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Growth Trends of GST Revenue in India: An Analytical Study

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Abstract

The Goods and Services Tax (GST), implemented in India in July 2017, represents one of the most significant indirect tax reforms in the country's fiscal history. This study analyses GST performance from 2017–18 to 2024–25 using secondary data on total returns filed, refund disbursement patterns, and tax collections under CGST, SGST, IGST, and Compensation Cess. The findings indicate a consistent increase in cumulative return filings, reaching nearly 1,650 million filings by FY 2025–26 (Q1), reflecting improved tax compliance and digital adoption. GST collections grew from ₹7.40 lakh crore in 2017–18 to ₹22.08 lakh crore in 2024–25, demonstrating strong revenue buoyancy despite the temporary contraction during the COVID-19 period (2020–21). Refund disbursements, especially under IGST, also increased significantly following automation reforms introduced in 2019, indicating administrative efficiency. The study concludes that GST has strengthened fiscal transparency, enhanced compliance, and improved revenue stability. However, refund rationalization and further digital integration remain key areas for policy focus. The research contributes to understanding GST's operational performance and its macroeconomic implications.

1. Introduction

The introduction of the Goods and Services Tax (GST) on 1 July 2017 marked a paradigm shift in India's indirect taxation system. GST replaced multiple cascading taxes levied by the Centre and States, integrating them into a unified tax structure. The reform aimed to create a common national market, eliminate tax-on-tax effects, and improve compliance through technology-driven administration.

Since its inception, GST has undergone structural and procedural refinements. Key performance indicators such as return filings, tax collections, and refund disbursement provide measurable evidence of its operational efficiency. The

implementation of automation in refund processing in September 2019 represents a major technological milestone in improving taxpayer services.

The COVID-19 pandemic posed a temporary setback in FY 2020–21, impacting collections and compliance levels. However, post-pandemic recovery shows robust growth trends in revenue mobilization and filing compliance. IGST collections dominate GST revenue, reflecting India's strong inter-state and import trade framework.

This study evaluates GST performance using empirical data from 2017–2025. By analysing trends in returns filed, refunds processed, and tax collections, the research attempts to assess the maturity and stability of the GST system in India. The findings are relevant for policymakers, researchers, and tax administrators aiming to strengthen fiscal governance and digital tax administration frameworks.

2. About GST in India

The Goods and Services Tax (GST) is a destination-based indirect tax implemented in India on 1 July 2017. It subsumed multiple indirect taxes such as VAT, Service Tax, Excise Duty, and Octroi into a unified tax system.

GST operates under a dual model:

- **CGST** – Central Goods and Services Tax
- **SGST** – State Goods and Services Tax
- **IGST** – Integrated Goods and Services Tax (inter-state transactions)
- **Compensation Cess** – Levied on luxury and sin goods

The GST Council, chaired by the Union Finance Minister, governs rate decisions and structural reforms. GST is administered through the GST Network (GSTN), a technology-driven platform enabling online registration, return filing, tax payment, and refund processing.

The system promotes input tax credit (ITC), reduces cascading effects, and enhances transparency. Over time, GST has improved tax buoyancy, broadened the tax base, and strengthened cooperative federalism in India.

3. Review of Literature

The introduction of the Goods and Services Tax (GST) in India marked a significant transformation in the country's indirect taxation system, with a primary objective of improving revenue collection efficiency and ensuring economic integration. Early studies on GST emphasized its potential to enhance tax revenue by eliminating cascading effects and broadening the tax base. Kumar (2014) argued that GST would lead to higher revenue productivity through improved compliance and a more transparent tax structure. Similarly, Mahanta (2016) observed that GST has the potential to strengthen the fiscal system by creating a unified market, which in turn contributes to increased tax collections over time.

With the implementation of GST in 2017, several empirical studies began analyzing the growth trends in GST revenue. Mishra and Mishra (2018) found that GST collections showed a gradual upward trend after the initial transition phase, primarily due to improvements in compliance mechanisms and the integration of technology in tax administration. Sharma (2018) further noted that the stabilization of GST systems and processes contributed to consistent growth in monthly revenue collections. The adoption of digital platforms for return filing and tax payments has played a crucial role in enhancing transparency and reducing tax evasion, thereby positively influencing revenue growth.

