



# GST and Digital Tax Transformation in India: Compliance, Revenue Mobilization, and Economic Formalization

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**Abstract** – One of the major milestones in the indirect tax system of India is the enactment of the Goods and Services Tax (GST) on July 1, 2017. It transformed the tax administration, compliance and economic governance landscape through digitalization. The present study discusses the possibilities of the technology-based governance systems to expedite digital taxation and drive economic transformation with GST. The study is descriptive and analytical research design and only secondary data from government documents from 2017 to 2025, peer-reviewed journals, reports of the GST Council, publications by the Ministry of Finance, bulletins by the RBI and Economic Surveys have been used. Analytical approaches (trend analysis, comparative analysis, percentage evaluation and interpretative assessment) were employed to examine the impact of GST on revenue mobilization, taxpayer expansion, the efficiency of compliance and economic formalization. The analysis revealed the significant impact of GST on enhancing accountability, transparency, and operational efficiency in India's taxation system by leveraging digital platforms such as online registration, electronic return filing, e-way bills, e-invoicing, automatic invoice matching, and centralized monitoring via the GST Network (GSTN). These measures decreased tax evasion, enhanced compliance, and promoted the adoption of digital accounting systems, online payments, and technology enabled financial processes by companies. The survey, however, also identifies some persistent challenges, particularly for Micro, Small and Medium-Sized Enterprises (MSMEs), which include cyber security risks, infrastructure limitations, technical portal disruptions, digital literacy and complexity in compliance.

**Keywords** - GST, Digital Taxation, Economic Transformation, E-Governance, Tax Compliance, Technological Integration.

## I. INTRODUCTION

### 1. Background of the Study

Taxation is one of the important sources of revenue to any government and also plays an important role in the economic development of any country. The Goods and Services Tax (GST) was not in place until before that, indirect taxation in India was very complicated with separate taxes levied by both the Central Government and the State Government [1]. To improve the tax system in the country, a fragmented tax regime has been laid out with levies such as Value Added Tax (VAT), Service Tax, Central Excise Duty, Entry Tax, Octroi, Luxury Tax and Octroi Duty (Central Sales Tax). This complicated tax regime posed several problems for businesses. Various tax rates, intricate processes, and a lot of paperwork made compliance more difficult and frequently caused corporate operations to be delayed. Compliance with tax laws and tax filing regulations were different across states, creating extra challenges for businesses that operate in multiple states [2]. Additionally, the previous tax system was mostly dependent on human documentation and physical verification, which decreased transparency and raised the risk of tax fraud and revenue leakage.

Indian government introduced GST on July 1, 2017 to achieve the goal of improving the tax regime and making it more efficient. The purpose of the GST was to create a single national market through the implementation of a single, unified tax structure in place of numerous indirect taxes. It is considered one of the biggest tax and economic reforms of the era of independent India. However, GST's impact does not only relate to tax reform. The impact of GST on the Indian tax and governance paradigm is one of the significant impacts of the digital revolution in India [3]. The technology-based compliance framework of the GST would enable businesses to register, file returns, upload invoices, pay taxes, and adhere to other compliance requirements online.

The advent of technologies such as e-way bills, e-invoicing, automated invoice matching and centralized monitoring via Goods and Services Tax Network (GSTN) [4] forced businesses to adopt digital accounting and electronic compliance systems. This led to the promotion of technology in business operations and governance processes and supported India's ambitious Digital India initiative. Over the years, GST has transformed the tax system in India to become more transparent and technologically advanced. It also helped to formalize the



economy, and to tax more businesses under the structured tax system. Therefore, the study aims at exploring the impact of GST on digital taxation and an economy shift in India using technology-based governance systems.

### Concept of Digital Taxation

Digital taxation refers to the use of e-services and digital technology in the administration and compliance of taxes. This includes online registration, electronic tax return filing, automated monitoring, creation of invoices and digital tax verification based on technology. In recent years, governments around the world have been transitioning towards more digital tax systems to enhance efficiency, reduce manual work and improve tax administration transparency [5]. Additionally, digital technologies make it easier for authorities to keep an eye on transactions and lessen the possibility of tax evasion.

Following the implementation of the GST, digital taxation in India greatly increased. In the largely technology-based compliance landscape set forth by the GST framework, the bulk of tax-related activities are dealt with online. Online GST registration, electronic return filing, e-way bill production, e-invoicing systems, online tax payment systems, automated invoice matching, digital compliance verification, and centralized monitoring through GSTN are some of the key digital elements included under GST.

The Goods and Services Tax Network (GSTN) is the technology backbone of the Goods and Services Tax regime, connecting taxpayers, banks and government agencies through a single online platform. Transaction tracking was enhanced and compliance monitoring was reinforced with the use of e-invoicing and e-way bill systems [6]. Digital taxation has also motivated the adoption of modern accounting and management technologies, such as ERP software, cloud accounting, online payment systems, and digital inventory management, among others. Consequently, digital taxes represents a transition from a traditional paper-based tax governance to a technology-led tax governance.

