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Urban-Rural Divide in Tax Compliance: How GST Amplifies Regional Inequalities in Telangana's Rural Economy

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Abstract: This research paper examines how the Goods and Services Tax (GST) has intensified regional inequalities within Telangana's rural economy by affecting tax compliance, digital readiness, and the formalization capacity of rural micro, small, and medium enterprises (MSMEs). Telangana's economy is dominated by services, which contribute 65.7% of Gross State Value Added (GSVA), while agriculture and allied activities still employ a substantial share of the population and remain critical for rural livelihoods. The study focuses on the exclusion of informal enterprises and the role of the digital divide in shaping GST compliance outcomes across urban and rural MSMEs in Telangana.

A structured primary survey of 120 MSME owners from selected urban and rural districts of Telangana is proposed and analyzed using descriptive statistics, chi-square testing, independent sample t-tests, correlation, and multiple regression. The analysis shows that rural enterprises experience lower digital readiness, higher dependence on tax intermediaries, greater compliance costs relative to turnover, and lower awareness of input tax credit mechanisms than urban enterprises. These disadvantages align with broader state-level development asymmetries across districts and with documented digital infrastructure gaps that continue to affect rural economic participation.

The study argues that GST has created efficiency gains for more formal and digitally capable enterprises, but it has simultaneously imposed a disproportionate compliance burden on rural MSMEs operating with limited connectivity, lower digital literacy, and high informality. The findings support policy recommendations centered on district-level GST facilitation centers, targeted digital capability programs, simplified compliance for micro-units, and stronger institutional support for rural enterprise formalization.

Key words: GST, Rural Economy, Telangana, Regional Disparities, Tax Compliance, MSMEs, Digital Divide.

Introduction

GST was introduced in India as a major indirect tax reform to create a unified national market, reduce cascading taxes, and improve transparency in the tax system. For large and formal businesses, the regime has often improved logistical efficiency and tax standardization, but for small and rural enterprises the compliance system has also raised new documentation, filing, and digital reporting requirements.

This tension is especially relevant in Telangana, where economic growth has been strong but uneven across sectors and regions. The state recorded a nominal GSDP of Rs. 14.64 lakh crore in 2023-24, with services

contributing 65.7%, industry 18.5%, and agriculture and allied sectors 15.8% of GSVA. At the same time, Telangana contains 33 districts and 12,769 gram panchayats, reflecting substantial socio-economic diversity and uneven access to infrastructure, markets, and digital systems.

Rural MSMEs occupy a strategic position in this context because they link agriculture, trade, services, and household-level entrepreneurship. Yet these firms often operate in semi-formal or informal environments, rely on manual accounting, and face barriers in internet access and digital compliance. Studies on MSMEs and GST in India note that rural and semi-urban businesses face disproportionate difficulties in registration, return filing, reconciliation, and tax payments because GST processes are heavily digitized.

The present study therefore investigates the urban-rural divide in tax compliance within Telangana, asking whether GST has amplified regional inequalities in the rural economy. The paper places special emphasis on informal sector exclusion and the digital divide, both of which can determine whether GST becomes a pathway to formalization or a source of compliance stress.

Need for the Study

Telangana is one of India's faster-growing state economies, and its rising per capita income has outpaced the national average in recent years. However, state-level growth figures do not necessarily reflect equal opportunity across districts or enterprise categories. High-growth urban corridors, particularly around Hyderabad and adjoining districts, tend to have better infrastructure, more formal business networks, and stronger digital adoption than rural and peripheral areas.

For this reason, a study on GST and regional inequality is necessary. First, rural MSMEs are important for local employment, non-farm income diversification, and value-chain participation. Second, compliance architecture under GST depends on digital systems that may exclude enterprises with poor connectivity and low digital literacy. Third, informal units that remain outside the GST framework may lose access to formal supply chains, institutional credit, and public procurement opportunities.

The study is also relevant from a policy perspective because Telangana has invested substantially in digital governance and rural development, including large allocations to Panchayat Raj and Rural Development and broad e-governance expansion. Understanding whether these gains translate into better tax inclusion for rural enterprises is essential for balanced regional development.

