# Impact of the Goods and Services Tax on Ease of Doing Business: A PLS SEM Study of Micro and Small Enterprises in Goa

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**Abstract**

*The present study aims to investigate the impact of changes in the indirect tax structure, digital transformation, the GST compliance system, and GST knowledge on the ease of doing business for micro and small enterprises in the state of Goa. For the study, quantitative data were collected through a structured questionnaire from 200 business operators from Goa and analysed using Smart PLS SEM version 4. Besides it, a reference was made to various books, national & international journals & government reports. This study provides policymakers with empirical evidence on the influence of GST on ease of doing business for micro and small enterprises, supporting informed policy formulation and a more conducive business environment. It offers insights into the extent to which GST conforms to the principles of optimal taxation. By addressing the scarcity of quantitative evidence on indirect tax reforms and ease of doing business, the study fills a critical research gap. Overall, it contributes to the literature on GST framework design and its implications for the competitiveness and long-term sustainability of MSMEs. The key findings of this study reveal that the transition to the GST regime does not have a significant direct effect on ease of doing business, indicating that structural tax reform alone is insufficient to enhance business convenience. In contrast, digital transformation, the GST compliance system, and GST knowledge exert significant positive effects on Ease of Doing Business.*

**Keywords:** *:* Indirect Tax, Goods & Services Tax, micro and small businesses, digital transformation, ease of doing business.

## 1. Introduction

In an emerging economy like India, Micro, Small, and Medium Enterprises (MSMEs) play a crucial role in fostering industrialisation, generating employment and promoting inclusive economic growth. Their contribution towards innovation, value addition and employment generation is highly significant (Behera et al., 2025). Owing to their relatively smaller scale of operations and limited economies of scale, MSMEs are highly sensitive to policy changes, especially reforms in indirect taxation (Bhalla et al., 2023). The Goods and Services Tax (GST) marked a transformative reform in India's indirect tax system and significantly altered the business environment, particularly for MSMEs. Prior literature reveals the multifaceted effect of GST on business operations. (Ghosh 2021), observed that

MSMEs initially faced GST implementation challenges due to inadequate infrastructure, skills, systems, and coordination. (Joseph et al., 2018) highlighted its pervasive influence on pricing, supply chains, IT systems, accounting, and tax compliance. In contrast, (Singhal, Goyal, Sharma, et al., 2022), reported that GST has simplified commercial operations and enhanced export facilitation, while (Dhar & Khandelwal, 2022) opined that GST has encouraged firms to focus on improving operational efficiency.

The principal objective underlying the enforcement of GST reforms was to enhance the Ease of Doing Business (EoDB), particularly for MSMEs. EoDB represents the regulatory and administrative environment that enables firms to operate efficiently through improved service delivery and reduced procedural inefficiencies (Chowdhry, 2020; Sodhi & Dwivedi, 2022). GST was envisioned as a reform to simplify taxation and improve business facilitation. Nevertheless, the existing published work fails to explain its impact on the EoDB of micro and small enterprises, particularly at the regional level. Moreover, GST is not merely a tax reform but an institutional mechanism whose design and implementation will definitely produce noteworthy implications for the long-term performance of MSMEs (Ghosh, 2021). Despite efforts to simplify indirect taxation, it was evident that business operators often lack adequate knowledge of the GST system, resulting in increased dependence on tax practitioners and additional compliance costs. Frequent amendments to GST provisions have further intensified the compliance burden, rendering continuous adoption a persistent challenge for MSMEs. Against this backdrop, assessing the influence of GST on EoDB-related parameters, namely, the decline in paperwork, the time required for GST registration, return filing procedures, and the burden of dealing with multiple tax authorities, warrants systematic investigation. However, evidence from the literature indicates that medium enterprises tend to derive comparatively greater benefits from the GST structure than micro and small enterprises (Ghosh, 2021). Accordingly, this study evaluates the research question: What is the contribution of GST determinants towards the EoDB parameters of micro and small business enterprises? Thus, this research assesses the impact of GST on the EoDB of micro and small enterprises in the state of Goa. The outcomes of this study are expected to enhance tax authorities' understanding of how GST contributes to EoDB for micro and small enterprises. Furthermore, the findings will support the formulation of a more business-friendly regulatory framework for business organisations. Besides, this seems to be the first study to provide an empirical assessment of GST with EoDB criteria of micro and small enterprises.

