



TELANGANA GROWTH ANALYSIS

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ABOUT TELANGANA

Telangana is one of the fastest-growing states in India and one of the states with an open data policy.

.Telangana was formed on June 2nd 2014, which is recognized as the 29th state in India. Telangana has 33 districts with an area of 112077 km sq. Telangana is ranked 11th in area in India. Automobiles and auto components, spices, mines and minerals, textiles and apparels, pharmaceuticals, horticulture, and poultry farming are the main industries in Telangana.

OBJECTIVE

- Explore Stamp Registration, Transportation and Ts-Ipass Datasets.
Understand their attributes, categories and time period.
- Analyze trends and patterns within each department.
- Identify growth opportunities and areas needing attention.
- Find correlation among these departments and report the overall growth of the state through insights and relevant visuals such as shape maps.

PRIMARY INSIGHTS

- Stamp Registration
- Transportation
- TS-IPASS



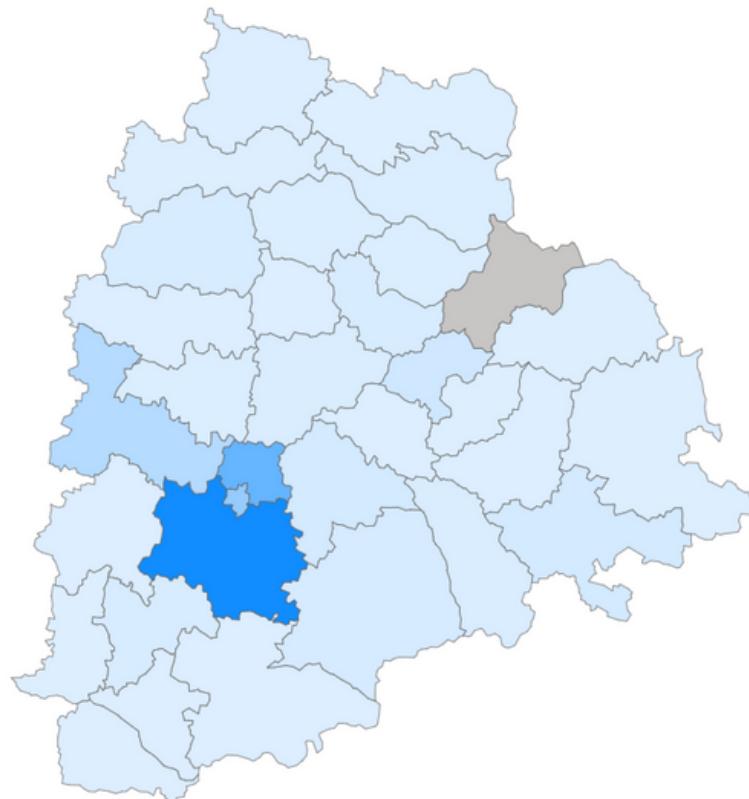
ESTAMPS

E-Stamp duty in Telangana-Assessment, Management & Payment System

eSTAMPS was launched by the Registration and Stamps Department, Telangana on 11th April, 2016. eSTAMPS refers to the stamp duty, transfer duty, registration fees and user charges paid by the public to register any deed. User now has the convenience of paying the stamp duty from anywhere. This system is user friendly, hassle free and convenient as the citizen saves time and pays the stamp duty from the comfort of his home/office/anywhere.

How does the revenue generated from document registration vary across districts in Telangana? List down the top 5 districts that showed the highest document registration revenue growth between FY 2019 and 2022