### GST and India's Digital Economy

GST was introduced at the same time as India's shift to a more digital economy. Government initiatives such as the Digital India campaign, enhanced internet connectivity, financial inclusion initiatives and promotion of digital payments created a conducive atmosphere for the use of technology in taxation. GST helped businesses digitalize compliance processes, as all the registration, filing of returns, uploading of invoices and payment of taxes were conducted online through the GSTN site [7]. This improved communication with the tax authorities and minimized paper papers. The introduction of the GST has

ushered in several digital solutions that have revolutionized India's tax landscape.

The introduction of GST brought about a number of technologically advanced procedures that profoundly changed India's framework for tax administration and compliance. The GST Network (GSTN) platform enabled online registration, return filing and uploading of invoices and electronic tax payments, simplifying tax filing processes and making them more transparent and centralised. The e-way bill system eliminated the transportation delays, simplified the logistics operations and mitigated the risk of tax evasion in the track and trace of commodity movement between the States [8]. Likewise, the e-invoicing system enhanced tax reconciliation procedures and reduced the likelihood of fraudulent billing practices by providing real-time reporting and verification of transactions.

Furthermore, the systematic compliance verification system increased the accuracy of invoice verification and prevented tax credit claims from being fraudulent. Tax authorities have also been employing data analytics and artificial intelligence (AI) enabled monitoring systems to identify suspect transactions, trends of compliance and to better detect tax fraud [9]. These digital initiatives have enhanced accountability, operational efficiency, transparency, and promoted a technology-enabled governance framework in India's tax administration.

The adoption of these digital tools, such as online tools, was a push to make businesses more tech-based and organized. To meet the requirements of the GST, a number of businesses started using online transaction services and computer accounting software. Consequently, GST was crucial in promoting formal business activities and bolstering India's digital economy.

### 2. Problem Statement

The shift from a traditional indirect tax regime to the digitally integrated Goods and Services Tax (GST) introduced opportunities and challenges for businesses and tax collectors in India. Many firms nevertheless struggled to adjust to new technology, deal with complicated compliance regulations, and deal with constraints in digital infrastructure, even though GST enhanced transparency, compliance monitoring, and tax administration using digital tools. Due to their lack of readiness for ongoing online compliance procedures, small and medium-sized businesses in particular had operational challenges in the early phases of GST implementation. It was exacerbated by the need for regular changes to return filing systems, reliance on internet and lack of digital skills for small businesses. The digital transition under the Goods and Services Tax (GST) continues to be affected by various



challenges, such as cyber security risks, technical issues with the GST system, and increasing compliance costs. This makes it essential to carefully review the potential of GST to evolve into a digital tax and to create a technologically enabled governance framework to transform India's economy.

### 3. Research Gap

There have been many studies which have explored the GST impact on tax structure and its economic implications for India. Most of these studies focus mainly on the macroeconomic impacts of GST, indirect tax reforms and revenue generation aspects. Nevertheless, there isn't much study that focuses on GST as a catalyst for digital transformation and electronic governance in India. Literature now available does not discuss as much how technologies such as GSTN, e-invoicing, e-way bills, automated compliance tools and online filing systems changed the business processes and enhanced governance. Moreover, only a few studies comprehensively examine the pros and cons of the digital transformation through GST for SMEs, the cyber security issue, digital literacy and infrastructure limitations.

### 4. Objectives of the Study:

The following are the goals of the study:

- To look into the impact of GST on technology enabled solutions and digital taxation in India.
- To understand the impact of the digital revolution of the GST on economic formalization, tax transparency and tax compliance effectiveness.
- To identify the key challenges and future opportunities in the digital transformation of India in the context of GST.

### 5. Research Questions

The following questions are the focus of this study:

- How has GST helped to digitally transform the taxation and compliance process in India?
- How has GST influenced the formalization of the economy, tax transparency and effectiveness of tax compliance?
- What are the major challenges and future opportunities in India's digital transformation in the context of GST?

### 6. Scope of the Study

This study looks at how the Goods and Services Tax (GST) encourages digital taxation and uses technology-driven administration to change India's economy. The key digital processes of GST that this study primarily focuses on are the GSTN platform, e-invoicing systems, e-way bills, online return filing, automated compliance monitoring and the integration of digital payments. It also explores the growth of taxpayer registration, enhancement

of revenue transparency, implementation of digital accounting practices, and transformation of tax administration through technology. This descriptive and analytical study has incorporated secondary data collected from various published reports from the GST council, publications of the ministry of finance, RBI bulletins, Economic Surveys, government papers, research journals and articles from the academia published during the period 2017 to 2025.

### 7. Significance of the Study

The study is significant in India for many reasons, including the fact that the Goods and Services Tax (GST) is one of the most sweeping tax reforms implemented using technology, fundamentally changing how taxes are administered. The study provides valuable insights on the potential of digital tax approaches to enhance economic formalization, administrative efficiency, transparency, and compliance monitoring. The study offers a detailed analysis of the impact of digital taxes on governance and economic functioning in a systematic manner, which is beneficial for policymakers, researchers, tax authorities, business organisations and students in commerce, management and economics departments. The findings can inform government institutions about the pros and cons of technology-driven tax administration and digital compliance initiatives and their future prospects.

