

Research Article

Deciphering Economic Growth: Analyzing Influential Factors on Gross Domestic Product in India

Jitendra Kumar Sinha

Retired Sr. Jt. Director Head, D E S, Bihar, Current City: Bengaluru (INDIA).

Corresponding Author: Jitendra Kumar Sinha, Retired Sr. Jt. Director Head, D E S, Bihar, Current City: Bengaluru (INDIA).

Received: 🗰 2024 Apl 01

Accepted: 🔛 2024 Apl 20

Published: 🗰 2024 May 22

Abstract

Gross Domestic Product (GDP) serves as a fundamental measure for assessing economic activity within a nation, representing the total value of all goods and services produced within its borders during a specified timeframe. The calculation of GDP typically employs three primary methodologies: the production approach, the income approach, and the expenditure approach. This study specifically focuses on the Expenditure Method. The Expenditure Method involves aggregating the total value of final goods and services purchased by four mains categories of spending agents: households, firms, government entities, and foreign purchasers. This paper aims to investigate the intricate relationship between the components comprising GDP under the Expenditure Method and the overall GDP figure. It places particular emphasis on elucidating the correlation between each component of GDP and the aggregate GDP, while also examining the impact of inflation on the genuine growth trajectory of economic activity. Furthermore, this study aims to explore public perceptions regarding the factors influencing GDP and the underlying reasons for these perceptions. Among the factors analyzed, six were found to have a significant impact on the decline in GDP during the study period. These factors include improper execution of demonetization policy, implementation of GST, decreased consumption of goods, decrease in investments, decrease in exports, and slowdown in industrialization. The findings suggest that these factors played a substantial role in the observed decline in GDP. Through this analysis, we endeavor to discern the true trend inherent in this macroeconomic indicator.

Keywords: GDP, Economic Development, Consumption, Inflation and Expenditure.

1. Introduction

Gross Domestic Product (GDP) serves as a fundamental metric for assessing a nation's economic performance. It encapsulates the aggregate value of all goods and services produced within a country's borders over a specific period, typically a year. Through continuous analysis and monitoring of GDP fluctuations, policymakers gain insights into economic trends and can devise appropriate strategies to foster growth or mitigate downturns [1-6]. Additionally, GDP analysis aids policymakers in comprehending the ramifications of economic policies on the broader economy. Policy alterations, such as tax adjustments or government expenditures, wield significant influence on GDP, both in the immediate and long-term contexts. By scrutinizing the nexus between policy modifications and GDP variations, policymakers can evaluate the efficacy of diverse interventions and tailor their strategies accordingly [7]. Moreover, for a comprehensive understanding of economic activity trends, delving into the determinants underlying GDP formation is imperative. Analyzing the constituents

shaping GDP provides critical insights for economic decisionmakers and stakeholders, including investors, as it unveils the intricate interdependencies inherent in production and consumption processes [8-10].

In the aftermath of the COVID-19 pandemic, the Indian economy experienced a contraction in real GDP during the fiscal year 2020-21. However, significant growth ensued in the subsequent fiscal year, 2021-22, buoyed by accommodative monetary and fiscal policies, widespread vaccination coverage, and expanded at an estimated rate of 6.9 percent in 2022-23. This growth was driven by robust domestic demand, heightened investment activity propelled by governmental infrastructure initiatives, and buoyant private consumption, particularly among higher-income segments. Notably, there was a shift in the composition of domestic demand, with reduced government consumption due to fiscal consolidation efforts. Despite a robust growth momentum, signs of moderation have emerged, attributed to rising borrowing costs, tightening financial conditions, and

persistent inflationary pressures. Consequently, the growth rate is anticipated to moderate to 6.3 percent in 2023-24 from the estimated 6.9 percent in 2022-23. Furthermore, the general government fiscal deficit and public debt to GDP ratio escalated sharply in 2020-21 but gradually declined thereafter. The fiscal deficit decreased from over 13 percent in 2020-21 to an estimated 9.4 percent in 2022-23, while public debt declined from over 87 percent of GDP to around 83 percent during the same period.

However, recent data indicates a significant downturn in GDP, suggesting forthcoming challenges for the Indian economy. Various factors, including policy implementation issues such as demonetization, initial disruptions in money flow due to the Goods and Services Tax (GST), reduced consumption, constrained access to banking credit, diminished investments, sporadic government expenditures, declining exports, and reduced industrialization, have contributed to this decline. Public discourse surrounding this GDP crisis has intensified, reflecting widespread concern about the economic trajectory and the pivotal role of GDP as a metric for national prosperity.

