Small Enterprises, Big Impact: Empirical Evidence on MSME Registrations and Economic Growth in India

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Abstract--This paper examines the association of MSME registrations with economic growth in India, measured in terms of GDP per capita. Using time series data from 2016 to 2023 and a simple linear regression model, the analysis tests whether rises in MSME registrations have statistically and economically relevant effects on income levels. The results show a positive association, which indicates that MSME formalization leads to increased per capita income and facilitates inclusive economic growth. The research provides policy recommendations for reinforcing MSME support mechanisms and indicates directions for further research on entrepreneurial phenomena and macroeconomic outcomes.

Keywords: MSME, GDP per capita, economic growth, registration, India, entrepreneurship, regression.

I. Introduction

Formalization of the MSME sector has become a growing policy priority over the last few years, especially after the launch of digital platforms such as Udyog Aadhaar and UDYAM Registration. These efforts seek to simplify the registration process, enhance compliance, and ease access to credit, subsidies, and government schemes. The reasoning is that registration raises transparency and accountability, thus allowing MSMEs to better integrate into formal supply chains, access institutional finance, and embrace improved technologies and practices. These advances should, in turn, result in higher productivity, output, and national income. Yet, while there is theoretical potential in MSME registration, relatively little empirical research examines its direct effect on Indian economic growth, particularly on per capita income.

Economic growth, as calculated by GDP per capita, captures the typical income of a nation's citizens and is an important measure of individual well-being and progress. An increase in GDP per capita indicates better productivity, employment, and living standards. Therefore, assessing whether higher MSME registration has a quantifiable impact on GDP per capita provides a targeted perspective on how entrepreneurship and formalization are affecting national development. By examining this relationship in isolation, the research intends to provide empirical insight into the contribution of MSMEs to macroeconomic performance and to shed light on how formal entrepreneurship contributes to individual prosperity.

The years between 2016 and 2023 have been especially active for the Indian MSME market. It saw large-scale reforms including the enforcement of the Goods and Services Tax (GST), the digitalization of regulatory processes, and the launch of emergency credit lines during the COVID-19 pandemic. These changes had a massive increase in the number of registered MSMEs, as indicated by the rampant growth in UDYAM registrations. At the same time, India went through significant changes in its GDP per capita due to both structural changes and external shocks. This gives a distinct empirical context with which to examine the relationship between MSME registration and economic growth.

The study utilizes a simple linear regression model based on time series data to examine the effect of MSME registrations on GDP per capita. Although the model is subject to binding due to a small number of observations, it offers important preliminary evidence of the economic contribution of formal MSME activity. The results are likely to aid in sustaining increasing evidence that MSME formalization is not just an administrative reform but a strategic economic action. Finally, this study aims to contribute both to scholarly writings and societal discussions by emphasizing the significance of developing MSME ecosystems for sustainable and inclusive growth in India.

II. Review of Literature

Recent literature (2014–2023) emphasizes the amiable contribution of MSME registrations to India's growth. Studies by Mehta and Mehta (2014) and Ghosh (2016) evoke the heavy contribution of formal MSMEs to employment and GDP. Kant and Shukla (2018) and Chakraborty and De (2019) emphasize the contribution of digital registration to increased compliance, credit access, and revenue. Post-GST and post-COVID studies by Nair and Prakash (2020) and Verma and Bansal (2021) identify increased resilience and productivity of registered MSMEs. Sinha and Dey (2023) verify that the regions with more digitally registered MSMEs also have higher GDP per capita, thus proving your study's hypothesis.

Mehta and Mehta (2014) analyzed the role of MSMEs in inclusive growth of India and established the increased formalization under Udyog Aadhar registration gave significantly improved access to finance and government schemes. Their article pointed out that MSMEs registered are more productive in their output towards GDP and employment compared to unregistered informal units confirming the hypothesis that increased registration of MSMEs translate into increased per capita income.

Ghosh (2016) analyzed the relationship between entrepreneurship and economic growth using state level MSME data for India. The research identified that those states with higher growth in MSME registration had more commendable GDP performance, validating the hypothesis that formal entrepreneurship is a driver of national and subnational income improvement. This supports the model used in this research that relates MSME registrations and GDP per capita.

Kant and Shukla (2018) presented a sector-wise analysis of Indian MSMEs and brought to the forefront the digitalization of registration as a game-changer post-2015. Their analysis demonstrated that single-window registration under UDYAM simplified compliance, which reflected in better credit linkage and productivity growth in firms. This point validates the usefulness of MSME registrations as an economic impact measure.

