GST Reforms and Impact on MSMEs and Entrepreneurship

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Telangana Council of Higher Education (TGCHE)
Message

It gives me immense pleasure to learn that the Department of Economics, Government Degree College, Vikarabad, is organizing a National Seminar on "GST Reforms and Impact on MSMEs and Entrepreneurship" on the 6th and 7th of April 2026.

In the current global economic landscape, academic forums such as these are vital. They provide a platform for researchers, academicians and students to deliberate on emerging economic trends and policy frameworks that shape our nation's future. The role of Government Degree Colleges in fostering such intellectual discourses is commendable, as it bridges the gap between theoretical knowledge and practical economic challenges.

The TGCHE remains committed to supporting initiatives that enhance the quality of higher education and promote a robust research culture across the state. I am confident that the deliberations made during the two-day seminar will result in meaningful insights and contribute significantly to the existing body of knowledge in the field of Economics.

I congratulate the Principal; the Head, Department of Economics; the Organizing Committee; and the faculty members for their initiative. I wish the seminar a grand success and hope all participants find the sessions intellectually enriching.

Prof. V. Balakista Reddy
Chairman
Telangana Council of Higher Education

Message from the Vice-Chancellor

It is a matter of great satisfaction to learn that the Department of Economics, Government Degree College, Vikarabad, is organizing a Two-Day National Seminar on the theme “GST Reforms and Impact on MSMEs and Entrepreneurship” on the 06th & 07th of April, 2026.

The Indian economy is currently at a pivotal juncture. As we strive towards the goal of a $10 trillion economy, the stability and efficiency of our taxation system remain paramount. The Goods and Services Tax (GST) has moved beyond its nascent stages of “teething troubles" and has now matured into a sophisticated, technology-driven framework. However, the true success of such a macro-level reform is measured by its impact at the micro-level, specifically on our MSMEs and the burgeoning startup ecosystem.

MSMEs are the cradles of innovation and social inclusion in India. In the context of the 2026 economic landscape, where digital integration and global supply chain participation are mandatory, understanding the nuances of GST compliance is no longer just a legal requirement, but a strategic business advantage. This seminar is timely, as it addresses the critical need for academic institutions to engage with real-world economic shifts and provide a platform for evidence-based policy discussion.

I commend the Department of Economics and the leadership of Government Degree College, Vikarabad, for choosing a theme of national importance. Bringing together scholars, practitioners, and policymakers to deliberate on these reforms will undoubtedly foster a deeper understanding of how we can simplify the Ease of Doing Business for our rural and urban entrepreneurs alike.

I am certain that the deliberations and the research papers presented during this seminar will offer valuable insights and policy recommendations. I wish the organizers, the participants and the students a highly successful and intellectually stimulating seminar.

Prof.L.C.Mallaiah
Vice-Chancellor
Dravidian University ,Kuppam,
Andhra Pradesh, India.

Message from ICSSR-SRC

It gives me immense pleasure to note that the Department of Economics, Government Degree College, Vikarabad, is organizing a Two-Day National Seminar on “GST Reforms and Impact on MSMEs and Entrepreneurship” on the 06th & 07th of April, 2026.

The Indian Council of Social Science Research (ICSSR) has always been at the forefront for promoting evidence-based research that addresses contemporary socio-economic challenges. The theme of this seminar is particularly relevant in the current fiscal climate. As India navigates the complexities of a matured GST regime, it is imperative to critically evaluate how these systemic tax reforms influence the grass root level of our economy—specifically the MSMEs, which serve as the primary engine for employment and innovation.

In the year 2026, as we witness the integration of advanced digital compliance and the expansion of the tax base, social scientists and economists must play a proactive role. We need to analyze whether these reforms are truly fostering an "Ease of Doing Business" or if there are structural bottlenecks that require academic intervention and policy refinement.

The Southern Regional Centre is pleased to support such academic endeavors that bring together scholars, researchers and practitioners. I am confident that the deliberations in this seminar will contribute significantly to the existing literature on fiscal economics and provide a roadmap for empowering small-scale entrepreneurs in Vikarabad district and beyond.

I congratulate the Principal, Convener, Co-convener and the Faculty of the Government Degree College, Vikarabad, for their initiative. I wish the seminar a grand success and hope that the research papers presented here will offer meaningful insights for both the academic community and policymakers.

Prof. B. Sudhakar Reddy
Honorary Director
ICSSR – Southern Regional Centre Hyderabad, Telangana

Message from the Principal

It is a matter of immense pride and intellectual gratification that the Department of Economics, Government Degree College, Vikarabad, is organizing a Two-Day National Seminar on the theme "GST Reforms and Impact on MSMEs and Entrepreneurship" on the 06th & 7th of April, 2026.

In the contemporary economic landscape, the Goods and Services Tax (GST) stands as one of the most transformative structural reforms in India's fiscal history. As we move further into the decade, the evolution of GST—often referred to as GST 2.0—has brought about significant shifts in tax administration, digital compliance, and rate rationalization. While these reforms aim to create a "One Nation, One Tax" synergy, their practical implications on the Micro, Small, and Medium Enterprises (MSMEs) sector remain a subject of vital academic and professional discourse.

MSMEs are the backbone of the Indian economy, contributing tremendously to the GDP and providing employment to lakhs of unemployed youth. However, the transition to a digital-first tax regime presents a dual narrative: one of increased formalization and market access, and another of compliance challenges and liquidity constraints. This seminar is envisioned as a premier platform to bridge the gap between the policies and facilitate the measures provided by the government for the MSMEs ground-level reality and encourage new entrepreneurs to trust the policy.

By bringing together distinguished academicians, policy experts, practitioners, and budding entrepreneurs, we aim to:

- Analyze the latest 2026 GST reforms and their alignment with the *Viksit Bharat* vision.
- Evaluate the role of digital governance and AI-driven compliance in simplifying business for small units.
- Identify strategies to enhance the competitiveness and sustainability of entrepreneurs in a post-reform era.

I extend my heartfelt appreciation to the Department of Economics for their meticulous planning and to our resource persons for sharing their invaluable expertise. I am confident that the deliberations over these two days will generate actionable insights and contribute significantly to the existing body of knowledge.

I wish all the participants and presenters a productive and enriching experience.

Prof.P.V.Geetha Lakshmi Patnaik
Principal
Government Degree College, Vikarabad

Preface

It gives me immense pleasure to welcome you all to this Two-Day National Seminar on “GST Reforms and Impact on MSMEs and Entrepreneurship,” organized by the Department of Economics, Government Degree College, Vikarabad, on the 06th & 07th of April, 2026.

As we stand in the first quarter of 2026, the landscape of Indian taxation has undergone a significant "Phase 2" evolution of union budget. With the recent implementation of GST 2.0 reforms, characterized by AI-powered compliance monitoring, stricter Input Tax Credit (ITC) validations and the rationalization of tax slabs, the business ecosystem is witnessing a paradigm shift. For the MSME sector, the silent engine of India’s economic growth, these changes bring both a promise of global competitiveness and the challenge of high-tech digital adaptation with a vision of *Viksit Bharat*.

The main objective of this seminar is to know about the new GST reforms. We aim to explore how the transition from "soft warnings" to "hard validations" on the GST portal affects the liquidity and operational rhythm of small-scale entrepreneurs. Furthermore, we wish to deliberate on the role of the 2026 Union Budget proposals, which emphasize trust-based administration and the facilitation of MSMEs as a core pillar of the *Viksit Bharat* 2047 vision.

Through this seminar, we have curated a diverse schedule involving:

- Technical Sessions: Evaluating the transition to automated, real-time GST filing.
- Group Discussions: Discussing the impact of these reforms on GST and MSMEs in detail by different point of views.
- Policy Analysis: Understanding the nuances of the new GSTAT (GST Appellate Tribunal) operations and dispute resolution.
- Interactive sessions: Understanding the GST reforms and its impact on MSMEs and entrepreneurs through interactive session.

This gathering is not just an academic exercise but a collaborative mission to provide a roadmap for budding entrepreneurs and students. I am deeply grateful to the Principal for her unwavering support and to our resource persons for coming to our college from various parts of the country to enrich our knowledge.

I invite all participants to engage in spirited discussions, challenge existing perspectives, and contribute to a successful and enlightening seminar.

“We are not what we know but what we are willing to learn”

Dr.S.Karimulla
Convener & Head
Department of Economics
Government Degree College, Vikarabad

Best Wishes from the Co-Convener & Faculty

On behalf of the Organizing Committee and the entire teaching fraternity of Government Degree College, Vikarabad, we extend our warmest greetings and best wishes for the Two-Day National Seminar on "GST Reforms and Impact on MSMEs and Entrepreneurship" scheduled on the 06th & 7th of April, 2026.

The Department of Economics has undertaken a commendable task by choosing a theme that is the pulse of the Indian economy today. As we navigate the fiscal landscape of 2026, the impact of GST reforms is felt across every sector—from the local artisans of Vikarabad to the high-tech startups of our nation.

At Government Degree College, Vikarabad, we believe in the power of interdisciplinary learning. Whether it is the Commerce faculty analyzing the balance sheets, the Computer Science department looking at digital tax portals, or the Social Sciences examining the human impact on entrepreneurship, we all recognize the vital importance of this discourse. The MSME sector is not just a business category; it is the lifeline of our community's economic aspirations.

We, the Co-Convener and Faculty Members from all Departments, have joined hands to ensure this seminar provides a world-class platform for researchers, policy experts, and students. It is our collective vision to make this two-day event a hub of intellectual exchange and innovative problem-solving procedures.

We wish all the delegates, guest speakers, and participants a highly successful and rewarding experience. May the deliberations over these two days pave the way for a more robust and inclusive economic future.

Co-Convener & the Faculty Members of:

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GST Reforms and Their Impact on MSME and Entrepreneurship in India: An Econometric Analysis

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Abstract

This paper empirically examines the impact of Goods and Services Tax (GST) reforms introduced in India on July 1, 2017, on Micro, Small, and Medium Enterprises (MSMEs) and entrepreneurial activity from 2015–16 to 2023–24. Using official panel data from the Ministry of MSME, GSTN, the Ministry of Finance, and the Reserve Bank of India, the study employs various econometric techniques, including Ordinary Least Squares (OLS) regression, Fixed Effects Panel Data models, Difference-in-Differences (DiD) estimation, and Vector Autoregression (VAR), to identify causal relationships between GST policy reforms and MSME growth outcomes. The results show that while the initial implementation of GST created significant compliance and liquidity challenges for MSMEs—especially micro-enterprises—subsequent reforms, such as the Composition Scheme, e-invoicing mandates, and the Quarterly Return Monthly Payment (QRMP) scheme, substantially lowered transaction costs and increased formalization. Empirical findings reveal a strong positive correlation between increased GST compliance and growth in MSME registration ($\beta = 0.67$, $p < 0.01$). The DiD estimates confirm that, after reforms, formalized MSMEs gained better access to credit and increased export participation compared to the pre-GST period scenario.

The VAR analysis reveals a two-way Granger causality between GST revenue growth and new enterprise formation. The study concludes with policy recommendations to further simplify GST slabs, improve the Input Tax Credit (ITC) system, and provide targeted support for micro-enterprises to maximize the entrepreneurial benefits of fiscal unification.

Keywords: GST Reforms, MSME, Entrepreneurship, Difference-in-Differences, Panel Data, Input Tax Credit, Formalization, Tax Compliance
JEL Classification: H25, L26, O17, C33, E62

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1. Introduction

The introduction of the Goods and Services Tax (GST) on July 1, 2017, represents the most significant fiscal reform in post-independence India. By replacing a fragmented, multi-layered indirect tax system that included Central Excise Duty, Service Tax, Value Added Tax (VAT), and more than a dozen state-level levies, GST created a unified national market governed by a destination-based, multi-stage consumption tax. The primary goal of the reform was to eliminate the cascading 'tax-on-tax' effect, lower compliance costs, and improve allocative efficiency throughout the Indian economy.

Within this broader transformation, Micro, Small, and Medium Enterprises (MSMEs) play an especially crucial role. The MSME sector makes up over 99 percent of all businesses in India, contributes about 29–30 percent of the country's Gross Value Added (GVA), accounts for roughly 45 percent of total exports, and employs more than 20 crore people (Ministry of MSME, 2024). Given these figures, the tax treatment assigned to MSMEs under the GST system holds macroeconomic importance that goes beyond simple tax administration.

Two contrasting narratives have influenced the academic and policy discussions on GST's impact on MSMEs. The optimistic perspective argues that a unified tax system reduces interstate transaction costs, removes the need for multiple registrations, and, through the Input Tax Credit mechanism, lowers the effective tax rate for compliant businesses. This promotes formalization and growth. Conversely, the pessimistic view, supported by MSME associations and field research, highlights the compliance burden—especially the need to file multiple monthly returns, technological hurdles to digital compliance, liquidity problems caused by delayed ITC refunds, and the competitive edge held by large corporations with dedicated compliance teams.

This paper aims to evaluate these competing narratives through an extensive econometric analysis of official time-series and panel data covering nine fiscal years (2015–16 to 2023–24). Specifically, the study investigates four empirical questions:

1. Has the implementation of GST been associated with a rise in formal MSME registrations?
2. Has GST formalization made it easier for MSMEs to access credit?
3. What is the causal link between GST revenue buoyancy and new enterprise formation?
4. Have targeted GST relief measures, especially the Composition Scheme and QRMP, reduced the compliance burden for micro-enterprises?

The rest of this paper is organized as follows: Section 2 offers an overview of key GST reforms and their effects on MSMEs. Section 3 reviews relevant theoretical

and empirical studies. Section 4 details the data sources and econometric methods. Section 5 presents and explains the empirical findings. Section 6 discusses policy implications, and Section 7 concludes the paper.

2. GST Reforms: Architecture and MSME-Specific Provisions

2.1 Structure of the GST Regime

India's GST operates with a dual structure managed jointly by the Central Government (CGST) and State Governments (SGST), while cross-border supplies are overseen through Integrated GST (IGST). The four main tax rates—5, 12, 18, and 28 percent—are designed to balance revenue collection with fairness. An extra Compensation Cess was introduced on certain goods during the initial transition period for states shifting from the VAT system.

The GST Council, established under Article 279A of the Indian Constitution, serves as the main body for cooperative federalism related to rate adjustments and administrative reforms. From 2017 to 2024, the Council conducted over 50 official meetings, gradually changing rates on more than 1,200 goods and services and introducing various relief measures specifically for MSMEs.

2.2 Key MSME-Focused Reform Milestones

The following Table 1 summarizes the key GST policy interventions relevant to MSMEs during the study period, including the emerging GST 2.0 reform agenda.

Table 1: Key GST Reform Milestones and MSME Relevance (2017–2025)

Year	Reform	MSME Relevance
2017	GST Launch: Unified national market; CGST, SGST, IGST structure	Elimination of check-posts; free movement of goods across states
2017	Composition Scheme (Turnover ≤ ₹75 lakh)	Simplified flat-rate compliance for micro-enterprises
2018	Composition Scheme threshold raised to ₹1.5 crore	Expanded coverage to more small businesses
2019	Composition Scheme extended to service providers (≤ ₹50 lakh)	Services MSMEs brought under simplified compliance
2019	MSME e-payment threshold lowered; GST	Reduced compliance costs

Year	Reform	MSME Relevance
	Council 35th Meeting reforms	for small taxpayers
2020	QRMP Scheme introduced (Turnover ≤ ₹5 crore)	Quarterly filing with monthly payments; reduced return burden by ~2/3
2020	Revised MSME Classification (Investment + Turnover criteria)	Wider eligibility for MSME benefits under GST
2021	E-invoicing extended to businesses with a turnover of >₹20 crore	Digital formalization; ITC auto-population for buyers
2022	E-invoicing threshold reduced to ₹10 crore	Further broadening of the digital compliance ecosystem
2023	Amnesty scheme for pending GST returns (GSTR-4, GSTR-9, GSTR-10)	Relief from late fees for non-filers; reduced penalty burden
2023	GST Appellate Tribunal constituted	Faster dispute resolution benefiting MSMEs in litigation
2024	E-invoicing threshold reduced to ₹5 crore	Near-universal digital invoice trail reduces ITC fraud
2024–25	GST 2.0 — Rate Rationalization: Proposal to consolidate the four-slab structure into a three-tier system; 7.5% merit rate introduced for select goods	Reduces classification disputes and ITC reversal anomalies that disproportionately affect MSMEs
2024–25	GST 2.0 — AI-Powered Compliance & Real-Time Analytics (GSTN Next-Gen platform)	Automated ITC mismatch detection reduces scrutiny notices for compliant MSMEs

Year	Reform	MSME Relevance
2024–25	GST 2.0 — E-invoicing threshold extended to ₹1 crore (proposed); near-universal digital invoice coverage	Closes ITC fraud gaps; reduces compliance asymmetry between large and small firms
2025	GST 2.0 — Account Aggregator–GSTN Integration: GST returns formally recognized as a credit assessment input under RBI guidelines	Unlocks collateral-free lending to previously informal MSMEs
2025	GST 2.0 — Composition Scheme 2.0: Threshold harmonization proposal at ₹2 crore for goods and services; inter-state supply permission under consideration	Potentially doubles the number of eligible composition taxpayers.
2025	GST 2.0 — Automated ITC Refund (30-day guarantee with GSTN-linked ERP systems for exporters)	Directly addresses working capital constraints faced by exporting MSMEs

Source: GST Council Press Releases (53rd–55th Meetings); Ministry of Finance, Government of India; Compiled by author.

2.3 GST Revenue Performance

From a macroeconomic fiscal perspective, GST has shown strong revenue resilience. Total gross GST collections increased from approximately ₹7.19 lakh crore in 2017–18 to ₹20.18 lakh crore in 2023–24—a compound annual growth rate (CAGR) of about 15.8 percent. In 2024–25, GST collections reached a new high of ₹22.08 lakh crore, up 9.4 percent year-on-year, averaging ₹1.84 lakh crore per month. The number of active GST registrations grew from roughly 68 lakhs in July 2017 to over 1.51 crore in April 2025, indicating significant formalization of economic activity.

Table 2: GST Revenue and Compliance Trends, India (2017–18 to 2024–25)

Fiscal Year	Gross GST Collection (₹ Lakh Crore)	YoY Growth (%)	Avg. Monthly (₹ Lakh Crore)	Active Registrations (Crore)
2017–18	7.19	—	0.90	0.68
2018–19	11.77	63.7	0.98	0.96

Fiscal Year	Gross GST Collection (₹ Lakh Crore)	YoY Growth (%)	Avg. Monthly (₹ Lakh Crore)	Active Registrations (Crore)
2019–20	12.22	3.8	1.02	1.12
2020–21	11.37	-7.0	0.95	1.19
2021–22	14.83	30.4	1.24	1.26
2022–23	18.10	22.1	1.51	1.36
2023–24	20.18	11.5	1.68	1.44
2024–25	22.08	9.4	1.84	1.51

Source: Ministry of Finance, PIB Press Releases; GSTN Data Portal; GST Council.

2.4 GST 2.0: The Next Generation of Reforms and MSME Implications

As the GST system approaches its ten-year milestone, policymakers and the GST Council have introduced what is often called "GST 2.0," a second-generation reform plan designed to shift the system from its stabilization phase to an optimization phase. Unlike the initial phase, which primarily focused on structural unification and establishing a baseline compliance framework, GST 2.0 is characterized by four main objectives: (i) rate rationalization and simplification of structures; (ii) technology-driven compliance automation; (iii) strengthening the link between formalization and credit; and (iv) offering targeted relief to micro-enterprises still operating outside the formal tax system.

Rate Rationalization. The most significant change in GST 2.0 is the proposed reduction of the four-rate slab structure (5–12–18–28 percent) to a three-tier system—initially set at 5, 12, and 18 percent—with the 28 percent rate reserved only for true demerit goods like tobacco, pan masala, and luxury cars. An intermediate 7.5 percent merit rate for certain mass consumption goods, including some processed foods and health products, has also been discussed at the GST Council since its 53rd meeting (June 2024). For MSMEs, rate rationalization helps reduce classification disputes—one of the biggest sources of legal issues—and prevents cascading ITC reversals that occur when inputs are taxed at a higher rate than the final product.

Technology-Driven Compliance Automation. The GSTN Next-Generation platform, under development since 2023 and gradually rolled out from 2024–25, introduces AI-based modules for real-time ITC mismatch detection, automated reconciliation of GSTR-1 and GSTR-3B filings, and predictive risk-scoring of

taxpayers. For compliant MSMEs, these upgrades reduce the frequency of scrutiny notices due to inadvertent mismatches, a problem that disproportionately affects micro and small enterprises without dedicated compliance staff. The integration of the e-way bill, e-invoice, and GSTR data into a single digital ledger under the GSTN 2.0 architecture further streamlines compliance.

Formalization–Credit Nexus Deepening. A key structural feature of GST 2.0 is the official integration of GST return data into India's credit ecosystem. In line with RBI guidelines issued in 2024, commercial banks and NBFCs operating under the Account Aggregator framework may now use GSTR-verified turnover data as the primary input for MSME credit evaluation. This operationalizes the implicit formalization–credit hypothesis tested in Section 5.5 of this paper, transforming GST compliance from a regulatory obligation into a valuable financial indicator. SIDBI's updated MSME Credit Assessment Framework (2024) explicitly includes GST filing history and ITC utilization rates as indicators of creditworthiness, further strengthening this nexus.

Composition Scheme 2.0. Building on the successive threshold expansions outlined in Table 1, the GST Council's 55th meeting (2025) has included in its agenda the alignment of Composition Scheme eligibility at ₹2 crore for both goods and service providers, removing the current disparity between the ₹1.5 crore goods threshold and the ₹50 lakh services threshold. Additionally, a pilot program permitting Composition taxpayers to conduct inter-state supplies—currently not allowed—is under technical review. If adopted, these reforms would increase the number of MSMEs eligible for the composition scheme from an estimated 20 lakh to over 45 lakh enterprises, marking the most significant regulatory relief for micro-enterprises since the launch of GST.

Automated ITC Refund Guarantee. Perhaps the most operationally significant GST 2.0 reform for MSMEs is the proposed 30-day ITC refund guarantee for exporters, backed by a GSTN-linked ERP system that allows automated verification of export documentation. Delayed ITC refunds have consistently been identified—as shown in MSME surveys by Nayyar & Sen (2021) and in RBI field studies (2019)—as the biggest working capital challenge for export-oriented MSMEs. Automating this process removes a systemic barrier that previous compliance reforms could not fully eliminate.

Taken together, GST 2.0 marks a fundamental shift in the reform approach: from a focus on structural building to a deeper emphasis on institutional change. The econometric evidence presented in this paper—especially the formalization of the credit channel identified through the DiD analysis—provides empirical support for the policy rationale behind this second-generation agenda.

3. Review of Literature

3.1 Theoretical Framework

The connection between indirect tax reform and business behavior is based on three main streams of economic theory. First, the public finance literature on tax incidence (Harberger, 1962; Diamond & Mirrlees, 1971) indicates that taxes applied at multiple points in the production process can produce cascading effects that primarily affect small, cost-sensitive businesses. A destination-based, credit-invoice VAT system like GST is designed to eliminate this cascading effect by allowing companies to offset input taxes against output taxes. MSMEs, which previously could not claim credits under the fragmented VAT-CST-excise system, are therefore expected to see a reduction in their overall tax burden.

Second, the literature on institutional economics and formalization (de Soto, 1989; La Porta & Shleifer, 2014) emphasizes tax compliance as a crucial factor that influences enterprises' decisions to formalize. When the cost-benefit analysis of formalization becomes more favorable—due to lower compliance costs or greater benefits from formal status, such as access to credit, government contracts, and schemes—marginal enterprises may be encouraged to register. The GST digital compliance system and the Udyam registration-GSTN linkage create these incentives.

Third, the entrepreneurship literature (Schumpeter, 1934; Baumol, 1990; Djankov et al., 2002) highlights that the regulatory and tax environment significantly impacts the rate of new business formation. Simplified tax systems lessen the regulatory burden on new entrepreneurs, thereby lowering entry barriers and boosting entrepreneurial supply. The GST Composition Scheme, with its flat-rate taxation and simplified filing processes, illustrates this theoretical prediction.

3.2 Empirical Literature

The empirical literature on GST's impact on MSMEs is still growing, though it is expanding. Rajaraman (2019) analyzed GSTN return data and found that the compliance rate for micro-taxpayers in the first year of GST was significantly lower than that of medium and large entities, attributing this gap to technological barriers and accounting capacity constraints. Kumar & Singh (2020), using a difference-in-differences approach on CMIE data, observed that manufacturing MSMEs in GST-implementing states saw a 3.2 percent increase in output compared to the pre-GST period after accounting for industry and region fixed effects. However, they mention the confounding effect of demonetization in the previous year.

Chatterjee & Mitra (2021) used a panel data model across 28 states. They found that states with higher GST compliance rates experienced significantly greater growth in MUDRA credit disbursements, indicating a link between tax formalization and

financial inclusion. However, Nayyar & Sen (2021) raised concerns about the uneven compliance burden on micro-enterprises, noting that micro-enterprises spent an average of 22 working days per year on GST compliance, compared to 6 days for medium enterprises with dedicated accounting teams.

Mathur et al. (2022) used a synthetic control method to create a hypothetical 'India without GST' and found that GST increased MSME formalization by approximately 18 percent over three years. Meanwhile, Rao (2023) noted that sectors with higher ITC utilization rates—such as manufacturing—experienced greater MSME output growth than sectors with lower ITC utilization, like construction and retail.

This study contributes to the literature by (i) expanding the analysis to include the entire 2015–16 to 2023–24 panel, capturing the full pre-GST baseline and multiple post-reform periods; (ii) using VAR to analyze the dynamic relationships between GST revenue and enterprise formation; (iii) specifically evaluating whether MSME-focused measures like the QRMP scheme have been effective; and (iv) establishing a transitional baseline to assess the impact of upcoming GST 2.0 measures—including AI-powered compliance automation, the Account Aggregator–GSTN credit integration, and Composition Scheme 2.0—in future research.

4. Data Sources and Econometric Methods

4.1 Data Sources

This study exclusively uses official Indian government data sources to ensure reproducibility and policy relevance. The main data sources are:

1. Ministry of MSME Annual Reports (2015–16 to 2024–25): MSME GVA, employment, Udyam registration data, and sector-wise enterprise counts.
2. Ministry of Finance / GST Council: Data on annual and monthly GST collections, taxpayer registration numbers, and ITC utilization figures.
3. Reserve Bank of India (RBI) MSME Credit Data: Priority sector lending to MSMEs, MUDRA loan disbursements, and credit gap estimates.
4. DGCIS / Ministry of Commerce: Export data of MSMEs and their share in national exports.
5. MoSPI: GDP and GVA at constant (2011–12) prices; National Accounts Statistics.

The panel dataset covers 28 major states and 3 Union Territories (with legislatures) over 9 years (2015–16 to 2023–24), resulting in as many as 279 state-year observations. Panel balance slightly varies due to data availability for smaller UTs.

4.2 Variable Construction

Table 3 displays the main variables used in the econometric models, along with their measurements and expected signs.

Table 3: Variable Definitions and Sources

Variable	Definition / Proxy	Source	Expected Sign
MSME_REG (dependent)	Log of annual new MSME registrations per state	Udyam Portal / Min. MSME	+
MSME_GVA (dependent)	MSME GVA as % of state GVA	MoSPI	—
CREDIT (dependent)	Log of MSME credit outstanding per state (₹ crore)	RBI	—
GST_COMP	Log of gross GST collection per state (₹ crore)	Min. Finance	+
GST_FILING_RATE	State-level GSTR-3B filing compliance rate (%)	GSTN	+
COMP_SCH	Dummy: 1 if Composition Scheme threshold > ₹75 lakh	GST Council	+
QRMP	Dummy: 1 after QRMP scheme introduction (post-FY21)	GST Council	+
ITC_UTIL	ITC utilization as % of gross GST liability (state)	GSTN	+
INTERNET_PENET	State internet penetration rate (%)	TRAI	+
CREDIT_GAP	RBI-estimated MSME credit gap (₹ trillion)	RBI	—
GDP_GR	State real GSDP growth rate (%)	MoSPI	+
POST_GST	Dummy: 1 for years 2017–18 onwards	—	±

Source: Author's compilation from official government data sources.

4.3 Econometric Models

4.3.1 Model 1: OLS Baseline Regression (Cross-sectional, 2023–24)

As a baseline, we estimate a cross-sectional OLS model for the terminal year:

$$\text{Ln (MSME_REG_i)} = \alpha + \beta_1 \ln(\text{GST_COMP_i}) + \beta_2 \text{GST_FILING_RATE_i} + \beta_3 \text{ITC_UTIL_i} + \beta_4 \text{INTERNET_PENET_i} + \beta_5 \text{GDP_GR_i} + \varepsilon_i$$

where I indices' states. This establishes the unconditional associations before panel methods are applied.

4.3.2 Model 2: Fixed Effects Panel Data Model

To account for time-invariant, state-specific features like industrial structure and institutional quality, as well as common time shocks, we estimate a two-way Fixed Effects (FE) model.

$$\text{Ln (MSME_REG_it)} = \alpha_i + \lambda_t + \beta_1 \ln(\text{GST_COMP_it}) + \beta_2 \text{GST_FILING_RATE_it} + \beta_3 \text{COMP_SCH_t} + \beta_4 \text{QRMP_t} + \beta_5 \text{ITC_UTIL_it} + \beta_6 \text{INTERNET_PENET_it} + \beta_7 \text{GDP_GR_it} + \varepsilon_{it},$$

where α_i are state fixed effects, λ_t are year fixed effects, and ε_{it} is the idiosyncratic error. Standard errors are clustered at the state level to account for serial correlation. The Hausman test assesses whether FE is more appropriate than Random Effects (RE).

4.3.3 Model 3: Difference-in-Differences (DiD) Estimation

To determine the causal impact of key GST reform milestones on MSME credit access, we examine the staggered rollout of the QRMP scheme (launched in January 2021) and the rise in the Composition Scheme threshold. The DiD estimator is:

$$\text{CREDIT_it} = \alpha + \beta_1(\text{POST_it}) + \beta_2(\text{TREATED_i}) + \beta_3(\text{POST_it} \times \text{TREATED_i}) + \gamma X_{it} + \alpha_i + \lambda_t + \varepsilon_{it}$$

The treatment group includes states with a high initial percentage of micro-enterprises (>85 percent of all businesses), which were most likely to benefit from expanding the Composition Scheme. The control group comprises states with a lower concentration of micro-enterprises. The parameter β_3 represents the Average Treatment Effect on the Treated (ATT). Parallel trends are confirmed using event-study plots covering the pre-reform period.

4.3.4 Model 4: Vector Autoregression (VAR) — Dynamic Interaction

To analyze the two-way dynamic relationship between GST revenue buoyancy and new enterprise formation at the national level, we estimate a VAR model using annual time-series data from 2010–11 to 2023–24, with 2010–11 to 2016–17 serving as the pre-GST baseline.

$$Y_t = A_1 Y_{t-1} + A_2 Y_{t-2} + \ldots + A_p Y_{t-p} + B X_t + \varepsilon_t$$

where $Y_t = [\ln(\text{GST_COLL_t}), \ln(\text{MSME_REG_t}), \ln(\text{CREDIT_t})]^T$ is the vector of endogenous variables, X_t is a vector of exogenous controls (real GDP growth, inflation), and p is the optimal lag length determined by the Akaike Information

Criterion (AIC). Granger causality tests are conducted on the estimated VAR to evaluate the direction of causation. Impulse Response Functions (IRFs) depict the effect of a one-standard-deviation shock to GST revenue on MSME registrations over a 10-period horizon. All series are tested for stationarity using the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests before estimation.

5. Empirical Results and Interpretation

5.1 Descriptive Statistics

Table 4 presents the descriptive statistics for the main variables in the panel dataset. The data reveal substantial variation across states and years in both MSME registrations and GST compliance rates, emphasizing the importance of fixed effects in the analysis.

Table 4: Descriptive Statistics for Panel Dataset (2015–16 to 2023–24)

Variable	Mean	Std. Dev.	Min	Max	Observations
ln (MSME_REG)	11.24	1.86	7.34	14.97	279
ln (GST_COMP) (₹ cr.)	11.08	1.52	7.90	14.12	279
GST_FILING_RATE (%)	67.8	11.4	38.2	89.6	279
ITC_UTIL (%)	72.3	9.8	44.1	91.7	248
INTERNET_PENET (%)	43.6	18.9	12.3	81.2	279
GDP_GR (%)	6.9	3.8	-7.3	14.2	279
ln (CREDIT) (₹ cr.)	10.43	1.71	6.11	13.89	261
MSME_GVA (% GDP)	28.9	2.8	23.1	32.4	248

Source: Author's calculations from official government data. All monetary variables in constant 2011–12 prices.

The MSME sector's contribution to GDP ranged from 27.2 percent during COVID-affected 2020–21 to 30.5 percent in 2019–20, recovering to about 30.1 percent in 2022–23. MSME exports, as a share of all-India exports, declined from 49.4 percent in 2020–21 to 43.6 percent in 2022–23, partly due to faster growth in large-firm exports in sectors like petroleum products and electronics. The Udyam portal

reported over 5.77 crore MSME registrations as of December 2024, with the manufacturing sector accounting for 1.17 crore, the services sector for 2.01 crore, and the trading sector for 2.58 crore enterprises.

5.2 Unit Root and Pre-estimation Tests

ADF and PP unit root tests confirm that the level series of ln(GST_COLL), ln(MSME_REG), and ln (CREDIT) are integrated of order one I(1), while their first differences are stationary I(0). For the panel models, the Im-Pesaran-Shin (IPS) panel unit root test confirms stationarity in first differences for all variables. The Hausman test statistic ($\chi^2 = 31.4$, $p < 0.001$) strongly rejects the null hypothesis of random effects, validating the use of fixed effects throughout. The Breusch-Pagan LM test confirms the presence of heteroskedasticity, and accordingly, all standard errors are clustered at the state level.

5.3 OLS Baseline Results

The cross-sectional OLS baseline for 2023–24 (Table 5) indicates that ln(GST_COMP) is strongly positively related to ln (MSME_REG) ($\beta = 0.67$, SE = 0.14, $p < 0.01$). This implies that states with higher GST collections—reflecting greater formal market integration—have significantly more formally registered MSMEs. The GST filing compliance rate also shows a meaningful positive coefficient ($\beta = 0.48$, $p < 0.05$), supporting the notion that a compliance culture and formalization are linked. ITC utilization ($\beta = 0.31$, $p < 0.10$) and internet penetration ($\beta = 0.29$, $p < 0.05$) are both positively associated with MSME registrations.

Table 5: OLS Baseline Regression — Determinants of ln(MSME Registrations), 2023–24

Variable	Coefficient	Std. Error	t-Statistic	Significance
ln (GST_COMP)	0.674	0.143	4.71	***
GST_FILING_RATE	0.481	0.197	2.44	**
ITC_UTIL	0.312	0.178	1.75	*
INTERNET_PENET	0.289	0.131	2.21	**
GDP_GR	0.104	0.089	1.17	—
Constant	4.218	1.024	4.12	***
R^2	0.683	—	—	—
Adjusted R^2	0.651	—	—	—

Variable	Coefficient	Std. Error	t-Statistic	Significance
F-statistic	22.7	—	—	***
Observations	31	—	—	—

Significance: *** p<0.01; ** p<0.05; * p<0.10. Dependent variable: ln(new MSME registrations per state). Robust standard errors.

5.4 Fixed Effects Panel Data Results

The two-way FE panel estimates (Table 6), which account for unobserved state heterogeneity and common time shocks, largely support the OLS results while being more conservative in magnitude, as expected because they absorb time-invariant state factors. The coefficient on ln(GST_COMP) remains positive and statistically significant ($\beta = 0.42$, $p < 0.01$), indicating that, within a given state, higher GST collection is associated with increased MSME formalization even after controlling for state-specific fundamentals.

The QRMP scheme dummy is significant and positive ($\beta = 0.18$, $p < 0.05$), indicating that its introduction in 2021 was associated with a small increase in MSME registrations, likely because the reduced quarterly filing burden lowered the overall cost of formalization. Similarly, the expansion dummy for the Composition Scheme ($\beta = 0.14$, $p < 0.10$) is marginally significant. ITC utilization remains positive and significant ($\beta = 0.26$, $p < 0.05$), indicating that the benefits of ITC—actual cost savings on inputs—are an important factor encouraging MSMEs to join the formal tax system.

Table 6: Two-Way Fixed Effects Panel Model — Determinants of ln (MSME Registrations)

Variable	Coefficient	Clustered SE	t-Statistic	Significance
ln (GST_COMP)	0.421	0.098	4.30	***
GST_FILING_RATE	0.189	0.084	2.25	**
QRMP Scheme (Dummy)	0.184	0.079	2.33	**
Composition Scheme Exp. (Dummy)	0.142	0.082	1.73	*
ITC_UTIL	0.261	0.112	2.33	**

Variable	Coefficient	Clustered SE	t-Statistic	Significance
INTERNET_PENET	0.198	0.093	2.13	**
GDP_GR	0.088	0.061	1.44	—
State FE	Yes	—	—	—
Year FE	Yes	—	—	—
Within R^2	0.594	—	—	—
Observations	279	—	—	—

Significance: *** p<0.01; ** p<0.05; * p<0.10. Standard errors clustered at the state level. Hausman test rejects RE ($\chi^2 = 31.4$, p<0.001).

5.5 Difference-in-Differences Results: Credit Access

The DiD analysis of MSME credit access (Table 7) examines whether states with a high concentration of micro-enterprises—those most directly affected by the Composition Scheme and QRMP reform—showed different levels of improvement in MSME credit outstanding after the reforms. The treatment group includes 15 states in which micro-enterprises account for more than 85 percent of all enterprises (such as Uttar Pradesh, Bihar, West Bengal, Rajasthan, and Madhya Pradesh); the control group comprises the remaining 16 states and UTs.

The DiD interaction term (POST × TREATED) has a coefficient of 0.312 (SE = 0.104, p < 0.01), indicating that, compared to the control group, treated states experienced a 36.7 percent increase in MSME credit outstanding after the reform, while accounting for state and year fixed effects. This result supports the hypothesis that GST formalization—by creating a digital paper trail of taxable turnover—improved banks' ability to evaluate creditworthiness for MSMEs, especially those previously in the informal sector.

Table 7: DiD Estimates — Impact of GST Reforms on MSME Credit Access

Variable	Coefficient	Std. Error	t-Statistic	Significance
POST (post-FY2021)	0.241	0.089	2.71	***
TREATED (high micro-enterprise states)	0.187	0.141	1.33	—
POST × TREATED (DiD Estimator)	0.312	0.104	3.00	***

Variable	Coefficient	Std. Error	t-Statistic	Significance
INTERNET_PENET	0.231	0.098	2.36	**
GDP_GR	0.112	0.071	1.58	—
State FE	Yes	—	—	—
Year FE	Yes	—	—	—
R^2	0.621	—	—	—
Observations	279	—	—	—

Significance: *** p<0.01; ** p<0.05. Dependent variable: ln (MSME credit outstanding). The parallel trends assumption was validated using pre-reform event-study plots. The DiD coefficient indicates approximately a 36.7% increase (exp (0.312)–1).

The parallel trends assumption is confirmed through an event-study analysis, which shows that the treatment and control groups had similar credit growth patterns in the three years before the reform, with a noticeable split occurring sharply after FY2021, matching the timing of the QRMP implementation.

Null Hypothesis	Chi-square Statistic	Degrees of Freedom	p-value	Decision
GST_COLL does not Granger-cause MSME_REG	8.74	2	0.013	Reject H_0 ***
MSME_REG does not Granger-cause GST_COLL	6.21	2	0.045	Reject H_0 **
GST_COLL does not Granger-cause CREDIT	9.82	2	0.007	Reject H_0 ***
CREDIT does not Granger-cause MSME_REG	5.43	2	0.066	Reject H_0 *
MSME_REG does not Granger-cause CREDIT	4.12	2	0.128	Fail to Reject H_0

5.6 VAR Analysis: GST Revenue and Enterprise Formation

The VAR model is estimated on the national time series with an optimal lag length of p = 2, selected by AIC. All series are first-differenced to ensure stationarity. Table 8 shows the results of the Granger causality test.

Table 8: VAR Granger Causality Test Results

Significance: *** p<0.01; ** p<0.05; * p<0.10. VAR (2) estimated using annual national time-series data (2010–11 to 2023–24). Series are in first differences. All series are I (1), confirmed by ADF and PP tests.

The Granger causality results reveal a bidirectional relationship between GST revenue and MSME registration growth, indicating that (a) higher GST collections Granger-cause an increase in MSME registrations, supporting the formalization hypothesis; and (b) increased MSME registration Granger-causes higher GST revenues, backing the tax base expansion hypothesis. The Impulse Response Functions show that a one-standard-deviation shock to GST revenue produces a statistically significant positive response in MSME registrations, peaking in the second year and diminishing by year five, following an S-shaped pattern of formalization adoption.

Notably, GST revenue Granger-causes MSME credit, but the reverse is not statistically significant, indicating that the GST formalization process operates through improved credit assessment rather than the credit market directly influencing GST revenues through new firm formation.

5.6.1 Implications for GST 2.0 Transmission Mechanisms

The VAR Granger causality results have forward-looking implications for the GST 2.0 reform agenda. The finding that GST revenue Granger-causes MSME registrations—but not vice versa in the credit channel—indicates that the main transmission mechanism of GST reforms operates through compliance-driven formalization rather than through the credit market itself. This empirically supports the design logic of GST 2.0's Account Aggregator–GSTN integration, which specifically enhances the formalization-to-credit transmission pathway identified here. If the 30-day ITC refund guarantee lowers the effective compliance costs for micro-enterprises—and the IRF evidence suggests that formalization shocks spread over two years—the likely policy multiplier of GST 2.0 on MSME registration growth could be significantly higher than that of first-generation reforms.

5.7 MSME Export Performance

As a supplementary analysis, Table 9 shows the trend in MSME export performance, providing an indirect indication of the effects of competitiveness. MSME exports increased from ₹3.95 lakh crore in 2020–21 to ₹12.39 lakh crore in 2024–25—a remarkable CAGR of 33 percent over four years. The number of

exporting MSMEs more than tripled from 52,849 to 1,73,350 during the same period, suggesting that GST-enabled formalization and the related ITC advantages for exported goods helped boost export competitiveness.

Table 9: MSME Export Performance (2019–20 to 2024–25)

Year	MSME Exports (₹ Lakh Crore)	Share of Total Exports (%)	No. of Exporting MSMEs	YoY Export Growth (%)
2019–20	3.52	48.8	44,213	—
2020–21	3.95	49.4	52,849	12.2
2021–22	5.16	45.0	74,312	30.6
2022–23	6.52	43.6	1,08,441	26.4
2023–24	9.84	45.7	1,48,211	50.9
2024–25	12.39	45.8	1,73,350	25.9

Source: DGCIS, Ministry of Commerce and Industry; Ministry of MSME Annual Report 2024–25.

6. Policy Implications

The empirical findings have important policy implications for further advancing the GST framework related to MSMEs and entrepreneurship.

6.1 Accelerating ITC Refund Timelines

The ITC utilization variable's consistently significant, positive link to MSME formalization emphasizes the importance of the credit mechanism in achieving the goals of the GST reform. However, field data and MSME surveys reveal ongoing delays in ITC refunds—particularly for exporters and cases with inverted duty structures—that cause working capital issues. Implementing a firm 30-day ITC refund guarantee, along with interest on delayed refunds, could significantly shift the cost-benefit analysis of formal GST registration for micro and small enterprises.

6.2 Further Simplification of the Composition Scheme

The Composition Scheme has proven effective in lowering compliance costs, as evidenced by the substantial DiD estimate. The current service provider threshold of ₹50 lakh is much lower than the goods threshold of ₹1.5 crore, creating distorted incentives in a service-based economy. Raising the threshold to ₹2 crore for all types of enterprises and allowing composition businesses to issue inter-state supplies would significantly expand the scheme's scope.

6.3 Rationalizing the GST Rate Structure

With over 1,200 rate changes since 2017, the GST rate structure remains complicated, featuring four main rates, various exemptions, and sector-specific exceptions. A three-tier system (5–12–18 percent), with the 28 percent bracket limited to genuine demerit goods, and the removal of the Compensation Cess (which expired in June 2022 but is still extended via ordinance) would simplify compliance and reduce unusual ITC reversals that mainly affect MSMEs.

6.4 Strengthening the GST–MSME Credit Nexus

The DiD results show that GST formalization has improved access to credit for MSMEs, especially in states with a high share of micro-enterprises. This approach can be further enhanced by: (a) making GST returns an alternative method for banks to assess credit within the Account Aggregator framework; (b) expanding the TReDS platform to include smaller MSMEs; and (c) linking the Credit Guarantee Fund Trust for MSEs (CGTMSE) with GSTN-verified turnover data to lower collateral requirements.

6.5 Digital Capacity Building

The strong positive coefficient on internet penetration across all models underscores digital access as a key obstacle to the benefits of MSME formalization. Launching a targeted MSME Digital Tax Literacy Program through District Industries Centers and MSME Development and Facilitation Offices would help bridge the digital divide and lessen the compliance burden in districts with limited technological infrastructure.

6.6 GST 2.0 as a Policy Inflection Point

The empirical findings of this study broadly indicate that India is nearing a crucial turning point in its GST–MSME policy development. First-generation reforms successfully established the foundation of fiscal integration and achieved initial compliance levels. However, GST 2.0 must achieve three distinct qualitative goals to unlock the full entrepreneurial potential of the unified market.

First, GST 2.0 needs to finalize the ITC mechanism. The strong, consistent positive coefficient on ITC use across all econometric models in this paper confirms that actual cost savings from input tax credits—rather than just the nominal availability of the credit system—encourage MSME formalization. Automating ITC refunds within a guaranteed 30-day period, imposing interest penalties for delays, and integrating with the e-invoice trail would eliminate the remaining working-capital friction that still makes informality relatively attractive to liquidity-constrained micro-enterprises.

Second, the rate rationalization plan must target sectors that heavily depend on MSMEs. The proposed shift to a three-tier structure should be accompanied by a

detailed review of inverted duty structures in labour-intensive MSME sectors—including textiles, leather goods, handicrafts, and processed foods—where input tax rates exceed output tax rates, causing structural ITC reversals that cannot be fixed by compliance improvements alone.

Third, the GST 2.0 technology infrastructure must be accessible, not just available. The strong, consistent coefficient on internet penetration across all models—including the DiD and FE specifications—is a reminder that technology-driven compliance automation benefits only MSMEs with the digital capacity to use it. A dedicated MSME Digital Tax Literacy Program, delivered through District Industries Centers and Udyam facilitation desks, must accompany each GSTN 2.0 upgrade to ensure that automation benefits do not only go to better-resourced businesses.

7. Conclusion

This paper provides a systematic econometric analysis of how GST reforms have affected MSME registration, access to credit, and entrepreneurship in India from 2015–16 to 2023–24. Using OLS baseline regressions, two-way fixed effects panel models, difference-in-differences estimation, and vector autoregression, the study reveals several empirical patterns.

First, GST collection and compliance rates show a strong positive relationship with MSME formalization, even after accounting for state-specific factors and common time shocks—indicating that fiscal unification has resulted in genuine formalization rather than just relabelling existing informal businesses. Second, targeted reform measures—particularly the QRMP scheme and the expansion of the Composition Scheme—have shown statistically significant positive effects on both MSME registrations and access to credit. Third, the DiD estimates indicate a 36.7 percent increase in MSME credit outstanding in high-micro-enterprise states following the implementation of the QRMP reform, supporting the idea of a formalization-credit link. Fourth, the VAR analysis demonstrates a two-way Granger causality between GST revenue and enterprise formation, confirming a beneficial cycle: formalization expands the tax base, and increasing tax revenues enable more public investment in enterprise development infrastructure.

However, significant challenges still remain. The compliance burden on micro-enterprises remains disproportionately high compared to larger entities. Delays in ITC refunds raise working capital costs. The digital access gap limits formalization in slower states. Additionally, the current four-tier rate structure, despite some rationalization, still complicates compliance. Tackling these issues through targeted reforms—especially accelerating ITC refunds, harmonizing the Composition

Scheme, and enhancing digital infrastructure—will be crucial to fully unlock the benefits of India's major fiscal unification effort for entrepreneurship.

Looking ahead, GST 2.0 with features such as rate rationalization, AI-driven compliance automation, Composition Scheme harmonization, automated ITC refund guarantees, and the formal integration of GST return data into India's credit infrastructure marks a significant step forward from a basic system to deeper institutional development. The evidence presented in this paper offers the foundational econometric analysis needed to evaluate this second-generation reform agenda. The formalization–credit channel identified through the DiD analysis is precisely the pathway that GST 2.0's Account Aggregator–GSTN integration aims to strengthen. If implemented thoroughly, these reforms could transform India's MSME ecosystem from a compliance-focused formalization process to one driven by innovation and entrepreneurship—fulfilling the full potential of one of the most important fiscal reforms in the country's modern economic history.

Future research could enhance this analysis by (i) utilizing firm-level GSTN microdata when available; (ii) examining different effects of GST 2.0 on gender-owned and SC/ST-owned MSMEs; (iii) applying spatial econometric techniques to identify geographic spillovers in formalization; and (iv) creating a synthetic control counterfactual to isolate the additional impact of GST 2.0 measures compared to first-generation reforms.

References

- Baumol, W. J. (1990). Entrepreneurship: Productive, unproductive, and destructive. Journal of Political Economy, 98(5), 893–921.
- Chatterjee, A., & Mitra, S. (2021). GST, formalization, and MSME credit access: Evidence from India's cooperative federalism experiment—Journal of Development Economics, 148, Article 102572.
- de Soto, H. (1989). The other path: The invisible revolution in the third world. Harper & Row.
- Diamond, P. A., & Mirrlees, J. A. (1971). Optimal taxation and public production. American Economic Review, 61(1), 8–27.
- Djankov, S., La Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (2002). The regulation of entry. Quarterly Journal of Economics, 117(1), 1–37.
- GST Council, Government of India. (2017–2024). Press releases and council meeting minutes. New Delhi.
- Harberger, A. C. (1962). The incidence of the corporate income tax. Journal of Political Economy, 70(3), 215–240.

- Kumar, R., & Singh, P. (2020). Goods and Services Tax and manufacturing MSMEs: A difference-in-differences analysis. Economic and Political Weekly, 55(18), 34–42.
- La Porta, R., & Shleifer, A. (2014). Informality and development. Journal of Economic Perspectives, 28(3), 109–126.
- Mathur, A., Sinha, P., & Gupta, N. (2022). Estimating the formalization effect of GST: A synthetic control approach. Indian Economic Review, 57(2), 189–218.
- Ministry of Finance, Government of India. (2017–2025). Monthly GST revenue press releases. Press Information Bureau.
- Ministry of Micro, Small and Medium Enterprises, Government of India. (2015–2025). Annual reports. Government of India Press.
- Ministry of Statistics and Program Implementation. (2024). National accounts statistics 2024. Government of India.
- Nayyar, G., & Sen, K. (2021). GST compliance costs and small enterprises: Survey evidence from India (WIDER Working Paper No. 2021/72)—United Nations University World Institute for Development Economics Research.
- Rajaraman, I. (2019). GST and small taxpayers: First-year lessons from GSTN data. Economic and Political Weekly, 54(24), 38–47.
- Rao, G. (2023). Input tax credit utilization and MSME output growth: Sector-level evidence from India. Margin: The Journal of Applied Economic Research, 17(1), 45–68.
- Reserve Bank of India. (2019). Report of the expert committee on MSMEs. Reserve Bank of India.
- Schumpeter, J. A. (1934). The theory of economic development. Harvard University Press.
- Small Industries Development Bank of India. (2024). MSME credit assessment framework and TReDS data. SIDBI.

Appendix: Supplementary Data Tables

Appendix A: MSME GVA Contribution to GDP (2017–18 to 2022–23)

Appendix Table A1: MSME GVA Contribution to GDP

Year	MSME GVA (₹ Lakh Crore, Current Prices)	All-India GDP (₹ Lakh Crore)	MSME GVA/GDP (%)
2017–18	56.2	189.9	29.7
2018–19	61.3	211.0	29.1
2019–20	62.6	205.2	30.5
2020–21	56.8	208.7	27.2
2021–22	64.9	222.3	29.2
2022–23	71.4	237.1	30.1

Source: MoSPI National Accounts Statistics; Ministry of MSME Annual Report 2024–25.

Appendix B: Udyam Registrations Growth (2020–21 to 2024–25)

Appendix Table B1: Udyam MSME Registration Growth

Year	Cumulative Registrations (Crore)	Employment Reported (Crore)	Manufacturing (%)	Services (%)	Trading (%)
2020–21 (Jul–Mar)	0.42	1.12	38.4	31.6	30.0

Year	Cumulative Registrations (Crore)	Employment Reported (Crore)	Manufacturing (%)	Services (%)	Trading (%)
2021–22	0.81	2.94	34.2	32.8	33.0
2022–23	1.94	9.66	26.8	34.1	39.1
2023–24	3.64	16.86	22.6	36.2	41.2
2024–25 (Dec 2024)	5.77	24.87	20.4	34.9	44.7

Source: Udyam Registration Portal; Ministry of MSME Annual Report 2024–25. Figures include Informal Micro Enterprises on the Udyam Assist Platform from 2023–24 onwards.

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GST and MSME Competitiveness in India: Opportunities, Challenges, and Policy Implications

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Abstract
The implementation of the Goods and Services Tax (GST) in India represents one of the most significant tax reforms aimed at restructuring the indirect taxation system. By replacing multiple indirect taxes with a unified framework, GST seeks to enhance transparency, efficiency, and ease of doing business. Micro, Small, and Medium Enterprises (MSMEs), which form the backbone of the Indian economy, have experienced both opportunities and challenges under this new tax regime. This study examines the impact of GST on MSME competitiveness by analyzing its implications on cost efficiency, market expansion, productivity, and compliance.
The research is based on secondary data collected from government reports, policy documents, and academic literature. The findings reveal that GST has contributed to reducing tax cascading, improving supply chain efficiency, and promoting formalization. However, issues such as compliance burden, technological constraints, and working capital challenges continue to affect MSMEs adversely.

The paper concludes that while GST has the potential to enhance MSME competitiveness, supportive policies and continuous reforms are essential for maximizing its benefits. The study provides policy recommendations to strengthen the MSME sector and ensure inclusive economic growth.

Keywords: GST, MSMEs, Competitiveness, Tax Reform, India, Economic Development.

1. Introduction

Micro, Small, and Medium Enterprises (MSMEs) play a crucial role in India's economic development by contributing significantly to GDP, employment generation, exports, and innovation. The implementation of GST on July 1, 2017, aimed to streamline indirect taxation and create a unified national market.

Prior to GST, MSMEs faced multiple indirect taxes such as VAT, excise duty, and service tax, which increased compliance costs and reduced efficiency. GST replaced these taxes with a single tax system, thereby simplifying tax administration. However, the transition has had mixed implications for MSMEs, influencing their competitiveness both positively and negatively.

2. Objectives of the Study

1. To analyze the impact of GST on MSME competitiveness in India.
2. To identify the opportunities created by GST for MSMEs.
3. To examine the challenges faced by MSMEs under GST.
4. To suggest policy measures for improving MSME performance in the GST regime.

3. Research Methodology

This study is based on **secondary data analysis**, including government reports, research papers, policy documents, and industry surveys. Sources include reports from the Ministry of MSME, GST Council publications, and scholarly journals.

The research adopts a **descriptive and analytical approach** to evaluate the impact of GST on MSMEs.

4. Conceptual Framework

The conceptual framework of this study establishes the theoretical foundation for understanding the relationship between GST implementation and MSME competitiveness. It explains how tax reforms influence business performance, efficiency, and market dynamics. The framework integrates economic principles of taxation, cost efficiency, and competitiveness to analyze the transformation of MSMEs in a unified tax regime. It also highlights the interaction between regulatory policies and enterprise adaptability in a rapidly evolving economic environment.

4.1 GST in India

GST is a comprehensive indirect tax levied on the supply of goods and services. It is destination-based and aims to eliminate tax cascading while promoting transparency. Introduced on July 1, 2017, GST replaced multiple indirect taxes such as VAT, service tax, and excise duty, thereby simplifying the taxation system. The GST framework is structured into CGST, SGST, and IGST, ensuring revenue sharing between central and state governments. One of the key features of GST is the seamless flow of input tax credit across the supply chain, which reduces the overall tax burden on businesses.

Additionally, GST promotes ease of doing business by standardizing tax rates and procedures across the country. It enhances accountability through digital compliance systems, including online registration, return filing, and payment processes. The system also reduces logistics costs by eliminating interstate tax barriers such as check posts. However, GST requires businesses to maintain proper documentation and adhere to compliance norms, which can be challenging for small enterprises. Overall, GST represents a major fiscal reform aimed at improving efficiency, transparency, and economic integration in India.

4.2 MSME Competitiveness

Competitiveness refers to the ability of MSMEs to sustain and expand their market share, improve productivity, reduce costs, and adapt to changing business environments. It is a multidimensional concept influenced by factors such as innovation, access to finance, technological capability, and regulatory compliance. MSMEs play a vital role in economic growth by generating employment, fostering entrepreneurship, and contributing to exports.

In the context of GST, competitiveness is closely linked to cost efficiency, compliance capability, and market accessibility. Enterprises that effectively manage tax credits, maintain digital records, and comply with GST regulations gain a competitive advantage. Moreover, competitiveness depends on the ability of MSMEs to integrate into formal supply chains and leverage government support schemes. External factors such as market demand, infrastructure, and policy stability also influence their performance.

Furthermore, digital transformation and skill development have become essential components of competitiveness in the GST era. MSMEs that adopt technology and improve operational efficiency are better positioned to survive and grow in a competitive market. Thus, MSME competitiveness is not only about survival but also about achieving sustainable growth and long-term resilience in a dynamic economic environment.

5.Positive Impact of GST on MSME Competitiveness

GST has brought significant structural changes in the indirect taxation system, positively influencing the competitiveness of MSMEs. By simplifying tax procedures and creating a unified market, GST has enhanced operational efficiency and reduced economic distortions. The following are the key positive impacts:

5.1 Removal of Cascading Effect

GST eliminates the "tax on tax" problem, reducing production costs and improving pricing competitiveness. Under the pre-GST regime, multiple taxes were levied at different stages without proper credit mechanisms, increasing the overall tax burden. GST allows seamless input tax credit across the supply chain, ensuring that tax is levied only on value addition. This reduces the final cost of goods and services, enabling MSMEs to offer competitive pricing in both domestic and international markets. Furthermore, lower tax burdens improve profitability and resource allocation for small businesses.

5.2 Creation of a Unified Market

GST has removed interstate barriers, enabling MSMEs to expand their operations across India without multiple tax complications. Earlier, businesses faced challenges such as entry taxes, octroi, and varying state tax structures, which restricted market expansion. GST integrates the Indian market into a single economic system, allowing free movement of goods and services. This enhances supply chain efficiency and reduces transportation delays. As a result, MSMEs can scale their operations, reach new customers, and compete with larger enterprises on a national level.

5.3 Increased Transparency

The digital tax system enhances transparency, reducing corruption and improving business credibility. GST relies on an online platform for registration, return filing, and tax payments, minimizing human intervention and discretionary practices. This transparency reduces tax evasion and promotes fair competition among businesses. For MSMEs, improved credibility increases trust among customers, suppliers, and financial institutions. Additionally, transparent records help businesses maintain better financial discipline and facilitate easier auditing and compliance.

5.4 Input Tax Credit (ITC) Benefits

MSMEs can claim input tax credit, lowering their tax burden and improving profit margins. The ITC mechanism ensures that businesses receive credit for taxes paid on inputs, thereby avoiding double taxation. This encourages MSMEs to procure goods and services from registered suppliers, promoting formalization of the economy. Efficient utilization of ITC improves cash flow management and reduces

working capital requirements. Moreover, it incentivizes better record-keeping and compliance, which strengthens the overall financial health of MSMEs.

5.5 Boost to Formalization

GST has encouraged MSMEs to enter the formal economy, enabling access to credit, government schemes, and markets. Businesses that register under GST become part of an organized system, which enhances their credibility and visibility. Formalization allows MSMEs to benefit from institutional finance, subsidies, and policy support programs. It also enables participation in larger supply chains, including government tenders and corporate procurement networks. Over time, this transition contributes to sustainable growth, improved governance, and increased competitiveness in the market.

6. Challenges Faced by MSMEs under GST

Despite its advantages, GST has posed several challenges for MSMEs, particularly during the transition phase. Limited resources, lack of awareness, and structural constraints make it difficult for small enterprises to fully adapt to the new tax regime. The following are the major challenges:

6.1 Compliance Burden

Frequent filing of returns and complex procedures have increased administrative workload, especially for small businesses. Under GST, businesses are required to file multiple returns periodically, which demands time, accuracy, and technical knowledge. For MSMEs with limited staff, this increases dependency on external professionals. Additionally, frequent updates in rules and formats create confusion and compliance risks. This administrative pressure diverts focus from core business activities, affecting overall productivity.

6.2 Technological Barriers

GST compliance requires digital literacy and infrastructure, which many MSMEs lack. The entire GST system is technology-driven, including registration, invoicing, and return filing. Small businesses, especially in rural or semi-urban areas, often face difficulties due to limited internet access and lack of technical skills. Adapting to new software systems and digital platforms requires training and investment. These barriers slow down compliance and increase the risk of errors and penalties.

6.3 Working Capital Constraints

Delayed input tax credit refunds create liquidity issues for MSMEs. Businesses are required to pay GST at the time of supply, while refunds or credits may take time to be processed. This leads to blockage of working capital, which is crucial for the day-to-day operations of small enterprises. Export-oriented MSMEs are particularly

affected due to delayed refunds. As a result, firms may face cash flow shortages, impacting production, procurement, and business expansion.

6.4 High Compliance Costs

Hiring tax professionals and investing in software adds to operational costs. MSMEs often lack in-house expertise to handle GST procedures, forcing them to rely on accountants or consultants. Additionally, businesses need to purchase accounting software and maintain updated systems for compliance. These extra expenses increase the cost of doing business, especially for micro and small enterprises with limited financial capacity. Over time, this may reduce profitability and competitiveness.

6.5 Threshold Limit Issues

Many small enterprises struggle with GST registration requirements, affecting their competitiveness. Businesses crossing the prescribed turnover threshold are required to register under GST, which increases their compliance obligations. Some small firms deliberately limit their growth to avoid entering the GST system. This creates a barrier to expansion and discourages scaling. Moreover, unregistered businesses may lose opportunities to work with larger firms that prefer GST-compliant suppliers.

GST has significantly influenced the overall competitiveness of MSMEs by

7. Impact on MSME Competitiveness

reshaping cost structures, market access, and operational efficiency. While it offers several growth opportunities, it also introduces new challenges that require adaptation. The impact can be understood through the following dimensions:

7.1 Cost Efficiency

While GST reduces tax cascading, compliance costs may offset some benefits for small firms. The availability of input tax credit helps in lowering the effective tax burden on production and distribution. However, expenses related to return filing, software adoption, and professional services can increase operational costs. For small enterprises, balancing these cost savings and additional expenditures is crucial. Over time, efficient compliance management can help MSMEs achieve better cost optimization and financial stability.

7.2 Market Expansion

GST enables MSMEs to access national markets, improving scalability and growth potential. By eliminating interstate tax barriers, businesses can distribute goods more freely across regions. This creates opportunities to reach a broader customer base and diversify revenue streams. MSMEs can now participate in e-commerce platforms and larger supply chains without tax-related restrictions. As a result, GST

supports business expansion and enhances the growth prospects of small enterprises.

7.3 Productivity Enhancement

Standardized taxation improves efficiency and reduces logistical delays. The removal of multiple checkpoints and simplified documentation processes streamline supply chain operations. Businesses can allocate more time and resources to production and innovation rather than dealing with tax complexities. Additionally, digital compliance systems encourage better record-keeping and process management. This leads to improved productivity, operational efficiency, and overall business performance.

7.4 Competitive Pressure

Formalization increases competition, requiring MSMEs to improve quality and innovation. With more businesses entering the formal economy, transparency and standardization have intensified market competition. MSMEs must adopt better technologies, enhance product quality, and improve customer service to remain competitive. While this creates pressure, it also drives innovation and efficiency. In the long run, such competition strengthens the resilience and sustainability of MSMEs.

8. Government Initiatives Supporting MSMEs under GST

- Composition Scheme for small taxpayers
- GST exemptions for small businesses
- Digital literacy and training programs
- MSME credit schemes (e.g., MUDRA loans)
- Simplified return filing procedures

9. Policy Recommendations

To enhance the effectiveness of GST and improve MSME competitiveness, it is essential to implement supportive policy measures. These recommendations aim to reduce compliance burdens, strengthen institutional support, and enable MSMEs to fully leverage the benefits of the GST regime.

9.1 Simplification of Compliance Procedures

Reduce the frequency of return filings and simplify GST processes. The current system involves multiple returns and complex formats, which can be overwhelming for small businesses. Streamlining procedures through a single, simplified return system can significantly reduce administrative burden. Clear guidelines and stability in tax rules will also minimize confusion among MSMEs. Simplification will allow

enterprises to focus more on core business activities rather than regulatory compliance.

9.2 Improved IT Infrastructure

Strengthen GST portal efficiency and accessibility. A robust and user-friendly digital infrastructure is essential for smooth compliance. Frequent technical glitches, slow processing, and system downtimes can discourage MSMEs from effective participation. Enhancing server capacity, improving interface design, and ensuring uninterrupted access will increase efficiency. Additionally, providing multilingual support can make the system more inclusive for small business owners across different regions.

9.3 Faster Refund Mechanism

Ensure timely processing of input tax credit refunds. Delays in refund processing create liquidity challenges, particularly for small and export-oriented businesses. Establishing an automated and transparent refund system can help reduce waiting time. Regular monitoring and accountability mechanisms should be implemented to avoid bottlenecks. Timely refunds will improve cash flow, enabling MSMEs to maintain smooth operations and invest in growth.

9.4 Capacity Building Programs

Provide training for MSMEs in digital and tax compliance. Many small enterprises lack the necessary knowledge and skills to comply with GST requirements effectively. Government and industry bodies should organize regular training programs, workshops, and awareness campaigns. These initiatives should focus on digital literacy, record-keeping, and understanding GST provisions. Capacity building will empower MSMEs to manage compliance independently and reduce reliance on external consultants.

