

**Two-Day National Conference on
"GST Reforms: Challenges, Opportunities, and Socio-Economic Effects in Telangana State"
on 09th & 10th June 2026**



CMR TECHNICAL CAMPUS

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UGC Autonomous, Approved by AICTE, New Delhi & JNTU Hyderabad
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The Impact of GST Determinants on the Growth of Indian MSMEs: Evaluating the Mediating Role of GST Compliance

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Abstract

The implementation of the Goods and Services Tax (GST) in India has fundamentally restructured the country's indirect taxation architecture, with far-reaching implications for Micro, Small, and Medium Enterprises (MSMEs). This study examines the impact of three core GST determinants — GST Knowledge, Input Tax Credit (ITC), and Revenue Neutral Rate (RNR) — on the perceived growth of manufacturing MSMEs in Hyderabad, Telangana, while also investigating the mediating role of GST compliance in these relationships. Grounded in the Theory of Reasoned Action (TRA) and Bandura's Social Learning Theory, the study adopted a quantitative cross-sectional design, collecting 531 valid responses from MSME owners, managers, and tax professionals through a structured 7-point Likert-scale questionnaire. IBM SPSS was utilized for descriptive statistics and multiple regression, while SmartPLS4 was employed for Structural Equation Modelling (SEM) and mediation analysis using the Variance Accounted For (VAF) approach. The multiple regression model explained 63.1% of the variance in MSME perceived growth ($R^2 = 0.631$, $F = 224.63$, $p < 0.001$). GST Knowledge emerged as the strongest predictor ($\beta = 0.534$, $p < 0.001$), followed by ITC ($\beta = 0.396$, $p < 0.001$), GST Compliance ($\beta = 0.337$, $p < 0.001$), and RNR ($\beta = 0.281$, $p < 0.001$). The mediation analysis confirmed that GST compliance plays a significant complementary partial mediating role, with VAF values of 27.0%, 39.7%, and 52.4% for the knowledge, ITC, and RNR pathways, respectively. The findings offer critical policy implications for simplifying GST structures, expanding tax literacy programmes, and streamlining ITC claim processes to facilitate MSME growth in emerging economies.

Keywords: GST Knowledge; Input Tax Credit; Revenue Neutral Rate; GST Compliance; MSME Growth

1. Introduction

India's Goods and Services Tax (GST), enacted through the One Hundred and First Constitution Amendment Act and operationalised on July 1, 2017, constitutes the most transformative tax reform in the country's post-independence history. By subsuming more than seventeen central and state levies — including Central Excise Duty, Service Tax, Value Added Tax (VAT), and Central Sales Tax — into a unified, destination-based, multi-stage consumption tax, GST sought to eliminate the cascading effect of taxes, foster a seamless national common market, and significantly lower compliance costs for businesses (Kumar, 2014; PricewaterhouseCoopers, 2016).

Micro, Small, and Medium Enterprises (MSMEs) occupy a central position in India's economic architecture. According to the Ministry of MSME's Annual Report 2023–24, the sector contributes approximately 30% of India's Gross Domestic

Product (GDP), accounts for 45% of the country's total exports, and employs over 110 million workers — making it the second-largest source of employment after agriculture. Given this structural importance, the interplay between GST policy and MSME performance has emerged as a crucial area of enquiry for policymakers, academics, and practitioners alike.

Despite the ambitious objectives underlying GST, the transition has not been uniformly seamless for MSMEs. The multiplicity of tax slabs (0%, 5%, 12%, 18%, and 28%), the complexity of Input Tax Credit (ITC) reconciliation, the mandatory adoption of digital filing portals, and the evolving regulatory framework have imposed significant adaptation burdens on enterprises with limited technical and financial resources (Mukherjee, 2015; Sridharan, 2019). Conversely, MSMEs that invest in building GST knowledge and maintain rigorous compliance standards benefit substantially from improved creditworthiness, reduced tax incidence, and access to formal financial markets.

Academic literature has begun to document these dynamics, yet empirical evidence on the relative influence of specific GST determinants on MSME growth — and the extent to which compliance mediates these relationships — remains sparse, particularly for manufacturing units in southern India. This study addresses that gap by developing and testing a theoretically grounded conceptual model that incorporates GST Knowledge, ITC utilisation, and Revenue Neutral Rate (RNR) perceptions as primary predictors, with GST compliance serving as a mediating variable, and perceived MSME growth as the outcome variable.