Recent literature highlights the role of technological advancements and policy measures in strengthening GST revenue performance. Patel (2021) emphasized that the use of digital tools, data analytics, and e-invoicing systems has significantly improved monitoring and compliance, leading to better revenue realization. Verma (2019) also pointed out that stricter compliance requirements, including invoice matching and input tax credit verification, have contributed to increased revenue collection by minimizing leakages in the tax system. Furthermore, Rao (2019) observed that administrative reforms and improved coordination between central and state governments have enhanced the efficiency of GST implementation, thereby supporting revenue growth.

However, the literature also identifies several challenges that affect the consistency and sustainability of GST revenue trends. Garg (2014) highlighted that the presence of multiple tax slabs and classification disputes can lead to inefficiencies and revenue uncertainties. Sehrawat and Dhanda (2015) noted that technological issues and compliance complexities during the initial years of implementation hindered smooth revenue collection. Ehtisham and Ahmad (2014) further emphasized that administrative and procedural challenges may affect taxpayer compliance, thereby impacting overall revenue performance. Additionally, Gupta (2017) pointed out that frequent changes in GST rates and policies create uncertainty, which can influence revenue stability in the short term.

The impact of GST on different sectors and business sizes has also been examined in relation to revenue growth. Kumar and Rai (2020) observed that while large enterprises adapted relatively quickly to GST, small and medium enterprises (SMEs) faced challenges in compliance, which initially affected revenue collection. Over time, however, increased awareness and system improvements have contributed to better compliance among SMEs, thereby supporting revenue growth. Singh and Singh (2021) highlighted that simplification of procedures and reduction in compliance burden are essential for sustaining long-term revenue growth under GST.

4. Scope of the Study

The study covers GST performance in India from FY 2017–18 to FY 2024–25. It analyses three major indicators: total GST collections, cumulative return filings, and refund disbursement trends across CGST, SGST, IGST, and Compensation Cess. The scope is limited to secondary data obtained from official GST statistics reports. The study does not include sector-specific or state-wise analysis. It focuses on macro-level fiscal performance and compliance behavior.

5. Research Gap

Although numerous studies discuss GST's structural impact and policy design, limited research integrates returns filing growth, refund efficiency, and revenue trends in a single analytical framework up to 2025. Post-pandemic GST performance and automation-driven refund improvements remain underexplored. There is insufficient empirical linkage between compliance growth and revenue buoyancy. This study attempts to bridge this gap by presenting consolidated trend analysis using recent official statistics.

6. Need for the Study

GST significantly influences India's fiscal health and cooperative federal structure. Understanding revenue stability, refund efficiency, and compliance trends is essential for policy improvement. With rising digitization and automation in tax administration, empirical evaluation is necessary to assess operational success. This study provides evidence-based insights to assist policymakers, academicians, and financial administrators in strengthening GST governance.

7. Objectives of the Study

1. To analyse GST revenue growth from 2017–2025.
2. To examine trends in GST return filings.

8. Research Methodology

- **Research Design:** Descriptive and analytical
- **Data Source:** Secondary data (GST official reports 2017–2025)
- **Tools Used:** Trend analysis, percentage growth analysis
- **Period of Study:** FY 2017–18 to FY 2024–25
- **Limitations:** No primary data, no state-wise disaggregation

9. Data Analysis

Table1 : Year-wise GST Revenue Collections in India (CGST, SGST, IGST, Compensation Cess & Total) with

