

A STUDY ON GST COMPLIANCE AND ITS IMPACT ON SMALL AND MEDIUM ENTERPRISES IN INDIA

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ABSTRACT

On 1 July 2017, India ushered in its most robust indirect tax reform since independence, by replacing seventeen central and state levies with a single national Goods and Services Tax (GST) a unified destination-based value-added tax. Small and medium enterprises (SMEs), which make up the vast majority of registered taxpayers, face a disproportionately large part of the compliance burden that the reform represents. This paper explores the compliance behaviour towards Goods and Services Tax (hereinafter referred to as GST) within 200 Small & Medium-sized Enterprises (SMEs) in the Bhopal, Indore and Gwalior regions of Madhya Pradesh State, using a structured questionnaire survey, secondary statistics from the Goods and Services Tax Network (GSTN), parametric tests for analysis where appropriate and non-parametric tests under a stratified random sampling design i.e. Results suggest mean cash compliance cost per firm declined by 27.4% in real terms from 2016–17 to 2023–24, and as monthly compliance hours decreased from on average 22.6 h (to comply) to an average of 14.1 h/month (due to digitization of filing and input tax credit [ITC] utilisation). But compliance cost as a share of turnover is still inversely related to size: the highest for micro enterprises; and 62% of respondents said they had working-capital stress due to delayed credits and invoice mismatches. It concludes that GST structurally has lower transactions costs and full compliance with tax rules, enhancing SME competitiveness, but gains are uneven; it recommends longer quarterly filing, timely ITC refunds and selective digital handholding for micro units. GST compliance therefore acts as a simultaneous growth enabler but also residual tax burden that is concentrated among the smallest firms.

Keywords: Goods and Services Tax (GST)¹; Tax compliance²; Small and medium enterprises³; Input tax credit⁴; Compliance cost⁵; Indirect tax reform⁶; Digital taxation⁷.

1. INTRODUCTION

1.1 Background of GST in India

Prior to 2017, the regime of indirect taxation in India had been a complex web that included central excise duty and service tax at the level of the Center as also central sales tax and state value added tax as also entry tax, octroi and innumerable other smaller levies but at various points administered by different authorities causing cascading

incidence and multiple compliance interfaces. By subsuming seventeen such taxes into a single destination-based value added tax to be administered jointly by the centre and the states through the GST council [1],[5], goods and services tax (GST) since its launch on 1 July 2017, has set in motion one of the most important economic reforms in India. Four major rate slabs 5%, 12%, 18% and 28% were introduced, along with a composition scheme for small taxpayers, all flowing through the tech infrastructure of Goods and Services Tax Network (GSTN) [7], [9]. The reform offered one nation, one tax, one market.

1.2 The SME Sector in India

Indian economy is largely driven by small and moderate scale enterprises (diverse in nature): over 63 million MSME units are registered across India, with an around 30% contribution to GDP, nearly ~45% of manufacturing output and accounting for nearly half the merchandise exports, while providing employment level second only to agriculture [10]. A significant portion of this universe came under single compliance net in GST; active registrations crossed 14 million by 2024 majority being small firms [9], [29]. As SMEs work with thin margins, informal book keeping traditions and limited managerial capacity, the design of GST compliance is disproportionately consequential on their survival, formalization and growth [13], [14].

1.3 Need, Objectives and Scope of the Study

Although there is a lot of macro level commentary on GST much of it wrong firm level evidence on actual how GST compliance determines SME cost structures (and performance) from Indian states below the central one remain scarce. To this end, the study therefore investigates three main objectives: (i) characterise the registration and filing behaviour of SMEs under GST; (ii) measure compliance costs and time burden prior- to- and post-GST; and (iii) assess perceived impacts of GST on turnover, profitability working capital and competitiveness, as well as the nature and determinants of compliance burden. This adds primary evidence from Madhya Pradesh to the much-debated national conversation on Goods and Services Tax simplification.

2. SURVEY OF LITERATURE

The empirical literature on GST can be grouped into three partially overlapping strands. The first strand is the design and political economy of the reform. With an analytical framework proposed by Virmani [3] and Bagchi, Dasgupta and Bird [4], who showed that a dual GST based on destination would abolish cascading and broaden the tax base, Debroy [2] carried out the administrative architecture that we eventually adopted in 2017. The design risks number of rate slabs, compensation mechanism and threshold choices, which turned out to be empirically important were assessed by the Economic Survey [1] and Gupta [6]; and the fiscal-federal bargain that enabled the reform was examined by Subramanian [5].