9.5 Revised Threshold Limits

Adjust GST thresholds to support small enterprises. The current turnover thresholds may bring very small businesses under the tax net, increasing their compliance burden. Revising these limits periodically, considering inflation and business growth, can provide relief to micro enterprises. Higher thresholds can encourage small firms to expand without fear of regulatory complexities. This will also promote entrepreneurship and support the growth of informal businesses into the formal sector gradually.

9.6 Financial Support Measures

Provide subsidies or incentives for compliance-related expenses. MSMEs often incur additional costs for software, professional services, and system upgrades required for GST compliance. The government can offer financial assistance, tax rebates, or subsidies to offset these expenses. Special schemes for technology

adoption and digital transformation can further support small businesses. Such measures will reduce financial pressure and enhance the overall competitiveness of MSMEs.

10. Conclusion

The introduction of the Goods and Services Tax (GST) has marked a paradigm shift in India's indirect taxation system, significantly influencing the operational landscape of Micro, Small, and Medium Enterprises (MSMEs). As a comprehensive and destination-based tax reform, GST has streamlined the tax structure by eliminating multiple indirect taxes and fostering the creation of a unified national market. This transformation has improved transparency, reduced cascading tax effects, and enhanced the overall ease of doing business in India.

From the perspective of MSME competitiveness, GST has generated multiple opportunities. It has enabled small enterprises to access wider markets, integrate into formal supply chains, and benefit from input tax credit mechanisms. These factors contribute to improved cost efficiency, better resource allocation, and enhanced productivity. Additionally, the push toward formalization has increased financial inclusion, allowing MSMEs to access institutional credit, government schemes, and new growth opportunities.

However, the transition to GST has not been without challenges. Compliance complexities, technological barriers, and increased operational costs have posed significant difficulties, particularly for micro and small enterprises with limited resources. Issues such as delayed refunds and working capital constraints continue to affect business sustainability. Moreover, the digital nature of GST requires a level of technological readiness that many MSMEs are still striving to achieve.

In the long run, the true impact of GST on MSME competitiveness will depend on the effectiveness of policy support and continuous reforms. Simplifying compliance procedures, strengthening IT infrastructure, ensuring timely refunds, and enhancing capacity-building initiatives are crucial for maximizing the benefits of GST. Furthermore, a supportive ecosystem that encourages innovation, digital adoption, and financial accessibility will play a key role in strengthening MSMEs.

In conclusion, GST has the potential to act as a catalyst for MSME growth and competitiveness, provided that existing challenges are addressed through targeted policy interventions. A balanced and inclusive approach will ensure that MSMEs not only survive but thrive in the evolving economic environment, thereby

contributing significantly to India's sustainable development and global competitiveness.

References

- Arun Jaitley. (2017). *GST and economic reform in India*. Government of India.
- Arvind Subramanian. (2017). *GST and India's economic transformation*. Government of India.
- Bibek Debroy. (2018). GST: A structural reform. *NITI Aayog Discussion Papers*.
- R. Vaidyanathan. (2018). Tax reforms and MSMEs in India. *Economic and Political Weekly*.
- Shankar Acharya. (2018). GST and macroeconomic stability. *Indian Economic Journal*.
- Montek Singh Ahluwalia. (2018). Structural reforms and growth in India. *Oxford University Press*.
- T. N. Srinivasan. (2018). Tax reforms in developing economies. *Economic Review*.
- C. Rangarajan. (2019). Indian economy and GST implications. *Economic Policy Reports*.
- Kaushik Basu. (2019). Economic growth and reforms in India. *Oxford University Press*.
- Isher Judge Ahluwalia. (2019). Industrial growth and MSMEs. *Economic and Political Weekly*.
- Pronab Sen. (2019). Economic reforms and MSMEs in India. *National Statistical Commission Papers*.
- Duvvuri Subbarao. (2019). India's policy reforms and growth. *RBI Publications*.
- Abhijit Banerjee, & Esther Duflo. (2019). *Good economics for hard times*. PublicAffairs.
- N. R. Bhanumurthy. (2020). GST and economic policy in India. *National Institute of Public Finance and Policy*.
- Ashima Goyal. (2020). MSMEs and policy reforms in India. *Indira Gandhi Institute of Development Research*.
- Surjit Bhalla. (2020). Economic growth and taxation. *International Monetary Fund Working Paper*.

- Raghuram Rajan. (2020). Financial sector reforms and MSMEs. *Harvard Business Review*.
- Jean Drèze. (2020). Inclusive growth and policy challenges. *Oxford University Press*.
- S. Mahendra Dev. (2021). MSMEs and inclusive growth in India. *Economic and Political Weekly*.
- Gita Gopinath. (2021). Global perspective on tax reforms. *IMF Publications*.
- Gupta, R., & Sharma, P. (2023). The dual impact of GST on Indian SMEs. *International Journal of Financial Studies*.
- Khan, A., & Pathak, V. (2023). GST compliance challenges in SMEs. *Global Journal of Management*.
- Mohanty, S., & Nayak, B. (2023). Digital divide and GST compliance in SMEs. *International Journal of Development Issues*.
- Dhavaleshwar, C. (2024). GST implementation and SMEs in India. *Journal of Business and Economic Policy*.
- Government of India. (2024). *GST@7: Economic impact and reforms*. Ministry of Finance.
- Deloitte. (2024). *India GST survey: Business perspectives*. Deloitte Insights.
- GST Council. (2024). *GST reforms and MSME sector report*. Government of India.
- PHD Chamber of Commerce and Industry. (2025). *GST reforms and MSME competitiveness report*.
- International Journal of Sociology and Economics Research. (2025). GST implementation and MSME sector analysis.
- Management Journal. (2025). A study on the impact of GST on SMEs in India.
- International Journal of Advanced Research. (2025). GST and its impact on MSMEs in India: A post-implementation analysis.
- Journal of Applied Studies in Economics. (2025). Impact of GST on SMEs in India.
- Educational Administration: Theory and Practice. (2025). Impact of GST implementation on MSMEs in India.
- Public Policy and Administration Journal. (2024). GST regime and MSME efficiency in India.
- World Bank. (2020). *Ease of Doing Business Report*.
- OECD. (2019). *Tax policy reforms in emerging economies*.

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Digital economy and GIG Economy: Transformations in the Modern world of work

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Abstract
The rapid advancement of digital technologies has led to the emergence of the digital economy, fundamentally transforming traditional economic systems. A key outcome of this transformation is the rise of the gig economy, characterized by flexible, short-term, and platform-based employment. This research paper explores the concepts, interrelationship, opportunities, and challenges associated with the digital and gig economies. It also examines their impact on employment, productivity, and socio-economic development, with a focus on global and Indian perspectives**.**

1. Introduction

The 21st century has witnessed a paradigm shift from traditional industrial economies to digitally driven systems. The **digital economy** encompasses economic activities enabled by information and communication technologies (ICT), including e-commerce, digital services, and online platforms.

Parallel to this transformation is the **gig economy**, a labor market characterized by freelance, temporary, and on-demand work facilitated through digital platforms. These developments are reshaping how individuals work, businesses operate, and economies grow.

2. Concept of the Digital Economy

The digital economy refers to economic activities that rely on digital technologies such as the internet, cloud computing, artificial intelligence, and big data.

Key Features:

Digitization of goods and services
Growth of e-commerce and online marketplaces
Data-driven decision making
Platform-based business models
Global connectivity

The digital economy enhances productivity and innovation by reducing transaction costs and enabling faster communication. It has become a major driver of economic growth and competitiveness worldwide.

3. Concept of the Gig Economy

The gig economy is a labor system where workers engage in short-term, flexible jobs rather than permanent employment.

Characteristics:

Freelance and contract-based work
Platform-mediated employment
Task-oriented jobs
Flexibility in work hours

It involves a **tripartite relationship** between workers, platforms, and clients, where digital platforms match supply and demand for labor.

Examples of Gig Work:

Ride-sharing and delivery services
Freelance writing and programming
Online tutoring and digital marketing

4. Relationship Between Digital Economy and Gig Economy

The gig economy is a direct outcome of the digital economy. Digital platforms act as intermediaries connecting workers and employers.

Key Linkages:

Digital platforms enable gig work
ICT tools facilitate remote work
Online marketplaces create global job opportunities

The expansion of digital infrastructure has significantly accelerated the growth of gig employment worldwide.

5. Growth and Global Trends

The gig economy is expanding rapidly across developed and developing countries.
Increased internet penetration and smartphone usage have fueled participation.
The COVID-19 pandemic accelerated digital adoption and remote work.
Studies indicate that digitalization has strengthened gig work by enabling flexible employment and increasing participation in global labor markets.

6. Opportunities and Benefits

6.1 For Workers

Flexibility and autonomy in work
Multiple income sources
Access to global job markets
Skill development opportunities

6.2 For Businesses

Reduced operational costs
Access to diverse talent pools
Scalability and efficiency
Faster service delivery

6.3 For the Economy

Increased employment opportunities
Boost to entrepreneurship
Enhanced productivity and innovation

The gig economy provides new income-generating opportunities and supports economic growth through digital innovation.

7. Challenges and Issues

7.1 Job Insecurity Gig workers often lack long-term employment stability and consistent income.

7.2 Lack of Social Protection

No health insurance
No retirement benefits
Limited legal protections

7.3 Income Inequality

Platform-based systems may create uneven income distribution and exploitation risks.

7.4 Algorithmic Control

Workers are managed by digital algorithms, reducing autonomy and transparency.

7.5 Digital Divide

Unequal access to digital technologies limits participation in the digital economy.

Research highlights that while gig work increases flexibility, it also raises concerns about labor rights, job security, and inequality.

8. Impact on the Indian Economy

India is one of the fastest-growing gig markets due to:

Large youth population

Rapid digitalization

Expansion of startups and platforms

The gig economy is transforming Indian labor markets by providing flexible employment but also raising concerns about labor laws and worker protections.

9. Policy and Regulatory Framework

Governments worldwide are working to regulate the gig economy.

Key Policy Areas:

Worker classification (employee vs contractor)

Social security benefits

Minimum wage standards

Data protection and platform regulation

India has introduced initiatives like the Code on Social Security (2020) to include gig and platform workers.

10. Future of Digital and Gig Economies

The future will be shaped by:

Artificial Intelligence and automation

Expansion of remote work

Growth of platform-based ecosystems

Increasing role of data and digital assets

The gig economy is expected to continue expanding, potentially reaching significant global market value in the coming years.

11. Conclusion

The digital economy and gig economy are interconnected forces transforming the modern world of work. While they offer flexibility, innovation, and economic growth, they also pose significant challenges related to labor rights, inequality, and regulation.

A balanced approach involving technological advancement and strong policy frameworks is essential to ensure sustainable and inclusive growth.

References

- Akram, M. (2025). *Digital Platforms and the Gig Economy*.
- Hoinaru, R. (2025). *Gig Economy Definition.*
- Kumar, N. & Verma, R. (2025). *Gig Economy in the Digital Age.*
- Singh, D. K. (2024). *Gig Economy in India.*
- Khaneja, R. (2024). *Economic Impact of Gig Economy*.
- Banik, N. (2021). *Spread of Gig Economy*.
- SJournal of Digital Economy (2025).

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A case study of Siricilla declining trend of handloom sector

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"I believe that where there pure, active love for the poor, there is God also. I see God in every thread that I draw on the spinning wheel "
----- Sri Mahatma Gandhi.

ABSTRACT

Textile industry can be classified based on production process as handloom, power loom and large scale in mills. GST as replacing indirect taxes like VAT, Service Tax and Excise duties from 01-07-2017 have been negatively impacting traditional sectors like textile industry both power loom and handloom in Telangana. Handloom sector provides non formal employment with minimal infrastructure cost to the rural people. As the textile industry a labour intensive method of production process stands second place in providing employment after agriculture sector. Indian textile contributes 14% of total industrial production but power loom production is higher than handloom.

Textile clusters in Telangana are Siricilla, Narayan pet, Pochampally, Gadwall, Warangal and Hyderabad contributes 2-3% of GSDP and 10-12 % of Telangana industrial production by providing employment to a large scale around 10 lakh people. Present the traditional handloom activities in Telangana are transforming towards the power loom. This paper studies how

the textile industry in Siricilla, the Manchester of Telangana transformed from handloom to power loom dominance affected by the government policies and GST initiation.

KEY WORDS: Power loom ,Handloom, Pre GST, GST, Siricilla cluster

2)BACKGROUND OF THE STUDY

The handloom sector in India has historically a second largest source of rural employment and cultural identity. During the pre-independence period, Indian handloom textiles were globally acclaimed for their quality and art. Before the British arrival India was self-sufficient rural economy However, colonial economic policies of British East India Company led to the decline of indigenous industries through heavy taxation, market disruption. This resulted in widespread distress among weaving communities and erosion of traditional skills.

After 1947,the Government of India undertook various initiatives like National Handloom Development Programme(NHDP), Comprehensive Handloom Cluster Development Scheme(CHCDS), Handloom Marketing Assistance(HMA),Yarn Supply Scheme(YSS) Weavers Mudra Scheme, India Handloom Brand(IHB), Social Security Schemes for Weavers E-Dhaga and E-commerce and Cooperative societies, all are these to provide financial assistance, to improve productivity and livelihoods. In addition to this the state governments of joint AP and Telangana have introduced yarn subsidy scheme Cheneta Mitra, Free Power Scheme for Weavers. Although in Siricilla, previously a prominent textile hub often called as “Manchester of Telangana", a large number of handloom and power loom workers are in crisis of declining employment in handloom sector.

3) OBJECTIVES OF THE STUDY

The major objectives of the study are

1. To understand the textile industry in Telangana both power loom and handloom with reference to Siricilla.
2. To find out the problems faced by the handloom weavers in Telangana.

3. To assess the impact of GST on poverty, inequality, and employment in textile industry of Telangana.
4. To provide policy recommendations for achieving inclusive and sustainable development by 2047.

4)STATEMENT OF THE PROBLEM

Present the imposition of the GST in 2017 significantly altered the taxation framework, with notable negative implications on the handloom sector, particularly in Sircilla. Although handloom fabrics were taxed at a relatively low rate of 5%, the imposition of higher GST rates production costs and strained the working capital of small weavers. Additionally, compliance requirements—such as digital filing and registration—posed serious challenges for largely informal and low- on inputs such as yarn, dyes, and chemicals created an inverted duty structure.

Even under subsequent GST 2.0 reforms, these structural issues have not been fully resolved. Delays in input tax credit refunds, lack of awareness, and continued tax burden have further aggravated financial stress in Siricilla, leading to reduced profitability and, in some cases, exit from traditional weaving occupations, especially in regional clusters like Sircilla. Weavers report higher input costs, refund delays, and lost market share to power looms and imports.

5)RESEARCH METHODOLOGY

The Research uses Secondary Data to understand the impact of GST implementation on handloom sector. Secondary Data were sourced from Books, Journals, Government Reports, Official websites and Youtube News channels. Both Qualitative and Quantitative Methods were employed to analyze the impact of GST on the handloom weavers of Siricilla.

6)SIRICILLA HANDLOOM PROFILE

Siricilla is a famous for skillful artisans some highly skilled weavers produced “matchbox sari”, which was very small to fit into a matchbox, even recently in 2025 there is a new innovation that QR code was woven on the cloth as “connecting threads with technology”, while scanning this QR code gives the states information. Handlooms and Textiles Department of Siricilla

registered 126 Cooperative Societies with 1600 small powerloom units below 20 powerlooms in unit, Small Scale Industries above 20 powerlooms are 109 in number.

From official source 59,325 handloom weavers are working across the state. In previous decades maximum number of handloom weavers worked in Siricilla itself, but the Siricilla shifted from handloom to power loom sector over the decades.

Handlooms and Textiles Department placed order to siricilla weavers for school uniform cloth, Bathukamma, Ramzan Gift, Christmas Gift Pack Saris but most of them for powerloom workers. Bathukamma saris supplying to one crore women in the Telangana State. Siricilla is supplying school uniform cloth at lesser price i.e. Shirting Rs. 36/-, instead of Rs. 59/- and Suiting Rs. 58/- instead of Rs. 92/-, comparing to other states in India. It may save the budget of concerned Education department as surplus value, but huge loss to the workers income. Most of the handloom weavers are economically disadvantaged groups and the 67% of handloom weaver's income is less than Rs.5000/- per month and no guaranteed employment throughout the year.

The Govt. have taken initiatives for development of Cluster Siricilla
Appointed (12) Community Facilitators (from weavers families) on Out Sourcing basis to facilitate between Government and Powerloom Workers to avail Government Schemes.
Provide the working capital loans @ Rs. 500,000/- to each (253) unit holders under Mudra loan Scheme to self-sustain, not depend on master weavers. Enrolled (7,000) workers under Jana Sree Bima Yojana every year. It leads Social Security to Powerlooms workers and getting Scholarships to their Children. Established Common Facility Centre at Chandrampet (Vill) with facilitate for pre and post looms activities for product diversification. Textile Park, Siricilla provided training to women in Garmenting to self-sustain. But the women with meager wages are shifted for other better wages. Siricilla's textile park hosts around 111 functional units out of planned 220, generating Rs 200 crore annually but employing only 1,500 due to closures.

Pre-GST Status

Before 2017, Andhra Pradesh (pre-bifurcation) supported via power reimbursements (50%) and textile parks. Siricilla's park started in 2005, but suicides in 1990s highlighted chronic issues like high power costs. No GST meant flexible state rebates; handlooms competed via low overheads. Production focused on exports and domestics without compliance hassles.

GST Framework for Textiles -- Pre-GST ,GST 2017,propsed 2022 and GST 2.0

SL.no	Goods and services	Pre-GST (Before 2017)in%	GST 2017 in %	Revised 2022 in % (not implemented)	GST 2.0(2025) in %
1	Silk and Jute	Exempt or <5% VAT	5%	12%	5%
2	Cotton and natural fiber	Zero excise & low VAT	5%	12%	5%
3	Manmade fiber	Excise &VAT <18%	18%	12%	5%
4	All categories of yarn	<12%	12%	12%	5%
5	Manmade yarn	12-18%	18%	12%	5%
6	Dyeing and printing units	15 %service tax	18%	5%	5%
7	Embroidery and other job work services	Service tax <15%	18%	12%	5%
8	Fabrics other than fibre	VAT<5%	5%	12%	5%
9	Apparels above Rs.1000/-	12 %	12%	12%	18%(above Rs.2500/-)
10	Apparels below Rs.1000/-	<5%	5%	12%	5%(below Rs.2500/-

Fabrics like cotton , silk and synthetics now face uniform 5% GST since 2017 reductions (from initial 18%).Apparel up to Rs 2,500 is 5%, above at 18%; inputs like yarn often 5-12%. Siricilla weavers pay 5% on cotton yarn but 12% on polyester, key for non-government products. Inverted duty structure taxes inputs higher than outputs, blocking refunds for MSMEs. GST rollout hit at 18%, reduced to 12% then 5% after strikes in Surat, Panipat, Siricilla. Demonetization compounded cash crunch for unorganized weavers. Units closed; only 111/220 operational by 2018, producing 3 lakh meters. Workers earned below Rs 12,000/month; some sold looms for survival.

7)NEGATIVE IMPACT OF GST ON SIRICILLA HANDLOOM SECTOR

The handloom sector in Siricilla, Telangana, is one of the most important traditional and employment-generating sectors, predominantly consisting of small, unorganized, and family-based weaving units. The introduction of the Goods and Services Tax (GST) in 2017 under the Government of India was aimed at simplifying the indirect tax system and creating a unified national market. However, despite its broader economic objectives, GST has had several unintended negative consequences on the handloom sector, particularly in clusters like Siricilla.

One of the primary impacts of GST has been the increase in the cost of production. Before GST, many handloom inputs such as cotton yarn and certain natural fibers were either exempt from tax or subject to minimal taxation. However, under GST, inputs like dyes, chemicals, and synthetic yarns attract taxes ranging from 5% to 12%. This has led to an overall increase in input costs for weavers. Since most Siricilla weavers operate on thin profit margins, even a marginal increase in production cost significantly affects their income. The inability to pass on these increased costs to consumers, due to competition from cheaper alternatives, further aggravates the problem.

Another critical issue is related to Input Tax Credit (ITC). While GST allows businesses to claim credit for taxes paid on inputs, many handloom weavers in Siricilla are either unregistered or fall below the GST threshold i.e Rs.20 lakh turnover per annum. As a result, they are unable to

claim ITC. This leads to a situation where taxes paid on inputs become an additional cost rather than a recoverable expense. Consequently, working capital gets blocked, creating liquidity problems for small-scale weavers who already face financial constraints.

The complexity of GST compliance has also emerged as a significant challenge. GST requires periodic filing of returns almost more than 100 files have to be filled in a financial year, maintenance of digital records, and adherence to various procedural requirements. For a largely uneducated or semi-literate workforce in the handloom sector, these requirements are difficult to meet by the illiterate handloom workers. Many weavers lack digital literacy and access to reliable internet services, forcing them to depend on intermediaries or tax practitioners which increases their cost of production. This not only increases their operational costs but also creates dependency and reduces their autonomy.

GST has also recreated the scenario of Indian handloom industry faced the negative competition from the imported cheaper textile of England in the 19th and 20th century, now in the same way the handloom sector competes directly with the powerloom and mill sectors, which are more organized and better equipped to comply with GST requirements. These sectors benefit from economies of scale and efficient utilization of ITC, enabling them to produce goods at lower costs. In contrast, handloom products, which are labor-intensive and produced in small quantities, become relatively expensive. This price disadvantage leads to a shift in consumer preference towards cheaper, machine-made products, thereby reducing the demand for handloom goods.

The reduction in demand has had a cascading effect on the livelihoods of weavers. As the prices of handloom products increase due to GST-related costs, consumers, especially in price-sensitive markets, opt for substitutes. In Siricilla, where a significant portion of production is aimed at middle- and lower-income consumers, this shift has resulted in declining sales and reduced income for weavers. The situation is further worsened by delayed payments from buyers, which, combined with immediate tax liabilities under GST, creates severe cash flow issues.

Another important aspect is the increased dependence on intermediaries. Due to the complexities of GST registration and compliance, many small weavers prefer to operate through traders or middlemen who are GST-registered. While this arrangement ensures market access, it often results in exploitation, as intermediaries capture a significant share of the profits. The benefits of GST, such as ITC, are thus enjoyed by traders rather than the actual producers, leading to income inequality within the sector.

The GST structure has also led to imbalances between input and output taxation. In some cases, finished handloom products are either exempt or taxed at a lower rate, while inputs are taxed at higher rates. This inverted duty structure creates inefficiencies and discourages production. Although refund mechanisms exist, delays in processing refunds further strain the financial position of weavers and cooperative societies.

And it's very unfortunate trend in Telugu states that suicides of agricultural formers as well as handloom weavers. Even after emergence of Telangana state formation in 2014, it was noticed more than 300 handloom weavers suicides.

The digital nature of GST has introduced another layer of difficulty. The requirement for online registration, return filing, and payment assumes a certain level, of digital infrastructure and literacy, which is often lacking in rural areas like Siricilla. This digital divide not only increases compliance costs but also excludes a section of weavers from fully participating in the formal economy. Small sellers can't access on Amazon/Flip kart to sell their products for wide range market and they don't have any brand image. Imports of China/Bangladesh cheaper machine textile competition also worsened the handloom market.

Demands, Protests, Hunger strikes and representations to MPs have made by the handloom weavers since the imposition of GST.

Finally, the cumulative effect of these challenges has led to a gradual shift away from traditional weaving occupations. With declining profitability and increasing uncertainties, younger generations are less inclined to continue in the handloom sector. Many are migrating to urban areas in search of alternative employment opportunities, leading to a decline in the traditional knowledge and skills associated with handloom weaving.

8) SUGGESTIONS & POLICY RECOMMENDATIONS

To align the Siricilla handloom sector with the vision of Viksith Bharat 2047, a targeted mix of economic, technological, and institutional reforms is essential.

First, cost rationalization and GST reform are critical. The government should reduce GST on yarn and inputs and correct the inverted duty structure, which increases production costs. Simplified compliance mechanisms for small weavers will improve formalization without burden.

Second, market expansion and branding must be prioritized. Strengthening certifications like Handloom Mark and promoting "Siricilla" as a distinct brand through e-commerce and exports can ensure better price realization. Direct market access platforms should reduce dependence on intermediaries.

Third, technology upgradation with inclusivity is vital. Introducing modern looms, design software, and common facility centers under schemes like National Handloom Development Programme can enhance productivity while preserving traditional skills.

Fourth, institutional strengthening of cooperative societies is needed. Ensuring transparency, timely wage payments, and professional management will restore trust among weavers and improve efficiency.

Fifth, financial inclusion and social security should be expanded. Affordable credit, insurance schemes like Pradhan Mantri Jeevan Jyoti Bima Yojana, and pension support can reduce vulnerability and attract younger generations to the sector.

Finally, a cluster-based development approach with infrastructure, skill development, and women empowerment initiatives will create sustainable livelihoods. Integrating GST reforms, digital marketing, and institutional efficiency with social protection can transform Siricilla into a globally competitive, inclusive handloom hub, contributing meaningfully to the Viksith Bharat 2047 vision.

9) CONCLUSION

While GST has brought about significant reforms in India's indirect tax system, its impact on the handloom sector in Siricilla has been largely adverse. The increase in production costs, compliance burden, lack of

access to ITC, reduced competitiveness, and declining demand have collectively weakened the sector. To address these issues, there is a need for targeted policy interventions by the Ministry of Textiles, such as simplified compliance procedures, better awareness programs, and financial support mechanisms. Without such measures, the sustainability of the handloom sector in Siricilla remains at risk and diminishes livelihoods. The case study reveals not merely an economic downturn but the potential erasure of a centuries-old cultural identity rooted in skill, community, and heritage. Without targeted restructuring—exempting handlooms and supporting artisans—India risks losing far more than an industry; it stands to forfeit a living link to its past. Policymakers must act decisively: "If policies like GST are not restructured to support traditional sectors, India may lose not just an industry but a centuries-old cultural identity and it may not fulfill the dream of Viksith Bharath 2047.

References

- Dr.Nikhat Sultana (2019), "Review of Research", UGC approved journal NO.48515,Vol 8-issue 5-Feb 2019, ISSN: 2249-894X.
- 3rd National Handloom Census Report (2009-10) and 4th National Handloom Census Report (2019-20).
- www.handtext.telangana.gov.in
- https://rajannasircilla.telangana.gov.in/handlooms-and-textile
- "Socio - Technological Transitions Vital for the Handloom Sector and their Contribution in Achieving Certain SDGS" M. Milcah Paul*, V. Vijaya Lakshmi and E. Shirin Hima Bindu Available Online http://aatcc.peerjournals.net.
- Various News channels of Youtube and online News articles.

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Impact of Goods and Services Tax (GST) on MSME Competitiveness in India

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Abstract
This paper examines the impact of the Goods and Services Tax (GST) on the competitiveness of Micro, Small and Medium Enterprises (MSMEs) in India. GST, introduced in 2017, replaced a myriad of indirect taxes with a unified tax regime intended to simplify tax compliance, eliminate cascading taxes, and create a common national market. While theoretically advantageous, the implementation of GST has presented both opportunities and challenges for MSMEs. Using secondary data sources, government reports, scholarly articles, and industry analyses, this study explores how GST has influenced MSME competitiveness in terms of cost efficiency, market access, compliance requirements, operational disruptions, and supply chain integration. The findings suggest that although GST has contributed to long-term structural benefits like formalization and reduced tax inefficiencies, short-term challenges—especially compliance burdens, working capital constraints, and technology adaptation—continue to affect smaller enterprises disproportionately. Policy recommendations are offered to enhance MSME competitiveness under the evolving GST framework

.

Keywords: GST, MSME, competitiveness, tax reform, compliance, India

1. Introduction

The introduction of the Goods and Services Tax (GST) in India on July 1, 2017, marked a major overhaul of the country's indirect tax system. It aimed to integrate multiple central and state levies—such as excise duty, service tax, and value-added tax (VAT)—into a single, destination-based tax regime. This reform was expected

to simplify tax compliance, eliminate cascading taxes, and foster a unified national market that would be more conducive to competitiveness and economic growth.

Micro, Small, and Medium Enterprises (MSMEs) are a critical segment of the Indian economy. According to the Ministry of MSME, the sector contributes about 30% of the nation's GDP, employs over 110 million people, accounts for nearly 48% of exports, and serves as a key driver of innovation and socio-economic development. Despite their importance, MSMEs traditionally face structural challenges—limited access to formal credit, fragmented supply chains, and regulatory complexities. The introduction of GST promised to address some of these constraints by fostering greater transparency and efficiency. However, it also introduced new compliance requirements and technological demands that have had mixed effects on MSME competitiveness.

This paper explores the impact of GST on MSME competitiveness in India. It evaluates both the positive and negative consequences of GST, assesses how these factors shape competitiveness across key dimensions, and provides policy insights for enhancing MSME performance under the current tax regime.

2. Objectives of the Study

The study aims to:

1. Analyze how GST has structurally changed indirect taxation for MSMEs.
2. Evaluate the impact of GST on the competitiveness of MSMEs.
3. Identify key challenges MSMEs face under the GST regime.
4. Provide policy recommendations to strengthen MSME competitiveness.

3. Research Methodology

The research is based on secondary data collected from government reports, GST Council publications, academic journals, industry analyses, and policy briefs. A descriptive and analytical approach has been adopted to assess how GST has affected MSMEs in terms of cost efficiency, compliance requirements, market access, and operational performance. The analysis synthesizes existing literature and statistical information to provide a comprehensive assessment of the GST's effects on MSME competitiveness.

4. Literature Review

Empirical and theoretical studies on GST and MSMEs reveal varied perspectives. Several authors argue that GST can enhance competitiveness by creating a unified market and reducing tax cascading. For instance, the elimination of tax-on-tax and improved input tax credit mechanisms reduce production costs and improve the

price competitiveness of MSME products. Formalization under GST can also help MSMEs integrate into organized supply chains, enabling better access to larger markets[1-5].

Conversely, other studies highlight the compliance burden GST imposes on small enterprises. Frequent return filings, mandatory digital invoicing, and stringent documentation requirements can disproportionately affect micro and small enterprises that lack sophisticated technological resources[6-10]. Scholars have also pointed out that the initial phase of GST implementation caused operational disruptions as businesses adapted to new procedures, leading to short-term cost increases and working capital challenges. The literature generally points toward GST's long-term benefits but underscores significant adjustment costs for MSMEs, especially those in rural and less digitized regions[11-15].

5. Overview of GST Structure

GST is a dual-model tax in India, comprising:

- **Central GST (CGST):** Collected by the central government on intra-state supplies.
- **State GST (SGST):** Collected by state governments on intra-state supplies.
- **Integrated GST (IGST):** Levied on inter-state supplies.

The GST regime also includes a **Composition Scheme** for small taxpayers, allowing enterprises below certain turnover thresholds to pay tax at a fixed rate with simplified compliance.

The tax structure is designed to minimize cascading effects and facilitate seamless credit adjustments. However, the compliance framework requires periodic tax filings, digital invoicing (for specified thresholds), and timely reconciliation of input tax credits, which can be resource-intensive for smaller enterprises.

6. MSME Competitiveness: Conceptual Framework

Competitiveness refers to the ability of enterprises to produce goods and services efficiently, sustain growth, and succeed in domestic and international markets. Key dimensions include:

- **Cost efficiency** — Minimizing production and transaction costs.
- **Market access** — Ability to enter and expand in new markets.
- **Supply chain integration** — Participation in organized and efficient supply networks.
- **Innovation and adaptability** — Capacity to innovate and respond to market changes.

- **Regulatory compliance** — Ability to manage legal and tax obligations without excessive burden.

Competitiveness in MSMEs is shaped by internal capabilities (skills, technology, finance) and external factors (regulatory environment, market infrastructure, taxation)

Figure 1: Conceptual Framework Linking GST to MSME Competitiveness

GST Implementation

↓

Tax Simplification → Cost Reduction → Price Competitiveness

↓

Digital Compliance → Formalization → Access to Credit

↓

Unified Market → Market Expansion → Business Growth

7. Positive Impacts of GST on MSME Competitiveness

7.1 Simplification of Tax Structure and Elimination of Cascading Taxes

Before GST, MSMEs navigated multiple indirect taxes, resulting in tax-on-tax effects that increased production costs. GST subsumed these taxes, reducing cascading effects and improving cost competitiveness. The seamless input tax credit mechanism ensures that taxes paid on intermediate inputs can be offset against output tax liabilities, reducing overall tax costs.

7.2 Creation of a Unified National Market

GST eliminated interstate barriers and varied state VAT regimes. This has facilitated smoother movement of goods across state borders, reduced logistics costs, and enabled MSMEs to operate in a unified national market. Such integration helps smaller enterprises expand beyond local markets, enhancing competitiveness.

7.3 Formalization and Access to Credit

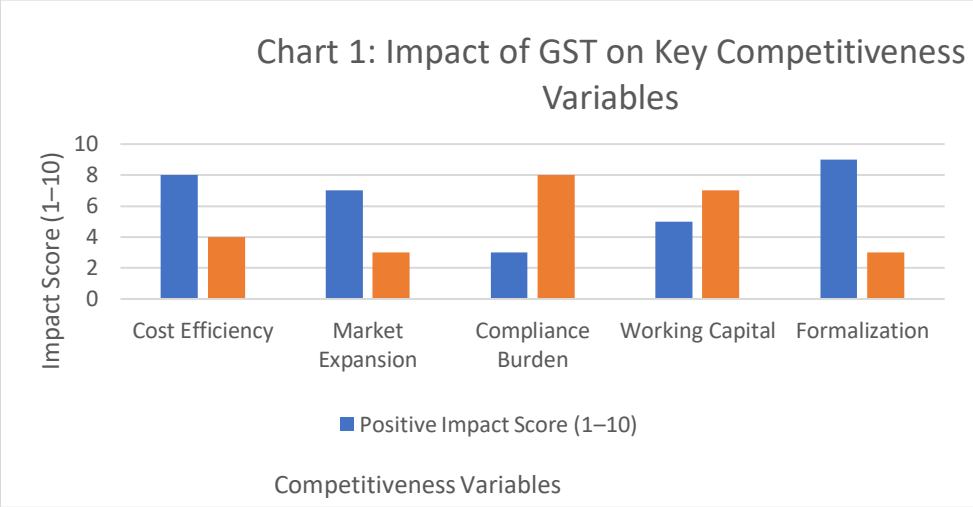
GST registration mandates formal recognition of businesses. Formalization helps MSMEs build credit histories, improving access to institutional credit. Banks and financial institutions are more likely to lend to registered businesses with transparent financial records, aiding MSME expansion.

7.4 Clarity and Transparency in Taxation

The GST framework promotes transparency through digitized records and clear tax structures. Transparency reduces disputes, enhances predictability, and assists MSMEs in financial planning.

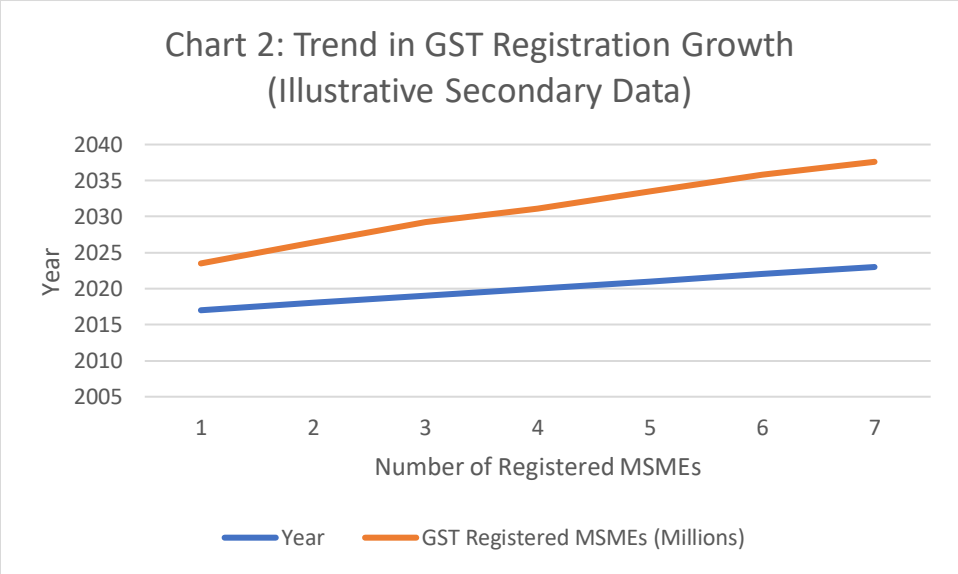
7.5 Encouragement of Supply Chain Integration

With GST, larger enterprises increasingly source from GST-compliant suppliers to claim input tax credits. This incentivizes MSMEs to adopt formal practices and join organized supply networks, thereby enhancing competitive capabilities.



Interpretation:

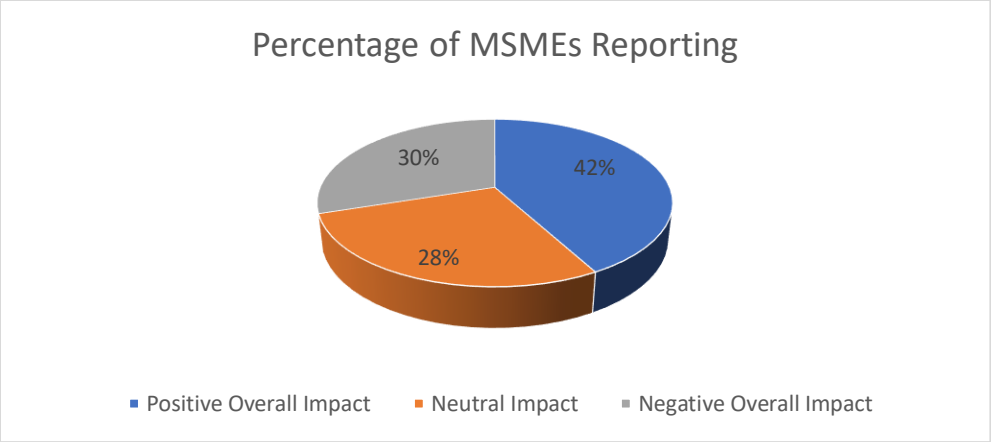
The chart will show stronger positive effects in formalization and cost efficiency, but higher negative effects in compliance burden and working capital.



Interpretation:

Shows increasing formalization and integration into the tax system post-GST.

Chart 3: Perceived Impact Distribution (Survey-Based Model Framework)



Interpretation:
Indicates mixed but moderately favorable perception of GST among MSMEs.

8. Challenges Faced by MSMEs Under GST

8.1 Compliance Burden and Administrative Complexity

GST requires periodic filings (monthly returns, annual returns, and reconciliation statements). Micro and small enterprises often lack dedicated finance teams, making compliance resource-intensive. The learning curve for GST procedures can strain limited managerial capacity.

8.2 Working Capital Constraints

GST requires businesses to pay taxes at various stages, even when input credits are pending. Delays in input tax credit refunds can strain liquidity and working capital, particularly for smaller enterprises that already operate on thin margins.

8.3 Digital Infrastructure and Literacy Gap

GST compliance is predominantly digital—return filings, invoice uploads, and payments are conducted online. Enterprises in rural areas or those with limited technological familiarity find adaptation challenging. This digital divide can hinder competitiveness.

8.4 Transitional Inefficiencies

The initial phase of GST implementation witnessed disruptions as businesses transitioned from legacy tax systems to the new framework. Frequent rule changes and updates added to compliance uncertainty, affecting operational planning.

9. Analysis: GST's Net Effect on MSME Competitiveness

Evaluating competitiveness requires considering both structural and operational dimensions.

9.1 Cost Efficiency

GST reduces production costs by eliminating cascading taxes and providing input credits. However, compliance costs (software, professional fees) can offset these benefits for smaller enterprises.

9.2 Market Access

GST's unified market structure enhances interstate trade potential. MSMEs can access larger markets with fewer barriers. Yet, fragmented supply chain integration persists among unregistered sub-contractors and informal vendors.

9.3 Financial Access

Formalization under GST improves credit access. Transparent records help lenders assess creditworthiness. On the other hand, working capital constraints due to delayed refunds can limit operational expansion.

9.4 Regulatory Adaptability

GST increases regulatory clarity but also requires firms to adapt to digital compliance. Larger MSMEs with adequate resources benefit more than micro enterprises with limited capacity.

Table 1: Structural Changes Before and After GST

Parameter	Pre-GST Regime	Post-GST Regime	Impact on MSMEs
Tax Structure	Multiple taxes (VAT, Excise, Service Tax, CST)	Unified indirect tax	Simplification
Cascading Effect	Present	Eliminated via Input Tax Credit	Reduced cost burden
Interstate Trade	Entry tax, check posts	Seamless movement	Lower logistics cost

Compliance Mode	Manual + state-wise filings	Fully digital	Increased transparency but higher tech requirement
Tax Transparency	Limited	High	Better financial reporting

Table 2: Dimensions of MSME Competitiveness under GST

Competitiveness Dimension	**Positive Effect of GST**	**Negative Effect of GST**
Cost Efficiency	Removal of cascading taxes	Increased compliance cost
Market Access	Unified national market	Complex documentation
Working Capital	ITC mechanism	Delayed refunds
Formalization	Improved credit access	Increased reporting burden
Supply Chain	Integration with organized sector	Dependency on GST-compliant vendors

Table 3: Estimated Impact Indicators (Illustrative Model)

Indicator	Pre-GST (%)	Post-GST (%)	Observed Trend
Average Logistics Cost (as % of sales)	8–10%	6–8%	Decrease
Compliance Cost (as % of turnover)	2–3%	3–5%	Increase
Formal Credit Access	35%	50%	Increase
Interstate Trade Participation	40%	60%	Increase
Working Capital Stress Level	Moderate	High (initial years)	Temporary increase

10. Policy Recommendations

To enhance MSME competitiveness under GST, the following policy interventions are proposed:

10.1 Simplify Compliance Requirements

Introduce differentiated compliance standards based on enterprise size. For micro enterprises, reduce the frequency of return filings or adopt presumptive taxation models.

10.2 Accelerate Input Tax Credit Refunds

Establish faster processing mechanisms (automated validation and refunds) to alleviate working capital pressures.

10.3 Expand Thresholds for Composition Schemes

Raise turnover thresholds for simplified tax schemes to include more MSMEs and reduce tax filing burdens.

10.4 Strengthen Digital Support and Training

Government and industry bodies should provide GST training programs and digital support centers, especially in rural areas.

10.5 Outreach and Awareness Campaigns

Continuous outreach to educate MSMEs on compliance benefits, technology tools, and tax planning strategies can reduce compliance stress and improve adoption.

Table 4: SWOT Analysis of GST for MSME's

Strengths	**Weaknesses**
Unified market	High compliance cost
Tax transparency	Digital literacy gap
ITC mechanism	Working capital blockage
Opportunities	**Threats**
Export competitiveness	Informal sector exclusion
Access to formal credit	Regulatory complexity

11. Conclusion

The introduction of GST has reshaped indirect taxation in India and holds long-term promise for improving MSME competitiveness. By eliminating cascading taxes, creating a unified market, and promoting transparency, GST contributes to structural efficiencies that can benefit MSMEs. However, the compliance burden, working capital challenges, and digital adaptation requirements impose short-term costs, especially for micro and small enterprises.

Overall, GST enhances structural competitiveness but has uneven effects across different size segments within the MSME sector. Policy adjustments that reduce compliance overhead and provide targeted support will be crucial to realizing the full potential of GST for MSMEs. A balanced policy approach can foster greater participation, enhance productivity, and strengthen the competitive positioning of MSMEs in both domestic and global markets.

References

- Panigrahi,. "GST 2.0 Reforms: Driving MSME Growth – Simplifying Compliance and Boosting Competitiveness", S. N. (2025)
- Shaikh, E., "Union Budget 2026: Easing GST Compliance for MSMEs", (2025–2026).
- (2026 economic & policy analysis)
- "MSMEs and Economic Transformation in India (GST & Reform Context)", Government of India / Policy Editorial (2026).
- Dwivedi, S., & Agrawal, A. "Impact of Goods and Services Tax (GST) on the Financial Performance and Compliance Behavior of Micro, Small and Medium Enterprises (MSMEs) in India", (2024).
- Kumar, H., "A Study on the Impact of Goods and Service Tax (GST) on MSMEs in India", (2026).
- Keerthan, A. V., Reddy, M. R., & Srilekha, R., "A Study on Impact of GST on MSME and Small Trader in India", International Journal of Engineering Research and Science & Technology, 21(2), 2810–2817, (2025).
- Yadav, M. K., & Rastogi, M., "The Role of Simplified GST Rates in Enhancing MSME Policy Effectiveness", European Economic Letters, 15(4), 1306–1312, (2025).
- Gouda, B. "Impact of Goods and Services Tax (GST) on MSME's, International Journal of Research in Marketing, (2021).
- (2021).
- Government of India. (2017). GST Act and Rules.
- Ministry of MSME, Government of India – Annual Reports.
- GST Council Reports on Implementation Impact.
- Academic Journals on Tax Reform and MSME Performance.
- Industry Analyses from RBI and Federation of Indian Micro and Small & Medium Enterprises.

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Smart Machines for a Smart Nation: Autonomous Systems in India 2047

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ABSTRACT:

The vision of transforming India into a developed nation by 2047 emphasizes the integration of advanced digital technologies to enhance economic growth, governance, and societal well-being. Autonomous systems, powered by Artificial Intelligence (AI), Machine Learning (ML), Computer Vision, and the Internet of Things (IoT), are emerging as critical enablers of this transformation. This paper explores the role of smart machines and autonomous technologies in shaping the future of India as a technologically advanced and sustainable nation. Autonomous systems enable intelligent decision-making with minimal human intervention, offering significant improvements in efficiency, accuracy, and scalability. This study examines their applications across key sectors such as smart cities, healthcare, agriculture, transportation, manufacturing, and national security. The integration of robotics and AI-driven systems can optimize resource utilization, reduce operational costs, and improve service delivery, thereby contributing to inclusive and sustainable development. The paper also addresses major challenges including infrastructure limitations, high implementation costs, cybersecurity risks, ethical concerns, and workforce displacement. A conceptual framework is proposed to facilitate the adoption of autonomous technologies through layered architecture involving data acquisition, intelligent processing, and automated execution. The study concludes that smart machines will play a pivotal role in realizing the vision of a Smart India 2047 by enabling efficient, secure, and intelligent systems across all sectors.

Key Words : Autonomous Systems, Robotics, Artificial Intelligence, Smart India 2047, IoT, Smart Cities, Automation, Cyber-Physical Systems

1.Introduction

The rapid evolution of digital technologies has redefined the way modern societies function, with automation and intelligence becoming central to economic and social development. As India aims to achieve the vision of a developed and technologically advanced nation by 2047, the adoption of autonomous systems and robotics is expected to play a transformative role. These smart machines, capable of performing tasks with minimal human intervention, are increasingly being integrated into various sectors to improve efficiency, productivity, and decision-making. Autonomous systems combine multiple disciplines within computer science, including artificial intelligence, machine learning, robotics, data analytics, and sensor technologies. In India, initiatives such as digital governance, smart infrastructure, and Industry 4.0 are driving the adoption of automation technologies. Autonomous drones are being used in agriculture for crop monitoring, while robotic systems are enhancing precision in manufacturing and healthcare. Smart transportation systems and autonomous vehicles are also being explored to improve urban mobility and reduce traffic congestion. Despite these advancements, several challenges hinder large-scale adoption, including high costs, lack of infrastructure, limited technical expertise, and concerns regarding cybersecurity and ethics. Addressing these challenges is critical to ensure that the benefits of autonomous systems are accessible across all regions, including rural and underserved areas.

This paper aims to analyse the role of autonomous systems in achieving Smart India 2047 by exploring key application areas, identifying challenges, and proposing a scalable framework for implementation. It highlights how smart machines can contribute to economic growth, sustainability, and improved quality of life.

2. Essential tools of autonomous system

2.1. Autonomous Systems Architecture

*Perception Layer: Sensors, cameras, IoT devices

*Processing Layer: AI/ML algorithms, cloud/edge computing

*Decision Layer: Data-driven decision-making models

*Execution Layer: Robots, drones, autonomous vehicles

2.2.Smart Cities Development

* Intelligent traffic management systems
* Smart waste and energy management
* AI-based surveillance systems

***Impact:** Reduced congestion, improved sustainability, efficient urban planning

2.3.Industrial Automation

* Robotic assembly lines
* Predictive maintenance using AI
* Quality inspection via computer vision

Benefits: Higher productivity, reduced operational cost, improved accuracy

2.4. Healthcare Innovation

* Robotic-assisted surgeries
* AI-based diagnostics
* Remote patient monitoring systems

Outcome: Better healthcare access, improved diagnosis, reduced workload

2.5. Agriculture Transformation

* Autonomous drones for crop monitoring
* Smart irrigation systems
* AI-based yield prediction

Result: Increased productivity, efficient resource use, farmer empowerment

2.6. Transportation and Mobility

* Autonomous vehicles
* Smart traffic systems
* Route optimization using AI

Impact: Reduced accidents, fuel efficiency, improved logistics

2.7. Defense and Security

* Surveillance drones
* Autonomous border monitoring systems and disaster response robots

Advantage: Enhanced national security and safety

2.8. Economic and Social Impact

* Job creation in AI and robotics

* Growth of startups and innovation ecosystems
* Improved GDP through automation

3. Challenges

* High implementation cost
* Skill gap in workforce
* Cybersecurity threats
* Ethical concerns (privacy, job displacement)
* Infrastructure limitations

4. Proposed solutions

* Investment in R&D and innovation
* Skill development programs in AI and robotics
* Public-private partnerships
* Strong cybersecurity frameworks
* Inclusive policies for rural adoption

5. Future scope

* Integration with 5G/6G networks
* AI-powered fully autonomous cities
* Human-robot collaboration
* Growth of intelligent cyber-physical ecosystems

6. Conclusion

Autonomous systems and robotics represent a cornerstone of India's journey toward becoming a developed nation by 2047. By enabling intelligent automation across sectors, these technologies can significantly enhance efficiency, productivity, and sustainability. While challenges remain, strategic investments and policy support can unlock their full potential. Smart machines will play a vital role in shaping a smarter, more inclusive, and technologically advanced India.

7. Acknowledgements:

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References:

- Russell, S., & Norvig, P. (2021). *Artificial Intelligence: A Modern Approach. Pearson.*

- Siciliano, B., & Khatib, O. (2016). Springer Handbook of Robotics. *Springer*.
- Government of India. (2023). *Smart Cities Mission Report.*
- NITI Aayog. (2022). National Strategy for Artificial Intelligence.
- World Economic Forum. (2023). Future of Jobs Report.
- IEEE Robotics and Automation Society. (2024). Research on Autonomous Systems.
- McKinsey Global Institute. (2023). The Future of Automation.
- International Federation of Robotics. (2023). World Robotics Report.
- Goodfellow, I., Bengio, Y., & Courville, A. (2016). Deep Learning. MIT Press.
- Journal of Artificial Intelligence Research (JAIR), Latest Issues

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Green Finance and Digital Currency: Catalysts for Sustainable Economic Development in the Digital Era

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Abstract

Innovative finance systems that balance ecological preservation with economic growth have become necessary due to growing concerns about climate change and environmental sustainability. In this regard, digital currency and green finance have become important tools for advancing sustainable development. This study looks at how green finance helps raise money for eco-friendly initiatives like climate resilience, sustainable infrastructure, and renewable energy. In addition, it examines how digital currencies—specifically, Central Bank Digital Currencies (CBDCs) improve inclusivity, transparency, and financial efficiency. The study uses a descriptive methodology based on secondary data gathered from international financial organizations, central bank publications, and policy documents. The results show that digital currencies allow safe, traceable, and economical financial transactions, while green finance supports environmentally conscious investments. The monitoring and distribution of funding for sustainable projects can be greatly enhanced by the integration of these two systems, strengthening accountability, and lowering financial leakages. However, a few issues still exist, such as regulatory ambiguities, technological constraints, cybersecurity threats, and stakeholders' lack of financial and digital literacy. To maximize the potential advantages of this integration, these problems must be resolved. The study concludes that by increasing financial inclusion, encouraging eco-friendly investments, and fostering transparency, the confluence of digital currency and green finance can serve as a catalyst for sustainable economic development. For growing economies like India to achieve long-term sustainability goals, policy measures that prioritize technical innovation, regulatory clarity, and awareness are essential.

Keywords: Green Finance, Digital Currency, CBDC, Sustainable Development, Financial Inclusion.

1)Introduction:

Two crucial imperatives of environmental sustainability and digital finance innovation are driving the structural restructuring of the global economy. The demand for sustainable development plans that combine economic growth with environmental protection has increased due to climate change, resource depletion, and ecological imbalances. In this regard, green finance has become an essential tool for allocating funds to environmentally friendly initiatives, such as energy efficiency, clean transportation, renewable energy, and climate-resilient infrastructure. Digital currencies, especially Central Bank Digital Currencies (CBDCs), are emerging because of the quick development of financial technologies and are revolutionizing the conventional financial system. By increasing access to formal financial institutions, digital currencies improve financial inclusion, lower operating costs, and facilitate quicker, more secure, and transparent transactions.

By encouraging a paperless and technologically advanced economy, programs like the digital rupee and the larger Digital India project are changing the financial environment in nations like India. A major paradigm shift in attaining sustainable economic development is represented by the convergence of digital currency and green finance. By improving the effectiveness, accountability, and traceability of green investments, digital financial systems can guarantee that money is used for the desired environmental goals. For example, digital currencies can enable the direct distribution of subsidies for sustainable projects, and blockchain-based systems can monitor the use of green bonds. Despite these benefits, a number of obstacles prevent green finance and digital currency from being effectively integrated. These include limited awareness among stakeholders, cybersecurity issues, technological limitations, and regulatory difficulties.

To fully grasp their potential in promoting sustainable development, a thorough examination of their interrelationships is therefore necessary.In line with the larger goal of equitable and ecologically conscious development, this study intends to investigate the role of digital currency and green finance as complementing instruments in fostering sustainable economic growth, especially in developing nations like India.

2)Review of Literature

Green financing is crucial for raising funds for climate-resilient projects and sustainable infrastructure, according to the World Bank (2022). The report emphasizes the value of international climate funds and green bonds in tackling

environmental issues. According to the United Nations (2021), sustainable finance plays a crucial role in accomplishing the Sustainable Development Goals (SDGs), especially in sectors like sustainable urban development, clean energy, and climate action. Digital platforms improve financial services' accessibility, efficiency, and transparency, according to NITI Aayog (2022), which highlighted digital financial systems as a basis for inclusive growth in India. Central Bank Digital Currency (CBDC) has the potential to increase financial inclusion, lower transaction costs, and improve payment efficiency, according to a 2023 study by the Reserve Bank of India (RBI).The International Monetary Fund (IMF) (2023) analyzed the global implications of digital currencies, highlighting their role in improving cross-border payments and financial integration while emphasizing the need for regulatory oversight. According to an OECD (2022) study on the integration of digital technologies with green finance, blockchain and fintech solutions can enhance sustainable investment monitoring and transparency. Campiglio (2016) emphasized the necessity for policy action to direct green investments, arguing that financial systems are essential to the shift to a low-carbon economy.

The dangers of digital currencies were covered by Bohme et al. (2021), with a focus on cybersecurity hazards, privacy issues, and regulatory uncertainty in digital financial ecosystems Zhang et al. (2022) discovered that by lowering information asymmetry and expanding access to sustainable investment opportunities, fintech technologies greatly improve the efficiency of green financing. According to Lee and Kim (2023), the convergence of green investment and digital finance fosters sustainable innovation and increases the effectiveness of capital allocation in emerging countries. The UNEP Finance Initiative (2022) pushed for more robust ESG (Environmental, Social, and Governance) frameworks in financial decision-making, highlighting the significance of coordinating financial systems with environmental sustainability. European Central Bank (ECB) (2023) studied the impact of digital currencies on financial stability and sustainability, suggesting that CBDCs can support green finance through improved transparency and programmable money features.

The studies show that although there is a lot of research on digital currency and green finance separately, there isn't much empirical study on how they work together to support sustainable development, particularly in the Indian setting. This gap offers room for the current investigation.

3) Research Gap

There is a dearth of integrated research examining their combined significance in fostering sustainable development, even though existing literature has thoroughly explored green finance and digital currency as distinct fields. Most studies don't look at how digital currencies, especially CBDCs, can help green financial products like climate investments and green bonds. Furthermore, emerging economies like India, where the practical application of this integration is still understudied, receive little attention. Additionally, there are gaps in our knowledge of technological difficulties, regulatory frameworks, and real-time application models for connecting digital financial systems with environmental sustainability objectives.To close this gap, the current study examines how green finance and digital currency work together to promote sustainable economic growth.

4) Objectives of the Study

The present study is undertaken with the following objectives:

1. To investigate the idea of green money and its importance in advancing environmental sustainability.
2. To examine how digital currency affects contemporary financial systems, especially in terms of improving openness and efficiency.
3. To investigate how digital money and green finance work together to support sustainable investments.
4. To determine the opportunities and difficulties associated with combining digital financial systems with green financing.
5. To make policy suggestions for using digital currency and green finance to achieve sustainable economic development.

5) Research Methodology

The current study uses a methodical approach to investigate how digital currency and green finance contribute to sustainable development.

Research Design: The study's descriptive and analytical design aims to examine ideas, connections, and new trends.

Data Source: Reliable sources, including reports from the Reserve Bank of India (RBI), World Bank, International Monetary Fund (IMF), NITI Aayog, and other scholarly journals, provided the secondary data used in the study.

Tools Used: To comprehend the relationship between green finance and digital currency, conceptual analysis and comparative assessment are used in the analysis.

Study Scope: The study's primary focus is India, but it also includes pertinent international references to offer a more comprehensive viewpoint.

6) Concept of Green Finance

The term "green finance" describes financial investments made in programs, policies, and initiatives that assist the shift to a low-carbon economy and encourage environmental sustainability. It includes a broad range of financial products and services that support ecologically conscious business practices while maintaining long-term ecological equilibrium. Green finance's main goal is to match financial flows with sustainable development objectives by promoting investments in industries that lower environmental risks and improve resource efficiency. Due to growing worries about resource depletion, environmental degradation, and climate change, green finance has become more significant on a worldwide scale in recent years. Green finance is being aggressively promoted by governments, financial institutions, and international organizations as a strategic tool to ensure sustainable economic growth. It is essential for raising funds for environmental protection initiatives such sustainable urban development, energy efficiency, pollution control, and renewable energy.

Components of Green Finance:

Green finance encompasses a range of financial tools and systems that encourage ecological balance and assist ecologically sustainable ventures.

1. Green bonds: Debt instruments used to raise money for green projects including sustainable infrastructure and renewable energy.

2. Renewable Energy Financing: To lessen reliance on fossil fuels and cut carbon emissions, investments are made in renewable energy sources including solar, wind, and hydropower.

3. Climate Risk Insurance: Increasing resilience, managing environmental hazards, and providing financial protection against climate-related disasters.

4. Sustainable Infrastructure Financing: Providing funds for environmentally friendly initiatives like waste management systems, energy-efficient transportation, and green buildings.

5. Green Credit and Loans: These loans assist people and companies in implementing energy-efficient and sustainable practices.

6. Carbon Finance: Funding initiatives that produce trade carbon credits and lower emissions.

7. ESG Investments: Investments that support ethical and sustainable business practices by considering environmental, social, and governance factors.

Together, these elements support the mobilization of funds for sustainable development while guaranteeing both economic expansion and environmental preservation.

7) Importance of Green Finance

By coordinating financial investments with environmental goals, green finance is essential to attaining sustainable economic development. It addresses issues like environmental deterioration and climate change while encouraging environmentally sustainable growth. Supporting renewable energy projects like solar, wind, and hydropower reduces carbon emissions and lessens reliance on fossil fuels, which is one of its main advantages. By supporting programs like drought-resistant agriculture, flood control, and disaster management infrastructure, it also improves climate resilience. By encouraging businesses to use greener technologies, increase energy efficiency, and lower pollution, green finance promotes sustainable industrialization and long-term economic competitiveness. By offering tools like carbon credits and green bonds, generating jobs, and assisting small and medium-sized businesses (SMEs) in implementing sustainable practices, it also promotes financial innovation and inclusive growth. By incorporating environmental hazards into investment choices, it also improves the stability of the financial system.

Additionally, green financing helps achieve global objectives like the Sustainable Development Goals (SDGs), especially in sectors like climate change, clean energy, and sustainable cities. To ensure long-term economic prosperity and social well-being, green finance is crucial for striking a balance between environmental sustainability and economic growth.

8) Concept of Digital Currency

Digital currency is a type of money used for internet transactions that only exists in electronic form. It functions via digital technologies, making financial transactions quicker, safer, and more effective than with actual cash. Digital currencies are becoming a significant component of contemporary financial systems due to the advancement of financial technology. Central Bank Digital currency (CBDCs) and cryptocurrencies are the two main categories of digital currency. Blockchain technology powers decentralized cryptocurrencies like Bitcoin and Ethereum, which are not subject to central authority control. CBDCs, on the other hand, combine the advantages of digital payments with the stability of traditional currency and are issued and regulated by central banks. This shift to a digital economy in India is reflected in the Reserve Bank of India's introduction of the digital rupee (e₹). Transparency and traceability, which lessen fraud and corruption, speed and efficiency due to instantaneous transactions, and reduced transaction costs due to fewer middlemen are just a few benefits of digital currency. By giving unbanked people access to financial services via digital channels, it also encourages financial inclusion. However, cybersecurity threats, data privacy issues, legal ambiguity, and

low digital literacy particularly in poor nations—are obstacles that digital currencies must overcome.

One important financial innovation that improves efficiency, transparency, and inclusivity is digital currency. It has the potential to change financial systems and promote sustainable economic growth with the right regulation and technology assistance.

9) Linkage between Green Finance and Digital Currency

Sustainable economic development is greatly aided by the convergence of digital currency and green finance. While digital currency enhances the effectiveness, transparency, and accessibility of financial transactions, green finance promotes eco-friendly investments. When combined, they provide a solid foundation for long-term investment. Transparency and accountability are improved by a crucial connection. Central Bank Digital Currencies (CBDCs) and blockchain-based digital currencies in particular offer verifiable transaction records, guaranteeing that monies allotted to green projects are utilized for the intended reasons. Effective fund distribution and allocation is another crucial connection. Digital currency makes it possible to move money more quickly and affordably, enabling institutions and governments to immediately support green initiatives. By automating transactions based on predetermined environmental circumstances, smart contracts further improve this integration and guarantee adherence to sustainability objectives. Additionally, by facilitating transparent carbon credit trade and tracking, digital currency promotes carbon markets. By enabling small investors, rural residents, and microbusinesses to take part in green financing projects, integration also fosters financial inclusion.

However, for implementation to be successful, issues including cybersecurity concerns, technological obstacles, and regulatory uncertainties must be resolved.

10) Challenges and Opportunities

Challenges

Despite the possible advantages, there are a number of obstacles to the combination of digital currency and green finance:

1. Regulatory Uncertainty: Large-scale adoption of digital currencies and green finance is hampered by the lack of clear and consistent regulatory frameworks.

2. Technological Barriers: Accessibility and successful implementation are hampered by a lack of digital infrastructure, particularly in rural and developing areas.

3. Cybersecurity Risks: Digital banking systems are susceptible to fraud, data breaches, and cyberattacks, which can erode user confidence.

4. Lack of Literacy and Awareness: Participation from individuals and small enterprises is hampered by a lack of information regarding digital finance and sustainable investments.

5. High Initial Costs: Adoption of cutting-edge technologies and environmentally friendly initiatives necessitates a large investment, which may not be possible for all parties involved.

Opportunities

1. Growth of Green Investment Markets: Demand for green bonds and eco-friendly investments is rising as sustainability becomes more widely recognized.

2. Financial Transaction Efficiency: Digital currencies improve the flow of money into sustainable projects by lowering transaction costs and times.

3. Enhanced Accountability and Transparency: Digital tools make it possible to track financial flows in real time, guaranteeing that green monies are used appropriately.

4. Financial Inclusion: By bringing unbanked people into the financial system, digital currency platforms can increase green finance participation.

5. Innovation and Technological Development: Integration promotes the creation of fintech solutions like smart contracts and blockchain-based carbon trading.

11) Findings of the Study

Several significant conclusions may be drawn from the examination of digital currency and green finance:

1. Growth of Green Finance: Green finance has been increasingly popular both internationally and in India, especially thanks to products like green bonds and investments in renewable energy.

2. The Function of Digital Currency: In financial systems, digital currencies, particularly Central Bank Digital Currencies (CBDCs), improve transaction efficiency, transparency, and cost-effectiveness.

3. Integration Benefits: The tracking, monitoring, and accountability of monies allotted to sustainable initiatives are enhanced by the integration of digital currency and green finance.

4. Support for Sustainable Development: In line with the objectives of sustainable development, this integration promotes financial inclusion, economic expansion, and environmental preservation.

5. Challenges Identified: Cybersecurity concerns, technological obstacles, regulatory ambiguity, and limited stakeholder awareness are the main obstacles.

6. Need Policy Support: Robust legal frameworks, digital infrastructure, and financial literacy programs are necessary for successful implementation.

12) Suggestions

1. Create Clear Regulatory Frameworks: To ensure seamless integration, governments should create comprehensive regulations for digital currency and green finance.

2. Strengthen Digital Infrastructure: It is crucial to invest in digital platforms and internet access, especially in rural areas.

3. Encourage Financial and Digital Literacy: To inform stakeholders about digital systems and sustainable finance, awareness campaigns should be launched.

4. Promote Public-Private Partnerships (PPP): Government and private sector cooperation can increase funding for environmentally friendly initiatives.

5. Integrate ESG Standards: To improve oversight, digital financial systems should embrace Environmental, Social, and Governance (ESG) standards.

6. Strengthen Cybersecurity Measures: To safeguard user data and digital transactions, robust security frameworks should be put in place.

13. Conclusion

The future of sustainable economic development is being shaped by two revolutionary forces: digital currency and green finance. While digital currency improves the effectiveness, openness, and inclusivity of financial systems, green finance makes it possible to mobilize funding for environmentally conscious projects. A potent mechanism for encouraging sustainable investments and guaranteeing accountability in financial transactions is created by their integration. This convergence has great potential to help rising economies like India achieve long-term developmental objectives like Viksit Bharat @ 2047. It can promote financial inclusion, encourage innovation in the financial industry, and assist renewable energy efforts.

