MODERATING ROLE OF COST OF GST COLLECTION ON GST REVENUE

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Abstract

Implementation of GST increased the tax revenue and this helps the government to provide better services encouraging production and increasing Economy-GDP. This micro-study seeks to analyze the relationship between Economy-GDP and GST Revenue and the influence of the Cost of GST Collection on such relationship which was unexplored in the previous studies. The study offers insights to the policymakers in ensuring the efficient generation of GST Revenue and making decisions related to Taxation, Spending, and Economic Planning. For the Study, Data were collected from Secondary Sources such as the Union Budget of India and the Press Information Bureau. A Statistical Model was framed using the data collected from the Secondary Sources. The Statistical Model WAS analyzed with the help of Multiple Regression Analysis Via Process macro model number 1 using SPSS Software. The results showed a significant relationship between Economy-GDP and GST Revenue. However, it was found that the relationship between Economy-GDP and GST Revenue remained stable across the levels of the Cost of GST Collection. Considering the sample size taken for the study, further research is essential to get more insights from this study.

Keywords: Goods and Services Tax (GST), Tax Revenue, GST Revenue, Cost of GST Collection, Gross Domestic Product (GDP), Moderator, Moderated Multiple Regression Analysis Via Process Macro.

1. INTRODUCTION

The Gross Domestic Product (GDP) of a country gives information about the performance of a country's economy. Its growth indicates a higher standard of living and its shrinkage translates to a lesser standard of living for the citizens in a country. The components of GDP are personal consumption, private investment, government purchases, and net exports. The standard of living concept involves the degree of necessities, comforts, and luxuries a person can afford and it is measured with the help of GDP. Improvement in public services, infrastructure development, and social welfare are some of the measures that can improve the standard of living of a citizen in a country. Government revenue plays a vital role in funding these initiatives and tax Revenue is the major source of revenue for the government. In India, Goods and Services Tax (GST) is the Tax Revenue that contributes majorly to GDP when compared with other taxes [1].

Understanding the relationship between GDP and Tax Revenue is important for analyzing the economic status and policymaking of a country. When the Tax collection by a country is low during a year, it impacts the government to finance its expenditures for activities to enhance the standard of living of the country's citizens which is an indicator of the Country's GDP [2]. Also, a country's GDP affects the consumption pattern and income

level of citizens and economic activities which influence the Tax Revenue of a country. The relationship between GDP and Tax Revenue is two-sided [3]. By considering the level of impact between GDP and Tax Revenue, policymakers can design effective policies to ensure economic growth and fiscal stability and to meet the socio-economic needs of the country's citizens.

Along with GDP, the Cost of Tax Collection has an impact on the country's Tax Revenue. Cost of Tax Collection differs from Tax Expenditure as the former is a Government Cost to collect the taxes from Tax Payers whereas Tax Expenditure lowers the tax burden through deduction and exemption for Tax Payers [4]. Minimizing the Government Cost to collect taxes can result in a majority of the Tax Revenue available for the country's welfare [5]. However, the reduction in cost shouldn't impact the Tax Collection as there is a need for proper tax collection systems for it to be effective. As GST is the new system implemented in India on 1st July 2017, it is still at the stage where the amount needs to be spent by the government for effective implementation of the GST system and collection of GST when compared with Direct Taxes.

2. LITERATURE REVIEW

Tax Revenue is not an independent system and it has an influence of financial and economic factors such as GDP growth, Bank Capital to asset ratio, FDI, Cash Surplus deficit, etc., [6]. According to the study [3], a bilateral relationship was found between Tax Revenue and GDP with the use of the Granger Causality Test in Eviews 12. Further testing of the data using the Cointegration test showed there is a long-run relationship between Tax Revenue and GDP. The prior studies primarily focused on the impact of Tax Revenue on GDP [7] and the relationship between both [8].

From these studies, it was concluded that there exists a relationship between Tax Revenue and GDP and there is an impact of Tax Revenue on the GDP. In the earlier studies [9], it was found that an increase in Tax Revenue can improve the GDP of a country.

A Study [10] on Tax Revenue and Tax Expenditure for collection showed that limiting Tax Expenditure can raise revenue without increasing the Marginal tax rates in the United States of America. Strengthening the process of Tax Collection helps maintain the country's tax revenue which would impact positively on economic growth [11].