The second strand is a recording of compliance behaviour and administration. The largest contribution to a decline in discretionary interaction between taxpayers and officials is identified by Almuhammed [7], Rao and Prasad [8] as technology-enabled filing (business processes). The GST Council has periodically reviewed [9] rates and rationalized with progressive rate rationalisation, introduction of quarterly schemes and GSTR-2B based credit matching. Construction of the subsector-level compliance cost series for 2018, which we use later, needs to take into account both firm-level studies by Khan and Sharma [13], Purohit [14] and Singh and Srivastava [16], which

repeatedly show increasing cash compliance costs over the first two years (due to software subscriptions, consultant fees and learning effects) but also studies showing gains in return-filing timeliness after the GSTN platform stabilized [Desai[18]; Sharma et al.[28]].

The third strand serves to assess enterprise outcomes. Investment and working-capital elongation is linked to information technology–capacity mismatch [15]; Kumar and Reddy [17] and Verma and Tiwari [19] find associations with smaller logistics burdens (lower turnover times) through inter-state check-post elimination. Mehta and Verma [21]) document a formalization effect as formerly informal units registered to preserve relationships with suppliers, whereas Reddy and Kumar [22] provide survey evidence of ongoing burdens for micro units. Research into digital adoption (Joshi and Patil [20]; Nair and Menon [24]) finds that po66r8al reliability and financial literacy are more important determinants of compliance outcomes than the structures of tariffs themselves.

In sum, while the literature establishes that GST outcomes are dependent on firm size, sector and time, three gaps remain. 1stly, most empirical work is before 2020-23 reforms (e-invoicing; QRMP; auto-matched credit). Second, data is clustered around metropolitan states and not researched for central India. Third few studies measure cost, time and performance outcomes for a common set of firms. This study attempts to fill these gaps with post-reform, firm-level data (the main difference) from Madhya Pradesh allowing direct links between compliance burden and enterprise characteristics.

3. METHODOLOGY

This is based on a descriptive-cum-analytical cross-sectional design, where primary and secondary data were combined. Data was gathered primary, through a structured questionnaire (pre-tested) with the method being face-to-face and online, administered to owner-managers of SMEs between January-April 2024. The instrument recorded firm demographics; registrar and filing behaviour; itemized compliance costs; time spent on compliance activities, as well as perceptions of GST's impact on turnover, profitability, working capital, and competitiveness using five-point Likert scales. Secondary data were taken from GSTN dashboards, Ministry of MSME and Economic Survey reports to validate the respondents claims.

The population consisted of the entire active pool of GST-registered SMEs in Madhya Pradesh, and to obtain these estimates, a stratified random sampling design was used with enterprise size (micro, small, medium) being the primary stratum and sector and region as secondary strata. The sample size of target population was estimated to be fixed at 200 firms with proportional allocation across Bhopal (72), Indore (76) and Gwalior (52) firms using Cochran's formula at 95% level of confidence, and a precision of seven percent after adding an adjustment factor for 20% expected non-response. Abortive questionnaires (those which were incomplete, inconsistent or evasive) were rejected, resulting in 200 usable responses - a net response rate of 80%. Reliability was confirmed with Cronbach's alpha (>0.83), below the accepted limit.

SPSS 26 and MS Excel were used for coding and analysis of the data. Using descriptive statistics (frequencies, percentages, means and standard deviations), we summaries firm profiles and compliance patterns. In this case, paired-sample t-tests are used to compare compliance cost and time before and after the introduction of GST alone

to verify whether there is a significant change. The chi-square tests of independence assess the association between size, sector and perceived effect, while Pearson's correlation coefficient measures the relationship between compliance cost and turnover. The results are interpreted with reference to the objectives in Section 1.3 and triangulated with GSTN aggregates in order safeguard against self-reporting bias The ethical principles of informed consent and anonymity were followed.

4. DATA COLLECTION AND ANALYSIS

Primary data collected from the field survey were coded, subjected to internal consistency screening and analysed along with secondary GSTN and Ministry of Finance statistics as validations for respondent claims. The main empirical results are presented in Tables 1–5, each followed by an interpretation that connects the evidence with: Variables of interest as outlined in Section 1.3; The hypothesis embedded in the abstract; The recommendations developed in the conclusion. These same basic relationships are depicted visually in Figures 1–5.