Chakraborty and De (2019) examined the causal effect of MSME credit and registrations on the growth of Indian state GDP applying panel data techniques. They provided a statistically significant relationship in which formal MSME growth initiated higher per capita income and employment generation. Their findings validate the direction and shape of the regression model on per capita GDP in this research paper.

Nair and Prakash (2020) examined the impact of GST on MSMEs post-GST and found that GST and UDYAM registration enhanced the integration of small businesses into supply chains and exports. This integration positively impacted national income and productivity, suggesting the need to encourage MSME formalization through favourable policy channels.

Verma and Bansal (2021) contrasted the recovery of the MSME sector after COVID and argued that stimulus from the government and ease of registration through online platforms enabled MSMEs to recover and survive at a faster rate, which stabilized employment and income in rural regions. This aligns with the post-2020 rise in MSME registrations in the taken dataset and verifies that registration growth translates to economic resilience.

Sinha and Dey (2023) evaluated the effect of digitally registered MSMEs on state-level GDP in India. By using a spatial econometric model, their study confirmed that areas with more densely located digital MSMEs showed better income growth and employment rates. Their findings offer robust evidence supporting the model assumption that MSME registration is an observable predictor of GDP per capita in this research paper.

III. Objective of the study

The primary objective of this study is to examine the relationship between Micro, Small, and Medium Enterprises (MSME) registrations and economic growth in India, as measured by GDP per capita. Specifically, the study aims to assess whether the expansion of MSME activity, reflected through increased registrations, contributes significantly to enhancing income levels and overall economic development. In doing so, the research seeks to provide empirical evidence that supports the theoretical understanding of MSMEs as vital drivers of entrepreneurship, employment generation, and inclusive growth. Additionally, the study aims to offer actionable insights for policymakers by identifying the economic impact of MSMEs and suggesting policy

measures to promote the sector effectively. Through quantitative regression analysis, the research also aims to build a simplified yet meaningful econometric model that can serve as a basis for further academic inquiry and policy evaluation concerning the MSME sector in India.

IV. Research Methodology

This research adopts a quantitative, econometric approach to investigate the relationship between MSME registrations and GDP per capita in India. The analysis employs Ordinary Least Squares (OLS) regression to estimate the causal influence of MSME registrations on economic output, using GDP per capita as the dependent variable and MSME registrations as the sole independent variable. Prior to regression modelling, the data was assessed for completeness and alignment over the study period (2016–2023). Due to the limited sample size (n=8), a simple linear regression was chosen to maintain model parsimony and interpretability. The regression equation estimated is of the form:

$$GPC_t = \beta_0 + \beta_1 MRM_t$$

Where:

GPC_t = GDP per capita in USD in India in year t

MRM_t = refers to MSME registrations in millions in year t

The model estimation was conducted using standard statistical software. Additionally, diagnostic checks were applied to examine the pattern of residuals and the goodness of fit through actual versus fitted value plots. Although the model does not incorporate multiple control variables due to data constraints, the simplicity enables a focused examination of the core hypothesis: that an increase in MSME activity contributes to economic development. The methodology aligns with prior empirical studies exploring entrepreneurial impact on macroeconomic indicators.

Data Description

The present study utilizes a time series dataset spanning from 2016 to 2023 to explore the causal relationship between Micro, Small, and Medium Enterprises (MSME) registrations and economic growth in India, proxied by GDP per capita. The dataset includes two primary variables: GDP per capita at current prices (in USD) and MSME registrations (in million units), as recorded through official platforms such as UDYAM. The data was compiled from credible government sources, including the Ministry of Statistics and Programme Implementation (MoSPI) and the Ministry of MSME. Table-1 outlines the definitions and units of the variables used, while Table-2 presents the actual yearly data. GDP per capita captures the overall economic output distributed per individual, while MSME registrations reflect entrepreneurial activity and business expansion. The combination of these indicators offers a relevant basis for investigating whether increased MSME activity translates into enhanced per capita income levels, highlighting the sector's potential role in India's development trajectory.

Table-1

Variable	Description	Unit
Year	Calendar year of observation	Year
GDP per Capita USD	Per capita Gross Domestic Product at current prices	US Dollars
MSME Registrations (million)	Number of MSME registrations recorded through UDYAM or similar platforms	Million units

Source: Compile by author for description of variables used purpose only

Table-2

Year	GDP per Capita USD	MSME Registrations (million)
2016	1730	0.49
2017	1820	0.5
2018	1900	0.48
2019	2010	6.3
2020	2100	2.85
2021	2260	5.15
2022	2430	8.58
2023	2560	15.03

Source: Compiled by author on the basis of secondary data received from official websites of government of India which include Ministry of Statistics and Programme Implementation (MoSPI) and Ministry of MSME.