The study is motivated by three core research questions: (i) What is the individual impact of GST Knowledge, ITC, and RNR on the perceived growth of manufacturing MSMEs in Hyderabad, Telangana? (ii) Does GST compliance mediate the relationship between these GST determinants and MSME perceived growth? (iii) What policy recommendations emerge from the empirical findings to better align India's GST ecosystem with the operational realities of MSMEs?

The remainder of this paper is structured as follows: Section 2 provides a critical review of the extant literature and outlines the theoretical framework. Section 3 presents the research hypotheses and conceptual model. Section 4 details the research methodology. Section 5 reports the empirical findings. Section 6 discusses the results in the context of prior literature. Section 7 presents the conclusions, policy implications, limitations, and directions for future research.

2. Literature Review and Theoretical Framework

2.1 Theoretical Foundations

This study is grounded in two complementary theoretical frameworks. The Theory of Reasoned Action (TRA), originally proposed by Fishbein and Ajzen (1975) and later extended into the Theory of Planned Behaviour (TPB) by Ajzen (1991), posits that an individual's behavioural intention — in this context, the intention to comply with GST regulations — is jointly determined by subjective norms and attitudinal dispositions. Positive attitudes derived from sound GST knowledge are expected to translate into higher compliance intentions and, ultimately, stronger tax compliance behaviour.

Bandura's Social Learning Theory (1977) provides a complementary lens by emphasising that learning occurs within social environments through observation, imitation, and modelling. For MSME operators, exposure to compliant peers, participation in capacity-building workshops, and interaction with tax professionals constitutes social learning that directly shapes attitudes towards GST adherence. Together, these frameworks predict that cognitive (knowledge) and normative (social) factors combine to drive behavioural compliance, which in turn facilitates business growth — a causal chain that the present study empirically tests.

2.2 GST Knowledge and MSME Growth

Tax knowledge is widely recognised as a foundational antecedent of voluntary tax compliance and business performance. Eriksen and Fallan (1996) demonstrated that taxpayers with higher levels of fiscal literacy exhibit superior compliance behaviour and are more capable of leveraging tax incentives for business gain. In the GST context, knowledge encompasses familiarity with applicable tax rates, the mechanics of ITC, the digital filing ecosystem (GST portal), and the legal provisions governing registration thresholds and exemptions.

Studies in the Indian context have confirmed that GST knowledge gaps disproportionately affect micro and small enterprises. Mukherjee (2015) found that the complexity of tax regulations creates a substantial knowledge deficit among

small business owners, who often rely on informal and frequently inaccurate information channels. Conversely, Sridharan (2019) established that enterprises with higher GST literacy reported greater operational confidence and improved capacity for strategic decision-making, including inventory management and pricing optimisation. Building on this evidence, GST Knowledge is hypothesised to positively influence MSME perceived growth.

2.3 Input Tax Credit (ITC) and MSME Growth

The Input Tax Credit mechanism is architecturally central to the value proposition of GST. By allowing registered businesses to set off the tax paid on inputs against their output tax liability, ITC eliminates the cascading effect of taxes — a structural deficiency that had long afflicted India's pre-GST indirect tax regime (Kumar, 2014). For MSMEs, effective ITC utilisation translates into reduced production costs, improved working capital efficiency, and enhanced price competitiveness in domestic and export markets.

Empirically, Vasanthagopal (2011) documented that the introduction of VAT in India improved business efficiency through structured input tax set-offs, a finding that foreshadowed the anticipated benefits of GST's ITC mechanism. However, the realisation of these benefits is contingent on the ability of enterprises to maintain meticulous digital records and reconcile ITC claims through the GSTR-2A/2B matching system. Systemic mismatches, supplier non-compliance, and portal-related technical bottlenecks frequently frustrate ITC claims, generating working capital stress for MSMEs (PricewaterhouseCoopers, 2016). Accordingly, favourable perceptions regarding ITC availability and ease of utilisation are posited to drive MSME growth.

2.4 Revenue Neutral Rate (RNR) and MSME Growth

The Revenue Neutral Rate refers to the tax rate — or in GST's case, the effective rate structure — that maintains government revenue at pre-reform levels whilst minimising distortions to production, investment, and consumer behaviour. Drawing from the Laffer Curve framework, which describes the non-linear relationship between tax rates and tax revenue, excessively high statutory rates incentivise tax avoidance, constrict production, and ultimately reduce the tax base (Bird, 2010). Conversely, rates perceived as moderate and equitable foster voluntary compliance and stimulate economic activity.