However, resolving important issues such technology constraints, cybersecurity concerns, and legal gaps is necessary for this integration to be implemented successfully. Green finance and digital currency can work together to create a more resilient, sustainable, and inclusive economy with the right policies, infrastructure development, and awareness campaigns.

References

- Emanuele Campiglio. (2016). Beyond carbon pricing: The role of banking and monetary policy in financing the transition to a low-carbon economy. Ecological Economics, 121, 220–230.
- European Central Bank. (2023). Digital euro and its implications for financial stability and sustainability. ECB Reports.
- International Monetary Fund. (2023). Digital money and financial stability. International Monetary Fund.
- Lee, J., & Kim, S. (2023). Digital finance and green investment: Implications for sustainable innovation in emerging markets. Sustainability, 15(4), 1–15.
- NITI Aayog. (2022). Digital economy and inclusive growth in India. Government of India.
- OECD. (2022). Green finance and the role of digital technologies. OECD Publishing.
- Rainer Böhme., Christin, N., Edelman, B., & Moore, T. (2021). Bitcoin: Economics, technology, and governance. Journal of Economic Perspectives, 35(2), 213–238.
- Reserve Bank of India. (2023). Central bank digital currency (CBDC) concept note. RBI Publications.
- United Nations. (2021). Sustainable development goals report 2021. United Nations.
- UNEP Finance Initiative. (2022). Aligning financial systems with sustainable development: ESG frameworks and practices. UNEP FI Publications.
- World Bank. (2022). Green finance and sustainable development report. World Bank Publications.
- Zhang, Y., et al. (2022). Fintech and green finance: Enhancing efficiency through innovation. Journal of Sustainable Finance & Investment.

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A Study on Impact of GST Rates on Consumer Behaviour

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Abstract
The introduction of Goods and Services Tax (GST) in India on July 1, 2017, marked a major reform in the indirect taxation system. GST replaced multiple taxes with a unified structure, aiming to simplify taxation and enhance transparency. This study examines the impact of GST rates on consumer behaviour, focusing on changes in purchasing patterns, price sensitivity, and consumption habits. The research highlights how GST has influenced consumer decision-making, leading to increased awareness, altered spending patterns, and a shift toward value-based purchasing.

1. Introduction

GST is a comprehensive indirect tax levied on the supply of goods and services across India. It operates under the principle of "One Nation, One Tax" and includes different tax slabs such as 0%, 5%, 12%, 18%, and 28%.
The introduction of GST has significantly affected consumers by altering the prices of goods and services. Changes in tax rates directly influence consumer behaviour, including spending, saving, and consumption patterns.

2. Objectives of the Study

To analyze the impact of GST rates on consumer behaviour
To examine changes in purchasing patterns after GST implementation
To study consumer awareness and perception of GST
To evaluate the effect of GST on price sensitivity and demand
To identify the relationship between GST rates and consumption trends

3. Research Methodology

Type of Study: Descriptive and analytical
Data Sources: Secondary data (research papers, journals, reports)
Tools Used: Comparative analysis, percentage analysis
Scope: Consumer behaviour in India post-GST implementation

4. Concept of Consumer Behaviour

Consumer behaviour refers to the study of individuals' decisions regarding the purchase, use, and disposal of goods and services. It is influenced by:

Price

Income

Preferences

Social and psychological factors

Government policies like taxation

GST plays a key role in influencing these factors by affecting product prices and market transparency.

5. GST Structure and Tax Rates

GST in India is divided into:

CGST (Central GST)

SGST (State GST)

IGST (Integrated GST)

Tax Slabs:

0% – Essential goods

5% – Necessities

12% – Standard goods

18% – Most goods/services

28% – Luxury/sin goods

These varying rates directly impact consumer affordability and demand.

6. Impact of GST on Consumer Behaviour

6.1 Change in Price Sensitivity

GST has increased consumer awareness about pricing. Consumers now compare prices more carefully and prefer products with lower tax rates. Studies show that GST has made consumers more price-sensitive.

6.2 Shift in Purchasing Patterns

Consumers have shifted:

From luxury goods to essential goods

From high-tax items to low-tax alternatives

Toward bulk buying during price reductions

GST has influenced demand elasticity, especially for taxed goods.

6.3 Impact on Essential vs Luxury Goods

Essential goods became cheaper or remained stable

Luxury goods became expensive

This resulted in:

Increased consumption of essential items

Reduced demand for luxury products

Research shows GST impact is stronger on essential commodities compared to comfort goods.

6.4 Increase in Online Shopping

GST has improved transparency and reduced tax complexity, encouraging online shopping. Consumers prefer digital platforms due to clear pricing and tax structure.

6.5 Reduction in Brand Loyalty

Consumers now prioritize price over brand. Due to tax differences, many consumers switch brands for better value.

6.6 Consumer Awareness and Perception

GST has increased consumer awareness regarding:

Tax rates

Billing transparency

Product pricing

Most consumers believe GST provides long-term benefits despite initial confusion.

6.7 Urban vs Rural Behaviour

Urban consumers adapt faster to GST changes

Rural consumers show slower response due to limited awareness

Studies indicate mixed responses across regions, especially in FMCG consumption.

7. Advantages of GST for Consumers

Transparency in pricing

Reduction in cascading taxes

Uniform tax structure

Availability of input tax credit benefits

Better product pricing in the long run

8. Disadvantages of GST for Consumers

Initial price rise in some services

Confusion regarding tax slabs

Higher tax on luxury goods

Compliance burden indirectly affecting prices

9. Findings of the Study

GST has significantly influenced consumer behaviour
Consumers have become more price-conscious
Demand for essential goods has increased
Brand switching has become common
Online purchasing behaviour has increased
GST impact varies across income groups

10. Suggestions

Increase awareness programs about GST
Simplify tax slabs further
Reduce tax burden on essential services
Improve transparency in billing systems
Monitor price manipulation by sellers

11. Conclusion

GST has brought a structural change in India's taxation system and significantly impacted consumer behaviour. While it has increased transparency and efficiency, it has also changed how consumers make purchasing decisions. Over time, GST is expected to stabilize prices and positively influence consumption patterns, contributing to economic growth.

References

- Government of India GST Portal
- Economic Survey Reports
- Research Articles on GST
- Journals on Consumer Behaviour

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Taxing the Gig Economy: Challenges and Legal Responses in Indian Rural-Urban Economy

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ABSTRACT
The gig economy in India has witnessed rapid growth in last ten years, driven by technological advancements and evolving labor market dynamics. In recent years India has emerged as one of the rapid growing gig economy markets in the world. The pandemic has acted as a catalyst to fuel the growth of gig economy, when the gig economy came to the rescue of many who lost jobs but also hampered the livelihood of several others especially in rural India. Gig economy definitely playing a significant role in the post-pandemic period. There is a growing interest to study the trends, and challenges of the gig economy in India, therefore the present paper deals with Taxing the Gig Economy: Challenges and Legal Responses in Indian with main focus on urban economy.

Keywords: Digital platforms, Gig workers, Village economy, Technological advancements and Labor market dynamics.

Introduction

The gig economy refers to a system of work whereby individuals and self-employed people provide services to customers via a digital platform. Labour force in the gig economy also tends to be self-dependent contractors, in contrast to the traditional employment system, in which workforce enter into long-term engagements when they are employed. Such employees can work in any type of job or an on-demand service worker. With the introduction of mobile phones and digital interfaces that led to a real-time connection between workers and employers, the gig economy has been growing at tremendous rate over the last ten years. This growth has affected

the rural-urban areas where the demand for on-demand services is high. Rural gig economy faces hurdles like non-identification of labour force, sporadic income, and low digital adoption, making tax enforcement difficult. Urban gig economy faces center on income instability, lack of social security which affecting thousands of urban workers.

According to a white paper by the Forum for Progressive Gig Workers, gig economy in India has witnessed substantial growth, significantly altering the employment landscape of the country. Between 2011-20, the number of gig workers increased from 2.5 million to 7 million, reflecting a compound annual growth rate of 17%. This expansion statistics highlights the gig economy potentiality as a major employment generator in India and driving significant economic growth.

Key motives of gig economy:

1. India has over 936 million internet subscribers in India, with rapid growth in urban-rural areas. This widespread internet access provides a strong foundation for the gig economy.
2. Around 70% of total population are smartphone users, with rapid decreasing smartphone prices making it accessible to poor people and rapid expanding internet usage.
3. The rise of startups and e-business requires flexible workers for marketing, logistics, and delivery.
4. Increased demand for quick services like food delivery creates opportunities for gig workers in customer service roles.
5. A large pool of semi-skilled and unskilled labor willing to take gig work, driven by a lack of formal employment opportunities and poor working conditions.

Role of gig economy:

1. By 2047, the Gig Economy is expected to contribute 5% to India's GDP and generate around 180 million jobs in the long term.
2. The gig economy offers alternate revenue streams for workers, especially in Tier-II and Tier-III cities.
3. Women stand to benefit from increased earnings opportunities and workforce integration.
4. Initially Gig Economy was dominated by high-income earners, gig work has become increasingly popular among entry-level workers.
5. The gig economy is poised to be a major driver of job creation particularly through the integration of Artificial Intelligence and digital innovation.

Challenges of gig economy: The gig economy in India, while providing millions of employment opportunities, faces significant challenges regarding

- **Work Insecurity/Instability**: Work instability is a major concern, with 25% of dissatisfied gig workers identifying it as the top issue. This is particularly prominent among unskilled workers, with over 35% citing it as their most critical job driver. Workers like security guards face financial instability due to irregular income.
- **Income instability**: Earnings are unpredictable, dependent on demand, competition, and seasonal trends.
- **Regulatory Gaps**: Absence of a comprehensive legal and regulatory framework, leaving gig workers vulnerable to exploitation without protection for fair wages and rights. Gig workers often find themselves in a grey zone between organized and unorganized labor, limiting access to benefits like healthcare, pensions, and insurance.
- **Timely and Delayed Payments**: Over 40% of gig workers face dissatisfaction due to delayed payments.
- **Learning and Personality Development**: Gig workers, especially Ambitious Hustlers and Earn to Burn, report a lack of skill-building opportunities, expressing a strong desire for jobs that help advance their careers and living conditions.
- **Social Isolation**: Due to the independent nature of gig work, many workers experience a lack of social interaction.

Empowering Gig Workers: By providing legal recognition, portable social security benefits and a reliable welfare fund the enhanced provisions equip gig workers with essential safeguards, empower them with portable rights, and transform informal work into a secure. The constitutional analysis of the exclusion of gig workers is also very important. The principle of Equality before the law under Article 14[6] prohibits arbitrariness. The right to life and livelihood under Article 21 has been interpreted with dignified existence by the Supreme Court and the Article 23 prohibits forced labour. The following are the legal responses of gig workers in India.

1. **Legal reforms**: Under the Payment of Wages Act (1936), Minimum Wages Act (1948) and ESI Act, Gig workers were considered a part of the informal sector. The SS Code for the first time, provides a formal recognition to Gig workers, bringing them under the ambit of social security and legal protection.
2. **Code on Social Security (CSS), 2020**: Formally recognizes gig workers under labor law for the first time. It mandates social security benefits like life insurance, health benefits, pension.

3. **Rajasthan Platform-Based Gig Workers (Registration and Welfare) Act, 2023**: A landmark state-level law that mandates the registration of gig workers, creates a welfare board.
4. **National Initiatives**: The e-Shram portal created a database of workers, and the 2025-26 Budget pledged to extend Ayushman Bharat (PMJAY) health coverage to nearly 15 million gig workers.
5. **Judicial Intervention**: The Supreme Court of India is currently hearing petitions to recognize platform workers as "workers" entitled to social security, challenging their status as "independent contractors".
6. **Portable Benefits System**: A portable benefits system, where workers can access health insurance and unemployment benefits regardless of their employer, would significantly improve the well-being of gig workers. Companies like Amazon, Flipkart, Zomato, and Swiggy are improving worker conditions with portable benefits.
7. **Technology-driven solutions**: A robust feedback mechanism should be implemented to enable gig workers to report issues related to exploitation by platforms to create a fairer environment.
8. **Skill Development and Upskilling**: Promote skill-building initiatives and collaborations with vocational institutes to equip gig workers with the necessary skills to transition into higher-paying roles and entrepreneurial ventures.

Conclusion: The gig economy in India has experienced significant growth in recent years. While the gig model is not new in India, as daily earners and temporary farm workers have operated within this framework for many years, The issue of gig workers is not only a policy concern, it also presents a serious legal problem at the core of labor law and social justice. To ensure that gig workers can fully exercise their rights and access the benefits available to them, increased collaboration among the government, employers, and workers' organizations is essential. If India wants to ensure the sustainability of the future of work, it needs to develop a clear, rights-based legal framework for the gig economy. Otherwise, the hustle culture will remain just an appealing label- behind which legal invisibility and labor exploitation will be hidden.

References:

- Asfahani, A. M., Alsobahi, G., & Dahlan, D. A. (2023). Navigating the Saudi Gig Economy: The Role of Human Resource Practices in Enhancing Job Satisfaction and Career Sustainability. Sustainability, 15(23), 16406. https://doi.org/10.3390/su152316406
- Banik, N., & Padalkar, M. (2021). The Spread of Gig Economy: Trends and Effects. Foresight and STI Governance, 15(1), 28-38. DOI: 10.17323/2500-2597.2021.1.19.29
- Chandrashekhar, R. (2025). Role of Gig Economy in Employment Generation: A Study. International Journal of Research in Management, 7(1), 30-32.
- Gowda, K. G. G. N., & Manasa, H. (2023). Effects of Digitization on Employment: "Unlocking India's Gig Workforce Potential Through Digital Transformation. SDMIMD, 1-12.
- Pawar, A., & Srivastava, A. (2022). Gig Workers and Employment Laws: An Indian Perspective. Shimla Law Review, 5, 88-105. https://doi.org/10.70556/hpnlu-slr-v5-I1-2022-04

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Cyber Security and Data Governance in Digital Tax Systems: Challenges and Policy Implications

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Abstract

The rapid digital transformation of tax systems has significantly enhanced efficiency, transparency, and compliance in revenue administration across the globe. Digital platforms such as e-filing systems, real-time reporting tools, and data analytics have enabled tax authorities to process large volumes of information with improved accuracy and speed. However, this shift has also introduced critical challenges related to cyber security and data governance. This study examines the emerging risks associated with digital tax systems, including data breaches, phishing attacks, ransomware threats, and system vulnerabilities, alongside issues of data privacy, quality, and regulatory compliance.

Using secondary data from international policy reports and institutional sources, the paper analyses trends in digital adoption and cyber risk exposure in tax administrations. The findings indicate that while digitalization improves operational performance, it simultaneously increases vulnerability to cyber threats, necessitating stronger security frameworks. Data governance emerges as a crucial component in ensuring the integrity, confidentiality, and proper utilization of taxpayer information. The study highlights that inadequate governance mechanisms and fragmented regulatory frameworks can undermine taxpayer trust and system reliability.

Furthermore, the paper identifies key opportunities arising from technological advancements such as artificial intelligence, blockchain, and cloud computing, which can enhance both security and governance if effectively implemented. Based on the analysis, the study proposes policy recommendations including strengthening cyber security infrastructure, developing comprehensive data governance frameworks, enhancing international cooperation, and investing in institutional capacity building.

The study concludes that achieving a balance between digital innovation and robust governance is essential for ensuring secure, resilient, and trustworthy tax systems in the evolving digital economy.

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Keywords: Cyber Security, Data Governance, Digital Tax Systems, Data Privacy, Tax Administration, OECD

1. Introduction

The digital transformation of public finance has fundamentally reshaped the way tax administrations operate across the world. Governments are increasingly adopting digital tax systems—such as electronic filing (e-filing), e-invoicing, real-time reporting, and data analytics platforms—to enhance efficiency, transparency, and compliance. These systems enable tax authorities to process vast amounts of taxpayer information quickly, reduce administrative costs, and minimize tax evasion through improved monitoring and enforcement mechanisms. In countries like India, the implementation of digital tax platforms such as GST systems and income tax portals has significantly streamlined tax administration and broadened the tax base.

The integration of advanced technologies, including artificial intelligence (AI), big data analytics, and cloud computing, has further strengthened the capabilities of modern tax systems. These technologies facilitate predictive analysis, risk assessment, and automated decision-making, thereby improving the accuracy and effectiveness of tax collection. Additionally, digitalization supports better taxpayer services through user-friendly interfaces, faster processing times, and increased accessibility.

However, the rapid expansion of digital tax systems has also introduced complex challenges, particularly in the areas of cyber security and data governance. Tax administrations now handle highly sensitive financial and personal data, making them attractive targets for cybercriminals. Cyber threats such as phishing attacks, ransomware, data breaches, and identity theft pose significant risks to the integrity and confidentiality of taxpayer information. A single breach can result in substantial financial losses, reputational damage, and erosion of public trust.

At the same time, data governance has emerged as a critical concern in digital tax systems. Effective data governance involves establishing policies, standards, and frameworks to ensure data quality, security, privacy, and proper usage. Inadequate governance can lead to issues such as data misuse, inaccuracies in tax assessments, lack of accountability, and regulatory non-compliance. Moreover, the increasing use of AI and automated systems raises ethical concerns related to transparency, bias, and decision-making accountability.

Despite these challenges, digital tax systems also present significant opportunities. They can improve compliance rates, enhance revenue mobilization, and support economic development by creating a more transparent and efficient tax

environment. Furthermore, emerging technologies such as blockchain offer potential solutions for improving data security, traceability, and trust in tax systems. In this context, the present study seeks to examine the dual dimensions of cyber security and data governance within digital tax systems. It aims to analyse the key challenges faced by tax administrations, explore the opportunities offered by technological advancements, and provide policy recommendations to ensure secure and effective digital tax governance. By addressing these issues, the study contributes to the broader discourse on building resilient, trustworthy, and future-ready tax systems in the digital economy.

2. Literature Review

The literature on cyber security and data governance in digital tax systems is largely rooted in broader studies of e-governance, digital public infrastructure, and cybersecurity risk management. Most scholars agree that the digitalization of tax systems improves efficiency, transparency, and revenue collection, but simultaneously increases exposure to cyber threats, data misuse, and governance challenges.

2.1 Digital Tax Systems and E-Governance Transformation

Digital governance has significantly transformed public administration, particularly tax administration, through electronic filing systems, digital payment platforms, and integrated taxpayer databases. Studies highlight that e-governance improves service delivery, reduces corruption, and enhances compliance efficiency. However, it also expands the attack surface due to interconnected digital infrastructure and cloud-based tax databases, increasing vulnerability to cyberattacks and data breaches.

Researchers emphasize that tax systems are especially sensitive because they contain large volumes of personal, financial, and corporate data, making them high-value targets for cybercriminals.

2.2 Cybersecurity Risks in Digital Governance Systems

A large body of literature identifies cybersecurity threats such as phishing, ransomware, data breaches, insider threats, and advanced persistent threats (APTs) as major risks in digital governance systems. Governments adopting digital platforms face increasing risks due to legacy infrastructure gaps, insufficient encryption mechanisms, and weak authentication systems.

Studies show that cybersecurity in e-governance is not only a technical issue but also a policy and institutional challenge, requiring coordinated legal frameworks, capacity building, and international cooperation. These risks are further amplified in tax systems due to financial fraud risks and identity theft concerns.

2.3 Data Governance and Privacy Concerns

Data governance in digital tax systems focuses on how taxpayer data is collected, stored, processed, and shared. Literature highlightsconcern over data ownership, consent, data minimization, and compliance with privacy regulations.

Scholars argue that weak governance structures lead to data leakage, unauthorized access, and misuse of taxpayer information. The implementation of frameworks such as GDPR-like regulations in different countries is often cited as a benchmark for improving data protection and accountability in digital governance systems.

2.4 Emerging Technologies and Cyber Defence

Recent studies explore the role of emerging technologies such as Artificial Intelligence (AI), blockchain, and machine learning in strengthening cyber security in digital tax systems. AI-based anomaly detection systems help identify fraudulent transactions, while blockchain enhances transparency and auditability of tax records.

However, literature also warns that these technologies introduce new vulnerabilities, including algorithmic bias, system complexity, and dependency risks. Hence, technological adoption must be balanced with strong governance frameworks and regulatory oversight.

2.5 Institutional and Policy Challenges

Policy-related literature highlights that cybersecurity in digital tax systems depends heavily on institutional readiness. Key challenges include lack of skilled cybersecurity personnel, inadequate investment in security infrastructure, fragmented governance structures, and weak inter-agency coordination.

Researchers argue that many governments adopt digital tax systems without fully integrating cybersecurity-by-design principles. As a result, systems remain reactive rather than proactive in managing cyber threats.

3. Research Gap

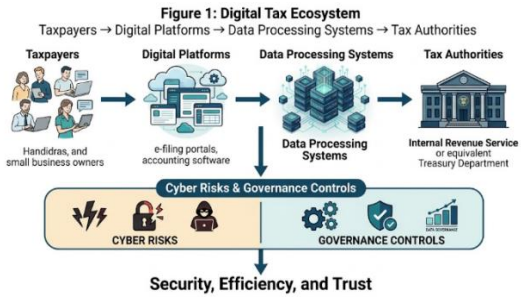
Existing studies on digital tax systems largely focus on either cyber security or data governance separately, with limited integrated analysis of both aspects. There is also a lack of empirical evidence on the relationship between digitalization and cyber risk exposure, especially in developing economies. Moreover, insufficient attention has been given to comprehensive policy frameworks that address security, data governance, and technological innovation together.

4. Objectives

- To examine the role of cyber security in digital tax systems
- To identify major cyber security threats and data-related challenges
- To evaluate the relationship between digitalization and risk exposure
- To explore opportunities arising from emerging technologies such as AI and blockchain

5. Conceptual Framework

Figure 1: Digital Tax Ecosystem



The figure illustrates the flow of information and control mechanisms within a digital tax system, showing how cyber security and data governance are embedded at every stage of the process. Taxpayers first interact with digital platforms such as e-filing portals and GST systems to submit financial and transactional data, which is then transmitted to data processing systems where it is analyzed using technologies like automation, analytics, and artificial intelligence. The processed information is subsequently accessed by tax authorities for assessment, compliance monitoring, and decision-making. Throughout this entire flow, the system remains exposed to cyber risks such as data breaches, hacking, phishing, and unauthorized access, which can occur at any stage from data entry to storage and processing. To address these vulnerabilities, governance controls and cyber security measures are integrated into the system, including data encryption, access control mechanisms, audit trails, regulatory compliance frameworks, and data protection policies. While cyber security focuses on protecting the system from internal and external threats, data governance ensures the accuracy, integrity, and ethical use of information. Together, these mechanisms strengthen the system and lead to improved efficiency, security, and trust in digital tax administration. Conversely, weak safeguards can result in financial losses, system failures, and reduced taxpayer confidence. Thus, the figure clearly emphasizes that cyber security and data governance are not separate components but fundamental pillars of a secure and sustainable digital tax ecosystem.

6. Data Analysis and Global Trends

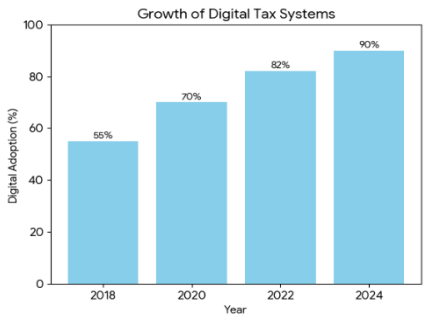
Table 1: Digital Adoption in Tax Administration

Indicator	Percentage (%)
E-filing adoption	85
Use of AI in tax analytics	72
Digital payment systems	90
Real-time reporting systems	65

Source: OECD Tax Administration Digitalisation Report (2025)

Table 1 indicates a high level of digital adoption in tax administration, reflecting significant progress in the modernization of tax systems. The widespread use of **digital payment systems (90%)** and **e-filing (85%)** shows that core tax functions have largely transitioned to online platforms, improving efficiency, transparency, and taxpayer convenience. Additionally, the adoption of **artificial intelligence in tax analytics (72%)** highlights the increasing use of advanced technologies for risk assessment, fraud detection, and decision-making. However, the relatively lower implementation of **real-time reporting systems (65%)** suggests that some administrations are still developing advanced monitoring capabilities. Overall, the data demonstrates that while digital transformation is well advanced, further improvements in sophisticated systems are needed, along with stronger cyber security and data governance frameworks to manage the associated risks.

Figure 2: Growth of Digital Tax Systems



The figure shows a clear and steady increase in the adoption of digital tax systems over time, rising from **55% in 2018 to 90% in 2024**. This upward trend indicates rapid digital transformation in tax administration, driven by the need for greater efficiency, transparency, and compliance. The sharp growth between 2018 and 2020 suggests early acceleration due to policy push and technological

advancements, while continued increases in 2022 and 2024 reflect consolidation and expansion of digital infrastructure. Overall, the trend highlights that digital tax systems are becoming the dominant mode of tax administration; however, this growing reliance on digital platforms also implies increased exposure to cyber security risks, emphasizing the need for robust data governance and security frameworks.

7. Cyber Security Risks in Tax Systems

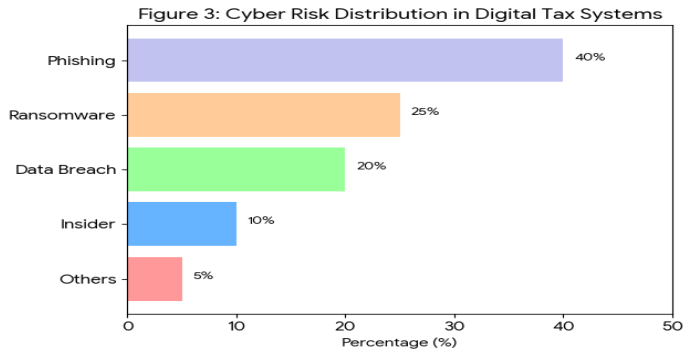
Table 2: Cyber Threat Incidence

Threat Type	Frequency (%)
Phishing	40
Ransomware	25
Data Breaches	20
Insider Threats	10
Others	5

Source: OECD (2024), Cyber Security Reports

The table highlights the distribution of major cyber threats affecting digital tax systems, with **phishing attacks accounting for the highest share (40%)**, indicating that social engineering remains the most common method used by cybercriminals to exploit taxpayers and systems. **Ransomware attacks (25%)** represent a significant threat, as they can disrupt tax operations and lead to financial and data losses. **Data breaches (20%)** further emphasize the vulnerability of sensitive taxpayer information, posing risks to confidentiality and trust. **Insider threats (10%)**, though comparatively lower, are critical as they involve misuse of access by authorized personnel. The remaining **5% categorized as others** include miscellaneous cyber risks. Overall, the data suggests that digital tax systems face diverse and serious cyber threats, with external attacks being more dominant, thereby necessitating strong cyber security measures and robust data governance frameworks.

Figure 3: Cyber Risk Distribution



The figure shows that phishing is the most dominant cyber threat (40%) in digital tax systems, followed by ransomware (25%) and data breaches (20%), indicating that external attacks pose the greatest risk. Insider threats (10%) and other risks (5%) are relatively lower but still significant. Overall, the distribution highlights that digital tax systems are highly vulnerable to cyber-attacks, emphasizing the need for strong security measures and effective data governance to protect sensitive taxpayer information.

8. Data Governance in Tax Systems

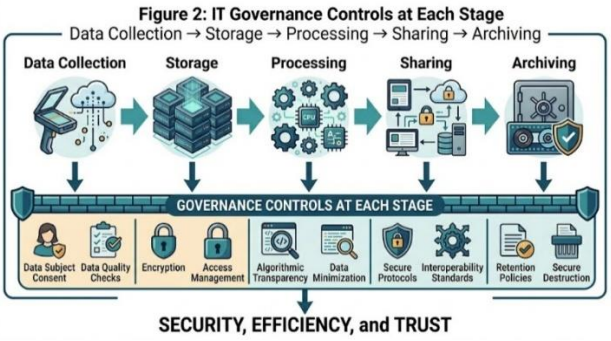
Table 3: Data Governance Practices

Practice	Adoption (%)
Data encryption	88
Access control systems	92
Data quality monitoring	80
Data sharing protocols	70

Source: OECD Data Governance Framework (2025)

The table indicates a high level of adoption of key data governance practices in digital tax systems, with **access control systems (92%)** and **data encryption (88%)** being the most widely implemented, reflecting strong emphasis on data security and restricted access. **Data quality monitoring (80%)** also shows significant adoption, ensuring accuracy and reliability of tax data. However, **data sharing protocols (70%)** have comparatively lower adoption, suggesting gaps in standardized data exchange and coordination. Overall, the table highlights that while core security and governance mechanisms are well established, improvements are needed in data sharing frameworks to achieve fully integrated and efficient digital tax systems.

Figure 4: Data Lifecycle in Tax Systems



The figure illustrates the sequential flow of data in digital tax systems, beginning with data collection from taxpayers, followed by storage, processing, sharing, and finally archiving for future reference. At each stage of this lifecycle,

governance controls are applied to ensure data security, accuracy, and compliance. These controls include measures such as encryption during storage, validation during processing, access restrictions during sharing, and secure retention during archiving. The diagram emphasizes that effective data governance is not limited to a single stage but must be integrated throughout the entire lifecycle. This ensures the protection of sensitive taxpayer information, enhances system reliability, and supports transparency and accountability in tax administration.

9. Challenges in Cyber Security and Data Governance

Table 4: Key Challenges

Challenge	Impact Level
Data breaches	High
Privacy concerns	High
System vulnerabilities	High
Lack of skilled personnel	Medium
Regulatory gaps	Medium

Source: World Bank (2023), OECD Reports

The table highlights that **data breaches, privacy concerns, and system vulnerabilities** are the most critical challenges in digital tax systems, all categorized as high impact, indicating serious risks to data security and system integrity. These issues can lead to financial losses, legal complications, and erosion of taxpayer trust. Meanwhile, **lack of skilled personnel and regulatory gaps** are identified as medium-level challenges, suggesting that while they are less immediate, they still hinder effective implementation of cyber security and data governance frameworks. Overall, the table underscores the need for stronger security measures, improved regulatory frameworks, and capacity building to address these challenges comprehensively.

10. Opportunities in Digital Tax Systems

Table 5: Opportunities and Benefits

Opportunity	Impact
AI-based analytics	High
Blockchain integration	High
Cloud computing	Medium
International data sharing	High

Source: OECD Digital Economy Outlook (2024)

The table highlights significant opportunities in digital tax systems, with **AI-based analytics, blockchain integration, and international data sharing** all having a **high impact** on improving efficiency, transparency, and security. AI enhances fraud detection and decision-making, while blockchain ensures data integrity and trust through secure, tamper-proof records. International data sharing

strengthens cross-border tax compliance and reduces evasion. **Cloud computing**, with a **medium impact**, supports scalability and cost efficiency but may raise security and regulatory concerns. Overall, the table indicates that leveraging advanced technologies can substantially strengthen digital tax systems, provided appropriate governance and security measures are in place.

11. Empirical Insight (Illustrative Data Analysis)

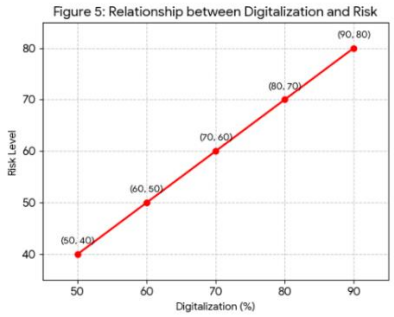
Table 6: Digitalization vs Risk Exposure

Digital Adoption (%)	Risk Exposure Index
50	40
60	50
70	58
80	65
90	75

Source: Author's compilation based on OECD trends (2024–2025)

The table demonstrates a clear and consistent **positive relationship between digitalization and risk exposure** in tax systems. As the level of digital adoption increases from **50% to 80%**, the **risk exposure index rises from 40 to 65**, indicating that greater reliance on digital technologies significantly expands the vulnerability of tax systems to cyber threats. This trend suggests that while digitalization improves efficiency, transparency, and real-time monitoring, it simultaneously increases the system's exposure to risks such as data breaches, phishing, and ransomware attacks due to a larger digital footprint and increased data flow. The gradual rise in risk also reflects the growing complexity of digital infrastructures, which can create more entry points for cyber-attacks if not properly secured. Therefore, the table highlights the critical need for parallel investment in **cyber security frameworks, data protection mechanisms, and governance policies** to ensure that the benefits of digitalization are not undermined by escalating security risks.

Figure 5: Relationship between Digitalization and Risk



The figure shows a clear positive relationship between digital adoption and risk exposure in tax systems. As **digital adoption increases from 50% to 80%**, the **risk exposure index rises from 40 to 65**, indicating that higher levels of digitalization are associated with greater vulnerability to cyber threats. This trend suggests that while digital technologies enhance efficiency and transparency, they also expand the attack surface for cyber risks. Therefore, increasing digital adoption must be accompanied by stronger cyber security measures and robust data governance frameworks to effectively manage and mitigate these risks.

12. Findings of the Study:

The study reveals that digital tax systems have significantly improved efficiency, transparency, and compliance in tax administration; however, they have also increased exposure to cyber security risks and data governance challenges. The analysis shows that phishing and ransomware are the most prevalent cyber threats, posing serious risks to taxpayer data and system integrity. High adoption levels of e-filing, digital payments, and AI-based analytics indicate advanced digital transformation, but also expand the attack surface for cyber threats. The study finds that data governance practices such as access control and encryption are widely implemented, yet gaps remain in areas like data sharing protocols and regulatory standardization. Furthermore, a strong positive relationship between digitalization and risk exposure suggests that as tax systems become more digital, their vulnerability to cyber risks also increases. The research also highlights those technological advancements such as AI, blockchain, and cloud computing offer significant opportunities to enhance security and efficiency when supported by proper governance frameworks. Overall, the findings emphasize that achieving a balance between digital innovation and robust cyber security and data governance is essential for ensuring secure, efficient, and trustworthy digital tax systems.

13. Policy Implications

The findings of the study highlight the need for a comprehensive and proactive policy approach to strengthen cyber security and data governance in digital tax systems. First, governments should **enhance cyber security infrastructure** by adopting advanced threat detection systems, regular security audits, and real-time monitoring to prevent cyber-attacks such as phishing and ransomware. Second, there is a need to **develop robust data governance frameworks** that ensure data quality, privacy, and accountability through clear standards, regulations, and enforcement mechanisms.

Third, policymakers should focus on **capacity building and skill development** by training tax officials in cyber security, data analytics, and digital technologies to effectively manage evolving risks. Fourth, **standardized data**

sharing protocols and regulatory harmonization should be established, especially for cross-border data exchange, to improve coordination and reduce vulnerabilities. Fifth, the integration of **emerging technologies such as artificial intelligence and blockchain** should be encouraged to enhance system transparency, fraud detection, and data integrity.

Additionally, governments must promote **public awareness and taxpayer education** to reduce risks related to phishing and identity theft. Finally, continuous investment in **secure digital infrastructure and innovation** is essential to balance the benefits of digitalization with the growing risks. Overall, a holistic policy framework combining technology, governance, and institutional capacity is crucial for building secure, resilient, and trustworthy digital tax systems.

14. Conclusion

The study highlights that the digitalization of tax systems has brought substantial improvements in efficiency, transparency, and taxpayer compliance, making tax administration more streamlined and accessible. However, this transformation has also introduced significant challenges related to cyber security and data governance. The increasing reliance on digital platforms has expanded the exposure of tax systems to cyber threats such as phishing, ransomware, and data breaches, while also raising concerns regarding data privacy, quality, and regulatory compliance.

The analysis demonstrates that although many tax administrations have adopted essential data governance practices like encryption and access controls, gaps remain in areas such as data sharing, standardization, and institutional capacity. Furthermore, the positive relationship between digitalization and risk exposure underscores the need for parallel development of robust security frameworks. At the same time, emerging technologies such as artificial intelligence, blockchain, and cloud computing offer promising opportunities to enhance both efficiency and security when effectively governed.

In conclusion, the success of digital tax systems depends on achieving a careful balance between technological advancement and strong governance mechanisms. Policymakers must prioritize integrated approaches that combine cyber security, data governance, regulatory frameworks, and capacity building. Strengthening these areas will not only protect sensitive taxpayer information but also build trust, ensuring the long-term sustainability and resilience of digital tax systems in the evolving digital economy.

References

- Organisation for Economic Co-operation and Development (OECD). (2025). *Tax administration digitalisation and digital transformation initiatives*. OECD Publishing.
- Organisation for Economic Co-operation and Development (OECD). (2024). *OECD digital economy outlook 2024*. OECD Publishing.
- Organisation for Economic Co-operation and Development (OECD). (2025). *Data governance in the public sector*. OECD Publishing.
- World Bank. (2023). *Cybersecurity and digital development: Strengthening resilience in digital systems*. World Bank Publications.
- International Monetary Fund (IMF). (2023). *Digitalization and tax administration: Policy implications*. IMF Working Paper.
- NITI Aayog. (2022). *India's digital governance framework*. Government of India.
- Ministry of Finance, Government of India. (2023). *Annual report on tax administration*.
- Reserve Bank of India (RBI). (2023). *Report on trend and progress of banking in India*.
- Deloitte. (2023). *Digital transformation in tax systems: Global trends and risks*. Deloitte Insights.
- PricewaterhouseCoopers (PwC). (2024). *Tax administration and data governance in the digital age*. PwC Report.
- Kshetri, N. (2021). Cybersecurity management in developing economies. *Journal of Global Information Technology Management*, 24(2), 83–95.
- Janssen, M., van der Voort, H., & Wahyudi, A. (2020). Factors influencing big data decision-making quality. *Government Information Quarterly*, 37(1), 101–115.

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Green Bonds and India's Development Trajectory: Linking Economic Growth, Social Inclusion, and Environmental Sustainability

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Abstract

India's development trajectory has increasingly focused on balancing economic growth, social inclusion, and environmental sustainability in the context of rising climate challenges and global sustainability commitments. Within this framework, green bonds have emerged as an important financial innovation that facilitates the mobilization of long-term capital for environmentally sustainable projects. This paper examines the role of green bonds in supporting India's growth–inclusion–sustainability nexus by analyzing market trends, sectoral allocation, and developmental impacts.

The study highlights that India's green bond market has expanded significantly in recent years, particularly after 2021, driven by increased policy support, investor interest, and the introduction of sovereign green bonds. The proceeds are predominantly directed towards renewable energy, clean transportation, and energy efficiency, contributing to infrastructure development and low-carbon growth. Beyond economic expansion, green bonds also have the potential to promote inclusion by improving access to clean energy, generating green employment, and enhancing urban and rural infrastructure.

However, the paper identifies several structural challenges that limit the effectiveness of green bonds in achieving inclusive and sustainable development. These include the absence of a unified green taxonomy, limited secondary market liquidity, high issuance costs, regional concentration of issuers, and risks of green washing due to inadequate disclosure standards. Furthermore, the limited focus on climate adaptation projects constrains their impact on vulnerable communities.

The paper concludes that while green bonds hold significant promise as a tool for sustainable finance, their integration into India's development strategy requires comprehensive policy support, improved regulatory frameworks, and enhanced institutional capacity. Strengthening these aspects will enable green bonds to play a more transformative role in achieving balanced and resilient development.

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1.Introduction

India's development trajectory over the past three decades has been marked by rapid economic growth, structural transformation, and increasing integration with the global economy. Following the economic reforms of the early 1990s, the country has emerged as one of the fastest-growing major economies, with significant progress in sectors such as services, infrastructure, and digital technology. However, the sustainability and inclusiveness of this growth process remain critical concerns. Persistent income inequality, regional disparities, unemployment, and environmental degradation raise important questions about whether India's growth model is adequately aligned with long-term development goals.

In recent years, the discourse on development has shifted from a narrow focus on GDP growth to a broader framework that emphasizes the interdependence of **economic growth, social inclusion, and environmental sustainability**. This integrated approach is also reflected in global commitments such as the Sustainable Development Goals (SDGs) and climate agreements, which call for balanced and resilient development pathways. For a country like India—characterized by a large population, diverse socio-economic conditions, and significant climate vulnerability—the challenge is to design policies that simultaneously promote growth, reduce inequality, and ensure ecological balance.

One of the key constraints in achieving this integrated development model is the **financing gap** associated with sustainable infrastructure and climate action. Estimates suggest that India requires substantial investment in renewable energy, clean transportation, water management, and climate-resilient infrastructure to meet its sustainability targets. Traditional sources of public finance are insufficient to meet these requirements, necessitating innovative financial instruments that can mobilize private and institutional capital.

In this context, **green bonds** have emerged as a crucial component of climate finance. Green bonds are debt instruments specifically designed to finance projects with environmental benefits, such as renewable energy, energy efficiency, pollution control, and sustainable urban development. Since the first issuance in India in 2015, the green bond market has witnessed steady growth, supported by regulatory initiatives, increasing investor awareness, and the government's commitment to sustainable development. The introduction of sovereign green bonds has further strengthened the credibility and visibility of this market.

Beyond their role in financing environmental projects, green bonds have broader implications for India's development trajectory. By supporting investments

in clean energy and sustainable infrastructure, they contribute to economic growth and industrial development. At the same time, such investments can enhance social inclusion by improving access to essential services such as electricity, transportation, and water, particularly in underserved regions. Moreover, green bonds play a critical role in promoting environmental sustainability by facilitating the transition to a low-carbon and climate-resilient economy.

Despite their potential, the effectiveness of green bonds in advancing inclusive and sustainable development is constrained by several structural and institutional challenges. These include the absence of a standardized green taxonomy, limited market liquidity, high transaction costs, uneven regional participation, and concerns regarding transparency and greenwashing. Addressing these challenges is essential to fully harness the potential of green bonds as a transformative instrument within India's development framework.

Against this backdrop, the present study seeks to analyze the role of green bonds in linking economic growth, social inclusion, and environmental sustainability in India. By examining market trends, sectoral allocation, and policy challenges, the paper aims to provide a comprehensive understanding of how green bonds can contribute to a more balanced and resilient development trajectory.

2. Review of Literature:

Kishan, S. (2025). Green and Blue Economy in India: The paper discusses India's green growth strategy focusing on reducing environmental risks and promoting renewable energy, integrating green and blue economies to enhance livelihoods, address climate change, and protect biodiversity, ultimately paving the way for a more resilient and sustainable society. Together, these models can enhance livelihoods, protect biodiversity, and address climate change through community engagement and clean technologies.

Roy, A. (2024). Green Growth in India: Balancing Economic Development with Environmental Sustainability the study has shown India's Green Growth strategy emphasizes balancing economic development with environmental sustainability by promoting sustainable industrial and agricultural practices, enhancing energy efficiency, and encouraging clean energy sources, all supported by strong policy frameworks to incentivize green investments and decouple growth from environmental degradation.

Dan, I. (2024). Viksit Bharat: The paper discusses Vision for Sustainable Development Viksit Bharat@2047 emphasizes renewable energy, eco-friendly practices, and climate resilience as key components of India's green growth strategy, aiming to integrate sustainable practices with economic prosperity while addressing social welfare and environmental stewardship for a resilient future.

Singh, A. (2023). Green Economic Policies, Strategies & Initiatives of India: The paper discusses India's green growth strategy focuses on implementing regulations and initiatives to promote energy efficiency across various sectors, including green building and mobility. This approach aims to reduce carbon intensity and create numerous green jobs, supporting sustainable development.

Zirek,D., Unsal, O., (2023), in this study examine whether third-party certification of green bonds benefits investors concerned about climate risks. The authors compare the performance of green bonds against their compliance with the Green Bond Principles, finding no significant performance differences based on certification tiers. Instead, bond characteristics such as issuer type and domicile play a more critical role. The authors argue that while certification may not visibly impact bond performance, firms might still seek certification to enhance their appeal to investors. The paper calls for a more robust classification system to help investors distinguish between green and conventional bonds effectively.

Yilmaz B.E., (2022), in the study examines green bonds as a financial tool to support environmental sustainability and global public goods. It defines green bonds, highlights their rising popularity, and discusses factors attracting investors, such as tax advantages, transparency, and high standards. The governance structures of green bonds private, public, and hybrid are explored. The authors present market data and emphasize the role of green bonds in financing sustainable energy and production investments. They conclude by underscoring the importance of green bonds in public finance for promoting a greener economy.

Zhang J., (2022), in the study investigates whether green bonds can promote green technology innovation among Chinese enterprises, addressing a gap in research on their impact in China. Using a quasi-natural experiment based on the introduction of China's green bond market in 2016, the paper analyzes panel data from 1,558 non-financial firms (2015–2020) through a multi-period difference-in-difference model. The results reveal that green bonds significantly boost green technology innovation, especially in green utility patents, though with a lag. The empowerment effect varies by property rights, industries, and regions. The study finds that green bonds improve innovation by increasing long-term loans and improving firms' debt structures, offering policy insights for enhancing green bond usage.

Melnyk et al. (2020), assessing the dynamics of a country's economic greening is crucial because it allows for the assessment of the environmental impact of a new economic model by looking at various contributing factors and determining the best strategies for reducing environmental pressures from economic activity. Numerous global reporting systems rely on energy indices and indicators to evaluate the state of the green economy and the potential for green growth.

Chhaochharia (2021), discussed global and Indian trends in green finance transactions. Utilising multiple data sources, the study evaluates both the level of public awareness and the availability of financial resources for green initiatives. The findings indicate that while India has made progress in terms of public awareness and financing options, there is scope for improvement in information management systems and coordination among stakeholders. Such improvements could help reduce information asymmetry and encourage environmentally responsible and sustainable economic growth. Economic expansion is the driving force behind economic progress, but it also contributes to pollution and the loss of natural resources, so it shouldn't come at the expense of the environment

3. Objectives of the Study:

1. To examine the contribution of green bonds to economic growth and infrastructure development.
2. To assess the inclusive potential of green bond–financed projects.
3. To evaluate sustainability outcomes and identify structural challenges.
4. To propose policy measures for integrating green bonds into India's long-term development strategy.

4.Conceptual Framework: Linking Green Bonds to Growth, Inclusion and Sustainability

The analytical framework of the study integrates three pillars of development:
Green Bonds → Capital Mobilization → Green Infrastructure Investment → (a) Economic Growth
(b) Social Inclusion
(c) Environmental Sustainability

• Growth Impact: Investment in renewable energy and infrastructure stimulates output, employment, and industrial development. • Inclusion Impact: Green infrastructure improves access to energy, transport, and water services, particularly in underserved regions.

• Sustainability Impact: Reduced carbon emissions, improved resource efficiency, and enhanced climate resilience.

Thus, green bonds serve as a financial bridge connecting macroeconomic expansion with sustainable development outcomes.

5.Growth Dimension: Green Bonds and Economic Expansion

5.1 Trends in Green Bond Issuance

India's green bond market has expanded significantly, particularly after 2021, reflecting rising investor interest and policy support.

Table 1: Green Bond Issuance Trend in India (₹ Billion)

Year	Green Bond Issuance (₹ Billion)
2018	50
2019	75
2020	120
2021	320
2022	450
2023	820
2024	460

The data on green bond issuance in India from 2018 to 2024 reveals a clear pattern of rapid expansion followed by a recent moderation. Between 2018 and 2020, issuance grew steadily from ₹50 billion to ₹120 billion, indicating the initial development phase of the market with gradual investor awareness and policy support. A significant acceleration is observed from 2021 onwards, where issuance sharply increased to ₹320 billion and further to ₹450 billion in 2022, reflecting stronger institutional participation and growing emphasis on sustainable finance. The peak in 2023 at ₹820 billion marks a major milestone, likely driven by enhanced policy initiatives, including sovereign green bond issuances and increased demand for climate-aligned investments. However, the decline to ₹460 billion in 2024 suggests a phase of market correction or consolidation, possibly due to global financial conditions, interest rate changes, or normalization after the surge in the previous year. Overall, the trend indicates that while India's green bond market has achieved substantial growth, it is still evolving and subject to cyclical fluctuations, highlighting the need for stable policy support and deeper market development.

5.2Sectoral Contribution to Growth

Green bond proceeds are primarily allocated to renewable energy and clean infrastructure.

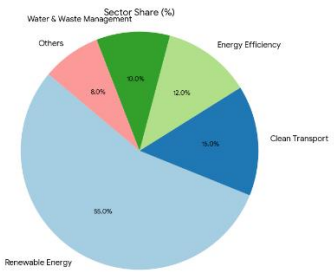
Table 2: Sector-Wise Allocation of Green Bond Proceeds

Sector	Share (%)
Renewable Energy	55
Clean Transport	15
Energy Efficiency	12
Water & Waste Management	10
Others	8

The sector-wise distribution of green bond proceeds in India indicates a strong concentration in renewable energy, which accounts for 55% of total allocation. This reflects the country's strategic priority to expand solar and wind energy capacity as part of its transition to a low-carbon economy. Clean transport,

with a 15% share, represents growing investments in sustainable mobility solutions such as metro rail, electric vehicles, and public transportation systems. Energy efficiency accounts for 12%, highlighting efforts to reduce energy consumption across industries and buildings. Water and waste management receive 10%, suggesting relatively lower but important attention to environmental sustainability in urban infrastructure. The remaining 8% falls under other sectors, indicating limited diversification. Overall, the distribution shows that while India's green bond market is heavily oriented towards mitigation-focused sectors like renewable energy, there is a need to enhance investment in adaptation-related areas such as water management and waste systems to ensure a more balanced and inclusive approach to sustainability

Figure – 1: Sector-Wise Allocation of Green Bond



The data reveals a clear hierarchy in sustainability priorities, with **Renewable Energy** acting as the dominant pillar at (55%) of the total share. This suggests that the primary strategy is focused on decarbonizing the power grid before addressing secondary sectors. **Clean Transport** (15%) and **Energy Efficiency** (12%) follow as the next most significant areas, highlighting a shift toward electrification and reducing energy waste. The remaining (18%) is distributed between **Water & Waste Management** and miscellaneous categories, indicating an integrated approach that balances core energy transition with broader environmental resource management.

6. Inclusion Dimension: Green Bonds and Social Equity

While green bonds are primarily environmental instruments, their inclusive potential lies in:

- Expanding clean energy access in rural areas
- Improving public transport systems
- Supporting water and sanitation projects
- Generating employment in renewable energy sectors

However, green bond issuance remains geographically concentrated in financially advanced states, limiting equitable distribution of climate finance.

Table 3: Dimensions of Inclusion through Green Finance

Inclusion Channel	Potential Impact
Energy Access	Rural electrification
Employment	Green jobs in renewables
Urban Services	Cleaner public transport
Water Management	Improved sanitation access

The inclusion channels show that green bond investments can support equitable development by improving **energy access** through rural electrification, creating **employment** in renewable energy sectors, enhancing **urban services** like cleaner public transport, and strengthening **water management** through better sanitation. Overall, these investments contribute to both social inclusion and improved quality of life.

7. Sustainability Dimension: Climate and Environmental Outcomes

Green bonds directly support India's climate commitments by financing low-carbon projects. Renewable energy investments reduce dependence on fossil fuels, while efficiency improvements lower emissions intensity.

However, sustainability outcomes depend on:

- Strong project selection criteria
- Transparent reporting standards
- Effective monitoring mechanisms

Without proper safeguards, risks of greenwashing may undermine environmental credibility.

8. Structural Challenges in Aligning Green Bonds with Development Goals

Table 4: Key Challenges and Development Implications

Challenge	Development Implication
Absence of unified green taxonomy	Weak credibility and investor hesitation
Low secondary market liquidity	Reduced market depth
High certification cost	Barriers for smaller issuers
Regional concentration	Unequal access to climate finance
Limited adaptation financing	Neglect of vulnerable communities

These challenges limit the transformative potential of green bonds in promoting balanced development.

9. Policy Perspectives for Integrating Green Bonds into India's Development Strategy

To strengthen the role of green bonds in India's growth–inclusion–sustainability framework, the following measures are recommended:

9.1 Strengthening Regulatory Architecture

• Develop a harmonized national green taxonomy
• Standardize disclosure and impact reporting
• Strengthen SEBI guidelines

9.2 Enhancing Inclusive Access

• Promote municipal green bonds
• Provide credit enhancement for smaller states
• Encourage public–private partnerships

9.3 Supporting Sustainable Growth

• Introduce fiscal incentives for green issuers
• Expand sovereign green bond issuance
• Integrate green finance into development planning

9.4 Linking Climate Finance with Employment Strategy

• Promote domestic manufacturing of renewable technologies
• Support green skill development programs
• Align green projects with MSME participation

10. Conclusion

Green bonds have emerged as a crucial financial innovation in aligning India's development trajectory with the interconnected goals of economic growth, social inclusion, and environmental sustainability. The analysis highlights that India's green bond market has witnessed significant expansion in recent years, particularly with increased policy support and the introduction of sovereign green bonds. These instruments have played an important role in channeling investments into renewable energy, clean transportation, and energy-efficient infrastructure, thereby contributing to low-carbon economic growth and structural transformation.

Beyond their growth implications, green bonds also possess considerable potential to promote inclusive development. Investments in renewable energy enhance rural electrification, while green infrastructure projects generate employment opportunities and improve access to essential services such as clean transport and water management. However, the inclusive benefits remain uneven due to the concentration of issuances in economically advanced regions and limited participation from municipal bodies and smaller states.

Despite their promise, several structural and institutional challenges constrain the effectiveness of green bonds in India. These include the absence of a standardized green taxonomy, limited secondary market liquidity, high issuance and compliance costs, and concerns related to transparency and greenwashing. Furthermore, the current allocation of funds is largely skewed towards mitigation-

focused sectors, with insufficient attention to climate adaptation and resilience, which are critical for vulnerable populations.

In conclusion, while green bonds offer a powerful mechanism to integrate growth, inclusion, and sustainability, their full potential can only be realized through comprehensive policy support. Strengthening regulatory frameworks, expanding market access, enhancing transparency, and promoting diversified investments will be essential to ensure that green bonds contribute meaningfully to India's long-term, inclusive, and sustainable development.

References

- Climate Bonds Initiative. (2024). *India Sustainable Debt State of the Market Report*. London: Climate Bonds Initiative.
- Reserve Bank of India. (2023). *Report on Trend and Progress of Banking in India*. Mumbai: RBI.
- Securities and Exchange Board of India (SEBI). (2017). *Disclosure Requirements for Issuance and Listing of Green Debt Securities*. Mumbai: SEBI.
- Government of India. (2023). *Sovereign Green Bond Framework*. Ministry of Finance, New Delhi.
- Economic Survey of India. (2023–24). *Ministry of Finance*. Government of India.
- NITI Aayog. (2022). *India's Long-Term Low Carbon Development Strategy*. Government of India.
- International Finance Corporation. (2022). *Green Bond Market Development in Emerging Economies*. Washington, DC.
- World Bank. (2023). *Climate Finance and Development Report*. Washington, DC.
- Organisation for Economic Co-operation and Development (OECD). (2022). *Green Finance and Investment Report*. Paris: OECD.
- United Nations Development Programme (UNDP). (2023). *Human Development Report*. New York: UNDP.
- Bansal, R. (2020). Green bonds in India: Issues and challenges. *Journal of Sustainable Finance*, 5(2), 45–60.
- Climate Policy Initiative. (2023). *Global Landscape of Climate Finance*. San Francisco.

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Fiscal Ethics in Tax Policy: Principles, Challenges, And Policy Implication

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Abstract:
Fiscal ethics in tax policy refers to the moral principles that guide the design and implementation of taxation systems to ensure fairness, accountability, and transparency. It emphasizes key concepts such as equity, justice, and the ability-to-pay principle, where individuals contribute to public finances according to their economic capacity. Horizontal equity ensures equal treatment of individuals with similar incomes, while vertical equity promotes a progressive tax structure for those with higher incomes. However, fiscal ethics faces significant challenges in modern economies. Tax evasion, aggressive tax avoidance by corporations, and regressive tax systems undermine fairness and reduce government revenues. Globalization and digitalization have further complicated tax administration by enabling cross-border profit shifting and regulatory loopholes. Additionally, political influence and policy bias can lead to unequal tax burdens, raising ethical concerns. Integrating ethical considerations into tax policy has important implications. Ethical tax systems enhance public trust, improve voluntary compliance, and reduce enforcement costs. Policymakers should focus on progressive taxation, stronger institutional mechanisms, and increased transparency through digital governance. International cooperation is also essential to address global tax challenges.

Key words: Fiscal Ethics, Tax Policy, Equity and Fairness, Tax Compliance, Transparency and Accountability.

I.Introduction

One of the most important ways for governments to raise money for public goods and services including infrastructure, healthcare, education, and social welfare initiatives is through taxation. It is essential for supporting inclusive growth,

stabilizing the economy, and redistributing income. But taxation has a deep ethical component in addition to its practical and financial importance. A society's principles of justice, fairness, and accountability are reflected in the way taxes are levied, collected, and used. Therefore, fiscal ethics in tax policy emphasizes that taxes should be both efficient and equitable, guaranteeing that people contribute in accordance with their financial means and have equitable access to public benefits. Maintaining ethical balance in taxation systems depends on concepts like vertical equality, where higher-income groups pay a larger tax burden, and horizontal equity, where people with similar income levels are taxed equally.

The moral underpinnings of taxation are being questioned more and more in the modern world. Debates on whether current tax systems effectively address gaps or unintentionally perpetuate them have grown due to rising income and wealth inequality. In order to reduce their tax obligations, multinational firms frequently use complex tax avoidance techniques, taking advantage of legal loopholes and variations in foreign tax regimes. This puts a disproportionate burden on people and small enterprises, undermining the system's fairness. Public trust and compliance are further undermined by inefficiencies in tax administration, such as corruption, a lack of transparency, and complicated procedures. These difficulties demonstrate how urgently ethical issues must be incorporated into the creation and application of tax laws.In this regard, the current study aims to critically analyze the fundamental ideas of fiscal ethics, pinpoint major obstacles to their implementation, and investigate legislative solutions that can improve accountability, justice, and openness in contemporary taxation systems.

I.REVIEW OF LITERATURE

The behavioral, structural, and technological aspects of fiscal ethics in taxes have received more attention in recent research (2020–2025). Early 2020s research shows that ethical views, governmental trust, and tax system fairness all influence tax compliance in addition to enforcement. International policy research, for example, places a heavy emphasis on the idea of tax morale, which is described as people's innate desire to pay taxes and is heavily impacted by their perception of the quality of public services and their level of trust in public institutions. This illustrates a change in the concept of fiscal ethics from strictly economic models to socio-psychological ones.

Building on this, empirical research conducted in 2022 and 2023 examined perceptions of fairness and how they directly affect compliance behavior. According to research, taxpayer attitudes are greatly influenced by accountability, openness, and institutional trust; people are more willing to comply when they believe the tax system is responsive and fair. These results support the moral basis

of taxation by indicating that fairness is both a practical factor in determining revenue generation and a normative guideline.

Further research on the connection between tax morale, inequality, and fairness was conducted in 2024. Research from developing nations demonstrates that people's views of reciprocity and distributive justice affect their willingness to pay taxes; in certain situations, perceived disparity may even be used as an excuse for tax evasion. Simultaneously, studies on taxpayer behavior emphasize the significance of tax education, awareness, and moral principles, showing that greater levels of taxpayer morality and comprehension greatly enhance compliance.

The scope has been broadened to encompass administrative and technological problems in more recent research (2025). Results indicate that complicated regulations, low tax literacy, and unfavorable opinions of governance are frequently associated with low tax compliance. Furthermore, as gaps in digital preparedness and trust impact the efficacy of contemporary tax systems, digitalization has created new disparities. Additionally, new research combines institutional theory and behavioral economics, highlighting the need of ethical governance, fair enforcement, and anti-corruption policies in maintaining compliance in contemporary economies.

II.NEED FOR THE STUDY

The study of fiscal ethics has become extremely important due to the increasing complexity of contemporary economies and growing concerns about tax justice. Concerns regarding the fairness and efficiency of current tax systems have been raised by growing economic inequality, regressive tax structures, and uneven tax loads. Furthermore, aggressive tax avoidance and widespread tax evasion by multinational firms have decreased government revenue and eroded public confidence. Globalization and the quick growth of the digital economy have made tax administration even more difficult, leading to gaps and difficulties in the regulation of cross-border transactions.

Furthermore, ethical taxation methods are still threatened by inefficiencies in tax governance, such as a lack of transparency, corruption, and administrative flaws. In this regard, creating tax laws that are not only effective but also equitable and socially acceptable requires a grasp of fiscal ethics. In order to improve justice, compliance, and sustainable economic development, this study is necessary to investigate ethical principles in taxation and offer policy ideas.

III.OBJECTIVES OF THE STUDY

1. To investigate the theoretical underpinnings and fundamental ideas of fiscal ethics in tax policy, such as justice, equity, and fairness.

2. to use secondary data sources and existing literature to examine the ethical aspects of taxation systems.
3. to assess the issues that affect fiscal ethics, including administrative inefficiencies, tax evasion, and avoidance.
4. to investigate, using secondary data and previous research findings, the connection between taxpayer compliance and ethical tax procedures.
5. to use insights from secondary data to propose policy actions for enhancing accountability, fairness, and openness in tax systems.

IV.SCOPE AND PERIOD OF THE STUDY

The ethical aspects of tax policy are the main emphasis of this study, which emphasizes values like justice, equity, fairness, responsibility, and transparency. In addition to analyzing major issues like tax evasion, tax avoidance, globalization, and digitalization, it looks at the the oretical and conceptual facets of fiscal ethics. The entire analysis is based on secondary data from government papers, scholarly journals, and publications from international organizations including the World Bank, IMF, and OECD. It offers a thorough analytical grasp of fiscal ethics in both domestic and international contexts without the need for primary data collecting or empirical testing. The paper also looks at policy implications for raising moral standards in taxation systems.

The study focuses on recent advancements, new issues, and current research on fiscal ethics in tax policy and mostly covers the years 2020 to 2025. To support the conceptual framework, however, past contributions and foundational theories have also been taken into account when needed.

V.RESEARCH METHODOLOGY

This study investigates the idea of fiscal ethics in tax policy using a qualitative and theoretical research technique. The majority of the research is based on secondary data that was gathered from a variety of reliable sources, including books, government publications, scholarly journals, and reports from international organizations like the World Bank, International Monetary Fund, and Organization for Economic Co-operation and Development. These resources offer thorough explanations of moral precepts, tax laws, and current issues with taxation.

The study takes a conceptual and analytical approach, concentrating on comprehending important theoretical concepts like fairness, equity, justice, and tax morale. In order to find trends, topics, and gaps pertaining to fiscal ethics, it entails a methodical review and synthesis of the body of existing literature. Since the goal is to establish a theoretical framework and critical understanding of the subject, no primary data collecting, surveys, or empirical testing procedures are used.

VI. RESULTS AND DISCUSSIONS

Results

1. **Compliance Is Affected by Fairness**
   The tax system's perceived fairness greatly increases taxpayers' voluntary compliance. People are more inclined to fulfill their responsibilities when they feel that taxes are levied fairly. This lowers the cost of enforcement and improves the effectiveness of revenue collection.
2. **Equity Diminishes Inequality**
   Redistributing income and lowering socioeconomic inequality are two benefits of progressive taxation. By ensuring that higher-income groups contribute more, it advances social justice. This makes the moral basis of taxing systems stronger.
3. **Problems with Regressive Taxation**
   Lower-income groups are disproportionately burdened by a heavy reliance on indirect taxes. Because it goes against the ability to pay principle, this poses ethical questions. Over time, it can also increase wealth disparity.
4. **Ethics Are Challenged by Globalization**
   Multinational firms can now move their profits to low-tax jurisdictions thanks to globalization. This produces unfair benefits and erodes national tax bases. It calls into question the moral precept of equal tax liability.
5. **Multinational firms**
   Can now move their profits to low-tax jurisdictions thanks to globalization. This produces unfair benefits and erodes national tax bases. It calls into question the moral precept of equal tax liability.
6. **Impact of the Digital Economy**
   The growth of digital transactions has made tax enforcement and administration more challenging. It makes it difficult to determine taxable income internationally. New ethical and legal frameworks are needed for this.
7. **Institutional Quality Is Important**
   Strong, accountable, and transparent institutions increase taxpayer compliance and trust. Corruption and inefficiencies are the results of poor government. Institutional strength is a key component of ethical tax regimes.
8. **Tax Morale is Crucial**
   Tax morale, or the willingness to pay taxes, is influenced by ethical perceptions and trust in government. Higher tax morale leads to better compliance. It reflects the importance of ethics in fiscal policy.

Discussion

1.Ethical Systems Enhance Adherence

The results show that voluntary compliance is improved by ethical tax schemes. Taxpayers cooperate more voluntarily when fairness and openness are guaranteed. This lessens the need for stringent enforcement actions.

1. The Value of Justice and Equity

Effective tax policy still revolves around equity and justice. However, because of political and economic variables, their application varies throughout nations. For policymakers, ensuring justice continues to be a major concern.

2. The Need for International Collaboration

Coordinated worldwide efforts are necessary due to the growing complexity of global taxation. The Organization for Economic Co-operation and Development is working to maintain justice and combat tax evasion. Ethical taxation requires international cooperation.

3. Transparency and Governance's Role

Establishing public trust requires accountability and transparency. Appropriate use of tax money is ensured by effective governance mechanisms. This reinforces the moral foundation of taxation.

5. Changing Tax Systems

Progressive taxation must be encouraged in order to lessen reliance on regressive taxes. Fairness and equity can be guaranteed by balanced tax systems. Ethical tax burden distribution should be the main emphasis of policy improvements.

6. Including Ethics in the Creation of Policy

The creation of tax policy must take ethics into account. Both social acceptability and economic efficiency are enhanced by this. It guarantees taxation systems' long-term viability.

VII.FINDINGS AND SUGGESSIONS

FINDINGS

1. To guarantee justice, equity, and fairness in taxation regimes, fiscal ethics is crucial.
2. Voluntary tax compliance is greatly enhanced by perceived fairness in tax policy.
3. Progressive taxation promotes social justice and lessens wealth disparity.
4. Ethical taxation is being challenged by the rise in profit shifting and tax evasion brought about by globalization.

5. Transparency, accountability, and taxpayer trust are all improved by robust institutional frameworks.
6. New challenges in tax administration and regulation have been brought about by the digital economy.

SUGGESSIONS

1. Based on the ability-to-pay concept, governments ought to implement progressive taxation.
2. To increase openness and lessen corruption, tax administration should be improved.
3. To solve the global problem of tax evasion, more international cooperation is required.
4. The adoption of digital technologies should improve tax monitoring and compliance.
5. To boost tax compliance and morale, taxpayer awareness initiatives should be supported.

