INDIA POPULATION CENSUS 2011 DATA ANALYSIS REPORT

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TOPIC: - INDIA CENSUS 2011

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Project Overview

This project analysed the India population census 2011 data and create power bi dashboard to show meaningful insights from that data using different visualization tools. This India population Census 2011 was the 15th National Census Survey held in India. It was carried out in two phases – house listing and population counting. Moreover, this survey covered 28 states, 7 union territories, 640 districts, 497 cities and over 600,000 villages.

In this Census the data was collected based on several key aspects:

- Total Population: 1.21 billion (623.7 million males, 586.5 million females)
- Literacy Rate: 74.04%
- Population Density: 382 people per square km
- Sex Ratio: 940 females per 1,000 males
- Child Sex Ratio (0-6 years): 914 females per 1,000 males

This data helps the government plan better policies and welfare programs for the people.

Source of the dataset

Fact table is taken from the GitHub and the other table which is yearly population was taken from the Worldometer.

Key Questions

1. States or provinces having the highest and lowest population?
2. What are the provinces having the highest & lowest male and female population composition?
3. What is the literacy rate of different educational level?
4. Age group composition of each province or states?
5. Power parity composition of all states showing poor and rich population economic conditions?
6. Percentage of male workers to female workers in the states?
7. Religion composition of the population

KPI's and Metrices

1. **Population Analysis:** Different states' population sizes, growth rates, and demographics were analysed.
2. **Literacy Rate Analysis:** This analysis helps identify areas where education improvements are needed.
3. **Sex Ratio Analysis:** This analysis helps track gender balance and identify areas where gender inequality exists.
4. **Population Growth Rate:** Different states' growth rates were studied to understand how their populations are changing over time.
5. **Power Parity Rate:** It analyses population those comes under low, medium and high-power parity rate.

Steps in the Analysis

1. **Data Collection:** Census 2011 data was gathered in Power BI.
2. **Data Preparation:** Power BI was used to clean and process the data by removing unnecessary details and organizing it for analysis.
3. **Dashboard Creation:** Power BI was used to create dashboard.
4. **Report Generation:** generated the report of this data analysis project on the Microsoft word.