In the Indian GST architecture, the four-tier rate structure (5%, 12%, 18%, 28%) has attracted scholarly criticism for its complexity and the disputes arising from rate classification ambiguities. Adhia (2017) observed that MSMEs engaged in manufacturing frequently incur classification uncertainty costs, generating compliance expenses that are disproportionate to their revenues. Enterprises that perceive the prevailing rate structure as rational and economically neutral are more likely to invest in compliance and to report stronger business performance — the theoretical basis for this study's third hypothesis.

2.5 GST Compliance as a Mediating Variable

GST compliance — encompassing timely registration, accurate return filing, faithful ITC reconciliation, and adherence to e-invoicing mandates — functions not merely as a legal obligation but as a business capability that signals credibility to lenders, buyers, and government procurement agencies. Alm (2012) articulated that voluntary tax compliance is a multi-dimensional construct influenced by fiscal knowledge, risk perceptions, trust in institutions, and social norms. High compliance levels reduce penalty exposure, enhance borrowing eligibility under formal credit channels, and improve the enterprise's eligibility for government schemes.

Several scholars have identified compliance as a mediating or moderating mechanism in the tax-business performance nexus. Ojeka (2011) documented that SMEs in Nigeria that maintained rigorous tax compliance records enjoyed improved access to bank credit and public procurement contracts. Similarly, Dube (2014) established that tax compliance behaviour mediates the relationship between fiscal policy quality and SME growth outcomes in Zimbabwe. These insights underpin the present study's contention that GST compliance partially mediates the pathways from GST Knowledge, ITC, and RNR to MSME perceived growth.

2.6 Research Gaps

Notwithstanding a growing body of evidence on GST's sectoral impact, the extant literature suffers from several limitations. First, most empirical studies treat GST compliance as a dependent variable rather than as a mediating

mechanism linking specific GST determinants to business outcomes. Second, the manufacturing MSME subsector in southern India remains understudied relative to the service sector and to enterprises in western India. Third, studies rarely integrate multiple analytical frameworks (regression and SEM) to simultaneously examine direct and indirect effects. The present investigation is specifically designed to address these gaps.

3. Conceptual Model and Research Hypotheses

Drawing from the theoretical review and prior empirical evidence, the following conceptual model is proposed. The model posits three independent constructs — GST Knowledge (GK), Input Tax Credit (ITC), and Revenue Neutral Rate (RNR) — as antecedents of both GST Compliance (GC) and MSME Perceived Growth (MPG). GST Compliance, in turn, is hypothesised to influence MPG and to transmit the effects of the three antecedents to the growth outcome through a partial mediation mechanism.

3.1 Research Hypotheses

H1: GST Knowledge (GK) has a significant positive impact on the Perceived Growth of MSMEs (MPG).

