	Abc
	Private	SangiValasa, Bheemunipatnam (M), Dist. Visakhapatnam	8008901273	anhbb2017@gmail.com	Visakhapatnam	Abc
	Private	D.NO-161/2B & 161/2C,B1,NEAR D MART, ENIKAPADU VIJAYAWADA	9963799994	anubloodcentres@gmail.com	NTR	Abc
	Government	Govt Area Hospital Blood Bank, Tuni, East Godavari, Dist. Kakinada	8854252333	tunibloodbank@yahoo.com	Kakinada	Abc
	Government	Pulivendula Area Hospital Premises, Muddanoor Road, Pulivendla, PULIVENDULA, Dist. Y.S.R.	9966509364	pulivendulabb2007@gmail.com	Y.S.R	Abc
	Government	near gosha hospital road, Adoni, Kurnool district, Adoni, Dist. Kurnool	9966928784	ahbloodbankadoni@gmail.com	Kurnool	Abc
	Government	APVVP blood bank, Area Hospital (Government), Amalapuram, Dist. East Godavari	9347154115	bloodbankahamp@gmail.com	East Godavari	Abc
	Government	Area Hospital. 13th ward, Satyanarayanapuram, Bapatla, BAPATLA, Dist. Bapatla	9492708498	bapatlabloodbank@gmail.com	Bapatla	Abc
	Government	Area Hospital Premises, Ist Floor, Opp. Head Post office, Gudivada, Gudivada, Dist. Krishna	9885254371	areahospital.gudivada@gmail.com	Krishna	Abc
	Government	Hospital Road, Gudur, Gudur, Dist. Sri Potti Sriramulu Nellore	8985750552	ahgudur@yahoo.co.in	Sri Potti Sriramulu Nellore	Abc
	Government	C/o MNM AREA HOSPITAL, Jangareddygudem, Dist.Eluru	9849175525	Bloodbankahjrg@gmail.com	Eluru	Abc
	Government	APVVP Govt. Area Hospital, Ground Floor, Kadiri, Anantapur, Dist. Sri Sathya Sai	7732081023	bbahkadiri@gmail.com	Sri Sathya Sai	Abc
	Government	Kavali, S.P.S.R, Nellore, Dist. Sri Potti Sriramulu Nellore	9885453278	areahospitalbloodcentrekavali@gmail.com	Sri Potti Sriramulu Nellore	Abc
	Government	Area Hospital Narsipatnam, Near Police Station,Chintapalli road, Narsipatnam, Dist. Anakapalli	9966996366	ahnrpmbloodcentre@gmail.com	Anakapalli	Abc
	Government	AH Ramachandrapuram, Konaseema District, Andhra Pradesh, RAMACHANDRAPURAM, Dist. Konaseema	9848257592	ah_rcpm@yahoo.co.in	Konaseema	Abc
	Government	GOVT HOSPITAL CHC RAZOLE, RAZOLE, Razole, Dist. Konaseema	8008553463	ahbloodbankrzl@gmail.com	Konaseema	Abc
	Government	Area hospital rampachodavaram, Rampachodavaram, Dist. Alluri Sitharama Raju	9493052941	govtbloodbank.rcvm@gmail.com	Alluri Sitharama Raju	Abc

