

“Assessing The Performance Of MSMEs In Uttar Pradesh: An Approach Of Multiple Regression Analysis”

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Abstract

As one of the largest and most populous states in India, Uttar Pradesh is home to a diverse and vibrant MSME sector, spanning a wide range of industries such as manufacturing, textiles, food processing, handicrafts, and information technology. However, there is a lack of in-depth regional analysis that considers the diverse industrial clusters, infrastructure differences, and local government initiatives across the districts of Uttar Pradesh.

Uttar Pradesh, with its vast geographical expanse and diverse economic activities, has varied levels of MSME development across its 75 districts. While some regions may have a thriving MSME sector, others might be lagging due to differences in infrastructure, industrial policies, and market access. This study will provide insights into the regional disparities and help identify which districts are performing well in terms of investment, turnover, and employment generation, and which districts need more attention and development support.

For the study, Data has been collected on the variables of Count of reg no., Investment cost, Employment and Net turn-over of Uttar Pradesh for the financial year 2023-24 from the Micro, Small and Medium enterprises Ministry, government of India. Descriptive analysis has been used to summarize the basic characteristics of the data and understand its distribution. Multiple regression technique has been employed to understand the influence of Investment cost and turnover in the growth of MSMEs sector where we found the value of R^2 0.95 means that 95% of the variance in the dependent variable i.e. count of Udyam reg. number is explained by investment and turnover. Further we analysed the role MSMEs number in the employment creation by simple regression where we got the value of R^2 0.80 means that 80% of the variance in the Employment is explained by the numbers of MSMEs.

MSMEs are one of the main sectors in Uttar Pradesh that create jobs, but to close the gap between urban and rural-centric MSMEs, policy measures and benefits are needed. This sector has a lot of potential to contribute more to the state's economy and help to achieve the goal of a "one trillion-dollar economy" by 2027.

Keywords: *MSMEs, Regional analysis, Employment generation, Regression analysis.*

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I. Introduction

Micro, Small, and Medium Enterprises (MSMEs) play a pivotal role in the economic development, contributes significantly to employment generation, industrial output, and poverty alleviation (Kumar, K. 2024). As one of the largest and most populous states in India, Uttar Pradesh is home to a diverse and vibrant MSMEs sector, spanning a wide range of industries such as manufacturing, textiles, food processing, handicrafts, and information technology (Tiwari, A., & Pandey, A. C. 2024). The MSMEs sector in Uttar Pradesh is not only a critical component of the state's industrial landscape but also an essential driver of innovation, facilitating exports, and nurturing a dynamic entrepreneurial ecosystem (Akansha Gupta & Rani, M. 2025).

MSMEs sector in Uttar Pradesh is the largest in India, with approximately 90 lakh registered units, of which 89.64 lakh are micro and small and 0.36 lakh are medium enterprises, collectively providing employment to over 14 million people. The sector significantly contributes to exports, accounting for around \$16 billion, or nearly 70% of the state's total exports (Invest UP. 2025). A recent study by (Akanksha Gupta and Rani 2024) highlights the historical growth trajectory of MSMEs in the state, showing a consistent rise in both unit numbers

and employment generation, especially after the implementation of Udyog Aadhaar, with the sector maintaining a robust Compound Annual Growth Rate.

The state government has implemented various policies such as One District One Product (ODOP) scheme, Vishwakarma Shram Samman and initiatives through the MSME Promotion Policy 2022 aimed at fostering growth and sustainability of MSMEs, such as providing Geographical Indication (GI) products, technology upgrades, skill development programs, and financial support. These efforts, along with the state's rich resource base and strategic location, have made Uttar Pradesh an attractive destination for both domestic and international investment (Saxena, S. 2024).

Here is a table that outlines the current definition and classification of MSMEs as per the 2020 amendment to the Micro, Small and Medium Enterprises Development Act 2006, alongside the previous definition for easy comparison:

Table: 1

Category	Current Classification (2020)	Previous Classification (before 2020)
Micro Enterprises	Investment in Plant & Machinery/Equipment: Up to ₹1 crore	Investment in Plant & Machinery/Equipment: Up to ₹25 lakh
	Annual Turnover: Up to ₹5 crore	Annual Turnover: Up to ₹1 crore
Small Enterprises	Investment in Plant & Machinery/Equipment: ₹1 crore to ₹10 crore	Investment in Plant & Machinery/Equipment: ₹25 lakh to ₹5 crore
	Annual Turnover: ₹5 crore to ₹50 crore	Annual Turnover: ₹1 crore to ₹5 crore
Medium Enterprises	Investment in Plant & Machinery/Equipment: ₹10 crore to ₹50 crore	Investment in Plant & Machinery/Equipment: ₹5 crore to ₹10 crore
	Annual Turnover: ₹50 crore to ₹250 crore	Annual Turnover: ₹5 crore to ₹25 crore

(Source: Gazette of India)

Importance of Regional Analysis of MSMEs: an analysis of MSMEs in Uttar Pradesh is crucial for comprehending the distinct challenges and opportunities encountered by various regions within the state. Uttar Pradesh exhibits significant diversity, characterised by distinct economic, geographical, and social conditions across its various regions. Examining the regional dimensions of MSMEs can inform policy development, enhance infrastructure, and promote inclusive economic growth. The following are the primary reasons for the significance of regional analysis.