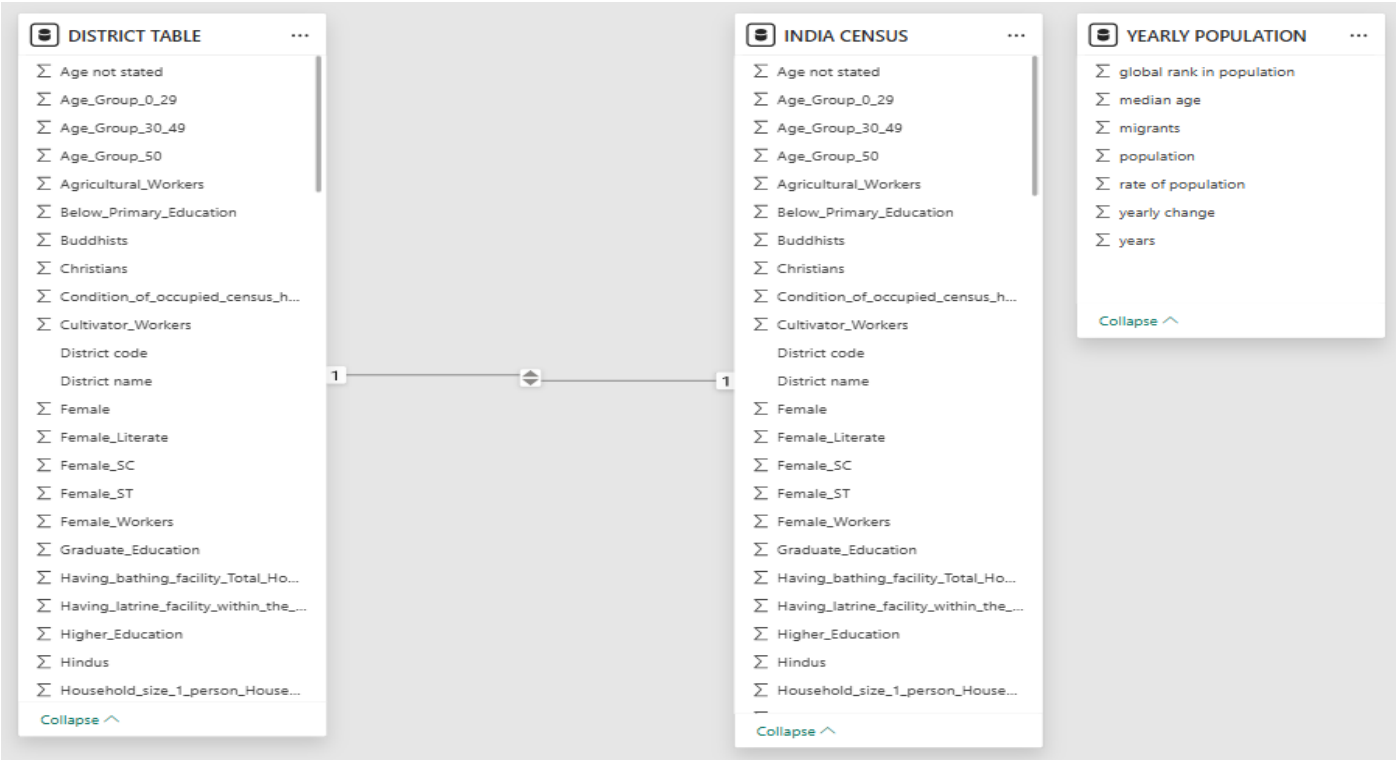
Data Extraction

The data was taken in csv file from the **GitHub** and **Worldometer.** This dataset extraction process ensured that the India Census 2011 data were accurate, consistent, and