



Telangana Growth Analysis



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About Telangana

- ❖ Telangana is India's youngest state, formed in 2014. capital city is Hyderabad, is a global IT hub with famous landmarks like the Charminar.
- ❖ The state has seen fast economic growth, especially in IT, pharmaceuticals, and manufacturing.
- ❖ Telugu and Urdu are the official languages.
- ❖ Government is focused on digital services, development projects, education.



Business Objective

To analyze the growth of Telangana across multiple sectors — including Stamp Registration, Transportation, and Toll Transactions (TS-I PASS) — using real-time datasets to identify trends, correlations, and opportunities. The goal is to generate actionable insights that support data-driven decision-making by the Telangana State Government, enabling informed policy formulation, resource allocation, and sustainable development planning.

Key Focus Areas:

- Analyze monthly, quarterly, and yearly trends in each sector.
- Identify high-performing and underperforming districts.
- Understand shifts in vehicle sales (especially electric adoption).
- Stamp registration and toll revenue to district-level activity.
- Correlate inter-departmental performance for holistic insights.

Who can be Stakeholders?

STAKEHOLDERS	INTEREST
Telangana State Government	Overall development, budget allocation
Revenue Department	Stamp registration trends, tax collection
Transport Department	Vehicle ownership, fuel shift, mobility
Highways & Roads Authorities	Toll usage, infrastructure planning
Private Investors	Market opportunities, ROI areas

Dataset Overview

Table name	No. of records	No. of columns	Primary key	Foreign key	Granularity
dim date	48	4	month	-	monthly level
dim districts	33	2	dist code	-	district level
fact stamps	1504	6	-	dist code , month	monthly per districts(each row represents stamp registrations for one district in one month)
fact transports	1440	18	-	dist code , month	monthly per districts(each row represents transports registrations for one district in one month)
fact TS iPASS	5753	5	-	dist code , month	monthly per district per sector (each row represents industrial project approvals in a specific sector for a given district and month)

Dataset Overview

Table : dim date

- This table contains a list of months with their corresponding abbreviations, quarters, and fiscal years.
- Columns :
 - 1) month – The first day of the month in the format dd-mm-yyyy
 - 2) mmm – Abbreviation of the month (e.g., Apr, May).
 - 3) Quarter – The fiscal quarter (e.g., Q1, Q2)
 - 4) Fiscal year - The fiscal year associated with the month.
- Observations:
 - 1) The fiscal year starts in April and ends in March.
 - 2) Each quarters span 3 months :
 - Q1 – Apr , May , Jun
 - Q2 – Jul , Aug , Sept
 - Q3 – Oct , Nov , Dec
 - Q4 – Jan , Feb , Mar

Dataset Overview

Table : dim districts

- This table contains a list of districts in Telangana, India, along with their unique district codes.
- Columns :
 - 1) district code – A unique code assigned to each district (e.g., 19_1, 22_2)
 - 2) districts – The official name of the district (e.g., Hyderabad , Warangal).
- Observations:
 - 1) There are 34 districts listed in this dataset.
 - 2) District names reflect the official names as recognized by the Government of Telangana.
 - 3) The file can be used to map district codes to their corresponding district names for data integration or reporting purposes.

Dataset Overview

Table : fact stamps

- This table contains data related to stamp registrations or document registrations in the state of Telangana, India.
- Columns :
 - 1) district code – A unique code assigned to each district (e.g., 19_1, 22_2)
 - 2) month – The first day of the month in the format dd-mm-yyyy.
 - 3) documents registered cnt – This column represents the total count of documents registered.
 - 4) documents registered rev – This column represents the total revenue generated from the registered documents.
 - 5) estamps challans cnt – This column represents the count of e-stamps challans.
 - 6) estamps challans rev – This column represents the revenue generated from e-stamps challans.
- Observations:
 - 1) The dataset spans from April 2019 to March 2023 , covering approximately 4 years of monthly data.
 - 2) Each district has associated monthly data.

Dataset Overview

Table : fact transports

(1/2)

- This table contains data related to vehicle registrations in Telangana, India.
- Columns :
 - 1) district code : A unique code assigned to each district (e.g., 19_1, 22_2)
 - 2) month : The first day of the month in the format dd-mm-yyyy.
 - 3) fuel type petrol : Number of petrol-fueled vehicles .
 - 4) fuel type diesel : Number of diesel-fueled vehicles .
 - 5) fuel type electric : Number of electric vehicles .
 - 6) fuel type others : Number of vehicles with other fuel types (e.g., CNG, LPG).
 - 7) vehicleClass MotorCycle : Number of motorcycles .
 - 8) vehicleClass MotorCar : Number of motor cars .
 - 9) vehicleClass AutoRickshaw : Number of auto rickshaws .
 - 10) vehicleClass Agriculture : Number of agricultural vehicles .
 - 11) vehicleClass others : Number of other vehicle classes .
 - 12) Category Non-Transport : Number of non-transport vehicles.
 - 13) Category Transport : Number of transport vehicles .