- A. **Employment and Sustainability:** Understanding how MSMEs contribute to the creation of jobs and long-term viability requires a regional perspective. (Gupta and Bhattacharya 2016) showed in their research on the brassware industry in Moradabad that local skill transfer and cultural customs are crucial to the long-term viability of family-owned MSMEs. Given that employment trends in MSMEs are influenced by sociocultural contexts, this emphasises the regional aspect of livelihood stability.
- B. **Cluster-Based Growth and Competitiveness:** Clusters significantly influence MSMEs performance by facilitating resource sharing and fostering innovation. (Saha and Sen 2025) conducted an analysis of the Varanasi handloom cluster, demonstrating that synergies within the cluster promote collaboration and the adoption of technology. Regional cluster analysis is crucial for enhancing competitiveness and resilience in MSMEs.
- C. **Infrastructure and Policy Alignment:** Infrastructure disparities vary among districts, necessitating regional analysis to align policies effectively. (Tiwari and Pandey 2024) highlighted that planning based on ODOP has enabled the government to address district-specific requirements, including common facility centres, credit support, and export linkages. Targeted interventions would not be feasible without regional insights.
- D. **Inter-State Comparison and Regional Disparities:** A comprehensive regional perspective is also crucial at the national level. A study discovered that Uttar Pradesh ranks among the top states for both registered and unregistered MSMEs, making a substantial contribution to employment generation (Manna and Mistri 2025). Their study also highlighted regional disparities in India, indicating that certain states are deficient in MSMEs development, hence emphasising the necessity for customised regional strategies to mitigate inequality and promote balanced growth.
- E. **Inclusive and Balanced Development:** Finally, regional analysis identifies intra-state disparities, helping policymakers promote inclusive development. (Saxena 2024) argued that tailoring interventions for underdeveloped clusters—such as agro-based MSMEs—ensures that industrially backward districts are not left behind, thereby contributing to balanced regional development.

II. Literature Review

Although MSMEs are universally acknowledged as growth engines, there are regional differences in their performance and difficulties. Regional analysis is crucial as MSMEs are intricately linked to local clusters, socio-cultural practices, infrastructure availability, and policy frameworks. In Uttar Pradesh, various case studies illustrate the influence of cluster-specific factors on the development of MSMEs. (Verma and Gupta 2019) analysed the Saharanpur woodcraft sector, highlighting the importance of design-led innovation and prototyping for the sustainability of this traditional craft amid global competition. (Venkataramanaiah and Nidugala 2016) examined the brassware cluster in Moradabad, highlighting that enhancing competitiveness necessitated region-specific strategies, including skill development, process improvement, and the fortification of market linkages. (Yadav and Mahara 2018) analysed the value chain of Saharanpur's wooden carving industry, identifying that bottlenecks in raw material access, quality assurance, and marketing are best understood through a regional perspective. Environmental challenges exhibit significant regional variation. Batabyal (2023), (Batabyal, Kourtit, and Nijkamp 2023), and (Singh and Gundimeda 2020) illustrate through their research on the Kanpur leather cluster that industrial practices are intricately linked to local ecological results, indicating that pollution control necessitates governance mechanisms tailored to the region. (Goyal and Wadhwa 2021) examined the Aligarh lock industry, emphasising the interaction of local technology deficiencies, branding obstacles, and infrastructure requirements. Their findings illustrate that MSMEs succeed or face difficulties based on region-specific circumstances rather than generalised national conditions.

Comparable evidence arises from various Indian states, indicating that regional analysis is essential for comprehending MSME dynamics. (Baskaran, Nachiappan, and Rahman 2012) demonstrated that in the Tirupur textile cluster of Tamil Nadu, sustainability and competitiveness were influenced by both firm-level decisions and the dynamics of local buyer-supplier relationships, as well as institutional pressures. (Rath and Raj 2019) performed a cross-state analysis of MSME exports, revealing significant inter-regional variations and associating performance with factors such as infrastructure, credit access, and regional capabilities. (Singh 2022) analysed technical efficiency and identified significant variation in productivity drivers among states, highlighting the importance of regional-level determinants. (Kaur and Kaur 2022) investigated access to formal credit, uncovering significant disparities in financing opportunities among states, which indicate varying institutional strengths and weaknesses specific to each region. (Henn 2013) examined Gujarat's diamond cluster, demonstrating that historical migration patterns and regional institutions influenced the cluster's resilience, indicating that MSME growth trajectories are grounded in regional history and context.