comprehensive, enabling valuable insights and informed decision-making.

Data Integration

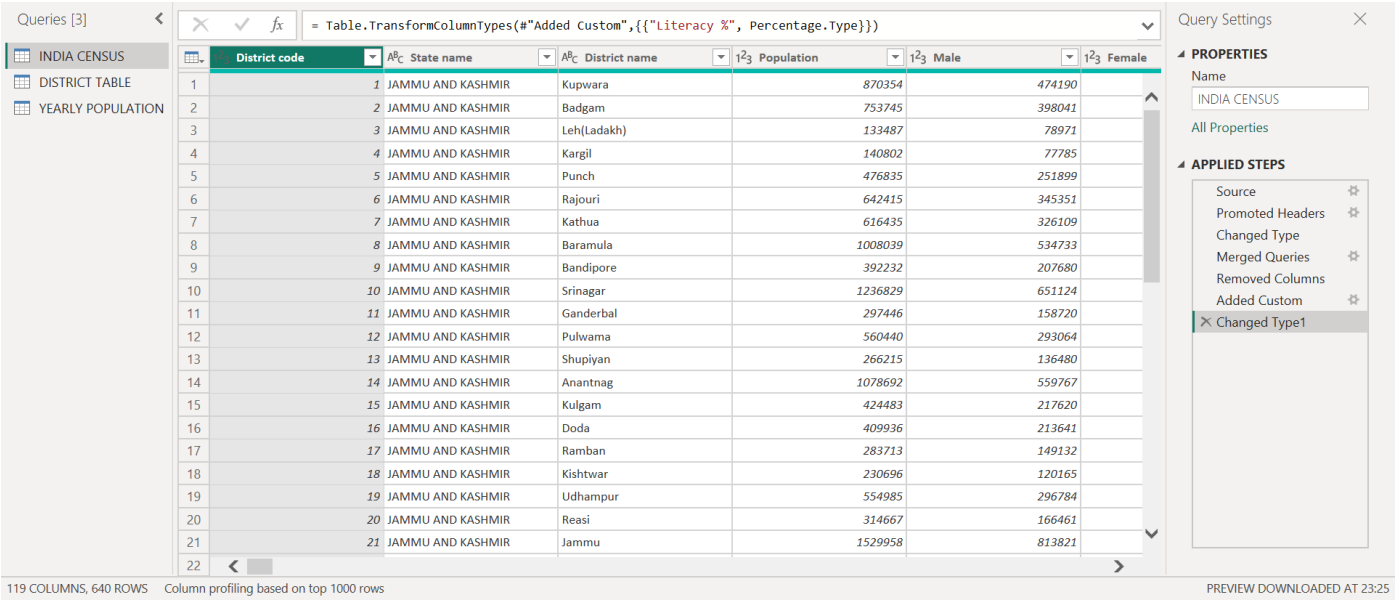
GitHub - https://github.com/Axar3010 LinkedIn - https://www.linkedin.com/in/akshar-patel-0b8153345