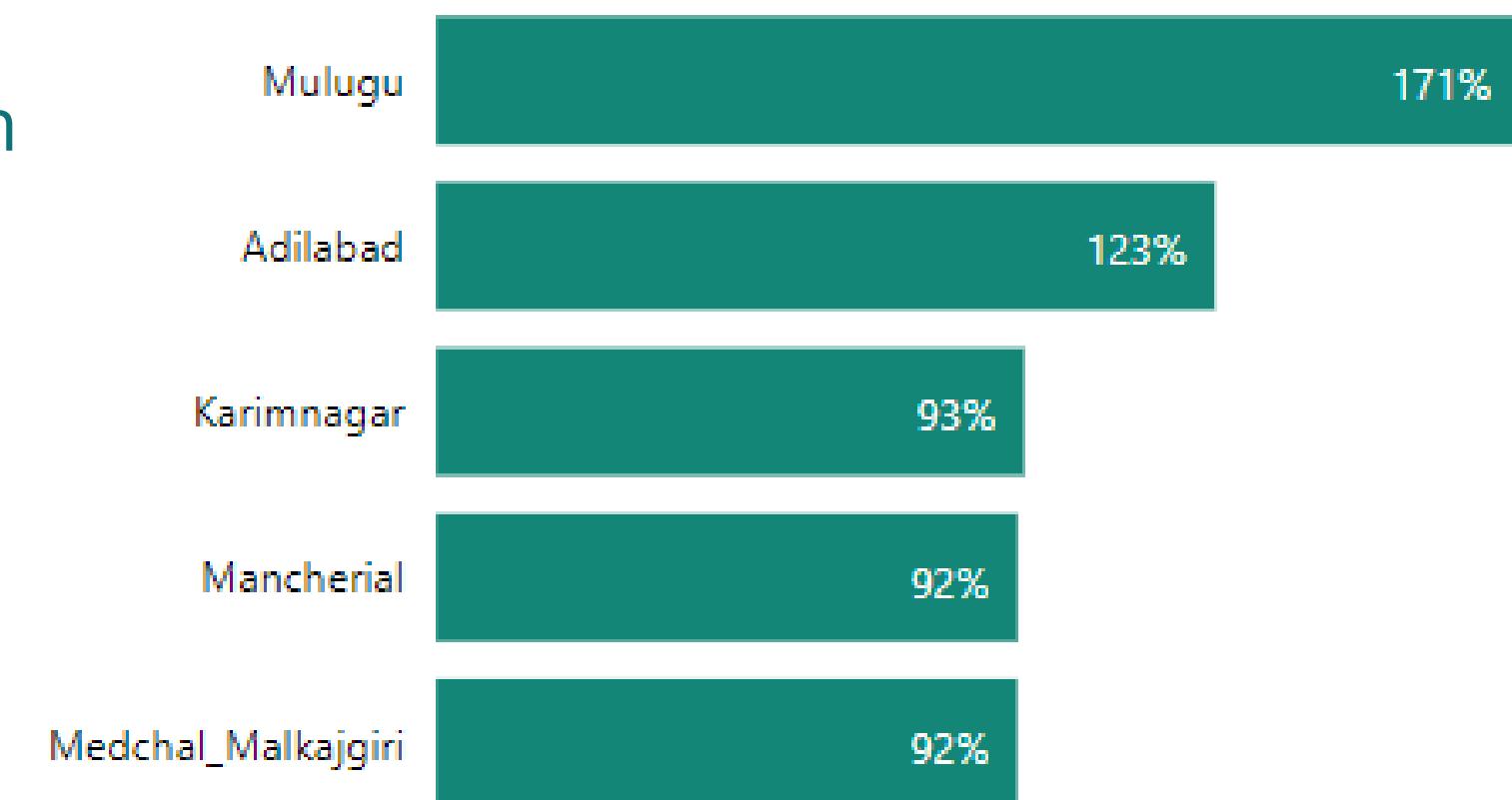
DOCUMENT REVENUE BY DISTRICT



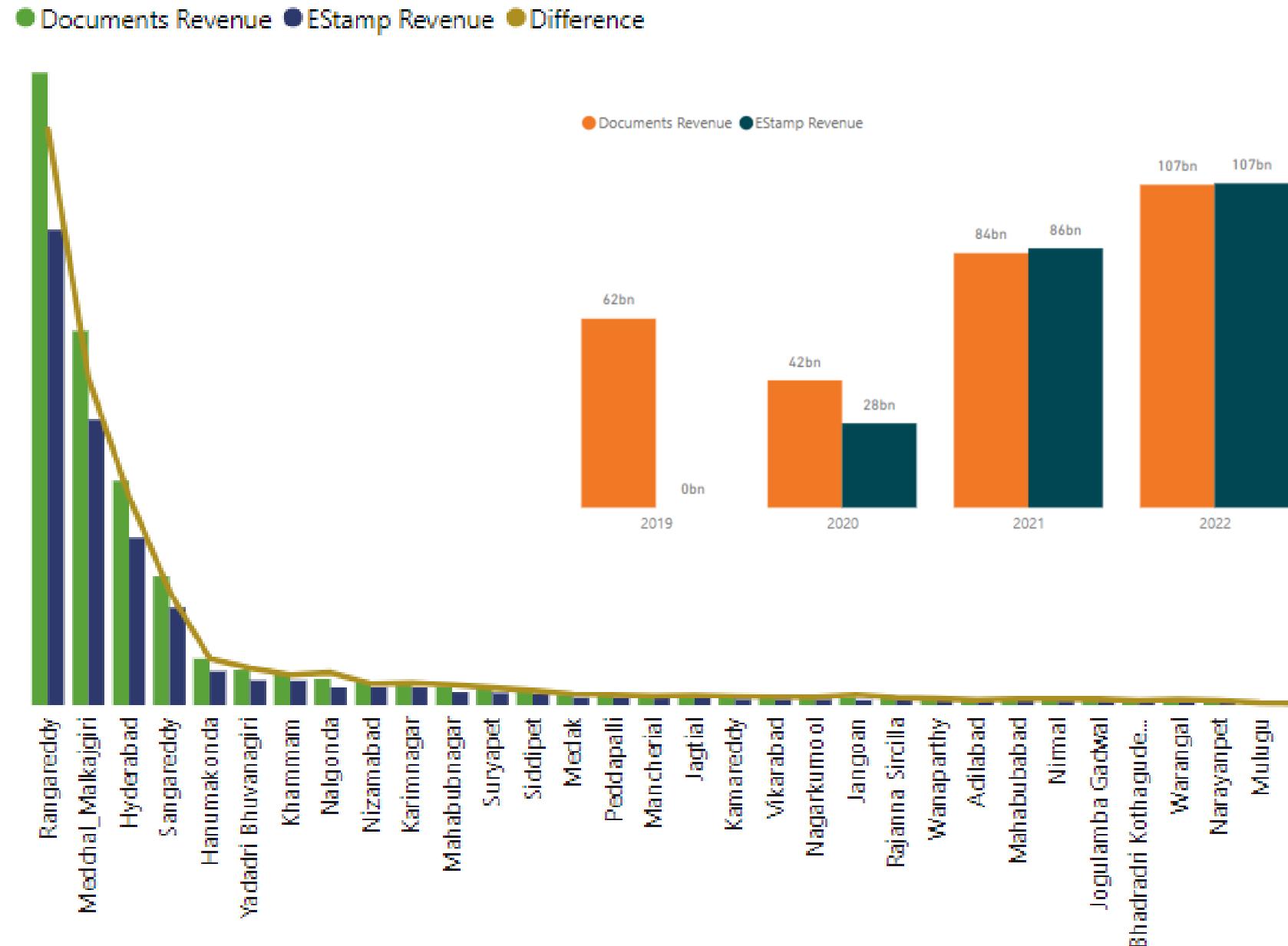
- In Telangana, **Rangareddy** generates the highest revenue through document registration with 37%.
- **Medchal_Malkajgiri(22%), Hyderabad(13%)** and **Sangareddy(7.5%)** come next.
- **Jayashankar Bhupalpally** receives no revenue from document registration.

Top 5 Districts With Highest Revenue Growth

- **Mulugu** district reports a phenomenal **171%** increase in revenue from document registration.
- **Adilabad** and **Karimnagar** came next, both with **123%** and **93%** growth, respectively.
- The revenue growth for **Mancherial** and **Medchal Malkajgiri** is over **92%**.



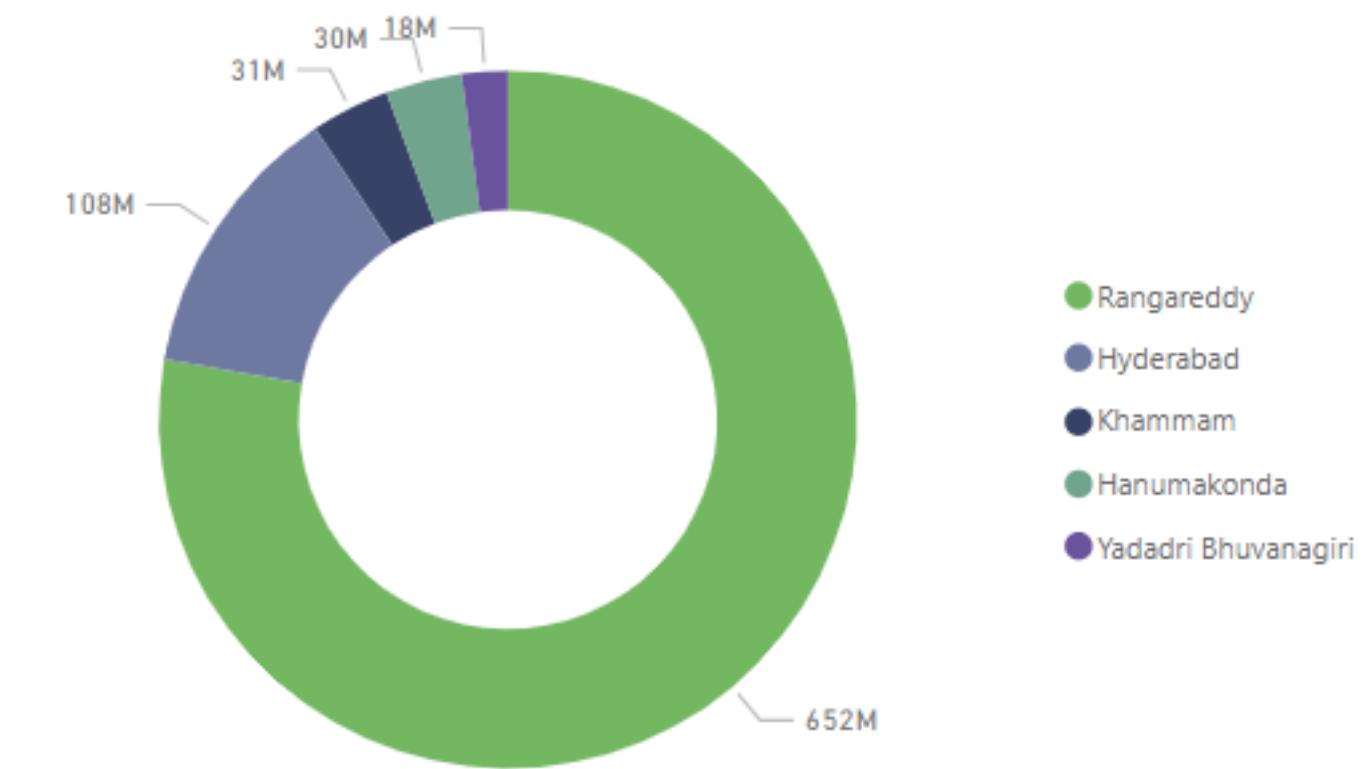
How does the revenue generated from document registration compare to the revenue generated from e-stamp challans across districts? List down the top 5 districts where e-stamps revenue contributes significantly more to the revenue than the documents in FY 2022?



- We can find that the revenue generated from document registration is more than the revenue generated from e-stamp challans for every district.
- In 2019, there is no revenue generated from EStamp challans.
- The income generated by EStamp challans rises in 2020, whereas the revenue generated by document registration falls.
- The revenue from EStamp challans as well as Document registration both rise in 2021 and 2022. In addition to document registration, the EStamp Challan generates additional money.

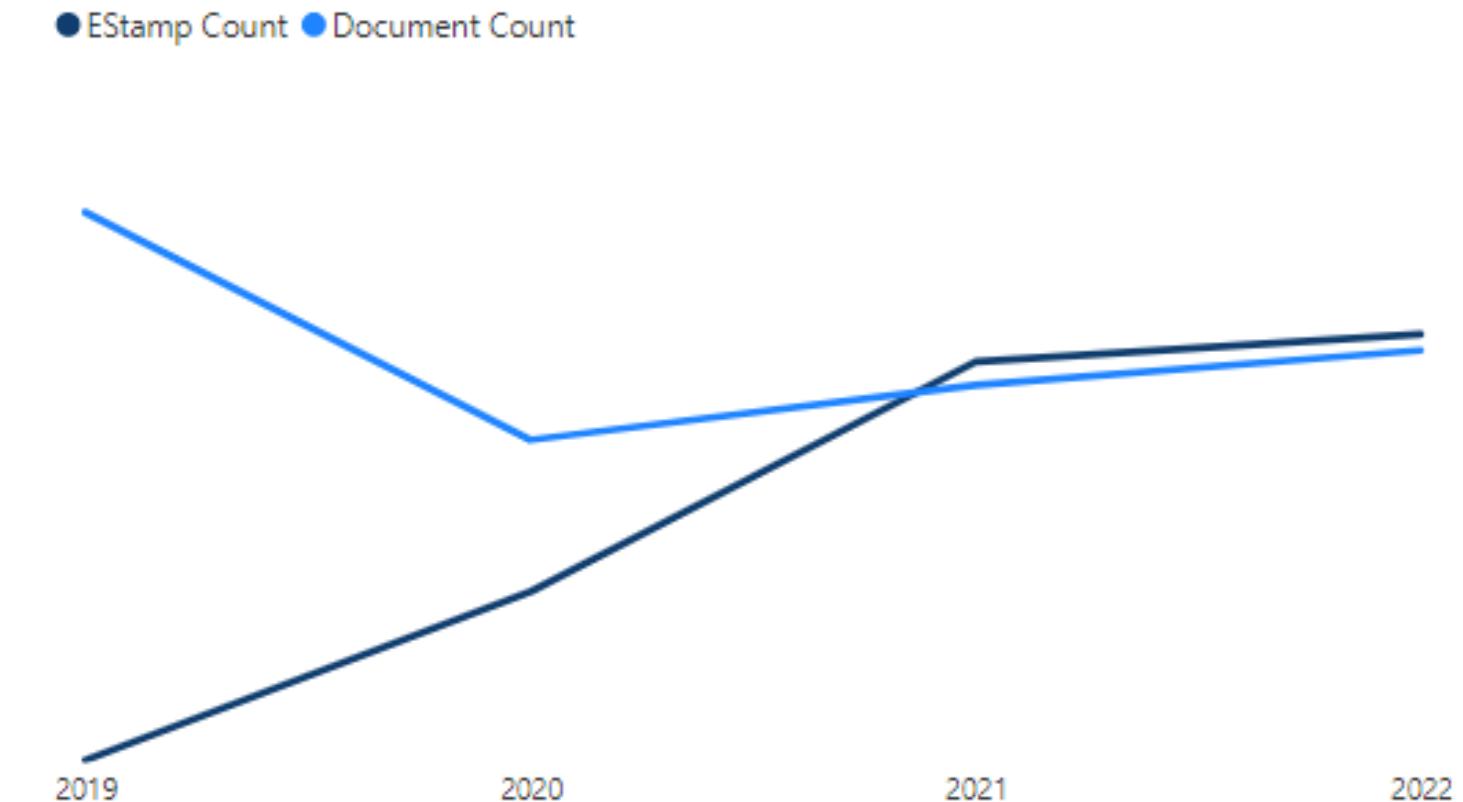
How does the revenue generated from document registration compare to the revenue generated from e-stamp challans across districts? List down the top 5 districts where e-stamps revenue contributes significantly more to the revenue than the documents in FY 2022?