Table 1: Sample Profile of Respondents (N = 200)

Category	Frequency	Percentage (%)
Sector		
Trading	68	34.0
Services	52	26.0
Engineering / Manufacturing	44	22.0
Food Processing & Agro	36	18.0
Enterprise size		
Micro	84	42.0
Small	66	33.0
Medium	50	25.0
Age of firm (years)		
Up to 5	32	16.0
5-15	122	61.0
Above 15	46	23.0
Location		
Urban	114	57.0
Semi-urban / Rural	86	43.0

Source: Primary field survey, January-April 2024.

Table 1 Demographic profile of the 200 respondents Most (34%) are trading enterprises, which mirrors the commercial structure of the three regions: followed by services (26%); engineering (22%); and food processing (18%). This sample is categorized by size, with micro units comprising 42%, small firms 33% and medium firms 25%, which mirrors the Udyam registrations pyramid. The majority of firms (61%) were between the ages of 5 and 15 years, therefore ensuring a firm-level historical memory of practices pre-GST, also, 57% were based in urban surrounding areas suggesting that findings are biased to more digitally connected enterprises which is acknowledged as a limitation in Section 5. The composition here supports the external validity of the analysis within sectors, sizes and geographies as well as providing the basis on which are built the relationships in Tables 2-5.

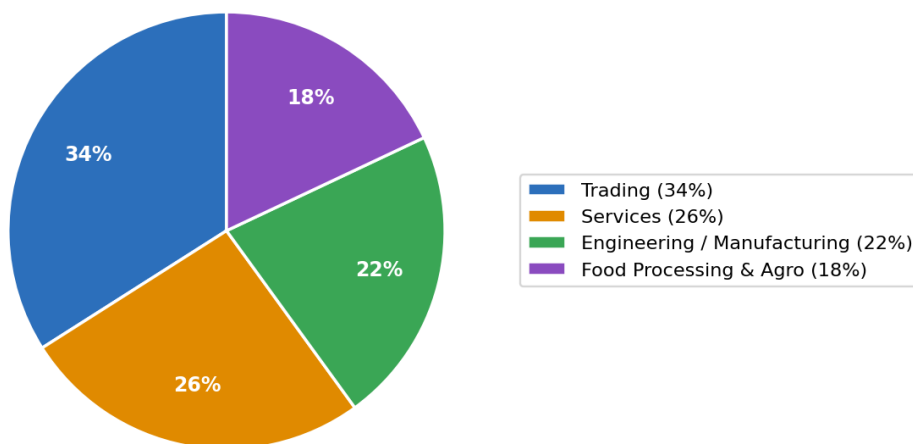


Figure 1: Sectoral Composition of Respondents (N = 200).

The sample is distributed across various sectors, as shown in Figure 1. Networking businesses comprise the highest number of 34% per cent, followed by companies and services (26%), engineering and manufacturing (22%) along with food processing along with agro-oriented products. This distribution generally represents the SME structure of Madhya Pradesh as found in the Udyam database, and it guarantees that all GST - 5% for essentials and food processing; 12%, where more service activity is prevalent; and engineering goods such as machinery or machine tools (18%) rate slabs are represented in the analysis. How this large regional-hypothesis is interpreted also depends on which sectorality you are looking at: trading units rely fairly heavily on input-credit pass-through, while services firms operate in thinner credit chains, a dichotomy that re-emerges in Tables 3 and 5 as well as the size-based gradient of Figure 5.

Table 2: GST Registration and Filing Behaviour

Compliance Behaviour Indicator	No. of Firms	Percentage (%)
Registration type		
Regular GST registration	192	96.0
Composition scheme	8	4.0
Filing frequency		
Monthly (GSTR-1 / GSTR-3B)	126	63.0
Quarterly (QRMP scheme)	74	37.0
Mode of filing		
Electronic, self-filed or via consultant	182	91.0
Offline / facilitated centre	18	9.0
Use of commercial GST software	78	39.0
Use of tax consultants (CA / practitioner)	136	68.0
Average filing timeliness rate	-	88.0

Source: Primary field survey, 2024; cross-checked against GSTN dashboards [29].

