XAVERIAN QUINTESSENCE

(An International Multidisciplinary Subjects and Peer- Reviewed Journal)

Biannual Online Journal

ISSN: 3139-6917 (Online)
Volume- 01, Issue-02
July 2026

Title of Research Paper: Public Expenditure and Economic Growth in Indian States: A Critical Review of Empirical Evidence and Methodological Challenges

Ashish Ranjan* Dr. Dhiraj Mani Pathak**

*Research Scholar, University Department of Economics, Ranchi University, Ranchi
**Assistant Professor, Department of Economics, St. Xavier's College, Ranchi

Abstract

Research background: The Indian literature on public expenditure and economic growth reveals a key distinction between aggregate and disaggregated expenditure. Aggregate-level evidence predominantly supports Wagner's Law, indicating that income growth drives government expenditure expansion. In contrast, disaggregated expenditure categories such as education, health, infrastructure, and capital outlay demonstrate stronger Keynesian growth-promoting effects. This divergence remains underexplored in the Indian fiscal-growth literature.

Purpose: This paper critically reviews 47 empirical studies of the fiscal-growth nexus in India, covering 1980 to 2024. The main attention is given to state-level evidence, as well as to the methodological advancements necessary for conducting credible sub-national analysis.

Research Methodology: Studies were categorized based on national and state-level evidence, and further classified according to causal direction and type of expenditure. The methodological progression from bivariate Granger causality through Johansen cointegration to ARDL bounds testing and Toda-Yamamoto causality is mapped systematically. Summary tables synthesize the evidence from all 47 studies.

Results: Seven national-level studies confirm Wagner's Law at the aggregate level. Disaggregated national studies recover Keynesian effects for education, health, infrastructure, and capital expenditure. State-level panel studies confirm Wagner's Law for aggregate expenditure with elasticities of 1.19 to 1.20. Capital and development expenditure retain Keynesian priority, even when aggregate expenditure is Wagnerian. Health expenditure is the most consistently positive sectoral finding, with elasticities of 0.524 to 0.707.

Published by
St. Xavier's College (Autonomous) Mahuadanr, Latehar, PIN-822119, Jharkhand, INDIA

XAVERIAN QUINTESSENCE
(An International Multidisciplinary Subjects and Peer- Reviewed Journal)

Biannual Online Journal

ISSN: 3139-6917 (Online)
Volume- 01, Issue-02
July 2026

Novelty: This review is the first to document aggregate-disaggregate divergence as the central empirical regularity in Indian fiscal-growth research. It also establishes methodological requirements for small-sample subnational analyses and identifies the absence of comprehensive standalone analyses for newly created Indian states as the primary research gap.

Keywords: Public Expenditure, Economic Growth, Indian states, Wagner's Law, Keynesian Hypothesis, ARDL bounds testing, Fiscal-Growth Nexus

JEL Classification: H50; H72; E62; C22; O11

Introduction

Public expenditure is an important fiscal tool for economic growth and has gained importance since the Great Depression of the 1929s. However, there is a theoretical and empirical debate on whether government expenditure drives economic growth or economic growth drives public expenditure. This is a question of direct consequence for fiscal planning in developing federal economies. In India, states are constitutionally responsible for education, health, agriculture, infrastructure, and social welfare expenditures, which collectively shape productive capacity and household welfare. Understanding the cause-and-effect relationship is important for policy formulation. In Keynesian model, national output increases with increase in public expenditure. However, in a Wagnerian model, increased public expenditure is a result of high growth and does not independently drive the economy.

Indian literature has studied this question for four decades, revealing an important but often overlooked finding. Overall, the evidence supports Wagner's Law at the aggregate level: income growth leads to fiscal expansion. However, at the disaggregated level, such as spending on education, health, and capital, Keynesian theory consistently holds. The aggregate and disaggregate divergence is a persistent trend in Indian expenditure and growth nexus research. It has not been systematically documented in the existing literature.

Three gaps motivate this review. First, state-level panel studies impose cross-state homogeneity constraints that suppress state-specific elasticities, particularly for newly created states with distinctive fiscal structures. Second, existing state-level studies leaving the full functional budget untested at the subnational level. Third, temporal coverage of existing studies

XAVERIAN QUINTESSENCE
(An International Multidisciplinary Subjects and Peer- Reviewed Journal)

Biannual Online Journal

ISSN: 3139-6917 (Online)
Volume- 01, Issue-02
July 2026

truncates before 2020, omitting the goods and services tax transition, the UDAY power sector restructuring, and the COVID- 19 fiscal displacement.

This study fills these gaps through a systematic critical review of 47 studies of the Indian fiscal-growth nexus from 1980 to 2024. Section 1 presents the theoretical frameworks structuring the literature. Section 2 surveys the methodological evolution. Section 3 reviews the national-level evidence. Section 4 reviews the state-level evidence. The concluding remarks synthesize cross-cutting findings and identify research gaps.

1. Theoretical Perspectives

Four theoretical frameworks structure the empirical literature. Each generates distinct testable predictions that differentiate the Keynesian hypothesis from the Wagnerian hypothesis and productive spending from non-productive spending.

According to Keynesian theory, government expenditure is an autonomous source of aggregate demand. An increase in government spending raises national output by a multiple of the initial injection through the multiplier effect.

Haavelmo (1945) demonstrated that a balanced budget increase has a definite output-expanding effect, with the balanced budget multiplier equal to one. Aschauer (1989) extended the Keynesian framework to the supply side, embedding public capital stock as a productive input in the aggregate production function. Infrastructure raises total factor productivity and the return to private capital, generating a supply-side complement to the demand channel. The testable prediction is that government expenditure Granger-causes output.

Wagner's Law posits the inverse. Rising national income generates expanding public expenditure as industrialisation, modernisation, and rising social expectations increase the demand for public services. Abizadeh and Yousefi (1988) document that the income elasticity of public expenditure exceeds unity primarily in middle-range developing economies. Narayan et al. (2012) confirm Wagner's Law at the Indian subnational level and find that it is predominantly driven by consumption rather than capital expenditure. The testable prediction is that output Granger-causes expenditure, with the long-run expenditure elasticity exceeding unity.

Barro (1990) identified an optimal fiscal ratio at which the economic growth rate is maximised. Below this threshold point, additional productive expenditure needed to raise the economic growth. Above it, the distortionary cost of taxation dominates. Devarajan et al. (1996)

XAVERIAN QUINTESSENCE
(An International Multidisciplinary Subjects and Peer- Reviewed Journal)

Biannual Online Journal

ISSN: 3139-6917 (Online)
Volume- 01, Issue-02
July 2026

produced the counterintuitive result that capital expenditure is not automatically superior. Its growth effect is negative when the budget share exceeds the output elasticity. Jain and Sinha (2022) estimate an optimal government size of 11.89 percent of GDP for India, confirming that the country currently operates below the growth-maximizing threshold.