### 8. Conceptual Framework of the Study

Figure 1 depicts the study's conceptual structure.

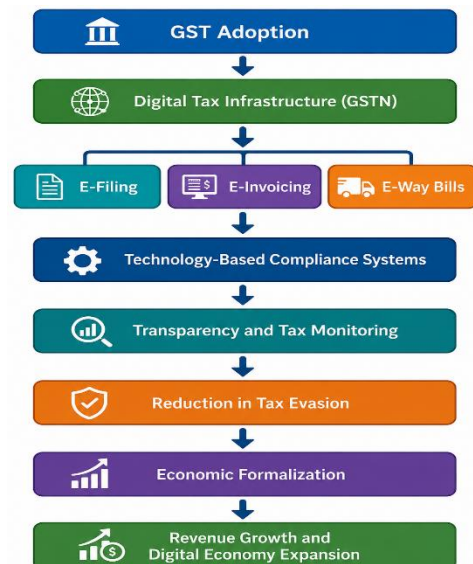


Figure 1: Conceptual Framework of the Study

## II. REVIEW OF LITERATURE

Because of its effects on India's tax system and governance, the introduction of the Goods and Services



Tax (GST) has attracted a lot of interest from academics, economists, legislators, and tax officials. The impact of Goods and Services Tax (GST) on the various aspects of tax transparency, tax compliance efficiency, economic formalization and digital transformation have been studied by many of the studies conducted in Indian context.

Garg (2018) claims that the implementation of GST streamlined India's indirect tax system by substituting a single system for many taxes. The study concludes that this adjustment made business activities more effective and facilitated trade across states and reduced the multiplicative impact of taxes. The study also found that the GST's usage of digital compliance technologies increased the transparency of the tax administration procedure. Sharma (2021) studied the impact of GST on formalisation of the economy in the period 2017-2020. The results showed that the GST was a success in terms of the companies' willingness to adopt online compliance and digital accounting. The study's results revealed that the GST had a significant impact on the increase in the number of enterprises in the formal sector. However, it also revealed a difficulty in the early days of adoption, with small businesses struggling with the new technology solutions to comply.

The study by Rao and Mehta (2022) on the role played by the Goods and Services Tax Network's (GSTN) in bringing about a change in the tax structure of India is of great significance. According to the paper, GSTN set up a unified, online system which integrated banks, government and the taxpayers. The researchers found that automated invoice match and e-file of returns helped to improve compliance monitoring and reduce the risk of tax evasion. Patil (2019), digital tax systems provide greater administrative transparency and reduces reliance on manual processes. The study identified the importance of real-time monitoring tools and electronic audit trails to increase accountability and to organise and streamline tax administration. Kumar and Singh (2020) have explored the impact of e-way bill system on transportation and logistics in the context of GST. Their results indicate that digital product traceability of product movement boosted the efficiency of the supply chain and reduced transport delays. The study found that the e-way bill system led to better monitoring of transactions and reduced the amount of black money.

Bhatia (2021) has discussed about the role of e-invoicing in the GST compliance. The study shows that e-invoicing reduced the fraudulent billing and improved the invoice authentication. Also, automated invoice reconciliation facilitated the detection of bogus claims of ITC by the tax authorities. Another significant aspect of the GST on the small and medium enterprises (MSMEs) is also discussed

in the literature. While GST helped in making the compliance and transparency more visible, the implementation of digital systems was found to be challenging for many MSMEs by Devi et al. (2023). Some of the challenges for small businesses were changing procedure requirements, no technology infrastructure and no digital skills. Reddy (2022) investigated how digital business transformation and GST are related. The study revealed that GST influenced the companies to adopt ERP software, Cloud accounting systems, and Digital payment systems, to meet online tax procedures. According to the study, GST hastened India's transition to a business environment that is more reliant on technology.

Arora et al. (2021) found that GST raised the government's revenue collection through better digital monitoring, and expanded the tax base. The researchers also highlighted the growing importance of using data analytics and compliance monitoring to detect suspicious transactions to prevent tax evasion. Srinivas (2024) discussed the role of Artificial Intelligence & Predictive Analytics in the Administration of GST. The report suggests that AI powered solutions can be used to improve risk identification, compliance monitoring and fraud monitoring. The study further suggests that if the most advanced technologies, such as predictive analytics and machine learning, were incorporated into the Indian digital taxation system, it could be further enhanced.

### 1. Research Gap

Although there is a considerable amount of literature available which discusses the taxing and the economic impact of Goods and Services Tax (GST) in India, very few studies have explicitly focused on it as a catalyst for digital transformation and technology driven governance. Though digital compliance systems, GSTN integration, e-invoicing systems, automated tax monitoring systems, and the overall change in the governance structure facilitated by technology integration under the GST are given minimal attention, most of the existing works focus on areas such as revenue collection, indirect tax reforms, macroeconomic impact, and business performance. To fill this knowledge gap, the present study delves into the various dimensions of GST in relation to digital taxation, enhancing the transparency of governance, the efficiency of tax compliance, and facilitating India's transition towards a technologically advanced and digitally integrated economy.