There are 3 tables in the project **Yearly Population, District** table**, India census** table. Among all this table the **Yearly population** table is taken from the different source, so it is the independent table. Between the **India Census** table and **District** table is linked by District ID and there is one to one relation between these 2 tables.



Data Transformation

I have used the **Power BI** software to transform, clean the data and to create the meaningful dashboard. To transform the data is to apply various transformation techniques such as normalization (scaling data to a common range), aggregation (summarizing data at different levels). The data transformation process for the India Census 2011 ensures that the dataset is ready for comprehensive analysis, enabling researchers and policymakers to derive valuable insights and make informed decisions

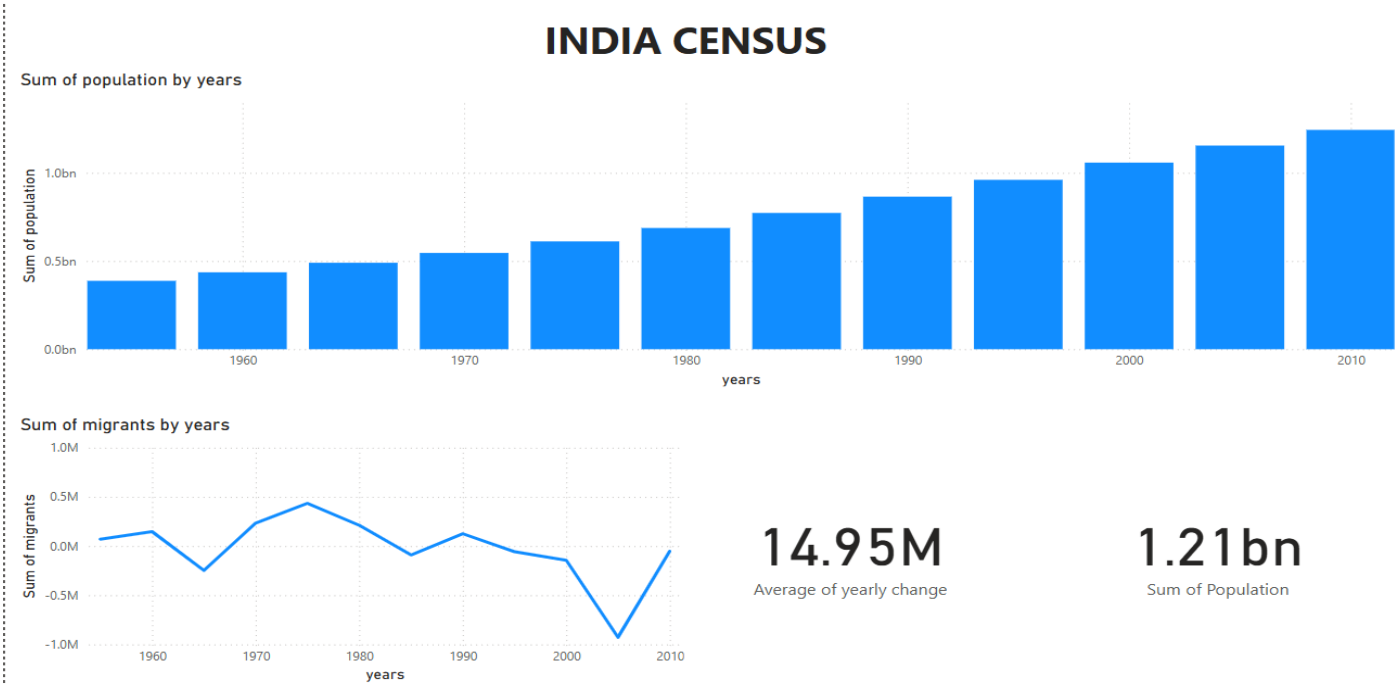


	District code	State name	District name	Population	Male	Female
1	1	JAMMU AND KASHMIR	Kupwara	870354	474190	
2	2	JAMMU AND KASHMIR	Badgam	753745	398041	
3	3	JAMMU AND KASHMIR	Leh(Ladakh)	133487	78971	
4	4	JAMMU AND KASHMIR	Kargil	140802	77785	
5	5	JAMMU AND KASHMIR	Punch	476835	251899	
6	6	JAMMU AND KASHMIR	Rajouri	642415	345351	
7	7	JAMMU AND KASHMIR	Kathua	616435	326109	
8	8	JAMMU AND KASHMIR	Baramula	1008039	534733	
9	9	JAMMU AND KASHMIR	Bandipore	392232	207680	
10	10	JAMMU AND KASHMIR	Srinagar	1236829	651124	
11	11	JAMMU AND KASHMIR	Ganderbal	297446	158720	
12	12	JAMMU AND KASHMIR	Pulwama	560440	293064	
13	13	JAMMU AND KASHMIR	Shupiyan	266215	136480	
14	14	JAMMU AND KASHMIR	Anantnag	1078692	559767	
15	15	JAMMU AND KASHMIR	Kulgam	424483	217620	
16	16	JAMMU AND KASHMIR	Doda	409936	213641	
17	17	JAMMU AND KASHMIR	Ramban	283713	149132	
18	18	JAMMU AND KASHMIR	Kishtwar	230696	120165	
19	19	JAMMU AND KASHMIR	Udhampur	554985	296784	
20	20	JAMMU AND KASHMIR	Reasi	314667	166461	
21	21	JAMMU AND KASHMIR	Jammu	1529958	813821	
22						