- **Rangareddy:** The revenue generated from the EStamp challan is 38349357618 and the document registration revenue is 37697750946. So the difference is 651606672 which is the highest difference among all the districts.
- **Hyderabad:** The revenue generated from the EStamp challan is 14374315032 and the document registration revenue is 14266012441. So the difference is 108302591.
- **Khammam:** The revenue generated from the EStamp challan is 2002220314 and the document registration revenue is 1971647539. So the difference is 3057275.
- **Hanumakonda:** The revenue generated from the EStamp challan is 2846856844 and the document registration revenue is 2817238587. So the difference is 29618257.
- **Yadadri Bhuvanagiri:** The revenue generated from the EStamp challan is 2185270667 and the document registration revenue is 2167480603. So the difference is 17790064.



Is there any alteration of e-Stamp challan count and document registration count pattern since the implementation of e-Stamp challan? If so, what suggestions would you propose to the government?

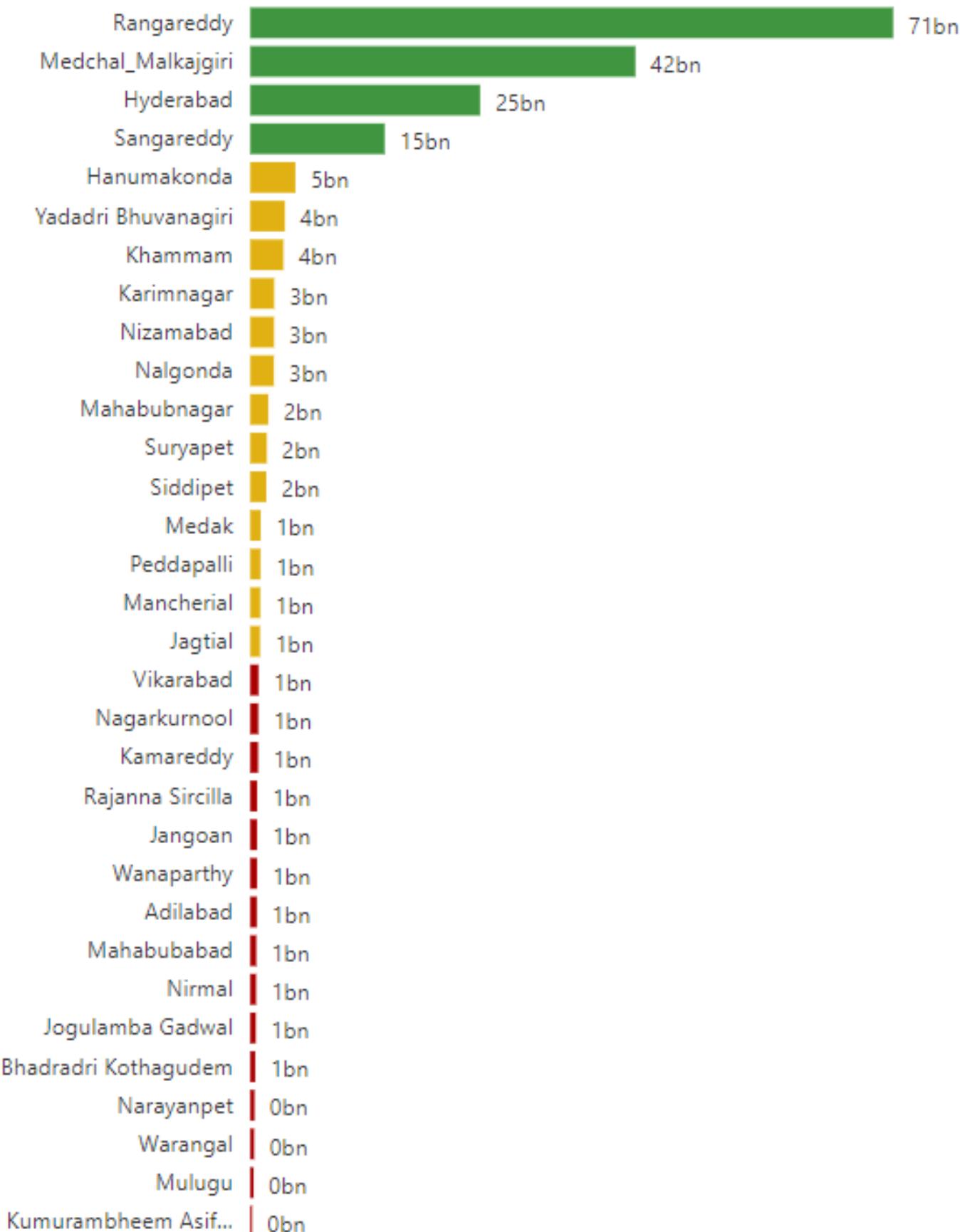
- No EStamp challan count has been recorded for 2019 yet.
- The EStamp challan count, however, grew steadily starting in 2020.
- The number of documents registered exceeds the number of EStamp challans till 2020.
- However, starting in 2021, there are more EStamp Challans than documents registered count.



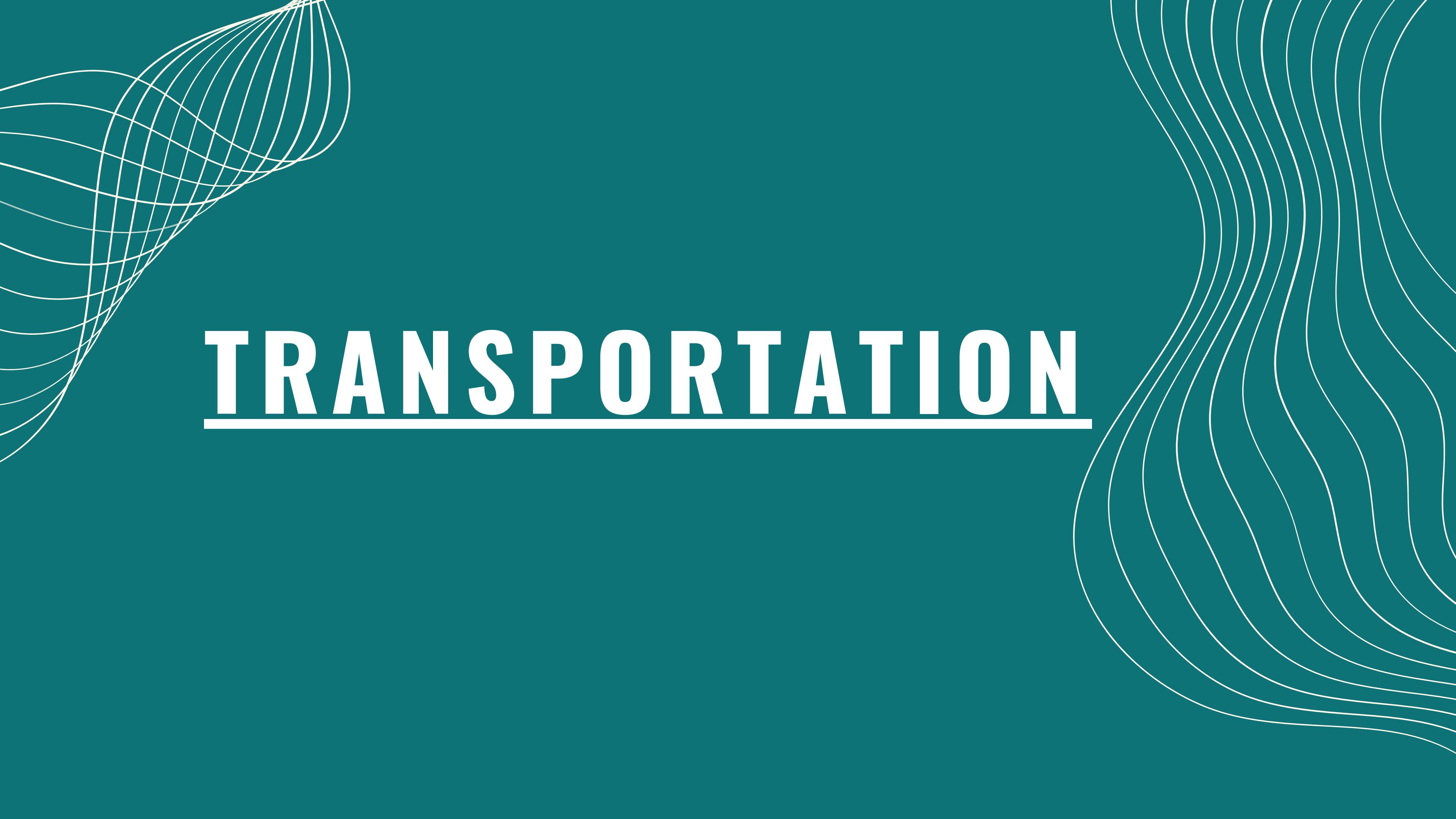
Suggestions:

- **Raising awareness** of EStamps and their advantages.
- **Improving user friendliness** of the EStamp.
- **Keeping the balance** between document registration and the EStamp Challan. Because document registration generates more money than EStamp does.
- Enhancing the website's **security**.

Categorize districts into three segments based on their stamp registration revenue generation during the fiscal year 2021 to 2022



- **Category 1(>10bn):** Rangareddy, Medchal Malkajgiri, Hyderabad, Sangareddy
- **Category 2(>1bn):** Hanumakonda, Yadadri Bhuvanagiri, Khammam, Karimnagar, Nizamabad, Nalgonda, Mahabubnagar, Suryapet, Siddipet, Medak, Peddapalli, Mancherial, Jagtial
- **Category 3(<1bn):** Vikarabad, Nagarkurnool, Kamareddy, Rajanna Sircilla, Jangoan, Wanaparthy, Adilabad, Mahabubabad, Nirmal, Jogulamba Gadwal, Bhadravati Kothagudem, Narayanpet, Warangal, Mulugu, Kumurambheem Asifabad



TRANSPORTATION

Investigate whether there is any correlation between vehicle sales and specific months or seasons in different districts. Are there any months or seasons that consistently show higher or lower sales rate, and if yes, what could be the driving factors? (Consider Fuel-Type category only)

Yes, there is a correlation between vehicle sales and seasons. Vehicle sales are typically higher in the winter and lower in the summer. As the population of a district increases, there is a higher likelihood of increased vehicle sales. The largest vehicle sales in Telangana were recorded in Hyderabad, Medchal Malkajgiri, Rangareddy, and Sangareddy.

- October and June have the highest sales rate in Telangana
- April and May have lowest vehicle sales rate in Telangana

district	Apr	Aug	Dec	Feb	Jan	Jul	Jun	Mar	May	Nov	Oct	Sep
Hyderabad	71323	101225	84240	88400	92626	91413	94958	102800	65338	99010	121229	89287
Medchal_Malkajgiri	65284	87692	79648	78948	81146	81677	84990	92863	57537	88459	110044	76982
Rangareddy	58545	81858	75673	73096	77557	76199	79243	86184	55018	80793	101322	73414
Sangareddy	17976	22363	21099	22727	22525	21742	24020	24454	18370	23010	29244	20766
Nizamabad	13710	20086	19415	18975	18434	19104	22240	18742	16474	21728	28780	17505
Nalgonda	13084	16998	14737	17828	22770	19322	21826	18763	16903	18131	28002	15867
Warangal	13502	19261	16146	15712	18673	19622	22039	16427	15574	19749	25422	15669
Khammam	14978	16842	13965	17348	20834	17966	21246	18964	15775	16511	24847	16763
Vikarabad	12385	13866	12715	14179	13764	14360	16377	15599	12868	15177	18478	12480
Mahabubnagar	11913	14290	12748	13113	12892	15182	16905	13662	12734	15249	19895	10624
Suryapet	9623	11988	10601	12679	15190	14411	16548	13611	12268	13529	20144	12471
Karimnagar	10483	14217	11697	11429	12747	12640	15707	12468	11558	13421	18586	12572
Bhadradri Kothagudem	10410	10090	9765	12296	14531	11823	14079	13782	11459	11024	17107	9578
Siddipet	8672	11835	11309	11265	11758	12036	15120	11734	9745	12291	14553	10931
Kamareddy	8093	10153	10303	10967	10079	10114	12575	11000	9447	11506	14531	9515
Jagtial	7333	10768	9425	10394	9566	11755	13456	9832	8479	10574	14687	10024
Yadadri Bhuvanagiri	7219	9697	8446	9058	9833	10048	10932	9953	7649	10633	12595	8677
Nagarkurnool	6914	8502	7406	8569	9288	9692	10220	10323	7531	8381	11416	7651
Medak	6555	7419	8633	8340	7477	7556	10014	8873	6590	9306	9748	7027
Mahabubabad	6298	7063	6049	8003	8683	8865	11033	8951	7978	7649	9794	6558
Mancherial	6464	7911	7462	7792	7706	7782	8823	8679	6130	9542	10708	7060
Nirmal	5736	7506	6948	8788	7321	7800	8271	7491	7420	9023	11014	6758
Peddapalli	5635	8379	6805	7434	7671	7395	9629	7442	6201	8759	10417	6702
Jayashankar Bhupalpally	5620	6232	5601	5985	7101	7951	9237	7527	6023	7583	8347	6260
Adilabad	5532	5912	5456	7469	6481	6231	6127	8028	5844	7402	9828	4887
Jogulamba Gadwal	5231	6699	4520	5699	6668	7521	7159	7090	5477	7417	8777	5523
Jangoan	4796	5929	5498	5614	6456	6349	7455	5994	5292	6801	7579	6038
Wanaparthy	4733	6107	4967	5383	5708	6549	7275	6111	4980	6562	9219	5117
Rajanna Sircilla	4240	6557	5701	6102	5964	5454	6819	5727	4678	5981	9320	5799
Kumurambheem Asifabad	3463	3207	3303	4789	5201	3513	3639	5263	3207	4013	5450	2924
Total	425750	560652	500281	528381	556650	552072	607962	588337	434547	579214	741083	501379

Investigate whether there is any correlation between vehicle sales and specific months or seasons in different districts. Are there any months or seasons that consistently show higher or lower sales rate, and if yes, what could be the driving factors? (Consider Fuel-Type category only)

Highest vehicle sales:

- June can see higher sales, as families and students prepare for the new school year, work and some may purchase vehicles for commuting to school or college.
- October and June have the highest sales rate in Telangana. In Telangana major festivals Dussehra and Diwali is celebrated in the month of October. Many people consider this occasion auspicious for making significant purchases, including vehicles.