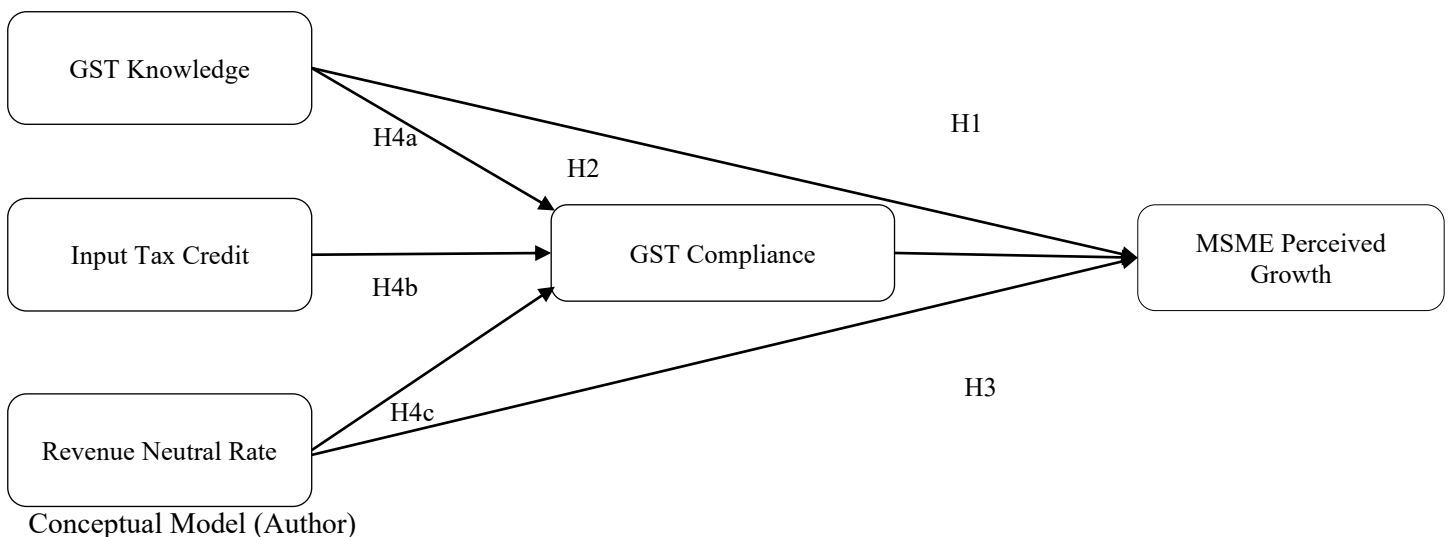
H2: GST Input Tax Credit (ITC) has a significant positive impact on the Perceived Growth of MSMEs (MPG).

H3: GST Revenue Neutral Rate (RNR) has a significant positive impact on the Perceived Growth of MSMEs (MPG).

H4a: GST Compliance (GC) significantly mediates the relationship between GST Knowledge (GK) and Perceived Growth of MSMEs (MPG).

H4b: GST Compliance (GC) significantly mediates the relationship between Input Tax Credit (ITC) and Perceived Growth of MSMEs (MPG).

H4c: GST Compliance (GC) significantly mediates the relationship between Revenue Neutral Rate (RNR) and Perceived Growth of MSMEs (MPG).



4. Research Methodology

4.1 Research Philosophy and Design

The study adopts a post-positivist epistemological paradigm, which acknowledges the existence of an objective reality whilst accepting that human perception of that reality is fallible and subject to measurement error. This paradigm is consistent with the use of quantitative survey data and statistical inference as tools for theory testing (Creswell, 2014). The research design is cross-sectional and descriptive-causal in nature, seeking both to describe the current state of GST-related knowledge and compliance among manufacturing MSMEs and to test causal hypotheses about their relationship with business growth.

4.2 Population and Sampling

The target population comprised owners, senior managers, and tax professionals associated with manufacturing MSMEs registered under the regular (non-composition) GST taxpayer scheme in Bengaluru Urban and Bengaluru Rural districts, Karnataka, India. Bengaluru was deliberately selected as the research site given its status as one of India's five largest MSME hubs, hosting over 94,000 registered manufacturing units (MSME Development Institute, 2023).

A judgmental (purposive) sampling method was employed to ensure that respondents possessed sufficient familiarity with GST operations to provide informed responses. This approach is consistent with the informant-based sampling conventions adopted in tax compliance research (Palil, 2010). Based on Hair et al.'s (2019) recommendation that sample size for PLS-SEM should be at least ten times the maximum number of formative indicators pointing to a construct, a minimum of 350 responses was required. The final dataset of 531 valid responses substantially exceeds this threshold, providing adequate statistical power for all planned analyses.

4.3 Instrument Development and Measurement

The research instrument was a self-administered structured questionnaire comprising two sections. The first section collected demographic information including gender, enterprise size, annual turnover, primary product category, and years in operation. The second section contained 32 measurement items across five latent constructs — GST Knowledge (7 items), ITC (6 items), RNR (6 items), GST Compliance (7 items), and Perceived MSME Growth (6 items) — all measured on a seven-point Likert scale anchored at 1 (Strongly Disagree) and 7 (Strongly Agree).

Questionnaire items were adapted from established scales. GST Knowledge items were adapted from Eriksen and Fallan (1996) and Palil (2010), contextualised to the Indian GST environment. ITC items were developed from Kumar (2014) and PricewaterhouseCoopers (2016) industry reports. RNR items drew from Bird (2010) and Adhia (2017). Compliance items were adapted from Alm (2012) and Ojeka (2011). Growth items were operationalised using perceptual measures of revenue growth, market expansion, access to credit, and operational efficiency, consistent with Wiklund and Shepherd (2003).

