Exploring the Peacock-Wiseman Hypothesis in India: "A Temporal Analysis of Expenditure in the Social Sector"

***Anjali Mishra**

*Research scholar, (anjalimishra13750@gmail.com),)Department of Economics, JTGDC, Prayagraj

Abstract

The expansion of an economy and the growth of government sector activity have a significant functional association (Bhatia, 2011). According to Crafts, Government institutions and policies play a central role in long-run growth outcomes. It has a positive impact on several growth-inducing factors. Enhancing human capital productivity is one of them. Investment in health, education, and social security creates positive externalities and possibilities for sustainable growth in the country. There is a two-way positive relationship between economic growth and public spending on the social welfare of people in a country. According to Economist **Amartya Sen** public spending on Health and Education is essential for achieving social equity and inclusive development. Investment in human capital is one of the major steps that has to be taken to achieve self-sustenance growth in India. Health is assumed to be an important component and determinant of the overall well-being of an individual. However, India has remarkably improved in human development parameters but is still far behind in achieving Sustainable Development Goals related to human resources. Marginally improved health indicators in the country urgently need massive intervention by individuals and on the part of the government. The objective of this study is to examine the association between economic growth and the rise in social sector expenditure in India. It aims to study the impact of investing in health on the improvement of selected health indicators. This paper attempts to study the dynamics of public spending in India, particularly about societal well-being. The paper analyses the linkages between the economic growth of a country and social sector expenditure and finds out the implication of the Peacock-wiseman hypothesis for the same & finds out that the growth of social sector expenditure in India is not smooth; instead, it increases in jerky steps, as suggested by **Wiseman-Peacock**.

Keywords: Wagner Hypothesis, Social Sector Expenditure, Human Development, Externalities.

INTRODUCTION

The correlation between public expenditure and gross domestic product (GDP) has been a topic of debate in economic literature. Classical economists believed that the government should have limited involvement in society, and public expenditure was not a priority, they believed that government work was unproductive and unbeneficial to society. **J.B. Say** stated that **" the best way of all plans of finance is to spend less",** while **Adam Smith** believed that the government should focus on **justice**, **public services**, **and management**. However, after the great depression of the 1930s, Classical ideas failed to restore the economic conditions. This led to a revolution in economic thinking by **British economist Keynes.** With the rise of industrialization and increased state activity, there has been a general trend of proportional increases in government spending. Various researchers have explored the relationship between government expenditure and a nation's GDP using different theoretical frameworks. In 1961, **Peacock and Wiseman** analysed the Wagner hypothesis and claimed that Wagner's Law is simply a collar of an old-fashioned and repugnant political philosophy (**Sharma et.al, 2021)**. According to **Musgrave RA (1989),** there are three main reasons

for the increase in public expenditure: the expansion of social activities of the state, an increase in administrative and protective actions, and the assumption of welfare functions. Two British economists**, Alan T Peacock and Jack Wiseman**, examined the Wagner hypothesis and discovered that public expenditure does not increase consistently, but in jumps and jerks. They argue that social crises cause sudden increases in government size, which never fall back to the previous level **(Displacement effect)** Even when there is no disruption, there is little incentive to revert to lower-level taxation as the increase expands the fiscal operations of the government, partly due to the disturbance and partly to expand economic activity and take up new functions that were previously neglected, which is known as the **"inspection effect."** When an economy experiences economic growth, there is a tendency for the central government's economic activity to grow at a faster rate than that of states and local governments (**concentration effect).** This is due to the country's political structure. Investing in the social sector is crucial because it benefits the poor more than the wealthy, and it can improve the human capital of the economy, creating direct growth effects and indirect benefits for the rest of the economy. In the case of India, as with many other developing nations, the government's spending on the social sector is essential for three reasons: the scale of poverty in the country is too significant to be left to market forces alone, more poor households rely on government services than wealthier households, and to ensure that social outcomes such as the **Sustainable Development Goals (SDGs)** are achieved. This paper aims to explore the relationship between social sector expenditure and economic growth and to investigate the Wiseman-Peacock hypothesis for India using time series econometric techniques from 2010 to 2023.