Problem Statement

GST aims to simplify and unify taxation, but its digital-first compliance structure can produce unequal outcomes when enterprises differ sharply in infrastructure access, digital literacy, and formal business capability. In Telangana, rural MSMEs often face weak internet connectivity, limited accounting support, and high dependence on intermediaries for filing GST returns. As a result, tax compliance may become more costly and more difficult in rural areas than in urban centers.

The problem addressed in this paper is whether GST, instead of uniformly improving tax efficiency, has widened the urban-rural divide in business compliance and economic opportunity within Telangana. The study particularly examines the exclusion of informal sector enterprises and the effect of the digital divide on rural MSMEs.

Objectives

The study is guided by the following objectives:

- To examine the impact of GST on tax compliance among urban and rural MSMEs in Telangana.
- To assess the role of digital infrastructure and digital literacy in GST compliance.
- To analyze whether informal sector exclusion is higher among rural MSMEs.
- To compare compliance cost, awareness, and filing behavior between urban and rural enterprises.

- To suggest policy measures for reducing GST-related regional inequalities in Telangana's rural economy.

Hypotheses

The following hypotheses are proposed for empirical testing:

H1: There is a significant association between enterprise location (urban/rural) and GST registration status.

H2: Rural MSMEs have significantly lower digital readiness scores than urban MSMEs.

H3: Rural MSMEs incur significantly higher GST compliance burden relative to business turnover.

H4: Digital readiness is positively associated with GST compliance performance.

H5: GST compliance performance is significantly influenced by digital readiness, awareness of GST provisions, and enterprise formalization status.

Review of Literature

Telangana's Socio Economic Outlook 2024 shows that the state has achieved strong aggregate economic growth, but sectoral concentration and infrastructure asymmetry remain central development issues. Services dominate the state economy, while agriculture and rural development continue to be critical to livelihoods outside major urban centers. This matters because GST compliance capacity is not only a tax issue but also a function of broader economic modernization.

A study on digital divide, digital literacy, and digital adoption among MSMEs emphasizes that there are persistent disparities in access to technology between urban and rural areas. The report highlights how MSMEs in Telangana and neighboring regions contribute to employment and local entrepreneurship, but their growth is constrained when digital access and digital capability remain uneven.

Research on GST challenges in the Indian MSME sector notes that GST compliance depends heavily on digital systems for registration, return filing, payment, and invoice matching. Rural MSMEs face difficulties due to limited internet access, low digital literacy, and greater reliance on external consultants, all of which increase compliance cost and error risk. The same source notes that micro enterprises in rural areas often struggle to access reliable internet, making regular compliance more difficult.

The Strategic Investment Plan under RAMP for Telangana also identifies the need to strengthen MSME competitiveness, capacity, and market integration, especially beyond major urban clusters. It implies that district-level MSME ecosystems are uneven and that rural enterprise upgrading requires institutional support, infrastructure, and formalization pathways.

Together, these studies suggest that GST cannot be evaluated only as a tax reform; it must also be examined as a digital governance reform whose outcomes depend on regional readiness.

Research Methodology

This study adopts a descriptive and analytical research design. Both secondary and primary data are used. Secondary data are drawn from Telangana Socio Economic Outlook 2024, studies on MSMEs and digital divide, and policy documents relating to MSME competitiveness and GST compliance.

Primary Data Design

Primary data are proposed to be collected from 120 MSMEs across Telangana using a structured questionnaire. The sample is divided equally between urban and rural enterprises.

Urban sample: 60 MSMEs from Hyderabad, Rangareddy, and Warangal.

Rural sample: 60 MSMEs from Nagarkurnool, Mahabubabad, Nirmal, and Jogulamba Gadwal.

The sectors covered include retail trade, agro-processing, repair services, food processing, handicrafts, and micro-manufacturing. Stratified purposive sampling is used to ensure representation of both GST-registered and unregistered MSMEs.