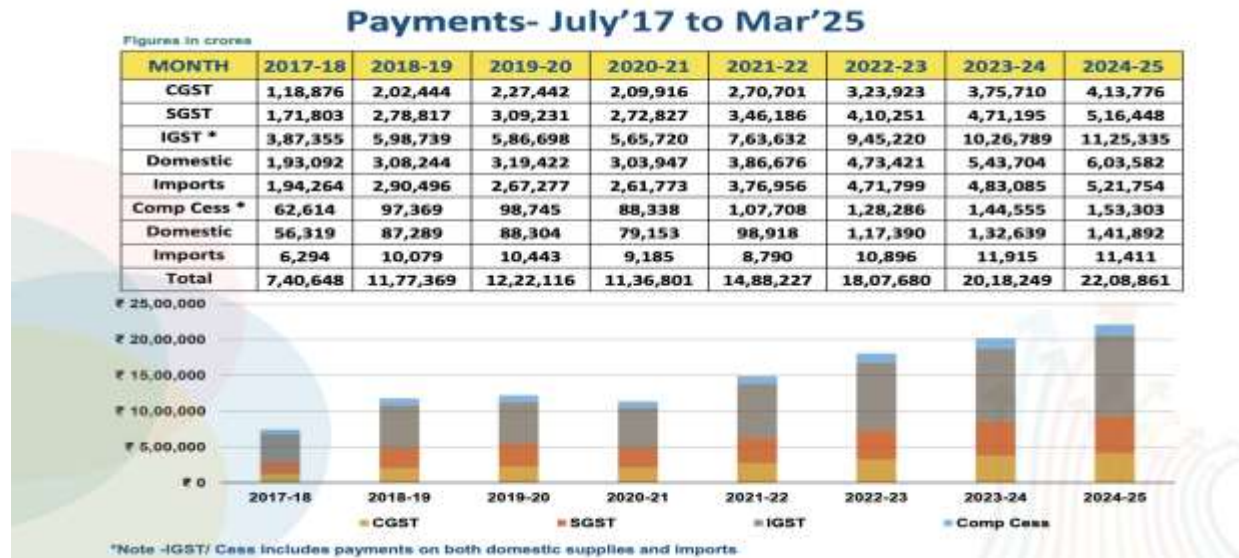
Growth Analysis Cores					
Year	CGST	SGST	IGST*	Comp Cess*	Total
2017-18	1,18,876	1,71,803	3,87,355	62,614	7,40,648
2018-19	2,02,444	2,78,817	5,98,739	97,369	11,77,369
2019-20	2,27,442	3,09,231	5,86,698	98,745	12,22,116
2020-21	2,09,916	2,72,827	5,65,720	88,338	11,36,801
2021-22	2,70,701	3,46,186	7,63,632	1,07,708	14,88,227
2022-23	3,23,923	4,10,251	9,45,220	1,28,286	18,07,680
2023-24	3,75,710	4,71,195	10,26,789	1,44,555	20,18,249
2024-25	4,13,776	5,16,448	11,25,335	1,53,303	22,08,862
CAGR	0.16	0.14	0.142	0.11	0.146
Mean	2,67,849	3,47,095	7,49,936	1,10,115	14,74,994

<https://www.gst.gov.in/download/gststatistics>

The data shows a consistent increase in GST revenue components over the years. **Total GST revenue** increased from ₹7,40,648 crore in 2017–18 to ₹22,08,862 crore in 2024–25, indicating strong growth over the period.