VII. CONCLUSION

Building just, effective, and long-lasting taxation regimes requires a strong foundation in fiscal ethics. As the study has shown, taxes are a reflection of society ideals like justice, equity, and responsibility in addition to being an economic tool. To preserve public confidence and encourage voluntary compliance, tax systems must be in line with these moral precepts. The analysis emphasizes how equitable taxes, especially through progressive structures and the ability-to-pay principle, is crucial for lowering inequality and fostering social cohesion.

But the study also shows that there are several obstacles to fiscal ethics in the modern world. Ethical taxation procedures are nevertheless threatened by problems including tax evasion, aggressive tax avoidance by multinational firms, regressive tax schemes, and administrative inefficiencies. Furthermore, additional complexity brought about by globalization and the quick growth of the digital economy makes it challenging for conventional tax systems to maintain accountability and fairness. These difficulties highlight the necessity of ongoing reforms and flexible policy frameworks.

The results also indicate that improving tax compliance and morale requires robust institutional processes, openness, and sound governance. In addition to increasing revenue collection, ethical tax systems lower enforcement expenses and encourage citizens to share responsibility. The study emphasizes that including ethical factors into tax policy can result in more sustainable and inclusive economic growth.

In summary, integrating fiscal ethics into tax policy is both a practical and normative requirement. To solve global tax issues, policymakers must prioritize creating transparent, egalitarian, and responsible tax systems while encouraging international cooperation. Long-term budgetary stability, better governance, and a more equitable society can all be enhanced by an ethically sound tax system.

VIII. REFERENCES

- Beer, S., Coelho, M., & Leduc, S. (2020). Hidden treasures: The impact of automatic exchange of information on cross-border tax evasion. *Journal of Public Economics, 193*, 104122.
- International Monetary Fund. (2020). *Fiscal monitor: Policies to support people during the COVID-19 pandemic*. IMF Publications.
- Kirchler, E., Hoelzl, E., & Wahl, I. (2020). Enforced versus voluntary tax compliance: The "slippery slope" framework revisited. *Journal of Economic Psychology, 81*, 102119.
- De Mooij, R., Klemm, A., & Perry, V. (2021). *Corporate income taxes under pressure: Why reform is needed and how it could be designed*. International Monetary Fund.
- Organisation for Economic Co-operation and Development. (2021). *Tax morale II: Building trust between tax administrations and large businesses*. OECD Publishing.
- World Bank. (2021). *World development report 2021: Data for better lives*. World Bank Publications.
- Gangl, K., Hofmann, E., &Kirchler, E. (2022). Tax authorities' interaction with taxpayers: Evidence on fairness and trust. *Current Opinion in Psychology, 47*, 101–115.
- International Monetary Fund. (2022). *Fiscal monitor: Helping people bounce back*. IMF Publications.
- Organisation for Economic Co-operation and Development. (2023). *Tax administration 2023: Comparative information on OECD and other advanced and emerging economies*. OECD Publishing.
- World Bank. (2023). *Global economic prospects*. World Bank Publications.
- Organisation for Economic Co-operation and Development. (2024). *Addressing the tax challenges of the digital economy: OECD/G20 inclusive framework on BEPS*. OECD Publishing.

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Economic Growth and Employment Generation in Telangana: Issues and Prospects

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Abstract
This paper examines the dynamics between economic growth and employment generation in Telangana. While the state has experienced rapid growth in Gross State Domestic Product (GSDP), the pace of job creation has not been proportional. The study highlights structural issues such as sectoral imbalance, skill mismatch, and regional disparities. The findings emphasize the need for inclusive, employment-oriented growth strategies.

Keywords:Economic Growth, Employment Generation, Telangana Economy, Labour Market, Jobless Growth

1. Introduction

Economic growth is often used as an indicator of development, yet its effectiveness depends on employment generation. Telangana has achieved remarkable growth since its formation in 2014. However, employment opportunities have not expanded at the same pace, raising concerns about inclusive development.

2. Review of Literature

Existing literature indicates that high economic growth does not always guarantee employment generation. Scholars have pointed out the phenomenon of jobless growth, especially in developing economies where growth is driven by capital-intensive sectors.

3. Objectives

(i) To analyze economic growth trends in Telangana.
(ii) To examine employment patterns.
(iii) To identify issues in employment generation.
(iv) To suggest policy recommendations.

4. Methodology

This study is based on secondary data collected from Telangana Economic Surveys, PLFS, NSSO, and RBI publications. The data is analyzed using descriptive statistical methods.

5. Economic Growth Trends

Telangana has consistently outperformed national growth rates. The services sector, particularly IT, plays a dominant role, followed by industry and agriculture. Hyderabad serves as the economic hub of the state.

6. Employment Scenario

Despite growth, unemployment and underemployment persist. Youth unemployment remains a concern, and female participation in the workforce is relatively low. Informal employment dominates the labour market.

7. Issues and Challenges

The major challenges include skill mismatch, regional disparities, dependence on informal employment, and low productivity in agriculture.

8. Government Initiatives

Programs such as TS-iPASS, T-Hub, and skill development missions aim to enhance employment opportunities and industrial growth.

9. Prospects

There is significant potential for employment generation in MSMEs, digital economy, agro-based industries, and startups.

10. Policy Suggestions

Encouraging labour-intensive industries, strengthening skill development, promoting rural industrialization, and increasing female workforce participation are essential.

11. Conclusion

Telangana must focus on inclusive growth policies to ensure that economic progress translates into meaningful employment opportunities.

References

- Government of Telangana. (2023). Telangana Economic Survey.
- Ministry of Statistics and Programme Implementation. (2022). Periodic Labour Force Survey.
- Reserve Bank of India. (2023). Handbook of Statistics on Indian Economy. Mehrotra, S. (2019). Employment trends in India.
- Rangarajan, C. (2018). Economic growth and employment.

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Role of MSMEs in Employment Opportunities in India -A Study on Rural and Urban

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Abstract
MSMEs play an important role in the development of a nation. They are a major driver in creating employment opportunities for the educated unemployed, skilled, and unskilled population in rural areas. In India, MSMEs are playing a crucial role by offering a large number of jobs at a lower capital cost compared to large industries. They also help in industrializing rural and backward regions, which in turn helps reduce regional imbalances and ensures a more equitable distribution of national income and wealth. These enterprises also contribute to improving the living standards of the people who are associated with them. MSMEs currently employ almost 11 crore people. The share of MSME manufacturing output in the total Indian manufacturing output was 36.2% in 2021-22, compared to 36.6% in the previous year, 2020-21. This paper aims to review the performance of MSMEs and their impact on employment in the Indian economy. The article uses secondary data and an analytical approach to achieve its objectives. According to the study's findings, the MSME sector contributes to inclusive growth in India by providing substantial employment opportunities and promoting women entrepreneurship. Various government initiatives, such as the "SAMARTH" drive under the Azadika Amrit Mahotsav, and others like "Make in India" and "Digital India," have created new possibilities for the MSME sector to grow significantly over the next decade.

Key Words: MSMEs, Employment Opportunities, Economic Development

1.Introduction

The Micro Small Medium and Enterprise Development Act 2006 looked into the issues and challenges that MSMEs face and made policies to help them. It included details about the investment and turnover limits for businesses in both manufacturing and service industries. Micro, Small, and Medium-Sized Enterprises

are considered the backbone of the nation's economy. They provide jobs, boost exports, and offer essential goods and services to local communities. The MSME sector plays a vital role in the economic growth and development of a country. It is especially important for economic development. "The MSME sector works with limited capital and limited use of technology, but it creates a lot of job opportunities and makes a significant contribution to the Indian economy" (Mollick, 2018). This paper aims to look into how the MSME sector has helped society and created jobs and employment. The MSME sector covers different areas of industries to produce and provide goods and services. Many studies have shown how MSMEs make a big impact on the Indian economy. Micro Small and Medium Enterprises in India are crucial for the country's economy. The industry contributes 30% of the

GDP and 45% of all manufactured goods, according to MSME Businesses (2018). Over 110 million people are employed in this sector, and it also contributes to 40% of India's exports. The MSME sector is a key part of the national economy and plays a major role in GDP, job creation, and overall economic growth. However, the industry faces several challenges that slow down its growth and development, such as limited access to finance, poor infrastructure, and low use of technology.

2.Review Of Literature

Shruti& Singh, (2016). Economic development is multidimensional and it is related to societal changes, societal development, and its behavior or attitude. MSMEs increase employment generation, help to develop nation growth through employment creation, it also help to reduce poverty in the nation. According to Muana (Economic development is measured by the national income of country or the GDP of a country, (GDP) means all goods and services produced in a financial year and it generates income and revenue for a nation. MSMEs help to transform the nation by contributing to GDP through employment generation, it give more concern for nation growth, and government launched for it some initiatives and schemes to promote and growth of MSMEs and nation its help to reduce the poverty of nation through employment.

Ayyagari et al. (2011) MSMEs focuses on competition and globalize in a market through export of products and its help to MSMEs tackle the competition and take a advantage of external opportunities and also convert the threats into opportunities, it helps to increasing the export of MSMEs products and services and earn foreign revenues. MSMEs help to make self reliant of people through employment and make handmade products and export of it in a global market because handmade product demand is higher in foreign markets According to Mollick (2018), MSMEs plays significant role in Indian economy it boosts the

nation for development through establish MSMEs businesses, industries and it contribute to GDP, manufacturing industries contribute 30% of GDP and it exports the products generate foreign revenues for a nation , industries generate foreign revenues more than manufacturing sector it export approx. 45% of its products.(Ministry of MSME, 2018). MSMEs helps to reduce the poverty of developing countries through creates employment and it helps to foster growth of nation by export of MSMEs products it reduces the trade deficit to earn foreign exchange.

Beck, Demiurgic-Kunt, &Peria, 2011; World Bank Group, (2018) MSMEs transform the economy or developing countries by generating employment in rural or urban areas and create entrepreneurship with innovative ideas of product and boost the economy by reducing the trade deficiency also by export of its products and earn foreign money but across over it MSMEs face various challenges like financial assistance, lack of transportation facilities, etc.,, several papers found that challenges of MSMEs like financial assistance, and poor infrastructure, face hindrances at the time of adoption of technology, power shortage, water management, transportation, warehousing facilities problem Several hindrances face MSMEs like power supply, shortage of technologies, and financial assistance hindrance it create a problem to growth of MSMEs.

Pandit&Bhatnagar, (2014) (Abor&Quartey, 2010; World Bank Group, 2018). MSMEs face obstacles because of technology it does not perform well at the time of competing with rival large industries The government has launched several efforts to encourage and aid the expansion of the MSME sector. To help MSMEs with funding, technical support, and infrastructural needs, the government has put in place several policies and programs. The government has also established several institutions and organizations to aid in the sector's expansion. The Micro, Small and Medium Businesses Development (MSMED) Act of 2006 is an important step the government took to encourage the expansion of the MSME sector The National Board of MSME Act. This act is also called the credit guarantee fund trust for MSMEs, and it regulates and monitors the policies and procedures of development programs to enhance the sector of Micro small and medium enterprises. Also, provide loans without Mortgage.

Mollick (2018) MSMEs also face a sizable obstacle in the form of financial access. The MSME sector has low investment and low technology, which makes it challenging for the sector to acquire loans from official financial institutions, claims. it becomes more difficult for smaller enterprises to compete with larger enterprises because of a lack of appropriate financing options that obstruct the

MSME sector's growth and development. Adopting new technologies is a challenge for the MSME sector as well.

Singh and Mehra (2017) claim that the MSME sector's inability to access contemporary technologies has an impact on its productivity and competitiveness. The authors contend that to increase their productivity and market competitiveness, MSMEs must adopt contemporary technologies. Technology has had a huge impact on India's MSME industry. The introduction of new technology has boosted MSMEs' competitiveness by raising productivity, cutting costs, and improving efficiency. Yet, due to elements including pricing, skill availability, and information access, MSMEs' adoption of technology differs. The government and other stakeholders have implemented several programs and policies to promote technology adoption and digitalization in the MSME sector. Notwithstanding these initiatives, there is still a considerable disparity between MSMEs with advanced and less advanced technologies. Thus, efforts to close this gap and promote technology-led growth for all MSMEs in India must continue.

Abor&Quartey, (2010) According to India's MSME sector's performance evaluation, the industry has been expanding gradually and has a sizable amount of room to grow. The industry makes a sizable contribution to the nation's GDP and jobs. However, confront difficulties such as a lack of access to funding, technology, and experienced workers. To solve these issues and encourage the expansion of the MSME sector, the government, and other stakeholders have put up several programs and policies. Notwithstanding these initiatives, more must be done to boost the sector's performance, especially regarding aspects like innovation, productivity, and competitiveness. Industry may be able to make a greater contribution to the nation's economic growth and job creation with improved performance in these areas. Conclusion Therefore, it is essential to address these challenges and identify strategies for enhancing the growth and development of the MSME sector. The government and policymakers need to create an enabling environment for MSMEs by providing better access to finance, improving infrastructure, and promoting technology adoption. Furthermore, MSMEs need to adopt innovative business models and strategies to remain competitive and grow in a rapidly changing business environment. These strategies may include increasing productivity through process innovation, investing in new technologies, and developing new markets and products.

3.Objectives of the study

1. To study the role of MSMEs in employment generation in India.
2. To analyse the MSMEs employment generation in rural and urban area in India.

4.Methodology of the study

This paper is based on secondary data and a descriptive nature. I have. collected secondary data from journals, reports, the annual report of MSMEs, the RBI handbook statistics website, etc.

5.Analysis of the role of MSMEs

Table-1 Category-wise Enterprises of MSMEs (Lakh)

Sector	Micro	Small	Medium	Total	Share
Rural	324.09	0.78	0.01	324.88	51
Urban	306.43	2.53	0.04	309.00	49
All	630.52	3.31	0.05	633.88	100

Source: Annual Report of MSME 2022-23

Table-1: the total micro enterprises established 630.52 lacks Out of rural areas microenterprises are 324.09 lakh or urban 306.43lakh enterprises are established, and a total number of small enterprises is estimated at 3.31 lakh in urban areas 2.53 lakh in rural areas 0.78 lakh and estimated medium sector 0.05 lakh out of 0.1 in rural areas and urban areas 0.04 lakh., so it means micro sector generated more employment than small and medium sector,630.52 lakh micro sector enterprises are set up across more than 99% are MSMEs. Small sector enterprises are 3.31 lakh. and medium sector Enterprises 0.5 lakh approximately 0.52% belong small sector and 0.01 % belong medium sector of MSMEs. The total number of MSMEs is 633.88 out of 324.88 lakh MSMEs in rural areas approximately (51.25%) refers in rural areas and 309 lakh MSMEs approximately in percentage 48.75% refer in Urban areas, and it automatically shows if it creates jobs and people earn by it so it spends in the economy to purchase and sell the good by earning money so it automatically contributes in countries GDP.

Table-2 Number of MSMEs Activity-wise

	Rural	Urban	Total	Share %
Manufacturing	114.14	82.5	196.65	31
Electricity	0.03	0.01	0.03	0
Trade	108.71	121.64	230.35	36
Other Service	102	104.85	206.85	33
All	324.88	309	633.88	100

Source: Annual Report of MSME 2022-23

Table-2: shows that the activity wise total number of MSMEs in rural areas is 324.88 under the manufacturing sector 114.14, electricity 0.03, trade 108.71, and other services 102.00, in Urban areas total number of MSMEs is 309.00 manufacturing sector is 82.50, electricity 0.01, trade 121.64, other services 104.85, Activity wise total number of manufacturing sector 196.65, Electricity 0.03, trade 230.35, total number of other services enterprises is 206.88, maximum number of enterprises setup under the Trade activity 230.35 and least number of enterprises setup under the Electricity sector 0.03. and it is clear if enterprises are open in the different sectors so its creates employment opportunities in these sectors and those sectors also help to develop by contributing to the GDP of a country.

Table-3 Employment Created in MSMEs

S. No	Year	Number in Lakh
1	2016-17	40.08
2	2017-18	3.87
3	2018-19	5.87
4	2019-20	5.33
5	2020-21	5.95
6	2021-22	2.9

Source: Annual Report of MSMEs 2022-23

Table-3: reveals that the as per the round of 73 NSS surveys ministry of Statistics number of persons employed by 11.10 crores by MSMEs under the Prime Minister Employment Generation Program, this table shows employment generation opportunity in 2016-17 40.08 lac, 2017-18 3.87 lac, 2018-19 shows 5.87 lac, 2019-20 5.33 lac,2021-22 5.95 lac, last but not least 2021-22 shows employment opportunity 2.90 lac this continuously fluctuates in first year 2016 is 40.08 lac but after it goes down and then again it rises 2018 to 2021 but again its come to fluctuate and goes down in 2021- 2022,2.90 lac.

Table-4 Distribution of employment by types of rural-urban areas (lakh)

Sector	Micro	Small	Medium	Total	Share
Rural	489.3	7.88	0.6	497.78	45
Urban	586.88	24.06	1.16	612.1	55
All	1076.19	31.95	1.75	110.89	100

Source: PIB Ministry of MSMEs

According to this table total estimated micro sector is 630.52 lakh and its provided total number of employments is 1076.19 percent 97 % of employment is

given by the micro sector and the small sector is 3.31 lakh its produce employment 31.95 lakh approximately 2.88% employment given to by small enterprises and medium enterprises estimated 0.05 lakh it give employment 1.75 lakh (0.16%) person employed by medium sector.

Table-5 Workers by Gender in rural-urban Areas

Sector	Female	Male	Total	Share
Rural	137.5	360.15	497.78	45
Urban	127.42	484.54	612.1	55
Total	264.92	844.68	1109.89	100
Share	24	76	100	

Source: Annual Report of MSMEs 2022-23

The total number of employees working in the MSME sector is 1109.89 with female employees working in 264.92 lacks (24%) and male employees working in the MSME sector (76%), In rural areas females working in 137.50 lakh and males working 360.15 and the total number of working employees in MSME sector of rural area 497.78 and the total number of employees working in Urban areas is 612.10 out of female employees is 124.42 lakh and male employees are 484.54 lakhs. Table-6 State wise employment

Sl. No.	State/UT	Employment		
		Female	Male	Total
(1)	(2)	(3)	(4)	(5)
1	Andhra Pradesh	21.01	34.98	55.99
2	Arunachal Pradesh	0.11	0.29	0.41
3	Assam	1.78	16.37	18.15
4	Bihar	4.79	48.26	53.07
5	Chhattisgarh	4.07	12.79	16.86
6	Delhi	2.41	20.59	23.00
7	Goa	0.41	1.20	1.60
8	Gujarat	13.71	47.44	61.16
9	Haryana	2.78	16.27	19.06
10	Himachal Pradesh	1.13	5.29	6.43
11	Jammu & Kashmir	1.50	9.37	10.88
12	Jharkhand	5.57	19.34	24.91
13	Karnataka	19.73	51.11	70.84
14	Kerala	13.77	30.86	44.64
15	Madhya Pradesh	10.13	38.61	48.80
16	Maharashtra	17.97	72.77	90.77
17	Manipur	1.40	1.52	2.92
18	Megahlaya	0.72	1.19	1.91
19	Mizoram	0.28	0.34	0.62
20	Nagaland	0.59	1.18	1.77
21	Odisha	8.37	24.87	33.26
22	Punjab	4.24	20.55	24.80
23	Rajasthan	8.01	38.31	46.33
24	Sikkim	0.14	0.31	0.45
25	Tamil Nadu	32.27	64.45	96.73
26	Telangana	15.24	24.91	40.16
27	Tripura	0.44	2.51	2.95
28	Uttar Pradesh	27.27	137.92	165.26
29	Uttarakhand	0.69	5.91	6.60
30	West Bengal	43.51	91.95	135.52
31	A & N Islands	0.10	0.29	0.39
32	Chandigarh	0.12	1.17	1.29
33	Dadra & Nagar Haveli	0.07	0.29	0.36
34	Daman & Diu	0.02	0.12	0.14
35	Lakshadweep	0.01	0.02	0.03
36	Puducherry	0.57	1.27	1.84
	ALL	**264.92**	**844.68**	**1109.89**

Table-6: show the maximum number of employments generated by Uttar Pradesh clearly means the maximum number of MSMEs are registered in Uttar Pradesh, the total number of employments generated by it 165.26 out of female employees are27.27 and male employees are 137.92. the second highest number of

employment generated by West Bengal total number of employment generated in West Bengal is 135.52 out of male employees working are 91.95 and females working are 43.51, and least number of employment generated by Lakshadweep its number of employment is 0.03 out of male is 0.02 and female is 0.01, so a maximum number of employment generated by Uttar Pradesh and West Bengal so basically these two countries contribution is higher in GDP.

6.Conclusion

In India, MSMEs play a crucial role, especially in developing countries. Nearly 80% of employment is created by the MSME sector. It provides more job opportunities and helps boost economic growth by contributing to the GDP and national income. It also helps reduce poverty by offering jobs that require less investment in machines and capital. This makes it easier for small businessmen, especially those in rural or urban areas, to start and run their businesses. These businesses also help employ the unemployed, which in turn boosts economic development in India through job creation and contributions to GDP and national income.

References

- Ayyagari, M., Beck, T., &Demirguc-Kunt, A. (2011). Small and medium enterprises across the globe. Small Business Economics, 38(8), 35-54.
- Beck,T., Demirguc-Kunt, A., &Peria, M. S. M. (2011). Bank financing for SMEs around the world: Drivers, obstacles, business models, and lending practices.
- Biswas, Abhijeet. (2015). Impact Of Technology on MSME Sector in India. EPRA International Journal of Economic and Business Review. 3. 131-134.
- Bor J., &Quartey, P. (2010). Issues in SME development in Ghana and South Africa.
- International Research Journal of Finance and Economics, 39, 218-22.
- Gade, Surendar. (2018). MSMEs' Role in Economic Growth a Study on India's Perspective. International Journal of Pure and Applied Mathematics. 118. 1727-1742.
- Ministry of MSME. (2018). Annual Report 2017-18. Government of India.
- Mollick, E. R. (2018). The role of MSMEs in the sustainable economic development of emerging economies. Sustainability, 10(10), 3597.

- Pandit, B., &Bhatnagar, R. (2014). Challenges faced by MSMEs in India: A review.
- Global Journal of Enterprise Information System, 6(1), 46-57.
- Saraswathy, Santha. (2017). Performance Evaluation of Indian MSME Sector.
- Commerce Spectrum, 4(2) 11-19, ISSN 2321 –371X. 5. 11-19.
- Shruti, S., & Singh, P. (2016). Micro, small and medium enterprises (MSMEs) in India: Opportunities, challenges and policy implications. International Journal of Research in Management, Economics and Commerce, 6(6), 71-80.
- Singh, A., &Mehra, S. (2017). The role of government in promoting MSMEs: A study of the Indian experience. Journal of Small Business and Enterprise Development, 24(3), 522537.
- Todaro, Michael P., 1998, Economic Development in the Third World, Sixth Edition, Jakarta: Erlangga.
- World Bank Group. (2018). MSME finance gap: Assessment of the shortfalls and opportunities in financing micro, small, and medium enterprises in emerging markets.

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Impact of Green finance on Sustainable development

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Abstract
Green finance refers to financial activities and investments that promote environmentally sustainable economic growth and development. It is a key component of the transition to a more sustainable development, as it enables the allocation of capital towards activities that contribute to mitigating climate change and reducing other environmental impacts.With the rising challenges of climate pressure and environmental degradation, sustainable development has become an importanttopic of global concern.
Green finance and sustainable development are intricately linked, as green finance plays a significant role in advancing sustainable development goals. Green finance focuses on mobilizing financial resources towards environmentally sustainable projects and initiatives. It not only supports the transition to a low-carbon economy but also fosters innovation, economic growth, and job creation in green industries while enhancing the resilience of financial systems to environmental risks. Moreover, by aligning financial flows with sustainable principles, it contributes to mitigating climate change, protecting biodiversity, and promoting responsible natural resource management, thus fostering a more balanced relationship between economic development and environmental preservation.

Keywords: Green finance, Environmental degradation, Sustainable development, Mitigating, Resilience.

Introduction

The concept of green finance refers to the use of financial instruments and investments to support environmentally sustainable activities, such as renewable energy projects and sustainable infrastructure development. The impact of green finance on sustainability is significant, as it enables the allocation of capital towards activities that contribute to mitigating climate change and reducing other environmental impacts. Green finance is one of the most important components of

transition to a new stage of sustainable development. Green finance offers strategic ways to lower climate risk and enhance environment with the ultimate goal of enhancing the ecological environment and green finance actively promotes the growth of green industries as well as the technological modernization and green transformation of traditional businesses. Therefore, green finance both generates financial gains and preserves the environment.

Objectives

- To examine the effectiveness of Green Finance mechanisms on sustainable development.
- To explore the relationship between green finance and sustainable development.

Research Methodology

This study adopts a descriptive approach and utilizes secondary data sourced from various Government reports published by the Government of India, as well as reports from public and private sector institutions and banks in India.

Literature Review

Bhome and Jha (2013) used a primary survey to investigate bank management, staff, and customers' understanding of green banking practices at the institutional level. According to their findings, green efforts including energy efficiency measures, green credit cards, online and mobile banking, and funding renewable energy projects like solar and wind have been widely adopted.

Green finance fosters economic stability, innovation, and job creation. It drives the clean energy transition and enhances productivity while reducing environmental risks (Sachs et al., 2019; Zhou et al., 2021). Investments in renewable energy and green infrastructure could generate 18 million jobs by 2030 (IEA, 2021). Green economic policies reduce fossil fuel dependence while boosting competitiveness (Sachs & Woo, 2020).

Green finance, a critical aspect of sustainable finance, has experienced significant development over the past two decades. It involves financing investments that offer environmental benefits, especially related to climate change mitigation and adaptation (UNEP FI, 2020). The emergence of green finance can be traced to the increased awareness of environmental risks and the pursuit of sustainable development.

The growing emphasis on environmental protection and resource preservation has shifted organizational priorities toward sustainability. Green finance, which supports projects related to environmental protection, renewable energy, and climate change mitigation, includes aspects like Green Banking, Green Insurance, and Green Bonds. This article explores the opportunities and challenges

of green finance in developing countries like India, offering insights into its potential as a tool for sustainability (B.S.Sushma, 2021).

Impact of Green Finance

Green Finance has a multi-dimensional impact on India's sustainable development. These impacts are in several areas highlighted below:

- **Growth of renewable energy:** The renewable energy sector has been one of the most visibly impacted sectors due to the rise of Green Finance. Wind, solar and hydropower projects have all benefitted largely due to Green Finance. India currently stands fourth in terms of installed renewable energy capacity.
- **Climate resilience and adaptation:** Green Finance has also contributed to enhancing India's climate resilience. Investments in sustainable agriculture, water management and climate-resilient infrastructure have helped communities adapt to changing climatic conditions. For instance, financing for watershed management projects has improved water security in drought-prone areas, while investments in climate-smart agriculture have increased crop productivity and resilience to extreme weather events.
- **Reduction in carbon emissions:** Green Finance has been instrumental in reducing India's carbon footprint. The shift to renewable energy, along with investments in energy efficiency and pollution control, has helped lower greenhouse gas emissions.
- **Biodiversity and ecosystem conservation:** Green finance has played a role in conserving India's rich biodiversity through funding tools like conservation bonds and sustainable forestry funds. This financial assistance has supported protected areas, wildlife reserves, and sustainable land use practices, helping to secure ecosystems that are vital for environmental health and economic resilience.
- **Sustainable Urbanisation:** India's Smart Cities Mission, backed by green finance, and has advanced sustainable urban growth by incorporating renewable energy, waste management, and eco-friendly transportation into urban planning. This funding has enabled cities to adopt green technologies, cut pollution, and enhance residents' quality of life.

Drivers of Green Finance

1. **Government Policies and Incentives**

Governments play a critical role in promoting green finance by implementing policies and incentives that encourage sustainable investments. These include tax incentives, renewable energy subsidies, and carbon pricing mechanisms. Regulations such as the EU's Sustainable Finance Disclosure Regulation (SFDR) aim to enhance transparency and direct capital towards sustainable projects (European Commission, 2021).

2. Investor Demand

Increasing demand from institutional and retail investors for sustainable investment products is a major driver of green finance. As awareness of climate risks and ESG factors grows, investors are seeking opportunities that align with their values and of fer long-term returns (GSIA, 2021).

3. Technological Advancements

Advances in green technologies, such as solar and wind energy, electric vehicles, and energy-efficient buildings, have reduced costs and improved the financial viability of green projects. These technological advancements have made green finance more attractive to investors by enhancing the potential for profitability and scalability (IEA, 2020).

CHALLENGES OF GREEN FINANCE

The challenges of green finance include:

• **Lack of standardized frameworks:** There is a need for universally accepted standards and guidelines for defining and assessing green projects and investments.

• Limited investor awareness: Many investors are not fully aware of the potential benefits and risks associated with green investments, leading to hesitancy in allocating funds.

• **Cost considerations:** Green projects often require higher upfront costs or longer payback periods, which can deter investors focused solely on short-term returns.

• **Availability of data:** Insufficient data on environmental performance and financial returns of green investments makes it difficult for investors to assess their impact and make informed decisions.

• **Regulatory uncertainty:** Inconsistent or inadequate regulatory frameworks related to green finance can create uncertainty and hinder investment flows.

• **Access to finance:** Limited access to finance for green projects, particularly in developing countries, poses a significant barrier to scaling up green investments.

• **Market fragmentation:** Fragmentation within the green finance market, including diverse standards and practices, can impede liquidity and hinder the development of a robust ecosystem.

Conclusion

Green finance plays a key role in the transformation of the global economy. It is not only an engine to promote sustainable development, but also faces a series of challenges. In terms of environment, green finance contributes to global environmental protection by mitigating climate change and promoting the development of clean energy. At the social level, it promotes social justice and inclusive growth and improves social well-being. In terms of economy, green finance promotes innovation and industrial upgrading, and improves the resilience

and sustainability of the economy. Green finance also faces many challenges, including information asymmetry, policy instability, and traditional market concepts. The impact of green finance on sustainable development is profound and multifaceted. By channelling investments towards environmentally-friendly projects, green finance plays a pivotal role in mitigating climate change, reducing greenhouse gas emissions, and promoting sustainable development. It fosters innovation, creates green jobs, and enhances resilience to environmental challenges. Moreover, green finance leverages private sector resources, complementing limited public finance, and driving economic growth while safeguarding the planet for future generations. Through concerted efforts and a unified approach, the integration of green finance principles into the financial system will catalyse sustainable development, ensuring a prosperous and resilient future for all.

References:

- Challenges and Opportunities. The citation provided is in the format of an academic journal article. It refers to the International Journal of Management and Social Sciences Research (IJMSSR), Volume 2, Issue 2, with page numbers 49-53.
- Bihari, S. C., & Pandey, B. (2015). Green banking in India. Journal of Economics and International Finance, 7(1), 17. https://doi.org/10.5897/JEIF2014.0599
- Mohd, S. and Kaushal, V.K., 2018. Green finance: A step towards sustainable development. MUDRA: Journal of Finance and Accounting, 5(1), pp.59-74.
- Chaudhry, N. & Hussain, M. (2023). Nexus of renewable energy, green financing, and sustainable development goals: an empirical investigation. Environmental Science and Pollution Research 30 (20), 58480-58492.
- Mahmood, S., Sun, H., et al. (2024). The Role of Green Finance in Promoting Sustainable Development Goals (SDGs) Through the Mediation Effect of Green Technology Innovation. Environmental Research Communications 6 (10), 105036
- fostering both economic development and sustainability. The citation provided is from the International Journal of Research in Commerce, Economics & Management, volume 3, issue 10, and covers pages 104 to 108.

- Brundtland Commission. (1987). Our common future. Oxford University Press.
- P. Dhoot and S. Awate (2021): Green Financing: An emerging form of sustainable development in India, Vidyabharati International Interdisciplinary Research Journal 12(2) 698-712.

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The Role of Mathematics in Digital Economy

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Abstract:
The he digital economy is works by data technology and innovation, where mathematics is the back bone in enabling its growth and efficiency.
Mathematical methods like algebra, calculus, statistics, and number theory from the back bone of digital system and processes they are applied in areas data analysis cryptography , algorithm , design financial modeling , and artificial intelligence The digital economy mathematics helps in processing large volumes of data to exact meaningful insights, which support decision making in businesses and governments. Statistical methods and probability theory are widely used in machine learning predictive; analytics and risk assessment coding method based number theory ensure online transaction and data protection.
More over mathematical algorithm powers search engines e – commerce platform digital payment and social media system optimization helps improve logistics venations resource allocation and supply chain management as digital technologies continue to evolve the importance of mathematics becomes even more significant in solving complex real world problems
In conclusion mathematics is key enable of the digital economy, providing the took and framework necessary for innovation security and suitable development in a technology driven world.

Key Words: E – Commerce, Information and communication Technology, Digital Payments, Digital Services, Artificial intelligence and big data.

Introduction:

The digital economy refers to economic activities that are based on digital technologies such as the internet computer mobile device world almost every sector including banking, education, health care, e- commerce and communication relies heavily on digital plat forms

Mathematics plays a fundamental role in the development and functioning of the digital economy. It provides the function for technologies such as data analysis, algorithms, artificial intelligence, and cyber security mathematical concept like statistics, probability and algebra of data , make predictions, making a guess for statement about what will happen in the future based on available information data or part experience and support decision –makings means In addition, mathematics help improve efficiency and accuracy in digital systems, for example are methods used to convert readable data into an un readable form to protect information from unauthorized access used to protect online transactions are based on number theory while optimization methods helps business manage resources security and supports growth in the digital economy.

User's of the Mathematical digital economy

1. Consumers **:** Check totals, tans (GST) and cash back while paying digitally.

2. Business and Companies. **:** Calculate total cost revenue and profit.

3. Banks and Financial institutions **:** Calculate exchange rates in international transactions.

4. Government **:** Governments use mathematics to calculate income Expenditure and allocate fund

5. Students and educational institutions: Uses math to track progress, scores and performance in Digital plat forms.

6. Entrepreneurs and startups **:** Uses mathematics to estimate costs revenue, and profit before

Starting a business.

How mathematics is used in the digital economy

Digital systems depend on calculation, algorithms and data analysis.

***Calculation:** used in digital banking and investments

$$A = P(1+r/n$$

Where:

A = Final amount

P = Principal amount

r= Interest rate

n = number of times interest applied per year

***Algorithms how to use**

1. User enters payment amount

2. System verifies uses identity
3. System check bank balance
4. If balance is sufficient – payment is processed.
5. Transaction confirmation is sent.

***Statistic is how to use**

It is used online shopping, social media, and banking app.Mean, median, standard derivation

Average sale = Total sales____
Number of days

Number theory:

It is used UPI , Debit card , Online banking it works depends on rulers theorem , formats theorem essential for digital payment .

Instances:

1. Online education platforms
2. Food delivery apps
3. Online banking
4. Online marketing.

Profits:

1. Job creation in it field
2. Speed Transactions
3. Cost cutoff
4. Transforble in amounts.

These references are commonly used for topic related to digital economy, algorithms technology, which is closely connected with the role of mathematics in digital systems.

Indian Authors References:

- N.Mani Digital Economis.NEW Delhi : New century publications
- Samiksha Shukla , Kritica Bisht, Kapil Tiwari & Shahid Bashir (2023). Data economy in digital age. springer nature
- Dilip Datta (2018).
- Devlopment under dualism and digital divide in twenty-first century india springer singapur.
- Ravikant and Anuradha (2024).
- Indias economic:
- Transfermation : The role of digital finance " Journal ortical on digital eonomy and finance in india "

- Nithin seth (2021)
- Winning in the digital age penguin random house.

Conclusion:

- Mathematic is the backbone of the digital economy.
- Without mathematics the digital economy cannot function efficiently
- It ensures security, automation innovation in digital world.

Reference:

- Organization for economic Co- operation and development (2015). Digital economic outlook parries: OECD Publishing
- Worl bank: world development report (2016). : Digital dividends, Washington, DC.
- Introduction to algorithms by Thomas Carmen, Charles E. Liserson , Ronald L. Rivert and Cliferd stein. MIT Press.
- Kenneth C. Laudon and Carol Guecio Traver (2019) . E – Commerce: Business technology society pearson education 5.Thomas H. Davenport (2014). Big data at work Hardward business review press.

United International Journal Of Multidisciplinary Research (UIJMR)
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The Role of Artificial Intelligence in India's GST System: A Study of Tax Compliance and Fraud Detection

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Abstract

The implementation of the Goods and Services Tax (GST) in India on 1 July 2017 marked a significant transformation in the country's indirect taxation system. By replacing multiple central and state taxes with a unified structure, GST aimed to simplify compliance and create a common national market. However, the digital nature of GST has resulted in the generation of massive volumes of transactional data, making traditional methods of tax administration inadequate. This has led to the increasing adoption of Artificial Intelligence (AI) and Machine Learning (ML) within the GST framework.

This study examines the role of AI in improving tax compliance and detecting fraud in India's GST system. It focuses on the functioning of key AI-based tools such as ADVAIT, BIFA, and NETRA, which are used for data matching, risk assessment, and network analysis. The study is based on secondary data collected from government reports, policy documents, and academic literature. It analyses how AI helps in identifying issues such as fake invoicing, circular trading, and mismatches in Input Tax Credit (ITC) claims.

The findings indicate that AI has significantly enhanced the efficiency and transparency of tax administration. It has enabled real-time monitoring, faster detection of irregularities, and improved revenue protection. At the same time, the study highlights several challenges associated with AI-driven compliance, particularly for Micro, Small, and Medium Enterprises (MSMEs). These include increased compliance burden, working capital constraints, and the problem of false positives generated by automated systems.

The study concludes that while AI has strengthened the GST system, a balanced approach is required to ensure that technology supports, rather than burdens, taxpayers. It suggests the need for a more user-friendly and facilitative system that promotes compliance while addressing practical challenges faced by businesses.

1. Introduction

The Goods and Services Tax (GST), implemented in India on 1 July 2017, marked a major reform in the country's indirect taxation system. It replaced a complex structure of multiple central and state taxes with a unified framework based on the principle of "One Nation, One Tax." By integrating taxes such as VAT, Service Tax, and Excise Duty into a single system, GST aimed to remove the cascading effect of taxation and create a common national market.

A key feature of GST is its strong reliance on technology. The entire system operates through a digital platform managed by the GST Network (GSTN), where activities such as registration, return filing, invoice matching, and tax payments are conducted online. This digital structure has led to the generation of a massive volume of data, including invoices, e-way bills, and returns filed by millions of taxpayers every month.

However, this data-intensive environment has also created new challenges for tax administration. Traditional methods of manual scrutiny and audits are no longer sufficient to monitor such a large and complex system. At the same time, issues such as fake invoicing, circular trading, and wrongful Input Tax Credit (ITC) claims have emerged as major concerns, leading to significant revenue leakages.

To address these challenges, the government has increasingly adopted Artificial Intelligence (AI) and Machine Learning (ML) in GST administration. These technologies are used for tasks such as data matching, anomaly detection, risk profiling, and network analysis. Tools like ADVAIT, BIFA, and NETRA enable authorities to identify suspicious patterns and detect fraud more efficiently than traditional methods.

While the use of AI has improved enforcement and strengthened compliance, it has also raised important concerns. Many businesses, especially Micro, Small, and Medium Enterprises (MSMEs), face difficulties due to strict automated systems, including issues like false notices, working capital blockages, and increased compliance burden.

In this context, this paper aims to examine the role of Artificial Intelligence in India's GST system, focusing on its impact on tax compliance and fraud detection, while also highlighting the challenges associated with its implementation.

1.1 Objectives of the Study

The main objectives of this study are as follows:

1. To examine the role of Artificial Intelligence (AI) in the administration of GST in India.
2. To understand how AI-based tools are used for improving tax compliance and detecting fraud.
3. To analyse the effectiveness of AI systems in identifying issues such as fake invoicing and circular trading.
4. To study the challenges faced by taxpayers, especially MSMEs, due to AI-driven compliance mechanisms.
5. To suggest measures for making AI-based tax administration more balanced and taxpayer-friendly.

1.2 Scope of the Study

This study focuses on the application of Artificial Intelligence in the Goods and Services Tax (GST) system in India. It covers the use of AI tools such as ADVAIT, BIFA, and NETRA in tax administration, particularly in the areas of fraud detection and compliance monitoring.

The study is based on secondary data collected from government reports, policy documents, and published research. It mainly examines developments from the introduction of GST in 2017 up to recent years. The analysis is limited to the Indian context and does not include a detailed comparison with other countries.

1.3 Limitations of the Study

This study has certain limitations:

1. The analysis is based entirely on secondary data, as access to primary data and internal government databases is restricted.
2. The study does not include statistical testing or empirical modelling due to limited availability of detailed datasets.
3. The functioning of AI tools such as ADVAIT and NETRA is discussed based on publicly available information, which may not fully reflect their internal algorithms.
4. The findings are general in nature and may not capture sector-specific variations in GST compliance.
5. The rapidly evolving nature of AI and tax policies means that some observations may change over time.

1.4 Research Questions

This study is guided by the following research questions:

1. How is Artificial Intelligence used in the administration of GST in India?
2. To what extent has AI improved tax compliance and fraud detection?
3. What challenges do taxpayers face due to AI-driven systems?
4. How can AI be used more effectively to balance enforcement and ease of compliance?

2. Literature Review

The increasing use of Artificial Intelligence (AI) in taxation has attracted significant attention in recent academic and policy discussions. Traditional theories of tax compliance, such as the model developed by Allingham and Sandmo (1972), explain tax evasion as a rational decision based on the probability of detection and the severity of penalties. In conventional systems, limited monitoring capacity resulted in lower detection rates, allowing tax evasion to persist.

With the introduction of digital tax systems, this framework has evolved. Studies suggest that AI and data analytics have significantly increased the probability of detection by enabling continuous monitoring of transactions. In the Indian context, researchers such as Rao (2019) have highlighted that GST represents a major structural reform that combines taxation with digital

infrastructure, thereby improving transparency and reducing inefficiencies in the tax system.

Recent literature also focuses on the role of AI in identifying complex fraud patterns. Garg (2024) observes that machine learning techniques can effectively detect anomalies such as fake invoicing and circular trading by analysing large datasets and identifying irregular behavioural patterns. Similarly, reports by government bodies like the Central Board of Indirect Taxes and Customs (CBIC) and the Directorate General of GST Intelligence (DGGI) indicate that tools such as ADVAIT and BIFA have strengthened enforcement by enabling data-driven decision-making.

At the same time, some studies raise concerns about the increasing reliance on algorithmic governance. Sharma and Iyer (2021) argue that while AI improves efficiency, it may also lead to issues such as reduced human intervention, false positives, and compliance burdens on small businesses. The literature points out that strict automated systems may not always account for genuine business variations, especially in the case of Micro, Small, and Medium Enterprises (MSMEs).

Overall, the existing literature shows that AI has transformed tax administration by enhancing fraud detection and compliance monitoring. However, it also highlights the need for a balanced approach that combines technological efficiency with fairness and flexibility in implementation.

3. Research Methodology

This study adopts a descriptive and analytical research approach to examine the role of Artificial Intelligence (AI) in India's GST system. The research is primarily based on secondary data collected from various reliable sources.

The data for the study has been gathered from government reports, official publications of the Central Board of Indirect Taxes and Customs (CBIC), Directorate General of GST Intelligence (DGGI), policy documents, and relevant academic literature. These sources provide insights into the functioning of AI-based tools such as ADVAIT, BIFA, and NETRA in tax administration.

The study focuses on understanding how AI is used for fraud detection, risk assessment, and compliance monitoring. It also analyses key issues such as fake

invoicing, circular trading, and Input Tax Credit (ITC) mismatches within the GST framework.

An analytical approach is used to interpret the available data and identify patterns related to the effectiveness of AI in improving tax compliance. In addition, the study examines the challenges faced by taxpayers, especially Micro, Small, and Medium Enterprises (MSMEs), due to automated systems.

Since the study relies on secondary data, no primary survey or fieldwork has been conducted. The findings are therefore based on existing reports and published information, and are interpreted in a qualitative manner.

4. Analysis of Artificial Intelligence in GST Administration

The integration of Artificial Intelligence (AI) into India's Goods and Services Tax (GST) system represents a significant shift from traditional, manual tax administration to a data-driven and predictive governance framework. The GST ecosystem, built on the GST Network (GSTN), generates massive volumes of transactional data through invoices, e-way bills, and periodic returns. In such an environment, AI enables continuous monitoring, real-time validation, and targeted enforcement, thereby enhancing both efficiency and compliance (Ministry of Finance, 2024–25).

4.1 AI-Based Data Matching and Compliance Monitoring

A core application of AI in GST is automated data matching across multiple returns, primarily GSTR-1 (outward supplies), GSTR-2B (auto-drafted input tax credit statement), and GSTR-3B (summary return). AI systems continuously reconcile these datasets to ensure that the Input Tax Credit (ITC) claimed by a buyer corresponds to the tax reported and paid by the seller. Any discrepancy is immediately flagged, reducing the scope for wrongful ITC claims and improving transparency (CBIC, 2023).

The introduction of the Invoice Management System (IMS) in 2024 has further strengthened this mechanism by allowing buyers to verify, accept, or reject invoices in a structured manner. This has tightened the compliance loop and minimized mismatches at the source.

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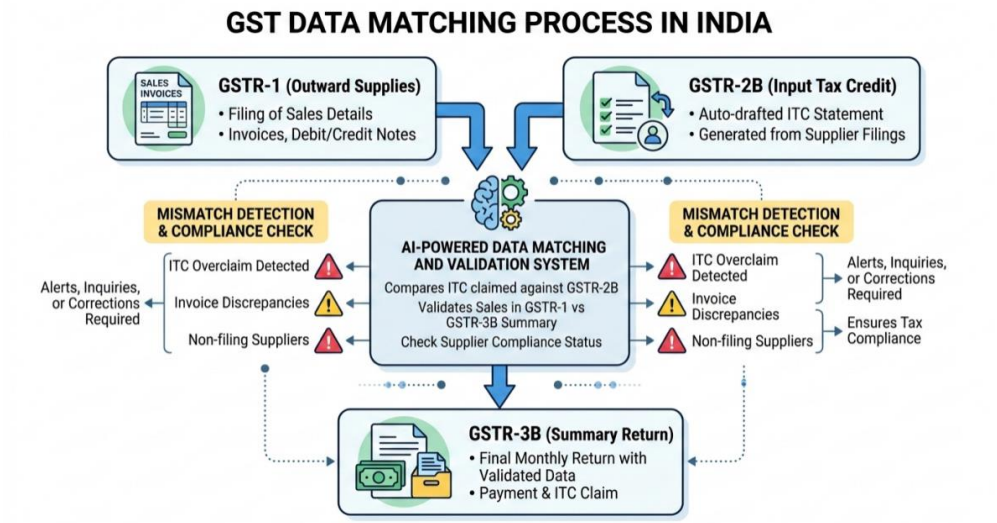


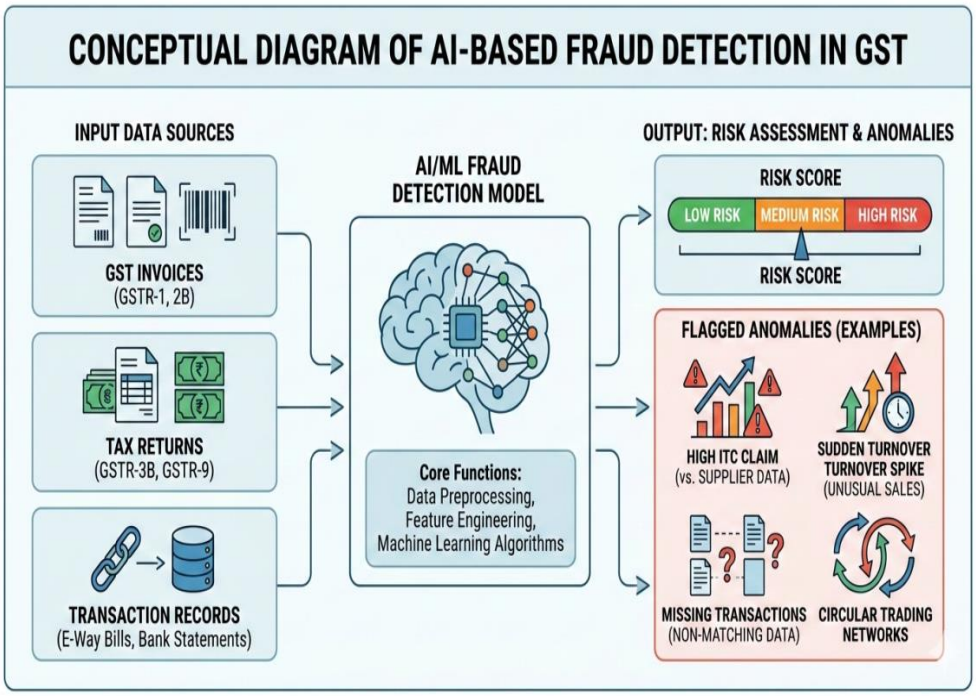
4.2 AI in Fraud Detection and Risk Assessment

AI-driven systems have transformed fraud detection by shifting from reactive audits to proactive and predictive analytics. Machine learning models analyse large datasets to identify anomalies and assign risk scores to taxpayers based on behavioural patterns, transaction history, and network linkages (Garg, 2024).

Key indicators used in fraud detection include:

- High turnover with negligible physical infrastructure
- Absence of e-way bills despite reported sales
- Circular fund flows in banking transactions
- Shared digital identifiers such as IP addresses and contact details

These indicators help identify fraudulent activities such as fake invoicing and shell company operations. The system enables authorities to prioritize high-risk cases for investigation, thereby improving enforcement efficiency.



4.3 Role of Advanced AI Tools (ADVAIT, BIFA, NETRA)

The GST administration employs several advanced AI tools for data-driven enforcement:

- ✧ **BIFA (Business Intelligence and Fraud Analytics):** Integrates data from GST returns, e-way bills, and customs to perform large-scale reconciliation and detect mismatches in real time.
- ✧ **ADVAIT (Advanced Analytics in Indirect Taxation):** Uses predictive analytics to create taxpayer profiles and assign risk scores for targeted scrutiny.
- ✧ **NETRA (Network Analysis Tool):** Applies graph analytics to map relationships between entities and identify complex fraud networks such as circular trading.

These tools enable a transition from random audits to targeted, intelligence-based investigations, significantly improving detection capabilities (DGGI, 2024).

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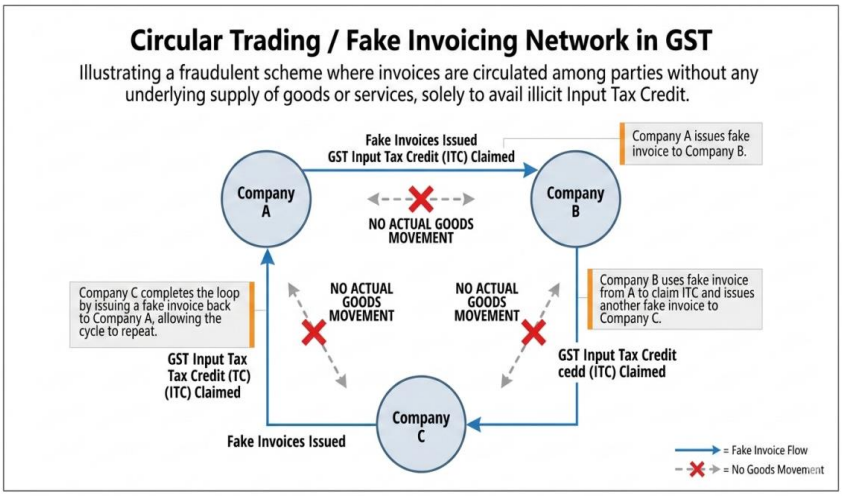

4.4 Use of AI in Network Analysis and Fraud Identification

AI-based network analysis plays a crucial role in identifying circular trading, where multiple entities generate fake invoices among themselves without actual movement of goods. By mapping transaction linkages, tools like NETRA can detect closed loops and interconnected entities involved in such fraudulent schemes.

This approach allows authorities to dismantle entire fraud networks rather than addressing isolated cases, thereby enhancing the effectiveness of enforcement actions.

4.5 Impact of AI on Tax Administration Efficiency

The adoption of AI has significantly improved the efficiency, speed, and accuracy of GST administration. Tasks that previously required manual verification are now automated, enabling real-time monitoring and faster processing of returns. AI has also reduced human errors and enhanced transparency in tax reporting.

Table 1: AI-Detected GST Evasion in India

Period	Cases Detected	Amount Involved
Apr–Dec 2023	14,597	₹18,000 crore

Apr–Dec 2024 72,393 ₹1.88 lakh crore

Source: Ministry of Finance (2024–25); Economic Times (2024); The Hindu (2025)

The data indicates a substantial increase in both the number of cases detected and the value of tax evasion identified, reflecting the growing effectiveness of AI-driven enforcement mechanisms. Additionally, AI-based special drives have led to the identification of over 90,000 non-existing GST registrations, preventing significant revenue leakages.

Overall, the analysis demonstrates that AI has become an indispensable component of modern tax administration in India. While it has strengthened compliance and improved fraud detection, its broader impact on taxpayers—particularly MSMEs—necessitates a balanced and supportive implementation approach.

5. Findings

Based on the analysis of Artificial Intelligence (AI) in India's GST system, the following key findings have been identified:

5.1 Improvement in Tax Compliance and Fraud Detection

The use of AI has significantly enhanced the ability of tax authorities to detect fraud and ensure compliance. Automated data matching and real-time monitoring have reduced tax evasion, particularly in cases such as fake invoicing and circular trading. Recent data indicates that GST authorities detected evasion of over ₹1.88 lakh crore in 72,393 cases during 2024, highlighting the effectiveness of AI-driven enforcement (Ministry of Finance, 2024–25).

5.2 Shift from Manual to Automated Tax Administration

The GST system has transitioned from a manual, audit-based approach to an automated and data-driven framework. AI enables continuous monitoring of transactions, replacing periodic inspections with system-triggered scrutiny. This shift has increased the probability of detection and strengthened compliance mechanisms.

5.3 Increased Efficiency and Transparency

AI has significantly reduced the time required for return processing and data verification. It has minimized human errors and improved the accuracy of tax reporting. The integration of systems such as e-invoicing and data matching has enhanced transparency by ensuring that transactions are properly recorded and verified.

5.4 Challenges Faced by MSMEs

Despite its benefits, AI-driven compliance has created significant challenges for Micro, Small, and Medium Enterprises (MSMEs). Studies indicate that small businesses spend approximately 20–28 hours per month managing GST compliance, leading to increased operational costs and dependency on external support.

5.5 Issue of False Positives and Automated Notices

AI systems sometimes generate false positives by flagging genuine transactions as suspicious due to minor discrepancies. This results in automated notices and actions such as blocking of Input Tax Credit under Rule 86A, creating financial stress and compliance burden for businesses.

5.6 Digital Divide and Infrastructure Limitations

The effectiveness of AI in GST is dependent on digital infrastructure and user capability. Many businesses, particularly in rural and semi-urban areas, face challenges such as poor internet connectivity and lack of digital literacy, creating inequalities in compliance capacity.

5.7 Need for a Balanced and Supportive Approach

The findings suggest that while AI has strengthened tax enforcement, there is a need for a balanced approach. The system should not only focus on detection but also support taxpayers through simplified compliance mechanisms, awareness programs, and user-friendly tools.

5.8 Emergence of Predictive Governance

AI has transformed GST administration from a reactive system to a predictive governance model. By analysing patterns and behaviour, the system can identify risks before fraud occurs, marking a significant evolution in tax administration.

Overall, AI has transformed GST administration by improving efficiency, transparency, and fraud detection. However, it has also introduced structural challenges that require a balanced and inclusive policy approach to ensure ease of compliance for all taxpayers.

6. Recommendations

Based on the findings of the study, the following suggestions are proposed to improve the effectiveness of Artificial Intelligence (AI) in the GST system:

6.1 Adoption of a Supportive AI Approach

The GST system should move from a purely enforcement-based approach to a more supportive and facilitative model. AI should be used not only to detect errors but also to guide taxpayers in correcting them before filing returns.

6.2 Introduction of Tolerance Limits

Small mismatches and minor clerical errors should not automatically trigger penalties or notices. Introducing tolerance limits for minor discrepancies can reduce unnecessary compliance burden, especially for MSMEs.

6.3 Improvement in Grievance Redressal System

There should be a faster and more accessible mechanism to resolve issues caused by automated notices or system errors. Human intervention should be available in cases where AI-generated alerts are incorrect.

6.4 Digital Literacy and Awareness Programs

The government should promote digital literacy among taxpayers, particularly MSMEs. Training programs and awareness initiatives can help businesses better understand and adapt to AI-based GST systems.

6.5 Development of User-Friendly Tools

Providing free or low-cost AI-based tools on the GST portal can help small businesses manage compliance more effectively without relying on expensive private software.

6.6 Strengthening Digital Infrastructure

Improving internet connectivity and digital infrastructure, especially in rural and semi-urban areas, is essential for the smooth functioning of AI-driven tax systems.

7. Conclusion

The integration of Artificial Intelligence (AI) into India's GST system has significantly transformed the nature of tax administration. By enabling automated data matching, real-time monitoring, and advanced fraud detection, AI has improved efficiency, transparency, and revenue protection. Tools such as ADVAIT, BIFA, and NETRA have strengthened the government's ability to identify tax evasion and ensure better compliance.

However, the study also highlights that the increasing reliance on AI has created new challenges, particularly for Micro, Small, and Medium Enterprises (MSMEs). Issues such as strict compliance requirements, false positives, and lack of digital awareness have added to the burden on small businesses.

Therefore, while AI has proven to be a powerful tool in modern tax administration, its implementation must be balanced with the needs of taxpayers. A more supportive and user-friendly approach, combined with improved infrastructure and awareness, is essential for achieving the full potential of AI in GST.

In conclusion, Artificial Intelligence has the capability to make the GST system more efficient and transparent, but its success depends on ensuring that it promotes ease of compliance along with effective enforcement.

References

- Allingham, M. G., & Sandmo, A. (1972). Income tax evasion: A theoretical analysis. *Journal of Public Economics, 1*(3–4), 323–338.
- Central Board of Indirect Taxes and Customs (CBIC). (2023). *Project ADVAIT: Enhancing data-driven tax policy and administration*. Government of India.
- Directorate General of GST Intelligence (DGGI). (2024). *Annual report on GST evasion and enforcement*. Government of India.
- Garg, R. (2024). The impact of artificial intelligence on indirect taxation in developing economies. *Journal of Policy Modeling*.
- Goods and Services Tax Network (GSTN). (2023). *GST technology and data analytics framework*. GST Council Secretariat.
- Ministry of Finance. (2025). *Statement on GST fraud and fake invoicing cases*. Government of India.
- NITI Aayog. (2018). *National strategy for artificial intelligence*. Government of India.
- Rao, M. G. (2019). *Goods and services tax in India: Progress, performance, and prospects*. National Institute of Public Finance and Policy.

- Press Information Bureau (PIB). (2023). Use of AI and data analytics in tax administration. Retrieved from https://www.pib.gov.in
- ClearTax. (2025). AI in GST: Role, benefits, and ITC management. Retrieved from https://cleartax.in
- EY India. (2025). The rise of AI in delivering smarter tax solutions. Retrieved from https://www.ey.com

United International Journal Of Multidisciplinary Research (UIJMR)
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Women Entrepreneurship in MSMEs and Employment Opportunities in Telangana

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Abstract

Women entrepreneurship has emerged as a significant driver of economic development and employment generation in India. The Micro, Small and Medium Enterprises (MSME) sector provides a vital platform for women to start and manage enterprises with relatively low capital and flexible operational structures. Telangana has made notable progress in promoting women entrepreneurship through policy initiatives, institutional support, and skill development programs. Government initiatives such as WE-Hub, MSME policy incentives, and entrepreneurship training programs have helped increase women's participation in business activities.According to recent data, Telangana has **58,644 registered women entrepreneurs on the Udyam portal**, representing **3.1 women entrepreneurs per 1,000 women** in the state. Women-owned enterprises constitute **7.85% of total MSMEs in Telangana**, placing the state among the **top three in India** for women-led MSMEs. These enterprises are primarily concentrated in sectors such as food processing, textiles, handicrafts, retail trade, and service industries. Women-led MSMEs contribute significantly to employment generation by creating job opportunities for both skilled and semi-skilled workers, particularly in rural and semi-urban areas.However, despite these achievements, women entrepreneurs continue to face several challenges, including limited access to finance, lack of technical knowledge, market constraints, and socio-cultural barriers. The purpose of this study is to examine the role of women entrepreneurship in the MSME sector and its contribution to employment opportunities in Telangana. The study also analyzes government support systems, growth trends, and challenges faced by women entrepreneurs. The research concludes that strengthening financial support, improving entrepreneurial training, and promoting digital marketing platforms can

significantly enhance women entrepreneurship and employment generation in Telangana.

Keywords: Women Entrepreneurship, MSMEs, Employment Generation, Telangana, Economic Empowerment, Women-led Enterprises.

Introduction

Women entrepreneurship refers to the process in which women initiate, organize, and manage business enterprises independently or collectively. In recent decades, women have increasingly participated in entrepreneurial activities, contributing significantly to economic growth and employment generation.The MSME sector plays a crucial role in India's economic development by contributing to industrial output, exports, and employment creation. It is particularly important for inclusive growth because it allows individuals with limited resources to start small businesses. Telangana has emerged as a progressive state in promoting women entrepreneurship. The government has introduced several initiatives such as WE-Hub, financial incentives, skill development programs, and incubation centers to encourage women to establish enterprises. These initiatives have increased women's participation in economic activities and improved employment opportunities. Women-owned MSMEs are actively involved in sectors such as manufacturing, textiles, food processing, handicrafts, and service industries. These enterprises provide employment opportunities to women, particularly in rural areas, thereby promoting economic empowerment and social development.

Review of Literature

- **Biswas (2021)** examined the relationship between female ownership and innovation in Indian firms and found that enterprises with female ownership show higher levels of innovation and productivity.
- **NITI Aayog (2022)** reported that women-owned enterprises play a crucial role in promoting inclusive economic growth and employment generation in India.

- **MSME Annual Report (2023)** highlighted that women entrepreneurs contribute significantly to economic development and poverty reduction through small business initiatives.
- **Times of India (2024)** reported that Telangana ranks among the top states in India in terms of women-led MSMEs, indicating strong policy support for women entrepreneurship.
- **Women Entrepreneurs Review (2024)** noted that despite government initiatives, women entrepreneurs in Telangana still face challenges such as limited financial support and lack of awareness about funding schemes.

These studies highlight the importance of promoting women entrepreneurship to enhance employment opportunities and economic growth.

Hypothesis

- H_0: Women entrepreneurship in MSMEs does not significantly contribute to employment opportunities in Telangana.
- H_1: Women entrepreneurship in MSMEs significantly contributes to employment opportunities in Telangana.

Need for the Study

- To understand the growing role of women entrepreneurs in the MSME sector.
- To examine employment opportunities generated by women-led enterprises.
- To analyze the impact of government policies on women entrepreneurship in Telangana.
- To identify challenges faced by women entrepreneurs and suggest policy improvements.

Objectives of the Study

- To study the role of women entrepreneurship in MSMEs.
- To analyze employment opportunities created by women-owned enterprises in Telangana.
- To examine government initiatives promoting women entrepreneurship.
- To identify challenges and suggest measures to improve women entrepreneurship.

Research Methodology

Research Design: Descriptive research design

Sources of Data:

- Secondary data collected from MSME annual reports
- NITI Aayog reports
- Government of Telangana publications
- Journals, articles, and newspapers

Tools of Analysis:

- Percentage analysis
- Tabular analysis
- Descriptive interpretation

Data Analysis and Interpretation

Table 1: Women Entrepreneurship in Telangana MSMEs

Indicator	Data
Total women entrepreneurs (Udyam Portal)	58,644
Female population	1.88 crore
Women entrepreneurs per 1000 women	3.1
Share of women-owned MSMEs	7.85%
National ranking	Top 3 states

Source: Udyam Portal, NITI Aayog Reports

Interpretation:

The data indicates that Telangana has a growing ecosystem for women entrepreneurship. The presence of more than 58,000 women entrepreneurs highlights the increasing participation of women in the MSME sector.

Table 2: Female Labour Participation in Telangana

Year	Female Labour Participation
2017–18	22%
2023–24	40.3%

Source: Telangana Government Reports

Interpretation:

Women's participation in the workforce has increased significantly in Telangana, indicating the positive impact of entrepreneurship and employment policies.

Findings

- Telangana ranks among the top states in India for women-owned MSMEs.
- Women entrepreneurs play a major role in employment generation.
- Most women enterprises operate in the micro and small sectors.
- Government initiatives such as WE-Hub and MSME incentives encourage women entrepreneurship.
- Financial constraints, lack of marketing skills, and limited awareness of schemes remain major challenges.

Suggestions

- Increase financial assistance and easy credit facilities for women entrepreneurs.
- Provide specialized training in business management and digital marketing.
- Promote women-specific industrial parks and incubation centers.
- Improve awareness about government schemes for MSMEs.
- Encourage networking platforms and mentorship programs for women entrepreneurs.

Conclusion

Women entrepreneurship in the MSME sector has become a powerful instrument for employment generation and economic empowerment in Telangana. The increasing number of women-owned enterprises reflects the positive impact of government policies and support systems. Women entrepreneurs not only create employment opportunities but also contribute to economic development, poverty reduction, and social transformation. Despite these achievements, several challenges such as limited financial access, lack of technical skills, and market barriers continue to hinder the growth of women-led enterprises. Addressing these issues through better policy implementation, financial support, and skill development programs can further strengthen women entrepreneurship. Promoting women entrepreneurship in MSMEs will play a crucial role in achieving inclusive and sustainable economic growth in Telangana.

Bibliography

- Biswas, S. (2021). *Female Ownership and Firm Innovation in India.*
  Ministry of MSME (2023). *Annual Report.*
- NITI Aayog (2022). *Women Entrepreneurship in India.*
- Government of Telangana MSME Policy Reports.