3. RESEARCH GAP

The main factor that distinguishes this micro-study from the previous studies is the study on the three variables i.e., Cost of Tax Collection, Tax Revenue, and Economy-GDP in a single model. Also, the prior studies focused on the impact of Tax Revenue on GDP and overlooked the impact of Economy-GDP on Tax Revenue. It was found from a study [1] that in India, the major Tax Revenue that contributes to the Economy-GDP is Indirect Tax. Based on the Review of Literature, there have been no studies conducted on the GST in

India on Cost of GST Collection. Hence, the following micro-study has been carried out by the researcher to fill this research gap.

4. SIGNIFICANCE OF THE STUDY

The Gross Domestic Product has a tendency to soar on the revenue generated in a year [12]. Implementation of GST increased the tax revenue and this can help the government to provide better services which encourages production and hence Economy-GDP rises. This micro-study seeks to analyze the impact of Economy-GDP on GST Revenue and the influence of the Cost of GST Collection on such impact which was unexplored in the previous studies. This assists in making decisions related to Taxation, Spending, and Economic Planning. Understanding the effect of the Cost of GST Collection on the relationship between Economy-GDP and GST Revenue can help in budget allocations towards GST Collections and Establishment Expenditure. Also, this micro-study can offer insights to the policymakers in ensuring the efficient generation of GST Revenue.

5. OBJECTIVES

1) To analyze the relationship between Economy-GDP and GST Revenue.

2) To assess the Moderating Role of the Cost of GST Collection on the Economy-GDP and GST Revenue Relationship.

6. METHODOLOGY

6.1 Conceptual Model

It is a theoretical framework outlining the conceptual relationship between variables. It serves a purpose in framing hypotheses and data collection.
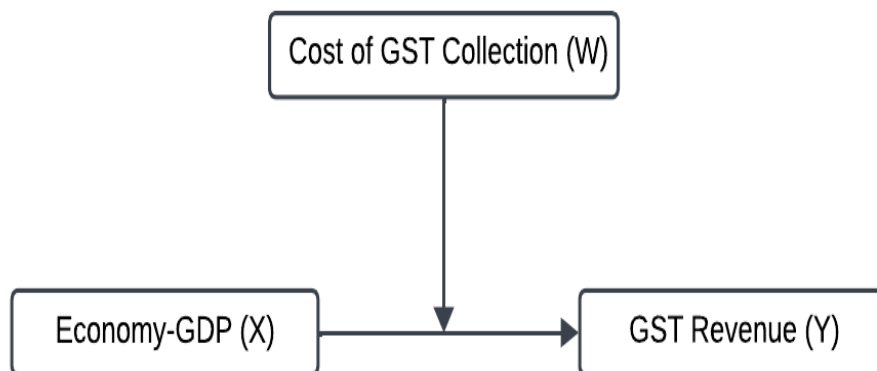

Fig 1: Conceptual Framework of the Study

Source: By Researcher with the help of Lucid Chart.

GDP is taken as an Independent Variable (X) and GST Revenue as a Dependent Variable (Y) where the relation between the two is analyzed. The Cost of GST Collection is taken as a Moderator (W) which is a third variable that modifies the direction and/or strength of the relationship between Independent and Dependent Variables.

A Moderator can impact the relationship between Independent and Dependent Variables in any of the following three ways:

a) Strengthen the Impact of the Independent Variable on the Dependent Variable.

b) Weaken the Impact of Independent Variable on Dependent Variable.

c) Reverse the Impact of Independent Variable on Dependent Variable.

6.2 Operational Definition

The Operational Definition for the three main variables of the Micro-study is given to reduce the ambiguity and provide a clear framework.

1) Economy-GDP: Gross Development Product (GDP) is one of the economic indicators that measures the economic performance of a Country. GDP is the monetary value of goods and services produced for sale in the market that are bought by the final consumers in a country [13]. GDP is the sum of Gross Value Added and Net Taxes of Products and Services.

2) GST Revenue: GST Revenue is the total amount of tax collected from taxpayers on the supply of goods and services at different stages such as manufacturing, distribution, and sale.

3) Cost of GST Collection: It is the cost incurred by the Government in the establishment and management of the GST system and in collecting GST within a specified period.

6.3 Method of Data Collection

Data on the Cost of GST Collection and GST Revenue were collected from secondary sources such as the Union Budget of India. Economy-GDP data were collected from the Press Information Bureau. In addition, data were collected from Journals and Books.

6.4 Hypotheses

H_01: *There is no significant relationship between Economy-GDP and GST Revenue.*

H_02: *There is no moderation effect of the Cost of GST Collection on the relation between Economy-GDP and GST Revenue.*

6.5 Statistical Tools Used

The data were analyzed using SPSS Software. Multiple Regression Analysis Via PROCESS macro model number 1 was used to analyze the Statistical Model framed.