Dataset Overview

Table : fact transports

(2/2)

- Columns :

- | | |
|--------------------------|---|
| 14) seatCapacity_1_to_3 | : Vehicles with seating capacity of 1-3. |
| 15) seatCapacity_4_to_6 | : Vehicles with seating capacity of 4-6. |
| 16) seatCapacity_above_6 | : Vehicles with seating capacity above 6. |
| 17) Brand new vehicles | : Number of brand-new vehicles . |
| 18) Pre-owned vehicles | : Number of pre-owned vehicles. |

- Observations :

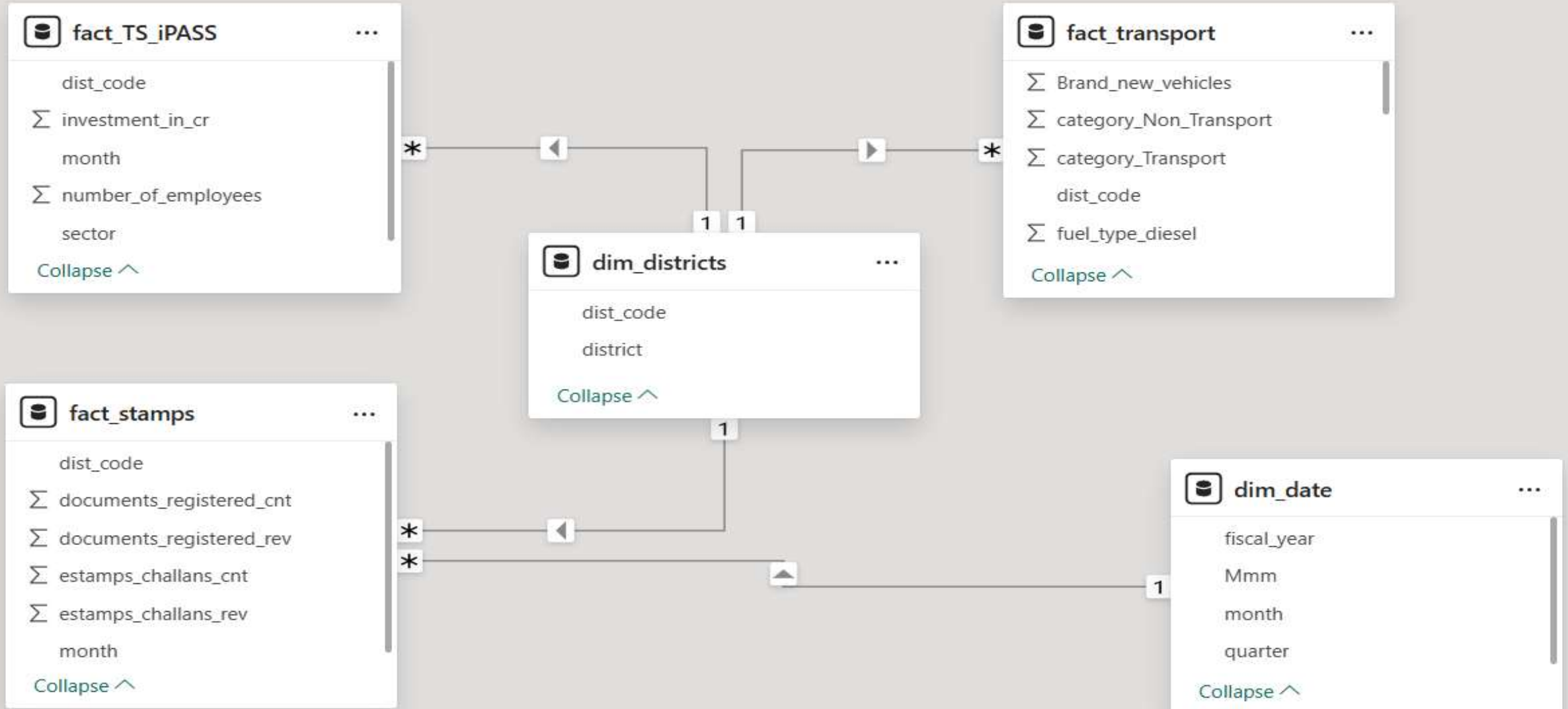
- Each district has associated monthly data for various categories like fuel type, vehicle class, seat capacity, and more.