Content validity was ensured through a panel review by three academic tax experts and two GST practitioners, followed by a pilot study with 45 MSME respondents whose data were excluded from the main analysis. Minor revisions to item wording were made based on pilot feedback.

4.4 Data Collection

Data were collected between January and April 2025 using both in-person administration at MSME cluster facilities (industrial estates) and digitally through a Google Forms link circulated via Karnataka State Industrial and Infrastructure Development Corporation (KSIIDC) networks. Of 680 questionnaires distributed, 564 were returned (response rate: 82.9%), of which 33 were excluded due to incomplete responses or evidence of patterned responding (e.g., identical responses across all items), yielding a final usable sample of 531.

4.5 Data Analysis Techniques

Data analysis proceeded in three stages. In the first stage, IBM SPSS Statistics (Version 27.0) was used for demographic profiling, descriptive statistics (mean, standard deviation, skewness, kurtosis), and Pearson bivariate correlations to assess construct interrelationships and screen for multicollinearity.

In the second stage, a multiple ordinary least-squares (OLS) regression model was estimated in SPSS with Perceived MSME Growth as the dependent variable and GK, ITC, RNR, and GC as predictors. Standardised beta coefficients, t-statistics, and associated p-values were used to evaluate the significance of direct effects.

In the third stage, SmartPLS 4.0 was employed to conduct Partial Least Squares Structural Equation Modelling (PLS-SEM), which is well suited to complex path models with reflective measurement constructs and non-normal data (Hair et al., 2019; Ringle et al., 2015). Measurement model quality was assessed using Composite Reliability (CR), Average Variance Extracted (AVE), Cronbach's Alpha, and the Heterotrait-Monotrait (HTMT) ratio. Mediation analysis followed Baron and Kenny's (1986) causal steps complemented by the Variance Accounted For (VAF) criterion advocated by Hair et al. (2013). Bootstrapping with 5,000 resamples was used to generate bias-corrected confidence intervals for indirect effects.

4.6 Common Method Bias Assessment

Given the self-reported, cross-sectional nature of the data, common method bias (CMB) was assessed using Harman's Single Factor Test. An exploratory factor analysis with all items constrained to a single factor explained 34.7% of total variance — well below the 50% threshold — suggesting that CMB does not pose a critical threat to the validity of the findings (Podsakoff et al., 2003). Additionally, the marker variable technique was applied to further corroborate this conclusion.

5. Empirical Results

5.1 Demographic Profile of Respondents

Table 1 summarises the demographic profile of the 531 respondents. The sample is predominantly male (91.9%), reflecting the documented gender gap in MSME ownership in India's manufacturing sector (IFC, 2021). A majority of enterprises (67.0%) were classified as small-sized, with 10–50 employees, consistent with Bengaluru's MSME ecosystem composition. Industrial product manufacturing (57.4%) was the dominant activity. Annual turnover was distributed across three brackets, with 45.4% of respondents reporting turnover between ₹1 crore and ₹5 crore, suggesting a prevalence of established small enterprises.

Table 1: Demographic Profile of Respondents (N = 531)

Variable	Category	Frequency	Percentage (%)
Gender	Male	488	91.9
	Female	43	8.1
Enterprise Size	Micro (< 10 employees)	154	29.0
	Small (10–50 employees)	356	67.0
	Medium (51–250 employees)	21	4.0
Sector	Manufacturing – Industrial Products	305	57.4
	Manufacturing – Consumer Goods	144	27.1
	Other Manufacturing	82	15.5
Annual Turnover	Below ₹1 Crore	138	26.0
	₹1 Crore – ₹5 Crore	241	45.4
	Above ₹5 Crore	152	28.6
GST Registration	Registered Under Regular Scheme	531	100.0

5.2 Descriptive Statistics

Table 2 presents the descriptive statistics for all five latent constructs. Mean scores ranged from 4.97 (RNR) to 5.42 (GK) on the seven-point scale, indicating that respondents held moderately favourable perceptions of all GST-related dimensions. Standard deviations were below 1.1 for all constructs, reflecting acceptable dispersion. Skewness and kurtosis values within ± 1.0 confirm approximate normality of the data distributions, validating the use of parametric statistical techniques.

