

## Assessing the Impact of GST on Profitability: Insights from Education, Hospitality, and Logistics Sectors

### Abstract:

Goods and Services Tax (GST) has made a revolutionary impact on all sectors of the economy, impacting their overall financial performance. The study has focused on the role of GST on the financial performance of service sector entities namely, education, hospitality, and logistics, with special emphasis on profitability. Employing analysis of secondary data and in-depth interpretation, the study attempts to understand the role of GST deployment on company profits, examining both pre-GST and post-GST scenarios. By scrutinizing trends and patterns in profitability data and comparing performance before and after GST enactment, this study focuses on the sector-specific effects of the tax reform on profitability. The study adopts a quantitative approach to assess the role of the GST on the financial performance of service sector companies, with a specific focus on profitability. Data was checked for normality. Subsequently, Correlation & Paired t-tests were done using R-Studio. The analysis of the education, hospitality, and logistic sectors post-GST implementation reveals diverse impacts on mean profit changes. The study will help develop customized policies for each sector that promote sustainable development amidst changing tax legislation.

**Keywords:** Goods and Services Tax (GST), Service Sector, Profitability, Education, Hospitality, Logistics.

## **Introduction:**

The introduction of Goods and Services Tax (GST) was expected to impact businesses in numerous ways, particularly in terms of their profitability and financial performance. Understanding the implications of this tax reform on company profits is essential for policymakers, businesses, investors, and other stakeholders (Sehrawat, 2015). It provides insights into the adaptability of businesses to the new indirect tax system, identifies potential challenges and opportunities, and informs strategic decision-making processes (Vasanthagopal, 2011).

For certain service industries, the transition to GST has increased profitability. One key reason behind this increase is the easily claimed input tax credits, which were not fully accessible under the previous tax structure. By allowing service providers to claim input tax credits for taxes paid on inputs such as rent, utilities, and capital goods, leading to improved profitability. Moreover, the elimination of multiple indirect taxes and the simplification of compliance procedures have lowered administrative costs for service providers, further contributing to enhanced profitability (Renuka, 2018).

The influence of GST on a company's profitability is multifaceted. On the one hand, the transition from a cascading tax system to a value-added tax structure can reduce the overall tax burden by allowing businesses to claim input tax credits. This reduction in taxes can potentially bolster profits. Implementing GST also introduces compliance costs, including investments in accounting systems and personnel training, which may eat into profits, especially for smaller businesses. Additionally, changes in pricing strategies, supply chain efficiency, and consumer demand further shape the impact of GST on a company's bottom line (Kawlel& Aher,2017).

Certain segments of the service sector have experienced a decrease in profitability following the implementation of GST. One notable factor contributing to this decline is the change in tax rates under the new regime. While GST aims to streamline taxation by introducing uniform tax rates across goods and services, some service categories have witnessed a rise in tax rates, leading to higher costs for businesses. Additionally, the initial challenges associated with GST compliance, such as the adoption of new accounting systems and the adjustment to revised invoicing requirements, may have temporarily disrupted operations and impacted profitability for some service providers (Kour, 2016).

Under the GST regime, companies benefit from reduced tax outgo through input tax credits, enabling them to enhance profit margins and pursue growth opportunities. Initially, savings may be directed towards improving operational efficiency and renegotiating contracts, strengthening financial positions. Subsequently, companies may invest in expanding capacities, such as upgrading technology or diversifying offerings, to capitalize on growth prospects and ensure long-term competitiveness. By strategically utilizing these savings, companies can improve short-term performance and lay a foundation for sustainable growth (Alam, 2017).

The role of GST on profitability in the services sector depends on various factors with both positive & negative outcomes. While GST has brought about efficiency gains and cost savings for some service providers through input tax credits and streamlined compliance, others have faced challenges related to tax rate changes and transitional adjustments. As the service sector continues to adapt to the GST and regulatory landscape, the long-term implications for profitability will depend on industry-specific factors, market dynamics, and the ability of businesses to innovate and respond effectively to evolving challenges and opportunities (Frank, 2019).

The reduction in compliance costs under the GST system is poised to significantly bolster profit margins for businesses. When businesses allocate fewer resources to comply with tax regulations, they can redirect these savings toward other operational areas or investments. Even a seemingly minor decrease in costs, such as 1%, can yield a substantial increase in profits. This is attributed to the direct contribution of cost reduction to the bottom line, enabling businesses to retain a higher portion of their revenue as earnings. Empirical evidence suggests that a modest 1% reduction in costs can lead to a remarkable 9-10% increase in profits (Vineeta, 2017).