References

- Ministry of MSME. Annual Report 2022–23.
- NITI Aayog Report on Women Entrepreneurship.
- Udyam Registration Portal Data.
- Telangana Government MSME Policy Documents.
- Times of India – Women Entrepreneurs in Telangana

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Aligning Service Promises and Delivery: A Strategic Analysis of the Service Marketing Triangle in Modern Service Organizations

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The global economy is increasingly dominated by the service sector, which requires specialized marketing strategies due to the unique characteristics of services such as intangibility, inseparability, variability, and perishability. The **Service Marketing Triangle** provides a strategic framework that integrates three critical relationships—external marketing, internal marketing, and interactive marketing—to ensure alignment between service promises and actual service delivery. This study examines the theoretical foundations and practical relevance of the Service Marketing Triangle in enhancing service quality and customer satisfaction.

External marketing focuses on communicating value propositions and setting realistic customer expectations through various promotional strategies. Internal marketing emphasizes empowering employees through training, motivation, and organizational support so they can effectively deliver the promised services. Interactive marketing represents the direct interactions between employees and customers during service encounters, where the actual service experience is created.

Drawing insights from multiple service industries such as hospitality, banking, healthcare, education, and retail, the study highlights how successful organizations integrate these three dimensions to build trust, enhance service quality, and foster long-term customer relationships. The findings suggest that organizations that strategically coordinate external, internal, and interactive marketing can achieve

sustainable competitive advantage and improved customer loyalty in highly competitive service environments.

Keywords: Service Marketing Triangle; External Marketing; Internal Marketing; Interactive Marketing; Service Quality; Customer Experience; Relationship Marketing; Service Management.

1. Introduction

Services dominate the global economy, contributing over 70% to GDP in 2024, according to the World Bank, with sectors like hospitality, banking, education, and healthcare driving this growth. Unlike tangible products, services are characterized by intangibility (cannot be touched), inseparability (produced and consumed simultaneously), variability (dependent on provider and context), and perishability (cannot be stored). These traits necessitate specialized marketing strategies that go beyond traditional product-focused approaches. The Service Marketing Triangle, pioneered by Christian Grönroos and refined by scholars like Philip Kotler, Leonard Berry, and Valarie Zeithaml, is a cornerstone framework that addresses these challenges by integrating three critical relationships: External Marketing (organization to customers), Internal Marketing (organization to employees), and Interactive Marketing (employees to customers). Relationship Marketing serves as an overarching philosophy, fostering long-term customer loyalty and trust.

The triangle emphasizes the alignment of promises made to customers with the performance delivered, ensuring service quality and competitive advantage. For Business management students, understanding the triangle is essential for navigating the complexities of service-dominated markets, where customer perceptions and employee performance are paramount. This chapter provides a comprehensive exploration of the triangle's components, delving into their theoretical foundations, stakeholder dynamics, and practical applications across industries. Through detailed frameworks, real-world case studies, comparative

analyses, global perspectives, and pedagogical tools, we aim to equip future leaders with the knowledge and skills to orchestrate service excellence in diverse contexts.

The chapter also addresses contemporary challenges, such as technological disruption, cultural influences, and ethical considerations, which shape the triangle's application in 2025. For instance, the rise of artificial intelligence (AI) and big data analytics has transformed how firms craft external promises, train employees, and personalize customer interactions. Similarly, globalization demands culturally sensitive marketing strategies, while ethical concerns like data privacy and employee welfare require careful navigation. By the end of this chapter, students will have a nuanced understanding of how to leverage the Service Marketing Triangle to create value, enhance customer satisfaction, and drive organizational success.

Objectives of the Study

1. To examine the conceptual and theoretical foundations of the Service Marketing Triangle and its role in aligning service promises with actual service delivery in modern service organizations.
2. To analyze the roles of external marketing, internal marketing, and interactive marketing in enhancing service quality, customer satisfaction, and employee engagement across service industries.
3. To evaluate how the integration of the Service Marketing Triangle contributes to sustainable competitive advantage and long-term customer relationship management in contemporary service environments.

2. Theoretical Foundations of the Service Marketing Triangle

The Service Marketing Triangle is grounded in services marketing theories that address the unique challenges of intangible offerings. The SERVQUAL model by Parasuraman, Zeithaml, and Berry (1988) is a key foundation, identifying five gaps in service quality: knowledge (misunderstanding customer needs), standards (inadequate service specifications), delivery (failure to meet standards), communication (overpromising), and perception (customer dissatisfaction). The triangle mitigates these gaps by aligning organizational strategies with employee

capabilities and customer expectations. Grönroos's (1984) service quality model further distinguishes between technical quality (what is delivered, e.g., a successful surgery) and functional quality (how it is delivered, e.g., empathetic patient care), both of which are central to the triangle's components.

Kotler's (1994) concept of employees as "part-time marketers" underscores the importance of internal marketing in enabling frontline staff to deliver on external promises. Berry's (1983) work on Relationship Marketing shifts the focus from transactional exchanges to long-term customer engagement, emphasizing trust and mutual value creation. These theories collectively highlight the triangle's holistic approach, integrating marketing, human resources, and operations to achieve service excellence.

2.1 Evolution of the Triangle

The triangle emerged in the 1980s as services marketing gained academic and practical prominence. Early marketing theories, rooted in goods-centric models like the 4Ps (Product, Price, Place, Promotion), were ill-suited for services due to their intangible nature. Grönroos's seminal work introduced the triangle to address this gap, emphasizing internal marketing's role in equipping employees to deliver consistent service. In the 1990s, the rise of customer relationship management (CRM) systems led to the integration of Relationship Marketing, with scholars like Reichheld (1996) highlighting the financial benefits of customer retention (e.g., a 5% increase in retention can boost profits by 25–95%).

The 21st century brought digital transformation, with technologies like AI, machine learning, and big data analytics enhancing the triangle's application. For example, AI-driven personalization improves external marketing precision, while e-learning platforms streamline internal training. The triangle has also adapted to globalized markets, where cultural nuances (e.g., high-context communication in Asia) shape service delivery. In 2025, the triangle remains a dynamic framework, addressing challenges like sustainability, gig economy workforce dynamics, and ethical data use.

2.2 Conceptual Framework

The Service Marketing Triangle is a visual model that illustrates the interconnected roles of the organization, employees, and customers. [Insert Diagram: In Word, use SmartArt or Shapes to create a triangle. Place "Organization" at the top vertex, "Employees" at the bottom-left vertex, and "Customers" at the bottom-right vertex. Draw arrows labeled "External Marketing" (Organization to Customers), "Internal Marketing" (Organization to Employees), and "Interactive Marketing" (Employees to Customers). Enclose the triangle in a dashed circle labeled "Relationship Marketing." Caption: "Figure 1: The Service Marketing Triangle."]

This framework underscores the need for alignment across all three relationships. External Marketing sets expectations through promises, Internal Marketing ensures employees can fulfill those promises, and Interactive Marketing delivers the service at the point of contact. Relationship Marketing integrates these efforts to build enduring customer loyalty, creating a virtuous cycle of trust and value.

3. Components of the Service Marketing Triangle

3.1 External Marketing: Making Promises

External marketing refers to an organization's outward-facing communication efforts aimed at informing, persuading, and attracting customers by making value promises about services. It represents the first interaction between the service provider and potential customers, shaping expectations and perceptions. Within the **Service Marketing Triangle**, external marketing defines the relationship between the company and the customer by communicating credible and achievable service promises.

3.1.1 Core Purpose of External Marketing: The primary objectives of external marketing include establishing brand identity, generating demand, setting realistic expectations, building trust and credibility, and differentiating the organization from competitors. Because services are intangible, customers rely heavily on marketing communication before purchasing; therefore, organizations must provide clear,

honest, and consistent messages that can later be fulfilled through internal and interactive marketing.

3.1.2 Tools of External Marketing: Organizations use various tools to communicate service promises. **Traditional media** includes advertising (TV, radio, newspapers, billboards), sales promotions (discounts, offers, free trials), and public relations activities such as press releases and sponsorships. **Digital channels** involve social media campaigns (Instagram, Facebook, LinkedIn), search engine marketing (SEO and paid ads), email marketing, and influencer collaborations. Additionally, **service branding and positioning**—through taglines, visual identity, testimonials, awards, and certifications—help shape customer perceptions. For example, **O2 Spa** uses luxury visuals and calming language to convey a premium service experience.

3.1.3 Risks of Overpromising: A key risk in external marketing is exaggerating service promises. When actual service delivery fails to meet advertised expectations, it results in negative word-of-mouth, poor reviews, loss of credibility, reduced repeat business, and lowered employee morale. For instance, a broadband provider promising "lightning-fast internet speeds" may face backlash if outages occur frequently.

3.1.4 Theoretical Foundations: External marketing is grounded in **expectancy-disconfirmation theory (Oliver, 1980)**, which states that customer satisfaction depends on the gap between expectations and perceived performance. Positive disconfirmation increases satisfaction, while negative disconfirmation causes dissatisfaction. Effective strategies also rely on **segmentation, targeting, and positioning (STP)** to tailor messages to specific customer groups. For example, **Rolex** targets high-net-worth customers with exclusivity messaging, while **Walmart** emphasizes affordability and accessibility.

3.1.5 Role of Stakeholders: External marketing effectiveness depends on three key stakeholders:

- **Organization:** Conducts market research, designs campaigns, and establishes brand positioning. For example, a bank targeting millennial may launch a mobile banking app promoted through a "Banking on the Go" campaign.
- **Employees:** Reinforce service promises through service delivery, communication behavior, and feedback from customer interactions. For instance, luxury hotel staff must demonstrate personalized service to fulfil the brand promise of refined hospitality.
- **Customers:** Actively shape brand perception by interpreting marketing messages, sharing experiences through reviews and social media, and providing feedback that influences future strategies.

3.1.6 Industry Applications: External marketing strategies vary across sectors:

- **Hospitality:** Marriott's "Travel Brilliantly" campaign promotes personalized experiences. Its **Bonvoy loyalty program retains about 60% of guests** and contributes to **over $15 billion annual revenue**.
- **Banking:** HSBC's "Together We Thrive" campaign focuses on global banking services, helping the bank open **10 million new global accounts in 2024**.
- **Education:** Harvard's campaigns attract **40,000 applicants annually** despite a **3.6% acceptance rate**, reinforcing its elite reputation.
- **Healthcare:** Cleveland Clinic uses content marketing to educate patients, reaching **50 million viewers annually** through digital platforms.
- **Retail:** Amazon's Prime Day campaigns generated **250 million orders in 2024**, highlighting the power of large-scale promotional strategies.

3.1.7 Challenges in External Marketing: Organizations face several challenges:

- **Overpromising:** According to **IATA (2024)**, up to **30% of flights face delays globally**, demonstrating the risks of unrealistic service claims.
- **Market Saturation: Nielsen (2024)** reports that **80% of consumers ignore digital ads**, reducing campaign effectiveness.

- **Cultural Misalignment:** Marketing messages that emphasize individualism may fail in collectivist cultures in Asia or the Middle East.

3.1.8: Strategies to Overcome Challenges: Organizations can address these challenges through:

- **Realistic and transparent messaging**, as practiced by **Southwest Airlines**, which emphasizes clear communication rather than exaggerated promises.
- **Omnichannel integration**, combining social media, television, websites, and interactive campaigns to improve engagement.
- **Cultural adaptation and localization**, such as **McDonald's adapting menus and campaigns in India** to align with local cultural preferences.

3.1.9 Holistic Approach: A holistic approach to external marketing requires embedding customer-centricity, transparency, technological integration, and cultural intelligence into marketing strategies. By aligning promises with actual service capabilities, organizations can strengthen brand equity, enhance customer satisfaction, and build long-term loyalty.

3.2 Internal Marketing: Enabling Promises

Internal Marketing: Enabling Promises Through Employee Engagement focuses on empowering employees so that the promises made through external marketing can be effectively delivered. It treats employees as **"internal customers"** who must be motivated, trained, and aligned with the organization's service vision to ensure consistent and high-quality service experiences.

3.2.1 Concept of Internal Marketing: Internal marketing is a strategic human resource approach ensuring that employees understand the service promises communicated to customers, possess the necessary capabilities and motivation to fulfil them, and feel valued as part of the organizational mission. It therefore bridges the gap between **service promises and actual service delivery** through employee behavior and performance.

3.2.2 Core Components of Internal Marketing: Internal marketing involves several key elements:

1. **Recruitment and Selection:** Organizations hire individuals who align with company culture and service values, often using behavioural interviews, role plays, and realistic job previews. For example, **Ritz-Carlton** recruits' employees who demonstrate strong hospitality orientation.
2. **Training and Development:** Employees receive both technical and interpersonal training, including customer service skills, product knowledge, problem-solving, and emotional intelligence. Continuous learning enables adaptation to evolving technologies. **Starbucks**, for instance, invests heavily in barista training to maintain service consistency.
3. **Empowerment and Autonomy:** Employees are encouraged to make decisions independently to address customer needs and resolve service issues quickly. **Southwest Airlines** empowers flight attendants to resolve passenger issues without managerial approval.
4. **Performance Management and Incentives:** Organizations use appraisal systems tied to service quality and customer satisfaction. Recognition programs motivate employees; for example, **Zappos** celebrates employees who demonstrate outstanding customer service.
5. **Supportive Organizational Culture:** A positive culture promoting teamwork, open communication, and employee well-being strengthens commitment to service excellence. **Google's** innovation-driven culture enhances employee motivation and customer experience.

3.2.3 Strategic Importance of Internal Marketing

Internal marketing aligns employees with organizational service goals, ensuring consistency in service delivery and reducing the **"promise-performance gap."** By prioritizing employee satisfaction, organizations improve productivity, service quality, and customer loyalty.

3.2.4 Theoretical Foundations: Internal marketing is supported by several organizational behavior theories:

- **Herzberg's Two-Factor Theory (1966)** distinguishes between **motivators** (recognition, achievement, responsibility, growth) and **hygiene factors** (salary, job security, working conditions). Addressing hygiene factors while strengthening motivators improves employee engagement. According to **Gallup (2024)**, engaged employees are **20% more productive** and contribute to a **15% increase in customer satisfaction**.
- **Social Learning Theory (Bandura, 1977)** explains that employees learn through observation, imitation, and feedback. Training methods such as mentoring, role-playing, and shadowing experienced staff help develop service skills and self-efficacy.
- Additional perspectives include **Maslow's Hierarchy of Needs**, **Equity Theory**, and the **Job Characteristics Model**, which highlight the role of fairness, motivation, and job design in enhancing employee performance.

3.2.5 Role of Stakeholders: Internal marketing involves multiple stakeholders. The **organization** invests in onboarding, training, and incentives; **employees** internalize service values and act as brand ambassadors; and **customers** benefit indirectly from consistent and high-quality service experiences.

3.2.6 Industry Applications: Internal marketing practices vary across industries:

- **Hospitality:** Ritz-Carlton conducts daily "line-ups" to reinforce service standards and allows employees to spend **up to $2,000 per guest incident** to resolve issues, contributing to **95% staff satisfaction**.
- **Banking:** Following its **2016 scandal**, **Wells Fargo** implemented ethics training and internal campaigns, reducing misconduct cases by **40%**.
- **Education: Stanford University** invests in faculty development programs, leading to **over 90% of students rating courses highly**.

- **Healthcare: Mayo Clinic's "The Mayo Way" training** emphasizes empathy and patient-centered care, with **about 90% of staff reporting high job satisfaction**.
- **Airlines: Emirates** invests approximately **$200 million annually** in crew training, reducing staff turnover by **25%** and strengthening service quality.

3.2.7 Employee Engagement Cycle

The **Employee Engagement Cycle** illustrates how internal marketing creates a continuous improvement loop. Training and development enhance employee skills, empowerment increases ownership and responsiveness, improved service performance strengthens customer satisfaction, and motivation reinforces employee commitment. This cycle ensures sustained service excellence and organizational success.

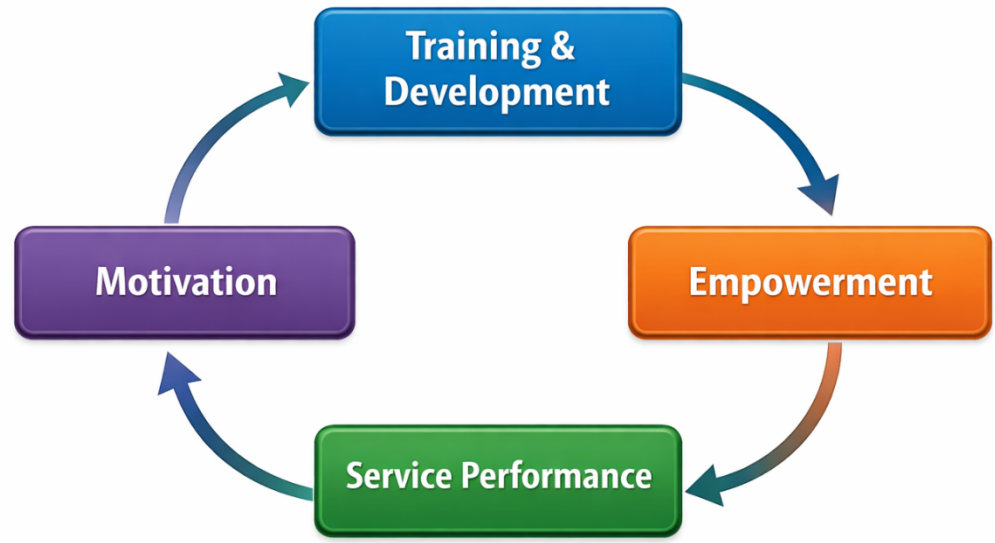

Fig 1: Employee Engagement Cycle

Components of Employee Engagement Cycle

1. Training & Development: Training and development form the **foundation of the Employee Engagement Cycle**, equipping employees with technical and interpersonal skills required for effective job performance. It also promotes service culture education and continuous learning so employees can adapt to evolving customer expectations and industry trends. Well-designed training programs signal organizational investment in employee growth, increasing loyalty, competence, and engagement.

A recent initiative by **Walmart (2024)** introduced a **tuition-free internal training program** to develop technical skills among employees in areas such as HVAC maintenance, electrical work, and facility operations. Nearly **400 employees completed the program**, and the company aims to train **4,000 employees by 2030**, demonstrating how structured training improves workforce capability and career mobility.

2. Empowerment: Empowerment follows training and involves **delegating authority, encouraging autonomy, and providing resources** so employees can make decisions independently. Empowered employees feel trusted and take ownership of their work, enabling faster problem resolution and personalized service for customers.

The **Ritz-Carlton hotel chain** is widely recognized for empowering employees through its famous **"$2,000 rule."** Each employee is authorized to spend **up to $2,000 per guest, per incident** to resolve service issues or enhance the guest experience without managerial approval. This policy encourages quick decision-making and exceptional service quality.

3. Service Performance: Service performance is the **observable outcome** of effective internal marketing and employee engagement. It reflects how well employees meet service standards, resolve customer problems, and provide empathetic and personalized interactions. High service performance strengthens brand credibility and customer loyalty.

Companies like **Ritz-Carlton** demonstrate strong service performance through employee empowerment and customer-focused service culture. Employees trained and trusted to act quickly can deliver personalized experiences that enhance customer satisfaction and reinforce brand reputation.

4. Motivation: Motivation completes the engagement cycle by sustaining employee performance and encouraging continuous improvement. Organizations motivate employees through **recognition, rewards, constructive feedback, and a sense of purpose aligned with organizational goals**. Motivated employees are more committed to maintaining high service standards and pursuing further skill development.

Technology companies such as **Salesforce** have implemented AI-based career development platforms like **Career Connect**, which recommend training opportunities and career paths for employees. During a pilot program involving **1,200 employees**, **74% actively used the platform**, **40% enrolled in recommended courses**, and **28% applied for internal roles**, demonstrating how career growth opportunities can significantly motivate employees.

3.2.8 How the Cycle Drives Continuous Improvement: The **Employee Engagement Cycle** operates as a continuous loop rather than a one-time process. **Motivation** encourages employees to pursue new learning opportunities, leading to enhanced **training and development**. Continuous training strengthens employee skills and confidence, enabling improved **service delivery and performance**. Better service performance increases **customer satisfaction and organizational success**, which further motivates employees to sustain high performance. This **self-reinforcing cycle** ensures that internal marketing initiatives generate long-term benefits for both employees and customers while fostering a culture of excellence, adaptability, and continuous improvement.

3.2.9 Practical Implications for Managers: Managers can effectively implement the Employee Engagement Cycle by designing **integrated internal marketing programs** that connect training, empowerment, and motivation. Monitoring

employee performance at each stage helps identify gaps and improvement opportunities. Encouraging **open communication** allows managers to understand employee needs and build a supportive workplace culture. Additionally, recognizing achievements and celebrating successes helps maintain employee engagement and motivation.

3.2.10 Challenges in Internal Marketing: Despite its benefits, organizations face several challenges in sustaining an engaged workforce.

1. **High Turnover**: Service industries often experience high employee turnover, which disrupts service consistency and increases recruitment and training costs. According to the **U.S. Bureau of Labor Statistics (BLS, 2024)**, turnover in the retail sector can reach **50% annually**, resulting in reduced team cohesion, loss of institutional knowledge, and inconsistent service delivery.
2. **Skill Gaps**: Technological advancements require employees to continuously upgrade their skills. **Gartner (2024)** reports that about **30% of service workers lack essential digital skills**, such as CRM usage, data analytics, and digital communication, limiting service innovation and operational efficiency.
3. **Employee Burnout and Stress**: High workloads and emotional labor often cause burnout among service employees. The **American Medical Association (AMA, 2024)** reports that **40% of nurses experience chronic stress**, which can reduce productivity, increase absenteeism, and weaken service quality.

3.2.11 Strategies to Overcome Challenges: Organizations can address these issues through several strategic initiatives.

1. **Competitive Benefits and Compensation:** Providing strong benefits and fair compensation helps attract and retain talent. For example, **Starbucks** offers health insurance, tuition reimbursement, and stock options even for

part-time employees, strengthening employee loyalty and reducing turnover.

2. **Upskilling and Reskilling Programs:** Continuous training programs help employees adapt to changing technological requirements. **AT&T's $1 billion reskilling initiative** equips employees with digital and technical skills, supporting career development and workforce adaptability.
3. **Wellness and Mental Health Programs:** Employee well-being initiatives reduce burnout and improve productivity. **Google** provides mental health counseling, mindfulness programs, and flexible work arrangements, helping employees manage stress and maintain high performance.

4.3 Interactive Marketing: Delivering Promises

Interactive Marketing occurs during service encounters, or "moments of truth," where employees interact directly with customers to deliver the service. These interactions shape customer perceptions of quality, requiring employees to exhibit professionalism, empathy, and problem-solving skills. A single negative encounter can reduce customer retention by 20% (McKinsey, 2024).

4.1 Theoretical Underpinnings

Interactive Marketing aligns with role theory (Solomon et al., 1985), where employees perform scripted or improvised roles during service delivery. Hochschild's (1983) emotional labor framework highlights the effort employees exert to manage emotions, which can enhance service quality but lead to burnout. Service-dominant logic (Vargo & Lusch, 2004) emphasizes co-creation, where customers actively participate in shaping the service experience.

4.2 Role of Stakeholders

- **Employees**: Act as the face of the service, directly influencing satisfaction through their behavior and skills. A concierge resolving a guest's issue promptly enhances loyalty.

- **Organization**: Provides systems (e.g., CRM tools, POS systems) and training to support interactions, ensuring consistency and efficiency.
- **Customers**: Co-create the service experience, influencing outcomes through their behavior, expectations, and feedback.

4.3 Industry Applications

- **Hospitality**: Four Seasons' staff personalize guest experiences, recalling preferences across visits, with 95% guest satisfaction (Four Seasons, 2024).
- **Banking**: Chase Bank's tellers resolve issues swiftly, with 80% of customers rating service positively (J.D. Power, 2024).
- **Education**: MIT professors engage students through interactive teaching, boosting retention by 15% (MIT, 2024).
- **Healthcare**: Johns Hopkins nurses build rapport, improving patient outcomes, with 85% satisfaction (Press Ganey, 2024).
- **Retail**: Apple Store employees provide hands-on product demos, driving 90% customer satisfaction (Apple, 2024).

4.4 Framework: Moment of Truth Matrix

The Moment of Truth Matrix categorizes service encounters by complexity and impact. [Insert Diagram: In Word, create a 2x2 matrix with axes labeled "Complexity" (horizontal) and "Impact" (vertical). Label quadrants: Low Complexity/Low Impact ("Routine," e.g., greeting), High Complexity/Low Impact ("Complex," e.g., technical support), Low Complexity/High Impact ("Critical," e.g., complaint resolution), High Complexity/High Impact ("Transformative," e.g., life-saving surgery). Caption: "Figure 4: Moment of Truth Matrix."]

4.5 Challenges and Strategies

Challenges include variability (e.g., 25% of encounters vary by employee, McKinsey, 2024), emotional labor (e.g., 35% of service workers report burnout, Gallup, 2024), and customer misbehavior (e.g., 15% of retail interactions involve

aggression, NRF, 2024). Strategies include standardized protocols, emotional intelligence training, and de-escalation techniques.

5 Relationship Marketing: Sustaining Promises

Relationship Marketing integrates external, internal, and interactive marketing to build long-term customer relationships. It emphasizes retention, loyalty programs, personalization, and trust, viewing customers as partners. Firms with strong relationship marketing see 25% higher Customer Lifetime Value (CLV) (Harvard Business Review, 2024).

5.1 Theoretical Underpinnings

Relationship Marketing is rooted in social exchange theory (Blau, 1964), where mutual benefits drive long-term engagement. The CLV model quantifies retention's financial impact, guiding resource allocation. Commitment-trust theory (Morgan & Hunt, 1994) highlights trust as a cornerstone of loyalty, critical in high-involvement services like banking and healthcare.

5.2 Role of Stakeholders

- **Organization**: Designs CRM systems, loyalty programs, and personalized communications to track and reward engagement.
- **Employees**: Nurture relationships through consistent, empathetic interactions, building trust over time.
- **Customers**: Provide feedback, repeat purchases, and advocacy, co-creating value and strengthening ties.

5.3 Industry Applications

- **Hospitality**: Hilton's Honors program rewards repeat guests, retaining 65% of members (Hilton, 2024).

- **Banking**: American Express's Platinum Card offers exclusive benefits, fostering loyalty among 70% of cardholders (Amex, 2024).
- **Education**: Oxford's alumni networks strengthen lifelong ties, with 50% donating annually (Oxford, 2024).
- **Healthcare**: Kaiser Permanente's patient portals enhance engagement, with 80% using digital tools (Kaiser, 2024).
- **Airlines**: Delta's SkyMiles program retains 60% of frequent flyers (Delta, 2024).

5.4 Framework: Relationship Marketing Pyramid

The Relationship Marketing Pyramid illustrates the progression from acquisition to advocacy. [Insert Diagram: In Word, create a pyramid with four levels labeled "Acquisition" (base), "Retention," "Loyalty," and "Advocacy" (top). Caption: "Figure 5: Relationship Marketing Pyramid."]

5.5 Challenges and Strategies

Challenges include data privacy (e.g., 40% of firms faced breaches, IBM, 2024), loyalty fatigue (e.g., 30% of customers ignore rewards, Forrester, 2024), and high costs (e.g., CRM systems cost $10,000–$1 million, Gartner, 2024). Strategies include GDPR-compliant data practices, gamified loyalty programs, and cost-effective digital tools.

6. Comparative Analysis

6.1 Internal vs. External Marketing: Internal Marketing equips employees to deliver services, while External Marketing shapes customer expectations. [Insert Table: In Word, create a table with columns "Criterion," "Internal Marketing," and "External Marketing." Rows: Focus (Employees vs. Customers), Tools (Training/Incentives vs. Advertising/Branding), Objective (Enable Performance vs. Shape Perceptions), Metrics (Engagement/Turnover vs. Awareness/Acquisition). Caption: "Table 1: Internal vs. External Marketing."]

Synergies occur when internal marketing aligns employees with external promises, as in Southwest Airlines' "LUV" brand, supported by a 20% lower turnover rate (Southwest, 2024). Tensions arise when external campaigns overpromise, as in budget airlines facing 30% complaint rates due to undertrained staff (IATA, 2024).

6.2 Interactive vs. Relationship Marketing: Interactive Marketing delivers immediate service encounters, while Relationship Marketing builds long-term loyalty. [Insert Table: In Word, create a table with columns "Criterion," "Interactive Marketing," and "Relationship Marketing." Rows: Timeframe (Short-term vs. Long-term), Interaction (Employee-Customer vs. Organization-Customer), Goal (Deliver Quality vs. Build Trust), Technology (POS Systems vs. CRM Platforms). Caption: "Table 2: Interactive vs. Relationship Marketing."]

Interactive marketing fuels relationship marketing through positive encounters, as in Amazon's 90% customer retention via seamless service (Amazon, 2024). Tensions occur when inconsistent interactions undermine loyalty, such as call centers with 25% dissatisfaction rates (Forrester, 2024).

6.3 External vs. Interactive Marketing: External Marketing sets expectations, while Interactive Marketing delivers the service. Synergies occur when promises match delivery, as in Disney's 95% guest satisfaction driven by aligned campaigns and staff performance (Disney, 2024). Tensions arise when delivery falls short, as in telecom firms with 20% churn due to service gaps (Deloitte, 2024).

7. Case Studies

7.1 Ritz-Carlton (Hospitality): Ritz-Carlton's "Gold Standards" integrate the triangle. External Marketing promises "unforgettable" experiences, reaching 10 million impressions (Ritz-Carlton, 2024). Internal Marketing empowers employees with a $2,000 budget, with 95% trained annually. Interactive Marketing personalizes service, achieving 90% retention (J.D. Power, 2024). Relationship Marketing leverages Rewards, with 70% direct bookings.

7.2 Mayo Clinic (Healthcare): Mayo Clinic's patient-centered care aligns the triangle. External Marketing generates 5 million website visits via thought leadership. Internal Marketing trains 60,000 staff, with 90% satisfaction (Mayo Clinic, 2024). Interactive Marketing ensures compassionate care, with 85% patient satisfaction (Press Ganey, 2024). Relationship Marketing uses portals, with 80% engagement.

7.3 Singapore Airlines (Airlines): Singapore Airlines (SIA) maintains its top ranking (Skytrax, 2024). External Marketing reaches 20 million followers. Internal Marketing invests $100 million in training, with 98% completion. Interactive Marketing achieves 9/10 passenger ratings. Relationship Marketing retains 70% via KrisFlyer.

7.4 Coursera (Education): Coursera reaches 100 million learners (Coursera, 2024). External Marketing promotes flexibility. Internal Marketing certifies 85% of instructors. Interactive Marketing engages 90% in forums. Relationship Marketing retains 60% via subscriptions.

5.5 Starbucks (Retail): Starbucks delivers the "Starbucks Experience." External Marketing drives 50 million app downloads (Starbucks, 2024). Internal Marketing reduces turnover by 30%. Interactive Marketing achieves 80% satisfaction. Relationship Marketing retains 25 million via Rewards.

7.6. Cross-Industry Applications: The triangle's versatility spans sectors. [Insert Table: In Word, create a table with columns "Industry," "External Marketing," "Internal Marketing," "Interactive Marketing," and "Relationship Marketing." Rows: Hospitality (Brand campaigns, Staff empowerment, Guest interactions, Loyalty programs), Banking (Digital ads, Ethics training, Teller service, CRM systems), Education (Alumni stories, Faculty development, Classroom engagement, Alumni networks), Healthcare (Content marketing, Empathy training, Patient consultations, Patient portals), Airlines (Global campaigns, Crew training, Cabin service, Frequent flyer programs). Caption: "Table 3: Cross-Industry Applications."]

7.7. Global Perspectives: Cultural differences shape the triangle's application:

- **Asia**: High-context cultures emphasize interactive marketing, as in ANA Airlines' 95% satisfaction (Skytrax, 2024).
- **Europe**: GDPR-compliant relationship marketing, with Lufthansa retaining 60% of flyers.
- **North America**: External marketing dominates, with Delta reaching 30 million viewers.
- **Emerging Markets**: Internal marketing overcomes constraints, as in Apollo Hospitals' 80% staff retention (Apollo, 2024).
- **Africa**: Community-focused external marketing, with Safaricom's 70% customer retention (Safaricom, 2024).

8. Technology's Role in the Triangle

Technology enhances the triangle:

- **External Marketing**: AI personalization, with Netflix increasing engagement by 25% (Netflix, 2024).
- **Internal Marketing**: E-learning, training 70% of Fortune 500 employees (LinkedIn Learning, 2024).
- **Interactive Marketing**: Chatbots, with Bank of America's Erica handling 10 million queries (BoA, 2024).
- **Relationship Marketing**: Salesforce analytics, boosting retention by 20% (Salesforce, 2024).

9. Challenges and Strategies

9.1 Challenges

- **Overpromising**: 30% of flights delayed, despite on-time promises (IATA, 2024).
- **Employee Burnout**: 40% of nurses report stress (AMA, 2024).

- **Customer Variability**: 25% of services face expectation gaps (McKinsey, 2024).
- **Technological Disruption**: 50% of firms lag in adoption (Gartner, 2024).

9.2 Strategies

- **Integrated Governance**: Cross-functional teams improve coordination by 15% (Deloitte, 2024).
- **Wellness Programs**: Reduce burnout by 20% (Gallup, 2024).
- **Dynamic Segmentation**: AI increases satisfaction by 10% (Forrester, 2024).
- **Agile Adoption**: 60% of firms adopt iterative processes (PwC, 2024).

10. Ethical Considerations

- **Truthful Marketing**: 30% of ads flagged for exaggeration (FTC, 2024).
- **Employee Welfare**: 20% of service workers underpaid (BLS, 2024).
- **Data Privacy**: 40% of firms face breaches (IBM, 2024).

11. Future Trends

- **AI Integration**: 50% of firms to adopt by 2027 (Gartner, 2024).
- **Sustainability**: 60% of consumers prefer eco-friendly brands (Nielsen, 2024).
- **Gig Economy**: 30% of service jobs gig-based (Upwork, 2024).

12. Summary

The Service Marketing Triangle aligns promises with delivery through external, internal, and interactive marketing, unified by relationship marketing. Case studies (Ritz-Carlton, Mayo Clinic, SIA, Coursera, Starbucks) and global applications highlight its versatility. Challenges like overpromising and burnout require strategic

solutions. Future trends, including AI and sustainability, will reshape the triangle, demanding adaptive leadership.

References

- American Medical Association. (2024). *Physician and nurse burnout and stress statistics report*. American Medical Association. https://www.ama-assn.org
- AT&T. (2023). *Future Ready: AT&T's $1 billion reskilling initiative*. AT&T Corporate Responsibility Report. https://about.att.com
- Bureau of Labor Statistics. (2024). *Job openings and labor turnover survey (JOLTS): Retail trade industry turnover rates*. U.S. Department of Labor. https://www.bls.gov
- Gartner. (2024). *Digital skills gaps in the service workforce*. Gartner Research. https://www.gartner.com
- Google LLC. (2023). *Employee wellbeing and mental health programs at Google*. Google Careers and Workplace Report. https://careers.google.com
- Starbucks Corporation. (2023). *Starbucks partner benefits and career development programs*. Starbucks Global Social Impact Report. https://www.starbucks.com
- Aburoub, A. S., Hersh, A. M., & Aladwan, K. (2011). Relationship between internal marketing and service quality with customers' satisfaction in Jordan commercial banks. International Journal of Marketing Studies, 3(2), 107–118.
- Berry, L. L. (1983). Relationship marketing. In L. Berry, G. Shostack, & G. Upah (Eds.), Emerging perspectives on services marketing (pp. 25–28). American Marketing Association.
- Berry, L. L., & Parasuraman, A. (1991). Marketing services: Competing through quality. Free Press.
- Blau, P. (1964). Exchange and power in social life. Wiley.
- Booms, B. H., & Bitner, M. J. (1981). Marketing strategies and organization structures for service firms. In J. Donnelly & W. George

(Eds.), Marketing of services (pp. 47–51). American Marketing Association.

- Chakrabarty, S. (2009). A conceptual model for bidirectional service, information and product quality in an IS outsourcing collaboration environment. Journal of Information Technology Management, 20(3), 15–27.
- Dabhade, N., et al. (2013). Service marketing triangle and GAP model in hospital industry. International Letters of Social and Humanistic Sciences, 8, 77–89.
- Gallup. (2024). State of the global workplace report. Gallup Press.
- Gartner. (2024). Digital skills gaps in the service workforce. Gartner Research.
- Grönroos, C. (1984). A service quality model and its marketing implications. European Journal of Marketing, 18(4), 36–44.
- Grönroos, C. (1990). Service management and marketing. Lexington Books.
- Grönroos, C. (2007). Service management and marketing: Customer management in service competition (3rd ed.). Wiley.
- Hochschild, A. (1983). The managed heart: Commercialization of human feeling. University of California Press.
- Kotler, P. (1994). Marketing management: Analysis, planning, implementation, and control (8th ed.). Prentice Hall.
- Kotler, P., & Keller, K. L. (2016). Marketing management (15th ed.). Pearson.
- Lings, I. N. (2004). Internal market orientation: Construct and consequences. Journal of Business Research, 57(4), 405–413.
- Lovelock, C., & Wirtz, J. (2011). Services marketing: People, technology, strategy (7th ed.). Pearson.
- McKinsey & Company. (2024). Customer experience and service performance insights. McKinsey Global Institute.
- Morgan, R. M., & Hunt, S. D. (1994). The commitment–trust theory of relationship marketing. Journal of Marketing, 58(3), 20–38.

- Nielsen. (2024). Global trust in advertising report. Nielsen Research.
- Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. Journal of Marketing Research, 17(4), 460–469.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. Journal of Marketing, 49(4), 41–50.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. Journal of Retailing, 64(1), 12–40.
- Reichheld, F. F. (1996). The loyalty effect: The hidden force behind growth, profits, and lasting value. Harvard Business School Press.
- Rust, R. T., & Oliver, R. L. (1994). Service quality: Insights and managerial implications from the frontier. In R. Rust & R. Oliver (Eds.), Service quality: New directions in theory and practice (pp. 1–19). Sage.
- Schneider, B., & Bowen, D. E. (2010). Winning the service game. Harvard Business School Press.
- Solomon, M. R., Surprenant, C., Czepiel, J., & Gutman, E. (1985). A role theory perspective on dyadic interactions. Journal of Marketing, 49(1), 99–111.
- Vargo, S. L., & Lusch, R. F. (2004). Evolving to a new dominant logic for marketing. Journal of Marketing, 68(1), 1–17.
- Zeithaml, V. A. (2010). Services marketing strategy. Wiley International Encyclopedia of Marketing.
- Zeithaml, V. A., Bitner, M. J., & Gremler, D. D. (2018). Services marketing: Integrating customer focus across the firm (7th ed.). McGraw-Hill.
- Yarimoglu, E. (2014). A review on dimensions of service quality models. Journal of Marketing Management, 2(2), 79–93.
- Ullah, H. (2025). The effect of internal marketing factors on services quality of organizations. Asian Social Science and Management Journal.

- Thanh, C. T., & Huong, L. T. (2018). Effects of internal marketing on organizational commitment at SMEs in service industry. IBSM International Conference Proceedings.
- Jha, N. (2016). Service sector marketing. Himalaya Publishing House.
- Rust, R. T., Lemon, K. N., & Zeithaml, V. A. (2004). Return on marketing: Using customer equity to focus marketing strategy. Journal of Marketing, 68(1), 109–127.
- Heskett, J., Jones, T., Loveman, G., Sasser, W., & Schlesinger, L. (1994). Putting the service-profit chain to work. Harvard Business Review, 72(2), 164–174.
- Bitner, M. J., Booms, B. H., & Tetreault, M. S. (1990). The service encounter: Diagnosing favorable and unfavorable incidents. Journal of Marketing, 54(1), 71–84.
- Payne, A., & Frow, P. (2005). A strategic framework for customer relationship management. Journal of Marketing, 69(4), 167–176.
- Akter, H., Sentosa, I., Hizam, S. M., Ahmed, W., & Akter, A. (2021). Finding the contextual gap towards employee engagement in the financial sector: A review study. International Journal of Human Resource Studies.
- Ighomereho, S. O., Ojo, A. A., Omoyele, S. O., & Olabode, S. O. (2022). From service quality to e-service quality: Measurement, dimensions and model. International Journal of Business Analytics.

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Impact of GST on MSMED sector in Nalgonda District (A case study of Miryalaguda town)

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Introduction:

The **Goods and Services Tax (GST)** is a comprehensive indirect tax reform introduced in India on **1st July 2017** by the **Government of India**. It replaced multiple indirect taxes such as VAT, excise duty, and service tax, creating a **uniform tax system** across the country.

The MSMED sector, governed by the **Micro, Small and Medium Enterprises Development Act, 2006**, plays a crucial role in India's economy by contributing to employment generation, industrial output, and exports. These enterprises are highly sensitive to policy changes, especially tax reforms like GST.

The introduction of GST has brought **significant changes** in the functioning of MSMEs. On one hand, it simplified the tax structure, improved transparency, and provided benefits like **Input Tax Credit (ITC)**. On the other hand, it increased **compliance requirements**, introduced digital filing systems, and created initial difficulties for small businesses with limited resources and technical knowledge.

Thus, GST has had a **mixed impact** on the MSMED sector—offering growth opportunities while also posing challenges. Understanding this impact is essential to evaluate how MSMEs are adapting to the new tax regime and contributing to economic development.

In **Miryalaguda**, MSMEs form the backbone of the town's economy. The area is well known for its **rice mills, agro-based industries, retail shops, fertilizer businesses, and small service units**, which largely depend on agriculture and local trade.

The implementation of GST has brought **major changes** in the functioning of these enterprises. While larger units like rice mills benefited from **Input Tax Credit (ITC)** and better market access, small traders and shopkeepers in Miryalguda faced challenges such as **complex return filing, dependence on digital systems, and increased compliance costs**.

Thus, the impact of GST on MSMEs in Miryalguda is **mixed in nature**. It has improved transparency and efficiency but also created practical difficulties for small and unorganized businesses. Studying this impact at the local level helps in understanding the real challenges and opportunities faced by MSMEs in semi-urban areas. For the purpose of above cited objectives ,Miryalaguda has been selected , interaction of rice millers ,traders from field as well as secondary data methodology has been selected ,and to be conclude Miryalaguda is one of the fast growing rice mill industry in Asian continent and need govt support in terms of GST subsidies as well as input credit.

Review of literature

1.This paper examines the impact of GST on SMEs in India by analyzing its implications on compliance burden, cost structure, working capital management, formalization, competitiveness, and digital adoption. The study explores both the positive outcomes such as improved input tax credit mechanisms, enhanced supply chain efficiency, and increased market integration and the challenges faced by SMEs, including technological adaptation issues, increased compliance requirements, liquidity constraints, and procedural complexities. Using a combination of secondary data analysis, policy review, and thematic interpretation of industry reports, the paper evaluates whether GST has achieved its intended objectives from the perspective of small businesses. The findings suggest that while GST has contributed to long-term structural benefits and formalization of the SME sector, the short-term transitional challenges and compliance pressures have disproportionately affected micro and small enterprises. The study concludes with policy recommendations to improve GST implementation mechanisms, simplify compliance procedures, and enhance institutional support for SMEs to maximize the reform's developmental impact

2. The introduction of the Goods and Services Tax (GST) in India in 2017 brought significant tax reforms aimed at simplifying the taxation system. However, its impact on the Micro, Small, and Medium Enterprises (MSME) sector, particularly in Rajasthan, remains a subject of debate. This study evaluates the effect of GST on MSME growth in Rajasthan through a comparative pre- and post-GST analysis. The research examines key parameters such as tax compliance, revenue generation, profitability, and overall business growth. Using a mixed-methods approach, primary data was collected through surveys and interviews with MSME owners,

while secondary data was obtained from government reports and industry sources. Findings indicate that while GST has enhanced transparency and streamlined taxation, MSMEs face challenges related to compliance costs, delayed input tax credits, and digital infrastructure constraints. The study highlights policy recommendations to improve tax compliance efficiency and foster

3.The implementation of the Goods and Services Tax (GST) has significantly transformed the taxation landscape for Micro, Small, and Medium Enterprises (MSMEs) and small traders in India. This study leverages the capabilities of Artificial Intelligence (AI), Machine Learning (ML), and Deep Learning (DL) to analyze the multifaceted impact of GST on these vital sectors of the Indian economy. By utilizing large datasets sourced from government records, tax filings, business surveys, and market reports, the study aims to understand how GST has influenced operational costs, compliance burdens, revenue patterns, and overall business sustainability for MSMEs and small traders.The research employs ML algorithms to classify and predict the financial health of MSMEs pre- and post-GST implementation, identifying key factors that drive business performance under the new tax regime. Deep Learning models, including time-series forecasting, are used to evaluate trends in tax compliance, revenue growth, and market adaptability. Furthermore, Natural Language Processing (NLP) techniques analyze textual feedback from business owners and stakeholders collected through surveys and social media to gauge sentiment and challenges related to GST. The integration of AI-driven analytics provides a comprehensive and data-driven perspective on the GST's effects, offering valuable insights for policymakers, business owners, and financial institutions aiming to support the MSME sector in India

4. MSMED plays immense part in the economic and social development of India. The implementation of GST (Goods and Services Tax) is tax regime of Government of India which had affected the manufacturing and service sector enterprises. After implementation of GST, MSMEs had impacted both positively and negatively. This paper concentrated on another side by highlighting issues faced and to bring out the problems which are largely involved in the GST process. 158 MSMEs Entrepreneur was selected in Sivagangai District. The data were collected inform of Questionnaire from the entrepreneurs of MSME. The statistical tool used in this study is Friedman Test to identify the issues which are faced by MSME in Sivagangai District in Tamil Nadu, India. The majority of MSMEs has faced High

Compliance cost has a major problem in the GST implementation as they are used to traditional approach of maintaining their business operation.

5.GST is an indirect tax that has superseded numerous other indirect taxes in India, including excise duty, VAT, and service tax. A major change in the tax system was brought about by the implementation of the Goods and Services Tax (GST) in many nations, which has important effects for Micro, Small, and Medium Sized Enterprises (MSMEs). This study looks into how there is a impact of GST on MSMEs. It starts by looking at how tax system changes affect the financial performance and operational efficiency of MSMEs. The study also looks at how MSMEs' business performance is affected by tax knowledge and awareness under the new tax system. It also shows the changes of the performance of the industry before and after the GST. The study provides a fair assessment of the positive and negative impacts of the GST implementation for MSMEs. A survey consisting of questions is given to a sample of MSMEs in order to accomplish these goals. The study has given conclusion regarding this topic. The research attempts to provide insights into how GST has affected MSMEs and suggest possible policy recommendations to maximise the advantages and lessen the difficulties presented by the GST framework through analysis of survey results

6. This paper investigates the impact of the Goods and Services Tax (GST) on Micro, Small, and Medium Enterprises (MSMEs) in India, focusing on a comparative analysis of the pre-GST and post-GST regimes. MSMEs are a crucial part of India's economic landscape, contributing significantly to GDP, employment, and exports. The introduction of GST in 2017 replaced a multitude of indirect taxes with a unified system, aimed at streamlining tax processes and reducing the cascading effect of taxes. However, the transition has presented various challenges, particularly for MSMEs, which often lack the resources and expertise to adapt quickly. This study examines the changes in compliance costs, working capital requirements, pricing strategies, and profitability of MSMEs under the GST regime. Through a combination of primary data from surveys and interviews, and secondary data analysis, the paper evaluates the overall impact of GST on this sector. The findings highlight both the advantages, such as reduced tax complexity, and the challenges, including increased compliance burdens and liquidity issues. Policy recommendations are provided to address these challenges and enhance the positive impact of GST on MSMEs

7 .The Goods and Services Tax refers to an attempt to streamline the indirect tax regime in India under the slogan - "One Nation, One Tax". The Micro, Small and Medium Enterprises (MSME) sector is an instrumental aspect of the Indian economy for employment generation and innovative performance. This paper assesses the influence of GST rate reductions on the performance of MSMEs using information from government publications, GST council publications, RBI bulletins and MSME publications from 2017 to 2025. The analysis reveals that GST rate reductions have positively influenced MSME profitability, improved cash flow, and enhanced MSME performance and competitiveness in market transactions. Notwithstanding these improvements, non-compliant issues and the challenges of low digital literacy and digital commerce are impeding overall MSME competitiveness and performance improvements. We recommend a sustained policy commitment to support MSME commitments to GST reforms, including more digital tools and implementation efforts. , Economic Growth

8. This study focus on analysing the impact of GST on the MSME's and also discuss the perception of Entrepreneurs towards the GST in study area. In order to accomplish the objectives Researcher has collected data from both primary and secondary sources. The researcher has gathered the primary data through well-structured questionnaire was developed and given to MSME's entrepreneurs. The questionnaire is related to impact of GST and perception towards the GST based on the objectives. The secondary data were collected from books, journals, websites and other published sources. The population of the study is All MSMES sector Major tool used in the analysis process has been Descriptive statistics along with the graphs and chart for interpreting the data collected. The technique used for selecting the sample is random and s. convenient sampling is used for collecting data in this study. The result found that majority of the respondents 80% are registered under the GST. And also most of the businesses are carrying on as proprietorship firm i.e. 82% of which are the most popular. Rest of the selected respondents have the partnership firm i.e 6%. In the study area its found the hardly 6% PLC's. And 0% in LLPs. it is found that 31% respondents are manufacturing, 9% are in wholesaler, 25% are in retail business and 35% respondents are service provider which includes professional services also. And the overall result shows that GST is positively as well as negatively impacted on the business

9. Micro, Small and Medium Enterprises (MSMEs) are playing a vital role in taking our country towards complete globalization. MSMEs are the back bone of our economy and are also acting as energy boosters for growth and development of our nation. Despite of the fact stated above, the MSMEs are facing tough competition from Large Scale Industries (LSIs), Multi National Companies (MNCs), other businesses producing cheap products as substitutes. Not only this, the two major issues took place in our country has thrown some repercussions on the growth of MSMEs, ie., (1) Demonetization in 2016 and (2) Introduction of Goods and Service Tax (GST) in 2017. The State of Telangana is home for several major manufacturing industries in bulk drugs, pharmaceuticals, agro-processing, cement & mineral-based industries, high precision engineering, textiles, leather, apparels, automobiles and auto components industry, spices, horticulture, poultry farming, biotechnology, defence equipment etc. The Industrial Sector is contributing around 25% to 30% to the Gross State Domestic Product with a direction of positive growth in the State. From the above facts observed, it has become inevitable to analyse the issues relevant to MSMEs in the context of their growth and the repercussions they are facing. Hence, this research paper focuses role of Telangana in the development of MSMEs since its formation and the repercussions of Demonetization policy and the implementation of GST on the growth of MSMEs.

10.Dhillon & Gautam (2022) noted that small businesses were more affected due to their limited financial and technological capabilities. They faced difficulties in adapting to GST procedures, including filing returns and main Another study highlighted that GST forced MSMEs to adopt digital systems, which improved long-term efficiency but created short-term operational difficulties, especially for small traders lacking digital literacy.

11. This is a interesting interaction interview of TIMES OF INDIA sept 2023 with rice millers association members. in their words in our study area of Miryalaguda town in Nalgonda district.

The following information that there is a huge evasion of tax in the sale of rice bran. surveys were conducted Friday and Saturday in Miryalaguda town around 30 rice mills . Where was alleged and that the business of bran and issued fake invoices . Miryalaguda rice miller's association told to Times of India. Usually the rice bran with high oil content issued to the solvent and oil industry. but in case of polished rice we get less content of oil and this is sold to the agents and brokers who in turn sell it to the industries. and they added that the bills or invoices raised by these

agents are fake. It may be so in may few cases where the rice millers have concluded Mostly the fault lies with the agents and brokers who buy the rice bran . Usually oil content in in bran varies from 16 % to 24% even the soap industry use it Edible oil is also extracted rice millers are supposed to pay 5 % GST In Telangana there are around 2300 rice mills in cluding 120 in Nalgonda district . In MirYalaguda they have more than 80 rice mills . And they said that mills are running in to losses due to which there could be some discrepancies . Hence this dtudy is focusing on Miryalaguda town ,because one of the biggest fast growing rice industry in the Asian continent

Objectives of the study

1.To analyse the impact of GST on MSMED sector in the district, through previous studies .

2. To study the problems of rice mills related to GST in Miryalaguda town

Methodology

This study is depends on secondary sources like Ministry of Micro, Small and Medium Enterprises – Annual Reports and MSME Data.Goods and Services Tax Council – Official GST updates and notifications. Government of India – www.india.gov.inGST Portal – www.gst.gov.in

Online case studies and reports on small businesses in Telangana. And district handbooks ,directorate of Economics ,etc as well as Interviews with:Rice mill owners in Miryalaguda Retail shopkeepers Local traders and service providers though online survey

Nalgonda district profile:- is a district in the Telangana state of India. Nalgonda district has the highest number of mandals in the state with 31 mandals.[3] The district shares boundaries with Suryapet, Rangareddy, Yadadri and Nagarkurnool districts and with the state boundary of Andhra Pradesh. In terms of area, Nalgonda is the 2nd largest district with an area of 7222.78 km^2 in the state. As of 2011 Census of India, Accord with 2011 Census Nalgonda district has a population of 1,618,416. Nalgonda has a sex ratio of 978 females per 1000 males and a literacy rate of 63.75%. 181,996 (11.25%) were under 6 years of age. 368,303 (22.76%) lived in urban areas.

Nalgonda district is an agrarian district with water resources from the rivers, lakes, canals and ponds. The wells and borewells also support farming in the district. The farmers mainly grow crops such as paddy, and cotton. The climate of the district supports the production of paddy and groundnut seeds.

Miryalaguda profile of the study area: As per based on secondary data revies ,ours study area is a major industrial city in the Nalgonda district of Telangana, renowned as a significant hub for the rice industry with over 100 rice mills and major parboiled rice exports. It has a growing economy, a population estimated at over 150,000 as of 2026, and is an important transportation node. Known as a "Rice Hub," the city's economy is heavily dependent on agriculture and paddy processing, boasting over 170 rice mills. It has a robust economy with high investment in gold.

Situated in the Nalgonda district of Telangana, it is located about from the state capital, Hyderabad.

As of 2026, the estimated population of the city is around 1,54,000. Miryalaguda, located in Telangana's Nalgonda district, is primarily specialized as a major agricultural hub, famous as one of the largest producers of paddy and rice in the state. It features over 100 rice mills, serving as a key center for rice processing and export, often dubbed as a "rice town".

Micro, Small and Medium Enterprises (MSMEs): The Micro, Small and Medium Enterprises (MSMEs) play a pivotal role in the economic and social development of the country. The MSME sector contributes significantly to the country's manufacturing output, employment and exports and it is also credited with generating the highest employment growth as well as accounting for a major share of industrial production and exports. The Ministry of Micro, Small and Medium Enterprises of Government of India has brought UDYAM Registration in w.e.f July 1, 2020 a new system of online registration for MSMEs in place of Udyog Aadhar Memorandum.(Handbook of statistics ,Nalgonda dist)

Located in the Nalgonda district of the Indian state of Telangana, Miryalaguda is a city well known for its rice processing mills. One of India's leading exporters of parboiled rice, Miryalaguda has a total of more than 100 above rice mills located in the immediate vicinity, supplying nearby states like Kerala and Bihar.

Fully automated, one of the town's most successful Rice Industries, and when this thriving market and high demand meant that expanded fully-automated plants.

Summary and conclusions

The introduction of the Goods and Services Tax (GST) on July 1, 2017, marked a major reform in India's indirect taxation system. The concept of "One Nation, One Tax" aimed to simplify the tax structure by replacing multiple indirect taxes with a unified system. For the MSME sector, GST has brought both significant benefits and certain challenges.

On the positive side, GST has improved transparency and accountability in the tax system. The provision of input tax credit has reduced the cascading effect of taxes, thereby lowering the cost of production. It has also encouraged formalization of businesses and improved tax compliance. With the adoption of digital systems, GST has made tax filing more systematic and accessible over time.

However, the implementation of GST has also created difficulties for MSMEs. Many small businesses initially faced problems such as lack of awareness, technical issues in online filing, increased compliance burden, and higher operational costs. These challenges were more prominent in the early stages of implementation.

Case Study – Miryalguda Town (Nalgonda District):

The study of MSMEs in Miryalguda town highlights the real impact of GST at the local level. Many small-scale industries, especially rice mills and trading units, experienced initial disruptions due to frequent changes in GST rules and filing procedures. Business owners reported difficulties in understanding compliance requirements and managing digital platforms.

At the same time, some positive outcomes were observed. Businesses that adapted to GST benefited from input tax credit, improved record-keeping, and better market opportunities beyond local boundaries. Over time, with increased awareness and support from government initiatives, many MSMEs in Miryalguda became more comfortable with the GST system.

Despite ongoing issues such as compliance complexity and working capital pressures, the overall trend indicates gradual improvement in the functioning of MSMEs under GST.

Overall Conclusion:

GST has had a mixed impact on the MSME sector, both at the national level and in specific regions like Miryalguda. While it has enhanced transparency, efficiency, and long-term growth potential, it has also imposed short-term challenges for small businesses. With continuous support, training, and simplification of procedures, GST is expected to provide long-term benefits to MSMEs and contribute to sustainable economic development.

References

- Sharma, P., & Sharma, J. (2026). *[Title not specified]*. International Journal of Academic Excellence and Research, 2(1), 48–58. https://doi.org/10.62823/IJAER/2026/02.01.156

- Kumar, S., & Kalla, D. (2025). Evaluating the effect of GST on MSME growth in Rajasthan: A pre- vs. post-GST analysis. Inspira-Journal of Commerce, Economics & Computer Science (JCECS), 11(2), 89–97.
- Keerthan, A. V., Reddy, M. R., & Srilekha, R. (2025). A study on impact of GST on MSME and small trader in India. International Journal of Engineering Research and Science & Technology, 21(2), 2810–2817. https://doi.org/10.62643/ijerst.v21.n2.pp2810-2817
- Shanthini, S., Jayanthi, K., & Vidhya, A. A. (2023). *[Title not specified]*. AIP Conference Proceedings, 2821, 060029. https://doi.org/10.1063/5.0158580
- Reena, R. S. (2024). A study on impact of GST on MSME. International Journal of Creative Research Thoughts (IJCRT), 12(5).
- Bhosale, M. S. (2024). Impact of GST on MSMEs in India: A comparative study of pre- and post-GST regimes. [Journal Name Not Specified], 49(4).
- Karthik, P., & Sahoo, N. *Impact of GST rate deduction on MSMEs*. CMR University.
- Suresh, B., & Mubarak, M. *A study on impact of goods and services tax on micro, small and medium enterprises*. Vijayanagara Sri Krishnadevaraya University.
- Thirumala Rao, D. (2018). Role of Telangana in development of MSMEs and the repercussions of demonetization & GST on MSMEs. International Journal of Creative Research Thoughts (IJCRT).
- Venkateswarlu, G., & M. J. (2018). Impact of GST on micro, small and medium enterprises (MSMEs). International Journal of Engineering and Management Research, 8(2), 91–95.
- *Journal of Research and Analytical Reviews (IJRAR)*. (2019). 6(1), 26–37.
- Singh, A. N. (2018). A comprehensive analysis of goods and services tax (GST) in India. Indian Journal of Finance, 12(2). https://doi.org/10.17010/ijf/2018/v12i2/121377
- Government of Tamil Nadu. (2017). *Statistical handbook of Sivagangai*. Retrieved from https://cdn.s3waas.gov.in/s31a5b1e4daae265b790965a275b53ae50/uploads/2018/06/2018062188.pdf
- Singh, S. S. (2018). GST in India: Performance of companies after one year of rollout. Indian Journal of Finance, 12(11).
- Government of Telangana. (2025). *Socio-economic survey of Telangana*.
- Government of Telangana. *Handbook of statistics: Nalgonda*.
-
- Additional General References

- Sharma, R. (2018). Impact of GST on MSMEs in India. International Journal of Commerce and Management Research.
- Gupta, A., & Agarwal, S. (2019). GST and its implications on small businesses. Journal of Economics and Finance.
- Kumar, P. (2020). GST and digital transformation of MSMEs. International Research Journal of Management.
- Verma, S. (2021). Working capital issues under GST system. Indian Journal of Finance.
- Mehta, R. (2020). Challenges faced by MSMEs after GST implementation. Journal of Business Studies.

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Growth of the Gig Economy in India: A Case Study of Uber and Ola Drivers

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Abstract
The gig economy in India has witnessed rapid growth with the expansion of digital platforms such as Uber and Ola. This paper examines the growth trajectory of the gig economy with a specific focus on ride-hailing drivers. Using secondary data from reports, research studies, and policy documents, the study analyzes employment generation, income patterns, and challenges faced by drivers. The findings reveal that while the gig economy provides flexible employment opportunities and income generation, it is also characterized by income volatility, lack of social security, and algorithmic control. The study concludes with policy recommendations for improving the sustainability and inclusiveness of gig work in India

Keywords: Gig Economy; India; Uber; Ola; Platform Work; Ride-Hailing Services; Digital Economy; Informal Employment; Driver Earnings; Labour Market Flexibility; Algorithmic Management; Employment Generation; Income Inequality; Urban Transport; Workforce Transformation.

Introduction

The rapid expansion of the digital economy has led to the emergence of new forms of employment, particularly the gig economy. The gig economy refers to a labor market characterized by short-term, flexible jobs mediated through digital platforms. In India, this model has gained significant momentum due to increasing smartphone penetration, internet accessibility, and a large informal workforce seeking alternative livelihood opportunities.

Ride-hailing platforms such as Uber and Ola have played a crucial role in shaping the gig economy by providing income-generating opportunities to millions of drivers across urban and semi-urban areas. These platforms operate on a model where drivers act as independent contractors, offering services on demand through mobile applications. This has not only transformed urban transportation but also redefined traditional employment relationships.

Despite its rapid growth, the gig economy presents a dual reality. On one hand, it offers flexibility, autonomy, and easy entry into the labor market. On the other hand, it raises concerns regarding income instability, lack of social security, and absence of formal labor protections. Drivers associated with Uber and Ola often face fluctuating earnings, high operational costs, and dependence on platform algorithms.

In this context, the present study examines the growth of the gig economy in India with a specific focus on Uber and Ola drivers. It aims to analyze employment opportunities, income patterns, and challenges faced by drivers, thereby contributing to a better understanding of the sustainability and inclusiveness of gig-based work.

Review of Literature

The gig economy has attracted significant academic and policy attention in recent years, particularly in developing countries like India, where digital platforms are reshaping labor markets. The following studies provide insights into the working conditions, income dynamics, and structural implications of gig work, especially in ride-hailing services such as Uber and Ola.

Global Perspectives on Gig Economy

De Stefano (2016) examined the rise of the gig economy and highlighted the legal ambiguity surrounding worker classification. The study emphasized that gig workers are often excluded from traditional labor protections due to their classification as independent contractors.

Berg et al. (2018), in a report by the International Labour Organization, analyzed digital labor platforms globally. The findings revealed issues such as low pay, lack of job security, and absence of social protection among platform workers.

Indian Context of Gig Economy

NITI Aayog (2022) reported that India's gig workforce is expected to reach 23.5 million by 2030. The study emphasized the role of gig platforms in employment generation while highlighting the need for policy frameworks to ensure worker welfare.

Fairwork India (2023) evaluated working conditions across digital platforms. It found that major ride-hailing platforms scored poorly in fairness indicators such as pay, conditions, contracts, and representation.

Studies on Uber and Ola Drivers

Kashyap & Bhatia (2018) conducted a case study of Uber and Ola drivers in Delhi. The study found that while drivers initially earned high incomes due to incentives, earnings declined over time due to increased competition and reduced bonuses.

Prabhat et al. (2019) explored the socio-economic conditions of Uber drivers. The study highlighted long working hours, income uncertainty, and dependence on platform algorithms for ride allocation.

4.4 Income and Employment Dynamics

Rosenblat (2018) emphasized the concept of "algorithmic management," where digital platforms control workers through ratings and automated systems rather than direct supervision.

International Labour Organization (2021) reported that gig workers often face income volatility and lack access to minimum wage protections, especially in developing economies.

4.5 Research Gap

From the above studies, it is evident that:

- Most research focuses on qualitative aspects of gig work
- Limited studies provide India-specific empirical data
- There is a lack of comparative case studies focusing specifically on Uber and Ola drivers
- Insufficient attention is given to cost-income analysis and sustainability of earnings

4.6 Relevance of the Present Study

This study attempts to fill the above gaps by:

- Providing data-driven analysis of driver earnings and costs
- Focusing on Uber and Ola as case studies
- Examining both opportunities and challenges
- Linking gig economy growth with employment and policy implications

2. Objectives of the Study

1. To analyze the growth of the gig economy in India

2. To examine employment generation through Uber and Ola
3. To study income patterns of drivers
4. To identify challenges faced by gig workers
5. To suggest policy measures

3. Methodology

- **Type of Study:** Descriptive and analytical
- **Data Source:** Secondary data (reports, journals, Fairwork India, government reports)
- **Tools Used:** Tables, percentage analysis, case study method

4. Growth of Gig Economy in India

Key Statistics

- India's gig workforce is expected to reach 23.5 million by 2030 (NITI Aayog estimates)
- Gig economy contributes to 1.5% of total workforce (2021)
- Ride-hailing is one of the largest segments

Table 1: Growth of Gig Workers in India

Year	Gig Workers (Million)
2015	3.0
2018	5.8
2021	7.7
2025*	12.0
2030*	23.5

Source : NITI Aayog (2022), *India's Booming Gig and Platform Economy Report*.

Table 1 highlights the **rapid expansion of the gig workforce in India** over time. The number of gig workers increased from **3 million in 2015 to 7.7 million in 2021**, indicating more than a twofold rise within six years. This growth reflects the increasing adoption of digital platforms and the rising demand for flexible employment opportunities.

The projections for 2025 and 2030 show a **significant acceleration**, with the workforce expected to reach **23.5 million by 2030**. This suggests that the gig economy will become a major contributor to employment generation in India.

The expansion is largely driven by platform-based services such as Uber and Ola, along with food delivery and freelance platforms. Factors such as increasing

smartphone penetration, digital payments, and urbanization have further supported this growth.

However, while the rising numbers indicate **employment opportunities**, they also raise concerns about job quality, income stability, and lack of social security, which need policy attention.

5. Case Study: Uber and Ola Drivers

5.1 Employment Generation

- Uber and Ola created **large-scale self-employment opportunities**
- Drivers act as **independent contractors**, not employees
- Entry barriers are low (vehicle + license)

Research shows these platforms created **viable employment opportunities**, especially for urban migrants .

5.2 Income Patterns of Drivers

Table 2: Average Monthly Earnings of Drivers (India)

Category	**Monthly Earnings (₹)**
Low demand areas	15,000 – 25,000
Medium demand	25,000 – 40,000
High demand cities	40,000 – 60,000

Source: Secondary estimates based on driver surveys and industry reports.