7. ANALYSIS

Table No.1: Particulars of GDP, GST Revenue, and Cost of GST Collection in India

Sl.No	Year Particulars	Economy-GDP	GST Revenue	Cost of GST Collection (Rs. In Bn)
1	2017-2018	170900.42	4441.97	52.50
2	2018-2019	188996.68	5843.38	49.50
3	2020-2021	198299.27	5515.42	50.92
4	2019-2020	201032.93	6017.86	51.52
5	2021-2022	234710.12	6783.27	55.21
6	2022-2023	272410.00	7837.06*	59.81*

*Budget Estimates for 2022-2023 in the Union Budget of India for 2022-2023

Source: Union Budget of India [14] and Press Information Bureau [15].

Table No.2: Standardization of the Data

Sl.No	Year Particulars	ZEconomy-GDP	ZGST Revenue	ZCost of GST Collection
1	2017-2018	-1.0982	-1.4151	-0.1992
2	2018-2019	-0.6033	-0.1994	-1.0020
3	2020-2021	-0.3489	-0.4839	-0.6199
4	2019-2020	-0.2742	-0.0480	-0.4606
5	2021-2022	0.6468	0.6161	0.5256
6	2022-2023	1.6777	1.5303	1.7561

Source: SPSS Software

The Z-score calculation is the process of Standardization placing different variables on the same scale [16]. To calculate the Standardized values, the Mean is subtracted from the actual value and the result is then divided by the Standard Deviation. Standardization makes it easier to interpret the regression equation when the interacting term is included. Secondly, problems with multicollinearity can be reduced by mean-centering the variables.

Statistical Model is a Mathematical representation describing the relationships between variables. A Conceptual Model is used to derive the Statistical Model and involves a mathematical equation explaining the relationship among the variables using statistical tools like Regression Analysis and ANOVA. It serves the purpose of testing hypotheses, analysing data and inferring relationships among variables.
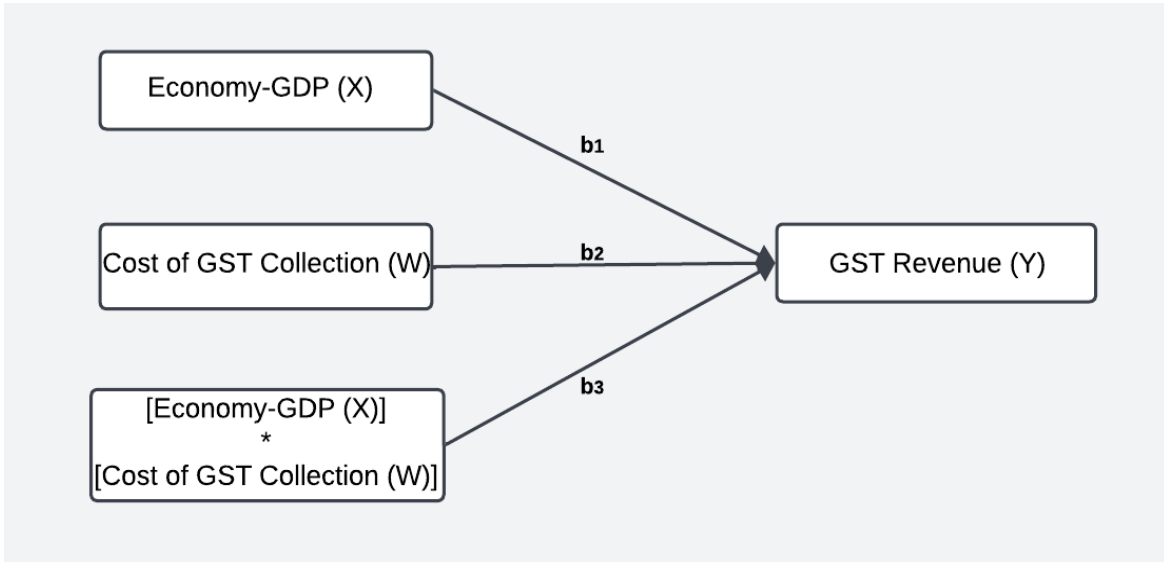
Fig 2: Statistical Model of the Study

Source: By Researcher with the help of Lucid Chart

$$Y = b_0 + b_1X + b_2W + b_3X.W \text{ (or) } Y = b_0 + (b_1+b_3W) X + b_2W$$

Where,

Y represents the Dependent Variable; X and W represent the Independent Variables; b_0, b_1, b_2, and b_3 are coefficients representing the impact of Independent Variables on the Dependent Variable.

b_0 indicates the value of Y when X and W are Zero,

b_1 indicates a change in Y for a unit change in X while W is constant,

b_2 indicates a change in Y for a unit change in W while X is constant,

b_3 indicates a change in Y for a unit change in the interaction between X and W i.e., X*W.