### **Factors contributing to GST's impact on the profitability of a company:**

- 1. Input Tax Credit (ITC):** Under the GST system, companies have the opportunity to claim credit for the taxes they have paid on input products and services. This credit may then be used to reduce the amount of GST they owe on their output deliveries. This process decreases the total amount of taxes that the firm has to pay, thereby enhancing its profitability (Singhvi & Narwane, 2020).
- 2. Cost Management:** Cost management is crucial for companies to maintain competitiveness in the market. GST impacts the cost structure by minimizing the

cascading effect of taxes, streamlining compliance, and decreasing logistics expenses. Implementing effective cost management measures may significantly improve a company's profitability (Tanty & Kumar, 2023).

3. **Effect on Sales:** The implementation of GST might potentially impact customer behavior and buying choices as a result of pricing fluctuations (Abhilash & Thimmarayappa, 2023). Reducing GST rates might result in decreased pricing for customers, which may lead to higher sales volumes and ultimately improve the company's profitability.
4. **Compliance Cost:** Complying with GST requirements incurs expenses related to administration and operations, including software updates, training, and paperwork (Das, 2018). Implementing effective compliance management practices may lead to cost reduction and have a beneficial effect on the company's profitability.
5. **Competitive Advantage:** Companies that adeptly handle the intricacies of GST compliance and use its advantages might get a competitive edge in the market (Arora & Singh, 2022). This competitive advantage has the potential to result in higher market share and profitability.

#### Literature Review:

1. Bibi & Duclos (2004), examine the impact of indirect tax revenues on Nigeria's economic growth. The results show that VAT had a significant adverse impact on real gross domestic product. The study recommends closing loopholes in tax administration so that past VAT and tariffs have an impact on economic growth & tax revenues contribute significantly to economic development.
2. Alam (2017) recommends an efficient tax collection mechanism to foster economic stability and prosperity. He emphasizes the need for a simple, transparent tax system due to the growing complexity and costs of the current system. Manufacturing and pharmaceutical companies could profit from GST by lowering production costs and simplifying tax procedures. The GST, which will replace many levies with one, is intended to streamline tax administration and reduce compliance costs in India. The GST is expected to boost India's economy by increasing revenue and budgetary stability.
3. Makandar & Mulla (2018) stated that the implementation of GST in India would create a unified market, resulting in improved business operations and significant reductions in

logistical expenses for enterprises in every sector. The effect of GST on various sectors may not be consistent due to their diverse taxing arrangements. Certain firms will see a net gain due to the reduction in the GST rate, which will be lower than their existing tax rates. Conversely, other companies may incur losses since the new rate will be greater than their current effective rate.

4. Malhotra & Mishra (2019) found that the tax expenses and inflation rate adversely affect the profitability of the logistics sector, whereas the fluctuations in the GDP of the service sector positively influence its profitability. Nevertheless, the influence of GDP on the profit of the transportation business is rather minor when compared to the effects of tax rates and inflation.
5. Shetty (2019) reports that GST has harmed the Indian textile business, eliciting unfavorable responses from traders. However, this circumstance emphasizes the need for more Indian government-textile industry cooperation. Such initiatives are essential for discovering and implementing GST-friendly strategies for merchants.
6. Semwal *et al.* (2020) in their study found that higher tax burden and regulatory compliance led to higher staffing, but did not affect the ease of doing business, loss, or transparency. The results indicate a decline in earnings due to paying taxes more than six times each year. Following the GST introduction, merchants had challenges in submitting GST due to the difficult procedure and fluctuating GST rates, leading to increased market competitiveness.
7. Srivastava *et al.* (2020) assert that GST may affect profitability depending on firm size and market characteristics. Thus, restaurant and hotel enterprises must carefully assess the new tax regime's financial effects. The GST has changed the tax structure in India's restaurant and hotel industry, which might impair profitability. Businesses faced cascading taxes and higher compliance expenses under the prior tax regime, which reduced profit margins. GST allows firms to simplify processes and save tax-related costs, potentially increasing profits.
8. Sahoo & Nayak (2021) concluded that budget hotels under a slab rate of 12% profit from this method in food and beverage areas. Hotels below the GST slab rate of 18–28% have

negative effects. There is a significant correlation between consumer understanding regarding GST rates and hotels' customer service challenges.