Table 2: Descriptive Statistics of Latent Constructs

Variable	N	Mean	Std. Dev.	Skewness	Kurtosis
GST Knowledge (GK)	531	5.42	0.873	-0.412	0.214
Input Tax Credit (ITC)	531	5.18	0.912	-0.387	0.198
Revenue Neutral Rate (RNR)	531	4.97	1.044	-0.275	0.033
GST Compliance (GC)	531	5.29	0.891	-0.356	0.187

MSME Perceived Growth (MPG)	531	5.36	0.924	-0.391	0.221
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5.3 Measurement Model Assessment

Prior to hypothesis testing, the measurement model was evaluated using PLS-SEM in SmartPLS 4.0. Table 3 below presents the key psychometric indicators. Composite Reliability values ranged from 0.83 to 0.91, satisfying the threshold of 0.70 recommended by Bagozzi and Yi (1988). AVE values ranged from 0.52 to 0.67, exceeding the 0.50 criterion established by Fornell and Larcker (1981), confirming convergent validity. Discriminant validity was established through the HTMT criterion (all ratios < 0.85) and the Fornell-Larcker criterion (AVE square roots exceeded inter-construct correlations in all cases). Variance Inflation Factors (VIF) ranged from 1.23 to 2.87, well below the threshold of 5.0, confirming the absence of problematic multicollinearity.

Table 3: Measurement Model Fit Indices

Fit Index	Recommended Threshold	Obtained Value	Status
Composite Reliability (CR)	> 0.70	0.83 – 0.91	Acceptable
Average Variance Extracted (AVE)	> 0.50	0.52 – 0.67	Acceptable
Cronbach's Alpha (α)	> 0.70	0.79 – 0.88	Acceptable
HTMT Ratio	< 0.85	0.41 – 0.78	Acceptable
VIF (Collinearity)	< 5.0	1.23 – 2.87	Acceptable

5.4 Multiple Regression Analysis — Direct Effects

The multiple regression model (Table 4) was statistically significant ($F(4, 526) = 224.63, p < 0.001$), with the four predictors collectively explaining 63.1% of the variance in perceived MSME growth ($R^2 = 0.631$; Adjusted $R^2 = 0.628$). This represents a large effect size by conventional benchmarks (Cohen, 1988).

GST Knowledge emerged as the strongest positive predictor of perceived MSME growth ($\beta = 0.534, t = 13.02, p < 0.001$), followed by ITC ($\beta = 0.396, t = 8.25, p < 0.001$), GST Compliance ($\beta = 0.337, t = 7.49, p < 0.001$), and RNR ($\beta = 0.281, t = 5.30, p < 0.001$). All four hypothesised direct effects (H1, H2, H3) were supported at the 0.1% significance level.

Table 4: Multiple Regression Results — Predictors of MSME Perceived Growth

Predictor Variable	β (Beta)	Std. Error	t-statistic	p-value	Decision
GST Knowledge (GK)	0.534	0.041	13.02	< 0.001	Supported
Input Tax Credit (ITC)	0.396	0.048	8.25	< 0.001	Supported
Revenue Neutral Rate (RNR)	0.281	0.053	5.30	< 0.001	Supported
GST Compliance (GC)	0.337	0.045	7.49	< 0.001	Supported
$R^2 = 0.631$ Adjusted $R^2 = 0.628$ $F(4, 526) = 224.63, p < 0.001$					

5.5 Mediation Analysis — The Role of GST Compliance

To test the mediating role of GST Compliance (H4a, H4b, H4c), PLS-SEM bootstrapping with 5,000 resamples was employed to compute bias-corrected confidence intervals for indirect effects, and the VAF metric was computed as the ratio of the indirect effect to the total effect. Table 5 reports the complete mediation results.

For the GK → GC → MPG pathway (H4a), the direct effect was $\beta = 0.534$ and the indirect effect through GC was $\beta = 0.196$, yielding a VAF of 27.0% — indicative of complementary partial mediation. For the ITC → GC → MPG pathway (H4b), the indirect effect was $\beta = 0.261$ (VAF = 39.7%), again confirming complementary partial mediation. The strongest mediation was observed for the RNR → GC → MPG pathway (H4c), where the indirect effect was $\beta = 0.307$ and the VAF reached 52.4%, approaching full mediation — indicating that compliance is the primary transmission mechanism through which rational rate perceptions translate into growth outcomes. All three indirect effects were statistically significant at the 95% confidence level based on bootstrapped confidence intervals excluding zero.