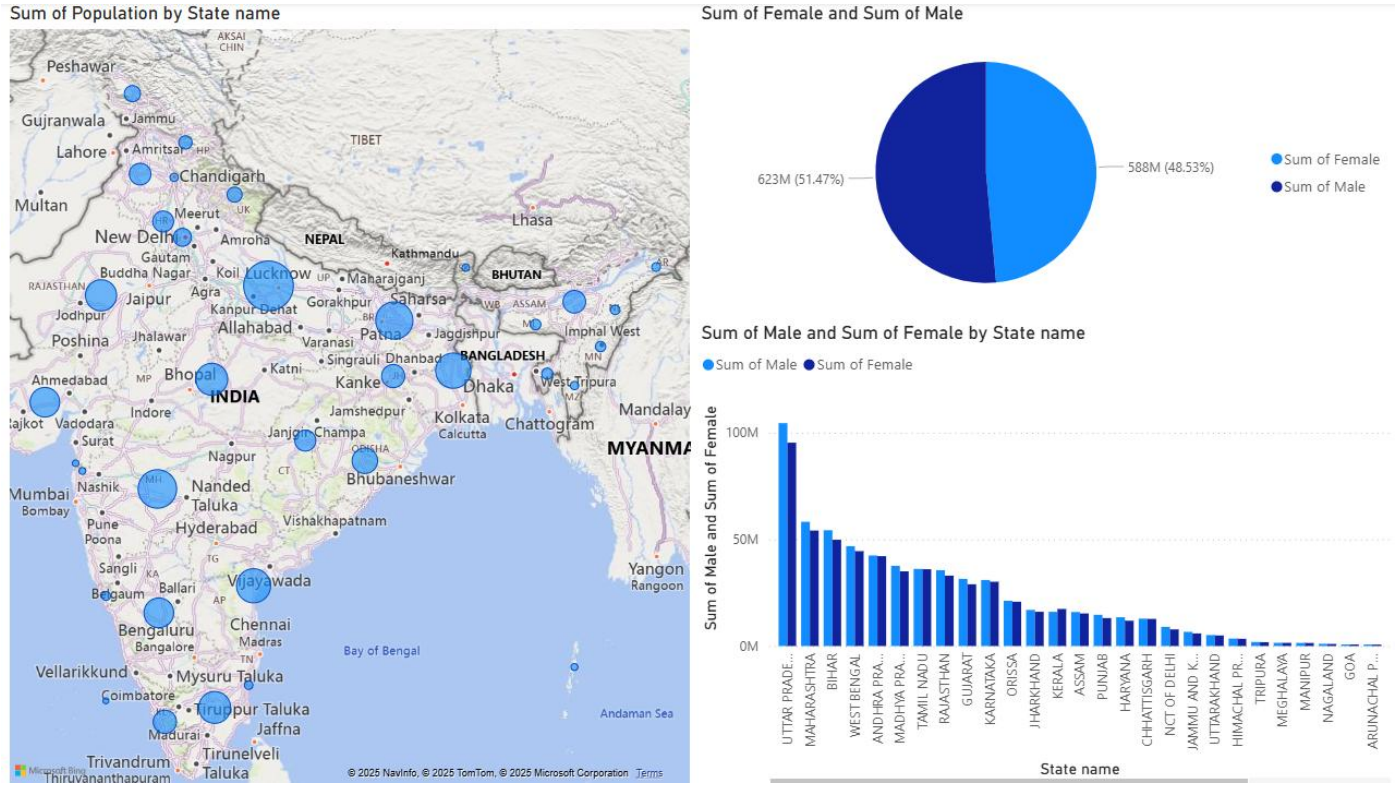
Dashboard Creation

I have 4 sheets of dashboard where we used different visualization tools to compare different categories and to describe the data of sector.