OBJECTIVES OF THIS STUDY

- To study the trend of social sector expenditure in India, in the context of the Peacock-Wiseman hypothesis.
- To study the trend of human resource development in India.

LITERATURE REVIEWS

Public expenditure can be viewed as an external factor that can influence economic growth and as a public policy tool, as Keynes suggested in 1936. However, it can also be seen as an internal factor or an outcome of economic growth, rather than a cause, as per Wagner's hypothesis of "increasing state activity" **(Singh et al .,1984).** These approaches **(Keynesian & Wagner's law)** reflect two ways of interpreting the link between government spending and national income. **In the Wagner framework**, cause and effect run from national income to government spending, whereas, **In the Keynesian approach** cause and effect go in the opposite direction, **(Javed et al., 2021).**

Different versions of Wagner's law have been proposed by different authors over the years, as Wagner himself did not present his law in mathematical form and did not explicitly formulate his hypothesis **(Dutt & gosh,1997)**. Hence, over the years, different authors used different mathematical forms for testing this law. (**Verma S. & R. Arora, 2010; Kulshrestha D.,2013; Sethi S., 2016)**, there are at least six versions of this law, which have been empirically investigated by different economists. The first version of this law was given by **Peacock and Wiseman in 1961** by using the double log equation from which the elasticity estimates were derived.

Log GE = a + b log GDP +u.

A study conducted by **Owino B. et, al. (2017),** in Kenya, assessed the relationship between public expenditure on education, health, social security, and economic growth. The study used the ARDL model and considered other variables like household expenditure and real rate interest. The study found that education expenditure had a positive effect on GDP per capita in both the short-run and long-run. On the other hand, health and social security expenditures appear to hurt economic growth. Moreover, population size and real interest rate negatively affected real GDP per capita in the long run.

Another study conducted by **Magazzino C. et, al.(2015)**, on European Union countries, examined Wiseman's displacement effect. The study used panel data methodologies, taking cross-dependence and causality of the variables, public expenditure, and aggregate income. The study found that there is a long-run relationship between public expenditure and GDP. The DOLS technique indicates that, in the long run, a 1% increase in GDP tends to result in a rise in government expenditure/GDP ratio share by 0.01% and 0.62%

A study conducted by **Abiodun M. et, al. (2013),** examined the relationship between government expenditure and revenue in Nigeria. They validated the Peacock-Wiseman hypothesis and assessed its impact on fiscal discipline. The study used time series data from 1961 to 2010 and employed Johansen multivariate cointegration technique, vector Error Correction Mechanism (VECM), and Granger causality test. The results showed that the Peacock-Wiseman spend-revenue relationship holds in both the short-run and long-run. This means that government spending decisions precede revenue, which can contribute to fiscal deficits in Nigeria. The study highlights the importance of fiscal discipline in government spending.

The study conducted by **Henry Thomas O. et, al.(2000)**, examined Peacock-Wiseman's hypothesis regarding government spending in the UK. The study used a univariate modelling technique and a dataset from 1836 to 1995 to identify the displacement effects in government expenditure to GDP ratio. The study found four significant shifts in government expenditure to GDP ratio, which corresponded to historical events and policy changes. These findings support the displacement hypothesis, indicating that significant events can have a lasting impact on government spending patterns.

RESEARCH GAP

Several research papers have been conducted in different countries to investigate the relationship between Total expenditure and GDP growth. These studies have empirically tested Wagner's hypothesis. However, none of the research papers explain the jerky steps as suggested by Peacock Wiseman in the context of India. This research paper aims to shed light on the reason behind this jerky manner by discussing three types of effects: **displacement effect, inspection effect, and concentration effect.**

RESEARCH METHODOLOGY

This study uses secondary data to evaluate the Peacock-Wiseman hypothesis in the context of social sector expenditure on economic growth in India after the pandemic. To achieve this, we collected the annual time series data from the economic survey 2022-23. The objective is to determine if the hypothesis is applicable or not by using secondary data analysis.