Dataset Overview

Table : fact TS iPass

- This table contains data related to industrial approvals in the state of Telangana, India, under the Telangana State Industrial Project Approvals and Self Certification System (TS-IPASS) scheme
- Columns :
 - 1) district code : A unique code assigned to each district (e.g., 19_1, 22_2)
 - 2) month : The first day of the month in the format dd-mm-yyyy.
 - 3) sectors : The industry(e.g., Engineering, Food Processing, Textiles) to which the investment belongs.
 - 4) Investment in cr : Declared investment in crores of Indian Rupees.
 - 5) number of employee : Number of jobs expected to be created through the project.
- Observations:
 - 1) At monthly level each entry provides number of approved projects ,investment amount (INR), employment generation.

ER DIAGRAM



Technology Stack

- **Excel:**
Perfect for initial data exploration, performing quick calculations, and sharing results with team members.
- **SQL Server:**
Serves as the backbone for storing and processing structured data, enabling efficient querying and analysis across large datasets.
- **Power BI:**
Ideal for delivering insights to business leaders and decision-makers through interactive dashboards and reports.

List Of Data Checks

- Checking missing values.
- Checking duplicated values.
- Checking if any rows have negative values.
- Checking name convention.
- Checking all columns has proper data types.
- Checking each row represents one district-month combination.

KPI & Formula

Document & Stamps KPIs	Formula	Description
Total Document registered	sum(documents registered cnt)	Total count of document registered
Total revenue from stamps	SUM(estamps challan rev)	Total revenue generated via stamps
Total revenue from documents registered	sum(documents registered rev)	Total revenue generated via document registered
Average Revenue per stamps	Total revenue / total stamps	Stamps per revenue registered
Average Revenue per document	Total revenue / total documents	Document per revenue registered
Top performing district	RANK(District, SUM(documents registered cnt))	Top N districts by total documents
Stamp Penetration Rate	Stamp Penetration Rate = DIVIDE(SUM(stamps[stamps challans cnt]), [Total Documents Registered]	Shows how many documents are being converted to digital stamps

Metrics for Stamp & document

Metrics	Values
Total Document registered	5M
Total revenue from stamps	220.68bn
Top performing district	Yadadri Bhuvanagiri with 262167 document count
Average Revenue per stamps	75.4K
Average Revenue per document registered	60.6K
Total revenue from document registered	295bn
Stamp Penetration Rate	60.06%

KPI & Formula

Transports KPIs	Formula	Description
Total fuel type vehicles	Petrol + diesel + electric + others	Total number of fuel type vehicles registered
Total class vehicles	Motorcycle + motorcar+ autorickshaw + agriculture + others	Total number of vehicles class registered
Percentage of brand-new vehicles	New Vehicles / (New + Used) * 100	Percentage of new vehicles
Percentage of transports vehicles	Transport vehicles / (Transport + Non-Transport) * 100	Percentage of transports vehicles
Total seat capacity vehicles	seatCapacity_1_to_3 + seatCapacity_4_to_6 + seatCapacity_above_6	Total number of seat capacity vehicles
District-wise EV Adoption	Electric Vehicles (District X) / Total Vehicles (District X) * 100	Electric vehicles per district
Average Seat Utilization	Avg passengers = seat capacity vehicles/ total vehicles	Avg. passengers per vehicle

Metrics for Transportation

Metrics	Values
Total fuel type vehicles	66.67Lakhs
Total no. of vehicles class	48.10 lakhs
Percentage of brand-new vehicles	93.27%
Percentage of transports vehicles	8.98%
Total seat capacity vehicles	66.63Lakhs
Avg. passengers per vehicle	2.6400
EV adoption percentage(for Hyderabad)	2.79%

KPI & Formula

iPASS KPIs	Formula	Description
Total investment	$\text{sum}(\text{investment in cr})$	Sum of investment amounts (INR)
Total employment generated	$\text{sum}(\text{number of employee})$	Total jobs created
Total sectors	$\text{Sum}(\text{sectors})$	Number of sectors
Monthly growth rate	$\frac{\text{current month} - \text{previous month}}{\text{previous month}} * 100$	MoM change in investment
Sector-wise Investment & Jobs	$\text{sum}(\text{investment in cr}) / \text{sector}, \text{sum}(\text{number of employee}) / \text{sector}$	Share of each sector in investment
Sector-wise Labour Efficiency	$(\text{Jobs by Sector}) / (\text{Investment by Sector}) * 100000000$	Jobs per crore invested by sector
Average investment per sector	$\text{Average}(\text{Total investment} / \text{total sector})$	Average investment per sector