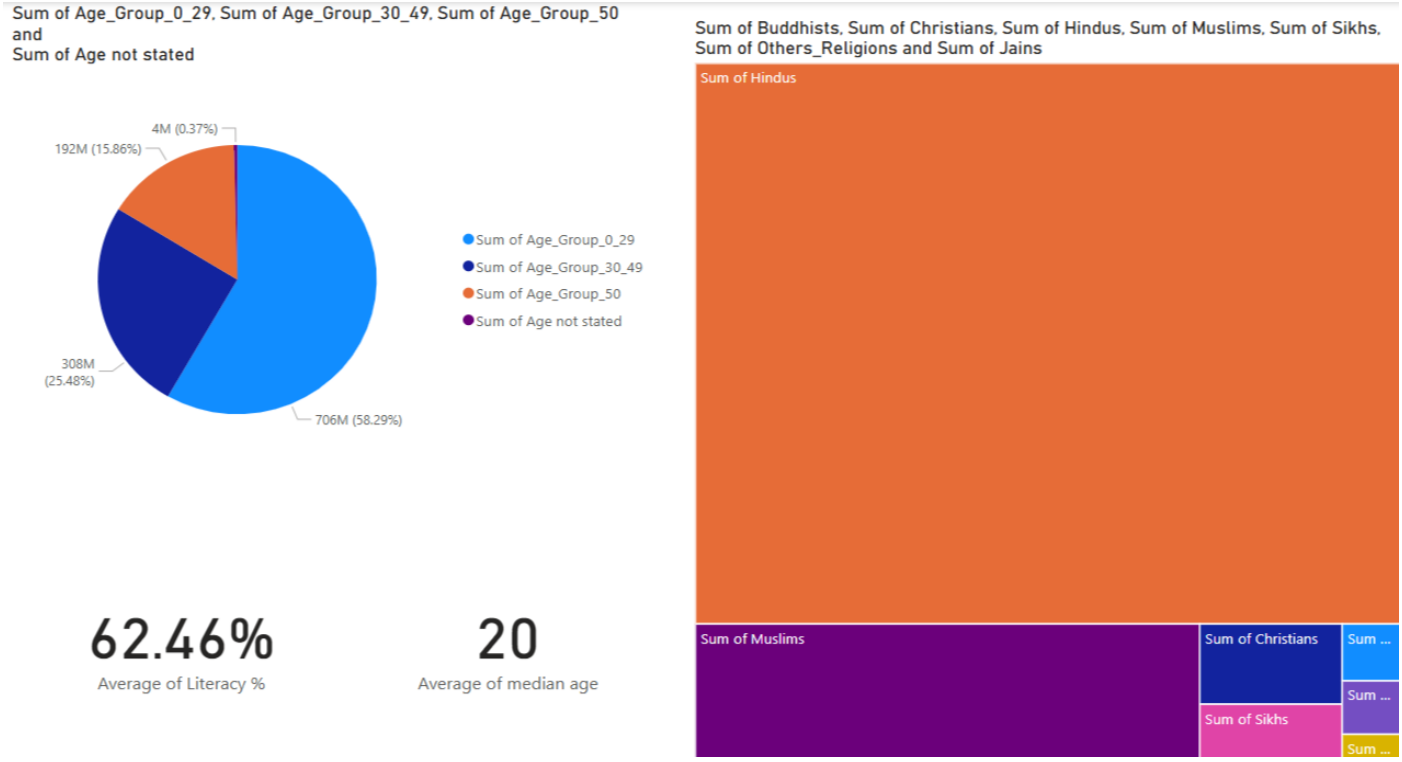
1. On the 1st sheet I have used bar graph to depict comparison of the population rate year by year from 1955 to 2010. Additionally, line graph is also plotted on the same sheet which describe the ratio of migrants (people who came and settle in India). Lastly, I have used 2 card to show the average of the population and to show the sum of population.