## 2. Review of Literature

Prior studies document both the economic and administrative implications of indirect tax reforms. (Hadal & John, 2022) reported that VAT-induced price increases in the UAE led to reduced consumption, indicating consumer sensitivity to tax-driven price changes. From an administrative perspective, Deshmukh et al. (2022) observed that GST significantly streamlined the structure of consumption tax by subsuming multiple taxes; however, seamless input tax credit and complete IT-based compliance were only partially achieved. Similar administrative uncertainties—particularly relating to registration, refunds, and input tax calculations—were highlighted by (Mahangila & Anderson, 2017) in the tourism sector. In the Indian context, (Guna & Anuradha 2021) noted that multiple tax rates and procedural complexities differentiate GST from international best practices, emphasising the necessity for clearer regulations and improved awareness initiatives for MSMEs. Empirical findings further demonstrate that GST, while simplifying taxation, imposed substantial adjustment and compliance costs on small firms, especially during the initial phase (Lichchavi & Greeshma, 2021) Joseph and Kumary (2023) established strong linkages between GST awareness, administrative support, perceived fairness, and compliance behaviour, while Shacheendran V (2024) identified manpower shortages and inadequate IT infrastructure as critical early implementation challenges. Despite these constraints, recent studies highlight improved tax compliance under GST, driven by enhanced monitoring and transaction matching mechanisms (Xing et al., 2024). Consistency in tax rates and the adoption of a unified tax system have further strengthened revenue mobilisation and contributed to broader economic development (Bhalla et al., 2022; Singhal, Goyal, et al., 2022). In summary, the literature reveals that GST represents a structurally sound reform aimed at simplification, unification, and enhanced compliance. However, its impact on MSMEs is mixed, shaped by compliance costs, digital readiness, awareness levels, and administrative efficiency.

## 3. Methodology

### Research Approach and Latent Constructs

The research adopts a quantitative research approach to examine the impact of the selected GST-related determinants on the EoDB of micro and small enterprises in the state of Goa. For the purpose of evaluating the effect of GST, the researcher has observed some key features of the GST system grounded in the Optimal Taxation Theory (Bhalla, 2023). Change in the indirect tax structure (CITS), Digital Transformation (DT), GST Compliance System (GSTCS), and GST knowledge (GSTK) are the antecedent variables, while EoDB is considered the dependent variable.

### Sample Design

Researchers employed a survey approach to gather data. The sample represents the populations of North Goa and South Goa. The sample size was decided on the basis of official records held by the Directorate of Industries, Trade and Commerce, Government of Goa, Panaji.

### Data Collection and Sampling Method

A self-administered structured questionnaire based on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) was employed to collect the required primary data. The questionnaire was pilot tested to ensure clarity and reliability, and revisions were made before finalising the instrument. Stratified sampling was employed to ensure adequate representation of micro and small enterprises across the two districts. A total of 320 questionnaires were distributed, of which 245 were returned. After excluding 45 questionnaires due to incomplete responses, 200 valid responses from micro and small enterprises operating under the regular GST scheme were retained for analysis. Consistent with prior studies (Ghosh, 2021) and expert recommendations obtained during content validation, the study was restricted to only micro and small organisations.

### Sample Size

A final sample of 200 micro and small enterprises was considered representative of the population registered with the Directorate of Industries, Trade and Commerce, Government of Goa.

### Statistical Technique

Smart PLS 4.0 software was used to analyse the primary data.

**Hypotheses:**

**$H_1$:** Change in the indirect tax structure has a significant impact on the EoDB of micro and small firms.
**$H_2$:** There is a noteworthy influence of the GST Compliance system on the EoDB of micro and small firms.
**$H_3$:** Digital transformation significantly affects the EoDB of micro and small firms.
**$H_4$:** GST knowledge has a significant implication towards the EoDB of micro and small firms.

**4. Results**

**Table 1: Demographic Characteristics of Respondents**

| District | Frequency | Percentage |
|---|---|---|
| North Goa | 137 | 68.5 |
| South Goa | 63 | 31.5 |
| Gender | | |
| Male | 162 | 81.0 |
| Female | 38 | 19.0 |
| Age | | |
| 18-30 | 30 | 15.0 |
| 31-40 | 53 | 26.5 |
| 41-50 | 50 | 25.0 |
| 51-60 | 51 | 25.5 |
| 61 and above | 16 | 8.0 |
| Qualification | | |
| SSC | 23 | 11.5 |
| HSSC | 47 | 23.5 |
| Graduate | 83 | 41.5 |
| Post graduate | 28 | 14.0 |
| Ph.D | 2 | 1.0 |
| Other | 17 | 8.5 |
| Type | | |
| Micro | 155 | 77.5 |
| Small | 45 | 22.5 |
| Category | | |
| Manufacturing | 21 | 10.5 |
| Service | 30 | 15.0 |
| Trading | 133 | 66.5 |
| Service & trading | 16 | 8.0 |