(Aubuchon 2008) found that MSME drives economic growth in rich and developing countries, especially developing ones. It is the solution to poverty and a proven technique to improve quality of life, especially for the poor. Microfinance is not a complete solution to poverty, but with dedicated practitioners, a plethora of theoretical study, and a growing need for international and private investment, it has proven effective and adaptable. (Katalinkiss 2014) said that expanding and improving rural Indian small businesses could reduce sociocultural and demographic-based spatial and social disparities. He found that in overpopulated India, where social and spatial inequalities sometimes take extreme measures, government efforts to develop small businesses would be needed to improve rural areas and integrate disadvantaged social groups. (Papiya Manna, 2017) examined Indian MSMEs' current state and tendencies. Different states have different MSMEs, with some leading in organised sector registration and others in unorganised sector. Unregistered or informal working firms generate more jobs, although registered enterprises outperform them in output generation. In some states, unregistered MSMEs are labour-intensive and registered MSMEs are capital-intensive. Micro enterprises naturally led all states, but some developed states like Gujarat, Tamil Nadu, and Goa in the south; Himachal Pradesh, Punjab, Haryana in the north; and Arunachal, Mizoram, Manipur, Nagaland, and Tripura in the north east are improving their small and medium enterprises.

(Prakash, 2019) examined Bihar's MSMEs' growth and performance. To evaluate MSME performance, they calculated CAGR, percentage increase, and graphical representation. CAGR results show that the number of MSME units in Bihar has expanded over the study period, but the yearly percentage growth rate has reduced regularly in the approaching years, while employment has declined. Investment in Bihar MSME firms has grown. Thus, MSME employment is not rising as fast as MSME units in Bihar. (Mohapatra, 2020) discussed how the MSME sector drives industrial and economic progress in India by creating jobs, exporting potential, and GDP, and examined regional trends in MSMEs' funding and growth. She observed that categorising MSME units into micro, small, and medium enterprises and using Chi-Square showed no correlation between unit size and region of operation. Region does not affect activity categorisation (manufacturing, trading, or other services). (Aditya Kumar Sharma 2021) noted that regional resources affect exports in Uttar Pradesh's four regions and inter-regional variation. They found statistically significant factors affecting total exports from each region using the Generalised Method of Moments panel data analysis. The study found inter-regional variances in export factors in eastern and western Uttar Pradesh. The data reveals that traditional exports remain a large share of regional exports. (Rajagopal 2022) examined the Comparative Distribution of Top 10 States in proportion of MSMEs by

activity, employment type, and gender. Most MSMEs are in rural regions servicing large industries. (Manu Pal 2022) examined the importance of rural entrepreneurship in Uttar Pradesh by collecting data from 400 respondents from four rural Uttar Pradesh regions. He found that most respondents agreed that in this modern age, rural entrepreneurship has a wide scope to boost the economic value of the rural sector, but some hindrances must be overcome.

International evidence further supports the significance of regional factors in the performance of MSMEs. (Humphrey and Schmitz 2002) examined the integration into global value chains and identified significant variations in upgrading opportunities across clusters, influenced by local governance. (Nadvi's 1999) examination of the surgical instrument cluster in Sialkot, Pakistan, illustrated how embedded social networks facilitate cooperation while simultaneously perpetuating inequalities, highlighting the dual aspects of regional embeddedness. (Parrilli 2010) posited that innovation in SMEs frequently occurs through interactive learning at the regional level, advocating for policies that are territorially embedded instead of standardised national frameworks. (Bianchi and Labory 2011) examined the Italian region of Emilia-Romagna, demonstrating that industrial policy designed for regional networks enhanced SME resilience during crises, thereby offering a model for regionally focused policymaking.

Initial research highlighted the significance of collective efficiency; wherein geographically concentrated clusters of small enterprises achieve competitive advantage by utilising shared resources and benefiting from localised knowledge spillovers. (Schmitz 1995) emphasised that small industries can attain growth trajectories via cooperative networks. In addition, (Giuliani, Pietrobelli, and Rabellotti 2005) noted that integration into global value chains presents opportunities for upgrading; however, the results are inconsistent and largely contingent upon the governance of regional clusters. (Delgado, Porter, and Stern 2010) empirically demonstrated that clusters promote entrepreneurship and innovation, highlighting the importance of region-sensitive analysis.

The synthesis of these studies reveals several recurring insights. The generation of employment by MSMEs is closely associated with regional skill bases and cultural practices, as evidenced in the traditional clusters of Uttar Pradesh. Inter-firm collaboration and localised governance structures are crucial for cluster competitiveness and innovation, as evidenced in regions such as Moradabad, Tirupur, and Emilia-Romagna.