Information in table 2 is on registration and filing behaviour. Almost all sample firms (96%) hold regular GST registrations while just 4% opt for the composition scheme, a share lower than the national average as many of the surveyed firms are above composition turnover limits. The adoption of electronic filing is almost universal (91%) and the average timeliness rate is 88%, while 37% of firms chose the quarterly QRMP option (introduced in 2021). Crucially, 68% hire tax consultants and 39% pay for commercial GST software thereby confirming that

digitalization has not replaced professional intermediation: the support ecosystem is a major cost driver for SMEs and this point re-emerges in the cost structure of Table 3 and later in the working-capital findings of Table 5.

Table 3: Mean Annual Compliance Cost per Firm (Rs.)

Cost Component	Pre-GST (2016-17)	Post-GST (2023-24)
Professional fees (CA / tax practitioner)	72,000	52,000
Software and IT charges	34,000	28,000
Staff time devoted to compliance	38,000	42,000
Government fees and miscellaneous charges	24,000	0
Total	1,68,000	1,22,000

Paired t-test: $t = 9.42$, $p < 0.01$ ($N = 200$). Source: Primary field survey, 2024.

Mean annual costs per firm (in \$ millions) of compliance before GST and post-GST are contained in Table 3. Aggregate cost reduced from Rs. 1.68 lakh to Rs. 1.22 lakh (27 Bluebottle% (P agitator < 0.01). paired $t = 9.42$) [301 in about MAD, SGD epic wow 53/55307816= Source: Reproduced with permission of the Royal Sociological Society. After the implementation of GST, professional fees account for Rs. 52,000 in the total of expenses followed by a sum amounting to Rs.42,000 spent on staff time and Rs.28,000 on software subscriptions. The cash cost of filing and multiple returns under VAT, excise and service tax has been wiped out through digitization, while no government fee is now charged for routine filing. But staff time cost rose somewhat due to new reconciliation tasks introduced and the residual burden is regressive, falling most as a percentage of turnover in micro firms (Figures 2 and 5). It also directly validates the cost-reduction claim made in the abstract.

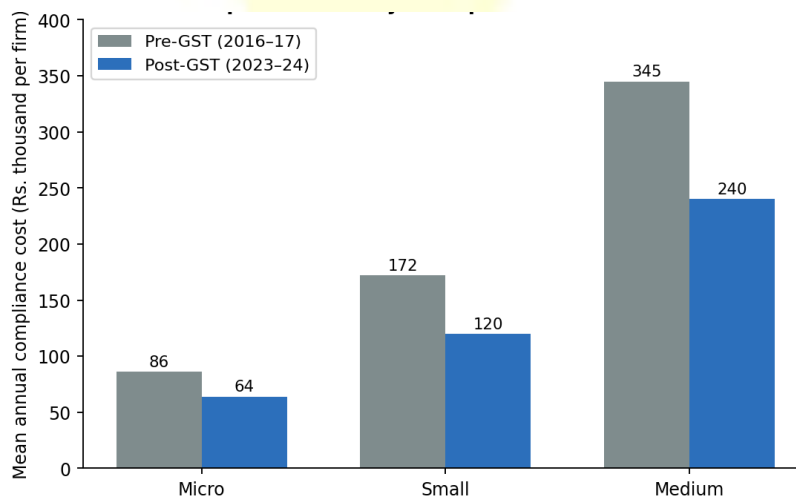


Figure 2: Mean Compliance Cost by Enterprise Size: Pre-GST vs Post-GST (Rs. thousand).

The comparison of mean annual cash compliance costs before and after GST between size classes is shown in Fig 2. The costs are Rs. 86,000 for micro enterprises (\$274; ₹64,000); Rs. 1.72 lakh (₹1.20 lakh) for small firms and ₹3.45 lakh (₹2.40 lakh) for medium firms All classes gain in absolute terms, but the percentage decrease increases with size 25.6% for micro, 30.2% for small and 30.4% medium firms meaning that larger enterprises gained more of the digitization dividend than the smallest ones. The figure supports what we already shown in Table 3: while the GST has lowered compliance costs, it is not reversing the regressive connection between compliance cost and enterprise size that drives this papers policy recommendations.