1.1. Influential Factors: A Review of Literature on GDP Determinants

Demonetization Policy: The demonetization of high-value banknotes, notably the withdrawal of 500- and 1000-rupee denominations, was enacted on November 8, 2016, alongside the introduction of new currency notes. This policy aimed to curb illicit financial activities. Initially garnering support from certain quarters including banking officials and international observers, its execution faced widespread criticism due to operational deficiencies. Opinions on its efficacy varied among experts, with proponents like Jagdish Bhagwati endorsing its potential benefits, while others such as Amartya Sen, Kaushik Basu, Pronab Sen, Prabhat Patnaik, T. N. Ninan, and Paul Krugman expressed skepticism [11-13]. Adverse consequences of the policy included a slowdown in economic growth due to liquidity shortages, resulting in decreased consumption, diminished production, substantial economic losses, and a reduction in employment opportunities, notably affecting micro, small, and medium enterprises.

Goods and Services Tax (GST): The Goods and Services Tax (GST) was introduced as a sweeping tax reform aimed at eliminating cascading taxes and facilitating easier access to goods and services at reduced prices. Initial forecasts, such as those by DBS Bank, anticipated transient inflationary pressures followed by positive economic outcomes. However, the abrupt implementation of GST led to disruptions stemming from challenges in obtaining licenses, filing returns, and adhering to tax payment protocols, largely due to a lack of preparedness among businesses. These issues resulted in delayed revenue accrual for the government and contributed to a contraction in GDP.

Consumption of Goods: Despite slowdowns in manufacturing and construction sectors, a significant decline in consumer

Copyright © Jitendra Kumar Sinha

spending has emerged as a primary driver of the pronounced deceleration in GDP growth. Between March 2019 and June 2019, consumption growth plummeted from 7.2% to 3.1%, representing a staggering 71% decrease. Sectors such as fast-moving consumer goods (FMCG) and automobile sales experienced substantial declines in demand, underscoring the pivotal role of consumer spending in GDP expansion.

Banking Credits and Loans: The availability of credit and loans from the banking sector is pivotal for fostering economic expansion [14-16]. However, recent trends indicate a contraction in lending activities by banks, prompting entrepreneurs to seek alternative financing avenues such as Non-Banking Financial Companies (NBFCs). This shift, exacerbated by a liquidity crunch following the September 2018 crisis, has resulted in diminished investment and hindered economic growth.

Investments: Investments from diverse sources are indispensable for driving economic progress. However, uncertainties surrounding GDP performance have deterred many corporate entities and businesses from undertaking new investment ventures. This reluctance, fueled by unclear return prospects, has contributed to the deceleration in economic growth.

Government Overheads: Government expenditures traditionally underpin essential public services and economic development initiatives [17-19]. Nonetheless, excessive spending, particularly on recurrent outlays, can exert downward pressure on GDP expansion. Despite calls for fiscal prudence, government expenditure has continued to escalate, leading to budgetary shortfalls and economic challenges.

Exports: Exports constitute a vital component of economic growth, contributing significantly to GDP enhancement [20-22]. Recent contractions in export volumes, attributed to global economic downturns and trade tensions, have adversely affected India's economic performance. While reductions in imports may alleviate some pressure on GDP, efforts to bolster export activity remain imperative for sustained economic vitality.

Industrialization: Industrial sectors, notably manufacturing, play a pivotal role in driving economic growth [23, 24]. However, a dearth of incentives and productivity declines in industrial segments have impeded growth prospects. The deceleration in industrial output, particularly in the manufacturing domain, has contributed to the overall downturn in GDP.

Conceptual Framework: The review of existing literature highlights a myriad of factors influencing the decline in GDP, encompassing policy interventions, consumption dynamics, financial sector intricacies, investment patterns, government expenditure trends, trade dynamics, and industrial performance. These multifaceted factors collectively delineate the conceptual framework elucidating India's economic challenges and the pathways toward sustainable

growth.