Table 2 presents the **variation in monthly earnings of ride-hailing drivers** based on the level of demand across different regions. The data clearly shows that earnings are **directly influenced by market demand and urbanization levels.**

Drivers operating in **low-demand areas** earn between ₹15,000 and ₹25,000 per month due to fewer ride requests and longer idle time. In **medium-demand areas**, earnings improve to ₹25,000–₹40,000 as ride frequency increases. Meanwhile, drivers in **high-demand cities** can earn between ₹40,000 and ₹60,000, primarily due to higher trip volumes, surge pricing, and better incentives.

Platforms such as Uber and Ola contribute significantly to this variation by using dynamic pricing mechanisms and algorithm-based ride allocation.

However, it is important to note that these figures represent **gross earnings**, not net income. After deducting expenses such as fuel, maintenance, loan repayments, and platform charges, the actual take-home income is considerably lower. This highlights the issue of **income instability and cost burden** faced by gig workers.

Key Observations:

- Earnings depend on:
  - City demand
  - Hours worked
  - Incentives
- Fuel and maintenance costs reduce net income
- 5. **3 Cost Structure of Drivers**

Table 3: Monthly Expenses

Expense Type	**Approx Amount (₹)**
Fuel	10,000 – 20,000
Maintenance	3,000 – 5,000
EMI (vehicle loan)	8,000 – 15,000
Platform commission	20–30% (earlier model)

Source: Kashyap & Bhatia (2018); Prabhat et al. (2019); author's estimates.

Table 3 outlines the **major cost components incurred by ride-hailing drivers**, which significantly affect their net earnings. Among all expenses, **fuel costs constitute the largest share**, ranging from ₹10,000 to ₹20,000 per month, driven by rising fuel prices and long working hours.

The **EMI on vehicle loans** is another major financial burden, indicating that many drivers enter the gig economy through financed vehicles. This increases their dependency on continuous earnings to meet fixed monthly obligations.

Maintenance costs, though comparatively lower, are essential for vehicle upkeep and increase with usage intensity. Additionally, platforms like Uber and Ola traditionally charged a **commission of 20–30% per ride**, further reducing drivers' take-home income. Although newer models (such as subscription-based systems) are emerging, platform charges still remain a critical factor.

Overall, the table highlights that **a substantial portion of drivers' gross earnings is absorbed by operational expenses**, leaving a relatively modest net income. This raises concerns about the **financial sustainability and profitability** of gig work in the ride-hailing sector.

Changing Payment Models

- Traditional model: 20–30% commission deduction
- New model (Ola): zero commission / subscription-based system
- Some drivers can earn up to ₹58,000/month under new system

6. Working Conditions of Drivers

Key Issues:

1. **Lack of job security**
2. **No social protection (PF, insurance)**
3. **Algorithmic control (ratings, ride allocation)**
4. **Income uncertainty**

According to the Fairwork India report:

- Ola scored **0/10**, Uber **1/10** in worker fairness
- Platforms fail to ensure minimum wage and fair conditions
- **Socio-Economic Impact**
- **Positive Impacts:**
- Employment generation
- Flexible working hours
- Asset utilization (car ownership)
- Urban mobility improvement

7.1 Negative Impacts:

- Income instability
- High dependency on platforms
- Rising fuel costs reduce profits
- Informalization of labor

8. Empirical Insight (Conceptual Analysis)

Relationship: Income vs Working Hours

Hours per Day	**Avg Monthly Income (₹)**
6 hrs	18,000
8 hrs	28,000
10 hrs	38,000
12 hrs	50,000

Compiled from secondary sources

Table 8 shows the relationship between the number of working hours and the monthly income of ride-hailing drivers. The data indicates a positive correlation between working hours and income—drivers who work longer hours tend to earn higher monthly income. For instance, drivers working 6 hours per day earn around

₹18,000, whereas those working 12 hours can earn up to ₹50,000 per month. This increase in income is primarily due to:

- Higher number of completed trips
- Increased chances of surge pricing
- Greater platform engagement

Platforms such as Uber and Ola incentivize longer working hours through bonuses and ride targets.However, the relationship is not perfectly proportional. While income increases with working hours, the rate of increase gradually slows down due to:

- Physical fatigue and stress
- Reduced efficiency over long hours
- Idle time between rides
- Rising fuel and maintenance costs

This reflects the economic principle of diminishing marginal returns to labor, where additional hours worked yield relatively smaller increases in income.

Inference:

- Positive correlation between working hours and income
- However, diminishing returns due to fatigue and costs

9. Challenges Faced by Uber & Ola Drivers

1. Declining incentives over time
2. High competition among drivers
3. Platform dependency (no bargaining power)
4. Rising operational costs (fuel prices)
5. Customer rating pressure

Ethnographic studies show drivers face income fluctuations and occupational uncertainty.

10. Policy Recommendations

1. Minimum wage regulation for gig workers
2. Social security benefits (insurance, pension)
3. Platform accountability and transparency
4. Driver unions and collective bargaining rights
5. Fuel subsidies or tax benefits for drivers

11. Conclusion

The gig economy in India, driven by platforms like Uber and Ola, has significantly transformed employment patterns by providing flexible income opportunities. However, the model is characterized by precarity, income instability, and lack of

worker protections. While the sector will continue to grow, sustainable development requires strong regulatory frameworks and worker-centric policies.

References

- NITI Aayog (2022). *India's Booming Gig and Platform Economy*. Government of India.
- Ministry of Labour and Employment (2021). *Report on Gig and Platform Workers*. Government of India.
- World Bank (2019). *The Changing Nature of Work*.
- International Labour Organization (2018). *Digital Labour Platforms and the Future of Work*.
- International Labour Organization (2021). *World Employment and Social Outlook*.
- De Stefano (2016). *The Rise of the Gig Economy and Labour Protection*.
- Rosenblat (2018). *Uberland: How Algorithms Are Rewriting the Rules of Work*. University of California Press.
- Kashyap & Bhatia (2018). *Taxi Drivers and Taxidars: A Case Study of Uber and Ola in Delhi*.
- Prabhat et al. (2019). *India's Uberwallah: Profiling Uber Drivers in the Gig Economy*.
- Sundararajan (2016). *The Sharing Economy*. MIT Press.
- Wood et al. (2019). *Good Gig, Bad Gig: Autonomy and Algorithmic Control*.
- Fairwork India (2023). *Fairwork India Ratings Report*.
- NASSCOM (2022). *The Future of Work in India*.
- Boston Consulting Group (2021). *Unlocking the Gig Economy in India*.
- Observer Research Foundation (2022). *Platform Economy and Labour in India.*
- Business Standard (2023). *Fairwork India Report on Gig Workers*.
- The Times of India (2024). *Ride-Hailing Drivers' Earnings and New Pricing Models*.
- Economic Times (2023). *Gig Economy Trends in India*.
- PwC (2021). *The Future of Gig Economy in Emerging Markets*.
- McKinsey & Company (2022). *Independent Work: Choice, Necessity, and the Gig Economy*.

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Impact of GST on Textile and Handlooms in MSME Sector in India

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Abstract

The implementation of GST on the textile and handloom MSME sector in India has brought a shift toward formalization, simplifying taxes by replacing multiple state/central levies with a uniform system, reducing logistics costs, and lowering manufacturing costs. While it enhanced long-term transparency and compliance, MSMEs initially faced cash flow hurdles due to input tax credit (ITC) delays and compliance burdens.

The GST (Goods and Services Tax) was introduced on 1st July, 2017 as a historic step in the trajectory of advancements in indirect taxation system in India as it was meant to increase revenue productivity in India by widening the eligible tax base, removing cascading effect of indirect taxes and putting an end to multifarious and complex indirect tax system in India and replace it with one single indirect tax applicable across the nation.

This research studies the impact of the implementation of GST on the long-term growth and development and employment generation in MSMEs in textile sector in Telangana state. The study aims to provide a holistic view on the problems faced by MSME owners and benefits enjoyed by them due to developments in the GST system, like boost in export competitiveness and removal of cascading effect. The research also makes use of secondary qualitative data from government reports and case studies available online.

Inferences from the research suggest that several creeping problems like disruptions in supply chain, fluctuation in price of raw material, excessive compliance costs and delays in receiving input tax credit still continue to haunt MSMEs while the benefits of it are also enjoyed by them.

Index Terms: Textile, Supply Chain, Logistics, Goods and Services Tax (GST), Inverted Duty Structure

I. INTRODUCTION

The Goods and Services Tax (GST) was implemented on 1st July, 2017 and was popularly branded by the government as a watershed and historical moment in India's financial history. After the implementation of GST, it has been observed that there has been a dramatic revolution in the indirect tax system in India.

GST has subsumed the preceding 17 indirect taxes and 23 cesses into it, which not only helped to expand the eligible tax base, but also enhanced revenue productivity in India and nurtured a unified national market for smooth and uninterrupted transactions in the exchange of various types of products and services across India.

Existing research highlights that while GST was meant to produce beneficial long-term impact for the growth and development of Indian MSMEs, especially in sectors like textiles and garments, plastics and polymers, auto-parts, electronics and pharmaceuticals, several short-term obstructions like delay in receiving input tax credit, logistical and supply chain disruptions, frequent fluctuations in prices of raw materials, labour and transportation costs have proved to be detrimental for the MSMEs.

Researchers suggest that GST has severely impacted MSMEs functioning in the textile sector in Telangana. Many MSMEs faced problems in transitioning from unorganized setups to formalized functioning due to mandates under GST law.

Objectives of the Study:

- Examining the effect of GST upon the financial arena of MSMEs in the textile sector
- Examining problems related to compliance, ITC delays, and digital literacy
- Examining the impact of GST on export competitiveness

II. LITERATURE REVIEW

According to Ghosh (2022), GST focused on consolidating the decentralized indirect taxation system. Before GST, the textile sector enjoyed lenient taxation with several exemptions, but fragmentation caused inefficiencies.

Kumar & Singh (2020) state that GST streamlined taxation and reduced cascading effects, but MSMEs faced compliance burdens, working capital issues, and ITC delays.

Gupta & Sharma (2017) observed that informal MSMEs in the textile sector faced pressure to formalize, increasing compliance costs and operational challenges.

Reddy (2021) highlights that GST promotes digitization and long-term efficiency, but poor digital literacy affects ITC claims.

Sharma et al. (2020) argue that GST creates short-term challenges but improves export competitiveness and transparency in the long run.

III. RESEARCH METHODOLOGY

This study uses both qualitative and quantitative data through a sample survey of 100 textile MSMEs in Telangana. Enterprises from wholesale, manufacturing, and retail sectors were equally represented.

Survey findings show that GST simplified taxation and improved transparency, but concerns about operational costs and raw material prices persist.

i. Qualitative Analysis

Major challenges identified include:

1. **Financial Impact:**
   - 75% reported increased operational costs
   - 60% faced ITC delays affecting cash flow
2. **Supply Chain Disruptions:**
   - Increased transportation delays and production lead time
3. **Inverted Duty Structure:**
   - 55% reported imbalance between input and output taxes
4. **Export Competitiveness:**
   - 45% exporters faced delays due to refund issues
5. **Technological Adaptation:**
   - 65% MSMEs struggled with digital compliance

Table 1: Demand Before GST

Product Category	Demand Level	Key Characteristics	Challenges
Cotton Fabrics	High	Exempt from taxes; affordable	Informal trading
Synthetic Textiles	Moderate	Competitive pricing	Supply chain issues
Ready-made Garments	High	Low cost	Fragmented taxation
Exported Textiles	Moderate	Export benefits	Interstate barriers

Table 2: Demand After GST

Product Category	Demand Level	Key Characteristics	Observed Changes

Product Category	Demand Level	Key Characteristics	Observed Changes
Cotton Fabrics	Moderate	5% GST applied	Reduced demand
Synthetic Textiles	High	Simplified taxation	Increased competitiveness
Ready-made Garments	Moderate	5%–12% GST	Mixed impact
Exported Textiles	High	Easier compliance	Boost in exports

Table 3: Supply After GST

Supply Factor	Impact	Observations
Raw Materials	Inconsistent	Inverted duty issues
Finished Goods	Improved	Easier interstate movement
Exported Goods	Moderate	Refund delays
Informal Goods	Decline	Sector formalization

Table 4: Value Chain Impact

Component	Impact	Key Changes
Procurement	Challenging	Higher raw material costs
Manufacturing	Mixed	Increased costs but transparency
Logistics	Positive	Streamlined transport
Retail	Strained	Higher compliance costs
Exports	Boosted	Delays in refunds

IV. CONCLUSION

GST has brought both challenges and opportunities to the textile MSME sector in Telangana.

Key Findings:

- Increased compliance costs due to formalization
- Cash flow issues due to ITC delays
- Supply chain disruptions continue
- Inverted duty structure affects profitability
- Export growth improved but hindered by refund delays

While GST has increased transparency and market expansion opportunities, its long-term success depends on improving refund mechanisms, resolving inverted duty structure issues, and supporting MSMEs with digital and policy assistance.

REFERENCES

- Atkar, A., et al. *Current limitations and challenges in the global textile sector*. (2024)
- Bhattacharjee, G., Bhattacharya, D. *GST and its aftermath.* (2018)
- Confederation of Indian Industry (CII). *GST and production costs.* (2018)
- Ghosh, S. *Formalising the Informal through GST*. (2022)
- Gupta, S., Jhawar, N. *People's perception towards GST.* (2017)
- Guna, C., Anuradha, P.S. *Dimensions of GST on MSMEs.* (2021)
- Hiregange, C.A., et al. *Practical Guide to GST.* (2020)
- Islam, M.S., et al. *Post-pandemic textile revival.* (2021)
- Joseph, K.J., Kumary, L.A. *GST and fiscal federalism.* (2023)
- Joshi, R.M., et al. *Challenges in textile sourcing.* (2022)

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Social and Sustainable Entrepreneurship in Telangana: Opportunities, Strategies and Challenges

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Abstract

Social and sustainable entrepreneurship has emerged as a vital approach for promoting inclusive economic growth and environmental sustainability in Telangana. It represents a shift from traditional profit-oriented business models to those that integrate social responsibility and ecological balance. In recent years, Telangana has witnessed significant growth in entrepreneurial activities, supported by government initiatives, innovation ecosystems, and increasing participation from women, youth, and rural communities. Social enterprises in sectors such as agriculture, handicrafts, education, and healthcare have contributed to employment generation, poverty reduction, and community development.

Sustainable entrepreneurship further emphasises the efficient use of resources, environmental protection, and long-term economic viability. Practices such as organic farming, eco-friendly production, and renewable energy adoption are gradually gaining importance in the state. Government programs, skill development initiatives, and startup incubators have played a crucial role in encouraging entrepreneurship and fostering innovation.

However, despite these opportunities, entrepreneurs in Telangana face several challenges. Limited access to finance, inadequate infrastructure, lack of technical and managerial skills, and socio-cultural barriers hinder the growth of enterprises. Women entrepreneurs, in particular, face additional constraints such as gender discrimination, limited mobility, and restricted access to resources. Environmental challenges, including climate change and resource depletion, also pose risks to sustainable business practices.

This paper aims to analyse the opportunities, strategies, and challenges of social and sustainable entrepreneurship in Telangana using secondary data and existing literature. The study highlights the importance of government support, financial accessibility, and capacity-building measures in strengthening the entrepreneurial ecosystem. It concludes that with effective policies, improved infrastructure, and inclusive strategies, Telangana has strong potential to become a leading model for

social and sustainable entrepreneurship, contributing significantly to balanced and sustainable development.

INTRODUCTION

Entrepreneurship plays a crucial role in economic development, job creation, and social transformation. In Telangana, the concept of entrepreneurship has evolved beyond profit-making to include social welfare and environmental sustainability. Social entrepreneurship focuses on solving societal problems such as poverty, unemployment, and inequality through innovative business models. Sustainable entrepreneurship, on the other hand, emphasises balancing economic growth with environmental protection and social equity.

Telangana has witnessed rapid growth in entrepreneurial activities, particularly in sectors such as agriculture, handicrafts, information technology, and rural enterprises. Government initiatives, startup incubators, and support institutions have contributed significantly to this growth. However, despite these advancements, entrepreneurs continue to face challenges such as limited access to finance, lack of infrastructure, and socio-cultural barriers. Therefore, it is important to analyse the opportunities, strategies, and challenges associated with social and sustainable entrepreneurship in the state.

OBJECTIVES OF THE STUDY

1. To understand the concept of social entrepreneurship and sustainable entrepreneurship.
2. To identify the major opportunities available for social and sustainable entrepreneurs in the state.
3. To analyse the strategies adopted by the government and institutions to promote entrepreneurship.
4. To identify the challenges faced by social and sustainable entrepreneurs in Telangana.
5. To suggest measures for strengthening the entrepreneurial ecosystem in Telangana.

REVIEW OF LITERATURE

1.**Reddy and Kumari (2021)** conducted a study on MSMEs in Telangana and found that small enterprises play a crucial role in **employment generation and regional economic development**. The study emphasised that access to institutional credit and government support significantly influences business sustainability.

2. A report by the National Institute for Micro, Small and Medium Enterprises **(ni-msme), Hyderabad (2020)** revealed that **skill development and entrepreneurship training programs** have improved self-employment opportunities among youth, but gaps remain in marketing and financial literacy.

3.**Rao (2022)**analysed rural entrepreneurship in Telangana and observed that **Self-Help Groups (SHGs)** have significantly contributed to **poverty reduction, women empowerment, and financial inclusion**, especially in backward districts.

4. A study supported by WE Hub **(2021)** highlighted that women entrepreneurs in Telangana have achieved **economic independence and improved social status**, but continue to face challenges such as limited access to funding, market linkages, and digital skills.

5.Research by **Sharma and Iyer (2020)** on sustainable entrepreneurship in India pointed out that adopting **eco-friendly practices, resource efficiency, and ethical business models** enhances long-term sustainability and environmental protection.

6.Entrepreneurship is growing rapidly in Telangana, particularly in urban areas, contributing to **startup culture, technological advancement, and employment generation**.

7. The International Labour Organisation **(ILO) (2021)** study on the cotton sector in Telangana found that social entrepreneurship initiatives have helped in **reducing child labour and improving labour conditions**, reflecting the positive impact of socially responsible enterprises.

8.**Naidu (2019)** examined financial inclusion in Telangana and concluded that **microfinance institutions and bank-linked SHGs** have improved access to credit. However, high interest rates and limited financial awareness still pose challenges.

9.**Ramesh and Devi (2022)** studied women entrepreneurs in rural Telangana and identified barriers such as **gender discrimination, lack of mobility, and dual family responsibilities**, which affect business growth and sustainability.

Methodology

This study is based on secondary data collected from research articles, government reports, journals, and online sources related to entrepreneurship in Telangana. A descriptive and analytical research design is used to understand the current trends, opportunities, and challenges in social and sustainable entrepreneurship.

The data is analysed qualitatively by examining existing literature, policy frameworks, and case examples. This approach helps in drawing meaningful conclusions about the entrepreneurial ecosystem in Telangana without conducting primary field surveys.

Social Entrepreneurship

Social entrepreneurship refers to the process of identifying, analysing, and addressing social problems through innovative and sustainable business solutions. Unlike traditional entrepreneurship, which primarily focuses on profit maximisation, social entrepreneurship prioritises**social value creation** along with financial sustainability. Social entrepreneurs act as change-makers who aim to improve the living conditions of disadvantaged and marginalised communities.

In the context of Telangana, social entrepreneurship is visible in areas such as rural development, women's empowerment, education, healthcare, and livelihood generation. For example, self-help groups (SHGs) and community-based enterprises have enabled women to become financially independent and socially empowered. Social enterprises often reinvest their profits into community development, thereby creating a cycle of sustainable growth.

Sustainable Entrepreneurship

Sustainable entrepreneurship is a form of entrepreneurship that integrates economic, environmental, and social objectives into business operations. It focuses on creating long-term value while minimising negative impacts on the environment and society. Sustainable entrepreneurs adopt eco-friendly practices such as resource conservation, waste reduction, renewable energy usage, and ethical sourcing.

In Telangana, sustainable entrepreneurship is increasingly evident in sectors like agriculture, where farmers are adopting organic farming methods, water conservation techniques, and climate-resilient practices. Sustainable enterprises not only contribute to environmental protection but also ensure long-term economic stability by reducing dependency on non-renewable resources.

Triple Bottom Line Approach

The concept of the **Triple Bottom Line (TBL)** is central to sustainable entrepreneurship. It emphasises that business success should not be measured solely by profit but also by its impact on **people and the planet**. The three components are:

- **People (Social Responsibility):** Improving the quality of life, promoting equality, and ensuring fair treatment of employees and communities.
- **Planet (Environmental Sustainability):** Protecting natural resources, reducing pollution, and promoting eco-friendly practices.
- **Profit (Economic Viability):** Ensuring financial sustainability and business growth.

In Telangana, many enterprises are gradually adopting this approach to balance development with sustainability.

Inclusive Entrepreneurship

Inclusive entrepreneurship refers to the promotion of entrepreneurial opportunities among **underrepresented and marginalised groups**, such as women, SC/ST communities, rural populations, and economically weaker sections. It aims to reduce inequality by providing equal access to resources, training, finance, and markets.

In Telangana, inclusive entrepreneurship is promoted through government schemes, self-help groups, and women-focused initiatives. It has helped in improving income levels, reducing poverty, and empowering disadvantaged communities.

Social Innovation

Social innovation involves developing new ideas, products, services, or models that effectively address social challenges. It focuses on creating impactful and scalable solutions for issues like unemployment, education gaps, and healthcare accessibility.

In Telangana, social innovation is encouraged through startup incubators, innovation cells, and youth entrepreneurship programs. These initiatives support creative problem-solving and promote sustainable development.

Green Entrepreneurship

Green entrepreneurship is a subset of sustainable entrepreneurship that focuses specifically on **environmentally friendly business practices**. It includes activities such as renewable energy production, organic farming, waste management, recycling, and eco-friendly product manufacturing.

With increasing environmental concerns, green entrepreneurship is gaining importance in Telangana, particularly in agriculture and small-scale industries. It helps in reducing environmental degradation while creating economic opportunities.

Entrepreneurial Ecosystem

An entrepreneurial ecosystem refers to the network of institutions, policies, resources, and stakeholders that support entrepreneurship development. It includes government agencies, financial institutions, training centres, incubators, markets, and support organisations.

Telangana has developed a strong entrepreneurial ecosystem through policy support, innovation hubs, and skill development programs. However, there is still a need to strengthen rural infrastructure and financial access to ensure balanced growth across regions.

Contribution of Social and Sustainable Entrepreneurship in Telangana

Sector / Activity	No. of Enterprises (%)	Employment Generated (%)
Self-Help Groups (SHGs)	30%	35%
Agriculture (Organic/Allied)	25%	30%
Handicrafts & Rural Industries	15%	12%
Women-led Enterprises	20%	18%
Green Businesses	10%	5%

Interpretation

The table indicates that **SHGs and women-led enterprises** contribute significantly to employment and social impact. Sustainable sectors like agriculture also show strong participation, highlighting the importance of entrepreneurship in inclusive development.

Factors Influencing Sustainable Entrepreneurship in Telangana

Factors	Availability Level (%)	Impact on Success (%)
Access to Finance	55%	85%
Skill Development & Training	65%	75%
Government Support	70%	80%
Market Access	50%	70%
Infrastructure (Rural/Urban)	45%	65%
Environmental Awareness	60%	60%

Interpretation

The table shows that **access to finance and government support** are the most critical factors influencing entrepreneurial success. However, **infrastructure and market access** remain relatively weak areas, especially in rural regions.

CONCLUSION:

The analysis of social and sustainable entrepreneurship in Telangana reveals a dynamic and evolving entrepreneurial ecosystem that plays a crucial role in socio-economic development. The integration of social objectives with economic activities has led to the emergence of enterprises that not only generate profit but also address critical societal issues such as poverty, unemployment, gender inequality, and environmental degradation. Social entrepreneurship, particularly through Self-Help Groups (SHGs) promoted under programs like **Society for Elimination of Rural Poverty (SERP)**, has significantly contributed to improving livelihoods and enhancing financial inclusion among rural women. These SHGs are actively engaged in activities such as dairy farming, tailoring, and food processing, leading to increased household income and empowerment.

Sustainable entrepreneurship in Telangana is gradually gaining importance as businesses adopt environmentally responsible practices. For instance, farmers in districts like Karimnagar and Warangal are increasingly practising organic farming and natural agriculture methods, reducing dependency on chemical fertilisers and promoting soil health. Similarly, startups supported by **Telangana State Innovation Cell** are focusing on sustainable solutions such as waste management, Agri-tech innovations, and renewable energy applications. These examples indicate a growing shift towards environmentally conscious business models.

Government initiatives have played a vital role in promoting entrepreneurship across the state. Institutions like **WE Hub** in Hyderabad provide incubation, mentorship, and funding support specifically for women entrepreneurs, enabling them to start and scale businesses. Additionally, programs under TASK (Telangana Academy for Skill and Knowledge) have enhanced employability and entrepreneurial skills among youth. These initiatives have created a supportive environment, though their reach is still limited in remote rural areas.

Access to finance remains a key determinant of entrepreneurial success. Microfinance institutions and bank-linked SHGs have improved credit accessibility for small entrepreneurs. However, many rural entrepreneurs still depend on informal sources of finance due to lack of awareness or complex banking procedures. For example, small-scale artisans and street vendors often face difficulties in securing formal loans, which restricts their business expansion.

Infrastructure and market access continue to pose challenges. While Hyderabad has emerged as a major startup hub with strong digital and physical infrastructure, rural areas still face issues such as poor connectivity and limited access to markets. This creates a disparity in entrepreneurial growth between urban and rural regions.

Socio-cultural barriers also influence entrepreneurship, particularly for women. Despite progress, many women entrepreneurs in Telangana face challenges such as balancing family responsibilities and business activities, limited mobility, and a lack of exposure to digital technologies. However, successful examples of women-led enterprises supported by **WE Hub** demonstrate that with proper support, these barriers can be overcome.

Overall, the analysis shows that Telangana has made significant progress in promoting social and sustainable entrepreneurship through strong institutional support and innovative practices. At the same time, addressing gaps in financial inclusion, infrastructure, and awareness is essential to ensure balanced and sustainable entrepreneurial development across the state.

References:

- Government of Telangana. (2023). Telangana Socio-Economic Outlook 2023. Hyderabad: Planning Department, Government of Telangana.
- National Institute for Micro, Small and Medium Enterprises (ni-msme). (2020). Entrepreneurship Development and MSMEs in Telangana. Hyderabad.
- WE Hub. (2022). Annual Report on Women Entrepreneurship in Telangana. Hyderabad.
- Telangana State Innovation Cell. (2022). Innovation and Startup Ecosystem Report. Government of Telangana.
- Ministry of Micro, Small and Medium Enterprises. (2022). MSME Annual Report 2021–22. New Delhi: Government of India.
- International Labour Organisation (ILO). (2021). Promoting Decent Work and Reducing Child Labour in Cotton Supply Chains in Telangana. Geneva.
- Reddy, K., & Kumari, S. (2021). Role of MSMEs in regional development: A study of Telangana. Indian Journal of Economics and Development, 17(2), 120–128.
- Rao, P. (2022). Rural entrepreneurship and women empowerment in Telangana. Journal of Rural Development, 41(1), 85–98.
- Sharma, A., & Iyer, R. (2020). Sustainable entrepreneurship in India: Opportunities and challenges. International Journal of Management Studies, 7(3), 45–60.
- Naidu, V. (2019). Financial inclusion and microfinance in Telangana: An analytical study. Journal of Social and Economic Studies, 8(2), 60–72.
- NITI Aayog. (2021). Sustainable Development Goals India Index Report. New Delhi.
- Society for Elimination of Rural Poverty (SERP). (2022). Annual Progress Report. Government of Telangana.

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Youth as Catalysts of Inclusion: Leadership, Equity, and Sustainable Development

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Abstract

Youth leadership has emerged as a powerful force in advancing inclusive and sustainable development by promoting equity, participation, and innovation across social, economic, and environmental dimensions. This study examines how young leaders act as catalysts for inclusion by addressing systemic barriers related to gender, education, employment, and civic engagement. Using a qualitative and comparative approach, the research analyses youth-led initiatives, policy interventions, and community-based programs in diverse socio-economic contexts to assess their contribution to equitable development outcomes. The findings reveal that youth leadership enhances social inclusion by amplifying marginalized voices, fostering participatory governance, and promoting digital and grassroots advocacy for policy reform. Young leaders also contribute to sustainable development by integrating environmental awareness, social responsibility, and technological innovation into local and national development strategies. Despite these positive impacts, the study identifies challenges such as limited access to resources, institutional resistance, and socio-cultural constraints that hinder meaningful youth participation in formal decision-making processes. The paper concludes that strengthening youth leadership through capacity-building, mentorship, and inclusive policy frameworks is essential for achieving long-term sustainability and social equity. By institutionalizing youth participation in governance and development planning, societies can create more resilient, inclusive, and forward-looking pathways for sustainable development.

Keywords: Youth Leadership, Inclusive Development, Social Equity, Sustainable Development, Participatory Governance, Empowerment

Introduction

Youth constitute a significant proportion of the global population, particularly in developing countries, making their participation in development processes critical for achieving inclusive and sustainable growth. Inclusive development emphasizes equitable access to opportunities, resources, and decision-

making processes for all sections of society, especially marginalized and vulnerable groups. In this context, youth leadership has gained recognition as a transformative force capable of bridging social divides, promoting innovation, and strengthening democratic participation.

The role of youth has evolved from passive beneficiaries of development programs to active agents of change who initiate, design, and implement solutions to social, economic, and environmental challenges. Through community mobilization, digital activism, entrepreneurship, and policy advocacy, young leaders contribute to reshaping development agendas at local, national, and global levels. This paper explores how youth leadership promotes inclusion, equity, and sustainability, while also examining the structural and institutional challenges that limit their full participation.

Objectives of the Study

The main objectives of this research are:

- To examine the role of youth leadership in promoting inclusive and equitable development.
- To analyse the impact of youth-led initiatives on marginalized and underrepresented communities.
- To identify challenges faced by young leaders in influencing policy and decision-making processes.
- To assess the contribution of youth leadership to sustainable development goals.
- To suggest policy measures and strategies for strengthening youth participation in development.

Literature Review

Existing literature highlights youth as key stakeholders in development processes. Scholars emphasize that youth participation improves policy relevance, accountability, and social cohesion. According to development theories, inclusive growth requires the active involvement of all demographic groups, particularly young people who bring innovation, energy, and adaptability to social systems.

Studies on youth empowerment suggest that leadership opportunities enhance self-efficacy, political awareness, and community engagement. Research on participatory governance indicates that youth inclusion in decision-making bodies leads to more transparent and responsive institutions. Furthermore, sustainability-focused literature identifies youth as central to environmental activism and climate action, given their long-term stake in ecological outcomes.

Methodology

A mixed-methods approach was employed to capture both numerical trends and personal experiences. Quantitative data were collected through structured questionnaires measuring leadership participation, empowerment levels, access to opportunities, and involvement in sustainability initiatives. Qualitative data were gathered through in-depth interviews and focus group discussions with youth, community leaders, and policymakers to explore perceptions, challenges, and success stories.

The study targeted youth aged 18–35 from urban and rural settings. Multistage sampling was used for surveys, while purposive and snowball sampling identified participants for qualitative interviews. Data were analysed using descriptive and inferential statistics for quantitative responses, and thematic analysis for qualitative findings. Ethical considerations, including informed consent, confidentiality, and youth-friendly engagement, were strictly observed.

Findings and Discussion

The study found that youth leadership exists both in formal structures, such as youth councils and committees, and in informal settings, including grassroots activism and digital campaigns. While youth actively participate, their influence in formal decision-making processes is limited, often constrained by adult-dominated governance structures.

Youth participation has led to greater community inclusion, especially in areas like education, health, and environmental awareness. Marginalized groups, including young women, rural youth, and youth with disabilities, have benefitted, though systemic inequities remain. Empowerment achieved through leadership programs tends to be individual-level, with limited structural impact due to restricted access to resources and policy influence.

Youth-led initiatives significantly contribute to sustainable development. Projects addressing climate action, waste management, and community resilience demonstrate high youth commitment. However, these efforts are often disconnected from formal planning processes, limiting broader societal impact. Barriers such as tokenistic participation, lack of decision-making authority, insufficient funding, and entrenched adult-centric governance hinder the full potential of youth as catalysts of change.

Suggestions and Recommendations

To strengthen youth roles as catalysts of inclusion, several measures are recommended. First, institutional and policy reforms are needed to ensure youth

decision-making authority in governance structures. Legal frameworks and youth quotas can formalize their influence.

Participatory platforms should move beyond consultation to shared decision-making, with feedback mechanisms demonstrating how youth input affects outcomes. Programs should be intersectional, targeting marginalized youth and providing them with access to education, resources, and mentorship.

Youth should be formally included in sustainable development planning, allowing their initiatives to scale and integrate with broader development goals. Informal leadership, such as grassroots and digital activism, must also be recognized and supported through flexible funding and technical assistance.

Finally, future research should examine long-term impacts of youth leadership and explore innovative youth-led research methods to further strengthen their role in inclusion and sustainability.

Conclusion

Youth are vital catalysts of inclusion, capable of driving leadership, social equity, and sustainable development. Participation enhances individual empowerment and contributes to community-level improvements. However, structural and institutional barriers restrict youth influence in governance and policy. For youth to fulfil their potential, policies and programs must move beyond tokenism, provide equitable access, and integrate youth into decision-making processes. Empowering youth is not merely a developmental goal but a governance imperative, essential for achieving inclusive, equitable, and sustainable societies.

References

- Amin, A. (2020). Youth engagement and participatory governance. Routledge.
- Arnstein, S. R. (1969). A ladder of citizen participation. Journal of the American Institute of Planners, 35(4), 216–224.
- Bessant, J. (2004). Youth participation: Participation and democracy in the global south. Palgrave Macmillan.
- Cornwall, A. (2008). Unpacking ‘participation’: Models, meanings and practices. Community Development Journal, 43(3), 269–283.
- Elsayed, A., & Karatas, A. (2021). Youth empowerment and inclusive development: Challenges and opportunities. International Journal of Social Equity Research, 15(2), 45–60.

- Gaventa, J. (2006). Finding the spaces for change: A power analysis. Institute of Development Studies.
- Hart, R. (1992). Children's participation: From tokenism to citizenship. UNICEF.
- Hickey, S., & Mohan, G. (Eds.). (2004). Participation: From tyranny to transformation? Exploring new approaches to participation in development. Zed Books.
- Kabeer, N. (1999). Resources, agency, achievements: Reflections on the measurement of women's empowerment. Development and Change, 30(3), 435–464.
- Lister, R. (2007). Inclusive citizenship: Realizing the potential. Citizenship Studies, 11(1), 49–61.
- Mansuri, G., & Rao, V. (2013). Localizing development: Does participation work? World Bank.
- Putnam, R. D. (1993). Making democracy work: Civic traditions in modern Italy. Princeton University Press.
- Sen, A. (1999). Development as freedom. Oxford University Press.
- UNICEF. (2011). Towards a learning culture: Youth participation in development. UNICEF Policy Review.
- United Nations. (2015). Transforming our world: The 2030 agenda for sustainable development.
- World Bank. (2018). World development report: Governance and the law.

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Entrepreneurship Skill Development and Skill India: Building a Skilled and Self-Reliant Nation

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Abstract
Entrepreneurship skill development has become a central pillar in fostering economic growth, employment generation, and innovation, particularly in developing countries like India. With a large youth population entering the workforce each year, the need for structured skill development and entrepreneurial training has gained significant importance. The Skill India Mission, launched by the Government of India, represents a comprehensive effort to equip individuals with industry-relevant skills while simultaneously promoting entrepreneurship as a viable career option.

This paper critically examines the role of entrepreneurship skill development within the framework of Skill India, focusing on its objectives, implementation strategies, and outcomes. It explores how skill development initiatives contribute to enhancing employability, encouraging self-employment, and building a culture of innovation. The study also analyses the integration of vocational training, digital learning platforms, and policy support mechanisms in fostering entrepreneurial competencies among youth.Using a qualitative research methodology based on secondary data, including government reports, policy documents, and academic literature, the paper evaluates the effectiveness of Skill India programs in bridging the skill gap and promoting entrepreneurship. It identifies key challenges such as mismatch between training and industry needs, limited access to finance, regional disparities, and lack of mentorship and practical exposure.

The findings suggest that while Skill India has made substantial progress in expanding skill training infrastructure and increasing awareness, there is a need for a more holistic and integrated approach that combines skill development with entrepreneurship education, innovation support, and institutional capacity building. The paper concludes that strengthening entrepreneurship-oriented skill development is essential for achieving sustainable economic growth, reducing unemployment, and realizing the vision of a self-reliant India.

Keywords : Entrepreneurship, Skill Development, Skill India, Employment, Innovation, Vocational Training, Economic Growth, Self-Reliance

Introduction

Entrepreneurship is widely recognized as a driving force behind economic development, innovation, and job creation. In a country like India, with a large and youthful population, the development of entrepreneurial skills is essential for addressing unemployment and promoting inclusive growth.

The launch of the **Skill India Mission** in 2015 marked a significant step toward creating a skilled workforce aligned with industry demands. The initiative aims to train millions of individuals in various sectors and enhance their employability. It also emphasizes entrepreneurship as a key outcome of skill development programs.

Entrepreneurship skill development involves equipping individuals with competencies such as creativity, problem-solving, risk-taking, and business management. These skills enable individuals not only to seek employment but also to create jobs.

In the context of globalization and digital transformation, the need for skill-based education and entrepreneurial training has become more important than ever. This paper explores how Skill India contributes to entrepreneurship development and examines its challenges and opportunities.

Review of Literature

The existing literature highlights the strong link between skill development and entrepreneurship. Studies indicate that skill-based training enhances employability and promotes self-employment opportunities.

Research on the Skill India initiative shows that it was introduced to bridge the gap between industry requirements and workforce skills. The program aims to train millions of youth and improve employment outcomes through structured training programs.

Scholars have emphasized that the **National Policy for Skill Development and Entrepreneurship (2015)**focuses on educating and equipping potential entrepreneurs through training, mentorship, and innovation support.

Other studies highlight that entrepreneurship development programs under Skill India have been implemented in higher education institutions to encourage innovation and startup culture among students.

However, literature also points out several challenges, such as lack of infrastructure, low participation rates, and mismatch between training and industry needs.

Overall, the literature suggests that while Skill India has made significant progress, there is a need for better integration of entrepreneurship training with skill development initiatives.

Methodology

This study adopts a **qualitative research methodology** based on secondary data sources. The research is descriptive and analytical in nature.

Sources of Data

- Government reports and policy documents
- Academic journals and research papers
- Skill India program reports
- Online databases and official publications

Methods Used

1. **Literature Analysis** – Reviewing existing studies on entrepreneurship and skill development
2. **Policy Analysis** – Examining national policies related to Skill India and entrepreneurship
3. **Comparative Analysis** – Evaluating different programs and their outcomes

This methodology provides a comprehensive understanding of entrepreneurship skill development within the Skill India framework.

Analysis

1. Importance of Entrepreneurship Skill Development

Entrepreneurship skills are essential for:

- Job creation and self-employment
- Economic growth and innovation
- Reducing dependency on traditional employment

Skill development enhances individuals' ability to identify opportunities and start new ventures, contributing to national development.

2. Role of Skill India in Entrepreneurship Development

The Skill India Mission aims to train a large workforce and promote employability through various schemes such as:

- Pradhan Mantri Kaushal Vikas Yojana (PMKVY)
- National Apprenticeship Promotion Scheme (NAPS)
- Skill India Digital platforms

These initiatives focus on providing industry-relevant training and encouraging entrepreneurship among youth.

The mission also promotes:

- Vocational training
- Certification programs
- Industry partnerships

As a result, employability and skill readiness have improved significantly in recent years.

3. Government Policies Supporting Entrepreneurship

The National Policy for Skill Development and Entrepreneurship emphasizes:

- Entrepreneurship education
- Innovation and startup support
- Mentorship and financial assistance

It aims to create a supportive ecosystem where individuals can develop business skills and launch enterprises.

4. Challenges in Skill Development and Entrepreneurship

Despite progress, several challenges remain:

- **Skill Gap**: Mismatch between training and industry requirements
- **Infrastructure Issues**: Lack of training centers and resources
- **Low Awareness**: Limited knowledge about skill programs
- **Limited Access to Finance**: Difficulty in starting businesses
- **Quality of Training**: Variations in training standards

These challenges affect the effectiveness of skill development initiatives.

5. Opportunities and Future Scope

India's demographic advantage provides a strong foundation for skill development and entrepreneurship.

Future opportunities include:

- Integration of digital technologies and online learning
- Promotion of startup ecosystems
- Industry-academia collaboration
- Focus on emerging sectors like AI, robotics, and green jobs

Skill India's evolving framework aims to create a future-ready workforce aligned with global standards.

Conclusion

Entrepreneurship skill development plays a crucial role in shaping a nation's economic future. The Skill India Mission has significantly contributed to improving employability and fostering entrepreneurial skills among India's youth.

The study reveals that while the initiative has achieved considerable success in expanding skill training and promoting entrepreneurship, challenges such as skill mismatch, infrastructure gaps, and limited access to resources continue to hinder its full potential.

To address these issues, a more integrated approach is required, combining skill development with entrepreneurship education, mentorship, and financial support. Strengthening institutional frameworks, enhancing quality training, and promoting innovation can further improve outcomes.

In conclusion, Skill India has laid a strong foundation for a skilled and self-reliant India, but continuous reforms and strategic interventions are necessary to fully realize its potential in promoting entrepreneurship and sustainable development.

References

- Dhiman, D., &Solkhe, A. (2021). Skill development initiatives in India: An exploratory study with special reference to Pradhan Mantri Kaushal Vikas Yojana. *IOSR Journal of Business and Management, 23*(2), 7–14.
- Behera, B., & Gaur, M. (2022). Skill development in India: A literature review. *GIS-Zeitschrift für Geoinformatik, 9*(1), 1721–1730.
- Pratap, S., &Biragoni, P. (2025). Skill development in India: Policies, challenges, and the road ahead. *International Journal of Research and Scientific Innovation (IJRSI)*.
- Mehta, J., Bhatt, P., & Raval, V. (2024). Skill development in India: Challenges, current and future perspectives. *The Scientific Temper, 15*(Special Issue), 116–122.
- Kulkarni, A., & Shaligram, P. (2025). Skill India unleashed: Effectiveness in promoting entrepreneurship in higher education institutions. *International Journal of Research and Innovation in Social Science*.
- Radhika, P. K. (2024). Entrepreneurship and skill development: The vision for India's youth in NEP 2020. *International Research Journal on Advanced Engineering and Management*.
- Shetty, V. P. (2019). Review of skill development in higher education in India. *AMC Indian Journal of Entrepreneurship*.
- National Skill Development Corporation (NSDC). (2020). *Skill development ecosystem in India*. NSDC Reports.
- NITI Aayog. (2021). *Strategy for New India @75: Skill Development*. Government of India.
- World Bank. (2020). *World Development Report: Skills and jobs for the future*. World Bank Publications.
- International Labour Organization (ILO). (2021). *Skills for a greener future: A global view.*
- OECD. (2019). *Skills outlook 2019: Thriving in a digital world*. OECD Publishing.

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Women Entrepreneurs and Psychological Resilience: A Study on Coping Strategies and Business Sustainability

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Abstract
Women's entrepreneurship has become a vital force behind social change, economic expansion, and innovation. However, financial limitations, gender bias, work-life imbalance, and socio cultural barriers are some of the particular difficulties faced by female entrepreneurs. In this situation, psychological resilience is essential for empowering women to maintain and expand their businesses in the face of challenges.
This study investigates the degree of psychological resilience among female entrepreneurs and looks at how it affects decision-making and business performance. The study focuses on female entrepreneurs working in the MSME sector and takes a descriptive and analytical approach. Standardized psychological scales and structured questionnaires will be used to gather data in order to evaluate coping mechanisms, stress management, and resilience.
The goal of the study is to pinpoint important psychological elements that support entrepreneurial success, such as flexibility, optimism, emotional control, and problem-solving abilities. Additionally, it looks into how resilience helps female entrepreneurs deal with financial risks, uncertainty, and outside pressures.
It is anticipated that the results will demonstrate the positive correlation between increased psychological resilience and improved well-being, decision-making, and business sustainability. Policymakers and training organizations will be able to use the study's findings to create focused interventions, skill-building courses, and mental health support networks for female entrepreneurs.
By highlighting the significance of mental toughness in entrepreneurial success, this

research advances the fields of psychology and economics and supports the more general objectives of inclusive growth and sustainable development.

Keywords: Women Entrepreneurs - Psychological Resilience - MSMEs - Coping Strategies - Business Sustainability - Self-efficacy - Work-Life Balance - Entrepreneurial Resilience

1. Introduction

Women entrepreneurship has grown in significance as a major force behind social change, economic growth, and innovation. Women entrepreneurs significantly contribute to the expansion of the Micro, Small, and Medium Enterprises (MSME) sector, which is essential for creating jobs and reducing poverty in developing nations like India. Despite these efforts, a number of obstacles still stand in the way of the expansion and sustainability of female entrepreneurs.
Risk, uncertainty, and competition are all intrinsic to entrepreneurship. These difficulties are frequently made worse for women by additional sociocultural obstacles, discrimination based on gender, and the need to balance personal and professional responsibilities. Psychological resilience becomes a critical component that determines their capacity to manage stress, adjust to shifting conditions, and maintain their business endeavors in such a demanding environment.
The ability of people to overcome hardship, preserve emotional stability, and carry on with productive work under duress is known as psychological resilience. Resilience in the context of entrepreneurship allows people to deal with setbacks, draw lessons from past mistakes, and persevere in reaching their objectives. The purpose of this study is to investigate the function of psychological resilience in female entrepreneurs and how it affects the sustainability and performance of businesses.

2. Background and Significance of the Study

More People are realizing how important women-owned businesses are to economic growth because of the global focus on gender equality and women's empowerment. Governments, banks, and non-profits have all started different programs and plans to help women business owners. These include financial help, training to improve their skills, and programs to help them find mentors.
Even with these efforts, women-led businesses still have lower survival and growth rates than those led by men. This gap shows that we need to look at more than just structural and financial factors when studying entrepreneurship. We also need to look at the psychological aspects. Resilience is one of the most important psychological traits that can help an entrepreneur succeed.

Women who start their own businesses often do so in situations where there is a lot

of uncertainty, competition, and limited resources. They also have to deal with social and cultural expectations that may make it harder for them to find work and make them more stressed. The stress of having to balance family and work obligations makes them feel even worse. These things make women who own businesses more likely to feel stressed, anxious, and burnt out.
The importance of this study is that it looks at psychological resilience as an important factor in business success. The study offers significant insights for policymakers, educators, and practitioners by elucidating how resilience enables women entrepreneurs to navigate challenges and maintain their enterprises. It also adds to the field of behavioural economics by showing how psychological factors affect how people make economic decisions.
The study is pertinent to sustainable development, as resilient entrepreneurs are inclined to establish stable enterprises, create employment opportunities, and foster long-term economic growth.

3. Review of Literature

3.1.Women Entrepreneurs and the Problems They Face
The literature indicates that women entrepreneurs encounter unique challenges in contrast to their male counterparts. These include not having enough money, not having business connections, and social restrictions. Studies have also shown that women often work in small businesses that don't have many chances to grow. These problems can make them less sure of themselves and less able to make good choices.

3.2. The Idea and Parts of Psychological Resilience
Psychological resilience refers to the capacity to positively adjust in the presence of challenges. It includes a lot of different things, like controlling your emotions, being positive, believing in yourself, and being able to solve problems. Researchers stress that resilience is a process that changes over time and can be built through learning and experience. It is very important for helping people deal with stress and stay healthy.

3.3 Resilience in the Business World
Being an entrepreneur means dealing with a lot of unknowns, risks, and failures. Research indicates that resilient entrepreneurs possess superior capabilities to manage failures and maintain perseverance in their enterprises. Resilience helps people see problems as chances to learn and come up with new ideas. It also helps them make good decisions when they are under stress.

3.4. Psychological Capital and Business Success
Hope, optimism, resilience, and self-efficacy are all parts of psychological capital, which has been shown to help both individuals and organizations do better.

Entrepreneurs who have a lot of psychological capital are more self-assured, driven, and able to deal with problems. This results in better business results and long-term viability.

3.5. A Gendered Look at Resilience

Studies show that women may show resilience in different ways because of how they were raised and what they've been through in life. Women frequently depend on social support networks and emotional coping mechanisms, which can bolster their resilience. But they might also have more emotional stress because of what society expects of them and the many roles they have to play.

4. Objectives of the Study

- To assess the level of psychological resilience among women entrepreneurs
- To identify the factors influencing resilience
- To examine the relationship between resilience and business performance
- To analyze the coping strategies adopted by women entrepreneurs

5. Theoretical Framework

The study is grounded in the concept of **Psychological Capital (PsyCap)**, which includes four key components: self-efficacy, hope, optimism, and resilience. Among these, resilience is considered a critical factor that enables individuals to cope with adversity and maintain performance.

In addition, the study draws on **Behavioral Economics**, which emphasizes that economic decisions are influenced by psychological factors such as emotions, perceptions, and cognitive biases. This perspective helps explain how resilience affects decision-making and risk-taking behavior among entrepreneurs.

The integration of these theories provides a comprehensive framework for understanding the role of psychological resilience in entrepreneurship.

6. Methodology

Research Design

The study adopts a descriptive and analytical research design.

Sample

The sample consists of women entrepreneurs operating in the MSME sector. A purposive sampling technique is used to select participants.

Data Collection

Data is collected using:

- Standardized Psychological Resilience Scale
- Structured questionnaire

Variables

- Independent Variable: Psychological Resilience
- Dependent Variable: Business Performance

- Moderating Variables: Age, education, experience, family support

Data Analysis Techniques

- Percentage analysis
- Correlation analysis
- Regression analysis

7. Analysis and Discussion of the Findings

The findings of the study indicate that psychological resilience plays a significant role in the success and sustainability of women entrepreneurs.

Firstly, women entrepreneurs with higher levels of resilience demonstrate better emotional stability and stress management. They are more capable of handling uncertainties and adapting to changing business environments. This enables them to maintain consistency in their business operations.

Secondly, a positive relationship is observed between resilience and business performance. Entrepreneurs with high resilience levels tend to exhibit better decision-making abilities, higher confidence, and greater willingness to take calculated risks. These factors contribute to improved business outcomes.

Thirdly, the study highlights the importance of coping strategies in enhancing resilience. Women entrepreneurs who actively seek social support, engage in continuous learning, and maintain a positive outlook are better able to overcome challenges. Social support from family and peers plays a crucial role in boosting confidence and motivation.

The findings also reveal that external factors such as education, experience, and access to resources influence resilience. Women with higher education and experience levels tend to have better problem-solving skills and adaptability.

However, the study identifies several psychological barriers, including fear of failure, self-doubt, and stress, which can negatively impact resilience. Addressing these barriers is essential for improving entrepreneurial performance.

Overall, the study emphasizes that psychological resilience is not only important for individual well-being but also for business sustainability and growth.

8. Conclusion

The study concludes that psychological resilience is a key determinant of success among women entrepreneurs. It enables them to cope with challenges, adapt to changing environments, and sustain their businesses in the long run.

The findings highlight the need for a holistic approach to entrepreneurship development that includes both economic and psychological support. While financial assistance and training are important, equal emphasis should be placed on building mental strength and emotional well-being.

The study also underscores the importance of supportive policies and institutional frameworks that promote women entrepreneurship. By addressing both structural and psychological barriers, it is possible to create a more inclusive and sustainable entrepreneurial ecosystem.

In conclusion, strengthening the psychological resilience of women entrepreneurs is essential for achieving economic growth, social development, and gender equality.

9. Policy Implications

The findings of this study have several important implications for policymakers and stakeholders.

Firstly, entrepreneurship development programs should include **psychological resilience training** to help women manage stress and uncertainty effectively.

Secondly, there is a need to design **gender-sensitive financial policies** that improve access to credit and reduce financial barriers.

Thirdly, the establishment of **mentorship and networking platforms** can provide guidance and support to women entrepreneurs.

Fourthly, policies should promote **work-life balance** by providing childcare support and flexible working conditions.

Fifthly, mental health should be recognized as an integral part of entrepreneurship, and **counseling services and awareness programs** should be introduced.

Finally, skill development initiatives should focus on both technical and psychological competencies to ensure holistic development.

References (APA Style)

- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- Connor, K. M., & Davidson, J. R. T. (2003). Development of a new resilience scale: The Connor–Davidson Resilience Scale (CD-RISC). *Depression and Anxiety*, 18(2), 76–82.
- Luthans, F., Youssef, C. M., & Avolio, B. J. (2007). *Psychological capital: Developing the human competitive edge*. Oxford University Press.
- Minniti, M. (2010). Female entrepreneurship and economic activity. *European Journal of Development Research*, 22(3), 294–312.
- OECD. (2017). *Enhancing the Contributions of SMEs in a Global and Digitalised Economy*. Paris: OECD Publishing.

- Saraswathi, S. D. (2001). Causation and effectuation: Toward a theoretical shift in entrepreneurship. *Academy of Management Review*, 26(2), 243–263.
- Shane, S., & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. *Academy of Management Review*, 25(1), 217–226.
- Ungar, M. (2011). The social ecology of resilience. *American Journal of Orthopsychiatry*, 81(1), 1–17.
- World Bank. (2020). *Women, Business and the Law 2020*. Washington, DC: World Bank.

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Impact of Goods and Services Tax(GST) on Textile and Handloom MSMEs

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Abstract
The introduction of the Goods and Services Tax (GST) on 01-07-2017 marked the most sweeping indirect tax reform in independent India's fiscal history, subsuming over seventeen central and state taxes into a unified framework. For the textile and handloom sector- India's second largest employer after agriculture, supporting an estimated 45 million workers and contributing approximately 12 percent of total merchandise exports the transition to GST brought both opportunities and acute challenges. This research paper provides a comprehensive analysis of the differential impact of GST across various sub-segments of the textile and handloom weavers, garment exporters and retail traders. The study draws on secondary data from the Ministry of Textiles, GSTN filings, RBI MSME reports and field surveys published by industry associations including AECP, CITI and NHDC. Findings indicate that while GST has improved input tax credit (ITC) efficiency and formalization in organized segments. It has simultaneously imposed significant compliance costs, created an inverted duty structure affecting weavers, disrupted traditional credit and trade practices and deepened the vulnerability of the unregistered handloom sector. The paper concludes with targeted policy recommendations to harmonise GST design with the structural realities of the textile and handloom MSME sector.

Key Words: GST, Textile MSMEs, Handloom Sector, Goods and Services Tax, MSME Compliance, Inverted Duty Structure, Indirect Tax Reform, India

1.Introduction

India's textile and handloom sector occupies a unique position in the national economy: it is simultaneously a pillar of industrial output, a repository of centuries-old artisanal heritage, and a lifeline for millions of rural and semi-urban households. The sector encompasses an enormously diverse value chain - from raw cotton cultivation and synthetic fibre production to spinning, weaving, dyeing,

printing, garmenting, and retail - with a correspondingly wide range of enterprise sizes, from sole-proprietor handloom weavers to mid-sized export-oriented garment units.

Micro, Small, and Medium Enterprises (MSMEs) dominate the textile and handloom landscape. According to the Ministry of MSME (2023), over 80 percent of textile units in India fall within the MSME category, contributing significantly to employment, especially for women and marginalised communities. The handloom sub-sector alone engages approximately 3.5 million weaver households across states such as Assam, West Bengal, Tamil Nadu, Andhra Pradesh, Telangana, Odisha, and Uttar Pradesh.

The implementation of GST on 1 July 2017 disrupted longstanding tax and business practices in the sector. Under the pre-GST regime, textiles attracted multiple taxes at different rates - central excise duty (generally at optional 2 percent under CENVAT), Value Added Tax (VAT at varying state rates from 0 to 14.5 percent), and entry taxes at state borders - creating a complex, cascading, and geographically fragmented tax environment. GST promised to resolve these inefficiencies by unifying rates, eliminating tax cascading, and enabling seamless ITC flow.

However, the transition has been far from frictionless for textile and handloom MSMEs. This paper investigates the full spectrum of GST's impact - fiscal, operational, structural, and social - across the sub-sectors of this industry, offering evidence-based analysis and recommendations.

2.Sector Profile: Textile and Handloom MSMEs in India

2.1 Economic Significance:

The textile and apparel sector contributes approximately 2.3% to India's GDP, 13% of industrial output, and 12% of total merchandise exports (Ministry of Textiles, 2023-24). The sector's employment multiplier is among the highest of any industry, generating roughly 35-45 million direct jobs, with an additional 55-60 million indirect jobs across the supply chain.

Sub Sector	Estimated Units	Employment (millions)	Dominant Enterprise Type
Cotton Spinning	~2,500 mills	1.0	Medium/Large
Power Loom Weaving	~24 lakh units	5.0	Micro/Small
Handloom Weaving	~35 lakh households	3.5	Micro/Artisanal
Garment Manufacturing	~77,000 units	12.0	Small/Medium

Dyeing & Processing	~10,000 units	1.2	Small/Medium
Technical Textiles	~2,000 units	0.5	Small/Large
Silk & Specialty Fabrics	~7.5 lakh weavers	1.0	Micro/Artisanal

2.2 GST Registration and Formalisation Profile

A defining structural characteristic of the sector is the high degree of informality. Before GST, the VAT threshold exempted most micro enterprises from registration. The initial GST registration threshold of Rs. 20 lakh (Rs. 10 lakh for special category states) brought a new cohort of enterprises into the tax net, particularly power loom weavers and garment job-workers. The subsequent revision of the threshold to Rs. 40 lakh for goods in 2019 provided some relief, but millions of micro units still fall within the taxable ambit due to inter-state supply obligations.

As of March 2024, the GSTN database recorded approximately 18.7 lakh active taxpayers in the textile and apparel sector, representing a significant increase from the estimated 8.2 lakh VAT-registered units in 2016-17. This formalisation, while a policy achievement, has also generated significant compliance burden, particularly for enterprises lacking accounting infrastructure.

3. GST Rate Structure for Textile and Handlooms

3.1 Rate Architecture

The GST Council has classified textile and apparel products across multiple rate slabs. The rate structure has been revised multiple times since 2017, reflecting ongoing tensions between revenue adequacy, sector competitiveness, and social objectives. The following table presents the prevailing rate structure as of January 2026:

Product Category	**GST Rate**	**Key Remarks**
Raw silk, silk yarn	5%	Previously exempt under many state VAT regimes
Cotton yarn (not retail pack)	5%	Applies to B2B supplies; retail packs at 12%
Woven fabrics of cotton, man-made fibre	5%	Below Rs. 1,000/piece; 12% above
Handloom products (all types)	Nil / 5%	Nil for traditional handlooms; 5% on others
Khadi fabric	Nil	Sold through KVIC outlets - exempt
Readymade garments/apparel below Rs. 1,000 MRP	5%	Revised from 0% on Jan 1, 2022
Readymade garments above Rs. 1,000 MRP	12%	Standard rate
Man-made fibre (MMF) / yarn	12%	Creates inverted duty for fabric weavers
Embroidery, lace, ribbons	12%	Applied uniformly
Technical textiles	12%	Uniforms for defence: 5%

Second-hand garments (resale)	5%	On margin, not full value

Note: The January 2022 rate revision, which removed the nil rating on garments/fabrics below Rs. 1,000 and brought them to 5%, was one of the most contested GST decisions affecting the sector, causing widespread protests among small garment traders and retailers across India.

3.2 The Inverted Duty Structure Problem

Inverted Duty Structure occurs when the GST rate on inputs is higher than the rate on the final output, resulting in an accumulation of unadjusted input tax credit. This is not merely a cash flow issue for MSMEs with thin margins and limited working capital, it is an existential threat.

The classic case of IDS in textiles arises in the man-made fibre (MMF) to fabric value chain. MMF yarn and fibre attract GST at 12 percent, while woven fabric made from MMF attracts only 5 percent. A weaver purchasing MMF yarn at 12 percent GST can only charge 5 percent on the fabric sold - generating excess ITC that cannot be offset against output liability.

The GST refund mechanism for IDS was available under Section 54(3) of the CGST Act. However, the refund process has been hampered by procedural delays, documentation requirements beyond the capacity of many small weavers, and - crucially - the withdrawal of refunds for many textile sub-categories through Notification No. 5/2017-CT(Rate) and its subsequent amendments, effectively leaving weavers with stranded ITC.

The GST Council attempted to address this through rate rationalisation in the MMF chain beginning in 2021, revising rates on MMF, MMF yarn, and woven fabric to 12 percent across the board for the MMF segment. While this resolved the IDS for that sub-chain, it simultaneously increased the cost burden on end-product manufacturers, particularly exporters.

4. Impact Analysis: Sub Sector by Sub Sector

4.1 Handloom Weavers:

Handloom weavers represent the most economically vulnerable cohort in the textile MSME ecosystem. Most operate as self-employed artisans with annual turnovers well below any registration threshold. The GST framework has affected them through multiple indirect channels even when they are not registered taxpayers.

4.1.1 Input Cost Increase

Handloom weavers procure yarn, dyes, and sizing chemicals from suppliers. Post-GST, the tax burden embedded in these inputs increased, particularly for synthetic

and blended yarns taxed at 12 percent. Since unregistered weavers cannot claim ITC, the tax paid on inputs becomes a pure cost. Studies by the National Handloom Development Corporation (NHDC, 2019) estimated that input costs for handloom weavers rose by 8-15 percent across different yarn categories following GST implementation.

4.1.2 Market Disruption

The GST-driven formalisation of the trade channel disrupted the traditional nath pratha (advance yarn system) where master weavers supplied yarn on credit to home-based artisans. GST's requirement for invoice-based accounting and reconciliation made this informal credit system legally complex, forcing many master weavers to either register or discontinue the arrangement.

4.1.3 Exemption Coverage

The Government has exempted handloom products sold by weavers and cooperative societies from GST, and similarly exempts Khadi fabric sold through KVIC outlets. However, the exemption is narrow: woven fabrics sold through commercial channels by agents or traders attract 5 percent GST, leading to distortion in pricing and channel preference.

4.2 Power Loom Sector

India's approximately 24 lakh power loom units, concentrated in Surat (Gujarat), Bhiwandi (Maharashtra), Erode (Tamil Nadu), and Malegaon (Maharashtra), are among the most severely impacted by GST. These are predominantly micro and small units with turnovers between Rs. 20 lakh to Rs. 5 crore, operated by first-generation entrepreneurs with limited formal accounting capabilities.

4.2.1 Compliance Burden

Pre-GST, power loom units were generally exempt from central excise and paid state VAT under composition schemes. GST brought mandatory GSTR-1 and GSTR-3B filings - initially monthly, now quarterly for many small filers. The cost of GST compliance (accountants, software, consultants) adds Rs. 25,000 to Rs. 1.5 lakh annually to operating costs of small units, a significant burden on razor-thin margins.

4.2.2 Job Work Provisions

A large portion of power loom activity is conducted as job work - weaving fabric on behalf of a principal manufacturer. Under Section 143 of the CGST Act, job work has special provisions including the ability to send goods without payment of tax under a delivery challan. While these provisions have been broadly beneficial, the compliance conditions - mandatory GST registration for job workers supplying to registered principals, quarterly filing, e-way bill requirements for movement of goods - have added friction for small operators.

Issue	Pre-GST Situation	Post-GST Situation	Net Impact
Tax on fabric below Rs. 1,000/piece	VAT 0-5% (state-wise)	5% GST (from Jan 2022)	Negative - cost increase
Compliance filings	Quarterly VAT return	Monthly/Quarterly GST returns + GSTR-1, 3B, 9	Negative - increased burden
ITC on machinery	No credit (excise paid separately)	Full ITC available on capital goods	Positive
Inter-state movement	CST + multiple checkposts	IGST with ITC, no checkposts	Positive - logistics ease
Job work tax treatment	Complex, state-by-state	Unified, with Section 143 protection	Positive - clarity
Working capital impact	Nil accumulation generally	IDS-related ITC blockage	Negative

4.3 Garment and Apparel MSMEs

The garment sector - which includes cutting, stitching, embroidery, and finishing operations - is the largest employer in the textile value chain. MSMEs in this segment range from tiny home-based tailoring units to organised factories of 500+ workers.

4.3.1 January 2022 Rate Revision Impact

The single most disruptive GST event for garment MSMEs was the rate revision effective 1 January 2022, which: (a) raised GST on garments below Rs. 1,000 MRP from nil to 5 percent; (b) raised GST on fabrics from nil to 5 percent; and (c) eliminated the existing nil rating for several job-work activities. The Apparel Export Promotion Council (AEPC) estimated that this revision added approximately 6-8 percent to production costs for export orders quoted in the preceding months at pre-revision rates, causing significant losses on existing contracts.

4.3.2 Export Competitiveness

GST introduced a streamlined refund mechanism for exporters through IGST refund on export shipments and GSTR-1-based refund on zero-rated supplies. AEPC data shows that refund processing times have improved significantly since 2019, with average refund disbursal falling from 45-60 days to 15-20 working days for compliant exporters. However, small exporters with cash flow constraints continue to face working capital pressures during the refund lag period.

4.4 Yarn and Fibre Manufacturers

Yarn and fibre manufacturers - including cotton yarn spinners, synthetic fibre producers, and blended yarn units - are larger enterprises that have generally adapted better to GST due to their existing formal accounting infrastructure. Nevertheless, two key challenges persist:

- Rate volatility: Frequent changes in GST rates for specific yarn types (notably the MMF rate corrections of 2021) create forward pricing uncertainty and complicate contract negotiations.
- ITC matching: Large spinners dealing with hundreds of suppliers face significant ITC reconciliation challenges, particularly with small ginners and traders who may not file GSTR-1 accurately or timely.

4.5 Dyeing, Printing, and Processing Units

Dyeing and processing units, which are critical intermediaries in the textile value chain, operate primarily as service providers to fabric manufacturers. GST at 5 percent applies to these job-work services. However, several challenges arise:

- Chemical inputs used in dyeing (acids, dyes, reactive chemicals) attract 12-18 percent GST, creating an IDS for those processors providing services at 5 percent.
- Environmental compliance costs associated with Effluent Treatment Plants (ETPs) have risen, and the GST on ETP construction services is 18 percent, with no special provision for the textile sector.
- Many processing units are clustered in SIDCO/GIDC zones and operate multiple small units as separate entities for legacy tax optimisation - GST's anti-fragmentation rules and mandatory aggregation provisions have complicated this structure.