HYPOTHESIS

H0: The rise in the social sector expenditure follows a smooth pattern after the 14th Finance Commission.

H1: The rise in the social sector expenditure follows a non-smooth pattern after the 14th Finance Commission.

Table: 1

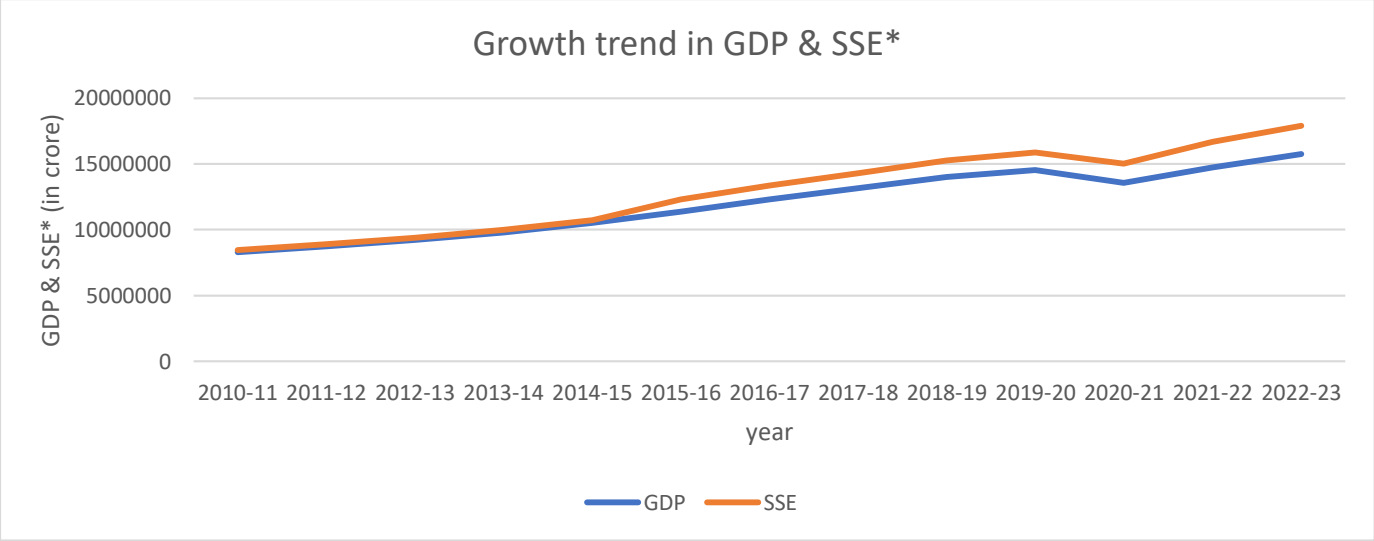
Trend in GDP & Social Sector Expenditure (in crore)

Year	GDP (at constant price)	Social Sector Expenditure	SSE* as a percentage of GDP
2010-11	8301235	147494	7.9
2011-12	8736329 (5%)	140932 (4%)	7.4
2012-13	9213017 (5%)	157353 (10%)	7.5
2013-14	9801370 (6%)	174855 (10%)	8.1
2014-15	10527675 (7%)	201983 (13%)	5.2
2015-16	11369493 (8%)	915500 (3.31%)	6.6
2016-17	12308193 (8%)	1040620 (12%)	6.8
2017-18	13144582 (7%)	1139524 (8%)	6.7
2018-19	13992914 (6%)	1278124 (10%)	6.8
2019-20	14515958 (4%)	1364906 (6%)	6.8
2020-21	13558473 (-7%)	1479389 (7%)	7.5
2021-22	14735515 (9%)	1944013 (23%)	8.2
2022-23	15760363 (7%)	2132059 (8%)	8.3

Source: Data computed based on NITI AYOG report post & pre-reform and economic survey 2022-23