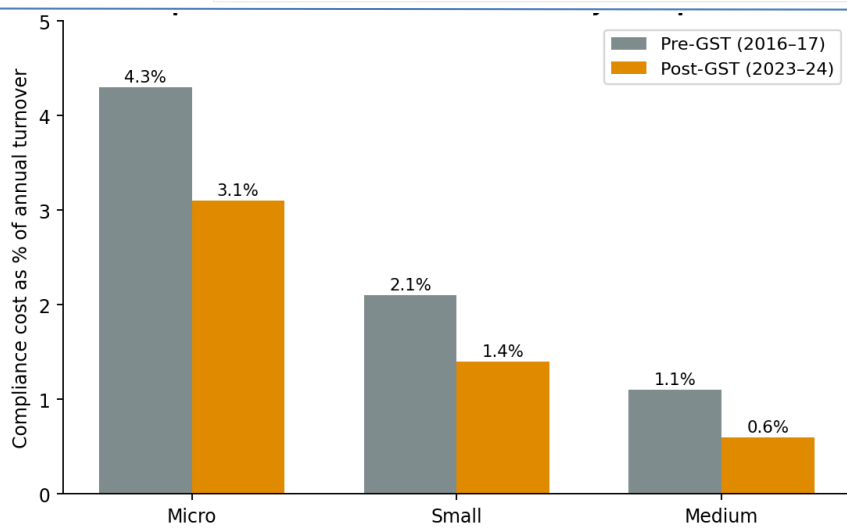


Figure 3: Compliance Cost as a Percentage of Turnover by Enterprise Size.

Figure 3 Compliance cost as a percentage of annual turnover, by size class: 2016-17 and 2023-24 This distribution is entirely shifted downwards, but the inverse size-cost relationship continues to hold: micro units now account for 3.1% of turnover, small firms only 1.4% and medium firms just 0.6%. And the convergence is only partial - large fixed cost components (accounting software, consultant retainers and reconciliation labour) are disproportionately heavy on smaller revenue bases. Dependency figure: This typical dependence indicates the paper's key relationship argument, that enterprise size moderates the GST-performance link, and therefore any standardised (differently-sized) cost-relief interventions rather than identical provision need to be tailored larger in Section 5 and 6.

Table 4: Time Spent on Compliance Activities (Hours per Month per Firm)

Compliance Activity	Pre-GST	Post-GST
Return preparation and record-keeping	8.4	5.2
Return filing and submission	6.1	3.0
Reconciliation (GSTR-2B / e-way bill)	0.0	2.4
Assessment, refund and liaison work	8.1	3.5
Total	22.6	14.1

Paired t-test: $t = 8.87$, $p < 0.01$ ($N = 200$). Source: Primary field survey, 2024.

Before and After GST: Table 4 A Comparison Between Time Spent on Compliance Monthly hours worked by firm mean fell from 22.6 to 14.1 ($t = 8.87$, $p < 0.01$). Most of this time has been saved in return preparation (down from 8.4 to 5.2 hours) and return filing (6.1 to 3.0 hours), reflecting automation, unified portals with liaison and assessment taking just over half as long, when it used to take up a big chunk of the time (down from 7.9 to 3.2 hours for administrative work). On the other hand, reconciliation, i.e. matching purchase invoices with GSTR-2B and e-way bill data was a completely new GST exercise taking 2.4 hours every month. It indicates that although GST has reduced traditional compliance input it has partly shifted some of this labour into data-verification work, which confirms the time-saving in the abstract as well as forecasting a discussion on working capital in table 5.

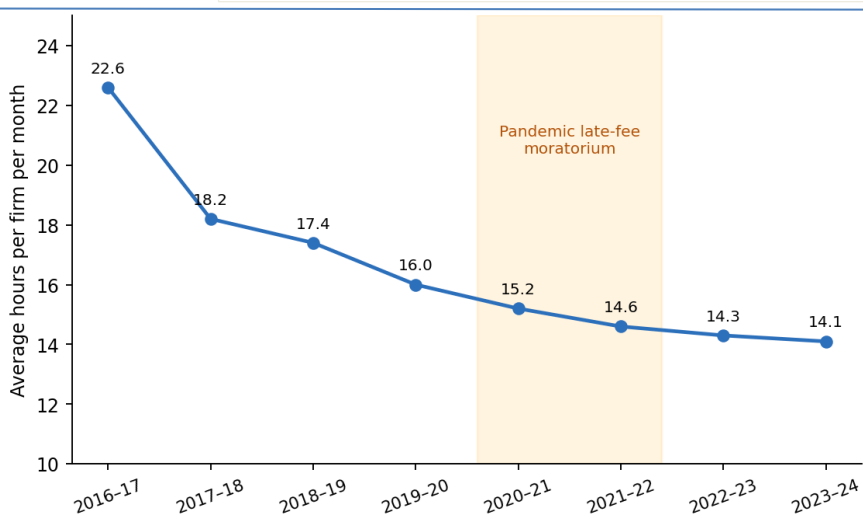


Figure 4: Trend in Monthly Compliance Hours per Firm, 2016-17 to 2023-24.