9. Gupta & Shankar (2021) stated that GST has raised tax rates on many commodities, raising educational institution costs. Universities and colleges that provide education beyond high school must pay GST for transportation, food, cleaning, etc. Thus, institutions must pay GST for these services. Educational institutions' output services are GST-exempt.
10. Kumar *et al.* (2022), in their study show a rise in the GST rate to 28% on cement, a crucial element in all projects, is exerting considerable pressure on both the costs and profitability of ongoing construction projects. Similarly, electricity remains exempt from the scope of GST, posing further challenges to the industry.
11. Ahmed (2022) found that 30 NIFTY-indexed manufacturing businesses' profitability increased significantly post-GST, despite identical profit margins. Company size and working capital alone had no significant influence on profit margins, but their combined effect was favorable post-GST, implying that enterprises with size and capital expansion had higher margins.
12. Aravind (2023) concluded that the implementation of the GST has had a varied effect on the hotel business, resulting in both favorable and unfavorable consequences. The effect of GST on the hotel business is contingent upon the individual conditions of each hotel, such as its dimensions, geographical location, and operations.
13. Maheshwari & Mani (2023) in their study focused on the influence of GST on 14 sectors of the Indian economy. It was projected that GST has a beneficial impact on the agricultural, automotive, healthcare, logistics, manufacturing, retail, and textile sectors. The insurance and electricity industries are seeing adverse impacts. The banking, FMCG, IT, e-commerce, and real estate sectors have a varied impact.
14. Nagaraj & Shailaja (2023) unveils that each sector has complex dynamics. After GST, the agricultural sector grew at different rates but contributed more to GDP, showing significant expansion potential. The automobile industry continually contributed to GDP,

while the finance sector has maintained growth despite fluctuations. The GST's complex interaction with economic developments may have slowed infrastructure expansion. The hospitality industry grew steadily and expanded economically. Therefore, industry-specific GST adaption methods are needed.

15. Usha (2024) found in her study that the perceived attitude, awareness, and acceptability towards the retail sector following the adoption of GST is consistent among consumers who have visited certain retail shops, but varies dramatically across other retail stores.

### **Statement of Problem:**

The GST has led to significant shifts in several sectors across the country. The implementation of GST has had a widespread impact on all sectors of the economy, resulting in both good and bad consequences. However, it is important to note that the reforms brought about by GST in India are always evolving, with the rules being subject to continual adjustments. Hence, it is crucial to assess the influence of GST on different sectors of the economy at different time intervals to develop customized policies for each sector that promote sustainable development amidst changing tax legislation. The overall impact of GST on several sectors has been explored but there is still a deficiency of specific studies that evaluate the precise impact of GST on the profitability dynamics of the education, hospitality, and logistics sectors. The abovementioned sectors lack extensive profitability trend comparisons before and after GST. Without such comparison studies, it is difficult to determine how GST has affected profitability and establish trends or patterns. Understanding the consequences of GST for businesses is crucial for getting profound insights and making informed policy choices that seek to promote the long-term survival and competitiveness of various sectors in the Indian economy.

### **Objective:**

1. To understand the role of GST in the profitability of education, hospitality, and logistics sectors.
2. To analyze trends and patterns in profitability before and after GST.
3. To compare the profitability in pre-GST and post-GST periods.

### **Hypothesis:**

$H_0$ : There are no significant differences between profitability in the pre-GST and post-GST periods.

### **Methodology:**

The study adopts a quantitative approach to assess the role of the GST on the financial performance of service sector companies, with a specific focus on profitability. Data are collected from three industries related to the service sector namely, education, hospitality, and logistics. From each industry, two companies were taken. From the education sector, VJTF Edu Services Ltd., and Career Point Ltd. were taken into consideration. From the hospitality sector, Indian Hotels Co Ltd., and India Tourism Development Corporation Ltd. were taken into account. From the logistics sector, two companies namely, Container Corporation of India Ltd., and Blue Dart Express Ltd. were accounted for. Both before GST and after GST financial data are gathered to facilitate a comparative analysis of profitability trends over time.

Statistical methods are then employed to analyze the collected data, including tests for normality, such as the Shapiro-Wilk test, to assess the analysis of profitability. Correlation & Paired t-tests are utilized to compare the mean and examine the relationship of profitability before and after GST implementation. The analysis was made using R-Studio.

### **Analysis and Findings:**

The analysis was conducted on the effects of GST implementation on profitability in three industries. The three industries are education, hospitality, and logistics. All these industries belong to the service sector.