The table above illustrates an increasing upward growth rate of 5% in GDP from 2011 to 2016. However, the growth rate fluctuated after 2018. During the COVID-19 pandemic, the GDP growth rate decreased to -7% in 2020-21. But, after 2020, the GDP growth rate increased by 9%, indicating a **V-shaped recovery** in the GDP growth rate. This growth rate is the highest in the last 10 years. During this time, the growth rates in the SSE also increased, which can be observed in a jerky manner, as the "**Wiseman hypothesis" suggests.**

Figure 1



According to above graph shows a smooth upward trend in both GDP & SSE*from 2010-11 to 2014-15, by **Wagner's hypothesis**. However, after 2014-15, there was a sudden surge in SSE by 13% compared to 2013-14, which can be explained by the "**displacement effect:** put forward by the **Peacock Wiseman hypothesis**. This sudden increase in SSE occurred due to the recommendation of the **14th Finance Commission** to increase the States' share in the divisible pool of taxes from 32% to 42%, resulting in a significant increase in SSE especially in health and education. Due to political circumstances after 2018,

there was a decline in SSE. However, during the pandemic lockdown, expenditure in the social sector was temporarily halted, which can be observed in the graph after the COVID-19 pandemic. there are again increases in both GDP & SSE*.

Table 2

Inter-Country Variation in Human Development Index value

Country / Year	**2013**	**2015**	**2017**	**2019**	**2021**	**2022**
USA	.914	.920	.924	.926	.921	.927
UK	.892	.909	.922	.932	.929	.940
Japan	.890	.903	.909	.919	.925	.920
Sri Lanka	.750	.766	.770	.782	.782	.780
Maldives	.698	.701	.717	.740	.747	.762
China	**.719**	**.738**	**.752**	**.761**	**.768**	**.788**
India	**.586**	**.624**	**.640**	**.645**	**.633**	**.644**
Bhutan	.584	.607	.612	.654	.666	.681
Bangladesh	.558	.579	.608	.654	.661	.670
Nepal	.540	.558	.574	.602	.602	.601
Pakistan	.537	.550	.564	.554	.544	.540

Sources: Data taken from HDR reports

The table above displays the Human Development Index (HDI) scores of different countries. India's HDI score is lower than that of its neighbouring countries like China, Sri Lanka, Bhutan, and Bangladesh. Before the recommendations of the 14th Finance Commission (2014-15), India's HDI score stood at 0.586. However, there was a remarkable improvement in health and education, which is reflected in the HDI scores, after the implementation of the recommendations **("states should increase their spending on health to more than 8% of their budget by 2022"),** from 2015 to 2019. The global HDI value has decreased over the past two years due to the pandemic, the Ukraine war, and other factors, with many countries experiencing a continuing decline in 2021. In India, the rise in investment in the social sector is expected to raise health indicators and education levels that will lead to high employability. The unemployment rate is still high because investment and employment opportunities are not expanding, due to political instability and a slowdown in the world economy; policy paralysis is also one of the reasons for it within the country itself.

Table 3
Inter-state variation in human resource development in India

States/UTs	2011-12				2017-18			
	Long & healthy life	Knowledge		Income	Health	Knowledge		Income
	Life expectancy at birth	The mean year of schooling	Expected year of schooling	Per capita GSDP at constant price (rupees)	Life expectancy at birth	The mean year of schooling	Expected year of schooling	Per capita GSDP at constant price (rupees)
Punjab	71.60	6.11	12.19	95379	72.4	7.37	14.20	124152
Chandigarh	70.10	8.77	14.52	176227	71.05	10.72	15.56	250609
Utter Pradesh	71.70	6.23	12.09	113456	71	8.25	14.09	164165
Delhi	73.20	9.40	15.04	202139	74.7	9.20	15.93	284434
Bihar	68.10	3.87	9.90	23525	68.9	4.66	10.18	29385
India	67.90	5.30	12.18	71609	69	5.97	12.45	100268

Source: Data taken from Ministry of Statics and Program Implementation, Government of India, & H.D.R

The table above indicates that following the recommendation of the 14th Finance Commission, there was a significant improvement in the Human Development Index (HDI) score in various states in India. This improvement was a result of increased expenditure in the social sector. As per the source, the performance of many states improved and they moved into the high and medium categories. This change is attributed to the **"inspection effect,"** which results from the sudden increase in social sector expenditure after the recommendation.