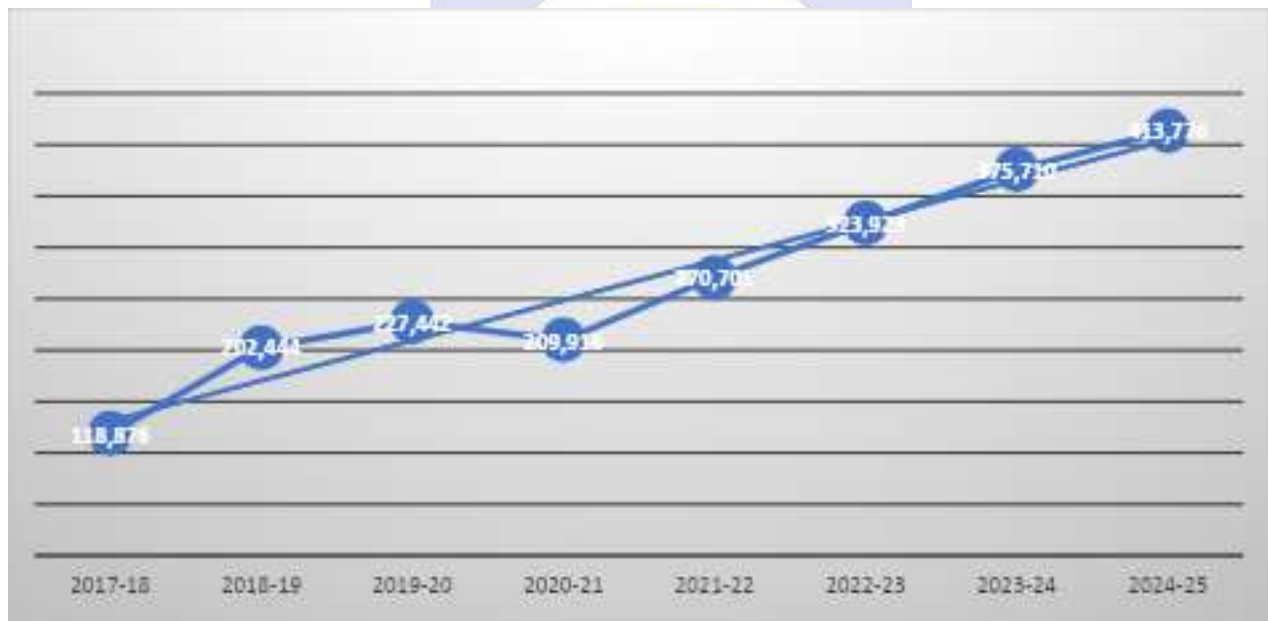
Among the components, **IGST** has the highest average collection (Mean = ₹7,49,936 crore), followed by **SGST** (Mean = ₹3,47,095 crore) and **CGST** (Mean = ₹2,67,849 crore). **Compensation Cess** has the lowest mean value (₹1,10,115 crore).

The **CAGR values** indicate that **CGST has the highest growth rate (16.87%)**, followed by **SGST (14.75%)**, **IGST (14.26%)**, and **Compensation Cess (11.84%)**. The overall GST revenue shows a growth rate of **14.63%**, reflecting steady expansion.



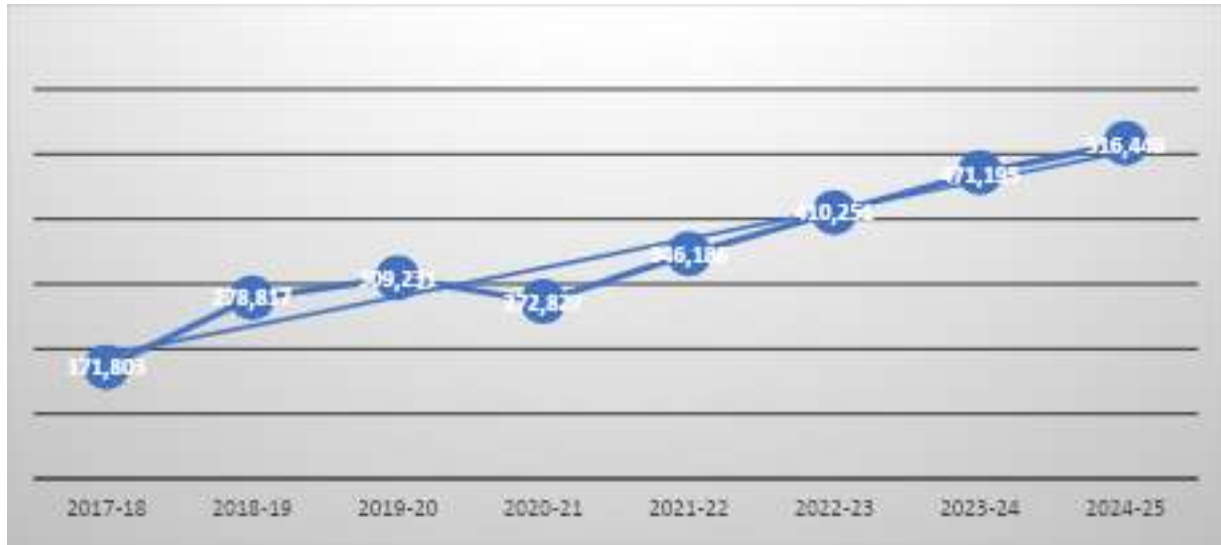
A slight decline is observed in 2020–21, after which revenues show a strong upward trend, reaching the highest level in 2024–25. Overall, the figures indicate stable and sustained growth in GST collections across all components.