**Table1: Shapiro-Wilk Test for Normal Distribution**

<b>Companies</b>	<b>W statistic (Pre-GST)</b>	<b>P-value (Pre-GST)</b>	<b>W statistic (Post-GST)</b>	<b>P-value (Post-GST)</b>
VJTF Edu Services Ltd.	0.96	0.78	0.89	0.35
Career Point Ltd.	0.74	0.02	0.95	0.70
Indian Hotels Co. Ltd.	0.95	0.75	0.78	0.05

India Tourism Development Corporation Ltd.	0.88	0.29	0.93	0.58
Container Corporation of India Ltd.	0.96	0.83	0.89	0.36
Blue Dart Express Ltd.	0.82	0.12	0.90	0.44

Source: Output from analysis using R Studio

In the above table, data presents Shapiro-Wilk test results for pre-GST and post-GST profits of six entities. For VJTF Edu Services Ltd., both periods show reasonable agreement with normality, Career Point Ltd.'s data indicates a substantial improvement in normality post-GST, with a significantly higher p-value. Indian Hotels Co. Ltd. exhibits a slight decrease in normality post-GST, with a significant p-value but less as compared to pre-GST. India Tourism Development Corporation Ltd. maintains reasonable agreement with normality across both periods. Container Corporation of India Ltd. shows high agreement with normality in both periods. Blue Dart Express Ltd. also maintains reasonable agreement with normality in both periods. The findings indicate the varied impact of GST on the profitability of these companies.

**Table 2: Paired t-test on Pre-GST and Post GST**

Sectors	t	df	p-value	95%CI lower	95% CI upper	Mean Difference
<b><u>Education Sector</u></b>						
VJTF Edu-services Ltd.	-0.523	4	0.628	-709.990	484.575	-112.708
Career Point Ltd.	1.412	4	0.2308	-1246.38	3825.89	1289.754
<b><u>Hospitality Sector</u></b>						
Indian Hotels Co. Ltd.	-0.805	4	0.4658	-307.506	169.238	-69.1337
India Tourism Development Corporation Ltd.	0.932	4	0.4039	-3517.06	7074.10	1778.52
<b><u>Logistic Sector</u></b>						
Container Corporation of India Ltd.	3.6837	4	0.02114	127.1519	905.4086	516.2802
Blue Dart Express Ltd.	0.978	4	0.3835	-17006.59	35502.98	9248.193

Source: Output from analysis using R Studio

In the education sector, the analysis indicates that both VJTF Edu-services Ltd. and Career Point Ltd. show no statistically significant difference in profitability between the pre-GST and post-GST periods. For VJTF Edu-services Ltd., the p-value obtained from the paired t-test is 0.628, for Career Point Ltd., the p-value is 0.2308, suggesting that there is insufficient evidence to reject the null hypothesis.

In the hospitality sector, the analysis reveals that both Indian Hotels Co. Ltd. and India Tourism Development Corporation Ltd. do not exhibit a statistically significant difference in profitability between the pre-GST and post-GST periods, with a p-value of 0.4658 and 0.4039 respectively. There is insufficient evidence to reject the null hypothesis.

In the logistic sector, for Container Corporation of India Ltd., the paired t-test results in a significant p-value of 0.02114. This outcome leads to the rejection of the null hypothesis, indicating a substantial difference in profitability between the pre-GST and post-GST periods. Furthermore, the mean difference suggests a notable increase in profitability post-GST, underscoring the positive impact of GST implementation on Container Corporation of India Ltd.'s financial performance. In contrast, for Blue Dart Express Ltd., the paired t-test yields a p-value of 0.3835. This result indicates that there is insufficient evidence to reject the null hypothesis. Consequently, no significant difference in profitability is observed between the pre-GST and post-GST periods for Blue Dart Express Ltd.