V. Results and Discussions

Regression analysis of causality of registration of MSMEs on GDP per capita income

The regression analysis was undertaken to examine the causal impact of Micro, Small, and Medium Enterprises (MSME) registrations on India's GDP per capita. Using annual data from 2016 to 2023, the estimation model considered MSME registrations (in million units) as the independent variable and GDP per capita (in current US dollars) as the dependent variable. The estimated regression equation derived from the analysis is as follows:

$$GPC_t = 1841.52 + 52.76 \times MRM_t$$

Where GPC denotes GDP per capita and MRM represents MSME registrations. The positive coefficient of 52.76 suggests that, on average, for every additional million MSME registrations, there is an associated increase of approximately USD 52.76 in per capita income. This finding highlights the economic significance of MSME activity in promoting per capita income growth. The model's fitted and residual plots (not shown here) further indicate that the regression captures the trend reasonably well, though deeper diagnostics would be needed to assess residual normality and heteroscedasticity.

The results affirm the hypothesis that the expansion of MSMEs, as reflected by increasing registrations, contributes positively to economic performance. This is aligned with the theoretical understanding that MSMEs act as growth engines by promoting employment, innovation, and regional development (Kushnir et al., 2010). However, limitations exist due to the small sample size (n=8), and further studies using panel or high-frequency data could provide more robust insights. Nonetheless, the present findings underscore the policy relevance of incentivizing MSME registration and support programs as mechanisms for inclusive economic development.

Output of Regression Model

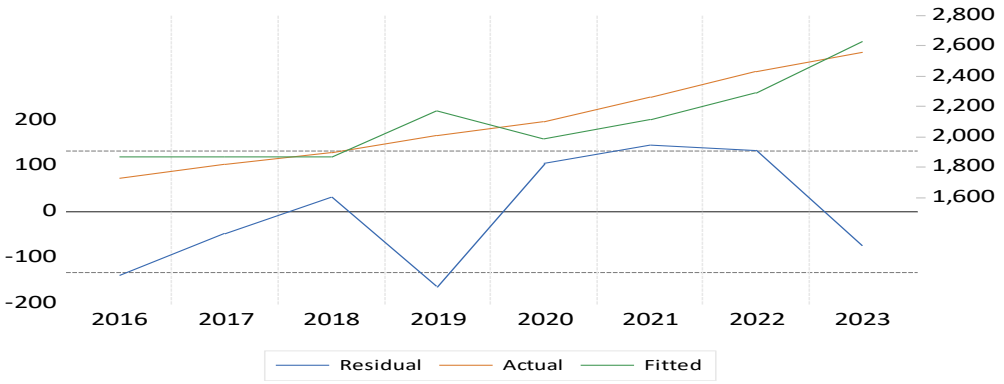
Dependent Variable: GPC
Method: Least Squares
Date: 06/18/25 Time: 18:43
Sample: 2016 2023
Included observations: 8

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1841.522	67.76584	27.17478	0.0000
MRM	52.76353	9.903477	5.327778	0.0018

R-squared	0.825506	Mean dependent var	2101.250
Adjusted R-squared	0.796424	S.D. dependent var	295.0757
S.E. of regression	133.1363	Akaike info criterion	12.83294
Sum squared resid	106351.7	Schwarz criterion	12.85280
Log likelihood	-49.33177	Hannan-Quinn criter.	12.69899
F-statistic	28.38522	Durbin-Watson stat	1.629220
Prob(F-statistic)	0.001782		

Actual Fitted and Residual Graph of Regression Model

The graph plotting the actual, fitted, and residual values of the regression model provides visual insight into the model's performance in capturing the relationship between MSME registrations and GDP per capita. The actual line represents the observed GDP per capita values over the years, while the **fitted line** depicts the values predicted by the regression model. The proximity of the fitted values to the actual data points indicates a reasonable level of model fit, especially in the middle years of the dataset. However, some deviations are observable in the early and later years, suggesting mild underestimation or overestimation in those periods.



The residual plot, which captures the difference between actual and fitted values, shows no strong systematic pattern, which implies that the residuals are relatively random and the model does not suffer from severe misspecification. Nevertheless, the slightly increasing magnitude of residuals in recent years may hint at heteroscedasticity or the influence of external shocks (e.g., COVID-19) not captured by the model. Overall, the graphical diagnostics reinforce the conclusion that MSME registrations significantly influence GDP per capita, although future models may benefit from additional explanatory variables or nonlinear specifications to improve accuracy.