The primary responsibility for implementing social sector programs lies with the state governments. However, various committees and finance commissions have recommended an increase in grants to states for social sector expenditure. The central government also supports the states by allocating extra resources for specific programs through Centrally Sponsored Schemes, Additional Central Assistance, and Special Central Assistance. In FY2015-16, there was a 21.19% increase in resources available to the states by way of central transfers as compared to FY2014-15, indicating a " **concentration effect". (Sachdeva H.et,al.2018).**

DATA ANALYSIS

To investigate the relationship between economic growth and social sector expenditure, we first create a null hypothesis to test the stationarity of both time series data (GDP growth and SSE*). We use the augmented Dickey-Fuller test for unit root testing and find that the data has no unit. Therefore, we reject the null hypothesis and accept the alternative hypothesis. we conducted a regression analysis using SSE* as the dependent variable, which is dependent on GDP, the independent variable. The results of the regression analysis show, a strong relationship between the growth of GDP and SSE*. For every 1% increase in GDP, there is a 0.2% increase in SSE*.

Theoretical framework

Log (SSE*) = a + b log (GDP) + u

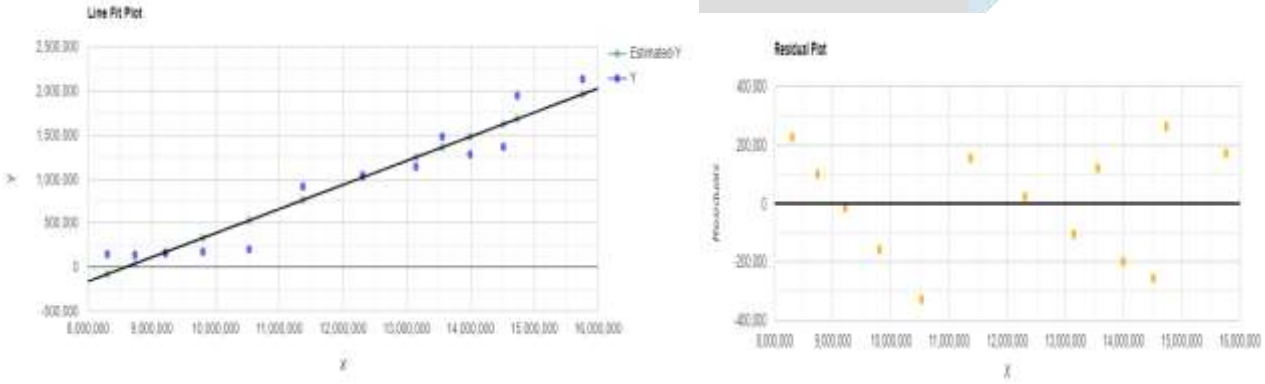
$$\hat{Y} = -2348156.1897 + 0.2736X$$

Findings

$R^2 = .93$, $F(1,11) = 138.15$, $p < .001$

b(beta) = .27, $p < .001$, a (alpha) = -2348156.019, p = .000.

The statistical analysis shows that 93% of the variability of the SSE* is explained by the GDP, as indicated by the R-squared value of .93. The correlation (R) between the growth in GDP and the growth in SSE is 0.9624, indicating a strong positive correlation. The slope of b1 equals 0.2736, which means that an increase in GDP by 1 will increase the value of SSE* by 0.2736.The Y-intercept, b_0 =-2348156.1897, represents the prediction of Y's value when X is zero, which is -2348156.1897. The overall regression is right-tailed, with F(1,11) = 138.1486, and a p-value of 1.493e-7. Since the p-value is less than α (0.05), we reject H0, indicating that the linear regression model provides a better fit than the model without the independent variable resulting in Y = b0 + ε. The slope (b_1): two-tailed, T(11)= 11.7537, p-value = 1.439e-7. For one predictor it is the same as the p-value for the overall model. The y-intercept (b_0): two-tailed, T(11) = -8.2496, p-value =2. Hence, b_0 is not significantly different from zero. The linear regression model assumes normality for residual errors. The Shapiro-Wilk p-value equals 0.5365**.** (normally distributed data assumed)