## III. RESEARCH METHODOLOGY

### 1. Research Design

This study has adopted descriptive and analytical approach to understand the relevance of GST in fostering digital taxation and transforming the Indian economy through



technology in Government. The various digital processes that have been initiated under GST, such as e-invoicing, e-way bills, e-return filing and connection with GSTN, are described. The analytical method is used to evaluate the effect these digital systems have on the growth of taxpayers, the formalisation of the economy, tax transparency and the efficiency of tax compliance. The study also assesses the primary prospects and practical challenges arising due to the transformation of India towards a digital economy vis-à-vis the introduction of the Goods and Services Tax (GST).

## 2. Nature of the Study

The study is descriptive in nature as it describes the changes in the entire tax regime of India after the inception of the Goods and Services Tax (GST) and the impact of digital technology on the tax administration and compliance. The study is also analytical as it is used to analyse trends, growth patterns and impacts of digital tax systems on economic formalisation and effectiveness of governance. The main research question was: How did the GST impact on the deployment of digital technologies in Government organisations and businesses?

## 3. Sources of Data

Current study is based on the secondary data collected from a lot of trusted and recognized sources related to the GST and digital taxation. The pertinent information, statistical records and analytical data have been obtained from various sources such as the reports of the GST Council, publications of the Ministry of Finance, RBI bulletins, Economic Surveys, government publications, reports issued by the Goods & Service Tax Network, research journals, books, scholarly articles, online databases and official government websites. The study primarily focuses on studies, publications and statistics published in the past few years (2017-2025) to understand the effect of the GST on promoting the cause of digital taxation, technology-based compliance and governance reform in India.

## 4. Data Collection Method

The information for this study was obtained from secondary information sources such as government document, annual reports, journal articles, policy papers and scholarly research. Information about GST revenue, taxpayer registration, e-invoicing, digital compliance and technology usage was gathered and analyzed to gain insights into the impact of GST on digital taxation and governance in India. Collected data was organized for analyzing the influence of GST on the system of digital taxation and governance.

## 5. Tools and Techniques Used for Analysis

The study employs different analytical tools and techniques to methodologically analyze the impact of GST on digital taxation and governance reforms in India. The percentage analysis was used to monitor changes in time for the indicators related to GST, such as the number of taxpayers registered, digital compliance, and the number of taxpayers filing online. For the entire timeframe of the study, long-term trends of GST income, adoption of technology, and digital taxation systems were analysed with the help of trend analysis.

## 6. Period of the Study

The study focuses on the impact of the GST after its implementation in India from 2017 to 2025 and its effect on the digital transformation and the economic impact. This period was chosen as it was during this period that some major changes in the digital landscape and compliance systems were implemented for the rollout of GST on July, 2017.

## 7. Variables of the Study

In the present study, various GST-related factors like adoption of the GST regime, GSTN platform, e-invoicing system, e-way bill mechanism, digital compliance tools, and online tax filing system were considered as the independent variables. These are the key digital initiatives which have been undertaken as part of the GST framework to modernise India's tax and governance processes. The results in this study reflect the broader impact of digital taxation regimes on administrative performance and economic transformation, and therefore, tax transparency, tax compliance efficiency, revenue growth, economic formalization and governance efficiency were considered dependent variables.

## 8. Limitations of the Study

Limitations of the present investigation may impact the scope and interpretation of the findings of this investigation. The validity and dependability of these sources is vital to the accuracy of all the study, as secondary data is obtained from published reports, official papers, journals and other publicly available sources. The analysis is confined to India and does not include any comparison with the GST regime of other countries or any comparison with any digital taxation regime.

# III. DATA ANALYSIS AND INTERPRETATION

## 1. Growth of GST Revenue Collection in India

One of the key indicators of the success of GST's digital transformation is that revenue collection has been improving consistently since the introduction of the technology-based compliance systems. E-invoicing, Return

filing online, automated matching of the invoices and real-time monitoring of transactions increased transparency and tax administration. In table 1, there is an overall trend of rising GST income, after the introduction of digital compliance technology under the framework of GST. The economy's disruptions due to the COVID-19 pandemic caused a slight decline in revenues in 2020 but GST revenues rose sharply in the years since then, as shown in figure 2.

Table 1: Growth of GST Revenue Collection in India

| Year | Average Monthly GST Collection (₹ Crore) | Growth Rate (%) |
|------|------------------------------------------|-----------------|
| 2018 | 89,700                                   | —               |
| 2019 | 98,100                                   | 9.36            |
| 2020 | 95,300                                   | -2.85           |
| 2021 | 1,11,000                                 | 16.47           |
| 2022 | 1,49,000                                 | 34.23           |
| 2023 | 1,68,000                                 | 12.75           |
| 2024 | 1,82,000                                 | 8.33            |
| 2025 | 1,95,000                                 | 7.14            |

Source: Compiled from GST Council Reports and Ministry of Finance Publications (2018–2025).