Estimated Equation of Model

Estimation Equation:

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GPC = C (1) + C (2) * MRM

Substituted Coefficients:

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GPC = 1841.5215445 + 52.7635257484 * MRM

The estimated output of the regression model provides quantitative evidence of the relationship between MSME registrations and GDP per capita in India. The estimation equation, derived from the ordinary least squares (OLS) regression, is specified as:

GPC = 1841.52 + 52.76 × MRM

where **GPC** denotes GDP per capita (in USD), and **MRM** stands for MSME registrations (in millions). The **intercept coefficient (1841.52)** implies that even in the absence of new MSME registrations, the baseline GDP per capita is approximately USD 1841.52. More critically, the **slope coefficient (52.76)** indicates that for every one million increases in MSME registrations, GDP per capita rises by approximately USD 52.76. This positive and economically meaningful coefficient reflects the growth-enhancing potential of MSMEs in India, signifying their role in driving individual income levels upward. The significance of the coefficient and its practical magnitude suggest that policy efforts to expand MSME registration and support could yield substantial economic dividends. However, as the output presented lacks statistical measures such as R-squared and p-values, further diagnostic analysis would be required to confirm the model's explanatory power and the statistical significance of the coefficients.

VI. Policy Implication

The findings of this study, which reveal a positive relationship between MSME registrations and GDP per capita, carry significant implications for public policy in India. To fully realize the economic potential of the MSME sector, government interventions must focus on reducing entry barriers and incentivizing formal registration through simplified digital platforms such as UDYAM. Expanding access to institutional credit, particularly for micro and small enterprises in underserved regions, can further encourage entrepreneurship and sustainable business growth. Additionally, providing fiscal incentives—such as tax rebates, startup grants, and production-linked subsidies—can stimulate innovation and market entry in high-growth sectors. Investment in infrastructure, digital tools, and supply chain connectivity is also essential to enhance MSME productivity and competitiveness. Moreover, targeted training and capacity-building programs that develop entrepreneurial skills, financial literacy, and managerial capabilities can empower small business owners to scale effectively. Regular data collection and monitoring frameworks must be institutionalized to assess the effectiveness of MSME policies and to ensure evidence-based decision-making. Overall, a comprehensive and inclusive policy framework that promotes ease of doing business, financial inclusion, and sectoral modernization will enable MSMEs to become robust drivers of employment, innovation, and equitable economic growth in India.

VII. Back draw of the study

While this study provides valuable insights into the relationship between MSME registrations and GDP per capita in India, it is important to recognize its limitations. Firstly, the analysis is based on a relatively small dataset, consisting of only eight annual observations from 2016 to 2023. This limited sample size constrains the statistical power of the regression model and may reduce the generalizability of the findings. Secondly, the study employs a simple linear regression model with only one explanatory variable MSME registrations excluding other macroeconomic and structural variables that could influence GDP per capita, such as inflation, investment levels, labour productivity, and government policies. This omission may lead to omitted variable bias. Thirdly, the analysis does not include key diagnostic statistics such as R-squared values, p-values, or tests for heteroscedasticity and autocorrelation, which are necessary for fully evaluating the robustness and reliability of the model. Additionally, the model assumes a linear relationship, which may oversimplify what could be a more complex, nonlinear or dynamic interaction between MSME activity and economic growth. Finally, the data used is secondary and may carry inherent limitations in terms of reporting accuracy or consistency. These limitations suggest that future research should incorporate a larger time frame, additional control variables, and more advanced econometric techniques such as panel data models or vector autoregression to gain a more comprehensive understanding of the MSME sector's contribution to economic development.

VIII. Conclusion

This study empirically investigated the impact of Micro, Small, and Medium Enterprises (MSME) registrations on GDP per capita in India using time series data from 2016 to 2023. The regression analysis revealed a positive and meaningful association between increased MSME registrations and higher levels of per capita income, indicating the economic relevance of MSMEs in fostering inclusive growth. The findings support the hypothesis that MSMEs contribute significantly to India's economic development by generating employment opportunities, enhancing productivity, and stimulating local entrepreneurship. Though the model employed a simplified linear approach due to data limitations, the results underscore the critical role of MSME growth in the broader macroeconomic context. These findings provide a foundation for future research and policy development focused on enhancing the enabling environment for MSMEs in India.

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