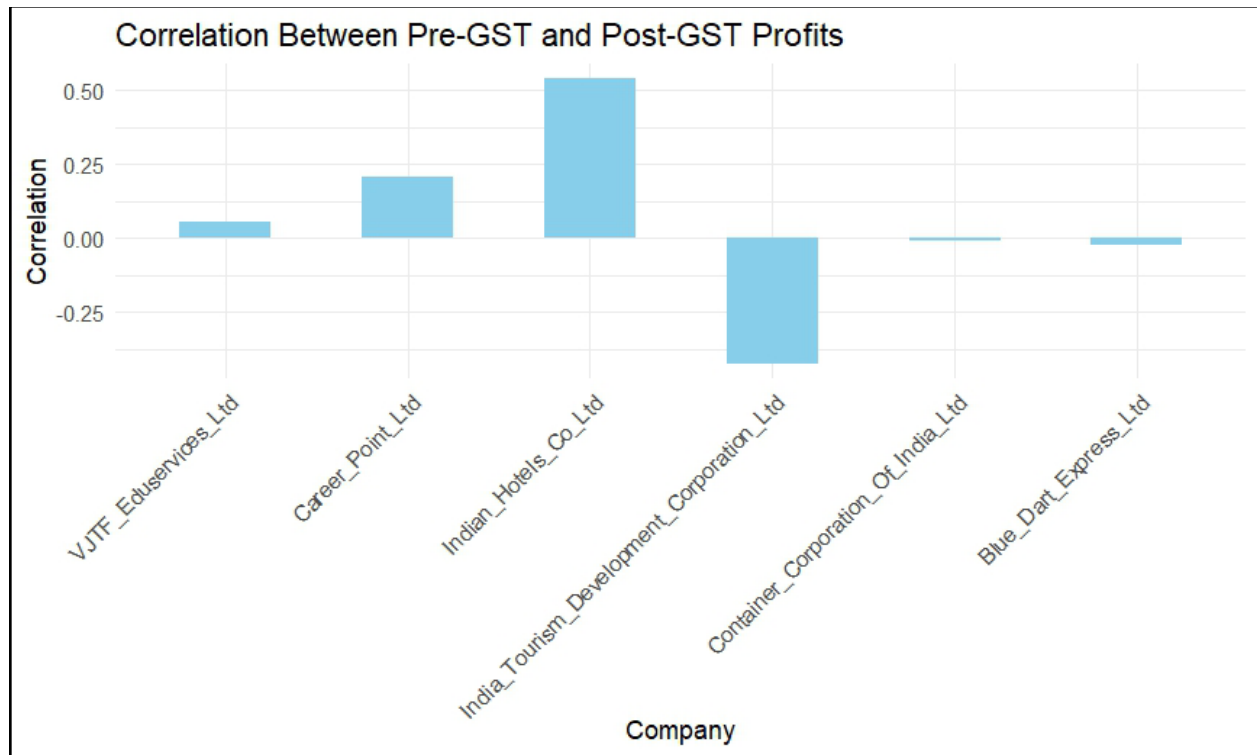
These results suggest that the impact of GST on profitability varies across different sectors and companies. In the logistics sector, specifically for Container Corporation of India Ltd., there seems to be a significant positive impact on profitability post-GST. However, in the education and hospitality sectors, no significant differences were observed for the companies tested. Sankar (2017) highlighted in his study the varied impact of GST on different sectors of the economy. Nagaprakash & Saranya (2023) also revealed that the impact of GST on private-sector and public-sector banks varied. Private-sector showed stability and adaptability post-GST implementation while public-sector banks experienced a decline in their profitability ratios. Therefore, the findings of the study are consistent with the literature available.

**Table 3: Correlation Coefficient Pre-GST and Post-GST Profit**

<b>Company</b>	<b>Correlation Coefficient Pre- and Post-GST Profit</b>	<b>Status of the Correlation</b>
<b>Education Sector</b>		
VJTF Edu. Services Ltd.	0.057021676	Weak positive correlation
Career Point Ltd.	0.207278573	Moderate positive correlation
<b>Hospitality Sector</b>		
Indian Hotels Co. Ltd.	0.542921827	Strong positive correlation
India Tourism Development Corporation Ltd.	-0.427833825	Strong negative correlation
<b>Logistic Sector</b>		
Container Corporation of India Ltd.	-0.007874412	No significant correlation (close to zero)
Blue Dart Express Ltd.	-0.025466707	No significant correlation (close to zero)