Metrics for iPASS

Metrics	Values
Total investment	₹ 99.13k crores
Total employment generated	675k
Monthly growth rate	0.08
Total sectors	20
Average investment per sector	₹ 4,956.67 crores
Sector-wise Investment & Jobs (Real Estate, Industrial Parks and IT Buildings)	₹29778.1741 crores & 352558 jobs
Labour efficiency per employee (Solar and Other Renewable Energy)	₹ 1.436 crores

Analysis to be made

1. Stamp registration over time

- Bar chart : Fiscal Year x Quarter vs Total Documents
- Line chart : Trend over time

2. Top performing district by stamp revenue

- Bar chart : Top 10 districts by revenue
- Bar chart: Bottom 10 district by revenue

3. Electric vehicle trends

- Line chart : EV adoption trend over time
- Stacked bar chart : Fuel types per quarter

4. Industrial Investment by Sector

- Pie chart : Share of investment by sector
- Bar chart : Top 10 sectors by investment

5. Job creation by sector

- Bar chart : Jobs created per sector
- Combo chart : Investment vs Employment comparison

6. District-wise job creation

- Bar chart : Top 10 districts by jobs
- Heatmap : District-wise job density

7. Vehicle class distribution

- Bar chart : Total vehicles per class
- Pie chart : % distribution

8. Stamp Registration vs Industrial Investment Correlation

- Dual-axis line chart : Document registrations vs Investment trends

Dashboard layout



Documents & Stamps

[Next Page](#)[Clear all Slicers](#)

Slicers : Fiscal Years

Number of
document
registered

Revenue of
document
registered

Number of stamp
registered

Revenue of stamp
registered

Count of document vs count of stamp registered :
line chart : x-axis → years
y-axis → count of document and stamp

Stamp revenue distribution:
Map chart

District wise YoY Growth%:
line chart: x-axis → District
y-axis → revenue growth%

Top5 District wise revenue:
column chart: : x-axis → District
y-axis → Total revenue

Dashboard layout

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Transportation

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Slicers : Fiscal Years

Total diesel
vehicles sold

Total electric
vehicles sold

Total petrol
vehicles sold

Total others fuel
vehicles sold

Monthly Fuel Type sold:

line chart : x-axis → months

y-axis → Total vehicles sold

Overall vehicles sold in
district:
Map chart

Top 5 District wise YoY Growth%:
line chart: x-axis → District
y-axis → YoY growth%

Distribution of vehicles:
Pie chart

Dashboard layout

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Industrial Investment & Job Creation

[Clear all Slicers](#)

Slicers : Sector Slicers : Quarters Slicers : Years

Total investment

Number of
employee

Investment in cr by months:
line chart : x-axis → months
y-axis → Total investments

Total sectors

Monthly growth
rate

District wise investment:
Map chart

Top 5 District wise investment
and employee
line chart: x-axis → District
y-axis → investment and
employee

Top5 sector by employee:
column chart: x-axis → sectors
y-axis → number of
employee