*Source: Author's compilation using primary data.*

Table 1 shows the demographic data of the business operators. It indicates a higher concentration of firms in North Goa (68.5 per cent), which may be due to greater commercial activity in the region. The respondent pool is predominantly male (81 per cent), indicating limited female participation in MSME ownership. Further, most of the respondents fall within the 31–40 years (26.5 per cent), 41–50 years (25 per cent), and 51–60 years (25.5 per cent) age groups, indicating a largely middle-aged business population. Younger respondents aged 18–30 years constitute 15 per cent, while 8 per cent are aged 61 years and above. Regarding educational qualification, a noteworthy proportion of survey participants are graduates (41.5 per cent), followed by HSSC holders (23.5 per cent) and postgraduates (14 per cent). In terms of business size, micro enterprises dominate the sample (77.5 per cent), whereas small enterprises constitute 22 per cent. With respect to the nature of business activity, the majority operate in trading (66.5 per cent), followed by services (15 per cent), manufacturing (10.5 per cent), and combined service and trading activities (8 per cent).

**Results of Measurement Models**

The assessment of PLS SEM for the reflective model is broadly divided into two parts. Primarily, the measurement (outer) model is assessed, followed by the structural (inner) model. Outer model evaluation involves i) Testing the internal consistency, reliability and individual indicator reliability. Subsequently, Convergent Validity (CV) is assessed to determine whether the indicator statements adequately exhibit the convergence in measuring the respective antecedent (Hair, 2014). It is examined using the Average Variance Extracted (AVE), with a threshold of 0.50. Next, we determine the Discriminant Validity (DV) of the construct using i) The Fornell–Larcker criterion and ii) Heterotrait–Monotrait (HTMT) ratio, (Henseler et al., 2016).

**Table 2: Reliability and Validity Assessment**

| | Code | VIF | OL | CA | CR | AVE |
|---|---|---|---|---|---|---|
| CITS | CITS1 | 1.216 | 0.743 | 0.697 | 0.812 | 0.520 |
| | CITS2 | 1.369 | 0.708 | | | |
| | CITS3 | 1.373 | 0.746 | | | |
| | CITS4 | 1.299 | 0.686 | | | |
| DT | DT1 | 1.652 | 0.799 | 0.793 | 0.856 | 0.544 |
| | DT2 | 1.614 | 0.770 | | | |
| | DT3 | 1.763 | 0.783 | | | |
| | DT4 | 1.641 | 0.675 | | | |
| | DT5 | 1.465 | 0.647 | | | |
| GSTCS | GSTCS1 | 1.535 | 0.905 | 0.643 | 0.801 | 0.584 |
| | GSTCS2 | 1.546 | 0.812 | | | |
| | GSTCS3 | 1.104 | 0.523 | | | |
| GSTK | GSTK1 | 1.573 | 0.728 | 0.783 | 0.851 | 0.535 |
| | GSTK2 | 1.641 | 0.743 | | | |
| | GSTK3 | 1.477 | 0.763 | | | |
| | GSTK4 | 1.54 | 0.739 | | | |
| | GSTK5 | 1.288 | 0.679 | | | |
| EoDB | EODB1 | 2.037 | 0.848 | 0.771 | 0.852 | 0.592 |
| | EODB2 | 2.063 | 0.835 | | | |
| | EODB3 | 1.451 | 0.678 | | | |
| | EODB4 | 1.375 | 0.701 | | | |

*Source: Author's compilation using primary data.*

***Note**: CITS: Change in the Tax Structure, DT: Digital Transformation, GSTCS: GST Compliance System, GSTK: GST Knowledge & EoDB: Ease of Doing Business.*

Table 2 illustrates the results. All the VIF values are below 3, which indicates the absence of a multicollinearity issue. Secondly, the outer loadings (OL) of the indicators are estimated. Most indicators exhibit OL above the threshold of 0.70, which states that the respective construct explains a substantial proportion of the indicator variance. A small number of indicators show loadings between 0.50 and 0.70; however, the researchers have retained these indicators as deletion did not result in a meaningful increase in composite reliability or AVE (Hair et al., 2019). Further, Cronbach's Alpha (CA) values range from 0.643 to 0.793. Whereas Composite Reliability (CR) values range from 0.801 to 0.856, which are above the threshold of 0.70. These outcomes demonstrate acceptable levels of internal consistency. Lastly, the CV was checked using the AVE. All constructs report AVE values greater than 0.50. This indicates the achievement of adequate variance explanation by each variable in the model.