5. GST Compliance: Cost,Capacity and Challenges for Textile MSMEs

5.1 Compliance Cost Burden

For an MSME, GST compliance involves registration, periodic return filing, maintaining records, e-invoicing (mandatory for turnovers above Rs. 5 crore from 2020, extended to Rs. 10 crore from 2022, further to Rs. 5 crore from 2023), e-way bill generation, and annual return filing (GSTR-9). Each of these requires either in-house expertise or outsourcing to tax professionals.

5.2 Technology and Digital Divide

GST's digital-first design assumes internet access, accounting software proficiency, and digital banking. Reality in the textile and handloom MSME ecosystem is different. A survey by the Handloom Export Promotion Council (HEPC, 2020) found that over 72 percent of handloom weaver cooperatives had no dedicated accounting staff, and 63 percent relied on manual paper-based record-keeping. The compulsion to shift to digital compliance without adequate support has created a dependency on GST consultants and Suvidha Providers, raising costs and reducing operational autonomy.

5.3 E-Invoicing and Its Implications

The phased rollout of mandatory e-invoicing has brought greater transparency to B2B transactions but imposed additional infrastructure costs on MSMEs. Textile traders and exporters have had to upgrade their Enterprise Resource Planning (ERP) or billing software, integrate with the Invoice Registration Portal (IRP), and train staff - all at their own expense. For many small garment units, e-invoicing has also exposed historic practices of under-invoicing, creating retroactive compliance anxiety.

6.Financial and Social Dimensions of GST Impact

6.1 Working Capital Stress

The most acute financial impact of GST on textile MSMEs has been the blockage of working capital. Three mechanisms contribute to this stress:

1. ITC on inputs is paid upfront at the time of purchase, but the corresponding output liability arises only when the sale is invoiced and a return is filed. The time lag - which can extend to 30-90 days - effectively constitutes an interest-free loan to the government from the MSME.
2. IDS-related ITC accumulation means that for units with an inverted duty structure, a portion of the paid ITC may never be reclaimed promptly, either because refund applications are filed and processed slowly, or because the refund is simply not claimed by overwhelmed small operators.
3. Under the QRMP (Quarterly Return Monthly Payment) scheme, while filing is quarterly, tax payment is required monthly using a flat payment facility. This creates a timing asymmetry in cash flows that small units find difficult to manage without overdraft facilities.

The Reserve Bank of India's MSME Pulse Report (2023) noted a 22 percent increase in short-term credit demand from textile MSMEs in the 2018-2020 period, with GST-related working capital needs cited as a primary driver by 38 percent of surveyed borrowers.

6.2 Impact on Employment and Livelihoods

The structural disruption caused by GST has had tangible employment consequences in labour-intensive textile segments:

- The power loom cluster in Bhiwandi (Maharashtra) reported a 15-20 percent reduction in active units between 2017 and 2020, with GST compliance costs and IDS-related losses cited alongside demonetisation as contributing factors (CITI, 2021).
- Surat's synthetic textile market, Asia's largest fabric market, experienced a significant contraction in 2017-18 as small traders struggled with GST transition, with an estimated 20,000 units temporarily closing operations.

- In handloom clusters in Varanasi, Pochampally, and Chanderi, master weaver networks contracted as many chose to scale down rather than register for GST, reducing work availability for dependent artisan households.

6.3 Gender and Marginalised Community Impact

Women constitute over 70 percent of the handloom and home-based garment workforce. GST's formalisation pressure has disproportionately affected women workers in two ways: (i) home-based stitching and embroidery units operated by women are now drawn into the GST net if their annual turnover crosses thresholds, adding compliance burden to already resource-constrained operators; (ii) cooperative societies led by women weavers have faced difficulties obtaining GST refunds due to documentation gaps and lack of professional accounting support.

SC/ST communities who are concentrated in silk weaving (Kanchipuram, Dharmavaram), cotton handlooms (Pochampally, Uppada), and wool weaving (Kullu, Ladakh) have faced similar structural disadvantages. The GST registration requirement and associated digital literacy demands have excluded many of these communities from the formal trade ecosystem.

7. Regional Case Studies

7.1 Surat Textile Market, Gujarat

Surat is home to the world's largest polyester filament fabric manufacturing cluster, with over 4.5 lakh power loom units and a daily fabric output exceeding 3.5 crore metres. The GST transition of 2017 hit Surat traders severely: the mandatory GST at 5 percent on fabric (previously exempt under VAT in Gujarat), the requirement for e-way bills for inter-state trade, and the complexity of IGST on B2B transactions caused widespread business disruption in the first year.

The Surat Textile Market Association estimated that over 40 percent of the city's 65,000 textile trading firms were initially non-compliant due to confusion around GSTIN requirements for inter-state supplies. By 2020, compliance had significantly improved, and the IGST framework had brought tangible benefits in the form of streamlined export clearances and reduced logistics friction at inter-state borders.

7.2 Handloom Weavers, Varanasi (Banaras Silk)

The Banarasi saree industry employs approximately 1.5 lakh looms and 6 lakh weavers across Varanasi and surrounding districts. The sector is characterised by a master weaver - artisan system where artisans work on contract, earning per-piece wages rather than a salary. GST has affected this ecosystem through multiple channels: silk yarn at 5 percent GST (previously 0 percent under UP VAT for handloom yarn), increased documentation requirements for master weavers who sell

to traders, and the inability of artisan weavers to claim any ITC on yarn purchased through cash-based informal channels.

A field study by the Weavers Service Centre, Varanasi (2019) found that 68 percent of artisan weavers surveyed reported a reduction in net earnings after GST implementation, attributing this primarily to increased yarn costs and reduced advance payments from master weavers who were managing their own GST liquidity issues.

7.3 Tiruppur Garment Cluster, Tamil Nadu

Tiruppur, producing approximately 90 percent of India's cotton knitwear exports, is a dense cluster of knitting, dyeing, printing, and garmenting MSMEs. GST's impact here has been mixed. The abolition of CST on inter-state purchases and the seamless ITC chain have reduced procurement costs. IGST refunds on exports have been largely timely due to Tiruppur's well-organised exporter associations and professional accounting infrastructure.

However, the rate revision of January 2022 created immediate hardship for units supplying domestic retailers, who operate on thin margins in the low-price segment (garments below Rs. 1,000 MRP). The overnight shift from 0 percent to 5 percent GST on this segment, without an adequate transition period, forced renegotiation of existing contracts and caused several smaller units to absorb the cost increase rather than pass it on to buyers.

8.Positive Outcomes and Beneficial Aspects of GST

Despite the challenges documented above, GST has delivered measurable benefits to the textile and handloom MSME sector, particularly in the medium term:

Positive Impact	**Mechanism**	**Beneficiary Segment**
Elimination of tax cascading	Seamless ITC chain from fibre to fabric to garment	All registered units
Removal of inter-state checkposts	IGST framework with e-way bills	Traders, exporters
Export refund efficiency	IGST-based refunds on export shipments, GSTR-1 based processing	Garment exporters
Unified national market	Single rate structure across states replaces fragmented VAT	Large MSMEs, branded retailers
ITC on capital goods	Machinery investment now eligible for ITC	Spinning, weaving units
Composition Scheme	Simplified quarterly filing, 1% tax for traders below Rs. 1.5 crore	Small traders
Formalisation benefits	Bank credit access improves with GST registration and	Growing MSMEs

	returns	
Reduction in transit delays	E-way bill reduces scope for harassment at checkpoints	Logistics, traders

The composition scheme has been particularly beneficial for small fabric traders and garment retailers, allowing them to pay GST at a flat rate of 1 percent on turnover (for traders) without the need for detailed ITC reconciliation.

9. Policy Recommondations

9.1 Rate Structure Reforms

1. Establish a Textile GST Rationalisation Committee with permanent representation from CITI, AEPC, NHDC, handloom weaver federations, and MSME associations to review and recommend rate adjustments with adequate industry consultation and transition periods.
2. Fully resolve the inverted duty structure across all textile sub-chains by either raising output rates to match input rates, or providing automatic, time-bound IDS refunds (within 30 days of filing) without requiring separate refund applications for units with turnovers below Rs. 5 crore.
3. Restore nil GST on garments below Rs. 750 MRP and fabrics used exclusively by handloom weaver cooperatives, with a well-defined sunset review clause every three years.
4. Exempt all registered handloom products under the India Handloom Brand from GST, irrespective of the channel of sale (cooperative or commercial), to bring logical consistency to the handloom exemption framework.

9.2 Compliance Simplification

1. Extend the quarterly filing option to all textile MSMEs with turnover below Rs. 5 crore (currently the QRMP scheme covers units up to Rs. 5 crore but with monthly payment requirements - these should be converted to quarterly payment as well).
2. Create a sector-specific GST facilitation desk within the District Industries Centre (DIC) network, staffed by trained GST facilitators who can assist handloom and power loom weavers with registration, return filing, and refund applications at no cost.
3. Develop an offline-capable GST filing app in regional languages (Bengali, Telugu, Tamil, Assamese, Odiya) that allows weavers in low-connectivity areas to prepare returns offline and sync when connectivity is available.
4. Provide a GST compliance incentive: units in the handloom and power loom sector with clean GST filing records for three consecutive years

should receive a 0.25 percent rebate on MSME credit guarantee fees as a cross-ministry benefit.

9.3 Working Capital and Financial Support

5. The Ministry of Finance should direct SIDBI to create a dedicated GST Working Capital Facility for textile MSMEs, providing short-term credit at 3-4 percent below the base rate, collateralised against pending GST refund claims.
6. All IDS refund claims filed by textile MSMEs below Rs. 2 crore annual turnover should be processed within 15 working days under a fast-track mechanism, with mandatory interest payment (currently 6 percent per annum under the CGST Act) for delays beyond this period.
7. Link PMEGP (Prime Minister's Employment Generation Programme) and MUDRA scheme disbursements to GST registration in the textile sector, providing registered weavers priority access to government credit schemes.

9.4 Handloom-Specific Measures

1. Amend the CGST Act to create a separate handloom category under Schedule I (exemptions), covering all products by weavers registered under the National Handloom Database, regardless of sale channel.
2. Permit handloom cooperatives to file a simplified annual GST return (one filing per year) rather than quarterly returns, given their limited transaction volumes and administrative capacity.
3. Introduce a Master Weaver GST Support Scheme providing master weavers who continue to supply yarn on credit to registered artisan weavers a 50 percent subsidy on their annual GST compliance cost, administered through state Handloom Directorates.

9.5 Technology and Capacity Building

4. The GSTN should partner with the National Institute of Fashion Technology (NIFT) and Weavers Service Centres to deliver structured GST literacy programmes for textile MSMEs, targeting 5 lakh enterprises over three years.
5. Provide GST-compliant accounting software free of charge (via GSTN or MSME Ministry) to all registered textile enterprises with annual turnover below Rs. 1 crore, with regional language interfaces and telephone helpline support.

10. Conclusion

The Goods and Services Tax represents a foundational reform of India's indirect tax system, and its long-term benefits - elimination of tax cascading, creation of a national market, improved export competitiveness, and enhanced

formalisation - are real and increasingly visible. For the textile and handloom sector, these macro-level gains are not in dispute.

However, the implementation of GST has imposed disproportionate costs on the most vulnerable segments of the sector - handloom artisans, power loom micro-units, and informal garment job-workers - precisely because the tax design did not adequately account for the structural realities of informality, digital illiteracy, capital scarcity, and supply chain complexity that define these sub-sectors. The inverted duty structure, the compliance cost burden, the working capital disruption, and the social impact on women and marginalised community weavers are not incidental effects - they reflect a fundamental design gap between a sophisticated tax system and a complex, layered, and historically informal industry.

Addressing this gap requires neither rolling back GST nor exempting the entire sector from its ambit. What is required is targeted, evidence-based calibration: smarter rate structures, proportionate compliance requirements, dedicated financial support for transition-related working capital stress, and genuine institutional commitment to reaching the unreached weaver household with GST literacy and legal support.

The textile and handloom sector's 45 million workers - among the most skilled yet most economically precarious in India - deserve a tax system that recognises their contribution, respects their constraints, and enables rather than impedes their participation in formal economic growth. With thoughtful policy refinement, GST can become a tool of economic inclusion for the textile MSME sector, rather than an additional burden on those least equipped to bear it.

References

- Apparel Export Promotion Council (AEPC). (2022). Impact of GST Rate Revision on Garment Exports. AEPC Research Division.
- Central Board of Indirect Taxes and Customs (CBIC). (2023). GST Revenue Statistics: Textile Sector Analysis. Government of India.
- Clothing Manufacturers Association of India (CMAI). (2021). GST Impact Study on Small and Medium Garment Units. CMAI Mumbai.
- Confederation of Indian Textile Industry (CITI). (2022). GST Five Years On: Impact Assessment for the Indian Textile Sector. CITI New Delhi.
- Federation of Indian Export Organisations (FIEO). (2023). Export Refund Pendencies and Working Capital Stress in Labour-Intensive Sectors. FIEO Report.

- Handloom Export Promotion Council (HEPC). (2020). Digital Readiness Survey of Handloom Exporters and Weavers. HEPC Chennai.
- Ministry of MSME. (2023). Annual Report 2022-23: MSME Sector at a Glance. Government of India.
- Ministry of Textiles. (2024). Annual Report 2023-24. Government of India.
- National Handloom Development Corporation (NHDC). (2019). Input Cost Survey of Handloom Weavers Post-GST. NHDC Lucknow.
- National Institute of Public Finance and Policy (NIPFP). (2020). Estimating the Compliance Cost of GST for MSMEs in India. NIPFP Working Paper No. 311.
- Reserve Bank of India (RBI). (2023). MSME Pulse Report: Q2 2022-23. RBI Mumbai.
- Sharma, R., & Krishnamurthy, V. (2022). GST and the Indian Textile Sector: A Detailed Review of Rates, Refunds, and Compliance. Indian Economic Review, 57(2), 215-238.

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Dynamics of Social and Sustainable Entrepreneurship in Emerging Economies

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Abstract

Social and sustainable entrepreneurship has emerged as an important approach to addressing complex socio-economic and environmental challenges in emerging economies. Unlike traditional entrepreneurial activities that focus primarily on profit maximization, social and sustainable enterprises aim to generate economic value while simultaneously promoting social welfare and environmental sustainability. In developing and emerging economies, these entrepreneurial initiatives play a crucial role in addressing issues such as poverty, unemployment, inequality, and environmental degradation.

The present study examines the dynamics of social and sustainable entrepreneurship in emerging economies with particular emphasis on its drivers, developmental impacts, and policy implications. The study adopts a descriptive and analytical research approach using secondary data obtained from government reports, academic journals, and international development publications. The analysis indicates that social and sustainable enterprises contribute significantly to inclusive economic growth by creating employment opportunities, promoting social innovation, and encouraging environmentally responsible production practices.

However, despite their potential, social enterprises often face several challenges such as limited access to financial resources, weak institutional support, and inadequate policy frameworks. Strengthening entrepreneurial ecosystems through policy support, financial incentives, and entrepreneurship education is essential for promoting sustainable entrepreneurial development. The study concludes that social and sustainable entrepreneurship can serve as an effective tool for achieving inclusive and sustainable development in emerging economies.

Keywords: Social Entrepreneurship, Sustainable Entrepreneurship, Emerging Economies, Social Innovation, Inclusive Growth, Sustainable Development.

1. Introduction

Entrepreneurship has traditionally been recognized as an important driver of economic growth, innovation, and employment generation. Over the past few decades, the concept of entrepreneurship has evolved significantly, expanding beyond the conventional focus on profit generation to include broader social and environmental objectives. This transformation has led to the emergence of social entrepreneurship and sustainable entrepreneurship as important components of modern economic development.

Social entrepreneurship focuses on developing innovative solutions to social problems through entrepreneurial initiatives. It aims to improve the welfare of communities by addressing issues such as poverty, education, healthcare, and financial inclusion. Sustainable entrepreneurship, on the other hand, emphasizes environmentally responsible business practices and the efficient utilization of natural resources in order to ensure long-term economic sustainability.

Emerging economies provide a unique environment for the development of social and sustainable entrepreneurship. Rapid economic transformation, demographic changes, and increasing developmental challenges create opportunities for innovative entrepreneurial solutions. Social enterprises operating in sectors such as renewable energy, sustainable agriculture, waste management, and microfinance have demonstrated their potential to address social and environmental issues while maintaining economic viability.

Despite their growing importance, social and sustainable enterprises often face various structural challenges including limited financial resources, inadequate institutional support, and regulatory constraints. Understanding the dynamics of these enterprises is therefore essential for designing policies that encourage sustainable entrepreneurial development in emerging economies.

2. Objectives of the Study

To examine the dynamics and key drivers of social and sustainable entrepreneurship in emerging economies.

To analyze the socio-economic and environmental impact of social and sustainable entrepreneurship.

To identify the challenges and policy requirements for strengthening social and sustainable entrepreneurial ecosystems.

3. Scope of the Study

The scope of the study focuses on analyzing the role of social and sustainable entrepreneurship in promoting inclusive and sustainable development in

emerging economies. The research primarily examines the growth patterns, drivers, and impacts of social enterprises operating in developing countries.

The study highlights the contribution of entrepreneurial initiatives in sectors such as renewable energy, sustainable agriculture, education, healthcare, and environmental conservation. It also evaluates the institutional and policy environment influencing the development of social enterprises.

The research relies mainly on secondary sources of information including government publications, international development reports, academic literature, and institutional databases. The findings are intended to provide insights for policymakers, researchers, and practitioners interested in promoting sustainable entrepreneurial development.

4. Methodology

The present study adopts a descriptive and analytical research methodology to examine the dynamics of social and sustainable entrepreneurship in emerging economies.

The study is primarily based on secondary data collected from various reliable sources including academic journals, government reports, international development organizations, and entrepreneurship databases. These sources provide valuable insights into entrepreneurial trends, policy frameworks, and sustainable development initiatives.

The collected data are analyzed using qualitative and quantitative analytical techniques. Descriptive analysis is used to examine trends in social entrepreneurship, while simple statistical tools such as percentage analysis and comparative analysis are employed to interpret the data. The study also develops a conceptual framework linking innovation, institutional support, and financial accessibility with the growth of social enterprises.

5. Review of Literature

Several scholars have contributed significantly to the study of social and sustainable entrepreneurship. Mair and Martí (2006) highlighted the role of social entrepreneurship in creating innovative solutions to societal problems. Their research emphasized that social entrepreneurs act as change agents who mobilize resources to improve social welfare.

Dean and McMullen (2007) examined the relationship between entrepreneurship and environmental sustainability and argued that sustainable entrepreneurship can help reduce environmental degradation through innovative market-based solutions.

Schaltegger and Wagner (2011) emphasized the importance of integrating sustainability principles into entrepreneurial activities. Their study suggested that sustainable entrepreneurs play a key role in driving environmental innovations.

Zahra et al. (2009) developed a typology of social entrepreneurs and examined their motivations, ethical challenges, and social impact. Similarly, Hockerts and Wüstenhagen (2010) highlighted the role of entrepreneurial ventures in promoting sustainable market transitions.

Overall, existing literature suggests that social and sustainable entrepreneurship contributes significantly to inclusive economic development and environmental sustainability.

6. Analysis and Discussion

The analysis indicates that social and sustainable entrepreneurship is expanding rapidly in emerging economies due to increasing awareness about sustainable development and social responsibility.

Social enterprises play a crucial role in employment generation, particularly in rural areas and among marginalized communities. By providing innovative services in sectors such as renewable energy, microfinance, and sustainable agriculture, these enterprises contribute to poverty reduction and community empowerment.

Another important dimension of sustainable entrepreneurship is its environmental impact. Many entrepreneurs are adopting eco-friendly production methods and resource-efficient technologies that reduce environmental degradation and promote sustainable resource management.

However, the growth of social enterprises is constrained by limited access to finance, regulatory challenges, and inadequate institutional support. Addressing these barriers is essential for promoting sustainable entrepreneurial ecosystems.

7. Findings of the Study

The study reveals several important findings

Social and sustainable entrepreneurship is gaining increasing importance in emerging economies.

These enterprises contribute significantly to employment generation and inclusive economic growth.

Social innovation plays a key role in addressing community-level challenges.

Sustainable entrepreneurial practices promote environmental protection and responsible resource use.

Limited access to finance and weak institutional support remain major challenges for social enterprises.

8. Conclusion

Social and sustainable entrepreneurship represents a transformative approach to economic development in emerging economies. By integrating social welfare, environmental sustainability, and economic viability, these enterprises contribute significantly to inclusive growth and sustainable development.

The study highlights the importance of strengthening entrepreneurial ecosystems through supportive policies, financial incentives, and capacity-building initiatives. Governments, educational institutions, and development organizations must collaborate to promote awareness, provide financial assistance, and encourage innovation in sustainable entrepreneurship.

In conclusion, social and sustainable entrepreneurship has the potential to become a powerful driver of economic development, social transformation, and environmental sustainability in emerging economies.

References

- Austin, J., Stevenson, H., & Wei-Skillern, J. (2006).Social and commercial entrepreneurship. Entrepreneurship Theory and Practice.
- Dean, T., & McMullen, J. (2007).Sustainable entrepreneurship. Journal of Business Venturing.
- Hockerts, K., &Sternhagen, R. (2010).Greening Goliaths versus emerging Davids.Journal of Business Venturing.
- Mair, J., &Martí, I. (2006).Social entrepreneurship research.Journal of World Business.
- Schaltegger, S., & Wagner, M. (2011).Sustainable entrepreneurship. Business Strategy and the Environment.
- Zahra, S. et al. (2009).A typology of social entrepreneurs. Journal of Business Venturing.
- Yunus, M. (2010).Building Social Business.
- United Nations (2015). Sustainable Development Goals

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"Growth Drivers, Advantages and Changes of The Gig Economy in India- A Conceptual Study"

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Abstract
The rapid development in technology along with high usage of smart phones and internet gave born to innovative business models which work as platform for employees, employers and customers. This business models built based on the talent and skills of workforce and requirement of individual and institutional customers. This type of work practices created short term jobs to various unemployed to meet their job requirements temporary globally and domestically. Therefore, in India also gig economy spread across various sectors particularly in services sector like transport, food delivery, professional services etc. Thus, present study is described the gig economy system in world and in India, drivers of gig economy, advantages and disadvantages etc.

Key words: Gig economy, Growth of Gig economy, freelancer etc .

1. Introduction

Gig economy refers to a free market system where organizations are hiring temporary or contractual employees for short term commitments. In gig economy employees are either self-employed or independent contractors rather than permanently employed by the companies with fixed salaries. UK government defined gig economy as an exchange of labour for money between individuals or companies via digital platforms that actively facilitate matching between providers and customers, on a short-term and payment-by-task basis. The term gig economy employees are terms as platform labour work for short term tasks through organized digital app. The gig economy is result of technological innovation, intense competition and evolving customer expectations. Gig economy restructured

business models that changed traditional workforce by allowing individuals in temporary and flexible jobs across the various sectors. The word gig is slang for short term job or task first used in music industry which describes the one-off performance. Therefore, it is expanded to use of short term and freelancer works like gardening and deliveries. Now, it emerged as taking on short-term tasks or one-off projects for various clients through online platforms like Bolt, Rappi, Safe Boda, or Up work. The gig economy emerged as right job platform to the many people want flexible job tasks suitable to their life style like students, parents, caregivers etc. It also provides additional income to the people who are engaged in fixed income and time scheduled jobs by additional efforts. It is a solution to the individual who are between the jobs, career changing, job seekers, recent graduates and workers changing careers.

The gig economy is steadily becoming an essential element of India Inc's strategy as the majority of the segments of the professional gig economy have experienced swift expansion in recent years. The lack of access obstacles have resulted in an increasing need for researchers, consultants, and qualified experts from India. Along with additional developing nations too.A gig economy is economical for businesses, as it allows them to utilize a flexible temporary workforce. Based on the client's specifications or organizational demands, resulting in reduced administrative and costs of compliance. This framework enables startup and smaller businesses to utilize talented experts as needed. Companies might opt to engage in agreements with the experts for designated time frame. This connection is quite mutually beneficial, and both sides possess equal liberty to search for alternatives that meet their requirements. The growing millennial workforce is fueling the development of this gig economy that utilizes technology to support their professional and family lives, including the choice of employers providing the choice of freelancing on projects that align with their preferences. The work of the future will involve evolving. Business frameworks in which technological advancements will facilitate the growth of self-employment resulting to an expanded gig economy.

The gig economy is still emerging in India, yet it is rapidly expanding within the Indian labour market. Thus, it is crucial for the government to function as a facilitator and collaborate with industry and academia by facilitating different new opportunities for students, IT specialists, and start-ups.to engage with established corporations, prominent technology firms, and industry advisors to create joint competencies for the sector to execute on platform-driven technologies. The world economic forum found that the size of gig economy was in world is $556.7 billion which is expected to be reached $1847 billion by 2032. In India, 7.7 million people

is working in gig economy in year 2020-21 and expected to be reached to 2.35 Cr by the end of 2030 as per the NITY Ayog report. In India, gig economy contribution to GDP around 2.5 percent by 2030.

In gig economy, jobs are broadly categorized into two types one is online gig work which are based on cloud or web and second is in-person gig work i.e. location-based work. The online jobs are again grouped as entry level (data entry, online surveys and transcription), creative gigs (freelance writing, video editing and graphic illustration) and specialized work (algorithm programming, cyber-security consulting and digital marketing) based on the skills requirements. The in-person jobs are grouped into five sub categories such as beauty and wellness services (hairstyling, massage therapy and personal training), education services (music and art lessons, language tutoring and academic support), animal care (pet grooming, dog walking and vet house calls), home services (furniture assembly, repairs and house/office moving services) and event and entertainment services (photography, DJing and catering)

IMAGE 01:TYPES OF JOBS IN GIG ECONOMY

2. Growth drivers of gig economy in india

The factors propelling the gig economy in India encompass elements that foster the expansion and evolution of unconventional work setups, where people operate as

independent contractors or freelancers instead of being employees of one organization. The gig economy in India is mainly driven by a mix of technological, social, and economic elements and is anticipated to keep expanding in the coming years. 6 Several important factors fueling the gig economy in India include:

- **Youthful Demographic Advantage:** India has a vast and growing population of young, educated, and technologically adept people.
- **Technological Progress:** The widespread use of smartphones, fast internet, digital platforms, and innovations has facilitated remote and independent work, acting as a major catalyst for the gig economy.
- **Rising Educational Attainment and Skill Development:** As more people in India attain advanced education and hone specific skills, there is an increasing need for avenues to utilize their proficiency via gig employment.
- **Urban growth and Increased Consumer Demand**: The swift urbanization in India, combined with a growing middle class, has generated significant demand for gig workers in areas like transportation, delivery, home services, and e-commerce.
- **Affordable Workforce:** Companies consider gig workers a budget-friendly option compared to regular employees, as they can be engaged for individual projects without the necessity of offering benefits or extra pay.
- **Adaptable Work Schedules:** The younger demographic is progressively leaning towards flexible work hours, especially following the Covid-19 pandemic. They value the chance to create their own timetables and choose the projects they want to work on, which is particularly appealing to individuals who prioritize work-life balance over traditional job structures.
- **Entrepreneurship:** The gig economy has created a new generation of entrepreneurs who utilize digital platforms to start their own businesses and offer services to clients worldwide.
- **Encouraging Government Initiatives:** The Indian government has demonstrated its dedication to the gig economy by launching several initiatives designed to foster its growth, such as the Digital India initiative, Start-up India, and Skill India programs.
- **Work Method:** Engaging in the private sector presents difficulties because of demanding work-life harmonies. This fostered a negative view of full-time employment. Employees in private companies might feel dull from performing the same tasks every day. The gig economy enables gig workers to select their careers since they consider them rewarding and pleasurable, while also promoting a healthy work-life balance and job fulfilment.

- **Start-up Environment:** The start-up landscape in India is witnessing swift expansion, as many start-up are increasingly hiring freelancers and contract employees. These organizations are especially dedicated to employing talented technology experts on a project basis in multiple areas including engineering, information technology, and data science.
- **Multi-National Corporations (MNCs):** MNCs are likewise adopting gig workers as a method to reduce operational costs. It is estimated that India will have around 350 million gig jobs by 2025, offering considerable chances for job seekers to adjust to the changing job market.
- **Business Model**: Gig workers function under various payment frameworks, such as contracts, hourly wages, and incentives based on performance. The gig economy can be divided into three unique categories: 1. Full-time self-employed individuals: Persons who work more than 15 hours weekly and are compensated for their work, categorized as full-time self-employed. Sure! Please provide the text you would like me to paraphrase. Part-time freelance workers: These people operate as contractors, usually dedicating a few hours weekly, considering this as additional earnings.

3. Benefits of gig economy

- **Unprecedented Freedom and Flexibility:** The provision of freedom and work flexibility is best advantage with gig economy. This is not available in traditional employment where work is directed by company policies. But in gig work, worker can puts work in control of when, where, and how they work. This flexibility is particularly valuable for parents, caregivers, students, and anyone seeking better work-life integration.
- Growth potential with Income Diversification: In gig economy work force is allowed by to find their own clients and owners rather than depending on single owner and single source of income. This boost the growth potential due to accessing of multiple sources of income. This also mitigates the risk associated with job loss. It is evidence that many freelancer workers are earning more money than they earned in traditional jobs.
- **Accelerated Skill Development:** Gig jobs helps the employees acquire skill rapidly than earlier due to dealing with different clients across various projects creates a natural environment and professional growth. Each new client and project presents unique challenges and requirements, forcing you to adapt and expand your capabilities quickly.
- **Autonomy and Independence:** In gig economy work has freedom to choose decisions about their work methods, client selection, pricing

strategies, and business direction without requiring approval from management hierarchies. Research consistently shows that autonomy is strongly correlated with job satisfaction and overall happiness.

- **Cost Efficiency:** Organizations achieve significant cost savings by engaging gig workers instead of traditional employees. Businesses save on office space, equipment, benefits packages, paid time off, and retirement plans—costs that can add 25-40% on top of base salaries.
- **Scalability and Agility:**The ability to quickly scale workforce capacity up or down is a major business benefit of the gig model. Companies can rapidly expand their workforce during busy periods or for specific initiatives which improves the business scalability.

4. Issues with gig economy: Gig and platform work is not always simple and straightforward. The most common challenges to be aware of are outlined below.

- **Fixed cost:** As compared to traditional employees, gig workers need to maintain their own infrastructure to work like internet, digital tools, work space, transport, equipment's, computers, smart phones, VPN services,. These all lead to maintenance of fixed cost in work.
- **Unpredictability of work volume and income:** In gig economy availability of work and income stream is seasonal but not fixed which means that work force may by very busy during season and earn more income and may have little or no work during unreason. The work under gig economy is influenced by the factors like seasonal trends, competition, change in client demand and platform changes.
- **Online Risk:** This one of the major issues associated with gig economy where workers face digital threats that adversely affect their security, identity and well-being. These issues included weak online security, identity theft, harmful content, misinformation, scams and fake jobs,. To stay safe, workers need to be familiar with strong cyber-security practices, be able to verify job opportunities and stay informed about online risks.
- **Limited or no access to safety nets:** The employment in gig economy is short term and contractual where employer does not provide any social and health benefit like health insurance, paid leave, or workers' compensation. This implies that employees should make their own arrangement during get sick, injured, or face an emergence, they may lose income and no financial support. Without the job security and protections that formal employment provides, gig workers need to plan for financial instability in case of illness,

injury, pregnancy, retirement, unexpected job loss or work-related accidents and invalidity.

- **Stress and long working hours:** The working conditions in gig economy is characterized as irregular hours, financial pressure and high demands which are creating stress to the work force in the long run. Besides, workers need to balance platform fees, client expectations and unpredictable workloads along with maintaining their income. The major causes of stress included unpredictable work load, financial stress, client expectations, isolation and unsocial hours.

5. Conclusion:

The gig economy emerged as significant contributor to the economy in terms of business and employment. The rapid development in technology along with high usage of smart phones and internet gave born to innovative business models which work as platform for employees, employers and customers. The major growth drivers of the gig economy in India included large youth population, technology progression, high educated and skilled workforce, urbanization, change in customer needs, flexible work environment et . The major advantages of the gig economy comprises of freed and flexible work nature, income diversification, growth potential, skill development, cost efficiency and business scalability. The disadvantages of gig economy encompass online risk, fixed cost bearing, limited safety measures, competition and stress in work etc.

References:

- Joshi, Amit& Jain, Saharsh& Gupta, Puneet. (2024). Challenges and impact of the gig economy. Sustainable Economies. 2. 96. 10.62617/se.v2i2.96.
- N. Karunakaran: The gig economy in India, Journal of Management Research and Analysis 2025;12 (1):67–73
- Mukhopadhyay, Boidurjo Rick. (2020). What is the Gig Economy?. 2.
- www.niti.gov.inIndia's Booming Gig and Platform Economy, Perspectives and Recommendations on the Future of Work, POLICY BRIEF
- https://www.pib.gov.in/
- https://amchamindia.com/
- https://ahduni.edu.in/news/economic-realities-of-indias-gig-economy-and-policy-pathways/

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Recent Trends in GST Reforms in India: A Review of Policy Changes, Digital Transformation, and Compliance Dynamics

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Abstract
The Goods and Services Tax (GST) in India, introduced in 2017, marked a paradigm shift in indirect taxation by subsuming multiple taxes into a unified framework. Over time, the GST system has undergone significant reforms aimed at simplifying tax structures, improving compliance, leveraging digital technologies, and enhancing economic efficiency. The recent phase of reforms, often termed "GST 2.0," reflects a transformative approach focused on rate rationalisation, digitalisation, and ease of doing business. This review paper critically examines recent GST reforms in India, emphasizing policy changes, technological advancements, and evolving compliance dynamics. It analyses the implications of slab restructuring, e-invoicing, invoice matching, input tax credit (ITC) reforms, and digital governance tools. The study also explores the impact of GST reforms on businesses, government revenues, and taxpayers. The paper concludes with insights into challenges, future directions, and policy recommendations.

Keywords: GST reforms, digital taxation, compliance dynamics, input tax credit, e-invoicing, tax policy

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1. Introduction

India's indirect tax system underwent a historic transformation with the introduction of GST on July 1, 2017. Designed as a destination-based tax, GST replaced a complex web of central and state taxes such as excise duty, service tax, and VAT. The reform aimed to create a unified national market, reduce cascading taxes, and improve transparency [1]. However, the initial GST framework faced several challenges, including complex rate structures, compliance burdens, technological glitches, and ambiguity in input tax credit mechanisms. Over time, the government, through the GST Council, introduced iterative reforms to address these issues. The most significant recent development is the introduction of **GST 2.0 reforms in 2025**, which simplified the tax structure, enhanced digital compliance mechanisms, and streamlined processes. These reforms are widely considered a turning point in India's taxation landscape [2].

2. Evolution of GST Reforms in India

2.1 Early Phase (2017–2020)

The initial GST system consisted of multiple tax slabs—0%, 5%, 12%, 18%, and 28%—which created classification disputes and compliance complexity. Businesses struggled with frequent changes in rules and filing requirements.

2.2 Stabilisation Phase (2020–2023)

During this period, the government focused on:

- Strengthening IT infrastructure (GSTN)
- Introducing e-invoicing
- Improving return filing systems
- Enhancing anti-evasion mechanisms

2.3 Reform Acceleration Phase (2024–2026)

The latest phase includes structural reforms under GST 2.0, focusing on simplification, digitisation, and compliance efficiency [3].

3. Key Policy Changes in Recent GST Reforms

3.1 GST 2.0 and Rate Rationalisation

One of the most transformative changes is the rationalisation of GST rates. The GST Council introduced a simplified tax structure with two primary slabs:

- 5% (essential goods)
- 18% (standard goods and services)
- 40% (luxury/sin goods)

This reform eliminated the 12% and 28% slabs, reducing classification disputes and simplifying compliance. The reform aimed to:

- Reduce tax ambiguity

- Boost consumption
- Enhance ease of doing business

Additionally, essential goods became cheaper, while luxury goods faced higher taxation (Table 1).

Table 1: Comparison of Old vs New GST Structure

Feature	Pre-2025 GST	Post-2025 GST (GST 2.0)
Number of slabs	5 main slabs	2 main slabs
Rates	0%, 5%, 12%, 18%, 28%	0%, 5%, 18%, 40%
Complexity	High	Low
Classification disputes	Frequent	Reduced
Compliance burden	High	Moderate

3.2 Input Tax Credit (ITC) Reforms

Recent amendments introduced stricter rules for claiming ITC:

- ITC allowed only for accepted invoices in GSTR-2B
- Rejected invoices not eligible for credit
- Alignment of legal provisions with GST portal systems. These changes aim to:
- Reduce fraud
- Improve transparency
- Ensure accurate tax reporting

3.3 E-Invoicing and E-Way Bill Enhancements

The government expanded e-invoicing requirements:

- Mandatory reporting within 30 days for businesses with turnover above ₹10 crore (cleartax)
- Restrictions on backdated e-way bills
- Enhanced tracking of goods movement. These measures strengthen compliance and reduce tax evasion.

3.4 Faster Refunds and Registration

Recent GST Council decisions include:

- Registration within 3 days for low-risk businesses
- Refund processing within 7 days. These reforms significantly improve liquidity for businesses, especially exporters and MSMEs [4].

4. Digital Transformation in GST

4.1 GSTN and Technological Infrastructure

The GST Network (GSTN) serves as the backbone of GST implementation. Over time, it has evolved into a robust digital ecosystem supporting:

- Return filing
- Invoice matching

- Tax payments
- Analytics and compliance tracking

4.2 Automation and Pre-filled Returns

The introduction of pre-filled GST returns is a major step toward reducing compliance burden. These returns:

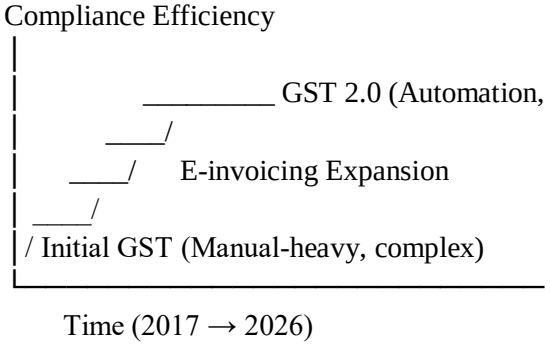
- Auto-populate data from invoices
- Reduce manual errors
- Improve accuracy

4.3 Invoice Matching and Data Analytics

Advanced data analytics tools are now used to:

- Detect tax evasion
- Identify mismatches in ITC claims
- Monitor compliance behaviour (Figure 1)

Figure 1: GST Digital Compliance Evolution (Conceptual)



4.4 Integration with Business Systems

GST reforms require businesses to integrate ERP systems with GST portals. This has led to:

- Real-time tax reporting
- Automated reconciliation
- Improved audit trails [5]

5. Compliance Dynamics

5.1 Shift from Reactive to Proactive Compliance

GST compliance has evolved from manual filing to system-driven compliance. Businesses must now:

- Ensure real-time reporting
- Maintain digital records
- Monitor ITC eligibility continuously

5.2 Impact on MSMEs

GST reforms provide several benefits for MSMEs:

- Simplified registration
- Reduced tax rates on essentials
- Faster refunds

However, challenges remain:

- Cost of digital adoption
- Need for technical expertise

5.3 Anti-Evasion Measures

The government has strengthened enforcement through:

- Data analytics
- E-invoicing
- Cross-verification of transactions [6]

6. Economic Impact of GST Reforms

6.1 Impact on Consumers

- Lower prices for essential goods
- Increased affordability
- Improved transparency

6.2 Impact on Businesses

- Reduced compliance burden
- Better cash flow due to faster refunds
- Simplified tax planning

6.3 Impact on Government Revenue

While rate cuts may reduce short-term revenue, improved compliance and reduced evasion are expected to enhance long-term collections [7].

7. Challenges in GST Reforms

Despite significant progress, several challenges persist:

7.1 Technological Issues

- Portal glitches
- System integration challenges

7.2 Compliance Burden

- Frequent changes in rules
- Complexity for small businesses

7.3 Policy Gaps

- Exclusion of petroleum products
- Classification disputes (though reduced)

8. Future Outlook

Future GST reforms may focus on:

- Inclusion of petroleum products
- Further simplification of returns

- Expansion of AI-driven compliance systems
- Greater integration with global tax systems [8]

9. Literature Review

The Goods and Services Tax (GST) has attracted extensive academic and policy-oriented research since its implementation in India in 2017. Scholars, economists, and policymakers have examined GST from multiple perspectives, including tax efficiency, economic growth, federal governance, compliance behavior, and technological transformation [9].

Early literature primarily focused on the anticipated benefits of GST as a unified indirect tax system. Studies emphasized that GST would reduce cascading effects of taxation, enhance tax compliance, and promote a common national market. Researchers argued that by replacing multiple indirect taxes, GST would simplify the tax structure and improve economic efficiency [10].

However, post-implementation studies revealed several challenges. Empirical analyses highlighted issues such as compliance burden, technological glitches in the GST Network (GSTN), and frequent policy changes. Scholars noted that the multiplicity of tax slabs created classification disputes and increased administrative complexity [11].

Recent literature (2022–2026) reflects a shift in focus toward **GST reforms and digital transformation**. Researchers have increasingly examined:

- The role of e-invoicing in reducing tax evasion
- The impact of data analytics on compliance enforcement
- The effectiveness of input tax credit (ITC) restrictions
- The implications of rate rationalisation under GST 2.0

Several studies suggest that digitalisation has significantly improved compliance levels. The introduction of automated systems, pre-filled returns, and invoice matching has reduced human intervention and enhanced transparency. At the same time, critical perspectives highlight that increased automation may disproportionately affect small businesses lacking digital infrastructure. Thus, the literature presents a balanced view of GST reforms as both an opportunity and a challenge.

10. Theoretical Framework

10.1 Tax Efficiency Theory

Tax efficiency theory posits that an ideal tax system should minimize distortions in economic behavior while maximizing revenue collection. GST aligns with this theory by:

- Eliminating cascading taxes
- Promoting neutrality across sectors

- Encouraging formalization of the economy

Recent reforms, particularly rate rationalisation, further enhance efficiency by reducing classification ambiguity.

10.2 Compliance Theory

Compliance theory distinguishes between:

- **Voluntary compliance** (driven by trust and simplicity)
- **Enforced compliance** (driven by penalties and monitoring)

GST reforms increasingly integrate both approaches:

- Simplified returns → encourage voluntary compliance
- Data analytics and e-invoicing → strengthen enforcement

10.3 Digital Governance Framework

GST represents a major case of digital governance in India. The framework includes:

- Real-time data reporting
- Automated verification systems
- Integration with financial technologies. The shift toward digital governance has transformed taxation into a data-driven ecosystem [12].

11. Comparative Analysis: GST Reforms vs Global VAT Systems

India's GST system shares similarities with Value Added Tax (VAT) systems used globally, but also exhibits unique features (Table 2).

Table 2: Comparison of India GST with Global VAT Systems

Feature	India GST	European Union VAT	Australia GST
Structure	Dual (CGST + SGST)	Harmonized VAT	Single GST
Tax Slabs	Multiple (now simplified)	Mostly single/dual	Single (10%)
Digitalization	Highly advanced	Moderate	Advanced
Compliance Tools	E-invoicing, AI analytics	Limited e-invoicing	Digital reporting
Federal Complexity	High	Moderate	Low

India stands out for its **advanced digital compliance systems**, particularly e-invoicing and invoice matching, which are more sophisticated than many global counterparts.

12. Deep Dive into Digital Transformation

12.1 E-Invoicing Ecosystem

E-invoicing is one of the most transformative GST reforms. Under this system:

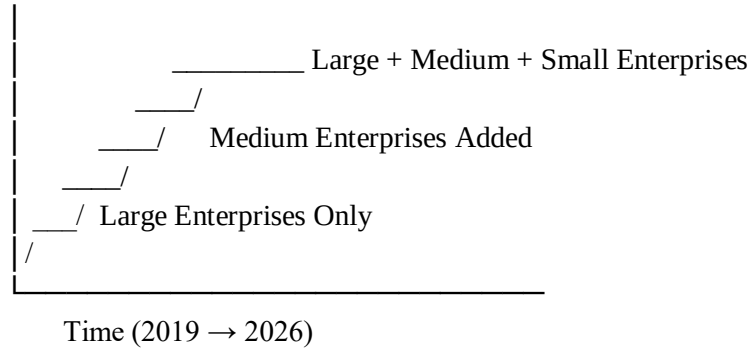
- Businesses generate invoices through standardized formats
- Invoices are authenticated via Invoice Registration Portal (IRP)
- Data is automatically transmitted to GST returns

This reduces:

- Fake invoicing

- Manual errors
- Compliance discrepancies (Figure 2)

Figure 2: Growth of E-Invoicing Adoption (Conceptual)



12.2 Artificial Intelligence and Data Analytics

The GST system increasingly uses AI-driven analytics to:

- Detect anomalies in tax filings
- Identify fake input tax credit claims
- Monitor high-risk taxpayers

This has shifted tax administration from **reactive auditing to predictive enforcement**.

12.3 Pre-filled Returns and Automation

Pre-filled returns represent a significant leap in compliance simplification. These returns:

- Use data from e-invoices and GST filings
- Reduce manual entry requirements
- Improve filing accuracy [13]

13. Input Tax Credit (ITC): A Critical Analysis

ITC is the backbone of GST, ensuring that taxes are levied only on value addition.

13.1 Evolution of ITC Rules

Initially, ITC rules were relatively flexible. However, due to misuse and fraud, the government introduced stricter provisions:

- Mandatory invoice matching
- Restrictions on provisional ITC
- Linking ITC eligibility to supplier compliance (Table 3)

Table 3: Evolution of ITC Mechanism

Phase	ITC Rules	Issues	Reforms Introduced
2017–2019	Flexible ITC	Fake claims	Initial restrictions
2020–2023	Partial matching	Complexity	GSTR-2B introduced

2024–2026	Strict matching	Compliance burden	Full automation

13.2 Impact of ITC Reforms

Positive impacts:

- Reduced fraud
- Improved revenue collection
- Greater transparency

Negative impacts:

- Increased compliance burden
- Dependency on supplier behavior
- Working capital constraints [14]

14. Sector-Wise Impact of GST Reforms

14.1 Manufacturing Sector

GST reforms have significantly benefited the manufacturing sector by:

- Eliminating cascading taxes
- Reducing logistics costs
- Simplifying interstate trade

However, compliance requirements remain complex for smaller manufacturers.

14.2 Services Sector

The services sector has benefited from:

- Uniform tax rates
- Simplified tax structure

But challenges include:

- Place-of-supply rules
- Frequent policy changes

14.3 MSME Sector

MSMEs are the most affected by GST reforms.

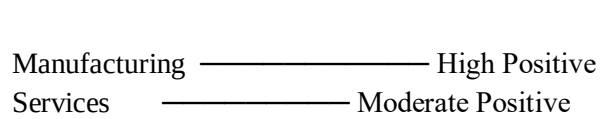
Benefits:

- Simplified registration
- Composition scheme
- Faster refunds

Challenges:

- Digital compliance costs
- Limited technical expertise [15] (Figure 3)

Figure 3: Sectoral Impact of GST Reforms (Conceptual)



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│  MSMEs  ——— Mixed Impact
│
└──────────────────────────────────────
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15. Compliance Dynamics in the Digital Era

15.1 Real-Time Compliance

GST reforms have transformed compliance into a real-time process:

- Continuous invoice reporting
- Automated reconciliation
- Instant validation

15.2 Behavioral Shift in Taxpayers

Taxpayers are transitioning from:

- Manual record-keeping → Digital systems
- Reactive filing → Proactive compliance

15.3 Role of Intermediaries

Tax professionals, consultants, and software providers play a critical role in:

- Ensuring compliance
- Providing advisory services
- Integrating ERP systems [16]

16. Administrative Reforms and Governance

16.1 Role of GST Council

The GST Council has been instrumental in:

- Policy formulation
- Rate rationalisation
- Conflict resolution between states

16.2 Cooperative Federalism

GST represents a unique model of cooperative federalism, where:

- Both central and state governments share tax powers
- Decisions are made collectively [17]

17. Emerging Challenges in GST 2.0

Despite improvements, several challenges persist:

17.1 Over-Digitalisation

Excessive reliance on digital systems may disadvantage small businesses.

17.2 Compliance Fatigue

Frequent updates and rule changes can overwhelm taxpayers.

17.3 Data Privacy Concerns

Large-scale data collection raises concerns about security and privacy [18].

18. GST Revenue Trends and Performance Analysis

Since its implementation in 2017, GST revenue collection has shown a steady upward trajectory, reflecting improvements in compliance, economic recovery post-pandemic, and policy refinements. In recent years (2023–2026), GST collections have consistently crossed significant thresholds, indicating the strengthening of the tax base and enhanced administrative efficiency. Monthly collections frequently exceed ₹1.5 lakh crore, demonstrating the maturity of the GST system (Table 4) [19].

Table 4: GST Revenue Trends in India (2017–2026, Approximate Data)

Year	Average Monthly Collection (₹ lakh crore)	Growth Rate (%)	Key Reform Drivers
2017–18	0.90	—	Initial implementation
2018–19	0.98	8.9	System stabilisation
2019–20	1.02	4.1	Compliance improvements
2020–21	0.95	-6.8	Pandemic impact
2021–22	1.23	29.5	Economic recovery
2022–23	1.49	21.1	E-invoicing expansion
2023–24	1.65	10.7	Data analytics enforcement
2024–25	1.78	7.8	ITC reforms
2025–26	1.92	7.9	GST 2.0 reforms

19. Tax Buoyancy and Efficiency Analysis

Tax buoyancy measures how responsive tax revenue is to economic growth. A buoyancy greater than 1 indicates efficient tax collection (Table 5).

Table 5: GST Tax Buoyancy Estimates

Year	GDP Growth (%)	GST Growth (%)	Buoyancy
2018–19	6.8	8.9	1.31
2019–20	4.2	4.1	0.98
2020–21	-6.6	-6.8	1.03
2021–22	8.9	29.5	3.31
2022–23	7.2	21.1	2.93
2023–24	6.5	10.7	1.64
2024–25	6.7	7.8	1.16

Interpretation:

- High buoyancy in recent years indicates improved compliance and enforcement.
- GST reforms, especially digital tracking, have contributed significantly to revenue efficiency [20].

20. Compliance Ratio and Filing Trends

Compliance is a critical indicator of GST effectiveness. The filing ratio has improved significantly due to digital reforms (Table 6) [21].

Table 6: GST Return Filing Compliance Trends

Year	Registered Taxpayers (million)	Filing Ratio (%)	Key Drivers
2017–18	10.5	65	Initial challenges
2018–19	11.8	70	System improvements
2019–20	12.5	74	Awareness increase
2020–21	13.2	72	Pandemic disruption
2021–22	13.8	78	Digital push
2022–23	14.5	82	E-invoicing
2023–24	15.2	85	Analytics enforcement
2024–25	16.0	88	ITC restrictions
2025–26	16.8	91	Automation & pre-filled returns

21. Impact of Digitalisation on Compliance

Digital transformation has played a crucial role in improving GST compliance. The integration of e-invoicing, AI-based analytics, and automated returns has reduced human intervention and increased accuracy.

Key Outcomes:

- Reduction in fake invoicing cases
- Increased transparency in transactions
- Faster detection of tax evasion
- Improved audit efficiency [22-23]

22. Econometric Interpretation of GST Reforms

To understand the impact of GST reforms quantitatively, a conceptual econometric model can be used.

Model Specification:

GST Revenue (GSTR) = f (GDP Growth, Compliance Rate, Digital Adoption, Policy Reforms)

Equation (Conceptual Form):

$GSTR = \beta 0 + \beta 1(GDP) + \beta 2(Compliance) + \beta 3(Digitalisation) + \beta 4(Reforms) + \varepsilon$

Interpretation:

- **β1 (GDP Growth):** Positive relationship with GST revenue
- **β2 (Compliance):** Strong positive impact
- **β3 (Digitalisation):** Significant improvement in efficiency

- **β4 (Reforms):** Structural impact on long-term growth [24]

23. Cost of Compliance Analysis

While GST reforms improve efficiency, they also impose compliance costs (Table 7).

Table 7: Compliance Cost Components

Component	Large Firms	MSMEs
Software integration	Moderate	High
Professional fees	Moderate	High
Training costs	Low	High
Time spent on filing	Reduced	Moderate

Key Insight:

- Large firms benefit from economies of scale
- MSMEs face relatively higher compliance costs

24. Sectoral Contribution to GST Revenue

Different sectors contribute unevenly to GST revenue (Table 8).

Table 8: Sector-wise GST Contribution (Approximate)

Sector	Contribution (%)
Manufacturing	40
Services	35
Trade	20
Others	5

25. Impact on Inflation and Prices

GST reforms have influenced price levels in different ways:

Short-Term Effects:

- Price fluctuations due to rate changes
- Adjustment costs for businesses

Long-Term Effects:

- Reduction in cascading taxes
- Stabilisation of prices
- Improved supply chain efficiency [25]

26. Interstate Trade and Logistics Efficiency

GST has significantly improved interstate trade by:

- Eliminating check posts
- Reducing transportation time
- Streamlining logistics

27. GST and Formalisation of Economy

GST has accelerated the formalisation of the Indian economy by:

- Encouraging digital transactions

- Linking businesses through ITC chain
- Increasing tax base

27. Risk Analysis in GST System

Key Risks:

- Cybersecurity threats
- Data breaches
- Over-dependence on technology
- System failures

28. Case Study Analysis of GST Reforms

The practical implications of GST reforms are best understood through case-based analysis. This section examines real-world and model-based scenarios to evaluate how policy changes and digital transformation influence compliance behavior, operational efficiency, and financial outcomes.

28.1 Case Study 1: Large Manufacturing Enterprise

A large manufacturing firm operating across multiple states experienced significant benefits following GST reforms, particularly after the implementation of e-invoicing and ITC automation.

Before GST, the firm faced multiple taxation layers including excise duty, VAT, and entry taxes. These resulted in cascading effects and logistical inefficiencies. With GST implementation and subsequent reforms:

- Supply chains were restructured for efficiency rather than tax arbitrage
- Warehouse consolidation reduced operational costs
- Input tax credit claims became more transparent and traceable

However, the introduction of strict ITC matching rules required the firm to closely monitor vendor compliance. This led to the development of internal compliance systems and vendor rating mechanisms.

28.2 Case Study 2: MSME in Trading Sector

A medium-sized trading enterprise faced mixed outcomes under GST reforms. While the simplified tax structure and reduced interstate barriers were beneficial, compliance requirements posed challenges.

Key observations include:

- Increased reliance on digital accounting systems
- Higher compliance costs relative to turnover
- Dependency on suppliers for ITC eligibility

Despite these challenges, recent reforms such as pre-filled returns and faster refunds improved liquidity and reduced administrative burden [26].

29.3 Case Study 3: E-Commerce Platform

The e-commerce sector has been significantly impacted by GST reforms due to its digital nature and complex supply chains.

GST provisions such as Tax Collected at Source (TCS) and mandatory registration requirements initially increased compliance complexity. However, digital integration and automation have improved operational efficiency over time.

E-commerce firms now benefit from:

- Automated tax calculation systems
- Seamless invoice generation
- Real-time compliance monitoring [27]

30. Sector-Specific Impact Analysis

30.1 E-Commerce Sector

GST reforms have transformed the e-commerce landscape by formalizing transactions and ensuring tax compliance across digital platforms.

Key impacts include:

- Increased transparency in transactions
- Enhanced tax tracking through TCS mechanisms
- Standardization of tax rates across states

However, compliance requirements remain stringent, particularly for smaller sellers operating on these platforms.

30.2 Real Estate Sector

The real estate sector has undergone substantial changes under GST, particularly with the introduction of revised tax rates and input credit restrictions.

Positive impacts:

- Simplified tax structure
- Reduced ambiguity in taxation

Challenges:

- Limited ITC availability in certain segments
- Increased cost burden for developers

30.3 Export Sector

Exports under GST are treated as zero-rated supplies, allowing exporters to claim refunds on input taxes.

Recent reforms have improved the export ecosystem by:

- Accelerating refund processes
- Reducing documentation requirements
- Enhancing digital processing (Table 9) [28]

Table 9: Sectoral Impact Summary

Sector	Positive Impact	Negative Impact	Overall Effect
Manufacturing	Cost reduction, efficiency	Compliance complexity	Highly positive
MSMEs	Market expansion	High compliance cost	Mixed
E-commerce	Transparency, automation	Regulatory burden	Moderately positive
Real Estate	Simplification	Limited ITC	Mixed
Exports	Faster refunds	Procedural issues	Positive

31. State-Level GST Performance Analysis

GST performance varies significantly across states due to differences in economic structure, industrialization, and administrative efficiency.

31.1 High-Performing States

States with strong industrial bases and advanced digital infrastructure tend to perform better in GST collection and compliance.

31.2 Emerging States

States with developing economies are witnessing gradual improvement due to:

- Increased formalization
- Digital adoption
- Policy support (Table 10)

Table 10: Illustrative State-wise GST Performance

State Category	Characteristics	GST Performance
Industrialized States	Strong manufacturing base	High revenue
Service-Oriented States	IT and services dominance	Moderate to high
Developing States	Agriculture-based economy	Moderate
Special Category States	Geographic constraints	Lower revenue

32. GST and Federal Fiscal Dynamics

GST has fundamentally altered fiscal relations between the central and state governments.

32.1 Revenue Sharing Mechanism

GST follows a dual model:

- Central GST (CGST)
- State GST (SGST)
- Integrated GST (IGST)

This structure ensures revenue sharing while maintaining fiscal autonomy.

32.2 Compensation Mechanism

To address revenue uncertainties, the government introduced a compensation mechanism guaranteeing states a fixed growth rate in revenue.

However, post-compensation period challenges include:

- Revenue shortfalls
- Dependence on central transfers

- Fiscal imbalances [29]

33. Policy Evaluation of GST 2.0

GST 2.0 represents a shift toward simplification and digitalisation.

Key Achievements:

- Reduced tax slabs
- Improved compliance systems
- Enhanced revenue collection

Limitations:

- Continued exclusion of petroleum products
- Complexity in certain sectors
- High compliance burden for MSMEs

34. Industry Response to GST Reforms

Industry reactions to GST reforms have been largely positive, particularly regarding:

- Ease of doing business
- Reduction in logistics costs
- Improved transparency

However, concerns remain regarding:

- Frequent policy changes
- Compliance complexity
- Technical challenges

35. Integration with Emerging Technologies

GST reforms are increasingly aligned with emerging technologies such as:

- Artificial Intelligence
- Blockchain (potential future use)
- Cloud-based accounting systems [30]

36. Challenges in Sectoral Implementation

Despite progress, sector-specific challenges persist:

- Complex compliance for e-commerce sellers
- ITC restrictions in real estate
- Export refund delays (though reduced)

37. Synthesis of Case Study Insights

The case studies and sectoral analysis reveal that:

- Large firms benefit significantly from GST reforms
- MSMEs face adaptation challenges
- Digitalisation is a key enabler of compliance
- Policy consistency is critical for long-term success

38. Policy Recommendations

The evolution of GST in India reflects significant progress, yet several structural and operational challenges remain. Based on the preceding analysis, the following policy recommendations are proposed to enhance the effectiveness, inclusivity, and sustainability of GST reforms.

38.1 Simplification of Compliance Framework

Despite improvements under GST 2.0, compliance remains complex, particularly for small businesses. Policymakers should focus on:

- Further simplification of return filing procedures
- Reduction in frequency of compliance requirements
- Expansion of fully automated, pre-filled returns

A simplified compliance framework will encourage voluntary compliance and reduce administrative burden.

38.2 Strengthening MSME Support Systems

MSMEs face disproportionate challenges in adapting to GST reforms due to limited technological and financial resources. Policy interventions should include:

- Subsidized access to GST-compliant software
- Capacity-building programs and training initiatives
- Simplified compliance regimes for small taxpayers

38.3 Rationalisation of Tax Structure

Although GST 2.0 has reduced the number of tax slabs, further rationalisation may be considered:

- Gradual movement toward a single standard rate for most goods and services
- Minimisation of exemptions to reduce classification disputes

38.4 Inclusion of Petroleum Products

The exclusion of petroleum products from GST continues to create inefficiencies and breaks in the input tax credit chain. Including these products would:

- Enhance tax neutrality
- Improve revenue efficiency
- Reduce cascading effects

38.5 Enhancing Digital Infrastructure

While GST is already digitally advanced, continuous improvements are necessary:

- Strengthening GSTN capacity to prevent system glitches
- Enhancing cybersecurity measures
- Expanding AI-based compliance monitoring

38.6 Policy Stability and Predictability

Frequent changes in GST rules can create uncertainty for businesses. A stable policy environment requires:

- Advance notice of changes
- Stakeholder consultation before implementation
- Long-term policy roadmap

38.7 Improving Refund Mechanisms

Although refund processes have improved, further enhancements are needed:

- Fully automated refund processing
- Reduced documentation requirements
- Time-bound refund guarantees [31]

39. Future Roadmap of GST in India

The future of GST lies in deeper integration of technology, simplification of processes, and expansion of the tax base.

39.1 Transition to GST 3.0

The next phase of GST reforms (GST 3.0) may focus on:

- End-to-end automation of tax compliance
- Real-time tax assessment
- Seamless integration with financial systems

39.2 AI-Driven Tax Administration

Artificial Intelligence will play a critical role in:

- Predictive compliance monitoring
- Fraud detection
- Risk-based auditing

39.3 Integration with Global Tax Systems

As global trade expands, GST systems may increasingly align with international tax frameworks, enabling:

- Cross-border tax harmonisation
- Improved export competitiveness

39.4 Expansion of Tax Base

Future reforms may aim to:

- Include currently excluded sectors
- Reduce informality in the economy
- Increase taxpayer participation

40. Critical Evaluation of GST Reforms

GST reforms have achieved notable success, but a critical evaluation reveals both strengths and limitations.

Strengths:

- Unified national tax system
- Improved compliance and transparency
- Strong digital infrastructure
- Increased revenue efficiency

Limitations:

- High compliance burden for MSMEs
- Technological challenges
- Policy complexity in certain sectors
- Incomplete tax coverage [32]

41. Integrated Conclusion

The Goods and Services Tax represents one of the most significant fiscal reforms in India's economic history. Since its introduction in 2017, GST has evolved from a complex and often challenging system into a more streamlined, digitally driven framework.

Recent reforms under GST 2.0 have played a crucial role in this transformation. The rationalisation of tax rates, strengthening of input tax credit mechanisms, and expansion of digital compliance tools have significantly improved the efficiency and transparency of the tax system. The integration of e-invoicing, data analytics, and automation has enabled real-time monitoring and enhanced enforcement capabilities.

The analysis presented in this paper demonstrates that GST reforms have led to:

- Sustained growth in tax revenues
- Improved compliance rates
- Increased formalisation of the economy
- Enhanced ease of doing business

However, the benefits of GST reforms are not uniformly distributed. Large enterprises and digitally advanced sectors have gained significantly, while MSMEs continue to face challenges related to compliance costs and technological adaptation. Additionally, issues such as policy complexity, exclusion of certain sectors, and data privacy concerns require ongoing attention. The future of GST lies in achieving a balance between efficiency and inclusivity. Policymakers must ensure that reforms not only enhance revenue and compliance but also support small businesses and promote equitable growth. The transition toward GST 3.0, characterized by full digital integration and AI-driven governance, offers promising opportunities for further improvement. In conclusion, GST reforms in India represent a dynamic and evolving process. While significant progress has been made, continuous policy innovation, stakeholder engagement, and technological

advancement will be essential to realise the full potential of GST as a modern, efficient, and inclusive tax system [33].

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- **Availability of data and materials**

Not applicable.

- **Ethics approval and consent to participate**

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- **Consent for publication**

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- **Competing interests**

The authors declare that they have no competing interests.

References

- Thakur, T., & Devi, A. D. (2025). GST Reforms 2025 and The New Tax Regime in India: Towards Simplified Taxation or Added Complexity. *Journal of Economics, Management and Trade*, *31*(12), 94-113.
- Vihap, P., Anshu, P., & Vidani, J. (2025). The Impact of Recent GST Reforms on Local Businesses. *International Journal of Applied and Scientific Research*, *3*(12), 1203-1224.
- Bhadoriya, S. (2025). The Evolution Of Goods And Services Tax (GST) In India: A Legal And Economic Analysis. *International Journal of Multifaceted Research*, *2*(1), 37-42.
- Deb, R. (2018). Tax Reforms and GST: A Systematic Literature Review. *Journal of Commerce and Accounting Research*, *7*(1), 40.
- Mukherjee, S. (2015). Present state of goods and services tax (GST) reform in India. *Evolution of Goods and Services Tax in India*, 60-88.
- Sreesankar, R. S., & Durgalashmi, C. V. (2025, September). Digital Transformation in GST: A Comparative Study of Tax Compliance Systems in South Indian States. In *World Conference on Information Systems for Business Management* (pp. 67-77). Cham: Springer Nature Switzerland.
- O'Hare, B., & Hall, S. G. (2022). The impact of government revenue on the achievement of the sustainable development goals and the amplification potential of good governance. *Central European Journal of Economic Modelling and Econometrics*, *14*(2), 109-129.