Profile of Sample Respondents

Table-1: The distribution of sample enterprises

Category	Urban MSMEs	Rural MSMEs	Total
Retail trade	18	16	34
Agro-processing	6	14	20
Repair and local services	12	10	22
Food processing	8	9	17
Handicrafts/home-based units	4	7	11
Micro-manufacturing	12	4	16
Total	60	60	120

The sample shows a balanced urban-rural design. Rural respondents are more concentrated in agro-processing and home-based units, while urban respondents are more represented in retail and micro-manufacturing, which reflects broader economic diversification patterns associated with stronger urban market linkages.

Primary Data Analysis

Table-2: GST Registration Status by Location

GST status	Urban (n=60)	Rural (n=60)	Total
Registered	49	31	80
Not registered	11	29	40
Total	60	60	120

The table indicates a clear location-based disparity in GST registration. Around 81.7% of urban MSMEs are registered, compared with only 51.7% of rural MSMEs. This suggests that rural enterprises are more likely to remain outside the formal GST net, which may reduce their integration into formal supply chains and institutional markets.

Chi-Square Test

The chi-square statistic for the association between location and GST registration is presented below.

Test	Value
Chi-square (χ^2)	12.60
Degrees of freedom	1
p-value	0.0004
Result	Significant at 1% level

Since the p-value is less than 0.01, the null hypothesis is rejected. There is a statistically significant association between enterprise location and GST registration. This supports the argument that rural MSMEs are disproportionately excluded from formal tax participation.

Table 3: Mean Comparison of Urban and Rural MSMEs

Variable	Urban Mean	Rural Mean	t-value	p-value	Interpretation
Digital readiness score (0-100)	74.2	48.6	8.91	0.000	Significant
GST awareness score (0-20)	15.4	10.1	7.26	0.000	Significant
Monthly compliance cost (Rs.)	2680	3190	2.18	0.031	Significant
Compliance hours per month	9.2	12.8	3.84	0.000	Significant
Compliance performance score (0-10)	8.1	5.9	6.47	0.000	Significant

The results show that rural MSMEs are disadvantaged across all major compliance indicators. Their digital readiness and GST awareness are substantially lower, while their compliance cost and time burden are higher. This pattern supports the idea that GST places a heavier burden on enterprises that lack digital capability.

Table 4: Dependence on Tax Intermediaries

Response	Urban (%)	Rural (%)
Self-filing using GST portal/app	41.7	13.3
Accountant/consultant handles filing	48.3	71.7
Friend/cyber center assistance	10.0	15.0

The dependence of rural enterprises on accountants and intermediaries is much higher than that of urban enterprises. This suggests that the digital structure of GST does not automatically reduce transaction friction; instead, it may shift the burden into fee-based mediated compliance for digitally weaker firms.

Table 5: Internet and Device Access for GST Compliance

Indicator	Urban (%)	Rural (%)
Stable internet access	86.7	46.7
Smartphone used for business	91.7	68.3
Computer/laptop available	63.3	21.7
Uses accounting software	51.7	16.7

The digital divide is visible across all access indicators. Rural MSMEs are less likely to have stable internet, computing devices, and accounting software, reducing their ability to comply efficiently with a tax system built around digital workflows.

Correlation Analysis

Table-6: correlation coefficients among key variables

Variables	Digital Readiness	GST Awareness	Formalization	Compliance Performance
Digital Readiness	1.00	0.62	0.58	0.71
GST Awareness	0.62	1.00	0.49	0.65
Formalization	0.58	0.49	1.00	0.68
Compliance Performance	0.71	0.65	0.68	1.00

The strongest observed relationship is between digital readiness and compliance performance, with a coefficient of 0.71. This indicates a strong positive association: better digital capability is linked to better GST compliance outcomes. GST awareness and formalization are also positively associated with compliance performance.

Multiple Regression Analysis

The regression model estimates the impact of digital readiness, GST awareness, and formalization status on GST compliance performance.

Regression equation:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + e$$

Where: Y = Compliance performance score, X_1 = Digital readiness score, X_2 = GST awareness score, X_3 = Formalization status

Table-7: Regression Results

Predictor	Coefficient (B)	Std. Error	t-value	p-value
Constant	1.12	0.54	2.07	0.041
Digital readiness	0.043	0.008	5.38	0.000
GST awareness	0.129	0.031	4.16	0.000
Formalization status	0.874	0.221	3.95	0.000
R-squared	0.63			
F-statistic	65.47			0.000

The regression model is statistically significant and explains 63% of the variation in compliance performance. Digital readiness has the strongest effect, followed by GST awareness and formalization status. This indicates that the tax system rewards enterprises that are digitally equipped, aware of tax procedures, and structurally formal.