Document & Stamp Registration



Clear all slicers

Fiscal Year

2019

2020

2021

2022

Total Document registered

5M

Document revenue

295bn

Total Stamp

3M

Stamp revenue

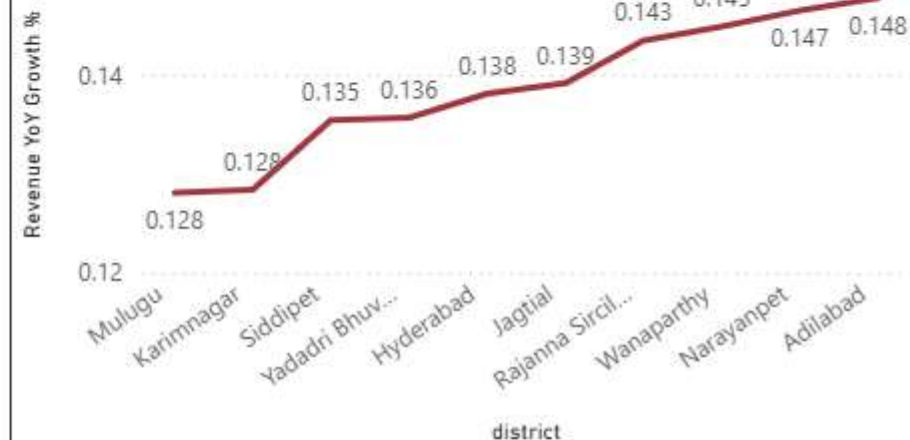
220.68bn

Stamp Registration Revenue Distribution

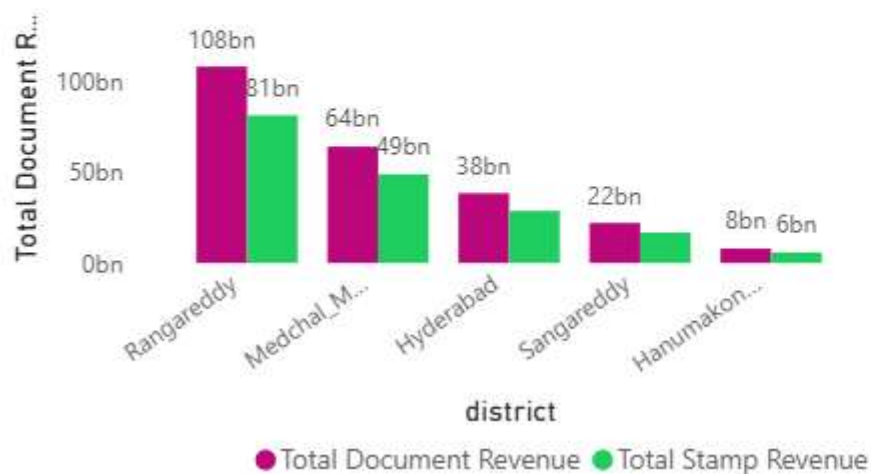


High Low Moderate

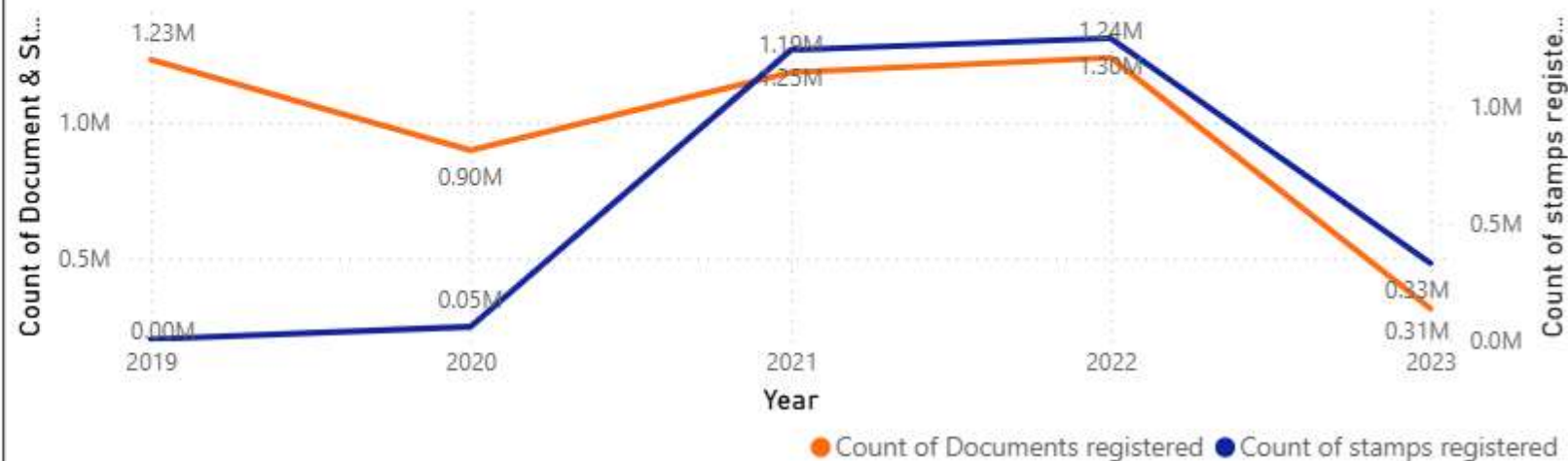
District wise YoY Growth%



Top 5 District wise Total Revenue



Count of Document & Stamp Registration



Insight for Document & Stamp

1. Key Metrics :

- Documents Registered : 5 million.
- Stamp Registrations : 3 million.
- Document Revenue : ₹295 billion.
- Stamp Revenue : ₹220.68 billion.

2. Count of Document & Stamp Registration Over Time :

- Both document and stamp registrations show an upward trend over the years.
- Stamp registration counts have consistently been lower than document registrations.

3. Revenue YoY Growth :

- Revenue growth has been steady, with significant increases observed over time.

4. District-wise Revenue Distribution :

- Some districts (e.g., Rangareddy) contribute significantly more revenue compared to others.

5. Top 5 Districts by Total Revenue :

- Rangareddy leads in total revenue, followed by Medchal Malkajgiri and Hyderabad.