Source: Output from analysis using R Studio

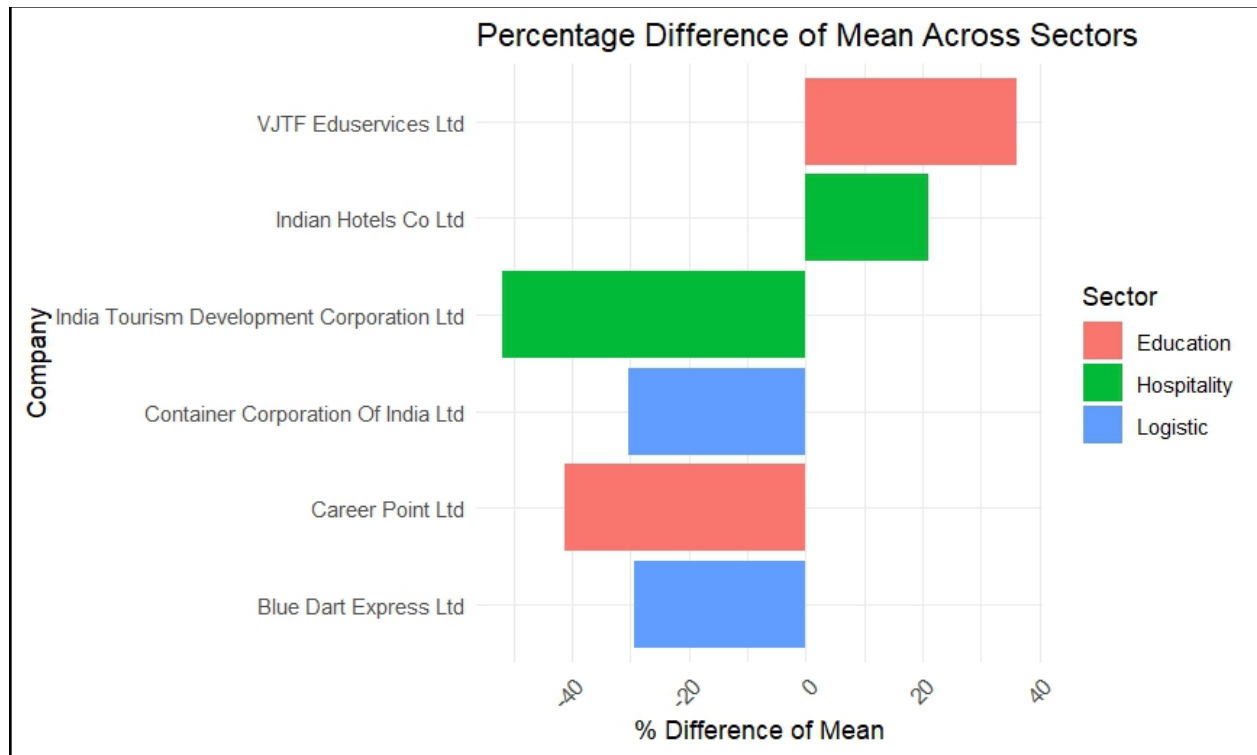
**Figure 1: Correlation of Pre-GST and Post-GST Graphical View**



Source: Output from analysis using R Studio

In the education sector, VJTF Edu-services Ltd. and Career Point Ltd. both show correlations between pre-GST and post-GST profits. VJTF exhibits a weak positive correlation, suggesting a slight increase in profits post-GST, while Career Point displays a moderate positive correlation, indicating a stronger tendency for profit growth. In the hospitality sector, Indian Hotels Co. Ltd. demonstrates a strong positive correlation, whereas India Tourism Development Corporation Ltd. exhibits a strong negative correlation, suggesting a decline in profits following GST implementation. In the logistics sector, both Container Corporation of India Ltd. and Blue Dart Express Ltd. show no significant correlation between pre-GST and post-GST profits, indicating minimal impact from the GST change on their profit margins.

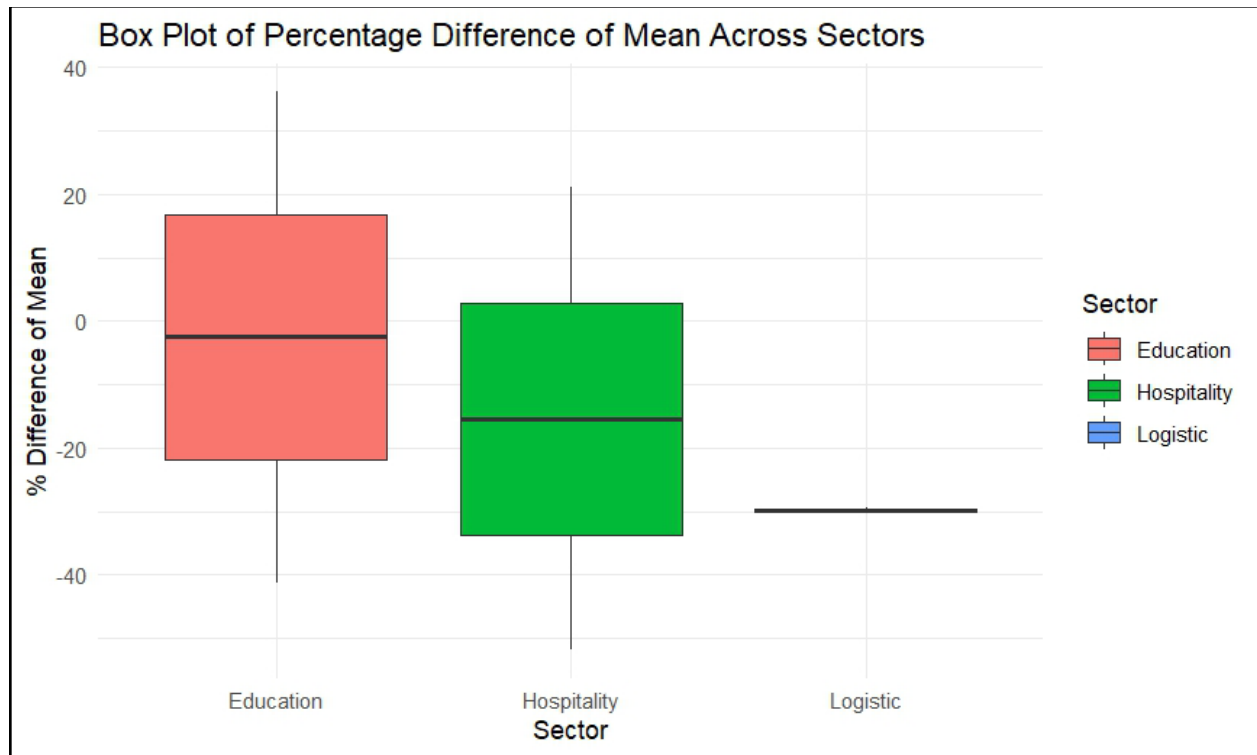
**Figure 2: Difference in Mean Pre-GST and Post-GST Profit**