Regional infrastructure disparities underscore the insufficiency of uniform solutions, necessitating focused investment at both district and state levels. Regional ecosystems promote distinct types of innovation, especially within traditional and artisanal sectors, where localised, community-oriented processes replace formal research and development. Addressing regional disparities facilitates balanced development by preventing advanced industrial clusters from surpassing those that are lagging, thus fostering inclusive growth.

Literature gap

Most existing studies on MSMEs in Uttar Pradesh focus on the state-level perspective without delving into regional variations in MSMEs development. There is a lack of in-depth regional analysis that considers the diverse industrial clusters, infrastructure differences, and local government initiatives across the districts of Uttar Pradesh.

Need of the study

Uttar Pradesh, with its vast geographical expanse and diverse economic activities, has varied levels of MSMEs development across its 75 districts. While some regions may have a thriving MSMEs sector, others might be lagging due to differences in infrastructure, industrial policies, and market access. The study will provide insights into the regional disparities and help in identifying which districts are performing well in terms of investment, turnover, and employment generation, and which districts require more attention and development support. A one-size-fits-all approach to MSMEs policy often fails to address the unique challenges faced by different regions. Targeted policies are required to foster MSME growth in each district.

Objectives

Below are the key objectives for conducting a regional analysis of MSMEs in Uttar Pradesh:

1. To examine how MSMEs are spread across the districts of Uttar Pradesh and identifying areas with high concentrations of MSMEs.
2. Identify Regional Sectoral Strengths and Opportunities
3. To analyse how MSMEs in different regions contribute to job creation and employment patterns

Hypotheses:

1. H_0 : Investment cost does not have any impact in the growth of MSMEs sector.
2. H_0 : Net turn-over does not influence the growth of MSMEs sector.
3. H_0 : Urbanisation does not have any role in the growth of MSMEs sector.

4. H₀: Growth in Count of registration number is not helpful in creation of Employment.

Data source:

Data has been collected on the variables of Count of reg numbers, Investment cost, Employment and Net turn-over of Uttar Pradesh for the financial year 2023-24 from the website of Udyam registration certificate (URC) provided and managed by Micro, Small and Medium enterprises Ministry, government of India.

III. Methodology:

1. Descriptive Analysis

a. **Purpose:** To summarize the basic characteristics of the data and understand its distribution.

b. **Methods:**

✓ Descriptive statistics (mean, median, mode, standard deviation) for each variable to understand their central tendency and spread.

2. Multiple Linear Regression:

It is a statistical technique used to model the relationship between one dependent variable and two or more independent variables. In this context of analysis of MSMEs in Uttar Pradesh, we use multiple linear regression to understand how variables like investment, turnover influence a dependent variable, such as number of MSMEs in each district. Further we use regression analysis to understand how count of registration number impacts in creation of employment.

Top ten districts in terms of highest number of Udyam registration

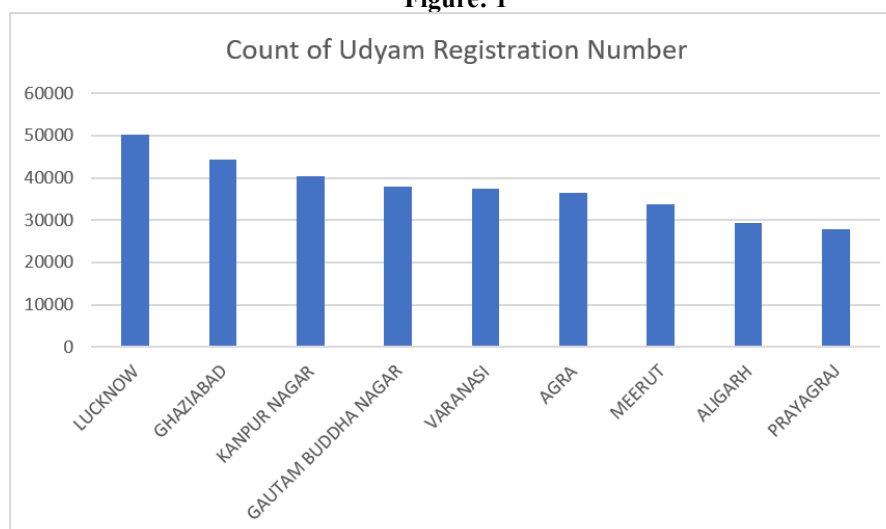
This data has been obtained from Udyam registration certificate (URC) of micro, small and medium enterprises ministry, government of India. From the below table, Lucknow has received the highest number of MSMEs registration followed by Ghaziabad and Kanpur Nagar.