Recommendation & Stakeholders

Recommendations

1. Focus on High-Revenue Districts : Implement strategies to maintain or increase revenue in top-performing districts.
2. Digital Transformation : Enhance e-stamping adoption to streamline processes and reduce manual errors.
3. Seasonal Analysis : Identify peak periods for document and stamp registrations to optimize resource allocation.

Stakeholders

1. Revenue Department : Track revenue collection and ensure compliance.
2. Tax Collectors : Monitor stamp duty collections and identify areas for improvement.
3. IT Teams : Support digital initiatives like e-stamping to improve efficiency.
4. Public Awareness Campaigns : Educate citizens about the benefits of electronic stamping.



Transportation & Vehicles Registration



Clear all slicers

Fiscal Year

2019

2020

2021

2022

Total Diesel Vehicles Sold

949K

Total Electric Vehicles Sold

104K

Total Petrol Vehicles sold

6M

Total Other Fuel Vehicles Sold

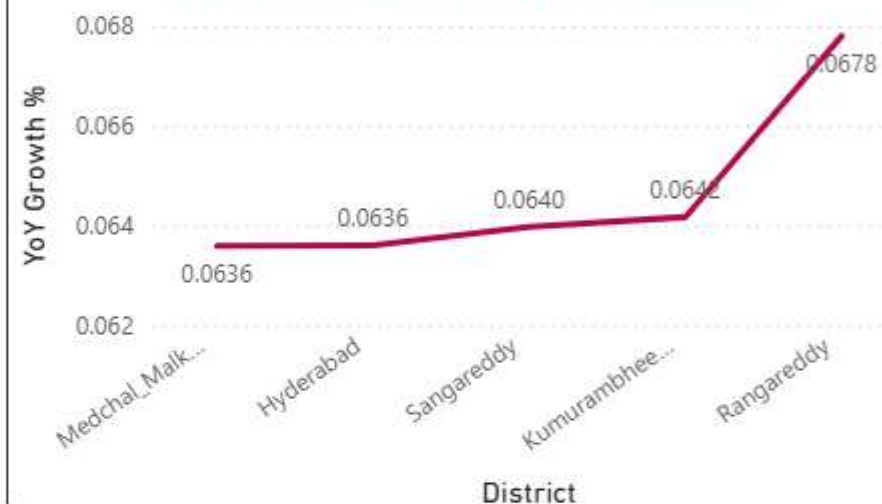
89K

Overall Vehicles Sold by District

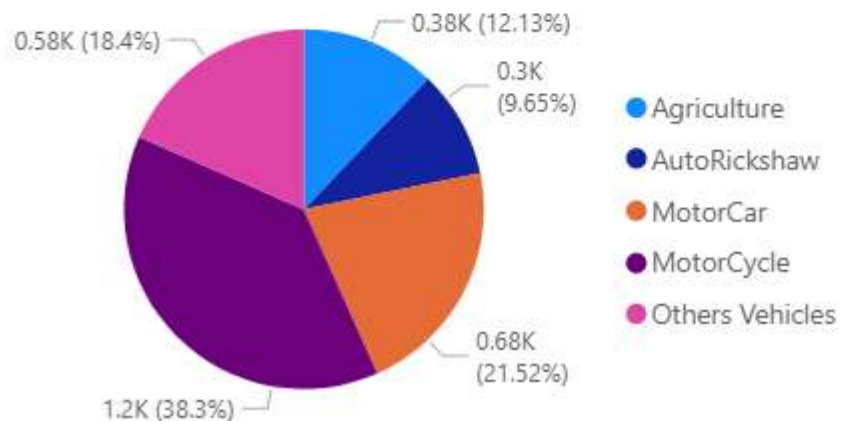


High Low Moderate

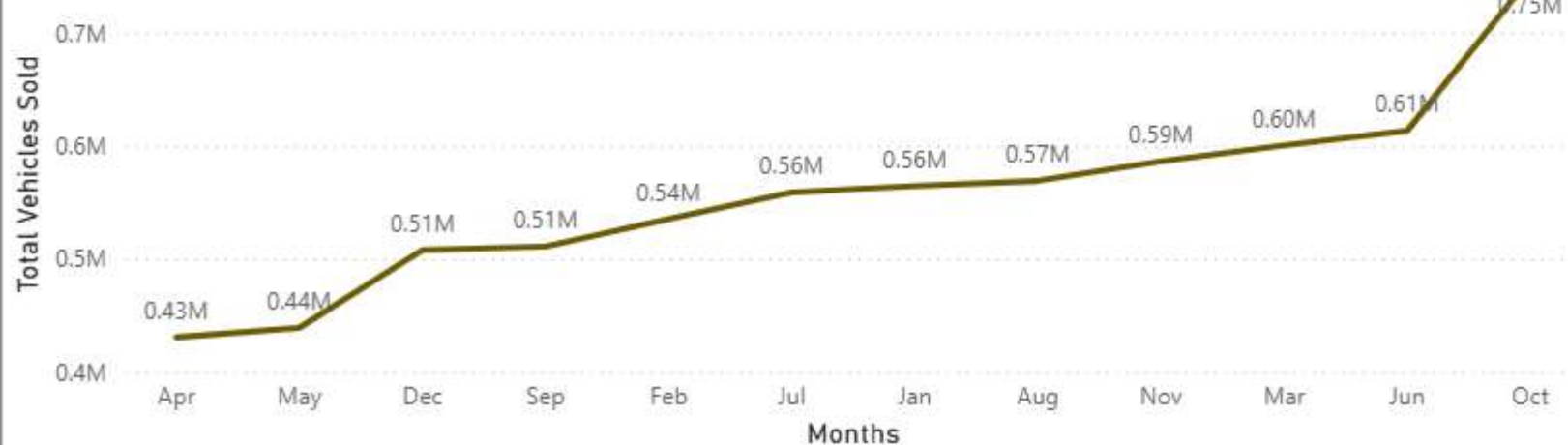
YoY Growth% by Top 5 District



Distribution of Vehicles



Monthly Fuel Type Vehicles Sold



Insight for Transportation

1. Vehicle Sales Summary :

- Total diesel vehicles sold: 949K .
- Total electric vehicles sold: 104K .
- Total petrol vehicles sold: 6M .
- Total other fuel vehicles sold: 89K .