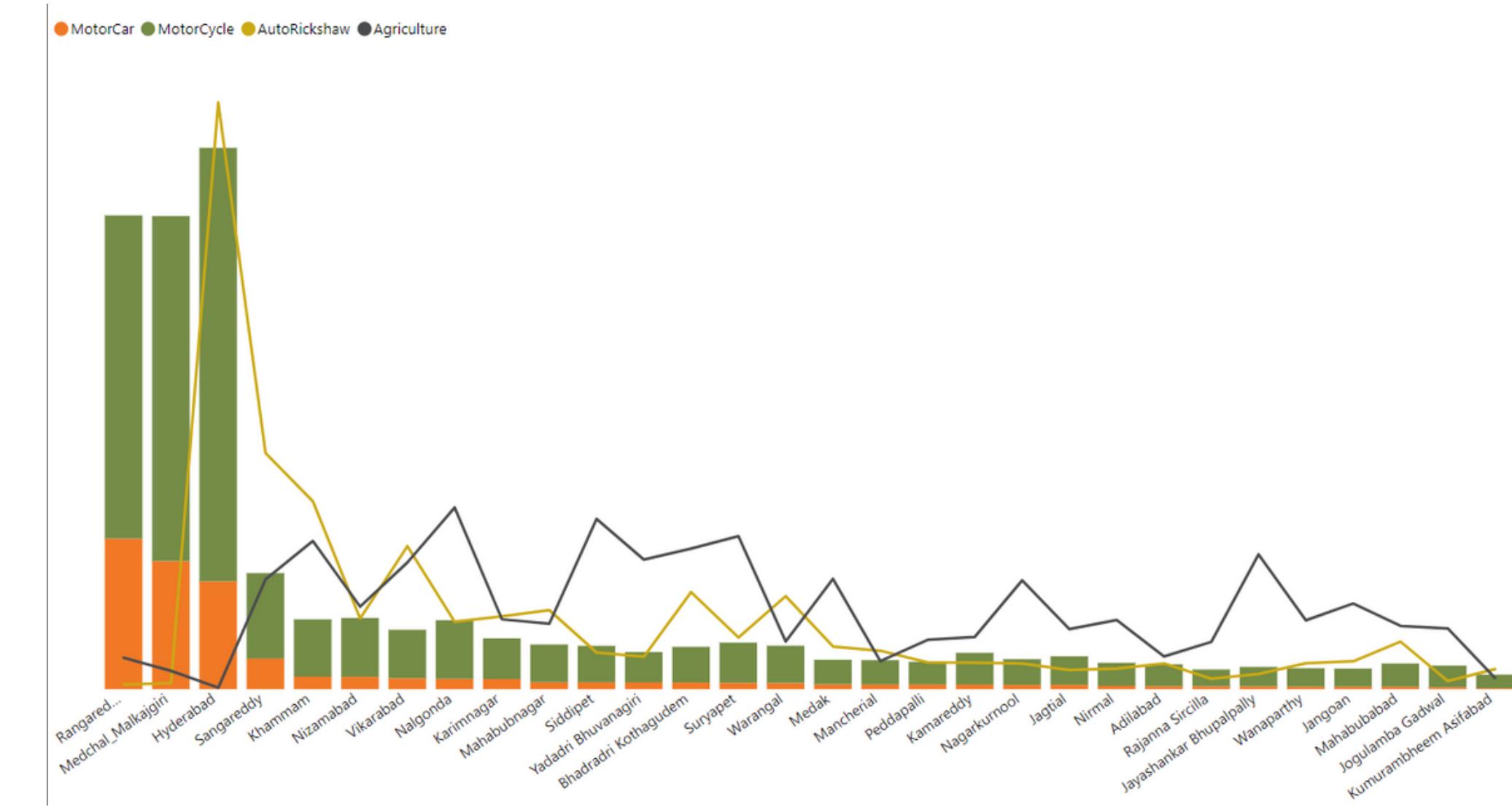
Mmm	Total Sales
Oct	741083
Jun	607962
May	434547
Apr	425750

Lowest vehicle sales:

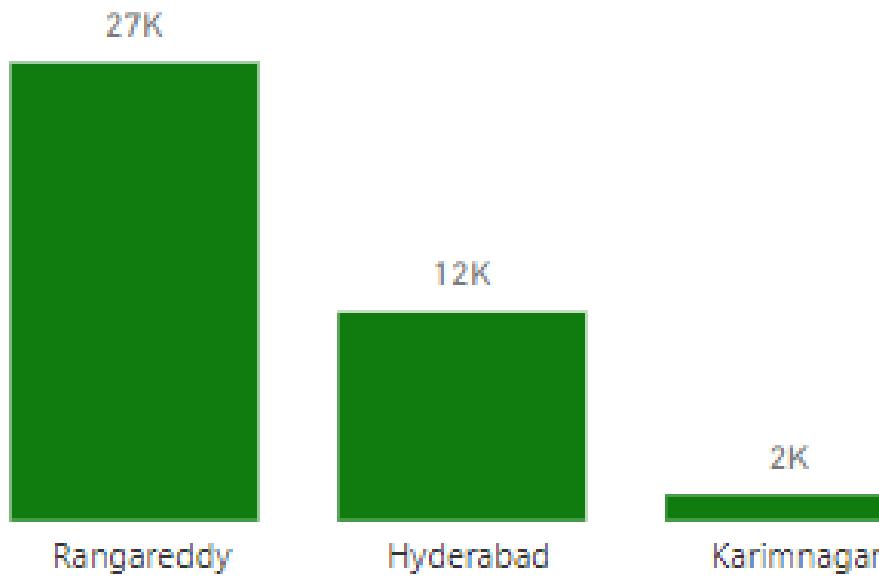
- Telangana experiences extreme summer heat in the months of April and May. Vehicle sales may slow down during the hottest months as potential buyers may prefer to avoid outdoor activities, including visiting dealerships.
- Even fuel prices tend to be higher during the summer months.

How does the distribution of vehicles vary by vehicle class (MotorCycle, MotorCar, AutoRickshaw, Agriculture) across different districts? Are there any districts with a predominant preference for a specific vehicle class? Consider FY 2022 for analysis.

- **MotorCycle:** Due to its affordability, convenient parking, and convenience of travel, motorcycles are favored by the majority of people. Medchal-Malkajgiri (17%), Rangareddy (16%), Hyderabad (22%) and Sangareddy (4%) prefer motorcycles.
- **MotorCar:** People prefer MotorCar due to its flexibility, efficiency and convenience. This vehicle class is preferred by Rangareddy (26%), Medchal_Malkajgiri (23%), Hyderabad (19%), and Sangareddy (5.5%).
- **AutoRickshaw:** Auto Rickshaws are convenient and reasonably priced. Most residents of Hyderabad (27%) prefer this Vehicle class, followed by Sangareddy (11%), Khammam (8.8%), and Vikarabad (6.7%).
- **Agriculture:** This vehicle class is preferred by Nalgonda (7.3%), Siddipet (7.0%), Suryapet (6.3%), Khammam (6.0%), and Bhadradi Kothagudem (5.7%). As agriculture is the primary source of revenue for these districts.



List down the top 3 and bottom 3 districts that have shown the highest and lowest vehicle sales growth during FY 2022 compared to FY 2021? (Consider and compare categories: Petrol, Diesel and Electric)

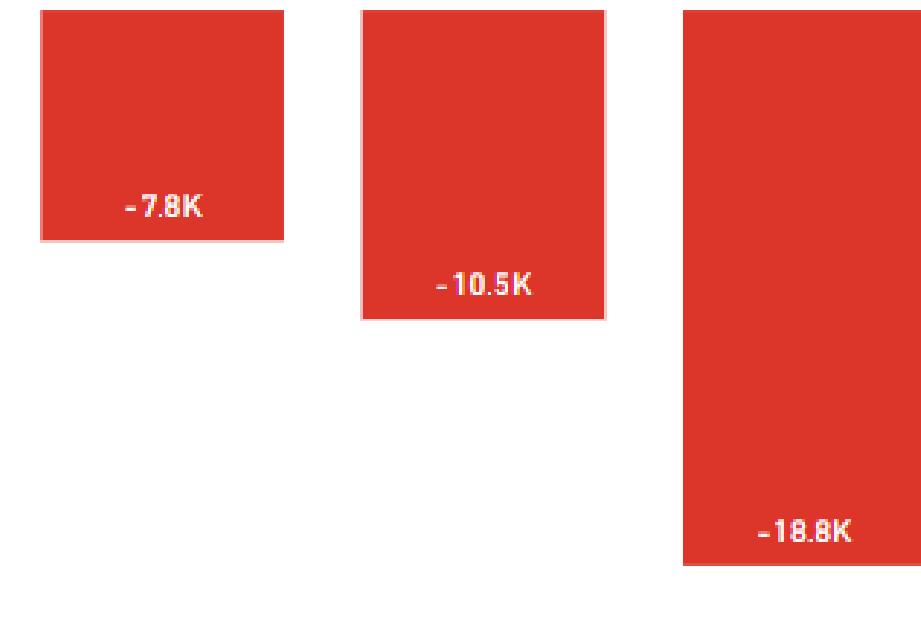


Top 3 districts with highest sales growth during FY 2022 and FY 2021

- **Rangareddy:** This district saw the most substantial sales growth with 13%.
- **Hyderabad:** This district has shown a growth of 5% of sales.
- **Karimnagar:** This district has an increase of 4% sales.

Bottom 3 districts with lowest sales growth during FY 2022 and FY 2021

- **Warangal:** This district has a 45% drop in sales.
- **Jagtial:** The sales have dropped by 37% in this distict .
- **Nirmal:** This district has a decrease in sales of 34%.