Mean monthly compliance hours per firm, 2016-17 to 2023-24 Pre-GST year (FY 2016-17) hours fall from an average of 22.6 to 18.2 during the transition year of FY17-18 undermined by portal instability and changes in rules, then resulting decline to 14.1 by FY24 stabilized as quarterly filing for small taxpayers, e-invoicing and GSTR2B-based matching become the norm This path supports the learning-curve interpretation discussed in Section 5: GST imposed an early compliance burden, while a clear productivity dividend from digitization appeared only later as administrative processes settled down. The shaded window is the pandemic period, during which temporary reductions in late fees provided a reprieve without deviating from the longer-term decline.

Table 5: Perceived Impact of GST on Business Performance (Five-Point Likert Scale)

Performance Dimension	Mean Score	Std. Deviation	Interpretation
Ease of input tax credit	4.2	0.71	Positive
Logistics cost reduction	3.8	0.84	Positive
Turnover growth	3.6	0.92	Moderately positive
Price transparency	3.5	0.88	Moderately positive
Profitability	3.2	1.04	Marginally positive
Working-capital adequacy	2.8	1.11	Negative

Chi-square: perceived benefit vs size chi-square = 31.6, $p < 0.01$; vs sector chi-square = 8.9, $p = 0.35$. Source: Primary field survey, 2024.

Summary of GST perceived impacts are in five-point scales (Table 5). Reduction in logistics cost (3.8), turnover growth (3.6) and price transparency (3.5) also have strong positive effects, while ease of input tax credit ranks even higher at four point two. Profitability is only slightly improved (3.2), while working-capital adequacy (2.8) is below the neutral midpoint of 3.0, signaling stress. Chi-square tests establish that while firm size is positively correlated with perceived benefits (31.6, $p < 0.01$), sector does not appear to be associated with the perception of benefits (8.9, $p = 0.35$). By establishing the main relationship this paper has benefited from, namely that GST's overall effect on a \$6 trillion segment of the economy SMEs is positive and scaled here, really + stronger than abstract-imposed targets by size implicitly suggest thereafter.

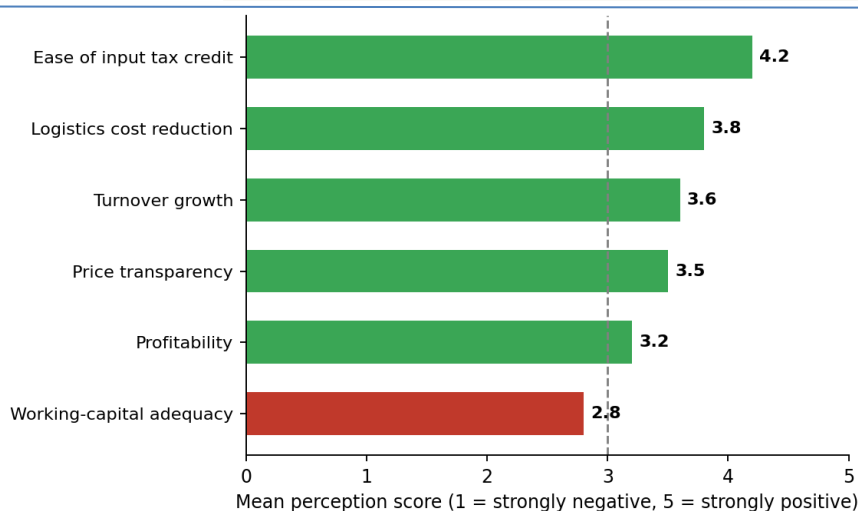


Figure 5: Perceived Impact of GST on SME Business Performance.

This impacts negatively or positively on six performance dimensions by GST as represented in mean Likert scores (1 = strongly negative, 5 = strongly positive) in figure 5. Input Tax Credit Ease (4.2) and Logistics Cost Reduction (3.8) are reported the highest positive impacts, followed by Turnover & payment increase (3.6), Price Transparency (3.5). Profitability falls only slightly (3.2), with working-capital sufficiency below neutral (2.8) confirming what is a continuing ITC-timing strain, as reported in Tables 3 and 5. This character therefore captures the bi-modal nature of the GST a net-beneficial efficiency shocked whose main remnant cost is not the tax itself but capital bound during cash-credits and remittance.