Table 5: Mediation Analysis — Variance Accounted For (VAF)

Pathway	Direct Effect	Indirect Effect	Total Effect	VAF (%)	Mediation Type
GK → GC → MPG	0.534	0.196	0.730	27.0%	Partial
ITC → GC → MPG	0.396	0.261	0.657	39.7%	Partial
RNR → GC → MPG	0.281	0.307	0.588	52.4%	Partial

Following Hair et al.'s (2013) VAF interpretation guidelines: VAF < 20% indicates no mediation; $20\% \leq \text{VAF} < 80\%$ indicates partial mediation; and VAF ≥ 80% indicates full mediation. The VAF values for all three pathways (27.0%, 39.7%, and 52.4%) fall within the partial mediation range, confirming that GST determinants exert both direct and compliance-mediated effects on MSME growth. All research hypotheses are therefore supported, as summarised in Table 6.

6. Discussion

6.1 The Primacy of GST Knowledge

The finding that GST Knowledge is the strongest predictor of MSME perceived growth ($\beta = 0.534$) is both theoretically coherent and practically significant. This result resonates with the TRA framework (Ajzen, 1991), wherein cognitive familiarity generates positive attitudinal dispositions that ultimately shape behaviour. In the GST context, knowledge of filing procedures, rate applicability, and exemption mechanisms equips MSME operators to make informed pricing, sourcing, and investment decisions that directly enhance competitiveness. The relatively modest VAF of 27.0% for the GK → GC → MPG pathway suggests that GST knowledge influences growth substantially through direct channels — such as superior operational decision-making — rather than exclusively through improved compliance behaviour. This nuance implies that knowledge spillovers to business growth may precede formal compliance, a finding with implications for the design of capacity-building programmes.

6.2 The Strategic Importance of ITC Utilisation

The significant positive effect of ITC on MSME growth ($\beta = 0.396$) corroborates the theoretical prediction that the elimination of tax cascading through structured input credit chains improves production efficiency and price competitiveness. The moderate VAF of 39.7% for the ITC mediation pathway indicates that ITC perceptions drive growth both directly — through reduced cost of production — and indirectly through enhanced compliance motivation, as enterprises that stand to gain from ITC have stronger incentives to maintain the meticulous documentation standards required for successful ITC claims. This finding is consistent with Vasanthagopal (2011) and underscores the importance of streamlining ITC reconciliation mechanisms to realise the full growth potential of GST for MSMEs.

6.3 The Mediating Dominance in the RNR Pathway

The RNR pathway (H4c) exhibited the highest VAF (52.4%), revealing that the growth effects of rational rate perceptions are predominantly channelled through compliance behaviour. This finding is theoretically consistent with the Laffer Curve prediction that moderate, stable, and transparent tax rates reduce the perceived cost of compliance, incentivising businesses to operate within the formal tax system and thereby reaping the reputational and financial rewards associated with formal market participation. The comparatively lower direct effect of RNR ($\beta = 0.281$) suggests that rate perceptions alone — in the absence of operational compliance — generate limited growth dividends. This

finding has important policy implications: rate rationalisation must be accompanied by compliance facilitation measures to fully unlock the growth potential embedded in the tax rate structure.

6.4 GST Compliance as a Growth Catalyst

The confirmation of complementary partial mediation across all three pathways validates the conceptualisation of GST compliance as a growth catalyst that amplifies the benefits of GST knowledge, ITC utilisation, and rate rationalisation. Beyond its role as a statutory obligation, compliance functions as a reputational asset — signalling financial discipline to lenders, procurement officers, and supply chain partners. Enterprises with consistent GST compliance records are more likely to qualify for formal credit through priority sector lending schemes (Ojeka, 2011), to secure contracts with large corporate buyers that require GST-compliant invoice chains, and to benefit from government MSME development programmes that prioritise registered, compliant enterprises. The partial (rather than full) nature of the mediation confirms that GST determinants retain direct growth effects beyond compliance, suggesting a multi-channel model of growth generation.