Source: Output from analysis using R Studio

The data analysis reveals insights into the effects of GST implementation on companies across various sectors. In the education sector, VJTF Edu. Services Ltd. exhibited a substantial 36.15% increase in mean values post-GST, suggesting robust adaptation and growth potential. Conversely, Career Point Ltd. faced a significant downturn with a stark -41.19% difference, signaling challenges in adjusting to GST regulations. Transitioning to the hospitality sector, Indian Hotels Co. Ltd. demonstrated resilience with a notable 21.00% increase post-GST, while India Tourism Development Corporation Ltd. struggled, showing a substantial -51.85% difference. Shifting the focus to the logistic sector, both Container Corporation of India Ltd. and Blue Dart Express Ltd. experienced declines, with differences of -30.26% and -29.31% respectively, pointing to broader industry challenges post-GST.

**Figure 3: Box Plot Percentage Difference in Mean of Profit in Pre-GST and Post-GST Period**

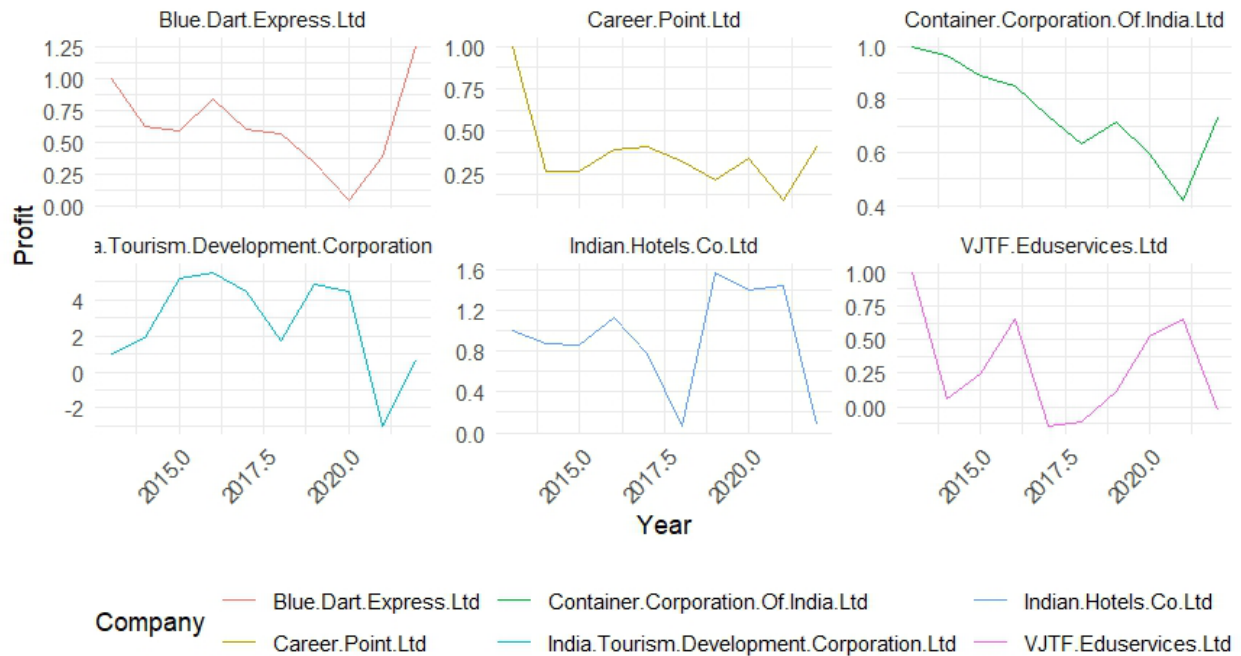


Source: Output from analysis using R Studio

In the education sector, there were mixed results in mean profit changes post-GST, with one company experiencing a positive difference while another faced a negative difference. In the hospitality sector, one company observed a slight increase in mean profit post-GST, while another encountered a significant decrease. Similarly, in the logistics sector, both companies witnessed declines in mean profit post-GST. Thus, the implementation of GST in India is beneficial for some companies and sectors while challenging for others.