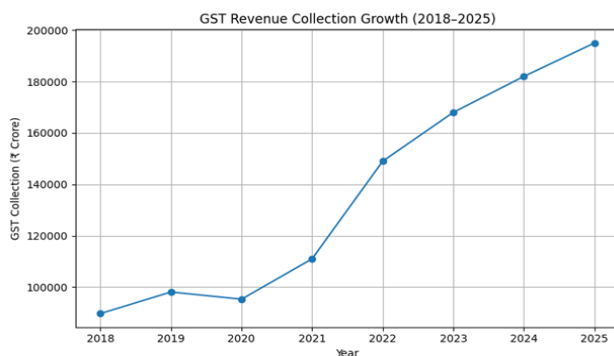


Figure 2: Growth of GST Revenue Collection in India

This growth is driven by several factors such as various enhancements to compliance monitoring systems, increasing adoption of the GSTN system, automated invoice matching, and strengthening of e-invoicing system usage and digital verification and tracking. These technologically sophisticated programs brought transparency, lowered potential for tax evasion and boosted overall effectiveness of tax administration. According to the results, the GST-enabled digital transformation has been crucial in boosting revenue generation, enhancing compliance management, and encouraging more transparency in India's tax system.

## 2. Growth in GST Taxpayer Registration

The ease with which businesses could enter into the official tax system was made easier with the availability of online GST registration. After introducing digital taxation system under GST, it can be observed in case of Table 2, that number of tax registrants under GST has been increasing in consistent manner. The online registration process favored enterprises located in different places to register under the tax framework, simplified the registration process, and reduced the administrative complexity. This rise in tax payer registration can be attributed to the economic formalization, accessibility of the internet and the expansion of organized commercial activities in the country as shown in figure 3.

Table 2: Growth of GST Registered Taxpayers

| Year | Number of Registered Taxpayers (Crore) |
|------|----------------------------------------|
| 2018 | 1.05                                   |
| 2019 | 1.14                                   |
| 2020 | 1.24                                   |
| 2021 | 1.31                                   |
| 2022 | 1.39                                   |
| 2023 | 1.45                                   |
| 2024 | 1.51                                   |

Source: GSTN Annual Reports and GST Registration Statistics (2018–2025)

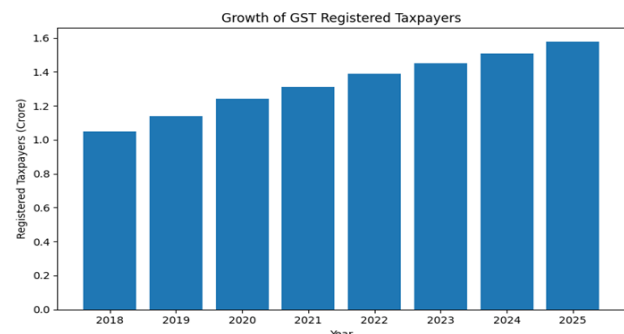


Figure 3: Growth of GST Registered Taxpayers

Further, the formalization of the tax regime through the GST brought with it a host of regulatory requirements to be met in digital form, incentivizing many informal sector enterprises to join the formal tax regime, thereby enhancing the integrity of the overall tax administration framework and transparency and ease of compliance for the informal sector.

## 3. Impact of E-Invoicing on Tax Compliance

The introduction of e-invoicing under GST helped improve the verification process and make the compliance monitoring more effective. Table 3 demonstrates the



significant improvement in tax compliance that ensued with the implementation of e-invoicing under the framework of the GST. Table 3 illustrates the substantial benefit of e-invoicing under the framework of the GST in terms of improved tax compliance, with real-time transaction reporting and automated invoice verification.

Table 3: Impact of E-Invoicing System

| Parameter                 | Before E-Invoicing | After E-Invoicing     |
|---------------------------|--------------------|-----------------------|
| Fake Invoice Cases        | High               | Reduced Significantly |
| Invoice Verification Time | Lengthy            | Real Time             |
| Compliance Accuracy       | Moderate           | High                  |
| Input Tax Credit Fraud    | Frequent           | Controlled            |
| Manual Intervention       | High               | Low                   |

Source: Compiled from GST compliance reports and secondary research studies.

The findings reveal that e-invoicing enhanced the effectiveness of compliance, reduced the cases of false input tax credit claims, reduced cases of fake billing, and the transparency in the tax administration system. Furthermore, automated invoice matching software reduced manual verification processes, making business operations more efficient. Also, the automated matching of invoices reduced the manual verification process, making business operations more efficient for both businesses and tax authorities. These compliance solutions have introduced new technology that have created a more open and accountable digital taxation environment in India, enhanced transaction monitoring and better reporting of taxes.

#### 4. Impact of GST on Digital Business Transformation

GST urged the businesses to adopt the technology based operating procedures and digital accounting systems. Table 4 shows that there was a significant increase in using digital technology after the introduction of GST. Businesses are more and more adopting ERP systems, cloud accounting software, digital payment systems and online compliance platforms to meet the requirements of the GST. The results showed that GST provided impetus to businesses for their transformation to digital business and to update their systems.