1.2. Clarifying Goals: The Aim and Objectives of Analysis This study investigates the components comprising Gross Domestic Product (GDP) determination through the Expenditure Method, focusing on the impact of consumption expenditure (C), investment expenditure (I), government expenditure (G), and net export expenditure (X – M) on GDP. Elevated levels of consumption and investment expenditure are hypothesized to positively affect GDP, while government expenditure and net export expenditure may have varying effects contingent upon their financing and trade balance, respectively. Additionally, the study aims to ascertain the public's perceptions of factors influencing GDP and the reasons behind them. Conducted in Bangalore, India, a survey was employed to gauge public understanding and opinions. Statistical analysis, including Multiple Regression Analysis, was utilized to quantify the significance and influence of each factor on GDP. The formulated hypotheses suggest that policies such as demonetization and the implementation of GST, alongside factors like decreased consumption, banking credit deterioration, reduced investments, government overheads, decreased exports, and industrial slowdown, may have contributed to the observed decline in India's GDP. Recommendations for policymakers to address these issues and strengthen the economy are provided based on the findings.

2. Evaluating India's GDP Dynamics: Methodology

This study investigates the factors influencing the evolution of Gross Domestic Product (GDP) in India from 2007 to 2023. A comprehensive analysis methodology, inclusive of correlation analysis, was employed to discern significant variables impacting GDP and elucidate their relationship with economic performance. The analysis primarily employed the expenditure method, a recognized approach in national accounting, to delineate India's GDP trajectory during the specified period, offering insights into economic growth dynamics and informing policy-making strategies for sustainable development. Understanding GDP determinants is pivotal for policymakers, economists, and stakeholders to formulate effective economic strategies. Correlation analysis aims to identify primary elements driving GDP fluctuations and elucidate their interrelations. Disaggregating GDP into consumption, investment, government spending, and net exports components allows insights into growth drivers. Quantifying correlations and discerning their nature provides a nuanced understanding of economic factors' interplay and overall performance. Rigorous analysis identifies key growth elements and informs policymakers about fostering sustainable development amidst evolving global challenges. In conducting the correlation analysis, the correlation matrix methodology was employed. The correlation matrix is a statistical technique commonly utilized to elucidate relationships among two or more variables. Its applicability spans various fields, including economics. The

Copyright © Jitendra Kumar Sinha

matrix exhibits a value of 1 along the principal diagonal, representing self-correlation, and presents correlation coefficients for other variable combinations. The Pearson correlation coefficient was employed, a measure ranging between -1 and 1. A coefficient approaching -1 indicates a strong negative correlation, while a coefficient of 0 signifies no discernible correlation. Conversely, a coefficient nearing 1 suggests a robust positive correlation between variables. Put differently, positive correlation coefficients denote variables moving in tandem, either increasing or decreasing together, while negative coefficients indicate variables moving in opposite directions.

The public's perceptions of factors influencing GDP and the reasons behind them were ascertained through a purposive survey conducted sixty relevant and prominent figures in, India, to gauge public understanding and opinions. Statistical analysis, including Multiple Regression Analysis, was utilized to quantify the significance and influence of each factor on GDP.

Change in GDP and eight variables were studied by the multiple regression of the form:

 $\Delta \text{ GDP} = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \notin (1)$

Where X₁: Execution of Demonetisation policy.

X₂: Money flows through GST.

- X₃: Consumption of Goods.
- X₄: Banking credits loans.
- X₅: Government Investments.
- X E₆: Government Overheads Expenditure.

X₂: Exports

- X_o: Industrialisation.
- Δ GDP: Change in GDP

 α and β 's are the parameters and \in is the error term associated with the regression equation.

2.1. Data Software

The variables selected for correlation analysis in this study are i) Gross Domestic Product (GDP); ii) Consumption Expenditure (CE); iii) Investment Government Expenditure (IGE); and iv) Net Export (NE). Data about these variables were sourced from the website of the Ministry of Statistics Programme Implementation, as well as other relevant Ministries.

The XLSTAT software was utilized for calculating the correlation matrix. XLSTAT is renowned for its robustness and versatility in statistical analysis, making it a suitable tool for this study's requirements.

3. Results

The correlation analysis conducted provided significant insights into the determinants of economic growth in India spanning from 2007 to 2023. These insights are presented in Table 1 - Correlation Matrix (Pearson).

Variables	GDP	СЕ	IGE	NE
GDP	1.000	0.996	0.882	0.079
CE	0.996	1.000	0.917	0.122
IGE	0.882	0.917	1.000	0.265
NE	0.079	0.122	0.265	1.000
Source: Author's calculation.				