Table 2: Trend Analysis of CGST Revenue



CGST:

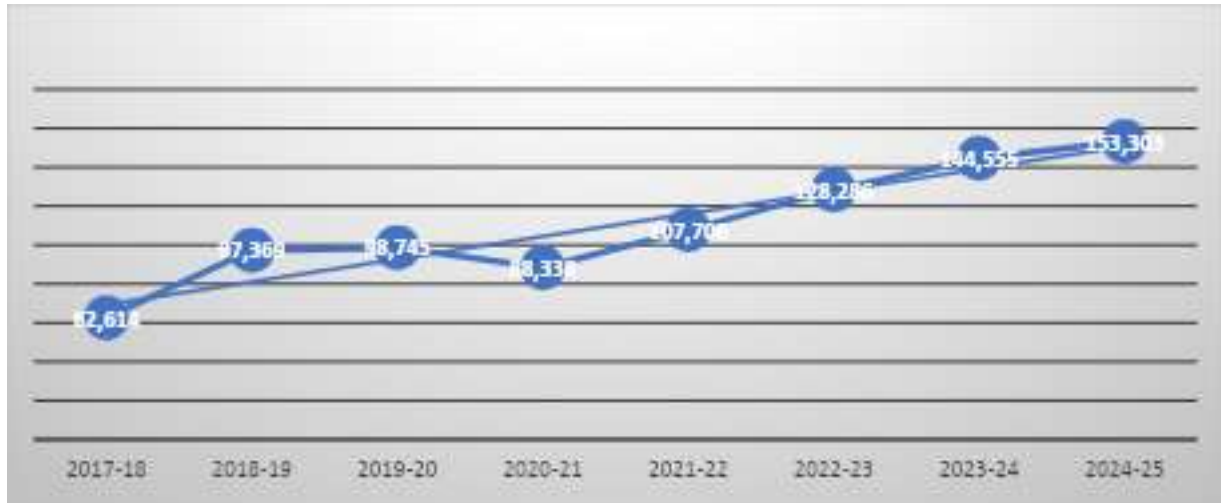
The equation $y = 39058x + 92088$ shows that CGST revenue increases by **₹39,058 crore annually**, starting from a base of **₹92,088 crore**, and the high $R^2 = 0.9486$ indicates a very strong and consistent growth trend.

Table 3: Trend Analysis of SGST Revenue**SGST:**

The equation $y = 44653x + 146158$ indicates that SGST revenue grows by **₹44,653 crore per year**, with an initial value of **₹1,46,158 crore**, and $R^2 = 0.9263$ confirms a strong and stable upward trend.