Table 4: Impact of GST on Digital Business Transformation

| Digital Technology      | Adoption Before GST (%) | Adoption After GST (%) |
|-------------------------|-------------------------|------------------------|
| ERP Software            | 28                      | 67                     |
| Cloud Accounting        | 22                      | 61                     |
| Online Tax Filing       | 35                      | 95                     |
| Digital Payment Systems | 40                      | 88                     |
| E-Invoicing Systems     | 10                      | 84                     |

Source: RBI Digital Economy Reports and Industry Surveys

#### 5. Role of GSTN in Digital Governance

The Goods and Services Tax Network (GSTN) is the technological backbone of the Goods and Services Tax (GST), which links banks, government departments and taxpayers through a single online platform, as illustrated in figure 4. GSTN services such as online taxpayer registration, digital return filing, e-payment integration, invoice data management, automated compliance monitoring, AI-based fraud detection, and data analytics and reporting are just some of the major functions performed by GSTN. This has enhanced the openness and coordination of tax administration between tax authorities. The one-stop digital platform, with its advanced data analytics and digital monitoring capabilities, reduced paperwork, eliminated processing delays, enhanced governance efficiency and enabled officials to identify suspicious activity and compliance issues.

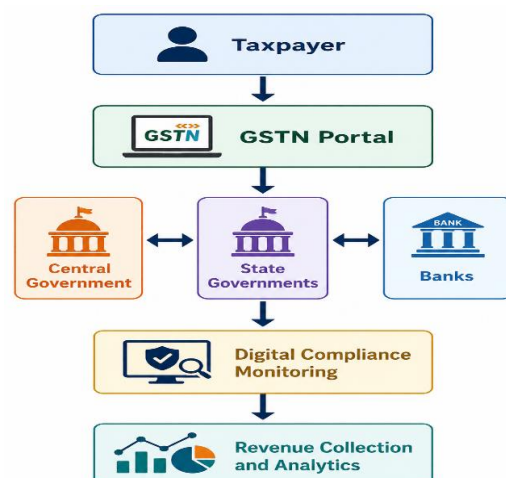


Figure 4: GSTN System Structure



## 6. Challenges Associated with GST Digital Transformation

Businesses still confront some operational and technological difficulties even if GST brought about a number of digital benefits. The data in Table 5 indicate that compliance is a major challenge and problems with the uptake of technology are significant obstacles for MSMEs.

Low-income businesses were at a disadvantage because of the sudden shifts in the process of their returns and the use of digital tools. Moreover, technical issues on the portal and lack of digital literacy have an adverse effect on the effectiveness of the digital transition of the GST. Due to the digital management of vast amounts of financial and compliance data, cyber security issues continue to be a significant problem.

Table 5: Major Challenges in GST Digital Transformation

| Challenges                     | Impact Level |
|--------------------------------|--------------|
| Compliance Burden on MSMEs     | High         |
| Frequent Procedural Changes    | High         |
| Technical Errors in GST Portal | Moderate     |
| Lack of Digital Literacy       | High         |
| Cyber security Risks           | Moderate     |
| Internet Connectivity Issues   | Moderate     |
| Complex Return Filing Process  | High         |

Source: Business surveys, MSME reports, and GST related research studies.

## 7. Comparative Analysis: Pre-GST and Post-GST Taxation System

The contrast of table 6 shows that the Indian tax system was once a manual and decentralized system, but is now connected and centralized by GST. The post-GST regime significantly enhanced tax administration transparency, compliance monitoring, operational efficiency, and digital governance, thanks to its streamlined tax administration and strengthened stakeholder relationships. The post-GST regime streamlined tax administration and fostered collaboration between stakeholders, leading to significant improvements in transparency, compliance monitoring, operational efficiency, and digital governance.

Table 6: Comparison between Pre-GST and Post-GST Systems

| Parameters          | Pre-GST System   | Post-GST System  |
|---------------------|------------------|------------------|
| Tax Structure       | Multiple Taxes   | Unified Tax      |
| Compliance Mode     | Manual & Offline | Digital & Online |
| Transparency        | Limited          | High             |
| Invoice Monitoring  | Weak             | Automated        |
| Tax Filing          | Paper-Based      | Online Filing    |
| Interstate Trade    | Complex          | Simplified       |
| Tax Evasion Control | Moderate         | Strong           |
| Data Analytics      | Limited          | Advanced         |

Source: Comparative analysis based on GST policy reports and secondary data.

## 8. Trend Analysis of Digital Taxation Growth

Table 7 illustrates the impact of the increase in digital taxation systems under GST on digital economic growth in India, such as boosting digital transactions, the use of data analytics in the administration of taxes, strengthening online compliance systems, expansion of e-invoicing, enabling AI-based compliance monitoring, and encouraging wider adoption of accounting software. These developments strengthened the fraud detection and compliance monitoring capabilities, boosted administration effectiveness and transparency.