2. Monthly Fuel Type Vehicles Sold :

- Electric vehicle sales show consistent growth over time.
- Diesel and petrol vehicle sales remain stable but lower compared to electric vehicles.

3. Overall Vehicles Sold by District :

- Districts like Hyderabad and Rangareddy show higher vehicle sales compared to others.

4. YoY Growth by Top 5 Districts :

- Rangareddy exhibits the highest year-over-year growth in vehicle sales.

5. Distribution of Vehicles :

- Motorcycles account for 21.52% of total vehicles sold, followed by agriculture vehicles (18.4%) and auto-rickshaws (12.13%)

Recommendation & Stakeholders

Recommendations

1. Promote Electric Vehicles : Continue incentivizing EV adoption to reduce pollution and dependency on fossil fuels.
2. District-Specific Strategies : Address low vehicle sales in underperforming districts through targeted campaigns.
3. Fuel-Type Analysis : Monitor the shift towards electric vehicles and plan infrastructure accordingly (e.g., charging stations).
4. Seasonal Trends : Identify peak sales periods for different vehicle types to optimize inventory and marketing efforts.

Stakeholders

1. Transportation Authorities : Monitor vehicle sales trends and plan infrastructure improvements.
2. Environmental Agencies : Track EV adoption to meet sustainability goals.
3. Urban Planning Departments : Plan road expansions and parking facilities based on vehicle distribution.