**Table 3: Fornell-Larcker Criteria**

| | CITS | GSTCS | DT | EoDB | GSTK |
|---|---|---|---|---|---|
| CITS | 0.721 | | | | |
| GSTCS | 0.303 | 0.764 | | | |
| DT | 0.637 | 0.444 | 0.738 | | |
| EoDB | 0.384 | 0.387 | 0.483 | 0.769 | |
| GSTK | 0.538 | 0.144 | 0.459 | 0.369 | 0.731 |

**Source:** *Author's compilation using primary data.*

Table 3 shows that DV under the Fornell–Larcker criterion is established for all constructs.

**Table 4: Heterotrait-Monotrait (HTMT) Ratio**

| | CITS | GSTCS | DT | EoDB | GSTK |
|---|---|---|---|---|---|
| CITS | | | | | |
| GSTCS | 0.396 | | | | |
| DT | 0.832 | 0.575 | | | |
| EoDB | 0.499 | 0.493 | 0.578 | | |
| GSTK | 0.721 | 0.234 | 0.573 | 0.461 | |

**Source:** *Author's compilation using primary data.*

As reported by Table 4, all HTMT values among the constructs—(CITS), (GSTCS), (DT), (EODB) and (GSTK), are below the threshold value of 0.85. Thereby, providing strong evidence that the DV using HTMT is established and the outer model does not involve any construct overlap or redundancy.

**Results of Structural Model**

Structural (Inner) model assessment involves examining the association between exogenous and endogenous variables. Figure 1 illustrates outer loadings and the path relationships that examine the determinants of EoDB under GST.

**Table 5: Hypothesis Testing**

| | Relationship | β | T Stats | P Value | Inference |
|---|---|---|---|---|---|
| $H_1$ | CITS->EoDB | 0.042 | 0.392 | 0.695 | Unsupported |
| $H_2$ | GSTCS->EoDB | 0.228 | 2.997 | 0.003 | Supported |
| $H_3$ | DT -> EoDB | 0.268 | 2.712 | 0.007 | Supported |
| $H_4$ | GSTK-> EoDB | 0.191 | 2.553 | 0.011 | Supported |

***Source:*** *Author's compilation using primary data*

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Table 5 exhibits the results of the structural model. The model was bootstrapped using 5,000 subsamples, with statistical significance tested at the 0.05 level.

The structural model explains 30.4% of the variance in EoDB ($R^2$ = 0.304), reflecting a moderate level of explanatory power within the context of micro and small enterprises operating in Goa.