Romer (1986) and Lucas (1988) propounded Endogenous growth theory which emphasizes the human capital accumulation and knowledge spill overs as endogenous drivers of sustained growth. Government education expenditure directly augments human capital and raises economy-wide externality. Agénor and Neanidis (2011) model the complementarities among health, education, and infrastructure as jointly productive public inputs. These frameworks collectively motivate disaggregated analysis of public expenditure on economic growth.

2. Methodological Approaches

Methodological literature has evolved through three phases. Each of these models resolved the specific limitations of their predecessors. Each also introduced new constraints.

The first phase applies the Granger (1969) causality framework to aggregate national time series. Singh and Sahni (1984) conducted the first formal test on Indian fiscal data. They identified bidirectional feedback at the aggregate level but highly diverse patterns across functional categories. The Granger procedure, however, assumes covariance stationarity. Applying it to nonstationary variables produces spurious inference. This limitation drives the second phase.

The co integration literature resolves the spurious regression problem. Johansen multivariate co integration dominates the second phase. Verma and Arora (2010) and Lakshmanasamy (2022) apply it to Indian national data. Both confirm Wagner's Law across multiple formulations. Johansen cointegration has its own limitations, however. It is severely biased in small samples and requires system dimensionality well below the sample size. This creates a problem for subnational analysis.

The third phase is defined by ARDL bounds testing. Pesaran et al. (2001) develop the approach, and it is now the dominant framework for Indian state-level research. ARDL accommodates regressors of mixed integration orders. It requires no unit root pretesting and performs well in small samples. Its critical limitation is that Pesaran et al. (2001) derive their tabulated critical values asymptotically, for $T = 1000$. This inflates size distortions for

XAVERIAN QUINTESSENCE
(An International Multidisciplinary Subjects and Peer- Reviewed Journal)

Biannual Online Journal

ISSN: 3139-6917 (Online)
Volume- 01, Issue-02
July 2026

subnational samples. Narayan (2005) addresses this directly. He generates small-sample critical value bounds for T = 30 to T = 80 using response surface analysis. Studies with fewer than 80 annual observations should use Narayan (2005) critical values exclusively.

Causality testing in the third phase relies on the Toda and Yamamoto (1995) modified Wald procedure. The method fits a levels VAR of lag length $p = k + d_{max}$. Its key advantage is distributional. The modified Wald statistic follows a standard chi-square distribution regardless of integration or cointegration status. These properties eliminate all pretesting requirements. Kaur and Mishra (2017) demonstrate why this matters for Rajasthan. ARDL bounds testing alone fails to detect causality in their single-state small-sample setting. Toda-Yamamoto recovers it. Supplementary causality testing is therefore indispensable. Mishra and Mohanty (2021) applied panel Dumitrescu-Hurlin causality to 14 Indian subnational governments. They showed thatexpenditure endogeneity must be tested, not assumed. Brown et al. (1975) CUSUM and CUSUMSQ stability tests complete the toolkit, standardised for Indian state-level fiscal studies by Kaur and Manglani (2015).

3. National-Level Indian Evidence

3.1 Wagnerian Evidence at the Aggregate Level

Seven studies confirm Wagner's Law at the aggregate level for India. Lakshmanasamy (2022) applies Johansen cointegration, vector error correction modelling, and Granger causality to India over 1983–2020 and confirms a stable cointegrating relationship with unidirectional causality from GDP to total government expenditure. Medhi (2014) reached the same conclusion for central government expenditure over 1974–2010. Gupta and Shastri (2020) apply a vector autoregression with Johansen-Juselius cointegration and Granger causality and find that Granger causality supports Wagner's Law for non-plan expenditure. Verma and Arora (2010) apply Engle-Granger cointegration and vector error correction modelling to 1950–2008 data and confirm long-run cointegration across all six versions of Wagner's Law, though short-run dynamics show no significant relationship. Rani and Kumar (2022) apply ARDL bounds testing and Granger causality to six versions of Wagner's Law over 1967–2015 and confirm cointegration in all six, with unidirectional causality from GDP to expenditure substantially stronger after the 1991 economic liberalisation. Adil et al. (2017) apply ARDL bounds testing

XAVERIAN QUINTESSENCE
(An International Multidisciplinary Subjects and Peer- Reviewed Journal)

Biannual Online Journal

ISSN: 3139-6917 (Online)
Volume- 01, Issue-02
July 2026

and Granger causality to Indian data over 1970–2013 and confirm cointegration, though evidence for Wagner's Law is weak and not uniform across expenditure concepts. Wadhwa and Subramaniam (2024) apply Johansen cointegration, vector error correction modelling, and Granger causality to total and per capita expenditure data over 1981–2020 and confirm unidirectional causality from GDP to expenditure in the Goffman and Gupta versions, with budget deficits independently causing expenditure growth.

3.2 Keynesian Evidence at the Disaggregated Level

The capital-revenue distinction reveals that aggregation conceals opposing causal directions within the Indian fiscal system. Kaur (2018) finds that GDP Granger-causes revenue expenditure, but per-capita capital expenditure Granger-causes per-capita GDP. Capital and revenue expenditures follow opposing causal dynamics within the same national budget and must be modelled separately. Maitra and Hossain (2025) apply a cointegrated vector autoregression to India over 1985–2022 and find that aggregate, development, and revenue expenditures have a significant negative long-run impact on real GDP, while only capital expenditure stimulates national income. Singh and Sahni (1984) find bidirectional feedback at the aggregate level but highly diverse causal patterns across functional expenditure categories, directly anticipating this review's central motivation.

Disaggregated social sector analysis recovers Keynesian growth effects for specific categories of social spending. Keshrawani and Srivastava (2025) applied Johansen cointegration and vector error correction modelling to India over 1990–2024 and find that education, health, labour and employment, and water supply positively affect per capita GDP in the long run, whereas social welfare has a significant negative effect. Para and Alam (2024) applied ARDL bounds testing inIndia over 1990–2020 and confirmed positive impacts for health and education, alongside negative impacts for social security and urban development. Sinha (2023) employed Johansen cointegration and Toda-Yamamoto causality methods to analyse ten social sector categories in India from 1972 to 2022. The study reveals a one-way Keynesian causality flowing from health to per capita GDP, highlighting health as the most influential Keynesian social sector. Fan et al. (2000) demonstrated that rural roads and agricultural research in India's states generate the largest positive effects on total factor productivity and rural poverty reduction, with education ranking second.