Industrial Investment & Job Creation

Clear all slicers

Quarters: All
Years: All
District Code: All

Total Investment in cr
99.13K

Total Employee
675K

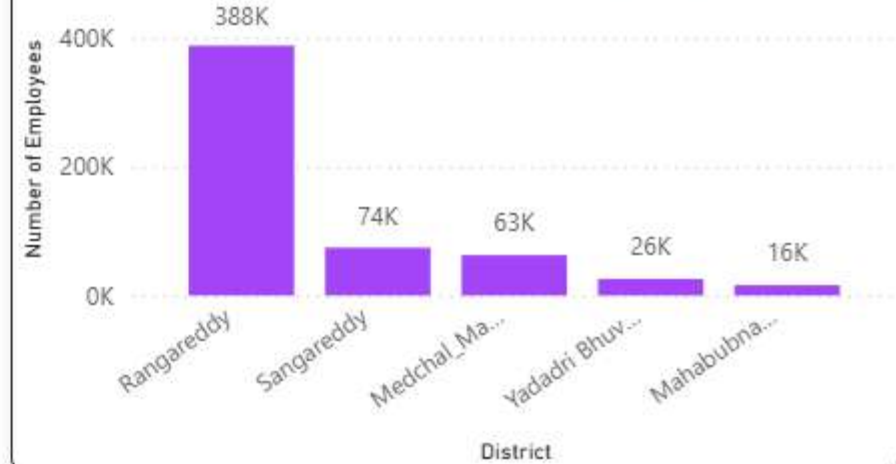
Total Sectors
20

Monthly growth rate
7.55%

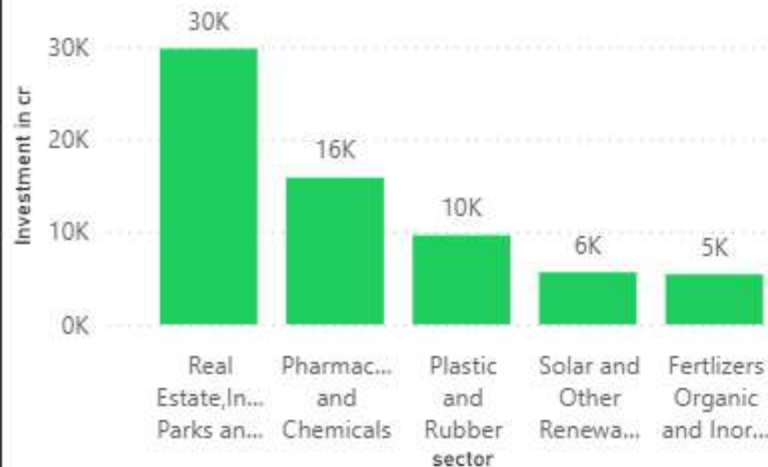
District wise Investment in Crores



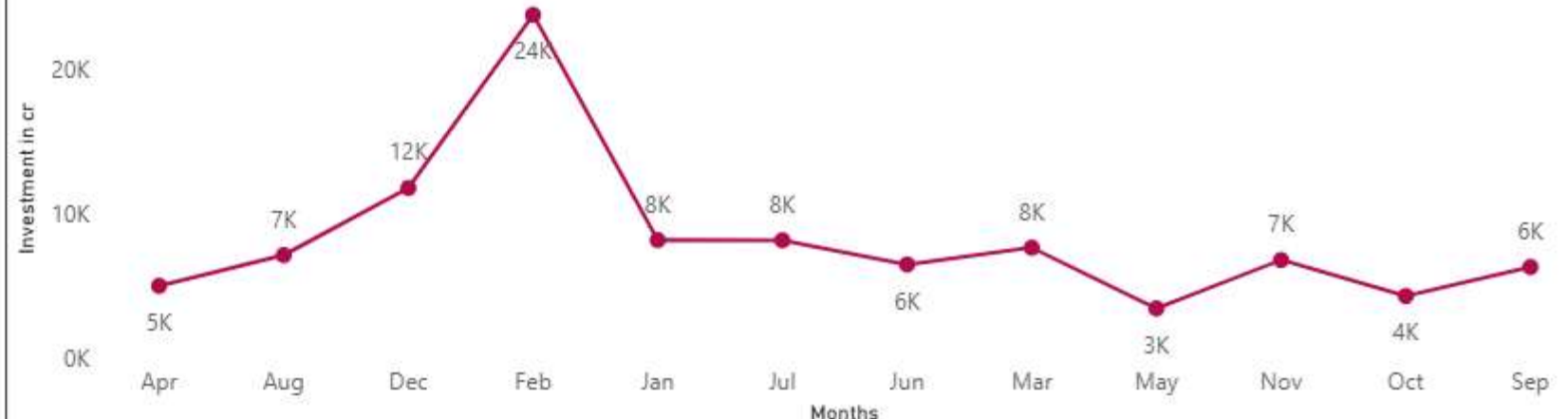
Top 5 District wise Employee



Top 5 sector by Investment



Investment in Crores by Months



Insight for TS iPASS

1. Investment in Crores :

- Total investment across sectors is ₹99.13K crore .
- Number of employees generated is 675K .
- There are 20 sectors involved, with a monthly growth rate of 0.08 .

2. Investment by Months :

- Investment peaks in February (₹24K crore) and dips in March (₹8K crore) .
- A general upward trend is visible from April to February, followed by a decline in March.

3. District-wise Investment :

- The map shows varying levels of investment across districts, with some districts having significantly higher investments than others.

4. Top 5 Districts by Employee and Investment :

- Rangareddy leads in both employee generation and investment.

5. Top 5 Sectors by Investment :

- Real Estate, Industrial Parks, and IT Buildings dominate the investment landscape.

Recommendation & Stakeholders

Recommendations

1. Focus on High-Investment Districts : Allocate resources to districts like Rangareddy to sustain high investment trends.
2. Sector Diversification : Encourage investment in other sectors beyond real estate to balance economic growth.
3. Monthly Growth Monitoring : Track monthly fluctuations closely to identify seasonal patterns or anomalies.

Stakeholders

1. Government Officials : Monitor overall investment and employment trends.
2. Business Investors : Identify high-potential sectors and districts for future investments.
3. Employment Agencies : Track job creation trends to align workforce development programs.

Thank you