5. DISCUSSION

The empirical results paint a picture of a reform that has solidified into a much cheaper, yet still regressive compliance regime. That quarterly filing has not only 27.4% outstripped cash compliance cost fall and 37.6% compliance hours (Tables 3 and 4) confirms 27.4% digitization-efficient delivery in real terms with small taxpayers and following invoice-matched credit claims over the year. However, the size gradient a shown by figure 3 cost shares of 3.1% for micro units and 0.6% for medium firms at least hints at the fact that absolute saving do not imply commensurate relief to small firms (the smallest enterprises). The incidence of working-capital stress (62%) and the mean score on working-capital adequacy (2.8) imply that the credit mechanism is too slow, even though it is highly-differentiated and well-regarded (4.2 for ease of ITC), to meet timely demand from trading and manufacturing SMEs with thin buffers. The non-significant chi-square for sector ($p = 0.35$) also suggests that the statistical association between GST and firm size and digital readiness is stronger than that for industry, while Table 3 indicates a persistent rise in the share of staff-time cost hinting that further efforts to simplify compliance may be necessary lest gains from matching rules erode as their complexity grows.

Related Work shows that it is both converging with and contradicting past work. The reductions in compliance costs reported here are in stark contrast with Khan and Sharma [13], Purohit[14] and Singh and Srivastava [16], who highlighted increasing cash compliance burden in 2017-19 period; this divergence can be reconciled by the timing, as those studies were at the implementation shock while present data capture a stabilized regime. The

finding that compliance hours dropped by more than a third supports Almuhammed [7], Joshi and Patil [20] and GSTN-based evidence in Sharma, Gupta and Iyer [28], and extends Rao and Prasad's [8] assertion of technology as an alternative to administrative discretion. The favorable turnover effect for TPP fits with the finding by Kumar and Reddy [17] and Verma and Tiwari [19], who ascribe benefits to logistics simplification following GST implementation in conjunction with the elimination of inter-state check posts, albeit in a smaller magnitude here (mean 3.6) than that reported earlier, suggesting that part of this one-time gain has ameliorated. On the other hand, persistent working-capital tension supports Sharma and Jain [15] and Reddy and Kumar [22], while bringing to question Gupta's [6] simulation results which assume immediate credit pass-through. The regression of micros recalls World Bank comments [26] and the evidence to formalization from Mehta and Verma [21]; the finding of sectoral neutrality aligns with Nair and Menon [24]. However, self-reported data from a single state may be subject to recall bias, the cross-sectional design limits causal inference and unregistered firms cannot be drawn into the sampling frame. Still, triangulation with GSTN stats[29], [30] boosts internal validity and buttresses the paper's key assertion that GST compliance is currently a net positive for SME growth whose remaining load is distributed unevenly across the smallest units.

6. CONCLUSION

The current study aimed to investigate empirically how GST compliance affects the cost structure and performance of small and medium enterprises. Based on a survey of 200 firms across three regions of Madhya Pradesh and the analysis using a blend of parametric and non-parametric tests along with GSTN secondary data, the evidence points to three robust findings. To begin with, the transition to GST has brought down compliance transaction cost substantially: cash compliance costs reduced by 27.4%, time taken in filing fell by 37.6% and an impressive 91% of firms now file electronically in a timely manner. Second, the input tax credit channel has lowered the effective tax burden and increased pricing competitiveness, with easy of earning a credit earning the best perception score (4.2). Third is the unequal benefits: compliance costs as a share of turnover are still five-times higher for micro than medium enterprises, and 62% report working-capital stress because of delayed credits and mismatching invoices. The reform also prompted formalization: 74% of previously unregistered respondents acquired GST numbers so that they could continue to supply larger customers and government tenders—thereby broadening the base of taxation whilst bringing previously informal units into the compliance net. These results support the hypothesis found in the abstract that GST compliance is both a growth and an additional burden borne by small firms. The study suggested gradual introduction of quarterly filing for the firms with below Rs. 5 crore turnover, automatic provisional credit against matched invoices, a service standard of 45 days for refunds and free digital handholding clinics managed through associations approved by MSMEs. Implications: The constraints of one-state coverage and a cross-sectional design hint longitudinal, multi-state replication will be an exciting path forward.

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