Table 7: Trend Analysis of Digital Taxation Growth

| Year | Online Filing (%) | E-Invoicing Usage (%) | Digital Payments (%) |
|------|-------------------|-----------------------|----------------------|
| 2018 | 42                | 12                    | 38                   |
| 2019 | 51                | 18                    | 45                   |
| 2020 | 63                | 30                    | 58                   |
| 2021 | 74                | 48                    | 67                   |
| 2022 | 82                | 61                    | 76                   |
| 2023 | 89                | 73                    | 84                   |
| 2024 | 93                | 81                    | 89                   |
| 2025 | 97                | 88                    | 94                   |

Source: Compiled from GSTN reports, RBI digital payment statistics, and Ministry of Finance publications.

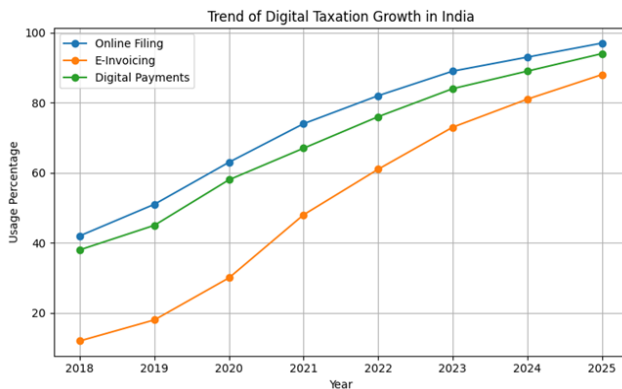


Figure 5: Trend Analysis of Digital Taxation Growth

In general, technology-based compliance measures and digital taxation systems have continued to grow after the introduction of GST (Figure 5). The findings suggest that the impetus for the use of digital technology and new governance tools by government bodies and corporations was driven by GST.

#### 9. Future Prospects of GST Digital Transformation

Future changes in the GST are expected to focus more on automation, transparency and intelligent compliance technologies. The latest technologies can be employed to achieve even better fraud detection, better services for taxpayers, improved governance, and more effective compliance monitoring. These steps will likely enhance the robustness of India's digital tax framework and contribute to the nation's overall administrative efficiency and economic modernization. Figure 6 predicts that the GST digital transformation will incorporate more cutting-edge technologies in the future, including:

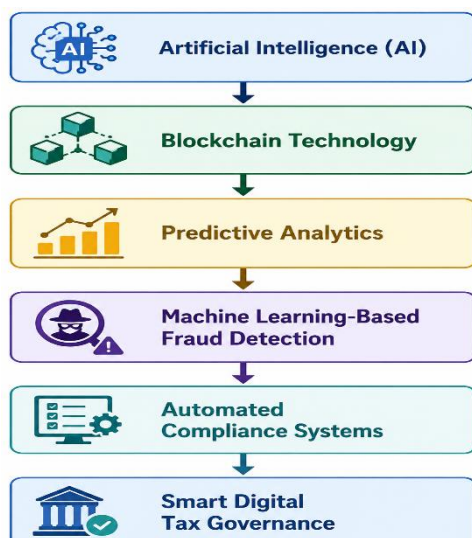


Figure 6: Future Prospects of GST Digital Transformation

## IV. FINDINGS, SUGGESTIONS, AND CONCLUSION

### Findings

The study shows that the digital integration and technology-based strategies of compliance by GST have profoundly altered the tax landscape in India. With the introduction of the Goods and Services Tax (GST), online taxing processes were encouraged and collaboration between government and business was improved.

GST has paved the way for India's taxing system to become digital, with online return filing, e-invoicing, and automated compliance monitoring processes. These digital platforms boosted tax registration, reduced tax evasion and abusive billing, and increased transparency in taxation administration, all while encouraging businesses to join the formal economy.

To meet GST requirements, the study also found that businesses were adopting digital payment options, cloud accounting platforms, and ERP. The GSTN technology enabled a new way of monitoring tax related activities from a central area, across the entire country, and enhanced the cooperation between the tax authorities at the federal and state level.

Additionally, fraud detection and compliance verification procedures were enhanced using AI-based compliance systems and automated invoice matching. The shift to digital taxation greatly decreased reliance on manual verification processes and paper-based paperwork, improving administrative effectiveness and governance procedures.

Despite all the above, the operational challenges facing the MSMEs remained, as compliance is complex, getting accustomed to new technology is tough and they lack digital literacy. Technical glitches at the GST portal and cyber security was another issue that affected the smooth functioning of the digital tax system. On the whole, GST did a lot of good in helping India transition to a digitalized and technological governance system and an economy.

### Suggestions

To lessen the cost of compliance, especially for MSMEs and small taxpayers, the government should further streamline the GST return filing process. To increase digital literacy and assist companies in better understanding online compliance systems, regular awareness campaigns and digital training activities should be carried out.

To minimize the technical issues, improve system stability and provide a smoother user experience, the GST



infrastructure needs to be continuously improved. Financial and technological support should also be provided to MSMEs to facilitate them in adopting online operational tools, compliance software and online accounting applications.

To safeguard taxpayer data and lower the risks associated with digital fraud and data breaches, stronger cyber security measures are crucial. To enhance fraud detection and fortify compliance monitoring systems, the government should also use cutting-edge technology like artificial intelligence, predictive analytics, and machine learning.