Table 1: Correlation Matrix (Pearson).

The analysis elucidated the significant role of household consumption expenditure in driving favorable economic developments throughout the studied period. Particularly noteworthy was the surge in consumption demand, largely attributed to salary increases in 2006 and 2016, which exerted a robust influence on economic growth. Furthermore, direct and substantial correlation was observed а between investments-particularly public spending, gross fixed capital formation-and positive economic outcomes. These findings underscore the considerable contribution of government expenditure and investment activities to India's economic performance. Conversely, the correlation coefficient associated with net exports indicated a weak connection with GDP evolution, suggesting India's pronounced dependence on imports relative to its capacity to leverage national production externally. To mitigate this dependency and bolster economic resilience, policymakers are encouraged to intensify efforts to enhance domestic production competitiveness and attractiveness in international markets. The causal relationships and interdependencies among variables influencing GDP provide additional insights into the intricacies of economic growth dynamics in India.

3.1. Real Economic Growth Between 2007-2023

• Given the focal point on the expenditure method in scrutinizing GDP evolution and its resultant positive outcomes, notably in final consumption, a comprehensive examination of the real growth trajectory of the national economy was deemed essential [25]. The objective of the study was to evaluate the extent to which documented developments translated into tangible economic growth, considering the inflationary pressures inherent in heightened consumer demand.

• Inflation, as a potential influencer of GDP dynamics, manifests through diverse channels, encompassing diminished purchasing power, escalated production costs, and currency devaluation, each exerting distinct impacts on economic growth and GDP trajectories [26, 27]. Correlation coefficients between GDP and the inflation rate were meticulously examined to discern the real determinants influencing GDP trends.

• Analysis utilizing XLSTAT software unveiled a correlation coefficient of 0.299 between GDP and the inflation rate in India from 2007 to 2023, signifying a direct yet feeble association between the two variables. This empirical finding underscores a nuanced relationship between inflationary pressures and economic growth.

• India's Gross Domestic Product (GDP) exhibited growth in

recent years, notwithstanding a slight contraction in 2020 precipitated by the COVID-19 pandemic. Robust performance in the services and agricultural sectors propelled GDP expansion in 2019, whereas pandemic-induced disruptions adversely affected economic activity in 2020, particularly within the services and industry domains.

• Government interventions, encompassing fiscal and monetary policies, coupled with support from the supporting countries, played instrumental roles in alleviating the economic repercussions of the pandemic. As economic activities gradually resumed, India witnessed GDP growth in the first quarter of 2021, predominantly driven by the services and industry sectors. Overall, India's recent GDP trajectory underscores resilience amidst challenges, with promising prospects for sustained growth in the foreseeable future.

3.2. Results of Public Opinion

i. The F-value between the dependent variable and predictors is 1.97, with a significant value of 0.033, indicating significance at the 0.05 level. Additionally, it can be inferred that for every one-unit increase in items related to influencing economic factors, there is an increase of 231.559 in GDP. Therefore, it is interpreted that the predictors of influencing economic factors significantly influence the change in GDP.

ii. The R-Square value is 0.291, suggesting that all influencing variables collectively contribute to 29.1 percent of the change in GDP, while the remaining 70.9 percent is attributed to other unknown variables.

iii. The decline of GDP concerning X_1 (Improper execution of demonetization policy) is 29.161 (29.1 + 0.061). If X1 increases by one unit, the overall GDP performance increases by 29.161.

iv. Similarly, if predictors $X_{2'}$, $X_{3'}$, $X_{4'}$, $X_{5'}$, $X_{6'}$, $X_{7'}$, and $X_{8'}$ are increased by one unit, the increase in GDP is as follows:

- X₂ (Initial scarcity of money flow through GST) by 29.164;
- X_3^2 (Decreased consumption of goods) by 29.152;
- X₄ (Unavailability of banking credits and loans) by 29.113;
- X₅ (Diminished investments) by 29.253;
- X_{ϵ} (Discontinuous government overheads) by 29.003;
- X_7 (Declined exports) by 29.247;
- X_{8} (Lowering industrialization) by 29.186.
- v. Hypotheses Testing:

• H_1 : The improper execution of the demonetization policy has a high influence on the declined GDP of India. The weightage of the factor, 29.161, suggests moderate acceptance, thus the hypothesis is accepted.