Table: 2

District	Count of Udyam Reg. No
Lucknow	50144
Ghaziabad	44249
Kanpur Nagar	40460
Gautam buddha Nagar	37975
Varanasi	37443
Agra	36340
Meerut	33792
Aligarh	29354
Prayagraj	27893

Source: MSMEs ministry, GOI

Figure: 1



Source: Author's own calculation.

Top Ten districts with lowest number of registrations:

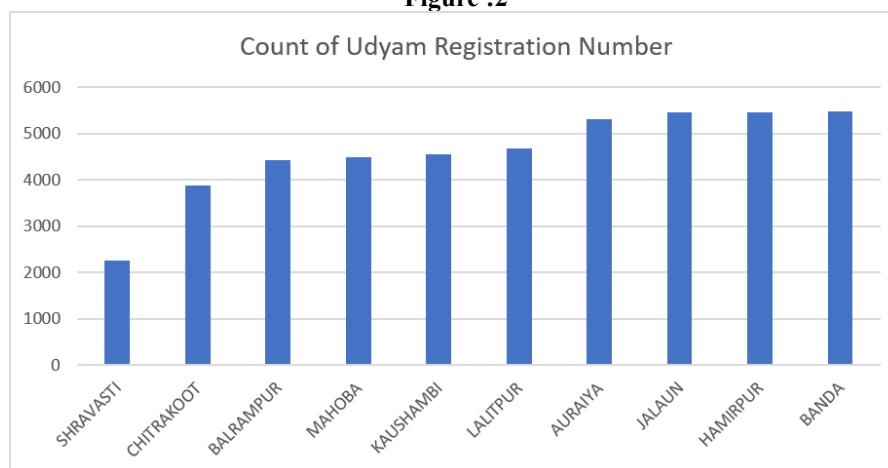
Shravasti has received the lowest number of MSMEs registration in year 2023-24 followed by Chitrakoot and Balrampur. This indicates that district with maximum rural areas, low infrastructure, poor connectivity are lagging in the MSMEs sector.

Table :3

Shravasti	2261
Chitrakoot	3888
Balrampur	4434
Mahoba	4492
Kaushambi	4553
Lalitpur	4671
Auraia	5319
Jalaun	5454
Hamirpur	5459
Banda	5489

Source: MSMEs ministry, GOI

Figure :2



Source: Author's own calculation.

Top ten districts with highest employment generation:

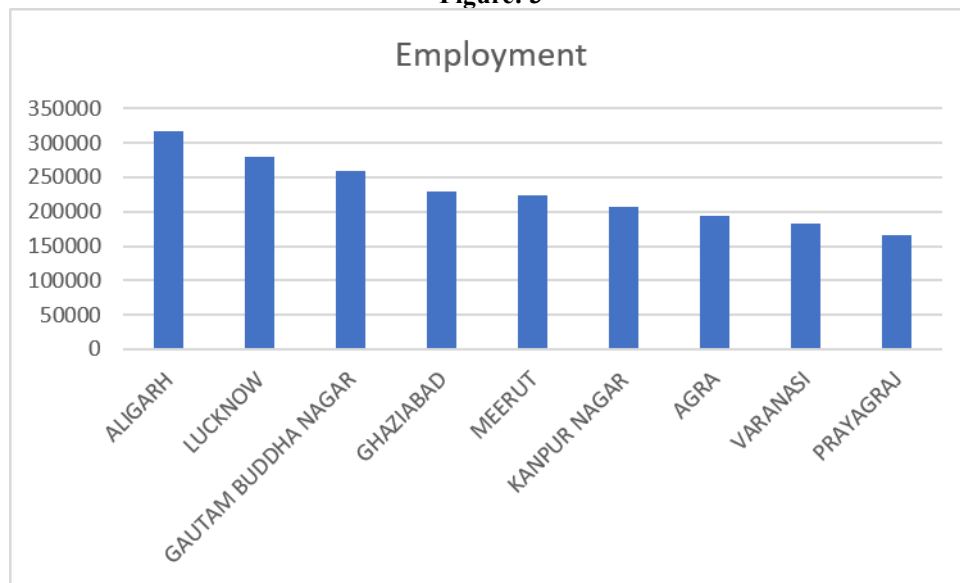
Since, Lucknow has received the highest the number on registration in year 2023-24 but was unable to create the highest employment signifies mostly the enterprises were capital intensive. Aligarh was on the 9th position in terms of receiving the registration but created the highest employment indicating the labour-intensive enterprises.

Table :4

District	Employment
Aligarh	316763
Lucknow	279398
Gautam buddha Nagar	258386
Ghaziabad	229260
Meerut	223681
Kanpur Nagar	206118
Agra	192938
Varanasi	183185
Prayagraj	166061

Source: MSMEs ministry, GOI

Figure: 3



Source: Author's own calculation.