A awareness campaign about digital taxes should also be extended to rural and semi-urban areas, where companies are still not sufficiently using new technologies. Future amendments to the GST should focus on greater automation, streamlining and convenience through technology to enhance efficiency and the taxpayer experience.

## V. CONCLUSION

The Goods and Services Tax (GST) is one of the most important tax and governance reforms in India. Apart from the indirect tax structure being simplified, GST has brought a significant revolution in the way indirect taxes are administered; including digital systems and technology-driven compliance procedures. The study found that GST made several strides in the field of digital taxation through various platforms and technologies, such as the integration with GSTN, electronic invoices, e-way bills, online filing of returns, and automated compliance checks. These digital initiatives boosted tax administration efficiency, decreased tax evasion, reinforced compliance monitoring, and increased transparency. GST also promoted the use of online payment systems, cloud-based software, and digital accounting systems, which helped facilitate the broader digital transformation of company operations and governance. To support the broader digital transformation of company operations and governance practices in India, GST also encouraged the adoption of online payment systems, cloud-based software, and digital accounting systems. However, there were also several challenges that were identified for the digital transformation that would be achieved through GST, including complexity of compliance for MSMEs, technology adaption issues, technical issues with GST and concerns on cyber security. These issues need to be addressed to ensure equitable and sustainable expansion of digital taxes.

## Future Scope

Future changes to the GST may increasingly adopt AI, block chain, predictive analytics, and machine learning to enhance fraud detection, automate compliance processes, and improve governance. India's long-term digital economic modernization and effective tax administration can be further supported by growing its digital infrastructure, cyber security measures, and taxpayer awareness initiatives.

## REFERENCES

1. Garg, G. (2018). Impact of GST on Indian economy. *Journal of Taxation Studies*, 12(3), 45–52.
2. Kumar, R., & Gupta, S. (2020). Digital transformation through GSTN in India. *International Journal of Commerce and Management*, 8(2), 101–110.
3. Sharma, P. (2021). GST and digital compliance in India. *Indian Journal of Finance*, 15(4), 88–95.
4. Patil, A. (2019). E-governance and tax administration in India. *Asian Journal of Economic Policy*, 9(1), 67–79.
5. Rao, V., & Mehta, S. (2022). Technology-driven taxation systems and economic transparency. *International Review of Public Finance*, 14(2), 120–138.
6. Singh, R. (2020). Digital taxation and compliance management. *Journal of Financial Governance*, 11(3), 55–71.
7. Bhatia, S., & Arora, P. (2021). GST reforms and economic formalization in India. *Indian Journal of Economics and Business*, 20(2), 88–104.
8. Chandra, V. (2023). E-invoicing systems and digital compliance transformation under GST. *International Journal of Digital Governance*, 6(1), 55–71.
9. Dutta, M., & Roy, S. (2022). Role of GST in strengthening India's digital economy. *South Asian Journal of Business Studies*, 11(4), 211–228.
10. Gupta, N., & Sharma, R. (2021). Tax transparency and digital governance under GST regime. *Journal of Public Administration and Policy Research*, 13(2), 44–60.
11. Iyer, K. (2020). GSTN and technological modernization of tax administration in India. *Journal of Economic Reforms*, 18(3), 120–135.
12. Joshi, A., & Menon, R. (2024). Artificial intelligence and future taxation systems in India. *International Journal of Emerging Technologies in Governance*, 9(1), 77–95.
13. Kannan, S. (2019). Digital payment systems and GST compliance efficiency. *Asian Economic Review*, 61(2), 98–113.
14. Mehra, P., & Soni, D. (2023). Impact of GST digitalization on MSMEs in India. *Journal of Small Business and Enterprise Development*, 30(5), 455–472.



15. Nair, V. (2021). Online tax compliance systems and taxpayer behavior in India. *International Journal of Public Finance*, 14(4), 201–219.
16. Patel, H., & Desai, R. (2022). E-way bill mechanism and logistics efficiency under GST. *Indian Journal of Transport Management*, 46(3), 89–103.
17. Ramesh, K. (2020). GST and economic integration in India. *Journal of Commerce and Accounting Research*, 9(2), 31–47.
18. Sahoo, B., & Tripathi, M. (2023). Blockchain applications in taxation and digital governance. *Journal of Digital Innovation and Policy*, 5(2), 66–84.
19. Tiwari, P. (2022). Revenue growth trends under GST administration in India. *International Journal of Financial Studies*, 10(3), 145–162.
20. Verma, S., & Kulkarni, A. (2024). Predictive analytics and intelligent compliance systems in GST administration. *Journal of Digital Public Administration*, 7(1), 92–109.
21. Ministry of Finance. (2024). *Annual economic and revenue reports*. Government of India.
22. Reserve Bank of India. (2024). *RBI annual report 2023–24*. Reserve Bank of India.
23. GST Council. (2024). *GST implementation and compliance reports*. Government of India.
24. Government of India. (2024). *Economic survey 2023–24*. Ministry of Finance.
25. Goods and Services Tax Network. (2024). *GSTN operational statistics and compliance reports*. GSTN.