XAVERIAN QUINTESSENCE
(An International Multidisciplinary Subjects and Peer- Reviewed Journal)

Biannual Online Journal

ISSN: 3139-6917 (Online)
Volume- 01, Issue-02
July 2026

Physical infrastructure generates consistently positive long-run growth effects. Sahoo and Dash (2009) demonstrated that a composite infrastructure stock index contributes more to GDP and that causality runs unidirectionally from infrastructure stock to GDP. Unnikrishnan and Kattookaran (2020) confirmed that investments in public and private infrastructure for transport, power, and construction together have a significant impact on GDP. A subset of studies has introduced qualifications. Ruzima and Veerachamy (2023) found a negative long-run impact of education spending on the Human Development Index, attributing this to poor spending quality and a content-labour market mismatch. Sasmal and Sasmal (2020) confirmed that fiscal deficit dynamics independently drive expenditure patterns, establishing a fiscal sustainability constraint on the growth effect of spending.

Table 1. Summary of National-Level Indian Studies on Public Expenditure and Economic Growth

Author(s)	Period	Method	Expenditure Type	Causal Direction	Key Finding
Singh and Sahni (1984)	1950–1981	Granger-Sims causality	Aggregate; four functional heads	Bidirectional (aggregate)	Bidirectional feedback at aggregate level; diverse patterns across functional categories
Fan et al. (2000)	1970–1993	FIML; simultaneous equations	Rural roads; agricultural R&D; education	G→TFP (Keynesian)	Rural roads and agricultural research generate the largest positive TFP and poverty-reduction effects; education ranks second
Sahoo and Dash (2009)	1970–2006	PCA; Granger causality; OLS	Infrastructure stock (composite)	Infra→GSDP (Keynesian)	Infrastructure stock contributes more to GDP than investment flows; unidirectional causality from infrastructure to GDP
Verma and Arora (2010)	1950–2008	Engle-Granger; VECM	Aggregate (six Wagner formulations)	GSDP→G (Wagnerian)	Long-run cointegration confirmed across all six versions; short-run dynamics insignificant
Gupta and Shastri (2020)	1980–2015	VAR; Johansen; Granger	Non-plan expenditure	GSDP→G (Wagnerian)	No long-run relationship among stationary variables; Granger causality supports Wagner's Law for non-plan expenditure
Medhi (2014)	1974–2010	Johansen; VECM; Granger	Central government expenditure	GSDP→G (Wagnerian)	Long-run equilibrium confirmed; unidirectional causality from GDP to central government spending
Adil et al. (2017)	1970–2013	ARDL; Granger causality	Aggregate	Weak GSDP→G	Cointegration confirmed; evidence for Wagner's Law is weak and not uniform across expenditure concepts
Kaur (2018)	1970–	Johansen;	Capital vs.	Capital:	Capital and revenue expenditures follow

XAVERIAN QUINTESSENCE
(An International Multidisciplinary Subjects and Peer- Reviewed Journal)

Biannual Online Journal

ISSN: 3139-6917 (Online)
Volume- 01, Issue-02
July 2026

	2014	VECM; Granger	revenue	G→GSDP; Revenue: GSDP→G	opposing causal dynamics; disaggregation is a methodological necessity
Unnikrishnan and Kattookaran (2020)	1961–2017	Johansen; VECM; IRF; VD	Public and private infrastructure	Infra→GSDP (Keynesian)	Stable long-run relationship; public and private infrastructure investments jointly and significantly affect GDP
Lakshmanasamy (2022)	1983–2020	Johansen; VECM; Granger	Aggregate	GSDP→G (Wagnerian)	Stable cointegrating relationship; unidirectional Granger causality from GDP to total government expenditure
Rani and Kumar (2022)	1967–2015	ARDL; Granger	Aggregate (six versions)	GSDP→G (Wagnerian)	Cointegration confirmed in all six versions; Wagner's Law substantially stronger after 1991 liberalisation
Wadhwa and Subramaniam (2024)	1981–2020	Johansen; VECM; Granger	Aggregate and per capita	GSDP→G (Wagnerian)	Long-run cointegration confirmed; budget deficits independently cause expenditure growth
Sinha (2023)	1972–2022	Johansen; Toda-Yamamoto	Ten social sector categories	Health→GSDP only	Cointegration across all categories; health is the only category with unidirectional Keynesian causality; others bidirectional
Keshrawani and Srivastava (2025)	1990–2024	Johansen; VECM	Education; health; labour; water supply; social welfare	Mixed	Education, health, labour, and water supply positive; social welfare and nutrition significantly negative in the long run
Para and Alam (2024)	1990–2020	ARDL; ECM	Health; education; social security; urban development	Mixed	Health and education positive; social security and urban development significantly negative
Sharma et al. (2018)	1971–2016	ARDL; ECM	GFCO; FDI; foreign aid; human capital development	Mixed	GFCO, FDI, and foreign aid positive; human capital development expenditure counterintuitively negative
Ruzima and Veerachamy (2023)	1990–2018	ARDL	Health; education	Mixed	Health positive on HDI; education significantly negative attributed to poor spending quality and content-market mismatches
Sasmal and Sasmal (2020)	1970–2015	Engle-Granger; Granger	Fiscal deficit ratio; NNP	G→fiscal deficit	Total expenditure growth causes significant rise in the revenue deficit; interest payments cause the gross fiscal deficit
Seshaiah et al. (2018)	1980–2015	OLS; dummy variables	General government expenditure	G→GSDP (Keynesian)	General expenditure positively affects GDP; reinforced after 1991; 2008 crisis introduces a significant negative structural shock

Published by
St. Xavier's College (Autonomous) Mahuadanr, Latehar, PIN-822119, Jharkhand, INDIA

XAVERIAN QUINTESSENCE
(An International Multidisciplinary Subjects and Peer- Reviewed Journal)

Biannual Online Journal

ISSN: 3139-6917 (Online)
Volume- 01, Issue-02
July 2026

Maitra and Hossain (2025)	1985–2022	Cointegrated VAR	Aggregate; development; revenue; capital	Mixed	Aggregate, development, and revenue expenditures negative; only capital expenditure stimulates national income

Source: Author's own elaboration

4. State-Level Empirical Evidence

4.1 Aggregate Expenditure: Wagner's Law Dominates

Wagner's Law dominates the panel evidence at the Indian state level. This finding is robust across methods, states, and periods. Rath et al. (2023) apply Pedroni and Kao panel cointegration, FMOLS, DOLS, and system GMM to 18 Indian states over 2005 to 2020. Long-run cointegration is confirmed. The expenditure elasticity with respect to gross state domestic product is 1.19 to 1.20. Nirola and Sahu (2020) find that below-average income states exhibit even more elastic expenditure responses, exceeding unity. Rastogi et al. (2019) confirm for low-income states, including Bihar and Jharkhand, that income growth generates more than proportionate increases in social sector and economic services spending. Hazarika and Nayak (2022) introduce an important qualification. Across 20 subnational governments, Wagner's Law holds only when intergovernmental transfers and fiscal deficits are controlled for. Without these controls, fiscal illusion and flypaper effects confound the relationship. Choudhary et al. (2023) confirm Wagnerian cointegration across 12 states and classify Jharkhand among the high-debt group. Mishra and Mohanty (2021) find bidirectional causality for 14 subnational governments. This makes expenditure endogeneity an empirical question rather than an assumption.