Top ten districts with lowest Employment generation:

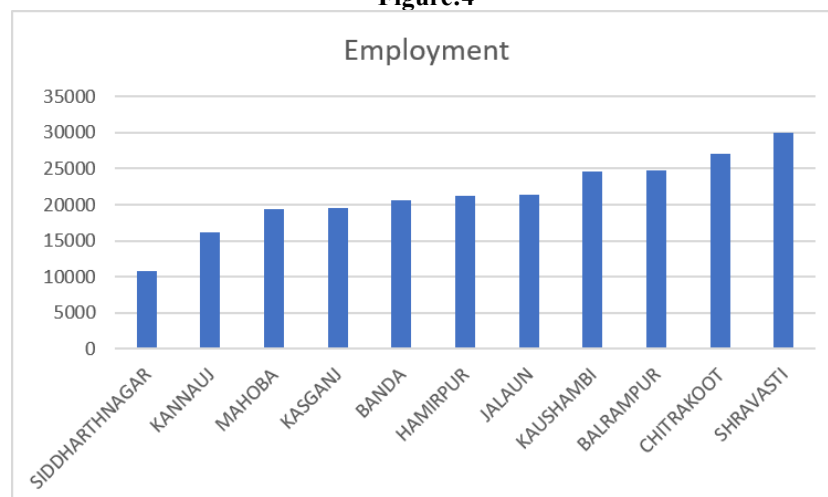
Siddharth nagar has created the lowest employment among the districts of u.p. in year 2023-24 followed by Kannauj and Mahoba.

Table:5

District	Employment
Siddharth Nagar	10717
Kannauj	16214
Mahoba	19323
Kasganj	19501
Banda	20640
Hamirpur	21252
Jalaun	21434
Kaushambi	24603
Balrampur	24826
Chitrakoot	27000
Shravasti	29909

Source: MSMEs ministry, GOI

Figure:4



Source: Author's own calculation.

Top ten districts with highest Investment cost:

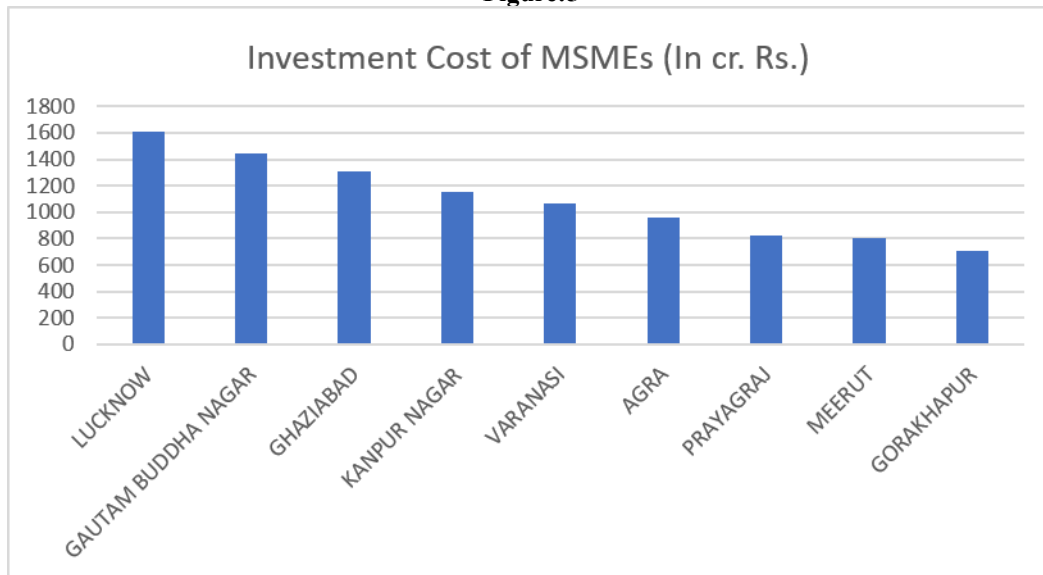
Top 3 states with highest number of registrations of MSMEs has the highest investment cost in year 2023-24.

Table:6

District	Sum of Investment Cost (In cr. Rs.)
Lucknow	1605.451067
Gautam buddha Nagar	1445.744372
Ghaziabad	1309.309139
Kanpur Nagar	1148.961409
Varanasi	1064.904003
Agra	963.0886313
Prayagraj	821.6925426
Meerut	804.3478493
Gorakhpur	705.6331524

Source: MSMEs ministry, GOI

Figure:5



Source: Author's own calculation.