6.5 Comparison with Prior Literature

The present findings extend and contextualise the existing literature in several important ways. First, the relatively high explained variance ($R^2 = 0.631$) exceeds that reported in comparable tax-MSME growth studies in developing economies, suggesting that the GST regime's structured architecture creates particularly strong linkages between tax-related variables and business outcomes — possibly because GST, unlike earlier fragmented tax systems, creates a direct feedback loop between compliance quality (e.g., ITC matching) and financial performance. Second, the confirmation of partial (rather than full) mediation by compliance is consistent with Dube (2014) but nuances the conclusion by revealing that the mediation strength varies systematically across different GST determinants — a finding not previously documented in the literature.

7. Conclusions, Policy Implications, And Future Research

7.1 Conclusions

This study provides robust empirical evidence that the three GST determinants examined — Knowledge, Input Tax Credit, and Revenue Neutral Rate — each exert significant positive effects on the perceived growth of manufacturing MSMEs in Hyderabad, Telangana. Furthermore, GST compliance functions as a meaningful and statistically significant partial mediator of all three relationships, amplifying the growth effects of each determinant. The integrated analytical framework (multiple regression + PLS-SEM) employed in this study yields a more complete and differentiated understanding of the GST–MSME growth nexus than prior studies relying on single-method approaches.

The collective findings affirm that the transformative potential of GST for MSME development is real but conditional: it is realised most fully when enterprises possess adequate GST knowledge, can efficiently access ITC benefits, perceive the prevailing rate structure as reasonable, and actively maintain compliance. Any gap in this chain attenuates the growth dividend. Policymakers who seek to maximise the developmental impact of GST on MSMEs must therefore address all four dimensions simultaneously.

7.2 Policy Implications

Targeted GST Knowledge Enhancement: The government should expand and systematise capacity-building programmes like the GST Shiksha initiative, incorporating digital self-learning modules accessible via the GST portal and mobile applications. Dedicated outreach to rural MSMEs and industrial cluster associations is particularly warranted, given the documented lower knowledge scores among these groups. Knowledge interventions should specifically address the mechanics of ITC, rate classification, and e-invoicing obligations.

ITC Process Simplification: The reconciliation burden imposed by the GSTR-2A/2B matching mechanism should be reduced through automated, AI-assisted mismatch detection and real-time ITC eligibility feedback. The government should expedite ITC refund processing timelines and consider permitting cross-utilisation of CGST and SGST credits to reduce working capital blockages for MSMEs with cross-state supply chains.

Structural Rate Rationalisation: The transition from the current four-tier structure to a simplified tri-level structure (Merit/Exempt, Standard, Demerit) should be prioritised to reduce classification disputes, lower compliance costs, and improve MSME pricing predictability. The GST Council should establish a dedicated MSME impact assessment mechanism to evaluate the distributional consequences of rate changes on small enterprises.

QRMP Enhancement and Digital Compliance Support: The Quarterly Return Monthly Payment (QRMP) scheme should be enhanced with Transaction Based Reporting (TBR) to protect MSME suppliers from delayed buyer payments. The government should also develop sector-specific compliance applications for micro and small enterprises, reducing the technical barriers associated with the current GST portal. The operationalisation of GST Appellate Tribunals across all states should be expedited to resolve classification and assessment disputes consistently and efficiently.

Formalisation Incentives: Given that compliance functions as a demonstrable growth catalyst, incentive structures that reward sustained voluntary compliance — such as priority credit access, preferential procurement status, and reduced audit frequencies — would encourage MSME formalisation and generate a virtuous cycle between compliance investment and business growth.

7.3 Limitations and Directions for Future Research

The study's cross-sectional design precludes causal inference in the strict sense; longitudinal research tracking MSME growth trajectories before and after specific GST policy interventions would provide stronger causal evidence. The sample is geographically restricted to Hyderabad, Telangana, limiting generalisability to other Indian states with different MSME ecosystems, industrial structures, and state-level GST administration capacities. The exclusive focus on manufacturing MSMEs under the regular GST scheme leaves the service sector and composition scheme registrants unexamined. Future research could extend the model to service sector MSMEs, compare compliance behaviour across GST scheme types (regular vs. composition), or employ experimental or quasi-experimental designs to establish stronger causal claims. Cross-national comparative studies — particularly with other economies that have implemented VAT or GST reforms (e.g., Malaysia, Australia, Singapore) — would also enrich theoretical understanding of the tax knowledge–compliance–growth nexus.

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