4.2 Capital and Development Expenditure: Keynesian Priority

Capital and development expenditure retain Keynesian priority at the state level. This holds even where aggregate expenditure is Wagnerian.Mohapatra and Giri (2016) find that development expenditure Granger-causes per capita GDP, while non-development spending is insignificant. Araf Cash (2023) demonstrates for Jammu and Kashmir that aggregate government expenditure positively affects per capita net state domestic product in both the short run and the long run, while economic and general services expenditures are insignificant. Ranjan and Panda

XAVERIAN QUINTESSENCE
(An International Multidisciplinary Subjects and Peer- Reviewed Journal)

Biannual Online Journal

ISSN: 3139-6917 (Online)
Volume- 01, Issue-02
July 2026

(2022) confirm for seven low-income Indian states that development spending has a significant positive influence on gross state domestic product in the long run. Ashwani (2017) establishes across Indian states that capital spending and private capital formation have significant positive impacts on growth, while revenue spending has a significant negative impact. Sumandeep et al. (2024) apply system GMM, FMOLS, and DOLS to 17 Indian states over 1990–2020 and find that both development plan and non-plan expenditures exert significant positive long-run impacts on net state domestic product.

4.3 Threshold and Composition Effects

The relationship between government size and growth is nonlinear in India. Jain and Sinha (2022) estimated an Armey curve using quadratic OLS and ARDL bounds testing on data from 1961 to 2018. The optimal government size is 11.89 percent of GDP. India currently operates below this threshold. Productive expenditure expansion raises output without triggering diminishing returns. Sharma et al. (2024) applied Hansen's panel threshold regression to six regional groupings over 1999 to 2019. The Eastern regionshows a linear and directly positive relationship between the capital expenditure ratio and net state domestic product. There is no threshold limit for this region. Choudhary et al. (2023) document the asymmetric effects of per capita GSDP on expenditure across states grouped by debt level. Chitgupi (2021) finds no aggregate threshold across 28 states over 2000 to 2019. Physical and human capital spending on education, transport, and health drive growth, but spending productivity varies substantially across states.

4.4 Health and Social Sector Evidence

Health expenditure is the most consistently positive sectoral finding at the Indian state level. Behera and Dash (2016) applied Westerlund error correction panel cointegration, panel DOLS, and vector error correction Granger causality to 16 major Indian states over 1980–2013. They findunidirectional long-run causality from health expenditure to gross state domestic product (GSDP). The estimated health expenditure elasticity ranged from 0.524 to 0.707. Kaur (2023) confirmed the health-led growth hypothesis for India using Toda-Yamamoto causality over 1981–2016. Nandan and Mallick (2020) found that health, education, and economic service expenditures had positive and significant growth effects when institutional quality controls were

XAVERIAN QUINTESSENCE
(An International Multidisciplinary Subjects and Peer- Reviewed Journal)

Biannual Online Journal

ISSN: 3139-6917 (Online)
Volume- 01, Issue-02
July 2026

included. Das et al. (2021) confirmed a long-run relationship between per-capita social sector expenditure and the Human Development Index across 24 Indian states over 1995–2016, with short-run bidirectional causality. Ram and Kaur (2011) found highly robust positive impacts of infrastructure, agricultural, and education expenditures on per capita gross state domestic product across 14 general category Indian states over 1990–2008.

4.5 Education and Agricultural Evidence

The education-growth relationship exhibits temporal asymmetry at the state level. Bhattacharyya (2019) applied a panel vector error correction model to 28 Indian states and found that gross state domestic product Granger-causes education expenditure in the long run, consistent with Wagner's Law, while education spending Granger-causes gross state domestic product in the short run, consistent with the Keynesian hypothesis. The causal direction therefore differs across time horizons for education. Dash and Mohanty (2022) found that per capita income positively affects public health and education expenditures with elasticities below one, classifying them as necessary goods that expand proportionally less than income at the subnational level. Kaur and Mishra (2017) demonstrated for Rajasthan over 1970–2014 that ARDL bounds testing finds no cointegration while Toda-Yamamoto tests identify unidirectional Keynesian causality from expenditure to net state domestic product, warning that supplementary causality testing is indispensable in single-state studies. Taylor and Dessai (2023) applied panel OLS to 23 Indian states over 1990–2020 and found that per capita gross state domestic product and own state revenue are the primary determinants of per capita public health expenditure, confirming the Wagnerian mechanism for health investment allocation. Dkhar and De (2018) found for Meghalaya over 1984–2014 that crop husbandry spending positively affects gross state domestic product while forestry and irrigation spending have significant negative impacts, with causality running unidirectionally from gross state domestic product to total agricultural expenditure, consistent with Wagner's Law.

Table 2. Summary of State-Level Indian Studies on Public Expenditure and Economic Growth

Author(s)	State/Region	Period	Method	Expenditure Type	Causal Direction	Key Finding
Kaur and Manglani (2015)	Rajasthan	1980–2014	Engle-Granger; Johansen;	Aggregate	GSDP→G (Wagnerian)	Unidirectional causality from NSDP to government expenditure;

XAVERIAN QUINTESSENCE
(An International Multidisciplinary Subjects and Peer- Reviewed Journal)