 \bullet H₂: The implementation of GST, causing trade disturbances, has a high influence on the declined GDP of India. The

weightage of the factor, 29.164, indicates moderate acceptance, hence the hypothesis is accepted.

• H_3 : Decreased consumption of goods has a high influence on the declined GDP of India. The weightage of the factor, 29.152, suggests moderate acceptance, thus the hypothesis is accepted.

• H_4 : Deterioration in banking credits and loans has a high influence on the declined GDP of India. The weightage of the factor, 29.113, being lower than other factors, suggests rejection of the hypothesis.

• H_{s} : A decrease in investments has a high influence on the declined GDP of India. The weightage of the factor, 29.253, is the highest influencing factor, and the hypothesis is highly accepted.

• H_6 : Uncontrolled government overheads have a high influence on the declined GDP of India. The weightage of the factor, 29.003, being the lowest, leads to the rejection of the hypothesis.

• H_7 : A decrease in exports has a high influence on the declined GDP of India. The weightage of the factor, 29.247, along with its significance value, leads to high acceptance of the hypothesis.

• H_8 : The slowdown in industrialization has a high influence on the declined GDP of India. The weightage of the factor, 29.186, moderately higher than others, leads to the acceptance of the hypothesis.

Among the factors analyzed, six were found to have a significant impact on the decline in GDP during the study period. These factors include improper execution of demonetization policy, implementation of GST, decreased consumption of goods, decrease in investments, decrease in exports, and slowdown in industrialization. The findings suggest that these factors played a substantial role in the observed decline in GDP.

4. Conclusion

In conclusion, the Expenditure Method reveals the significant impact that its components can exert on a country's GDP. Our analysis indicates that an increase in consumption expenditure and investment expenditure generally leads to GDP growth. However, the effect of government expenditure and net export expenditure on GDP varies depending on their financing methods.

Understanding the intricate relationship between each component of GDP and the aggregate GDP is imperative for policymakers striving to foster economic growth and development. Inflation, as observed, can detrimentally affect consumer purchasing power, business profits, and exportoriented economies, potentially leading to a decrease in GDP. Continuous monitoring of GDP changes and scrutiny of its composition empower policymakers to pinpoint economic sectors requiring assistance, evaluate the efficacy of policy interventions, and make well-informed decisions to foster growth and societal well-being.

Among the influencing factors, diminished investments stand out as the most significant, resonating well with public sentiment. The decline in investments has hampered various Copyright © Jitendra Kumar Sinha

developmental activities, such as product manufacturing, agricultural advancement, and service provision. To address this, governments should incentivize entrepreneurs, offering assurances of secured returns to bolster investor confidence and encourage a resurgence in funding for ventures. It's noteworthy that public awareness regarding the impact of decreased exports on GDP is high, with suggestions to promote products and services with unique selling propositions in international markets. Additionally, reducing imports of non-essential commodities, such as gold, could help address this issue. Conversely, public perception regarding discontinuous government overheads is relatively indifferent. While the public acknowledges the necessity of government expenditure on welfare schemes and developmental activities, they perceive such spending as indispensable and should continue unabated. In summary, addressing the identified influencing factors requires targeted policy measures aimed at revitalizing investment, enhancing export competitiveness, and ensuring prudent government expenditure to foster sustained economic growth and prosperity.