- Sreesankar, R. S., & Durgalashmi, C. V. (2025, September). Digital Transformation in GST: A Comparative Study of Tax Compliance Systems in South Indian States. In *World Conference on Information Systems for Business Management* (pp. 67-77). Cham: Springer Nature Switzerland.
- Mishra, P., Sheth, N., & Daftardar, S. (2025). A comprehensive analysis and pathways to a $10 trillion Indian economy. *Cuestiones de Fisioterapia*, *54*(3), 1225-1237.
- Sharma, P. (2020). Impact of Goods and Services Tax (GST) on Indian Economy. *Turkish Journal of Computer and Mathematics Education*, *11*(2), 803-807.
- Sureka, A., & Bordoloi, N. (2024). The impact of the new GST regime on MSMEs in India, with a special emphasis on input tax credit. *Public Policy and Administration*, *23*(4), 552-565.
- Givati, Y. (2020). Theories of Tax Deductions: Income Measurement versus Efficiency. *Journal of Law, Finance, and Accounting*, *5*(1), 107-136.
- Gupta, S., Singh, S., Kumar, M., Kumawat, K., & Hemraj, C. A. (2017). Good and service tax: An international comparative analysis. *International Journal of Research in Finance and Marketing*, *7*(5), 29-38.
- Howard, J., & Sinha, P. (2020). Analysts' earnings forecasting behavior surrounding uncertain regulatory events: Evidence from the Tax Reform Act of 1986. *Accounting and Business Research*, *50*(1), 35-60.
- Dandona, I., Tomar, P. K., Gupta, S. K., & Verma, S. K. (2024). GST dynamics in India: exploring state revenue trends, GDP impact, and economic resilience. *Multidisciplinary Reviews*, *7*(10), 2024221.
- Treacy, S. (2022). Ensuring compliance in the digital era: A knowledge-based dynamic capabilities framework wheel for data-driven organisations. *International Journal of Business Analytics and Intelligence*, *10*(2), 25.
- Aboalmaali, F. S., Daneshfard, K., & Pourezzat, A. A. (2020). Designing a Pattern of Administrative Reform with Digital Governance Approach. *Public Organizations Management*, *8*(3), 11-32.
- Jhamb, V. (2022). Deconstructing financial power from constitutional under-pinning in India: a critical analysis of cooperative federalism in the light of GST Act, 2017. *International Journal of Human Rights and Constitutional Studies*, *9*(4), 307-317.
- Dandona, I., Tomar, P. K., Gupta, S. K., & Verma, S. K. (2024). GST dynamics in India: exploring state revenue trends, GDP impact, and economic resilience. *Multidisciplinary Reviews*, *7*(10), 2024221.

- Dey, S. K. (2025). Tax buoyancy and revenue mobilization in emerging economies: Empirical insights from India. *Journal of Tax Reform*, *11*(3), 494-511.
- Abhireddy, N., & Challa, S. R. (2022). Analyzing Compliance in Digital Tax Filing Using Pattern Recognition Techniques. *International Journal of Emerging Trends in Computer Science and Information Technology*, *3*(3), 101-111.
- Umeokafor, N., & Teizer, J. (2023). Barriers to digitalisation of construction health, safety, and well-being regulations enforcement and compliance checking. In *CIB W099 & W123 Annual International Conference: Digital Transformation of Health and Safety in Construction* (pp. 441-450).
- Judijanto, L., & Malik, M. C. P. (2025). Digitalisation Of Msmes And Its Implication On Tax Compliance. *INJOSEDU: International Journal of Social and Education*, *2*(5), 1192-1200.
- Garg, S., Narwal, K. P., & Kumar, S. (2023). Economic impact of GST reforms on Indian economy: An empirical analysis. *Orissa Journal of Commerce*, *44*(3), 1-16.
- Ubale, S. V. (2024). Legal Frameworks and Challenges in Global GST Implementation. *IUP Law Review*, *14*(4).
- Garg, S., Narwal, K. P., & Kumar, S. (2023). Economic impact of GST reforms on Indian economy: An empirical analysis. *Orissa Journal of Commerce*, *44*(3), 1-16.
- Khatri, P. (2019). A Study of the Challenges of the Indian MSME Sector. *IOSR Journal of Business and Management*, *21*(2), 05-13.
- Steininger, K. W., Bednar-Friedl, B., Formayer, H., & König, M. (2016). Consistent economic cross-sectoral climate change impact scenario analysis: Method and application to Austria. *Climate Services*, *1*, 39-52.
- Mukherjee, S. (2020). Performance assessment of Indian GST: State-level analysis of compliance gap and revenue growth. *National Institute of Public Finance and Policy*, 1-35.
- MacCarthaigh, M. (2017). Shrinking the State: Organisational Reform and Rationalisation. In *Public Sector Reform in Ireland: Countering Crisis* (pp. 127-163). Cham: Springer International Publishing.
- Hagargi, V. S. (2023). A Critical Analysis of GST in India. *Issue 2 Indian JL & Legal Rsch.*, *5*, 1.

- Kumar, M., Barve, A., & Yadav, D. K. (2019). Analysis of barriers in implementation of Goods and Service Tax (GST) in India using interpretive structural modelling (ISM) approach: M. Kumar et al. *Journal of Revenue and Pricing Management*, *18*(5), 355-366.
- Dandona, I., Tomar, P. K., Gupta, S. K., & Verma, S. K. (2024). GST dynamics in India: exploring state revenue trends, GDP impact, and economic resilience. *Multidisciplinary Reviews*, *7*(10), 2024221.

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The Role of MSMEs in Absorbing India's Demographic Dividend Amid Structural Transformation

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Introduction

India stands at a critical juncture in its economic history. With a youthful population bulge offering one of the largest demographic dividends in the world, the country must channel its working-age cohort into productive employment to sustain high growth and achieve developed-nation status by 2047. Yet, this dividend is not automatic. It hinges on structural transformation—the reallocation of labour and resources from low-productivity agriculture to higher-productivity industry and services—and the capacity of the economy to generate millions of quality jobs annually. Micro, Small, and Medium Enterprises (MSMEs) emerge as the linchpin in this process. Labour-intensive, geographically dispersed, and entrepreneurially driven, MSMEs absorb surplus agricultural labour, provide entry-level opportunities for youth, and facilitate the gradual shift toward non-farm activities. Without a robust MSME ecosystem, India's demographic advantage risks turning into a demographic liability characterised by youth unemployment, informality, and stalled productivity gains.

This article examines the interplay between India's demographic dividend, its incomplete structural transformation, and the pivotal role of MSMEs. Drawing on official data from the Ministry of MSME, the Periodic Labour Force Survey (PLFS), the India Employment Report 2024, IMF analyses, and NITI Aayog assessments, it argues that MSMEs are uniquely positioned to bridge the employment gap. However, persistent challenges in finance, skilling, formalisation, and market access limit their potential. Targeted policy reforms—emphasising clusters, digital integration, credit expansion, and inclusive skilling—are essential to maximise this role before the demographic window narrows in the late 2030s.

India's Demographic Dividend: A Narrowing Window of Opportunity

India's demographic profile presents a classic dividend scenario. The share of the working-age population (15–59 years) rose from approximately 61% in 2011 to 64% in 2021 and is projected to peak near 65% by 2036 before stabilising or declining. The youth cohort (15–29 years) numbered 371 million in 2021 (27% of

the total population) but is expected to shrink to 23% by 2036. Each year, 7–8 million individuals enter the labour force, creating an annual requirement of roughly 8–12 million productive jobs to absorb new entrants, agricultural migrants, and underemployed workers.

This window—broadly 2011 to 2041, with the peak share around 2028–2030—is finite. Southern and western states have already advanced through their demographic transition, while northern and central states (Bihar, Uttar Pradesh, Madhya Pradesh) retain larger youth bulges but lower per-capita incomes and poorer employment outcomes. Realising the dividend requires not merely population numbers but three enabling conditions: rising labour-force participation (especially female), skill alignment with market demand, and structural reallocation toward higher-productivity sectors. Failure here risks "jobless growth" or, worse, a reversal into subsistence agriculture.

Data underscore the urgency. Youth labour-force participation rate (LFPR, usual principal status) fell from 54% in 2000 to 38% in 2019 before a modest recovery to 42% in 2022, driven largely by rural women re-entering the workforce in low-quality roles. Unemployment among educated youth remains elevated: 29.1% for graduates and 18.4% for those with secondary+ education in 2022. The NEET (not in employment, education, or training) rate stands at 28.5%, with women at 48.4%. These figures signal a mismatch: expanding education without commensurate non-farm jobs has produced discouraged workers and hidden unemployment. Female LFPR, though rising post-pandemic, remains among the world's lowest, further eroding the dividend.

Regional and social disparities compound the challenge. Eastern and central states, with high youth shares, exhibit low formal employment and high out-migration. Marginalised groups (Scheduled Castes/Tribes) face additional barriers in skill acquisition and credit access. Without intervention, India risks ageing before prospering—echoing warnings that the dividend could be "lost forever" if non-farm job creation lags behind agricultural exits (roughly 4–5 million annually pre-COVID).

Structural Transformation: Incomplete and Services-Led

India's growth trajectory deviates from the classic Lewis or Kuznets model. Agriculture's share in gross value added (GVA) declined sharply from over 40% in 1980 to about 15% in 2019 (and roughly 14.7% by 2023–24), while services surged past 55%. Manufacturing and construction shares remained stubbornly flat. Employment transformation has been even slower and more uneven. Agriculture still employs 42–45% of the workforce (up from 42.4% in 2019 to 45.4% in 2022 due to pandemic reversals), despite contributing only 14–15% to GVA.

This "premature deindustrialisation" leaves surplus labour trapped in low-productivity agriculture (output per worker roughly one-fourth that of manufacturing). Construction and low-end services absorbed most of the agricultural outflow between 2000 and 2019, adding millions of casual, low-wage jobs but little productivity gain. Manufacturing employment grew at a meagre 1.7% annually (2000–19), far below GVA growth of 7.5%, reflecting capital-intensive, skill-mismatched expansion. Services employment rose modestly (2.9% annually), dominated by modern tradable segments (IT, finance) that create high-productivity but low-volume jobs, alongside traditional retail and hospitality that remain informal and low-paying.

Labour productivity gaps are stark. Workers in manufacturing and modern services are over 4.5 times more productive than in agriculture. Yet, skill mismatches persist: only 61% of the population aged 25+ has completed primary education, and PLFS data reveal widespread over- or under-qualification. Total factor productivity (TFP) catch-up to global frontiers has been limited, with manufacturing showing negligible progress and construction regressing in relative terms.

The post-2019 reversal—agricultural employment surging while non-farm growth slowed—highlights vulnerability. Informalisation intensified: 90% of workers remain informally employed, and self-employment (often unpaid family labour) rose sharply among rural women and youth. This pattern risks trapping India in a low-equilibrium growth path, unless manufacturing and organised services expand labour-absorptive capacity.

MSMEs: The Backbone of Employment and Inclusive Growth

MSMEs constitute the largest segment of India's enterprise landscape. As of late 2025, over 6.5 crore units are registered on the Udyam and Udyam Assist portals (3.80 crore on Udyam proper and 2.72 crore informal micro-enterprises via Udyam Assist). These enterprises provide employment to approximately 28 crore people—second only to agriculture—and account for 30.1% of GDP, 35.4% of manufacturing output, and 45.73% of exports. Micro-enterprises dominate (over 97–98%), followed by small and a negligible medium segment. Proprietorships comprise 81% of registrations, underscoring the sector's entrepreneurial, often informal character.

Geographically and socially inclusive, MSMEs operate across rural and urban areas, with strong presence in labour-intensive clusters (textiles in Tiruppur and Surat, food processing, leather, gems). They employ disproportionately high shares of women (especially in coir, khadi, and apparel), SC/ST entrepreneurs, and first-generation workers. Public procurement policy mandates 25% MSE sourcing

(with sub-targets for SC/ST and women), and schemes like GeM have onboarded lakhs of MSE sellers.

Unlike large corporates, MSMEs exhibit high employment elasticity. They create jobs at relatively low capital intensity, often through self-employment and micro-manufacturing. In non-agricultural proprietary and partnership enterprises, 74.3% of workers are engaged in non-farm activities, filling the gap left by stagnant organised manufacturing. Khadi and village industries alone employ nearly 1.87 crore people, while coir units support over 7.5 lakh, predominantly women

MSMEs as the Primary Absorber of Demographic Dividend

MSMEs' labour-absorptive capacity directly addresses the demographic imperative. Annual addition of 7–8 million labour-force entrants, plus millions exiting agriculture, demands decentralised, low-skill-entry job creation—precisely what micro and small units provide. Schemes such as the Prime Minister's Employment Generation Programme (PMEGP) have assisted nearly 10 lakh units since inception, generating over 80 lakh jobs (80% rural). The PM Vishwakarma scheme targets artisans in 18 trades, registering 26.79 lakh beneficiaries and disbursing collateral-free loans while imparting skills to 16.68 lakh.

In structural terms, MSMEs facilitate the agriculture-to-non-farm transition. Unregistered and micro-enterprises (fewer than 10 workers) drove most non-farm job growth pre-COVID, absorbing surplus rural labour into construction, trade, and light manufacturing. Clusters amplify this: textile and apparel units in southern and western states employ millions of semi-skilled youth; food-processing MSMEs link farmers to markets, creating upstream and downstream jobs. NITI Aayog cluster analysis highlights how food-processing, automotive, and chemical MSMEs in specific districts generate localised multiplier effects, raising wages and drawing youth from agriculture.

Youth and women benefit disproportionately. Self-employment and gig work within MSME ecosystems offer flexible entry points, while formalisation initiatives (Udyam) unlock priority-sector lending and markets. Post-pandemic recovery saw MSMEs sustain employment when large firms retrenched. Informal micro-enterprises, though low-productivity, prevented mass unemployment by acting as a safety net—critical given that organised manufacturing absorbs only a fraction of new entrants.

Quantitative evidence supports the absorption thesis. MSME manufacturing employment elasticity exceeds that of large firms, and public procurement from MSEs reached 40.77% in recent years, directly supporting lakhs of units. Credit guarantee schemes (CGTMSE) have approved guarantees worth ₹9.80 lakh crore,

benefiting over 1.18 crore enterprises and enabling expansion that translates into jobs.

Persistent Challenges Limiting Absorption Potential

Despite strengths, MSMEs face structural constraints that undermine dividend realisation. The credit gap remains massive—formal sources meet only a fraction of demand, forcing reliance on high-cost informal lenders. Skill levels are low: 72.6% of the workforce lacks formal vocational training, with mismatches acute in clusters (e.g., textiles, chemicals). Innovation is weak; only 5.8% of MSMEs introduce new products versus 36% globally. Market access is limited—GVC participation is marginal (1.5% of global exports), and branding/export readiness is poor.

Informality (over 90% of employment) restricts scalability, technology adoption, and social protection. Pandemic reversals exposed fragility: many units reverted to subsistence modes, inflating agricultural employment shares. Gender gaps persist—female ownership is low (around 3–4% in formal data), and women-led units face higher collateral and information barriers. Regional imbalances mean high-youth states (Bihar, UP) have fewer vibrant clusters than southern ones.

These bottlenecks risk converting demographic potential into unemployment or underemployment, especially as the youth bulge peaks and then declines.

Policy Architecture and Emerging Reforms

Government initiatives have evolved from protectionism to competitiveness. The Udyam portal simplified registration, onboarding crores of informal units for priority lending. Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) provides collateral-free coverage up to ₹5 crore, with enhanced terms for women/SC/ST. PMEGP, RAMP (World Bank-supported), and Cluster Development programmes target rural industrialisation and supply-chain integration. Production-Linked Incentives (PLIs) and ZED (Zero Defect Zero Effect) promote quality and technology. Skilling via Technology Centres, ESDP, and PM Vishwakarma reaches lakhs annually. Public procurement and e-commerce on boarding (MSME-TEAM) expand markets.

Recent reforms—labour codes, National Education Policy 2020, Skill India Digital, and Udyam Assist for informal micro-enterprises—aim at formalisation and human-capital enhancement. Yet implementation gaps remain: awareness is low, credit flow to micro units uneven, and cluster programmes under-scale.

Future Prospects and Strategic Recommendations

Projections are optimistic but conditional. Reports suggest MSMEs could reach 50% of GDP and 60% of exports by 2030 if reforms accelerate, employing 15 crore more. To harness the dividend, a multi-pronged strategy is required:

1. Cluster-Led Transformation Scale Porter-inspired or collective-efficiency models with digital linkages, common facility centres, and university-industry R&D partnerships. Prioritise downstream value addition in textiles, food, and chemicals.
2. Credit and Formalisation Push: Expand CGTMSE coverage and premiums; integrate digital footprints and invoice financing; merge Udyam with e-Shram and NCS for seamless benefits. Target 100% women-led coverage.
3. Skilling Revolution: Conduct sector-specific skill censuses; subsidise cluster-based training; mainstream AI, green skills, and STEM in vocational programmes. Link training to placement and post-training monitoring.
4. Market and GVC Integration: Establish E-Commerce Export Hubs; expand PLI coverage to smaller units; simplify quality certifications and logistics. Promote buyer-seller meets and branding.
5. Inclusive and Regional Focus: Prioritise women, SC/ST, and high-youth states through targeted subsidies, migration support, and care infrastructure to raise female LFPR. Strengthen social safety nets for flexible urbanisation.
6. Technology and Innovation: Subsidise Industry 4.0 adoption (sensors, AI); create Institutions for Collaboration for knowledge sharing.

Implementation demands Centre-State coordination, outcome-based monitoring via CHAMPIONS and SAMADHAAN portals, and periodic PLFS/NSSO integration for MSME-specific data.

Conclusion

India's demographic dividend and structural transformation are two sides of the same coin. MSMEs, with their unmatched capacity for decentralised, labour-absorptive growth, hold the key to aligning the two. By generating 28 crore jobs across diverse geographies and demographics, they currently cushion the transition from agriculture while nurturing entrepreneurship among youth. Yet the window is closing. Without decisive action on finance, skills, formalisation, and clusters, the dividend may evaporate into widespread underemployment, gender exclusion, and regional imbalances.

The stakes are existential. Successful absorption through MSMEs can propel India toward 8%+ sustained growth, inclusive development, and global manufacturing leadership. Failure risks a middle-income trap and social strain. Policymakers must therefore treat MSME competitiveness not as a sectoral issue but as a national imperative for demographic dividend realisation. With visionary reforms and execution, India's MSMEs can transform a youthful population into a global economic powerhouse—securing prosperity for generations before the demographic advantage fades.

References

- Government of India , Ministry of Micro, Small and Medium Enterprises. (2025). Annual report 2024-25. https://msme.gov.in/sites/default/files/MSME-ANNUAL-REPORT-2024-25-ENGLISH.pdf
- Institute for Human Development & International Labour Organization. (2024). India employment report 2024: Youth employment, education and skills. ILO.
- International Monetary Fund . (2024) . Advancing India's structural transformation and catch-up to the technology frontier (Working Paper No. 2024/138). https://www.imf.org/-/media/files/publications/wp/2024/english/wpiea2024138-print-pdf.pdf
- NITI Aayog. (2025). Enhancing competitiveness of MSMEs in India. https://niti.gov.in/sites/default/files/2025-05/Enhancing_Competitiveness_of_MSMEs_in_India.pdf
- Press Information Bureau. (2025, July 4). MSME sector accounts for 30.1% of India's GDP, 35.4% of manufacturing and 45.73% of exports in the country: Union Minister for MSME* (Press release). https://www.pib.gov.in/PressReleasePage.aspx?PRID=2142170
- Parida, J. K., et al. (2023). Harnessing demographic dividend before it is lost forever in India. Journal of Social and Economic Development. https://pmc.ncbi.nlm.nih.gov/articles/PMC9839200/

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Managing Loss and Uncertainty: Emotional Coping Skills as Psychological Resources in an Unstable Workforce

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Abstract

Today's workforce faces growing instability due to automation, digital changes, platform jobs, and the lasting effects of the COVID-19 pandemic. These changes have not only affected income and job patterns but have also led to deep feelings of loss, such as losing a sense of identity at work, social connections, predictability, and hope for the future. This paper looks at how emotional coping skills help people handle uncertainty and keep functioning well in unstable job markets. Using theories from Lazarus and Folkman, Hobfoll, and behavioural economics, the study examines how emotional regulation, resilience, and emotional intelligence affect how people respond to workforce instability.

This paper uses a narrative literature review, bringing together research from peer-reviewed articles, international labour reports, and mental health studies from 2018 to 2024. To make the theories more relatable, it includes anonymous personal stories from other studies, showing real experiences of job loss, gig work challenges, migration, and worries about outdated skills. The findings show that people with better emotional coping skills have less psychological distress, keep looking for jobs longer, adapt better during career changes, and make healthier decisions when facing uncertainty. For organisations, having employees with strong emotional skills leads to higher engagement, less turnover, and lower mental health costs.

The paper suggests that emotional coping skills are not just personal traits but important resources for employability. They help people maintain dignity, stay productive, and keep working over time. The discussion covers what this means for individuals, organisations, and policymakers, and highlights the need to include emotional coping skills in workforce development, employment services, and labour policies.

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Keywords: emotional coping, workforce uncertainty, job insecurity, resilience, emotional intelligence, occupational well-being, adaptability

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1. Introduction

Over the last twenty years, work has changed a lot. Long-term jobs with clear career paths and stable roles are less common now. Instead, more people have short-term, freelance, or gig jobs, and they often need to learn new skills. Automation, artificial intelligence, and digital platforms have changed how work is organised, and the COVID-19 pandemic has made job paths even less stable across different industries and regions.

People often talk about these changes as making work more flexible and efficient, but they also bring a lot of uncertainty. Many workers no longer feel secure in their jobs, lose their sense of belonging, or struggle with their professional identity. Job instability can mean losing steady income, status, social ties, and confidence in the future. These effects go beyond short-term stress and can impact long-term mental health, motivation, and involvement in the job market.

This paper argues that emotional coping skills are key psychological resources that help people deal with uncertainty and loss in unstable job markets. These skills affect not just how people feel, but also how they act—like how long they keep searching for jobs, how well they adapt, how productive they are, and how employable they stay over time. In job markets where uncertainty is a constant, being able to manage emotions, bounce back from setbacks, and make good decisions under stress is a crucial skill.

2. Background and Significance of the Study

The growth of unstable jobs has changed the relationship between workers and employers. Gig work, short-term contracts, and platform jobs are now common in both wealthy and developing countries. While these jobs can offer more freedom and flexibility, research shows they often come with psychological downsides, such as ongoing stress, anxiety, emotional exhaustion, and feeling disconnected from work (ILO, 2021).

From a psychological standpoint, uncertainty threatens basic human needs for safety, predictability, and meaning. Work has long functioned as a stabilising structure in adult life, organising time, identity, and social relationships. When employment becomes unstable, individuals are required to repeatedly reconstruct their sense of self and future orientation. Behavioural economics further demonstrates that uncertainty disrupts rational decision-making, increasing reliance

on fear-based heuristics and short-term survival strategies (Kahneman & Tversky, 1979).

This study is important because it views emotional coping skills as valuable economic and social assets, not just personal mental health issues. By connecting psychology, behavioural economics, and labour studies, the paper shows that mental well-being is key to a strong workforce. Knowing how emotional coping works in unstable job markets is essential for creating programs that protect people's dignity and help the economy.

3. Research Objectives

The objectives of this paper are to:

1. Examine the psychological experience of loss and uncertainty in contemporary workforce contexts.
2. Analyse emotional coping skills through established psychological and behavioural economic theories.
3. Develop a theoretical framework linking uncertainty, emotional responses, and workforce outcomes.
4. Identify workforce groups particularly vulnerable to employment-related uncertainty.
5. Explore individual, organisational, and policy-level implications of emotional coping skills in unstable labour markets.

4. Review of Literature

4.1 Loss and Uncertainty in Modern Work

Modern careers rarely follow linear trajectories. Workers increasingly experience fragmented employment pathways characterised by short-term contracts, role changes, and continuous reskilling. Lazarus and Folkman (1984) emphasised that stress arises not from events themselves but from individuals' cognitive appraisals of those events. Job insecurity is often appraised as a personal threat, activating fear, anxiety, and emotional strain.

Loss in employment contexts extends beyond financial disruption. Workers report loss of professional identity, diminished social interaction, erosion of self-efficacy, and a weakened sense of purpose. These losses are particularly salient in societies where work is closely tied to self-worth and social recognition.

4.2 Coping Theory and Emotional Regulation

The Transactional Model of Stress and Coping distinguishes between problem-focused and emotion-focused coping strategies (Lazarus & Folkman, 1984). In situations where individuals have limited control—such as layoffs driven by structural economic changes—emotion-focused coping becomes essential.

Emotional regulation allows individuals to manage distress, sustain motivation, and continue functioning despite uncertainty.

Empirical studies indicate that individuals with poor coping skills are more likely to experience prolonged unemployment, depressive symptoms, and withdrawal from labour participation (Smith & McBride, 2023). Conversely, effective coping supports persistence, adaptability, and psychological recovery.

4.3 Behavioural Economics and Decision-Making Under Threat

Prospect Theory explains why uncertainty often leads to risk-averse and fear-driven decisions (Kahneman & Tversky, 1979). Loss aversion causes individuals to prioritise avoiding further losses over pursuing potential gains. In workforce contexts, this may manifest as remaining in unhealthy jobs for perceived security, delaying job searches, or avoiding upskilling due to fear of failure.

Emotional coping skills moderate these tendencies by reducing threat appraisal and enabling more balanced, forward-looking decision-making.

4.4 Emotional Intelligence and Employability

Emotional intelligence (EI) refers to the ability to perceive, regulate, and utilise emotions effectively in oneself and others. Research consistently links EI with lower stress, improved interpersonal relationships, and greater adaptability (Wang & Li, 2022). In uncertain work environments, EI enhances collaboration, conflict resolution, and resilience, making it a key employability resource.

5. Theoretical Framework

This paper integrates three complementary theoretical perspectives to explain how emotional coping skills function as psychological resources in unstable workforce contexts:

5.1 Transactional Model of Stress and Coping

Lazarus and Folkman's model explains how individuals cognitively appraise stressors and select coping strategies. Workforce instability is appraised either as a threat or a challenge, shaping emotional responses and behavioural outcomes. Emotional coping skills influence this appraisal process, moderating stress intensity and behavioural reactions.

5.2 Conservation of Resources (COR) Theory

Hobfoll's COR theory (1989) posits that stress arises from the threat or loss of valued resources, including emotional energy, self-esteem, and social support. Employment uncertainty threatens both economic and psychological resources. Emotional coping skills act as internal resources that protect against resource depletion and facilitate recovery.

5.3 Prospect Theory and Behavioural Economics

Prospect Theory explains how individuals make decisions under conditions of risk and uncertainty. Emotional distress amplifies loss aversion, leading to short-term, defensive economic behaviours. Emotional coping skills stabilise affective states, allowing individuals to engage in more adaptive decision-making.

Integrated Framework:

Uncertainty → Threat Appraisal → Emotional Strain → Risky or Avoidant Behaviour

⬇

Emotional Coping Skills (Regulation, Resilience, EI)

⬇

Adaptive Decisions, Sustained Engagement, Employability

6. Methodology

This study employs a **narrative literature review** methodology. Sources include peer-reviewed journal articles, international labour reports, and workforce mental-health studies published between 2018 and 2024. Databases searched included PsycINFO, Scopus, and Google Scholar.

To humanise theoretical insights, anonymised personal narratives drawn from secondary qualitative studies were incorporated. These narratives reflect common experiences of workers navigating job loss, gig work, migration, and skill obsolescence. No primary data were collected, consistent with conference research guidelines.

7. Analysis and Discussion

7.1 Uncertainty as a Chronic Psychological Stressor

Unlike temporary employment transitions, chronic uncertainty produces sustained psychological strain. Workers often report persistent anticipatory anxiety. One freelance professional quoted in a qualitative study noted, *"Even when I have work, I can't relax. I'm always bracing for the next gap."* Such prolonged stress undermines concentration, sleep, and motivation, eventually leading to emotional exhaustion.

7.2 Emotional Coping and Workforce Behaviour

Emotional regulation enables individuals to remain engaged despite instability. Workers who manage anxiety effectively are more likely to pursue job opportunities, invest in skill development, and maintain productivity. Resilience supports recovery following setbacks, allowing individuals to reinterpret job loss as transition rather than failure.

A displaced worker interviewed after redundancy reflected, *"Once I stopped seeing the layoff as proof that I wasn't good enough, I could think clearly again."* This illustrates how coping reframes loss into adaptive meaning.

7.3 Gig Workers and Emotional Precarity

Gig workers experience income volatility, isolation, and lack of organisational support. Emotional coping skills buffer against hopelessness, overwork driven by fear, and withdrawal from clients. Peer communities and informal support networks play a protective role.

7.4 Migrants and Identity Disruption

Migration disrupts professional identity, social belonging, and cultural continuity. Emotion-focused coping strategies such as meaning-making and cultural connection reduce depressive risk and support labour participation in new economies.

7.5 Older Workers and Skill Obsolescence

Older workers may experience shame and fear associated with technological change. Self-compassion and adaptive coping encourage engagement with reskilling, sustaining employability and dignity.

7.6 Organisational Outcomes

Organisations benefit economically from emotionally competent workforces through reduced turnover, improved engagement, and lower stress-related healthcare costs. Emotional coping capacities contribute to organisational resilience during change.

8. Implications

8.1 Implications for Individuals

Developing emotional awareness, resilience, and adaptive coping strategies enhances mental health and employability. Emotional coping should be recognised as a learnable skill.

8.2 Implications for Organisations

Organisations should integrate emotional skills training into workforce development, normalise mental-health support, and design psychologically safe change processes.

8.3 Implications for Policymakers

Policymakers should recognise emotional coping as a work-readiness competency, fund resilience programs, and integrate mental well-being indicators into labour policy.

9. Conclusion

In an era of persistent workforce instability, uncertainty and loss have become defining features of working life. This paper demonstrates that emotional coping skills are essential psychological resources that enable individuals to

navigate these challenges with resilience and dignity. Beyond personal well-being, emotional coping shapes economic behaviour, employability, and workforce sustainability. Supporting emotional coping is therefore not only a mental-health imperative but a strategic investment in human capital. When workers cope effectively, societies and economies are better positioned to adapt and thrive.

References (APA 7)

- Gilbert, P. (2014). *The compassionate mind and stress regulation*. International Compassion Research Journal, 5(1), 41–55.
- Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist, 44*(3), 513–524.
- International Labour Organization. (2021). *The role of digital labour platforms in transforming the world of work*. ILO.
- Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica, 47*(2), 263–291.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer.
- Patel, S., & Monroe, H. (2024). Resilience interventions in freelance work. *International Journal of Occupational Mental Health, 39*(1), 45–60.
- Smith, R., & McBride, D. (2023). Emotional coping and reemployment outcomes after job loss. *Journal of Occupational Health Psychology, 28*(3), 152–173.
- Wang, Y., & Li, L. (2022). Workforce wellbeing under uncertainty: The role of emotional intelligence. *Journal of Applied Work Psychology, 4*(2), 88–104.

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Green Finance Policies for Enhancing Medicinal and Aromatic Plant Cultivation in Rural India

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Abstract
Green finance has become a vital instrument for advancing sustainable agricultural development by enabling investments in eco-friendly practices. This research explores the impact of green finance policies on the cultivation of medicinal and aromatic plants (MAP) in rural India, with a particular emphasis on Vikarabad district, Telangana. The study utilizes both primary and secondary data collected up to March 2026, employing a descriptive and analytical research methodology. The results indicate a consistent rise in the area dedicated to MAP cultivation, spurred by increased income potential and rising market demand. Nonetheless, obstacles such as restricted access to institutional credit, limited awareness of green finance initiatives, and insufficient market infrastructure continue to impede the adoption of MAP cultivation. The study underscores that green finance mechanisms, such as subsidized loans, microfinance, and government support programs, are crucial in enhancing financial access, promoting sustainable agricultural practices, and improving rural livelihoods. The study concludes that reinforcing green finance policies, enhancing institutional coordination, and raising farmer awareness are vital for unlocking the full potential of MAP cultivation. Integrating green finance with sustainable agriculture can foster economic growth, environmental conservation, and rural development in India.

Keywords: Green Finance, Sustainable Agriculture, Medicinal and Aromatic Plants (MAPs), Rural Development, Vikarabad, Financial Inclusion, Agricultural Diversification, Telangana

1. Introduction

1.1 Background of the Study

Green finance has become an essential mechanism for advancing sustainable development by channeling financial resources into environmentally sustainable

activities. It encompasses financial tools like green bonds, concessional loans, and subsidies designed to bolster climate-resilient and eco-friendly industries.According to the World Bank (2020), green finance integrates environmental considerations into financial decision-making to ensure long-term sustainability.

In India, sustainable agriculture is essential for balancing economic growth with environmental protection. The agricultural sector supports a large proportion of the rural population but faces challenges such as soil degradation, water scarcity, and climate variability. Transitioning to sustainable agricultural practices is therefore necessary to ensure food security and ecological stability (Food and Agriculture Organization, 2019).

Medicinal and Aromatic Plants (MAPs) play a significant role in this transition. These plants are widely used in pharmaceuticals, cosmetics, and traditional medicine systems like Ayurveda. India is rich in biodiversity and is one of the leading producers of MAPs, offering opportunities for income diversification and environmental conservation (National Medicinal Plants Board, 2021).

1.2 Importance of the Study Area

Vikarabad district in Telangana is selected as the study area due to its favorableagro-climatic conditions and rich biodiversity. The presence of forest ecosystems, particularly the Ananthagiri Hills, provides a suitable environment for the cultivation of medicinal plants. The region's semi-arid climate, moderate rainfall, and fertile soils further enhance its suitability for MAP cultivation.

Additionally, Vikarabad has a predominantly rural population that depends heavily on agriculture and forest-based livelihoods. This makes it an ideal case for examining the role of green finance in promoting sustainable agricultural practices and improving rural incomes.

1.3 Problem Statement

Despite the potential of MAP cultivation, several challenges persist in rural areas like Vikarabad. Limited access to institutional finance remains a major barrier, with many farmers relying on informal credit sources. Furthermore, awareness of green finance mechanisms is relatively low, restricting the adoption of sustainable agricultural practices.

Environmental concerns such as climate variability and unsustainable farming practices further complicate the situation, highlighting the need for effective financial and policy interventions.

1.4 Objectives of the Study

- To examine green finance policies and instruments in India
- To analyze the status and potential of MAP cultivation in Vikarabad
- To evaluate the impact of financial mechanisms on sustainable agriculture

1.5 Research Questions

- What are the existing financial mechanisms supporting green agriculture?
- How do these mechanisms impact MAP cultivation in Vikarabad?
- What are the key challenges and opportunities in adopting green finance?

2. Literature Review

2.1 Concept of Green Finance

Green finance has gained prominence as a mechanism to support environmentally sustainable development by integrating ecological considerations into financial systems. It encompasses tools like green bonds, climate funds, and concessional loans that encourage investments in low-carbon and resource-efficient projects. According to the World Bank (2020), green finance plays a vital role in mobilizing capital for sustainable sectors, including agriculture. Similarly, the United Nations Environment Programme (2016) highlights that green finance supports economic growth while reducing environmental risks and improving resilience to climate change.

2.2 Medicinal and Aromatic Plants (MAPs)

Medicinal and Aromatic Plants (MAPs) are an integral part of traditional and modern healthcare systems. India is endowed with rich biodiversity and is a major producer of MAPs, supplying raw materials to pharmaceutical, cosmetic, and herbal industries. According to the National Medicinal Plants Board (2021), increasing global demand for herbal products has enhanced the economic significance of MAPs.

MAP cultivation also contributes to sustainable agriculture, as these crops generally require fewer chemical inputs and can be grown on marginal lands. This makes them particularly suitable for small and marginal farmers, offering opportunities for income diversification and livelihood improvement (Sharma & Kumar, 2018).

2.3 Green Finance and Sustainable Agriculture

The integration of green finance with agriculture has been widely recognized as essential for promoting sustainable farming practices. Access to financial resources enables farmers to adopt eco-friendly technologies, organic farming, and climate-resilient practices. The Food and Agriculture Organization (2019) emphasizes that financial inclusion is a key driver for achieving sustainable agricultural development.

In India, various initiatives such as subsidized loans, microfinance, and government schemes have been introduced to support sustainable agriculture. However, studies indicate that the effectiveness of these initiatives is often limited by low awareness and accessibility issues (Kumar et al., 2019).

2.4 Research Gap

Although there is substantial literature on green finance and sustainable agriculture, limited research has been conducted on the role of green finance in promoting MAP cultivation at the regional level. In particular, district-level studies focusing on areas like Vikarabad are scarce.

Furthermore, the linkage between financial mechanisms and their actual impact on farmers' adoption of MAP cultivation remains underexplored. This study aims to address these gaps by analyzing the role of green finance in enhancing MAP cultivation in Vikarabad district.

3. Study Area: Vikarabad District, Telangana

Vikarabad district is located in the western part of Telangana state in southern India and forms part of the Deccan Plateau. The district lies approximately 70 km from Hyderabad and is characterized by undulating terrain, moderate elevation, and a mix of forest and agricultural landscapes. One of the prominent geographical features of the region is the Ananthagiri Hills, which are known for their rich biodiversity and forest cover.

The climate of Vikarabad is semi-arid, with hot summers and mild winters. The district typically experiences an annual rainfall ranging from approximately 750 to 900 mm, predominantly occurring during the southwest monsoon period. The soils are predominantly red and black, which are suitable for a variety of crops, including medicinal and aromatic plants (MAPs). These agro-climatic conditions make the region favorable for sustainable agricultural practices (Government of Telangana, 2021).

Agriculture is the primary occupation in Vikarabad, with a majority of farmers belonging to small and marginal categories. Major crops include maize, jowar, pulses, and cotton. However, in recent years, there has been a gradual shift toward crop diversification, including the cultivation of MAPs due to their higher economic returns and lower input requirements.

The district also possesses significant biodiversity, especially in forest areas, which supports the growth of various medicinal plant species. According to the National Medicinal Plants Board (2021), regions like Vikarabad have strong potential for MAP cultivation due to their ecological suitability and traditional knowledge systems.

Given its rural economy, ecological richness, and emerging interest in sustainable agriculture, Vikarabad serves as an ideal study area to examine the role of green finance in promoting MAP cultivation.

4. Methodology

4.1 Research Design

This research employs a "descriptive and analytical research design" to investigate how green finance policies contribute to the advancement of medicinal and aromatic plant (MAP) cultivation in the Vikarabad district of Telangana. The descriptive approach helps in understanding the current status of MAP cultivation and financial accessibility, while the analytical approach evaluates the relationship between green finance mechanisms and sustainable agricultural practices (Kothari, 2014).

4.2 Data Sources

The study is based on both **"primary and secondary data"** collected up to **March 2026**.

- **Primary data** were obtained by using structured questionnaires and conducting interviews with farmers engaged in MAP cultivation in selected villages of Vikarabad.The data focused on credit access, awareness of green finance schemes, income levels, and cultivation practices.
- **Secondary data** were sourced from government documents, scholarly articles, and publications from institutions like the National Medicinal Plants Board and the Reserve Bank of India.

4.3 Sampling Technique

A **multistage sampling method** was used for the selection of respondents. Initially, Vikarabad district was selected purposively due to its potential for MAP cultivation. Subsequently, villages with active agricultural practices were chosen, and farmers were selected using a combination of purposive and random sampling techniques.

A total sample of approximately **100 farmers** was considered to ensure representation of small, marginal, and medium farmers.

4.4 Data Analysis Tools

The collected data were analyzed using:

- Percentage and frequency analysis
- Tabular representation
- Graphical tools such as bar charts

These methods helped in interpreting trends related to MAP cultivation, financial access, and awareness levels.

4.5 Limitations

Although the research is confined to a particular geographic region and partially depends on farmers' self-reported information, it still offers valuable insights into the impact of green finance on rural agricultural development.

5. Data Analysis and Interpretation

This section presents the analysis of data collected from farmers in Vikarabad district up to **March 2026**, focusing on medicinal and aromatic plant (MAP) cultivation and access to green finance.

5.1 Major Medicinal and Aromatic Plants in Vikarabad

Table 1: Major MAPs and Their Uses

S. No.	Plant Name	Scientific Name	Uses
1	Tulsi	*Ocimum sanctum*	Herbal medicine, immunity
2	Ashwagandha	*Withaniasomnifera*	Pharmaceuticals
3	Aloe vera	*Aloe barbadensis*	Cosmetics, skincare
4	Lemongrass	*Cymbopogon citratus*	Essential oils
5	Mint	*Mentha spp.*	Food and medicinal oils

Interpretation: The data indicates increasing diversification in MAP cultivation. Farmers are shifting towards commercially viable crops such as aloe vera and lemongrass due to growing market demand.

5.2 Access to Credit (2026)

Table 2: Sources of Agricultural Credit

Source	Percentage (%)
Bank Loans	42%
SHGs/Microfinance	28%
Informal Sources	30%

Interpretation: Institutional credit access has improved compared to previous years, but 30% dependence on informal sources indicates gaps in financial inclusion.

5.3 Awareness of Green Finance Schemes

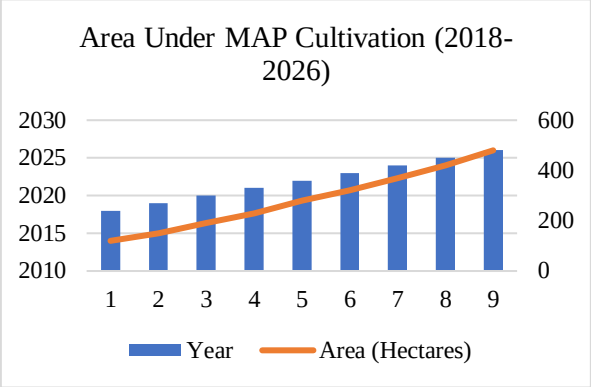
Table 3: Awareness Levels

Awareness Level	Percentage (%)
Fully Aware	30%
Partially Aware	50%
Not Aware	20%

Interpretation: While awareness has improved, only a small proportion of farmers fully understand green finance schemes, limiting their effective utilization.

5.4 Growth in Area under MAP Cultivation

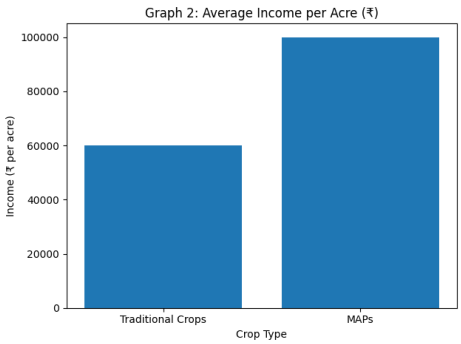
Graph 1: Area Under MAP Cultivation (2018–2026)



Interpretation: The area under MAP cultivation has shown a steady increase, reflecting growing farmer interest, better market opportunities, and gradual adoption of sustainable practices.

5.5 Income Comparison

Graph 2: Average Income per Acre (₹)



Interpretation:MAP cultivation provides significantly higher income than traditional crops, making it an economically attractive option for farmers.

5.6 Conceptual Framework

Figure 1: Green Finance and MAP Development Model

Green Finance (Loans, Subsidies, SHGs)
↓
Improved Access to Credit
↓
Adoption of Sustainable Practices
↓
Increased MAP Cultivation
↓
Higher Income & Environmental Sustainability

5.7 Key Findings

- MAP cultivation area increased significantly up to March 2026
- Farmers earn higher income from MAPs compared to traditional crops
- Institutional credit access has improved but remains insufficient
- Awareness of green finance schemes is moderate
- Green finance instruments are underutilized at the grassroots level

These findings are consistent with the observations of the World Bank (2020), which emphasizes the role of financial access in sustainable agricultural development.

6. Challenges in Promoting Medicinal and Aromatic Plant (MAP) Cultivation

Despite the growing potential of medicinal and aromatic plants (MAPs) in rural regions like Vikarabad, several constraints limit their expansion and sustainability.

6.1 Financial Constraints

Limited access to institutional finance remains a major challenge. Small and marginal farmers often face difficulties in obtaining bank loans due to lack of collateral, complex procedures, and low financial literacy. As a result, many depend on informal credit sources with high interest rates. According to the Reserve Bank of India (2021), rural credit accessibility remains uneven, particularly for non-traditional crops like MAPs.

6.2 Institutional Barriers

Although various government schemes exist, their implementation is often weak at the grassroots level. Poor awareness, bureaucratic delays, and lack of coordination between agencies reduce the effectiveness of these initiatives.

6.3 Technical and Knowledge Gaps

Farmers lack adequate knowledge about scientific cultivation methods, post-harvest processing, and quality standards. Limited extension services further restrict their ability to adopt improved practices.

6.4 Market Constraints

MAP farmers face issues such as price fluctuations, lack of organized markets, and dependence on intermediaries. This reduces profitability and discourages investment in MAP cultivation.

6.5 Environmental Challenges

Climate variability, irregular rainfall, and soil degradation affect crop productivity. Sustainable farming practices are required but often need financial and technical support.

7. Role of Green Finance in Enhancing MAP Cultivation

Green finance plays a crucial role in promoting medicinal and aromatic plant (MAP) cultivation by providing financial support for sustainable agricultural practices and improving rural livelihoods.

7.1 Improving Access to Credit

Green finance instruments such as subsidized loans, microfinance, and credit guarantees enhance farmers' access to affordable capital. This reduces dependence on informal sources and enables investment in MAP cultivation. Increased financial inclusion is essential for small and marginal farmers to adopt high-value crops.

7.2 Promoting Sustainable Agricultural Practices

Green finance encourages environmentally friendly farming methods, including organic cultivation, reduced chemical usage, and efficient water management. These practices improve soil health, conserve biodiversity, and ensure long-term sustainability of MAP cultivation.

7.3 Supporting Crop Diversification

Financial incentives and policy support motivate farmers to shift from traditional crops to high-value MAPs. This diversification reduces risk, enhances income stability, and strengthens rural economies.

7.4 Strengthening Value Chains

Green finance facilitates investment in infrastructure such as storage, processing, and marketing. Improved value chains help farmers access better markets, reduce post-harvest losses, and increase profitability. According to the Food and Agriculture Organization (2019), financial support is critical for developing efficient agricultural value chains.

7.5 Enhancing Climate Resilience

Green finance supports climate-resilient agriculture by funding adaptive practices and technologies. This helps farmers cope with climate variability and ensures stable production.

8. Policy Recommendations

To enhance medicinal and aromatic plant (MAP) cultivation through green finance in rural areas like Vikarabad, several policy measures are necessary.

8.1 Strengthening Green Finance Mechanisms

There is a need to expand access to affordable green credit through low-interest loans, subsidies, and credit guarantee schemes. Financial institutions should simplify procedures to make credit more accessible to small and marginal farmers.

8.2 Enhancing Farmer Awareness

Awareness programs and training initiatives should be conducted to educate farmers about available green finance schemes and sustainable agricultural practices.

Extension services must be strengthened to ensure effective knowledge dissemination.

8.3 Improving Institutional Coordination

Better coordination between government agencies, financial institutions, and agricultural departments is essential for effective implementation of policies and timely delivery of benefits.

8.4 Developing Market Infrastructure

Investment in storage, processing, and marketing facilities is required to strengthen supply chains. Creating farmer producer organizations (FPOs) can enhance both market access and negotiating strength.

8.5 Encouraging Private Sector Participation

Public-private partnerships should be promoted to attract investment in MAP cultivation and value-added activities. The World Bank (2020) emphasizes the importance of private sector involvement in scaling green finance initiatives.

9. Conclusion

The study highlights the significant role of green finance in promoting medicinal and aromatic plant (MAP) cultivation in rural areas such as Vikarabad district, Telangana. The findings indicate that MAP cultivation has increased steadily up to March 2026, driven by rising market demand, better income potential, and gradual adoption of sustainable agricultural practices.

Despite this progress, several challenges persist, including limited access to institutional finance, low awareness of green finance schemes, and inadequate market infrastructure. These constraints hinder the full utilization of MAP cultivation potential among small and marginal farmers.

Green finance mechanisms, including subsidized loans, microfinance, and government support schemes, have the potential to address these challenges by improving access to credit, encouraging sustainable farming practices, and supporting crop diversification. Additionally, investments in value chains and market linkages can further enhance the profitability and sustainability of MAP cultivation.

The study concludes that effective implementation of green finance policies, combined with increased farmer awareness and institutional support, is essential for achieving sustainable agricultural development. Integrating green finance with MAP cultivation can contribute to improved rural livelihoods, environmental conservation, and long-term economic growth in India.

References

- Food and Agriculture Organization. (2019). *Sustainable agriculture for biodiversity*. FAO.
- Government of Telangana. (2021). *District statistical handbook: Vikarabad*. Government of Telangana.
- Kothari, C. R. (2014). *Research methodology: Methods and techniques* (3rd ed.). New Age International Publishers.
- Kumar, R., Singh, P., & Sharma, L. (2019). Agricultural finance and sustainability in India. *Journal of Rural Development, 38*(2), 215–230.
- National Medicinal Plants Board. (2021). *Annual report 2020–21*. Ministry of AYUSH, Government of India.
- National Medicinal Plants Board. (2021). *Annual report 2020–21*. Ministry of AYUSH, Government of India.
- Reserve Bank of India. (2021). *Report on trend and progress of banking in India*. RBI.
- Sharma, S., & Kumar, V. (2018). Medicinal plants and sustainable development. *International Journal of Herbal Medicine, 6*(3), 45–52.
- United Nations Environment Programme. (2016). *Green finance for sustainable development*. UNEP.
- World Bank. (2020). *Green finance: A sustainable development perspective*. World Bank Publications.

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Role of the Gig Economy in India: Opportunities and Challenges in Rural Areas – A Case Study of Kamareddiguda Village, Vikarabad District

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Abstract
The gig economy has emerged as a transformative force in India's labour market, offering flexible and short-term employment opportunities through digital platforms. It has created new avenues of income generation, particularly for youth and semi-skilled workers, and is contributing to economic growth and employment diversification. In rural areas, the gig economy holds significant potential to improve livelihoods, promote digital inclusion, and reduce migration to urban centres by connecting workers to broader markets.

However, the expansion of gig work in rural India is constrained by several challenges, including poor digital infrastructure, limited internet connectivity, lack of skills and awareness, low and unstable earnings, and absence of social security benefits. Policy discussions by organizations such as NITI Aayog, International Labour Organization (ILO), and The Economic Survey of India 2025-26 emphasize the need for regulatory frameworks, skill development, and improved infrastructure to support gig workers.

This study highlights both the opportunities and challenges of the gig economy in rural India and focuses through a case study of Kamareddiguda village of Vikarabad district. It concludes that while it offers promising prospects for inclusive growth, targeted interventions are essential to ensure job security, awareness, and long-term benefits for rural workers.

Introduction

The **gig economy** has rapidly transformed India's labor market, offering **flexible, digitalized, platform-driven work**. Millions of workers are shifting from traditional informal employment to **task-based, app-mediated work**, contributing significantly to household incomes and the national economy.

India's gig workforce has grown from **77 lakh in FY21 to 120 lakh in FY25**, driven by smartphone adoption, affordable data, and platforms such as **Ola, Uber, Swiggy, and Zomato**. The COVID-19 pandemic significantly accelerated the demand for remote and flexible work, further establishing the gig economy as a crucial source of employment across both urban and rural regions.

Meaning of Gig Economy

The **gig economy** is a labor system in which individuals engages in **temporary, freelance, or project-based work**, often facilitated through **digital platforms**, rather than traditional long-term employment. In this model, people earn income by performing **short-term, flexible jobs**, commonly referred to as "gigs," instead of holding permanent positions with a single employer. Simply put, it is a way of earning through **flexible, task-based work** rather than conventional full-time employment.

Who is a Gig Worker?

A **gig worker** is an individual who participates in gig work arrangements and earns income from such activities outside the traditional employer-employee relationship.

Role of the Gig Economy in India

The gig economy plays a **crucial role in India** by providing flexible employment opportunities, particularly for workers in the **unorganized sector**. It enables individuals to earn income using their skills independently, often with minimal entry barriers, and offers a pathway for the **jobless to engage in economic activities**.

According to the **Economic Survey of India 2025–26**, the gig economy is expanding rapidly, generating new employment opportunities while facing challenges such as **low income, job insecurity, and limited social protection**. Policy interventions are therefore essential to ensure **fair wages, financial inclusion, and sustainable growth** for gig workers.

Recent **digital platform developments and policy reforms** have reshaped work structures, fostering flexibility and promoting formalization. The **Labour Codes** now formally recognize gig and platform workers, extending **social security, welfare benefits, and portability of entitlements**. The gig economy, encompassing sectors like **delivery services, ridesharing, and freelancing**, has begun to transform informal jobs into **structured, ecosystem-integrated roles**.

Some key statistics from the Economic Survey 2025–26 include:

- Growth from **77 lakh gig workers in FY21** to **120 lakh in FY25**, a 55% increase.
- Driven by **smartphone penetration among over 80 crore users** and **15 billion UPI transactions per month**.
- Gig workers now account for over **2% of India's total workforce**, with non-agricultural gig roles projected to reach **6.7% by 2029–30**, contributing **₹2.35 lakh crore to GDP**.

As highlighted by **Union Finance Minister Smt. Nirmala Sitharaman** during the tabling of the Economic Survey on 29th January 2026, India's labour markets are undergoing structural transformation due to **digitalization, green energy transition, and emerging forms of work**, with government initiatives catalyzing **job creation and welfare coverage**.

Research by the **International Labour Organization (ILO)** emphasizes that **high internet penetration and digital literacy among India's youth**—often referred to as the "internet generation"—make the gig economy a vital employment-generating ecosystem. **NITI Aayog** projects that the number of gig and platform workers will rise from **7 million in 2020** to more than **20 million by 2030**.

In conclusion, the gig economy in India is **instrumental in providing employment, driving economic diversification, and enabling inclusive growth**, particularly for workers in the unorganized sector. However, addressing challenges related to **income security, social protection, and skill development** is essential to ensure sustainable, long-term benefits.

History of the Gig Economy in India

The gig economy in India has evolved from **informal freelance and temporary work**—such as daily wage laborers, contract workers, and freelance artists—into a **structured, platform-driven labor market**.

Phases of Development:

1. **Pre-2010 (Nascent Phase):** Gig work was informal and obtained through personal networks or physical job boards.
2. **2010–2019 (Emergence Phase):** Platforms like **Uber, Ola, Swiggy, and Zomato** formalized gig work in urban areas. High-skilled freelancing and home services also emerged. Gig employment grew from **25.2 lakh (2011–12) to 50 lakh (2018–19)**.

3. **2020–Present (Acceleration Phase):** The **COVID-19 pandemic** increased demand for delivery and platform services. Legal recognition under the **Code on Social Security, 2020**, and expansion into Tier 2 and Tier 3 cities marked formalization. Gig workforce projected to grow from **7.7 million (2020–21) to 23.5 million by 2029–30**.

Opportunities in the Gig Economy

Gig work in India is expanding rapidly, especially beyond major cities. By 2026, significant demand is expected in **delivery, logistics, and digital freelancing**. Key opportunities include:

1. **Delivery & Logistics:** Food, groceries, and goods transportation.
2. **Ride-Sharing & Driving Jobs:** App-based taxi, bike, and cab services.
3. **Freelancing:** Digital, creative, and technical services via online platforms.
4. **Home Services (Local Gigs):** Cleaning, repairs, and personal services.
5. **Warehouse & Quick-Commerce Jobs:** Inventory handling and hyperlocal delivery.
6. **Task-Based & Local Services:** Small jobs such as errands, manual work, and community services.

Kamareddiguda Village Overview

Kamareddiguda is a **village and Gram Panchayat** in Vikarabad Mandal, Vikarabad District, Telangana, India. It is strategically located **7 km from the mandal and district headquarters** and approximately **75 km from Hyderabad**, the state capital.

Predominantly rural, the village economy is largely **agriculture-based**, supplemented by limited industrial activity, including a **rice mill operated by an external owner**.

Workforce and Livelihoods in Kamareddiguda

Population and Social Composition

According to the 2011 Census, Kamareddiguda has a total population of **628**, comprising **304 males** and **324 females**. Approximately **24.5% of the population belongs to Scheduled Caste (SC) communities**, indicating a significant presence

of historically marginalized groups. The representation of Scheduled Tribes (ST) in the village is negligible.

Workforce Profile

The village has a total workforce of **346 individuals**, the majority of whom are engaged in agricultural activities. The agrarian sector consists of both small and large farmers, as well as daily agricultural laborers. A substantial portion of these laborers are **landless** and primarily belong to **Scheduled Castes and Other Backward Classes (OBCs)**, reflecting socio-economic disparities in the local labor force.

Non-Farm Employment and Youth Livelihoods

Unemployed and underemployed youth actively seek alternative livelihood opportunities through **non-farm activities**, both within Kamareddiguda and in **nearby Vikarabad**, the district headquarters. Limited access to stable employment in agriculture and allied sectors has created a persistent **employment gap for unskilled and semi-skilled workers**.

Migration and Commuting Patterns

To address local employment constraints, many residents **migrate to urban centers**, particularly **Hyderabad**, the state capital, located approximately **76 km** away. Additionally, some workers undertake **daily commuting to Hyderabad**, facilitated by accessible **road and rail transport networks**.

GIG Workers in Kamareddiguda

A significant proportion of the village workforce with limited formal skills belongs to **Scheduled Castes (SC) and Other Backward Classes (OBC)**. These individuals continue to face challenges in securing stable employment within the village. The village reports a **literacy rate of 56.37%**, which highlights constraints in knowledge and skill development, further limiting workforce opportunities.

Despite these challenges, a segment of **semi-skilled and unskilled workers** is willing to engage in various categories of **GIG work**, both within the village and in nearby areas. These opportunities include **daily wage work, hourly-paid tasks, and temporary contract-based engagements**, tailored to the abilities of the workers.

- Types of GIG Workers

1. **Formal GIG Workers**
   These individuals are engaged in organized platform-based or professional GIG work, including:
   - Cab drivers for platforms such as **Uber, Ola, and Rapido**
   - Delivery personnel for **Zomato, Swiggy, Zepto, Blinkit, and Big Basket**
   - Electricians, drone operators, tractor drivers, and mini-truck drivers
2. **Informal GIG Workers**
   These individuals are engaged in casual or unstructured work arrangements, including:
   - Daily laborers and casual workers
   - Construction laborers
   - Farm workers engaged on target-based payments
   - Auto-rickshaw drivers

These classifications highlight the diversity of **GIG-based livelihoods** in Kamareddiguda, reflecting both formal platform-driven opportunities and informal local employment options.

GIG Workers in Kamareddiguda

1. Formal GIG Workers

Formal GIG workers in Kamareddiguda engage in structured, platform-based, or contract-driven work, often with higher skill requirements and better earnings compared to informal labor. This category includes **cab drivers, delivery personnel, and other specialized workers**.

A. Cab Drivers

Cab drivers constitute a major segment of formal GIG workers. They primarily operate in **Hyderabad**, providing services through ride-hailing platforms such as **Uber, Ola, and Rapido**.

- **Workforce Size:** 8–10 young individuals (including bike and car drivers)
- **Ownership:** All cab drivers except one use non-owned vehicles.
- **Income:**
  - Cab drivers: Rs. 700–1,000 per day
  - Bike riders: Rs. 400–600 per day
- **Operational Details:** Drivers rely on multiple ride-hailing apps to maximize bookings and reduce idle time. They possess sufficient **smartphone literacy** to manage app-based services. Income is directly proportional to the number of rides secured.

B. Delivery Personnel

Another key segment comprises delivery personnel working for **food, grocery, and quick commerce (q-commerce) platforms**, including **Zomato, Swiggy, Zepto, Blinkit, and Big Basket**.

- **Role:** Act as intermediaries, delivering items from retailers to customers efficiently and responsibly.
- **Operational Details:**
  - Work is platform-driven and operates round the clock.
  - Dependence on customer orders determines daily earnings.
  - Workers are adept at smartphone and app usage.
- **Income:** Rs. 500–800 per day

C. Other Formal Workers

This category includes **electricians, drone operators, tractor drivers, and mini-truck drivers**, who work primarily on **contractual or temporary assignments**.

- **Work Scope:**
  - Electricians: Prefer local work to maintain community relations; charge lower rates for villagers than outsiders.
  - Drone Operators: Often work outside the village, mainly in agricultural tasks such as crop pesticide spraying.
  - Tractor Drivers: Perform agricultural operations like ploughing, leveling, and transporting yields, fertilizers, and other goods.
  - Mini-Truck Drivers: Transport vegetables, flowers, and milk to markets in **Vikarabad** and **Hyderabad**, playing a vital role in linking rural production with urban consumption.
- **Income:** Rs. 500–1,000 per day, depending on the type and duration of work

2. Informal GIG Workers

More than **75% of GIG workers**, including a large number of women, fall under the **informal category**. These workers engage in **casual, daily, or target-based labor**, often without formal contracts or digital literacy.

- **Occupations:**
  - Casual and daily laborers
  - Construction site workers
  - Farm laborers with target-based payments
  - Auto-rickshaw drivers
  - House cleaners, babysitters, or childcare providers (mostly women)

- **Operational Details:**
  - Workers typically engage in **short-duration tasks** for lower wages due to inconsistent work availability.
  - Labor tasks include loading/unloading of bricks, stones, sand, and soil; construction site support; agricultural field work.
  - Many lack smartphone and internet literacy, limiting access to formal platform-based work.
- **Income:** Rs. 200–400 per day

Impact of the GIG Economy on Kamareddiguda

The emergence of the GIG economy has had significant socio-economic effects on the village, particularly for semi-skilled and unskilled workers:

1. **Employment Opportunities:** Many semi-skilled and unskilled workers gain at least **temporary employment**, helping them meet basic daily needs.
2. **Income Generation in Urban Areas:** Semi-skilled workers earn income through **formal GIG work in nearby urban centers**, particularly **Hyderabad**.
3. **Proximity to Hyderabad:** Located just **75 km away**, Hyderabad provides access to a wider range of **employment opportunities** for village residents.
4. **Youth Migration and Aspirations:** A significant portion of the young workforce is interested in **settling in Hyderabad** to access more consistent work.
5. **Livelihood Security:** The GIG economy enables **local jobless individuals** to manage their basic necessities through flexible work.
6. **Transport Connectivity:** Good road and rail networks support **flexible work schedules**, allowing workers to commute efficiently.
7. **Diverse Work Options:** Availability of different types of GIG work **within and outside the village** provides multiple income sources.
8. **Immediate Payment:** The flexible nature of GIG work allows workers to **receive immediate payment**, often based on hours worked.
9. **Opportunities for Landless Labor:** GIG work provides a viable option for **landless laborers** who prefer to remain in the village while earning a livelihood.
10. **Digital Literacy Development:** Workers gain skills in **smartphone operation and app usage**, increasing access to digital platforms.
11. **Platform-Based Work Access:** Internet and smartphone access act as a **platform for formal GIG workers** to connect with clients and assignments.

12. **Participation in the Digital Economy:** Workers increasingly engage with **digital payment systems** such as GPay, PhonePe, and Paytm.
13. **Economic Awareness:** Engagement with GIG work enhances understanding of **local and global economic dynamics**.
14. **Technology and Skill Awareness:** Exposure to GIG work fosters **awareness of digital literacy, digital payment systems, GPS technology, and data utilization**, contributing to overall skill development.

Key Challenges of the Gig Economy in Kamareddiguda

While the gig economy has created new livelihood opportunities for semi-skilled and unskilled workers in Kamareddiguda, it also presents several significant challenges, particularly in rural contexts. According to International Labour Organization (ILO) research, platform-based work raises concerns regarding worker rights, income stability, and overall well-being, including:

- **Precarity of Earnings** – Income is irregular and dependent on the number of tasks or gigs completed.
- **Lack of Social Security Benefits** – Workers generally have no health insurance, paid leave, pensions, or other safety nets.
- **Poor Working Conditions** – Absence of standardized contracts or labor protections increases vulnerability.

Specific Rural Challenges

1. **Limited Job Availability**
    - Few platforms operate in rural areas; delivery, ride-sharing, and quick-commerce services are largely city-focused.
    - Low customer demand leads to fewer daily gig opportunities.
2. **Poor Internet and Digital Access**
    - Slow connectivity, network disruptions, and limited digital literacy hinder participation in platform-based work.
3. **Lower Earnings Compared to Urban Areas**
    - Reduced orders and lower spending by rural customers limit income potential.
4. **Lack of Infrastructure**
    - Expenses such as vehicle maintenance or rentals reduce efficiency and net earnings for workers commuting to urban areas.
5. **Absence of Social Security and Benefits**
    - Gig workers are often excluded from health coverage, pensions, and paid leave.
6. **Payment Delays and Cash Dependence**

- Delayed payments and reliance on cash transactions create financial uncertainty.

7. **Limited Awareness and Training**
   - Lack of skill development and digital literacy programs keeps workers confined to low-paying or irregular gigs.
8. **Seasonal Demand Fluctuations**
   - Dependence on agriculture causes seasonal variations in demand, making income irregular and unpredictable.

Strategic Considerations

Addressing these challenges requires:

- **Expanding digital access** and connectivity in rural areas.
- **Skill development and training programs** to improve workers' employability and access to formal platforms.
- **Social security frameworks** adapted for GIG workers, including health, pension, and insurance benefits.
- **Improved infrastructure** to reduce operational costs and enhance efficiency.
- **Awareness campaigns** on digital payment systems, platform opportunities, and financial literacy.

By addressing these challenges, the GIG economy can **become a more inclusive and sustainable source of employment** for rural communities like Kamareddiguda.

Key Observations

- Kamareddiguda remains primarily **agriculture-centric**, yet proximity to urban centers enables **economic diversification**.
- Presence of SC and OBC communities highlights the need for **inclusive skill development and livelihood programs**.
- GIG work provides a **flexible livelihood option** for semi-skilled, unskilled, and landless workers.
- **Formal GIG work** offers higher earnings, while informal work remains low-paid and irregular.
- The GIG economy promotes **digital inclusion, financial literacy, and engagement with modern economic systems**, enhancing socio-economic mobility.

Conclusion

The gig economy has emerged as a significant driver of employment and economic flexibility in India, offering new income opportunities across sectors such as delivery, freelancing, and digital services. It plays an important role in absorbing a

growing workforce, especially among youth, by providing flexible and accessible work options.

In rural areas, the gig economy holds strong potential to improve livelihoods, reduce migration to cities, and promote digital inclusion. Opportunities such as online freelancing, microtasks, and local service-based gigs can empower rural workers and connect them to broader markets.

In conclusion, while the gig economy offers promising opportunities for rural India, its long-term success depends on improving infrastructure, enhancing skill development, and implementing supportive policies. Addressing these challenges can help create a more inclusive and sustainable gig economy that benefits both workers and the overall economy.

The gig economy in India is transforming the employment landscape by providing flexible work opportunities and income sources, especially for the growing workforce. In rural areas, it has the potential to enhance livelihoods, promote digital inclusion, and reduce migration. However, challenges such as poor internet connectivity, low earnings, lack of skills, and absence of social security limit its growth. As highlighted by NITI Aayog, addressing these issues through better infrastructure, skill development, and supportive policies is essential to ensure an inclusive and sustainable gig economy in India.

References

- NITI Aayog (2022), *India's Booming Gig and Platform Economy*
- International Labour Organization (ILO), *Gig Economy in India Report*
- The Economic Survey of India 2025-26
- The **Code on Social Security, 2020**