Biannual Online Journal

ISSN: 3139-6917 (Online)
Volume- 01, Issue-02
July 2026

Author(s)	State/Region	Period	Method	Expenditure Type	Causal Direction	Key Finding
			VECM			CUSUM diagnostics standard for subnational fiscal studies
Kaur and Mishra (2017)	Rajasthan	1970–2014	ARDL; Toda-Yamamoto	Aggregate	TY: G→GSDP; ARDL: no cointegration	ARDL finds no cointegration; Toda-Yamamoto identifies Keynesian causality; supplementary causality testing is indispensable
Trivedi and Rajmal (2011)	Major states	1980–2007	Panel fixed effects	Capital; fiscal deficits	Capital: G→GSDP	Fiscal deficits contract economic growth; capital expenditures on infrastructure and education promote growth with a lag
Ashwani (2017)	Indian states	1999–2011	GLS (cluster robust)	Capital vs. revenue	Capital: positive; Revenue: negative	Capital spending and private capital formation significantly positive; revenue spending significantly negative; among the strongest state-level findings
Ram and Kaur (2011)	14 general category states	1990–2008	GEE panel regression	Infrastructure; agriculture; education	G→GSDP (Keynesian)	Infrastructure, agriculture, and education allocations yield highly robust positive impacts on per capita GSDP
Rastogi et al. (2019)	Low-income states incl. Jharkhand	1980–2015	Panel cointegration; ARDL	Social sector; economic services	GSDP→G (Wagnerian)	Income growth leads to more than proportionate increase in social sector and economic services expenditure
Nirola and Sahu (2020)	15 general category states	1992–2014	Second-generation panel; DOLS	Aggregate	GSDP→G (Wagnerian)	Wagner's Law holds at the all-India level; below-average income states exhibit elastic long-run expenditure responses exceeding

Published by
St. Xavier's College (Autonomous) Mahuadanr, Latehar, PIN-822119, Jharkhand, INDIA

XAVERIAN QUINTESSENCE
(An International Multidisciplinary Subjects and Peer- Reviewed Journal)

Biannual Online Journal

ISSN: 3139-6917 (Online)
Volume- 01, Issue-02
July 2026

Author(s)	State/Region	Period	Method	Expenditure Type	Causal Direction	Key Finding
						unity
Mishra and Mohanty (2021)	14 major subnational govts	1980–2014	Panel DOLS; D-H causality	Aggregate	Bidirectional	Bidirectional Granger causality; expenditure endogeneity must be tested rather than assumed
Mohapatra and Giri (2016)	India	1980–2013	ARDL; VECM	Development vs. non-development	Dev: G→GSDP; Non-dev: insignificant	Development expenditure Granger-causes per capita GDP; non-development spending is insignificant
Behera and Dash (2016)	16 major states	1980–2013	Westerlund; DOLS; VECM Granger	Health expenditure	G→GSDP (Keynesian)	Unidirectional long-run causality from health to GSDP; health expenditure elasticity 0.524–0.707
Bhattacharyya (2019)	28 states	Panel	Panel VECM	Education expenditure	LR: GSDP→edu; SR: edu→GSDP	Education follows Wagner's Law in the long run and the Keynesian hypothesis in the short run; temporal asymmetry
Hazarika and Nayak (2022)	20 subnational govts	1980–2020	Second-generation panel; PMG	Aggregate	Weak GSDP→G	Wagner's Law weakly valid when intergovernmental transfers and fiscal deficits controlled for; fiscal illusion and flypaper effects identified
Rath et al. (2023)	18 Indian states	2005–2020	Pedroni; Kao; FMOLS; DOLS; GMM	Aggregate	GSDP→G (Wagnerian)	Long-run cointegration confirmed; expenditure elasticities of 1.19–1.20 with respect to GSDP
Dash and Mohanty (2022)	17 major states	Panel	ARDL (structural break)	Health; education	GSDP→G (Wagnerian)	Per capita income positively affects health and education expenditures with elasticities below unity;

XAVERIAN QUINTESSENCE
(An International Multidisciplinary Subjects and Peer- Reviewed Journal)

Biannual Online Journal

ISSN: 3139-6917 (Online)
Volume- 01, Issue-02
July 2026

Author(s)	State/Region	Period	Method	Expenditure Type	Causal Direction	Key Finding
						both are necessary goods
Taylor and Dessai (2023)	23 states	1990–2020	Panel OLS	Health expenditure determinants	GSDP→health exp (Wagnerian)	Per capita GSDP and own state revenue are primary determinants of public health expenditure
Nandan and Mallick (2020)	16 major states	1991–2017	FGLS; PMG	Health; education; economic services	G→GSDP (Keynesian)	Health, education, and economic services positive with institutional quality controls
Das et al. (2021)	24 states	1995–2016	Cointegration; panel VECM	Social sector expenditure	LR: G→HDI; SR: bidirectional	Long-run relationship between social sector expenditure and HDI; short-run bidirectional causality
Ranjan and Panda (2022)	7 low-income states incl. Jharkhand	1993–2015	FMOLS; D-H causality	Development spending	G→GSDP (Keynesian)	Development spending has significant positive influence on GSDP in the long run in low-income states
Choudhary et al. (2023)	12 states by debt level	2002–2021	PMG-ARDL; Westerlund; D-H	Aggregate	GSDP→G (asymmetric)	Long-run cointegration consistent with Wagner's Law; significant asymmetric effects; Jharkhand classified as a high-debt state
Sumandeep et al. (2024)	17 states	1990–2020	System GMM; FMOLS; DOLS	Plan and non-plan	G→GSDP (Keynesian)	Both development plan and non-plan expenditures exert significant positive long-run impacts on NSDP per capita
Jain and Sinha (2022)	India (national)	1961–2018	Quadratic OLS; ARDL	Aggregate government size	Nonlinear (Armey curve)	Armey curve confirmed; optimal government size estimated at 11.89% of GDP; India currently operates below this threshold

Published by
St. Xavier's College (Autonomous) Mahuadanr, Latehar, PIN-822119, Jharkhand, INDIA

XAVERIAN QUINTESSENCE
(An International Multidisciplinary Subjects and Peer- Reviewed Journal)

Biannual Online Journal

ISSN: 3139-6917 (Online)
Volume- 01, Issue-02
July 2026

Author(s)	State/Region	Period	Method	Expenditure Type	Causal Direction	Key Finding
Chitgupi (2021)	28 states	2000–2019	Panel regression	Physical and human capital spending	G→GSDP (productive categories)	No aggregate threshold effect; physical and human capital spending on education, transport, and health positively affect growth
Sharma et al. (2024)	Six regional groupings	1999–2019	Hansen threshold regression	Capital expenditure ratio	Region-specific	Eastern region including Jharkhand shows linear directly positive relationship without any threshold limit
Araf Cash (2023)	Jammu and Kashmir	1981–2020	ARDL	Aggregate; social; economic; general services	G→GSDP (Keynesian, aggregate and social)	Aggregate and social services expenditure positive; economic and general services expenditures insignificant
Kirti and Langyan (2023)	Haryana	1990–2020	Johansen; VECM; Granger	Development expenditure	G→GSDP (Keynesian)	Development expenditure has a significant positive long-run impact on per capita GSDP; Keynesian causality confirmed
Dkhar and De (2018)	Meghalaya	1984–2014	Time-series; Granger causality	Agricultural subsectors	GSDP→total agri (Wagnerian)	Crop husbandry positive on GSDP; forestry and irrigation negative; Wagner's Law holds for aggregate agricultural expenditure