Top ten districts with lowest investment:

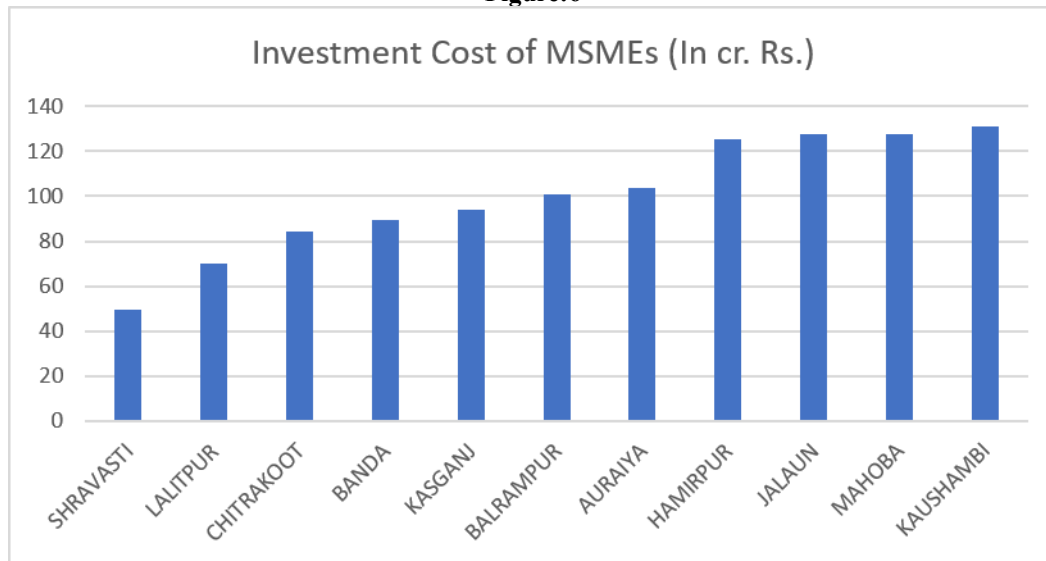
Shravasti has lowest number of MSMEs as well as the lowest investment cost in the year 2023-24 followed by Lalitpur and Chitrakoot.

Table:7

District	Sum of Investment Cost (In cr. Rs.)
Shravasti	49.4621864
Lalitpur	70.0873
Chitrakoot	84.158191
Banda	89.6240839
Kasganj	94.0949245
Balrampur	100.6092173
Auraiya	103.8916545
Hamirpur	125.5978155
Jalaun	127.513029
Mahoba	127.6328158
Kaushambi	130.8808202

Source: MSMEs ministry, GOI

Figure:6



Source: Author's own calculation.

From the above analysis we draw inferences about the district with better infrastructure, market access and urbanisation have better performance in terms of registration of MSMEs and investment in comparison to those districts which lacks in these areas.

Descriptive analysis:

Mean value of registration of MSMEs from all the district of U.P. is 13757 presents a decent number with the employment creation of 80152 on an average. Investment cost average is 366 crores with turn-over of 4316 crores in the year 2023-24 of Uttar Pradesh.

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Count of Udyam Reg. No	75	2261	50144	13757.79	10231.359
Employment	75	10717	316763	80152.75	64942.364
Investment Cost (In Rs.)	75	494621864	16054510667	3662421092.67	3195552374.442
Investment Cost (In cr. Rs.)	75	49	1605	366.29	319.530
Sum of Net Turnover (In Rs.)	75	4316211776	172613543621	35495248948.45	34750123342.255
Sum of Net Turnover (In Cr. Rs.)	75	4316	172614	35495.27	34750.184
Valid N (listwise)	75				

Source: Author's own calculation.

Regression analysis:

Number of MSMEs is the main dependent variable in analysis, as we are likely trying to understand the factors that influence the number or concentration of MSMEs in each district of Uttar Pradesh which is vary across regions and are influenced by several factors like investment, employment, turnover.

The aim of the regression model is to identify how these factors (independent variables) impact the number of MSMEs across different districts.

The multiple regression equation would look like this:

$$\text{Count of Udyam reg no. in District} = \beta_0 + \beta_1(\text{investment}) + \beta_2(\text{Turn over}) + \epsilon$$

Where:

- β_0 is the intercept (constant),
- β_1, β_2 are the coefficients that represent the effect of each independent variable on the number of MSMEs,
- ϵ is the error term (representing unobserved factors that might also influence the dependent variable)

Before applying regression analysis, we have checked the assumptions of multiple linear regression have been followed. There are no missing data points for the variables included in the regression model. There have been no outliers presents in the data as well as the data is normally distributed which has been checked through Q-Q plots.

The multiple correlation coefficient that is R whose value is 0.97 which shows well the independent variables are related to the dependent variable. The value of R² is 0.95 means that 95% of the variance in the dependent variable i.e. count of Udyam reg. number is explained by the independent variables which are investment and turnover. The residuals (errors) should be independent of each other. This is checked using the Durbin-Watson statistic, whose value is 2.3, a value between 1.5 and 2.5 generally indicates no autocorrelation.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.977 ^a	.954	.953	2224.711	.954	746.566	2	72	.000	2.311

a. Predictors: Net Turnover, Investment Cost

b. Dependent Variable: Count of Udyam Reg. No
Source: Author's own calculation.