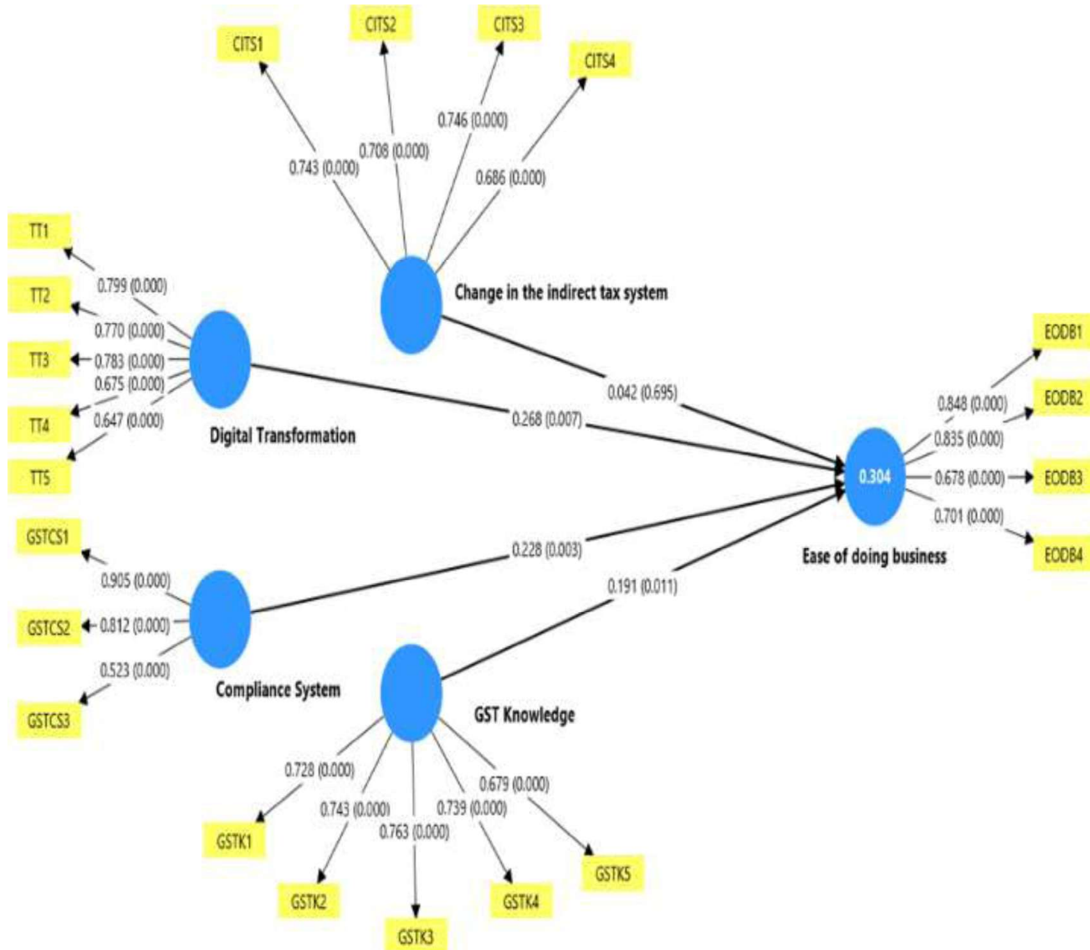


Figure 1: Research Model using Smart PLS SEM.

**Findings and Discussion of the Study**

CITS has a positive but statistically insignificant effect on EoDB with a path coefficient (β) of 0.042 and p value 0.695. This means that the mere shift to the GST regime does not, by itself, improve the business convenience for micro and small firms. Whereas, Digital Transformation has explained the strongest positive and statistically significant influence on EoDB with (β) 0.268 and p value 0.007. This finding underscores the critical part of digital initiatives under GST, such as online filing, e-payments, and reduced physical interface, in enhancing business efficiency. Additionally, the GST Compliance System has shown a (β) 0.228 and p value 0.003, exhibiting a significant positive effect on EoDB. This suggests that simplified procedures, system stability, and reduced compliance burden meaningfully improve the business environment for micro and small enterprises. GST Knowledge also shows a significant positive influence on EoDB with (β) of 0.191 and p value 0.011, indicating that better awareness and understanding of GST provisions enable firms to comply more efficiently and operate with greater ease.

The findings indicate that mere reforms or structural changes in the indirect tax regime are insufficient to enhance the ease of doing business for firms. These reforms must be complemented by the effective adoption and integration of digital platforms. In the prevailing business environment, Digital platforms play a pivotal role; therefore, tax authorities should prioritise strengthening the GST digital infrastructure, ensuring portal reliability, and minimising system-related disruptions. Simultaneously, efforts should be directed towards simplifying and stabilising GST compliance procedures and developing a user-friendly compliance framework aligned to the requirements of micro and small enterprises. Such measures would reduce firms' dependence on tax practitioners and, in turn, lower their compliance costs.

Furthermore, the study empirically establishes that GST knowledge significantly influences the EoDB. Accordingly, targeted GST awareness and capacity-building initiatives, such as training programmes, workshops, and sector-specific guidance, are essential to enhance firms' understanding and effective utilisation of GST provisions. Collectively, these interventions can translate GST reforms into tangible improvements in business convenience and sustainability, thereby advancing the broader objective of improving the EoDB for micro and small enterprises.

## Conclusion

This study analysed the impact of Change in indirect tax structure, GST compliance system, digital transformation, and GST knowledge on the EoDB among micro and small enterprises in Goa using PLS-SEM. The findings highlight that the structural tax reform alone is insufficient to improve business conditions.

In contrast, the GST compliance system, digital transformation, and GST knowledge have shown significant positive effects on EoDB, with digital transformation emerging as the most influential factor. The overall results reveal that simplified compliance procedures, effective digital infrastructure, and adequate understanding of GST provisions are critical in reducing administrative burden and enhancing business efficiency.

The study signifies that the success of GST in improving EoDB depends largely on implementing quality rather than policy design alone. Policy efforts should therefore focus on compliance simplification, strengthening digital systems, and enhancing GST awareness among micro and small enterprises.

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