Source: Author's own elaboration

Concluding Remarks

This study reviewed 47 empirical studies on the public expenditure-growth nexus in India from 1980 to 2024. Theprominent outcome of the studyis that the impact of government expenditure on economic growth in India varies decisively by the level of analysis and expenditure head type. At the aggregate level, the causal direction consistently favours Wagner's

XAVERIAN QUINTESSENCE
(An International Multidisciplinary Subjects and Peer- Reviewed Journal)

Biannual Online Journal

ISSN: 3139-6917 (Online)
Volume- 01, Issue-02
July 2026

Law: income growth drives fiscal expansion. At the disaggregated level, productive expenditure categories — education, health, capital outlay, and infrastructure — consistently retain Keynesian growth-promoting potential. This aggregate-disaggregate divergence is the central empirical regularity in Indian fiscal-growth research and has direct methodological implications: aggregate expenditure testing is insufficient for characterising the Indian fiscal- growth relationship.

The review has also revealed that the causal relationship between public expenditure and economic growth in India varies considerably by expenditure type, methodological approach, state characteristics, and time period under consideration. Capital and revenue expenditures follow opposing causal directions within the national and state budgets. Health expenditure is the most consistently positive sectoral finding, with elasticities ranging from 0.524 to 0.707. Education demonstrates temporal asymmetry, characterised by Keynesian effects in the short term and Wagnerian effects in the long term. The signs of the coefficients are sensitive to the quality of spending. Government size is nonlinear: Jain and Sinha (2022) estimate an optimal government size of 11.89% of GDP for India, confirming that the country and its low-income states operate below the growth-maximising threshold.

This review establishes three methodological requirements for future subnational Indian studies. ARDL bounds testing with Narayan (2005) critical values is the appropriate cointegration estimator for state-level samples with fewer than 80 annual observations. Toda-Yamamoto modified Wald causality testing supplements bounds testing and bypasses stationarity and cointegration pretesting requirements. CUSUM parameter stability testing confirms parameter constancy across structural break events without requiring prior identification of breakpoints. As Kaur and Mishra (2017) demonstrated, ARDL bounds testing alone may fail to detect causality in single-state contexts with small samples. Therefore, supplementary causality testing is essential.

Three research gaps remain. The first is geography. No existing study has examined the full expenditure-growth relationship for any newly created Indian state as a standalone time-series analysis. Jharkhand, Chhattisgarh, and Uttarakhand are not generic low-income states. Each has a distinctive fiscal structure shaped by mineral royalties, forest-based revenue, and tribal demographic composition. These features set them apart from the broader low-income groups. Panel studies that pool these states with others impose homogeneity constraints on the data. Consequently, state-specific elasticities and causal directions are lost. The second gap is

XAVERIAN QUINTESSENCE
(An International Multidisciplinary Subjects and Peer- Reviewed Journal)

Biannual Online Journal

ISSN: 3139-6917 (Online)
Volume- 01, Issue-02
July 2026

disaggregation of data. Most state-level studies examine only two to five expenditure categories in their analyses. This is far short of the full functional budget. No single study has tested all expenditure heads of any Indian state against its gross state domestic product in a disaggregated form. The third gap is timecoverage. Most existing studies cut off before 2021. Three major structural shocks are absent from the evidence base. The goods and services tax consolidation of 2017–2018 reshaped state revenues and expenditure patterns. The UDAY power sector restructuring of 2015–2016 permanently altered infrastructure obligations. The COVID-19 fiscal displacement of 2020–2021 shifted expenditure thresholds in ways that persist today. Any comprehensive analysis must capture all three aspects.

The policy message is direct. Fiscal planners in low-income Indian states should focus on what they spend on, not how much they spend in total. This distinction matters. These states operate below the Barro (1990) optimal fiscal threshold. Additional productive spending raises growth without triggering diminishing returns. Education, health, capital formation, and energy infrastructure are the productive categories. They drive output. Revenue spending and administrative expenditure do not. Across the reviewed literature, they consistently fail to generate Keynesian causal effects at the state level. Precise policy direction requires state-specific time-series analyses with full expenditure disaggregation. General panel estimates are insufficient for that purpose.

References

Abizadeh, S., & Yousefi, M. (1988). An empirical re-examination of Wagner's law. Economics Letters, 26 (2), 169–173. https://doi.org/10.1016/0165-1765(88)90035-3

Adil, M. H., Ganaie, A. A., & Kamaiah, B. (2017). Wagner's hypothesis: An empirical verification. IIM Kozhikode Society & Management Review, 6(1), 1–12. https://doi.org/10.1177/2277975216667095

Agénor, P., & Neanidis, K. C. (2011). The allocation of public expenditure and economic growth. The Manchester School, 79(4), 899–931. https://doi.org/10.1111/j.1467-9957.2011.02197.x

Araf Cash, T. (2023). The growth effect of government expenditure in Jammu & Kashmir. Arthshastra Indian Journal of Economics & Research, 12(1), 29. https://doi.org/10.17010/aijer/2023/v12i1/172841

Published by
St. Xavier's College (Autonomous) Mahuadanr, Latehar, PIN-822119, Jharkhand, INDIA

ISSN: 3139-6917 (Online)
Volume- 01, Issue-02
July 2026

Aschauer, D. A. (1989). Is public expenditure productive? Journal of Monetary Economics, 23(2), 177–200. https://doi.org/10.1016/0304-3932(89)90047-0

Barro, R. J. (1990). Government spending in a simple model of endogenous growth. Journal of Political Economy, 98(5, Part 2), S103–S125. https://doi.org/10.1086/261726

Behera, D. K., & Dash, U. (2016). Nexus between public health expenditure and income: Empirical evidence from Indian states. Journal of Applied Economic Sciences, 11(6), 1067–1077.