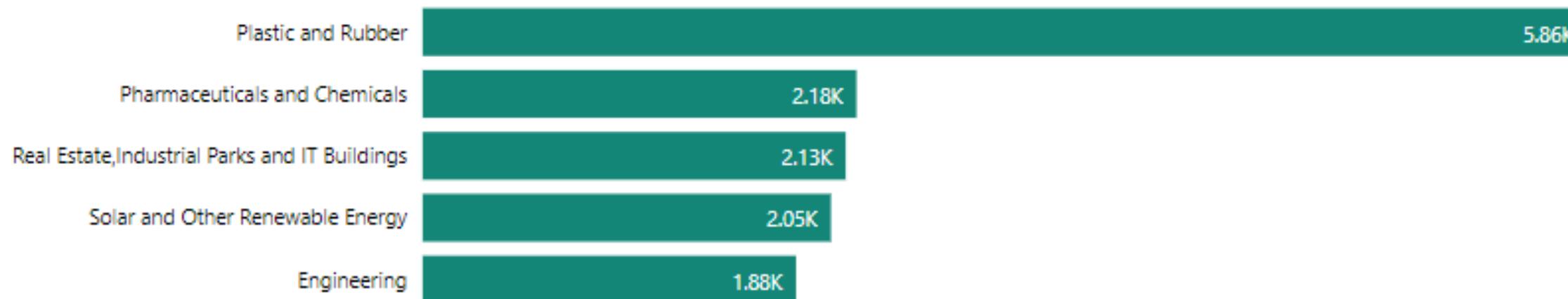
TS - IPASS

Telangana State Industrial Project Approval and Self Certification System

The Telangana Government has enacted the “Telangana State Industrial Project Approval and Self-Certification System (TS-iPASS) Act, 2014” (Act No.3 of 2014) for speedy processing of applications for issue of various clearances required for setting up of industries at a single point based on the self-certificate provided by the entrepreneur and also to create investor friendly environment in the State of Telangana.

List down the top 5 sectors that have witnessed the most significant investments in FY 2022.

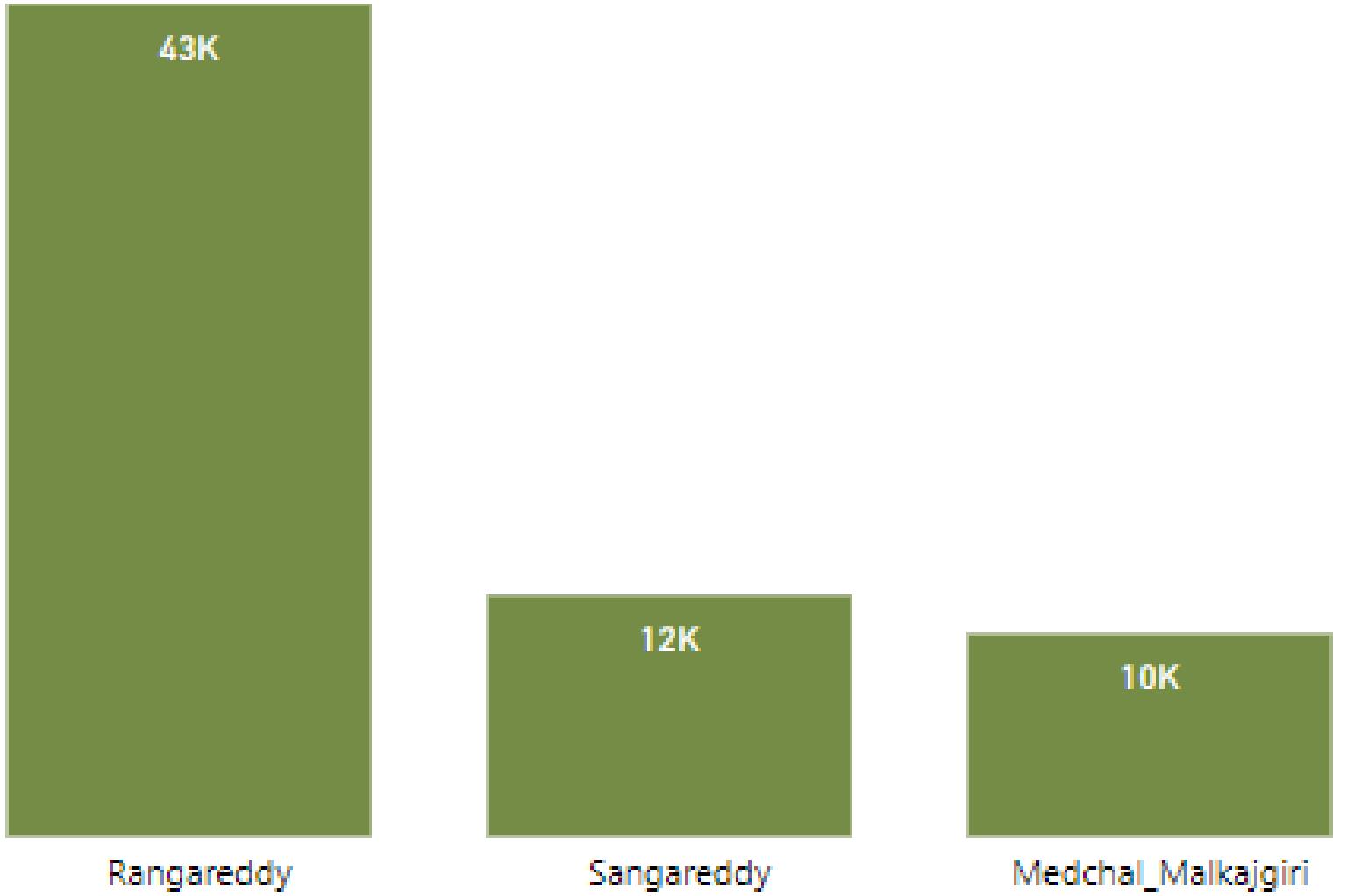
Top 5 sectors in 2022



The top 5 sectors that have witnessed the most investments in 2022 are:

- **Plastic and Rubber:** The sector with the most investment, contributing **22.7%** of all investments in 2022.
- **Pharmaceuticals and Chemicals:** This sector contributes to **8.5%** in 2022.
- **Real Estate, Industrial Parks and IT Buildings:** This sector contributes to **8.3%** in 2022.
- **Solar and Other Renewable Energy:** This sector contributes to **8.0%** in 2022.
- **Engineering:** This sector contributes to **7.3%** in 2022.

List down the top 3 districts that have attracted the most significant sector investments during FY 2019 to 2022? What factors could have led to the substantial investments in these particular districts?



- **Rangareddy** : Rangareddy district, which surrounds Hyderabad, has also seen substantial sector-specific investments due to its proximity to the capital city. The district is home to various IT and business parks, making it an attractive location for IT and ITES companies.
- **Sangareddy**: This district receives investments worth 12.5% of the total. Three large public sector businesses are located in the city. These are Ordnance Factory Medak, BDL, and BHEL. With adjacent districts like Hyderabad, Medchal Malkajgiri, and Rangareddy, this one is well linked.
- **Medchal_Malkajgiri** : This district, located in the northern part of the Hyderabad metropolitan area, has experienced growth in the pharmaceutical and biotechnology sectors. Several pharmaceutical companies and research institutions have set up operations in this district.

List down the top 3 districts that have attracted the most significant sector investments during FY 2019 to 2022? What factors could have led to the substantial investments in these particular districts?

Factors:

- **Skilled Workforce:** The availability of a skilled and educated workforce, particularly in information technology and pharmaceutical sectors, has been a significant factor. The presence of reputed educational institutions and research centers has attracted talent from across the country.
- **Government Policies and Incentives:** The Telangana government has introduced policies and incentives to promote industrialization and investment in key sectors. Initiatives like the Telangana Industrial Policy, offering land and power subsidies, have encouraged businesses to set up operations in the region.
- **Infrastructure Development:** Ongoing infrastructure development, including the expansion of road networks, the establishment of industrial parks and special economic zones (SEZs), and improvements in digital connectivity, has made the districts more attractive for businesses.
- **Quality of Life:** The overall quality of life in these districts, including factors like healthcare facilities, educational institutions, and cultural amenities, has made them attractive destinations for professionals and their families.
- **Logistical Advantages:** The strategic location of these districts, with access to major transportation routes and ports, has made them favorable for logistics and warehousing investments.