Anova Table

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7390019769.37	2	3695009884.69	746.566	.000 ^b
	Residual	356352377.207	72	4949338.572		
	Total	7746372146.58	74			

a. Dependent Variable: Count of Udyam Reg. No

b. Predictors: Net Turnover, Investment Cost
Source: Author's own calculation.

Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error				Lower Bound	Upper Bound	Tolerance	VIF
(Constant)	13.182	7.035		.582	.000	1.706	4.657		
Investment Cost	.747	.082	.648	.734	.000	.599	.894	.091	0.983
Net Turnover	.010	.005	.339	.050	.000	-.001	.021	.091	0.983

Source: Author's own calculation.

B (Unstandardized Coefficients) are the actual values used in the regression equation. They represent the change in the dependent variable for a one-unit change in the independent variable, holding other variables constant. If investment cost is changed by one unit, count of registration number will have impact on average 20 times. On the other hand, If Net turn-over is changed by one unit, number of MSMEs will be changed by 0.1 times on an average.

Both predictors are significant as their p values is less than 0.05 and this model is not affected by multicollinearity problem because here values of VIF of each variable are close to 10 which is acceptable.

Further we analyse how MSMEs has been helpful in creating employment across the Uttar Pradesh. Here, we will take sum of employment as dependent factor and the count of reg. no. as an independent factor and run simple regression analysis to find out the relationship.

Equation of simple regression analysis:

$$\text{Sum of Employment} = \alpha + \beta (\text{count of reg. no}) + \varepsilon$$

- α is the intercept (constant),
- β is the coefficient that represent the effect of count of reg. no on employment generation

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. Change	
1	.896 ^a	.803	.800	29031.689	.803	297.291	1	73	.000	2.139

a. Predictors: (Constant), Count of Udyam Reg. No

b. Dependent Variable: Employment

Source: Author's own calculation.

The multiple correlation coefficient that is R whose value is 0.89 which shows well the independent variable is related to the dependent variable. The value of R² is 0.80 means that 80% of the variance in the dependent variable i.e. sum of Employment is explained by the independent variables which is count of reg. no. The residuals should be independent of each other. This is checked using the Durbin-Watson statistic, whose value is 2.1, a value between 1.5 and 2.5 generally indicates no autocorrelation.

Anova

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	250568545276.322	1	250568545276.322	297.291	.000 ^b
Residual	61527243679.865	73	842838954.519		
Total	312095788956.187	74			

a. Dependent Variable: Employment

b. Predictors: (Constant), Count of Udyam Reg. No

Source: Author's own calculation.

Again, we have used the ANOVA table to test the significance of model whose value is less than 0.05, it means the overall regression model is statistically significant i.e., the independent variable predicts the dependent variable.

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error				Tolerance	VIF
1 (Constant)	1906.652	5641.984		.338	.736		
Count of Udyam Reg. No	5.687	.330	.896	17.242	.000	1.000	1.000

a. Dependent Variable: Employment

Source: Author's own calculation.

Value of the B (Unstandardized Coefficients) is 5.6 which is used in the regression analysis. It means if count of reg no is changed by one unit then the sum of employment is changed by 5.6 times on an average.

It indicates a positive relationship between two variables which is as the number of MSMEs increases, employment generation take place.

IV. Conclusion

In the study, we found that Urbanisation has been one of the key drivers in the growth of MSMEs sector. Lucknow, Ghaziabad, and Kanpur secured top three district position in the highest number of MSMEs registration entailing the concentration of MSMEs in the urban areas. Remotest and rural areas dominated districts such Shravasti, Chitrakoot, and Balarampur have lowest number of registrations of MSMEs which requires extra policy attention and incentives to boost the growth of enterprises. Reduction of investment cost has also been helpful in the set up new enterprises mainly in rural areas. We have also found that the role of Net turnover has not been much effective in the spurt of MSMEs which entails that most of the MSMEs are of micro enterprises in nature. Further, The MSMEs sector plays significant role in the employment creation of Uttar Pradesh especially in rural areas where MSMEs were more of labour intensive in nature such as Aligarh district which is not even in the top ten district of having highest count of registration number but has created highest employment among them and urban centric MSMEs which were capital intensive which has not created enough employment in comparison to their registration numbers.

MSMEs is one of the largest employment creation sectors of Uttar Pradesh but it requires policy measures and benefits to bridge the gap of urban and rural centric MSMEs and this sector offers a lot potential to contribute more in the economy of Uttar Pradesh to realise the dream of 'One trillion-dollar economy' in 2029.

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