CONCLUSION & SUGGESTION

The growth of social sector expenditure in India does not follow a smooth pattern and instead increases in jerks. The theoretical conclusion of the Wiseman-Peacock hypothesis can be split into three major effects. Firstly, the **displacement effects** of social sector expenditure in India were influenced by the 14th Finance Commission **(Public health expenditure of Union & states together should be increased progressively manner to reach 2.5% of GDP by 2025, FFC report, para 9.41, III)** and the COVID period. Secondly, India is still ranked at 135 in the category of middle human resource development countries. Therefore, there is a lot of potential to invest in human resource development if we want to achieve sustainable development goals and goals for **"Viksit Bharat".** Finally, the **concentration effect** of social sector expenditure is due to **Part IV of the Constitution under the Direct Principles of State Policy (DPSP).** The central and state governments are responsible for social sector expenditure (health and education) in India. Despite the rise in combined growth of central and state government expenditure on social sector expenditure, the contribution of states is more. Therefore, it is unlikely that the results will match Wiseman Peacock's conclusion.

REFERENCES

1. Alok Kumar, adviser, Ajay Nema, director, Jagat Hazarika, Himani Sachdeva, young professional, social sector expenditure of states pre & post fourteenth finance commission (2014-15 & 2015-16).
2. Amitava Dey (vol.6, 2021), an analysis of social sector expenditures and priorities of the government of India in the post-reform period, International Journal of Research and Development.
3. Boniface Owino (vol.8, no.14, 2017), public expenditure in the social sector and economic growth in Kenya, journal of economics and sustainable development ISSN 2222-1700 (paper) ISSN 2222-2855.
4. Cosimo magazzino1, Lorenzo Giolli, Marco Mele (2015) Wagner's law and peacock and Wiseman's displacement effect in European Union countries: a panel data study, International Journal of Economics and financial issues.
5. Dhiresh Kulshrestha (Vol.2, No.4, 2013), Relationship between Economic growth and public expenditure through Wagner's law: An Analytical study in Indian perspective, ISSN (P): 2279-0918, (O): 2279-0926.
6. Deepti ahuja1, Deepak Pandit (2020), public expenditure and economic growth: evidence from the developing countries.
7. Economic survey 2022-23, Ministry of Finance, Government of India.
8. Gendering human development, a working paper for computing HDI, GDI & GII for states of India, National Statistical Office, Ministry of statistic programme implementation, Government of India.
9. Human Development Reports 2023.
10. John Kibara Manyeki Balázs Kotosz (vol.13, 2017), empirical analysis of the Wagner hypothesis of government expenditure growth in Kenya: ARDL modelling approach, 'Club of economics in Miskolc.
11. K. Murugan (vol,14 no.1,2019) The Relationship between Public Expenditure and Economic Growth in South India: An Econometric Analysis, Journal of Economic Policy and Research.
12. Matthew Abiodun Dada, Joseph Ayowole Adesina (vol.3,no.6, 2013), empirical investigation of the validation of peacock-wiseman hypothesis; implication for fiscal discipline in Nigeria, public policy and administration research ISSN 2224-5731(paper) ISSN 2225-0972.
13. National Health Profile 2009.
14. Olan Thomas Henry (2000), the displacement hypothesis and government spending in the United Kingdom: some new long-run evidence, https;//www.researchgate.net/publication /51777542.
15. Satish Verma, Rahul Arora (2010) Does the Indian economy support Wagner's law? An econometric analysis, Eurasian Journal of Business and Economics.