Figure 1.3 shows the text table of blood banks in Andhra Pradesh

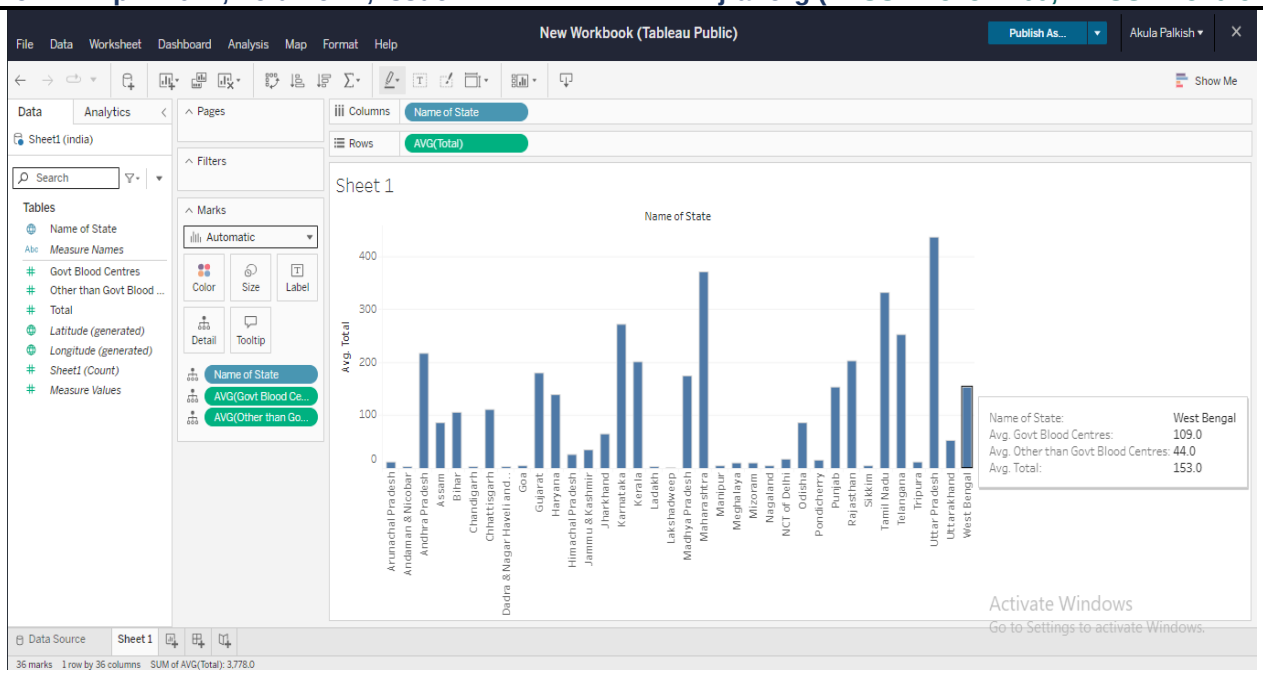


Figure 1.4 shows the number of blood banks in India

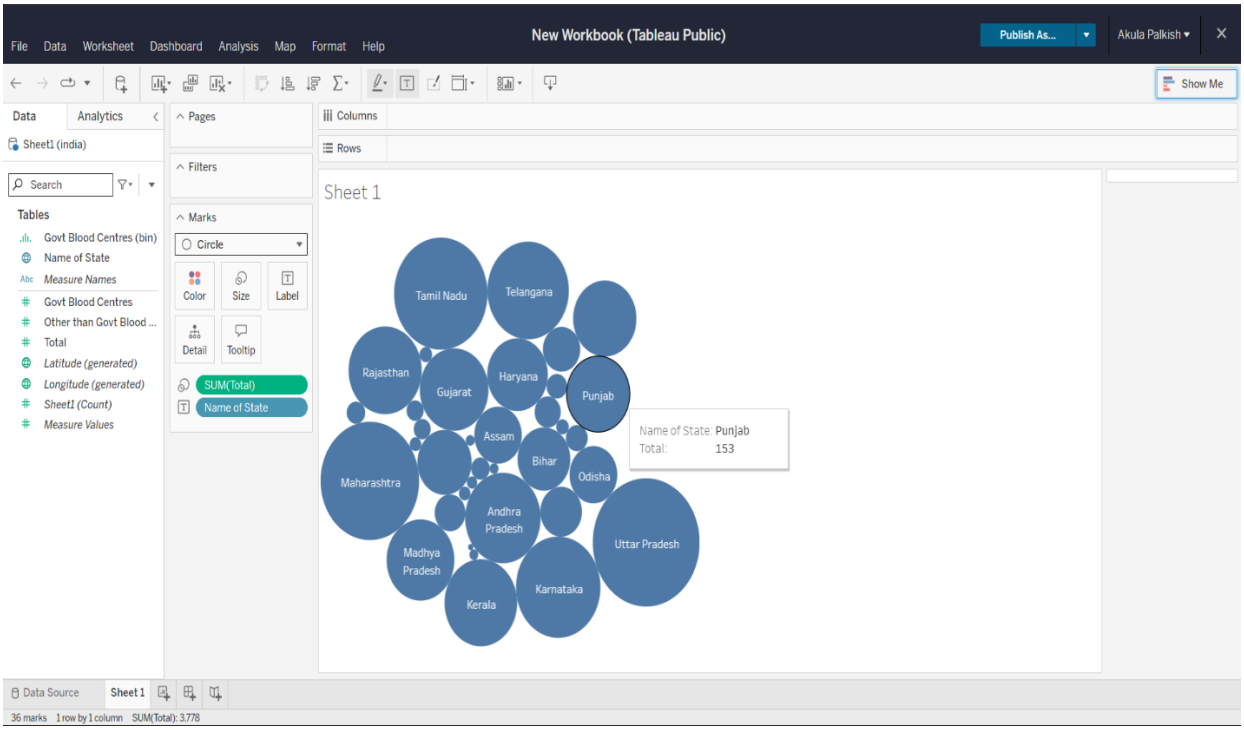


Figure 1.5 shows the treemap of blood banks in Indian

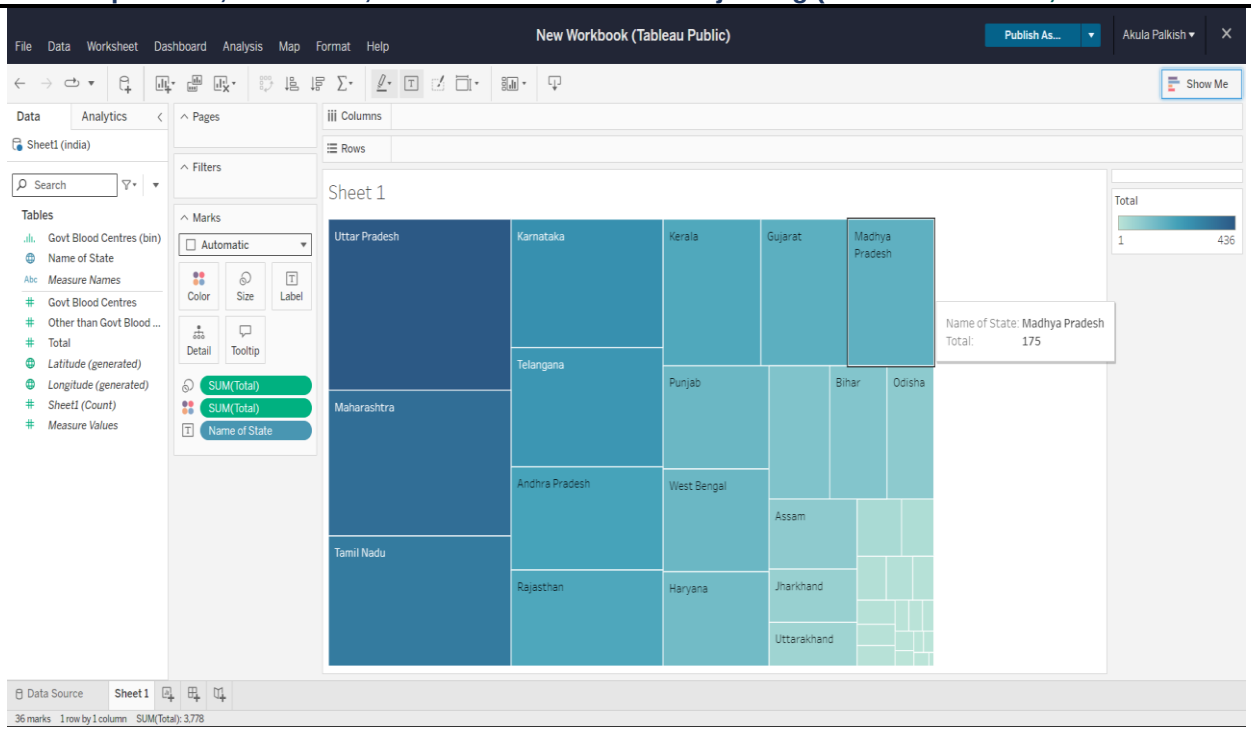


Figure 1.5 shows the packed bubble of blood banks in Indian

VI. CONCLUSION

Therefore, we have visualized the data regarding the and accessibility of blood banks in Andhra Pradesh and across all India. Through this amazing application, the government can analyzing visualized data and taking decisive actions, particularly in regions where there's a shortage or uneven distribution of blood banks! By using this visualization tool, we can identify areas which have high demand and low avalibility of blood banks in Andhra Pradesh and India. It can help us to improve the new blood banks and existing ones. It can help us to enhance the new blood banks and existing ones let's work together to make a real impact.

REFERENCES

[1] https://www.eraktkosh.in/BLDAHIMS/bloodbank/transactions/bbpublicindex.html

[2] https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1810996

[3] https://www.tableau.com/why-tableau/what-is-tableau