Table 4: Trend Analysis of IGST Revenue**IGST:**

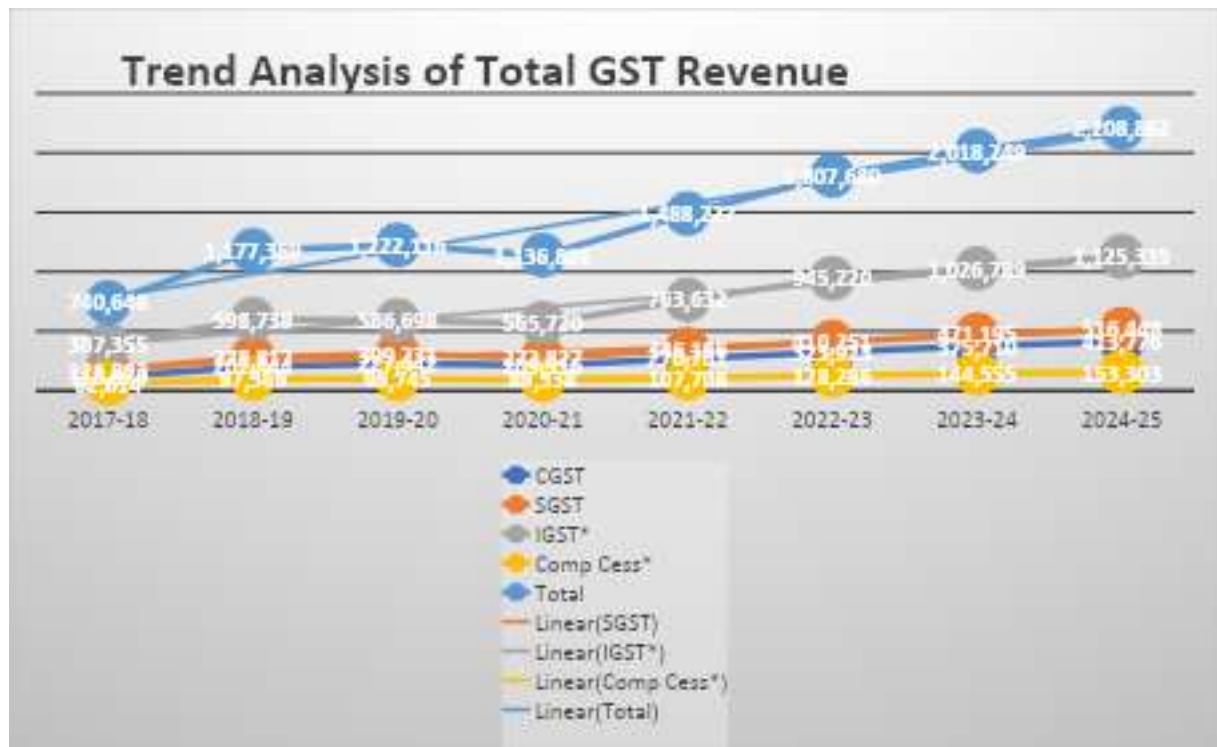
The equation $y = 102138x + 290315$ shows a significant annual increase of **₹1,02,138 crore**, starting from **₹2,90,315 crore**, and $R^2 = 0.9306$ reflects strong consistency, highlighting IGST's major contribution.

Table 5 : Trend Analysis of Compensation Cess

Compensation Cess: The equation $y = 11652x + 57682$ indicates a gradual rise of ₹11,652 crore annually from a base of ₹57,682 crore, and $R^2 = 0.8896$ shows comparatively lower but still positive consistency.

Table 5 : Trend Analysis of Total GST Revenue

Total GST: The equation $y = 197500x + 586243$ shows that total GST revenue increases by ₹1,97,500 crore each year, starting from ₹5,86,243 crore, and $R^2 = 0.9358$ indicates a strong and reliable overall growth trend.

**Table 6: Model Summary Results of CGST**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.974 ^a	.949	.940	.600

Source: Compiled from Secondary Data

The model summary table for CGST indicates a very high correlation coefficient ($R = 0.974$), suggesting a strong relationship between time and CGST revenue. The coefficient of determination ($R^2 = 0.949$) implies that approximately 94.9% of the variation in CGST revenue is explained by the model. The adjusted R^2 value (0.940) further confirms the model's robustness. The standard error of estimate (0.600) is relatively low, indicating a good fit of the regression model.

Table 7: ANOVA Results of CGST

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	39.843	1	39.843	110.811	.000 ^b
	Residual	2.157	6	.360		
	Total	42.000	7			

Source: Compiled from Secondary Data

The ANOVA table for CGST shows that the regression model is statistically significant, as indicated by the F-value of 110.811 and a significance level (p-value) of 0.000. This confirms that the model effectively explains the variation in CGST revenue over time. The low residual sum of squares also suggests minimal unexplained variation, indicating a strong predictive capability of the model.