**Figure 4: Profit trends with Inflation adjustment Pre-GST and Post-GST Profit**

## Profit Trends with Inflation Adjustment



Source: Output from analysis using R Studio

In the education sector, the profitability trend with inflation adjustment shows fluctuations over the years for both VJTF Edu-services Ltd. and Career Point Ltd., indicating varying degrees of financial performance. Within the hospitality sector, Indian Hotels Co. Ltd. and India Tourism Development Corporation Ltd. display fluctuating profitability post-GST, suggesting potential challenges or adaptations in response to market conditions. In the logistics sector, both Container Corporation of India Ltd. and Blue Dart Express Ltd. exhibit fluctuating profitability post-GST, indicating the potential impacts of economic factors on their financial performance. The increased cost of ancillary services due to GST has reduced the profitability of these institutions, limiting their ability to invest in quality improvements (Jain, 2023).

### Conclusion:

The study aimed to understand the role of GST in profitability and analyze trends in profitability data before and after the implementation of GST. The analysis of the education, hospitality, and logistic sectors post-GST implementation reveals diverse impacts on mean profit changes.

By examining trends and patterns in profitability before and after GST implementation, the study identified regional variations in the effects of GST on financial performance. These variations

highlighted the importance of considering industry-specific dynamics when assessing the impact of policy changes such as GST. The comparison between pre-GST and post-GST profitability reveals mixed outcomes across different sectors and companies. While some entities, such as Container Corporation of India Ltd. in the logistics sector, experienced significant improvements in profitability post-GST, others, like Blue Dart Express Ltd., did not exhibit notable changes.

In the education industry, after the implementation of GST, one company shows a profit, but at the same time, other companies incur more losses than profits. Similar observations were also made in the hospitality industry, but there were more losses compared to the education industry. Similarly, in the logistics sector, both companies witnessed declines in profitability post-GST, indicating that the new tax system regime had a negative impact.

The profitability of a firm is influenced by many elements when it comes to the effect of GST. These factors include the sector in which the company operates, its business model, its size, and its capacity to adjust to the evolving regulatory landscape. Companies must prioritize efficient tax planning, compliance management, and strategic decision-making to maximize the advantages of GST and improve their profitability.

#### **Limitations of the Study:**

- ❑ Limited sample size: The study relies on data from a small sample of service sector companies, potentially limiting the generalizability of the findings.
- ❑ Focus on profitability: The analysis only considers profitability as a measure of financial performance, overlooking other important indicators such as liquidity, solvency, and operational efficiency.
- ❑ Reliance on secondary data: The study is based on secondary data sources, which may contain inaccuracies or inconsistencies in reporting, impacting the reliability of the results.
- ❑ Timeframe: The analysis is conducted within a specific timeframe, which may not capture long-term trends or the evolving impact of GST over time.
- ❑ External factors: Changes in market conditions, regulatory environment, and macroeconomic factors could influence the observed results but are not explicitly accounted for in the analysis.

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## **Appendix – 1**

### **Profit with adjusted Inflation pre and Post GST period**

Year	VJTF Edu-services Ltd.	Career Point Ltd.	Indian Hotels Co Ltd.	India Tourism Development Corporation Ltd.	Container Corporation of India Ltd.	Blue Dart Express Ltd.
Pre GST						
2013	-864.126150	6691.425059	353.645200	949.858800	1921.146800	42988.370000
2014	-51.440455	1765.062210	311.524545	1824.190909	1850.530727	26998.313636
2015	-206.433042	1790.252190	304.557750	4905.390083	1709.911208	25566.050000
2016	-564.522087	2648.094557	401.728858	5260.752283	1632.362795	36164.208661
2017	127.700568	2761.874508	274.409129	4210.528485	1417.626402	26063.643939
Post GST						
2018	92.652574	2163.886287	395.574044	1637.561397	1217.256691	24681.713235
2019	-96.843500	1418.133464	557.240714	4666.806071	1376.017750	14531.053571
2020	-451.500138	2257.610381	498.139723	4250.333806	1146.892837	1854.833910

2021	-559.942060	606.596877	510.759668	-2898.011894	802.989435	16524.019934
2022	20.350000	2761.710000	29.820000	601.430000	1407.020000	53948.000000

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