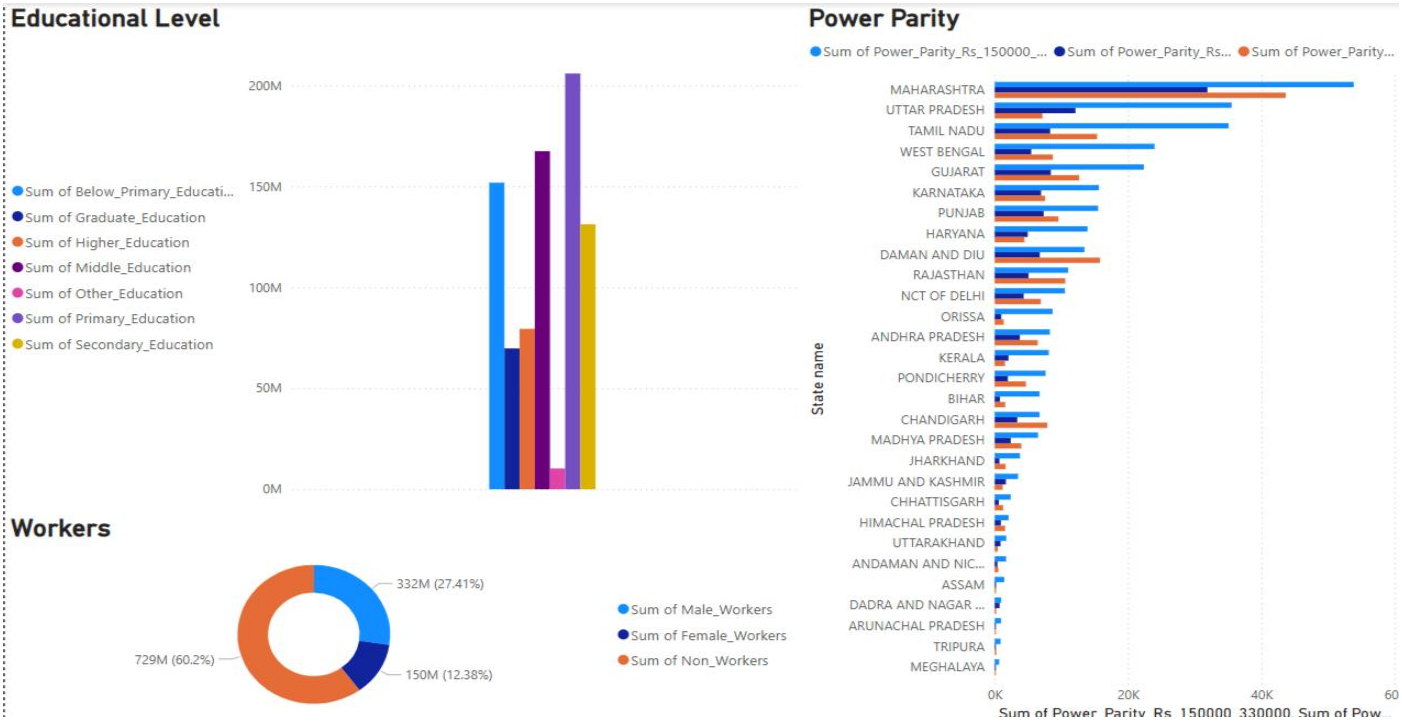
2. On the 2nd sheet I have used map to show the population from state to state just by hovering the cursor on the state. Moreover, I also included the pie chart to show the ratio of the male and female from the total population in 2011. Just to see the deep ratio of male and female I used the bar graph which show the gender ratio comparing by the state.



3. Furthermore, on the 3rd sheet I compare the ratio of the four different age group (0 to 29, 30 to 49, 50 or 50+, age not stated) using pie chart. I used the tree map to show the comparison of the population by their religion (Hindu, Muslim, Sikh, Jain, Christian, Buddhist) and two card which depict the average rate of the literacy rate and the median age from the four- age group



4. Lastly, on the 4th sheet I have added two bar graph which show the Education levels (below primary education, Graduates, primary education, secondary education, higher education, middle education, other education) and the power parity (Rs 1 lacs to 2.50 lacs, 3 lacs to 4.50 lacs, above 5 lacs) of the year respectively. Additionally, I added a donut chart to illustrate the ratio of male workers, female workers and the non-workers.



Future improvements:

1. Providing actionable recommendations for policymakers (e.g., improving education, reducing gender discrimination).

2. Expanding the analysis to include recent census data for comparison.

Lessons Learned

1. **Planning is important** – A well-organized plan helps keep projects on track.

2. **Data cleaning is crucial** – Clean data ensures accurate insights.

3. **Visuals help in understanding** – Graphs and charts make information easier to grasp.

4. **Automation saves time** – Using tools to automate repetitive tasks makes work more efficient.

5. **Continuous learning is necessary** – Keeping up with new technology helps improve future projects.

Challenges & Future Scope

1. The project was long and detailed, but there were no major difficulties.

2. This project was a great learning experience, helping to analyse demographic trends and create a powerful data visualization tool for Indian Census 2011.

Conclusion

The analysis of the India Census 2011 data reveals significant insights into the country's demographic, social, and economic side. India's total population in 2011 was 1.21 billion, with notable growth in northern states like Uttar Pradesh and slower growth in northeastern regions like Sikkim. Literacy rates improved across the country, with Kerala leading at 93.91% and Bihar trailing at 63.82%, highlighting the successes and challenges of educational programs. The urban population increased to 31.2%, with Delhi having the highest urban population at 97.5%, reflecting the trend of urbanization and its demographic pressures. These findings underscore the need for targeted policies and programs to address regional disparities and promote balanced development across India.