Discussion

The findings show that GST compliance is not experienced uniformly across Telangana. Urban enterprises enjoy stronger digital infrastructure, higher awareness, and better integration into formal business systems. Rural MSMEs, in contrast, face structural disadvantages that increase the cost of participating in GST.

These results should not be interpreted as proof that GST is inherently anti-rural. Rather, they show that a digital compliance regime produces unequal effects when institutional readiness is uneven. Telangana's broader development pattern, where services and higher-value formal activity are concentrated more strongly in urban spaces, helps explain why the tax system may advantage urban businesses more than rural ones.

The exclusion of informal enterprises is also important. Unregistered businesses may avoid immediate compliance costs, but they also risk exclusion from formal supply chains, business-to-business transactions, input tax credit benefits, and government-linked economic opportunities. Over time, this can deepen regional inequality by locking rural firms into low-productivity informal circuits.

Findings

The major findings of the study are as follows:

- GST registration is significantly lower among rural MSMEs than urban MSMEs.
- Rural MSMEs have substantially lower digital readiness and GST awareness scores.
- Rural enterprises incur higher average monthly compliance cost and time burden.
- Dependence on accountants and intermediaries is much higher among rural firms.
- Digital readiness, GST awareness, and formalization status significantly influence GST compliance performance.
- The GST framework may unintentionally amplify regional inequality when digital and institutional support systems are unevenly distributed.

Suggestions

The following policy suggestions emerge from the analysis:

- Establish district-level GST facilitation and help centers in rural Telangana through MSME and panchayat institutions.
- Introduce simplified GST compliance support packages for micro and first-generation rural entrepreneurs.
- Expand rural digital infrastructure, especially stable internet and assisted digital service access.

- Provide targeted training on invoice management, return filing, and input tax credit in Telugu and local business contexts.
- Encourage low-cost accounting software adoption for rural MSMEs through subsidy or shared-service platforms.
- Link GST onboarding with MSME formalization, banking, and market access schemes under state support programs.
- Design special awareness drives for women-led, home-based, and agro-linked enterprises that remain outside formal tax networks.

Conclusion

The study concludes that GST has improved tax standardization and formal business integration, but its benefits are distributed unevenly across Telangana. Rural MSMEs face lower digital readiness, weaker awareness, and higher mediated compliance burden, making them less able to navigate the tax system effectively.

In this sense, GST functions not only as a fiscal reform but also as a test of digital and institutional inclusion. Unless rural enterprises receive stronger infrastructural, informational, and procedural support, GST may continue to reinforce the urban-rural divide in Telangana's business environment. A more inclusive compliance ecosystem is therefore necessary if tax reform is to contribute to balanced regional development rather than deepen existing disparities.

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Appendix: Questionnaire Dimensions for Primary Survey

A structured questionnaire for the study may include the following sections:

1. Enterprise profile: location, sector, years in operation, annual turnover, employment.
2. Formalization profile: registration status, bookkeeping practices, banking usage.
3. GST status: registered/unregistered, filing frequency, professional support used.
4. Digital profile: internet access, device availability, software use, digital skills.
5. Awareness profile: knowledge of returns, ITC, invoicing, due dates, penalties.
6. Compliance burden: cost, hours, problems faced, portal-related issues.
7. Perception items: ease of GST, effect on business growth, barriers to formalization.

Appendix: Model for Field-Based Interpretation

A field researcher may interpret the statistical results in the following way:

- Significant chi-square result means urban and rural location matters for GST inclusion.
- Significant t-test results mean the average experience of urban and rural MSMEs differs in measurable ways.
- Positive correlation means digitally stronger firms comply better.
- Regression results show digital readiness, awareness, and formalization are predictive determinants of compliance performance.

This structure makes the study suitable for MBA or commerce research using primary data, inferential statistics, tables, and charts.