Bhattacharyya, P. (2019). Public expenditure on education and economic growth: A state-level analysis in India. Humanities & Social Sciences Reviews, 7(6), 533–539. https://doi.org/10.18510/hssr.2019.7683

Brown, R. L., Durbin, J., & Evans, J. M. (1975). Techniques for testing the constancy of regression relationships over time. Journal of the Royal Statistical Society Series B: Statistical Methodology, 37(2), 149–163. https://doi.org/10.1111/j.2517-6161.1975.tb01532.x

Choudhary, P., Chary, S., & Singh, N. (2023). An empirical investigation of Wagner's law for twelve Indian states: A pooled mean group approach using linear and non-linear specifications. In Review. https://doi.org/10.21203/rs.3.rs-3789990/v1

Das, R. C., Mandal, C., & Patra, A. K. (2021). Linkage between social sector's spending and HDI: Study on individual as well as panel data of Indian states. Review of Social Economy, 79(2), 357–379. https://doi.org/10.1080/00346764.2019.1671605

Dash, S. K., & Mohanty, A. R. (2022). The impact of income on public health and education expenditure: Evidence from the Indian states. Journal of Public Affairs, 22(S1), e2757. https://doi.org/10.1002/pa.2757

Devarajan, S., & Swaroop, V. (1996). The composition of public expenditure and economic growth. Journal of Monetary Economics, 37(2), 313–344. https://doi.org/10.1016/0304-3932(96)01249-4

Dkhar, D. S., & De, U. K. (2018). Public expenditure on agriculture and economic growth: A case study of Meghalaya. Agricultural Economics Research Review, 31(2), 271–279. https://doi.org/10.5958/0974-0279.2018.00044.7

ISSN: 3139-6917 (Online)
Volume- 01, Issue-02
July 2026

Fan, S., Hazell, P., & Thorat, S. (2000). Government spending, growth and poverty in rural India. American Journal of Agricultural Economics, 82(4), 1038–1051. https://doi.org/10.1111/0002-9092.00101

Granger, C. W. J. (1969). Investigating causal relations by econometric models and cross-spectral methods. Econometrica, 37(3), 424. https://doi.org/10.2307/1912791

Gupta, R., & Shastri, S. (2020). Public expenditure and economic growth in India: An empirical analysis using VAR model. GATR Journal of Business and Economics Review, 5(2), 45–58. https://doi.org/10.35609/jber.2020.5.2(1)

Haavelmo, T. (1945). Multiplier effects of a balanced budget. Econometrica, 13(4), 311. https://doi.org/10.2307/1906924

Hazarika, B., & Nayak, D. K. (2022). Fiscal illusion and Wagner's law: Evidence from Indian subnational finances. National Institute of Public Finance and Policy. (Report No. 367). https://nipfp.org.in/media/documents/WP_367_2022.pdf

Jain, N., & Sinha, N. (2022). Re-visiting the Armey curve hypothesis: An empirical evidence from India. South Asian Journal of Macroeconomics and Public Finance, 11(2), 168–184. https://doi.org/10.1177/22779787211054007

Kaur, K. (2018). Composition of public expenditure and economic growth in India: A time series analysis. International Journal of Social Science, 7(4). https://doi.org/10.30954/2249-6637.10.2018.10

Kaur, A. (2023). Health status, government health expenditure and economic growth nexus in India: A Toda–Yamamoto causality approach. Arthaniti: Journal of Economic Theory and Practice, 22(1), 34–46. https://doi.org/10.1177/0976747920963401

Kaur, K., & Manglani, H. (2015). Cointegration and causality analysis of public expenditure and growth with special reference to Rajasthan. Asian Journal of Research in Business Economics and Management, 5(9). https://doi.org/10.5958/2249-7307.2015.00170.X

Kaur, K., & Mishra, O. N. (2017). Causal relationship between government spending and economic growth in Rajasthan: A Toda-Yamamoto approach. Arthshastra: Indian Journal of Economics & Research, 6(1), 10. https://doi.org/10.17010/aijer/2017/v6i1/111019

ISSN: 3139-6917 (Online)
Volume- 01, Issue-02
July 2026

Keshrawani, S., & Srivastava, P. (2025). Impact of social sector public expenditure on economic growth in India: A cointegration approach. South Asian Journal of Social Studies and Economics, 22(8), 259–266. https://doi.org/10.9734/sajsse/2025/v22i81117

Kirti, K., & Langyan, B. (2023). Impact of development expenditure on economic growth in Haryana state: An empirical analysis. Arthshastra Indian Journal of Economics & Research, 12(3), 38. https://doi.org/10.17010/aijer/2023/v12i3/173260

Lakshmanasamy, T. (2022). The causal relationship between public expenditure and economic growth in India: VECM estimation. Journal of Quantitative Finance and Economics, 4(2), 201–211. https://doi.org/10.47509/JQFE.2022.v04i02.04

Lucas, R. E. (1988). On the mechanics of economic development. Journal of Monetary Economics, 22(1), 3–42. https://doi.org/10.1016/0304-3932(88)90168-7

Maitra, B., & Hossain, T. (2025). Assessing sectoral growth impact of public expenditure in India. Journal of Quantitative Economics, 23(4), 1165–1190. https://doi.org/10.1007/s40953-025-00471-9

Medhi, K. (2014). An empirical investigation of the causality between government expenditure and economic growth in India during 1974-2010. IOSR Journal of Humanities and Social Science, 19(7), 53–58. https://doi.org/10.9790/0837-19745358

Mishra, B. R., & Mohanty, A. R. (2021). Nexus between government expenditure and economic growth: Evidence from sub-national governments in India. The Journal of Developing Areas, 55(2). https://doi.org/10.1353/jda.2021.0045

Mohapatra, G., & Giri, A. K. (2016). The composition of public expenditure and economic growth in India: Evidence from ARDL approach. Journal of Economic Research, 21(2), 205–210. https://doi.org/10.17256/jer.2016.21.2.002

Nandan, A., & Mallick, H. (2020). Does gender equality matter for regional growth and income inequality? An empirical analysis for the Indian states. Journal of International Development, 32(4), 439–469. https://doi.org/10.1002/jid.3460

ISSN: 3139-6917 (Online)
Volume- 01, Issue-02
July 2026

Narayan, P. K. (2005). The saving and investment nexus for China: Evidence from cointegration tests. Applied Economics, 37(17), 1979–1990. https://doi.org/10.1080/00036840500278103

Narayan, S., Rath, B. N., & Narayan, P. K. (2012). Evidence of Wagner's law from Indian states. Economic Modelling, 29(5), 1548–1557. https://doi.org/10.1016/j.econmod.2012.05.004

Nirola, N., & Sahu, S. (2020). Revisiting the Wagner's law for Indian states using second generation panel cointegration. Economic Change and Restructuring, 53(2), 241–263. https://doi.org/10.1007/s10644-018-9237-6