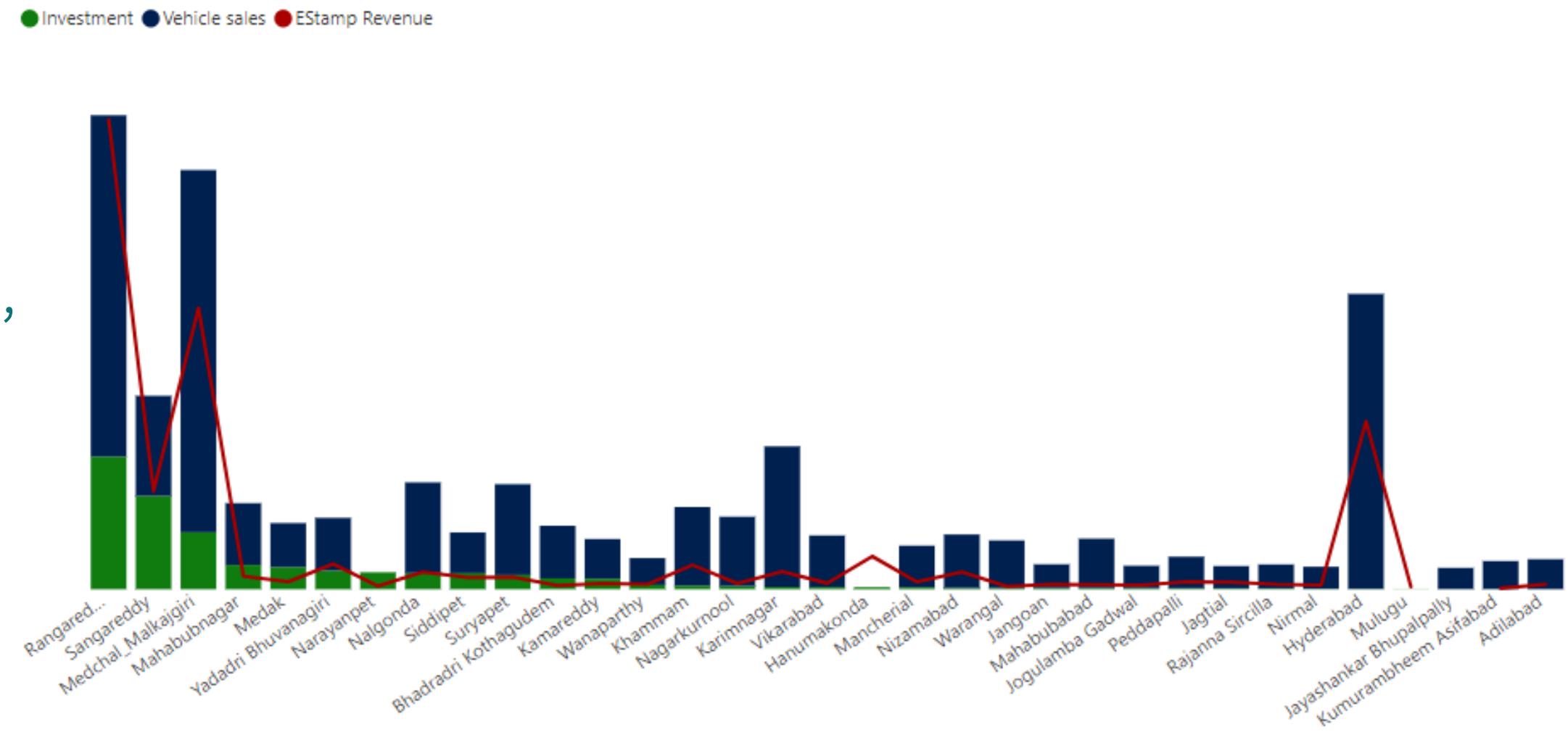
Is there any relationship between district investments, vehicles sales and stamps revenue within the same district between FY 2021 and 2022?

We can observe that district investments, vehicle sales and stamps revenue are directly related to each other.

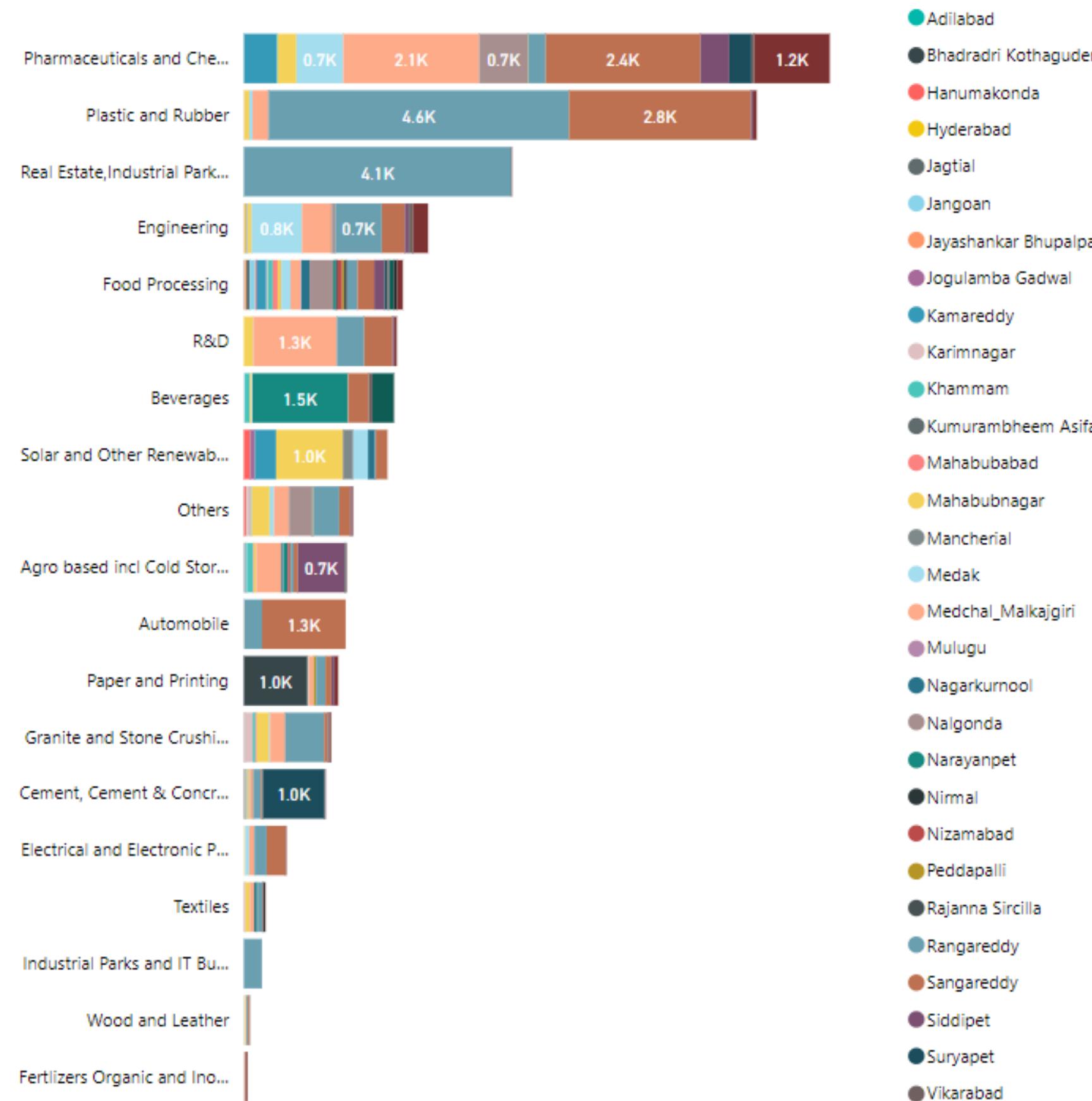
- **District Investments** : District investments, which might come from the public and private sectors, can encourage economic growth there. When companies invest in services, manufacturing facilities, or infrastructure, it frequently results in the creation of jobs and a rise in the district's economic activity.

- **Vehicle Sales**: Consumer spending may rise when economic activity and income levels rise in a district. As a result, more vehicles, including automobiles and commercial trucks, may be purchased as individuals and corporations have more money to spend on transportation.

- **Stamps Revenue**: The government collects stamp duty and registration fees when properties and other types of legal documents are registered. When the economy is expanding, there are frequently more real estate transactions, which might lead to higher stamp sales.