Table 8: Model Summary Results of SGST

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.962 ^a	.926	.914	.718

Source: Compiled from Secondary Data

The model summary results for SGST reveal a strong relationship between time and SGST revenue, with an R value of 0.962. The R² value of 0.926 indicates that 92.6% of the variation in SGST revenue is explained by the model. The adjusted R² of 0.914 supports the reliability of the model, while the standard error (0.718) indicates a satisfactory level of prediction accuracy

Table 9: ANOVA Results of SGST

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	38.903	1	38.903	75.362	.000 ^b
	Residual	3.097	6	.516		
	Total	42.000	7			

Source: Compiled from Secondary Data

The ANOVA results for SGST demonstrate that the regression model is statistically significant, with an F-value of 75.362 and a p-value of 0.000. This indicates that the independent variable significantly influences SGST revenue. The relatively low residual variance confirms the model's adequacy in explaining variations.

Table 10: Model Summary Results of IGST

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.965 ^a	.931	.919	.697

Source: Compiled from Secondary Data

The model summary for IGST indicates a strong correlation (R = 0.965) between time and IGST revenue. The R² value of 0.931 suggests that 93.1% of the variation in IGST revenue is explained by the model. The adjusted R² (0.919) and low standard error (0.697) indicate that the regression model is reliable and provides accurate estimates.

Table 11: ANOVA Results of IGST

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	39.087	1	39.087	80.512	.000 ^b
	Residual	2.913	6	.485		
	Total	42.000	7			

Source: Compiled from Secondary Data

The ANOVA table shows that the regression model for IGST is statistically significant, with an F-value of 80.512 and a p-value of 0.000. This confirms that the model significantly explains the variation in IGST revenue. The low residual error further supports the goodness of fit of the model.

Table 12: Model Summary Results of Comp Cess

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.943 ^a	.890	.871	.879

Source: Compiled from Secondary Data

The model summary results for Compensation Cess show a strong correlation ($R = 0.943$) between time and revenue collection. The R^2 value of 0.890 indicates that 89% of the variation is explained by the model. The adjusted R^2 (0.871) and relatively higher standard error (0.879) suggest that while the model is strong, it is slightly less precise compared to other GST components.

Table 13. ANOVA Results of Comp Cess

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	37.364	1	37.364	48.352	.000 ^b
Residual	4.636	6	.773		
Total	42.000	7			

Source: Compiled from Secondary Data

The ANOVA results indicate that the regression model is statistically significant, with an F-value of 48.352 and a p-value of 0.000. This confirms that the model is effective in explaining variations in Compensation Cess revenue, although the explanatory power is comparatively lower than other GST components.

Table 14. Model Summary Results of Total

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.967 ^a	.936	.925	.671

Source: Compiled from Secondary Data

The model summary for total GST revenue shows a very strong correlation ($R = 0.967$) between time and total revenue. The R^2 value of 0.936 indicates that 93.6% of the variation in total GST revenue is explained by the model. The adjusted R^2 (0.925) and low standard error (0.671) indicate a high level of accuracy and reliability.

Table 15: ANOVA Results of Total

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	39.302	1	39.302	87.418	.000 ^b
	Residual	2.698	6	.450		
	Total	42.000	7			

Source: Compiled from Secondary Data

The ANOVA table reveals that the regression model for total GST revenue is statistically significant, with an F-value of 87.418 and a p-value of 0.000. This indicates that the model effectively explains the variations in total GST collections over time and is suitable for predictive analysis.

Table 16: Correlation Matrix of GST Components

		CGST	SGST	IGST	Comp Cess	Total
CGST	Pearson Correlation	1	.999**	.991**	.993**	.998**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	8	8	8	8	8
SGST	Pearson Correlation	.999**	1	.989**	.996**	.996**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	8	8	8	8	8
IGST	Pearson Correlation	.991**	.989**	1	.988**	.998**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	8	8	8	8	8
Comp Cess	Pearson Correlation	.993**	.996**	.988**	1	.994**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	8	8	8	8	8
Total	Pearson Correlation	.998**	.996**	.998**	.994**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	8	8	8	8	8