Table No.3: Moderated Multiple Regression Analysis

Model	Coefficient	t	P Value
Model: 1 Y: ZGST Revenue X: ZEconomy-GDP W: ZCost of GST Collection Outcome Variable: ZGST Revenue Int_1 : ZEconomy-GDP * ZCost of GST Collection (X*W)			
Constant	-0.0613 (b_0)	-0.3642	0.7506
ZEconomy-GDP	1.3417 (b_1)	5.3886	0.0328
ZCost of GST Collection	-0.5062 (b_2)	-1.975	0.1869
Int_1	0.0826 (b_3)	0.449	0.6974

Source: SPSS Output

The multiple regression equation corresponding to the result in Table No.3 is as follows:

$$Y = -0.0613 + 1.3417X - 0.5062 \, b_2W + 0.0826X.W$$

Firstly, b_0 = -0.0613 (t = -0.3642, p = 0.7506) represents the value of ZGST Revenue when the value of ZEconomy-GDP and the ZCost of GST Collection in the model are zero. Secondly, b_1 = 1.3417 (t = 5.3886, p = 0.0328) suggests that for one unit change in ZEconomy-GDP, ZGST Revenue is expected to increase by 1.3417 times when the ZCost of GST Collection impact on both the variables is controlled. Thirdly, b_2 = -0.5062 (t = -1.975, p = 0.1869) indicates ZGST Revenue decreasing by 0.5062 times with one unit change in the ZCost of GST Collection when the impact of ZEconomy-GDP on the Model is controlled. Finally, b_3 = 0.0826 (t = 0.449, p = 0.6974) is the regression coefficient representing the interactive effect of both ZEconomy-GDP and the ZCost of GST Collection on ZGST Revenue.

Model 1 summary results (R-sq = 0.9767, F = 27.99, p = 0.0347) indicate the relationship between the independent variables and dependent variable included in the study is deemed to be statistically significant.

$H_0$1: There is no significant relationship between Economy-GDP and GST Revenue.

As per the analysis of Table No. 3, the testing of the $H_0$1 result (p = 0.0328, p<0.05 at 95% confidence interval) indicates a significant relationship between Economy-GDP (X) and GST Revenue (Y), and hence the Null Hypothesis is rejected.

$H_0$2: There is no moderation effect of the Cost of GST Collection on the relation between Economy-GDP and GST Revenue.

From Table No. 3, it was found that the interactive effect of Economy-GDP and the Cost of GST Collection (X*W) on GST Revenue (Y) was Not Significant at an alpha level of 0.05 (p = 0.6974). Hence, the researcher failed to reject the Null Hypothesis ($H_0$2). Here the moderating variable Cost of GST Collection has no significant impact on the relationship between Economy-GDP and GST Revenue.

8. CONCLUSION

Economy-GDP is one of the economic factors that is considered for the study as an influencing factor for GST Revenue. A growing economy results in an increase in the consumption level of the citizens and business transactions which contributes to a raise in GST revenue for the Government of India. From the analysis, it was found that there is a significant relationship between the Economy-GDP and the GST Revenue of India. Hence, a careful consideration of Economy-GDP by the policymakers would positively impact the GST Revenue. This revenue can be used by the government to contribute to economic stability, public investments, the standard of living of citizens, and increased business which play a role in influencing India's GDP.

The Cost of GST Collection involved in revenue collection and establishment expenses can impact the GST Revenue collection. An efficient Cost of GST Collection assigned to areas such as GST Tax Compliance from Stakeholders, infrastructure, and improving

policies results in contributing higher GST Revenue to the Government of India. Multiple Regression Analysis via PROCESS macro model number 1 was used to analyze the impact of the Cost of GST Collection on the relationship between Economy-GDP and GST Revenue. From the analysis, it was found that the Cost of GST Collection does not have a moderating impact on the relationship between Economy-GDP and GST Revenue. The relationship between Economy-GDP and GST Revenue remained stable across the levels of the Cost of GST Collection. However, there is a need to consider the sample size taken for the study as a limitation to the findings which could influence the results. Hence, further research is essential to get more insights from this study. In addition, other economic factors can be considered for further study.

9. LIMITATIONS

1) The data considered for the study is limited to six years i.e., 2017-2018 to 2022-2023 as the GST was implemented on 1 July 2017 in India.

2) The data for 2022-2023 is a budget estimate in the Union Budget of India.

3) For the study, only one of the economic factors (GDP) is considered.

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