References

- 1. Dynan, K., Sheiner, L. (2018). GDP as a measure of economic well-being (Vol. 43, No. 1, pp. 1-52). Hutchins Center Working Paper.
- 2. Sinha, J. K., Sinha, A. K. (2020). Trend and Growth of Capital Stock in Bihar During 1980-2017. Journal of Humanities, Arts and Social Science, 4(1), 57-66.
- 3. Sinha, J. K. (2022). Government Expenditure and Its Effect on National Income and Employment in India.
- 4. Sinha, J. K. (2022). Unemployment, public expenditure economic growth in India during post economic reform period. Journal of Economic Research and Review, 2(4), 476-481.
- Sinha, J. K. (2023). Economic Growth and Public Expenditure on Human Capital Formation in India: An Econometric Investigation. Advanced Journal of Economics and Finance, 5(2).
- Sinha, J. K. (2023). IMPACT OF GOVERNMENT EXPENDITURE, UNEMPLOYMENT, INFLATION, AND HOUSEHOLDS' CONSUMPTION ON ECONOMIC GROWTH IN INDIA. Studies in Economics and International Finance, 3(1), 63-76.
- Landefeld, J. S., Seskin, E. P., Fraumeni, B. M. (2008). Taking the pulse of the economy: Measuring GDP. Journal of Economic Perspectives, 22(2), 193-216.
- 8. Villanueva, A. I. (2020). Analyzing Romania GDP: Final consumption, gross investment, and net exports influence compared to previously published models. Theoretical Applied Economics, 27(4), 169-176.
- 9. Sinha, J. K. (2017). Contribution of investment in economic growth of major sectors: With focus on Agriculture and Allied sector in Bihar. Statistical Journal of the IAOS, 33(2), 557-564.
- Sinha, J. K. (2023). Dynamics of Investment, Economic Growth, and Employment in Contemporary India: Analyzing Patterns and Future Potential. Politi Sci Int, 1(1), 52-60.
- 11. Singh, C., Pemmaraju, S., Das, R. (2016). Economic

Volume - 1 Issue - 1

growth and banking credit in India. IIM Bangalore Research Paper, (531).

- 12. Dutta, P. K. (2018). Demonetisation: What India gained, and lost. India Today, 30.
- 13. Ohlan, M., Rani, E. (2019). Demonetization of Indian Economy: A Review on the Effects and Reactions. Indian Journal of Extension Education, 55(3), 9-16.
- Ranganath, N. S., Gopal, K. V. (2013). Growth of Insurance Sector in India–The New Horizons. Journal of Globalization and Business Management, 1(2), 72-82.
- 15. Korkmaz, S. (2015). Impact of bank credits on economic growth and inflation. Journal of applied finance and banking, 5(1), 51.
- 16. BonamSivakumar, K., Murty, D. V. Assessment of Public Discernment on Factors Influencing the Declined Gross Domestic Product of India.
- Udoh, B. E., Abner, I. P., Ike, R. N., Tingir, T. J., Ibekwe, U. J. (2018). Effect of administrative capital expenditure on economic development: An emerging nation outlook. Journal of Internet Banking and Commerce, 23(1), 1-17.
- Olulu, R. M., Erhieyovwe, E. K., Andrew, U. (2014). Government expenditures and economic growth: The Nigerian experience. Mediterranean Journal of social sciences, 5(10), 89-94.
- 19. Samson, A. A. (2013). Government spending and economic growth in Nigeria. Munich Personal RePEc Archive (MPRA), 2(5), 1-23.
- 20. Islam, M. R., Haque, M. (2018). The Success of Export and Its Impact on GDP of Bangladesh. International Journal of Investment Management and Financial Innovations,

4(1), 9-13.

- 21. Ronit, M., Divya, P. (2014). The relationship between the growth of exports and growth of gross domestic product of India. International Journal of Business and Economics Research, 3(3), 135-139.
- 22. Venugopal, K., Rajesh, B., Negash, M., Brhanu, A. (2016). Family Decision Making on Purchasing the Gold: A Study on the Transition of Indian Gold Imports into Economic Turmoil. Journal of Exclusive Management Science, 5.
- Adenomon, M. O., Oyejola, B. A. (2013). Impact of Agriculture and Industrialization on GDP in Nigeria: Evidence from VAR and SVAR Models. International journal of Analysis and Applications, 1(1), 40-78.
- 24. Udah, E. B. (2010). Industrial development, electricity crisis and economic performance in Nigeria. European Journal of Economics, Finance and Administrative Sciences, 18(1), 105-121.
- 25. Sinha, J. K. (2023). THE DYNAMICS OF GOVERNMENT SPENDING: A STUDY OF ITS INFLUENCE ON NATIONAL INCOME AND EMPLOYMENT IN INDIA. Studies in Economics and International Finance, 3(2), 131-155.
- Sinha, J. K. (2023). Shadow of Inflation-Unemployment-Poverty on the Economic Development in India. Journal of Quantitative Finance and Economics, 5(2), 297-315.
- Sinha, J. K. (2023). EXAMINING THE INFLUENCE OF INFLATION, UNEMPLOYMENT, POVERTY, AND POPULATION GROWTH ON ECONOMIC DEVELOPMENT IN INDIA. Studies in Economics and International Finance, 3(1), 25-43.