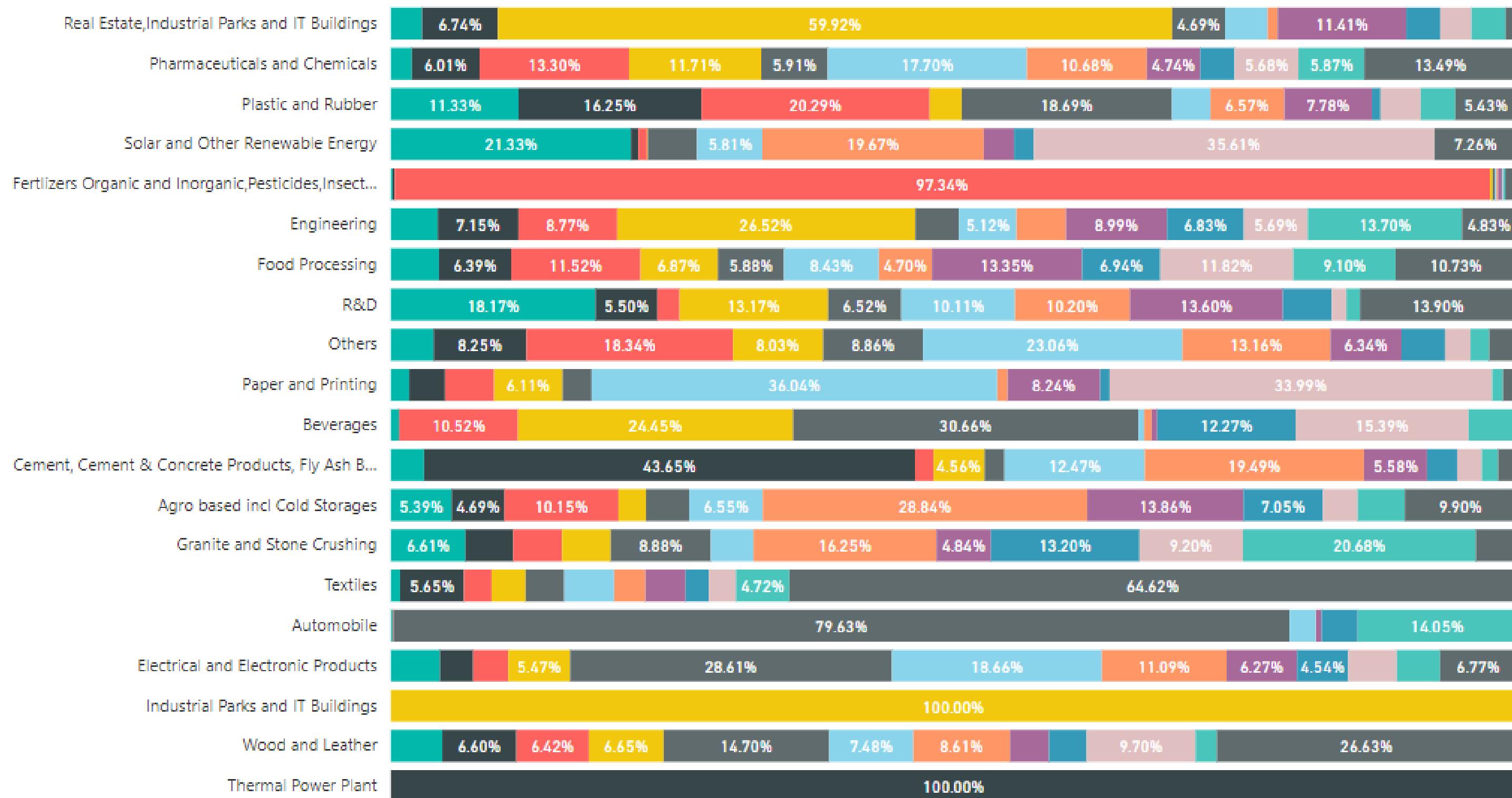
Are there any particular sectors that have shown substantial investment in multiple districts between FY 2021 and 2022?



- The **Electrical and Electronic Products** sector has investments in Sangareddy, Rangareddy, Medchal Malkajgiri and Medak.
- **Wood and Leather** has investments in Rangareddy, Sangareddy, Mahabubnagar and Medchal Malkajgiri.
- **Engineering** has investments in Medak, Rangareddy, Medchal Malkajgiri and Sangareddy.
- **Textiles** has investments in Rangareddy, Mahabubnagar, Medchal Malkajgiri and Warangal.
- **Granite and Stone Crushing** has investments in Rangareddy, Medchal Malkajgiri and Mahabubnagar.
- **Pharmaceuticals and Chemicals** has investments in Sangareddy, Medchal Malkajgiri and Yadadri Bhuvanagiri
- **R&D** has investments in Medchal Malkajgiri, Sangareddy and Rangareddy
- **Solar and Other Renewable Energy** has investments in Mahabubnagar, Kamareddy and Medak.
- **Beverages** has investments in Narayanpet, Wanaparthy and Sangareddy.

Can we identify any seasonal patterns or cyclicality in the investment trends for specific sectors? Do certain sectors experience higher investments during particular months?

● Apr ● Aug ● Dec ● Feb ● Jan ● Jul ● Jun ● Mar ● May ● Nov ● Oct ● Sep



Can we identify any seasonal patterns or cyclicality in the investment trends for specific sectors? Do certain sectors experience higher investments during particular months?

Yes, we can identify seasonal patterns in the investment trends for specific sectors. Few of them are:

- The **Real Estate, Industrial Parks and IT Buildings** sector indicate substantial investment in *February*.
- **Fertilizers Organic and Inorganic, Pesticides, Insecticides, and Other Related** saw considerable investment in *December*.
- *July, September, and December* are the prime investment months for **pharmaceuticals and chemicals**.
- **Plastic and Rubber** shows a significant investment in *December, January and August*.
- **Engineering** shows peak investment in *February and October*.
- **Solar and Other Renewable Energy** shows the highest investment in the months of *November, April and June*.
- **Paper and Printing** shows the highest investment in the months of *July and November*.
- **Beverages** sector has higher investments in *January and February*.
- **Cement, Cement & Concrete Products, Fly Ash Bricks** shows higher investments in *August and June*.
- **Textiles** show peak investment in *September*.
- **Automobile** show major funding in *January*.
- **Granite and Stone Crushing** experience higher investments in *October and June*.
- **Agro based incl Cold Storages** show major funding *June and March*.

SECONDARY INSIGHTS



What are the top 5 districts to buy commercial properties in Telangana? Justify your answer.

- **Hyderabad:** Hyderabad is the capital city of Telangana and the economic hub of the state. It offers a wide range of commercial real estate opportunities, including office spaces, retail properties, and industrial spaces. The city's growing IT and tech industries, as well as its status as a major business center, make it a prime location for commercial investments.
- **Rangareddy:** Rangareddy district surrounds Hyderabad and is often considered an extension of the city. It is known for its industrial and commercial zones, making it attractive for businesses looking to be close to the capital but with potentially lower real estate costs.
- **Sangareddy:** This district has been witnessing growth in commercial real estate development due to its strategic location, proximity to Hyderabad, and various industrial and economic activities in the region.
- **Medchal Malkajgiri:** This district is also located in the Hyderabad metropolitan area and has seen significant growth in commercial real estate development. It offers various commercial options for businesses looking to establish a presence in the region.
- **Hanumakonda:** It is located in northern Telangana, and has been experiencing industrial and economic growth. It has become an emerging hub for various industries, including manufacturing and technology, making it a potential location for commercial property investments.

What significant policies or initiatives were put into effect to enhance economic growth, investments, and employment in Telangana by the current government? Can we quantify the impact of these policies using available data?

- **Industrial Policy:** The government has introduced progressive industrial policies such as the Telangana State Industrial Project Approval and Self-Certification System (TS-iPASS) to streamline approvals for setting up industries and reduce bureaucratic processes.
- **IT and Innovation Hubs:** Telangana has established dedicated IT and innovation hubs such as the Hyderabad Information Technology and Engineering Consultancy City (HITEC City) and the T-Hub, which have attracted both domestic and international investments in the technology sector.
- **Infrastructure Development:** The government has invested in infrastructure projects such as the Hyderabad Metro Rail, Outer Ring Road, and development of industrial parks and special economic zones, which have helped in creating a conducive business environment.
- **Sector-Specific Policies:** The government has introduced sector-specific policies and incentives to promote industries such as IT and IT-enabled services, pharmaceuticals, textiles, and renewable energy.
- **Irrigation Projects:** The government invested heavily in irrigation projects like Kaleshwaram Lift Irrigation Project to improve water availability for agriculture, which indirectly contributed to rural employment and economic growth.

These policies resulted in an increase in investors, and stamp sales are up. The development of these businesses has decreased unemployment and boosted vehicle sales.

Provide top 5 Insights & 5 recommendations to Telangana government for sustained growth in the next 5 years based on your analysis.

INSIGHTS:

- **Industrial Development:** Telangana has made efforts to attract investments and launched the "Telangana State Industrial Project Approval and Self-Certification System" (TS-iPASS) to facilitate speedy approvals for industries.
- **Welfare Schemes:** The Telangana government launched several welfare schemes like "Rythu Bandhu", "KCR Kit" aimed at improving the living standards of its residents.
- **Economic Growth:** Telangana has demonstrated rapid growth. Telangana has shown rapid and robust economic growth amidst a global and national economic slowdown.
- **Rural Employment Generation Programme:** The Telangana government launched various rural employment generation programs, such as the MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act), to provide wage employment to rural households.
- **Government Policies and Incentives:** The Telangana government has introduced policies and incentives to promote industrialization and investment in key sectors. Initiatives like the Telangana Industrial Policy, offering land and power subsidies, have encouraged businesses to set up operations in the region.

Provide top 5 Insights & 5 recommendations to Telangana government for sustained growth in the next 5 years based on your analysis.

RECOMMENDATIONS:

- **Diversify the economy:** Telangana has achieved great strides in industries like IT and pharmaceuticals, but it is crucial to diversify the economy to lessen reliance on certain industries. To build a diverse and resilient economy, the government might concentrate on boosting industries like manufacturing, agriculture and renewable energy.
- **Strengthen infrastructure:** For sustained growth, there must be ongoing investment in infrastructure development. More enterprises will be attracted in, productivity will increase, and total economic activity will increase as a result of improvements in connection, logistics, electricity, and transportation.
- **Enhance skilling programs:** A highly qualified workforce that satisfies industry expectations may be ensured by investing in skill development programmes matched with rising industries and technology.
- **Encourage entrepreneurship and innovation:** By creating a supportive environment for start-ups and small enterprises, the government may encourage an entrepreneurial ecosystem.
- **Promote sustainable development:** Including sustainable practises in all areas of business can promote long-term economic prosperity.

THANK YOU