Para, I. A., & Alam, T. (2024). An empirical analysis of social sector expenditure and economic growth in India: An ARDL approach. Arthshastra Indian Journal of Economics & Research, 13(2), 53. https://doi.org/10.17010/aijer/2024/v13i2/173504

Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. Journal of Applied Econometrics, 16(3), 289–326. https://doi.org/10.1002/jae.616

Ram, K., & Kaur, S. (2011). Inter-state variations in economic growth: Does size and composition of state spending matter? The Indian Economic Journal, 59(1), 97–122. https://doi.org/10.1177/0019466220110107

Rani, R., & Kumar, N. (2022). Wagner hypothesis in India: An empirical investigation from pre and post reform period. Journal of Public Affairs, 22(1), e2395. https://doi.org/10.1002/pa.2395

Ranjan, P., & Panda, P. K. (2022). Pattern of development spending and its impact on HDI and GSDP in low-income states in India. Journal of Development Policy and Practice, 7(1), 71–95. https://doi.org/10.1177/24551333211047358

Rath, D. P., Behera, S. R., Seth, B., Suresh, A. K., & Solanki, R. (2023). The relationship between government revenue, government expenditure and economic growth in India: An empirical investigation at the sub-national level. In Srivastava, D. K., &Shanmugam, K. R. (Eds.), India's Contemporary Macroeconomic Themes (pp. 89–121). Springer Nature Singapore. https://doi.org/10.1007/978-981-99-5728-6_5

ISSN: 3139-6917 (Online)
Volume- 01, Issue-02
July 2026

Romer, P. M. (1986). Increasing returns and long-run growth. Journal of Political Economy, 94(5), 1002–1037. https://doi.org/10.1086/261420

Ruzima, M., & Veerachamy, P. (2023). The impact of public spending in education and health on human development in India. Journal of the Asia Pacific Economy, 28(2), 390–403. https://doi.org/10.1080/13547860.2021.1952920

Sahoo, P., & Dash, R. K. (2009). Infrastructure development and economic growth in India. Journal of the Asia Pacific Economy, 14(4), 351–365. https://doi.org/10.1080/13547860903169340

Sasmal, J., & Sasmal, R. (2020). Public debt, economic growth and fiscal balance: Alternative measures of sustainability in the Indian context. Global Business Review, 21(3), 780–799. https://doi.org/10.1177/0972150918778940

Seshaiah, S. V., Reddy, T. K., & Sarma, I. R. S. (2018). General government expenditure and economic growth in India: 1980-81 to 2015-16. Theoretical Economics Letters, 08(04), 728–740. https://doi.org/10.4236/tel.2018.84050

Sharma, R., Kautish, P., & Kumar, D. S. (2018). Impact of selected macroeconomic determinants on economic growth in India: An empirical study. Vision: The Journal of Business Perspective, 22(4), 405–415. https://doi.org/10.1177/0972262918803173

Singh, B., & Sahni, B. S. (1984). Causality between public expenditure and national income. The Review of Economics and Statistics, 66(4), 630. https://doi.org/10.2307/1935987

Sinha, J. K. (2023). Relationship between economic growth and expenditure on social sector in India: An econometric investigation. Indo-Asian Journal of Finance and Accounting, 4(1), 81–101. https://doi.org/10.47509/IAJFA.2023.v04i01.04

Sumandeep, Kiran, R., & Sharma, R. K. (2024). Investigating the relationship of government revenue and expenditure on economic growth using a generalised method of moments: Does

ISSN: 3139-6917 (Online)
Volume- 01, Issue-02
July 2026

state-level panel ensure sustainable growth? PLOS ONE, 19(5), e0301764. https://doi.org/10.1371/journal.pone.0301764

Taylor, F., & Dessai, S. P. S. (2023). Relation between per capita public expenditure on health and income in India at sub-national level. Indian Journal of Public Administration, 69(2), 317–329. https://doi.org/10.1177/00195561221149914

Toda, H. Y., & Yamamoto, T. (1995). Statistical inference in vector autoregressions with possibly integrated processes. Journal of Econometrics, 66(1-2), 225–250. https://doi.org/10.1016/0304-4076(94)01616-8

Trivedi, P., & Rajmal (2011). Growth effects of fiscal policy of India states. Millennial Asia, 2(2), 141–162. https://doi.org/10.1177/097639961100200201

Unnikrishnan, N., & Kattookaran, T. P. (2020). Impact of public and private infrastructure investment on economic growth: Evidence from India. Journal of Infrastructure Development, 12(2), 119–138. https://doi.org/10.1177/0974930620961477

Verma, S., & Arora, R. (2010). Does the Indian economy support Wagner's law? An econometric analysis. Eurasian Journal of Business and Economics, 3(5), 77–91.

Wadhwa, J. K., & Subramaniam, S. (2024). Exploring Wagner's law in India: An empirical study of economic growth and public expenditure. Indian Journal of Economics and Finance, 4(1), 39–46. https://doi.org/10.54105/ijef.A2574.04010524

Ashish Ranjan is a Research Scholar at the University Department of Economics, Ranchi University, where his doctoral research examines the impact of public expenditure on the economic growth of Jharkhand. He holds an M.A. in Economics (Gold Medallist) from St. Xavier's College, Ranchi, specialising in Mathematical Economics and Econometrics, and is UGC-NET qualified. His research interests span development economics, public finance, health economics, gender inequality, and labour economics. He is proficient in econometric software including Stata and R. He has served as a Field Investigator on an ICSSR-funded Minor Research Project examining malnutrition among school-going

ISSN: 3139-6917 (Online)
Volume- 01, Issue-02
July 2026

children in Ranchi District. He has contributed peer-reviewed articles and book chapters on topics including gender inequality in asset ownership, circular economy, food security, and environmental sustainability.

Email: aslokranjan007@gmail.com

Dr. Dhiraj Mani Pathak is Assistant Professor in the Department of Economics, St. Xavier's College (Autonomous), Ranchi, where he has been teaching at the undergraduate and postgraduate levels since 2008. He holds a Ph.D. from the Department of Economics, Ranchi University, with a doctoral thesis on Public Debt and Its Sustainability in Jharkhand (2016), and an M.Phil. in Economics. His research interests encompass public debt sustainability, macroeconomic policy, regional economic development, and food and nutrition economics. He has served as a Project director of a ICSSR-funded Minor Research Project examining malnutrition among school-going children in Ranchi District. He has published research in reputed national and international outlets, including Palgrave Macmillan, Global Policy (Wiley), SAGE's SEDME Journal, and the Indian Economic Journal. He has also presented papers at several national and international conferences on themes including debt management, fiscal policy, and sustainable development.

Email: pathaksxc@gmail.com