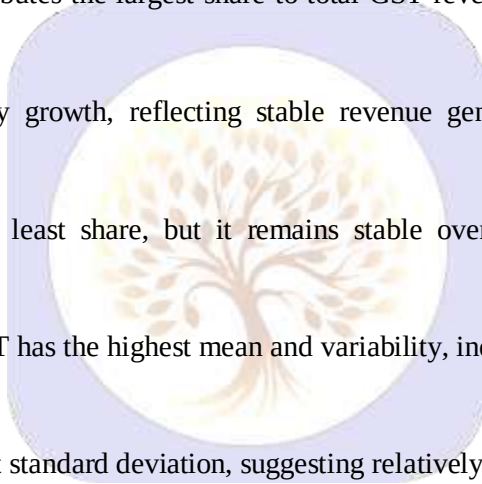
Source: Compiled from Secondary Data

The table presents the Pearson correlation coefficients among different GST components. The results indicate a very strong positive correlation between all variables, with coefficients close to +1 and significant at the 1% level ($p = 0.000$). CGST and SGST show an almost perfect correlation (0.999), indicating that they move together closely over time. Similarly, IGST, Compensation Cess, and Total GST revenue also exhibit strong interrelationships. The high correlation between total revenue and individual components confirms that increases in each component contribute significantly to the overall GST collections. This strong association reflects the integrated nature of the GST system in India.

Findings of the Study

The analysis of GST revenue trends, descriptive statistics, regression results, ANOVA, and correlation matrix reveals several important findings:

- The GST revenue in India has shown a consistent upward trend from 2017–18 to 2024–25, indicating improved tax administration and compliance.
- The total GST collection increased significantly from ₹7,40,648 crore in 2017–18 to ₹22,08,862 crore in 2024–25, reflecting strong growth in indirect tax revenue.
- A temporary decline in GST collections during 2020–21 was observed due to the economic slowdown caused by the COVID-19 pandemic.
- Post-pandemic, GST collections experienced a strong recovery and accelerated growth, particularly from 2021–22 onwards.
- Among all components, IGST contributes the largest share to total GST revenue, highlighting the importance of inter-state trade in India.
- SGST and CGST also show steady growth, reflecting stable revenue generation for both central and state governments.
- Compensation Cess contributes the least share, but it remains stable over the years, indicating its targeted application.
- Descriptive statistics reveal that IGST has the highest mean and variability, indicating its dominant yet fluctuating nature.
- Compensation Cess shows the lowest standard deviation, suggesting relatively stable and predictable collections.
- Regression analysis indicates a strong positive relationship between time and GST revenues for all components.
- The R^2 values for all GST components exceed 0.89, indicating that more than 89% of the variation in revenue is explained by time.
- CGST shows the highest explanatory power ($R^2 = 0.949$) among all components.
- ANOVA results confirm that all regression models are statistically significant ($p < 0.001$), validating the reliability of the models.
- The F-values across all GST components are high, indicating strong model fitness and predictive capability.
- The correlation matrix shows very high positive correlations (above 0.98) among all GST components.
- CGST and SGST exhibit an almost perfect correlation (0.999), suggesting synchronized growth patterns.
- IGST also shows strong correlation with total GST revenue, indicating its significant contribution to overall collections.
- The strong correlation among variables indicates the integrated structure of GST, where all components move together.



➤ The steady increase in GST collections reflects expansion of the tax base and digital compliance mechanisms such as e-invoicing and GSTN.

10. Conclusions

The study concludes that the Goods and Services Tax (GST) system in India has emerged as a robust and efficient indirect tax framework, significantly contributing to the country's revenue generation. The consistent increase in GST collections over the years reflects improved compliance, better tax administration, and widening of the tax base.

Although the COVID-19 pandemic caused a temporary setback in 2020–21, the system demonstrated strong resilience by recovering quickly in subsequent years. The dominance of IGST highlights the importance of inter-state trade, while the steady growth of CGST and SGST ensures balanced revenue distribution between the central and state governments.

The regression and ANOVA results confirm that GST revenues are strongly influenced by time and economic growth, with highly significant models indicating reliable trends. Furthermore, the strong positive correlations among GST components emphasize the integrated and cohesive structure of the GST system. Finally GST has not only simplified the indirect tax system but also enhanced revenue efficiency and transparency. The continued growth in collections suggests that GST will play a crucial role in India's fiscal sustainability and economic development in the coming years. However, continuous reforms, technological improvements, and policy support are essential to further strengthen its effectiveness.

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