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Health Expenditure and Economic Productivity in Indian States: An Analysis

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Abstract: ***This study explores the dynamic relationship between public health expenditure and economic productivity across Indian states during the fiscal year 2021-22. Utilizing data from the National Health Accounts, state budgets, and peer-reviewed research, it investigates the influence of both government health spending and individual out-of-pocket expenditure (OOPE) on Gross State Domestic Product (GSDP). The findings reveal a generally positive correlation between increased public health investment and economic performance, underscoring the role of robust health infrastructure in enhancing workforce efficiency and state-level growth. However, the study also uncovers persistent disparities in health financing across states, with high OOPE in several regions diluting the economic gains associated with public expenditure. These insights highlight the necessity of adopting more balanced and inclusive health financing mechanisms to drive equitable economic development.***

Key Words: Health expenditure, Economic productivity, GSDP, Indian states, Out-of-pocket expenditure (OOPE) .

Health constitutes a fundamental pillar of human capital and plays a pivotal role in shaping a nation's economic performance. A well-functioning healthcare system, supported by adequate investment in infrastructure, personnel, and services, directly contributes to improved workforce productivity by reducing the prevalence of illness, enhancing life expectancy, and promoting overall well-being. In turn, a healthier population can more effectively participate in economic activities, thereby accelerating growth and development.

In the context of India's federal structure, the responsibility for health primarily lies with individual states, leading to significant disparities in health expenditure and outcomes across the country. These differences are often shaped by a complex interplay of factors, including regional policy priorities, the availability of fiscal resources, demographic profiles, and governance effectiveness. Consequently, states vary widely in their capacity and willingness to invest in public health, resulting in diverse impacts on economic productivity.

This study seeks to examine the correlation between health expenditure and economic output across Indian states during the fiscal year 2021-22. By analysing both government health spending and out-of-pocket expenditure (OOPE) by individuals, the research aims to uncover how variations in health financing influence state-level economic performance, measured primarily through Gross State Domestic Product (GSDP). Through this analysis, the study contributes to the broader discourse on the economic value of health investments and the need for equitable and strategic health financing across India.

Health Expenditure Patterns across States- Understanding the patterns of health expenditure across Indian states is essential to evaluating how financial inputs in the health sector influence economic performance. The Indian federal structure permits substantial autonomy to states in allocating funds, resulting in wide inter-state disparities in both public and private health financing. This section delves into two major components: Government Health Expenditure (GHE) and Out-of-Pocket Expenditure (OOPE), highlighting how these vary across states in the fiscal year 2021-22.

1. Government Health Expenditure (GHE)- Government Health Expenditure refers to the total spending by state governments on health infrastructure, services, personnel, and public health programs. In 2021-22, there was considerable variation in GHE when measured as a percentage of Gross State Domestic Product (GSDP). Selected data includes:

Delhi: Allocated approximately 1.0% of its GSDP to health.

Kerala: Spent around 1.1%, reflecting its long-standing emphasis on human development indicators.

Uttar Pradesh: Allocated 1.2%, although absolute per capita spending remains low due to the large population.

Bihar: Despite being one of the least economically advanced states, Bihar spent 1.4% of its GSDP on health, the highest among these examples.

Health expenditure plays a pivotal role in shaping economic productivity across Indian states. A strategic focus on enhancing public health investment and minimizing OOPE can lead to more equitable and robust economic outcomes. Policymakers should prioritize health financing reforms to achieve these objectives.

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These figures reveal that higher allocations do not necessarily equate to better health outcomes or economic productivity, as effective utilization, administrative efficiency, and infrastructure quality also play significant roles.

Moreover, states like Tamil Nadu and Himachal Pradesh, which consistently prioritize health in their budgets, have developed more resilient healthcare systems that contribute positively to economic indicators such as labour force participation and productivity.

2. Out-of-Pocket Expenditure (OOPE)- Out-of-Pocket Expenditure refers to direct payments made by individuals for healthcare services at the point of use, without reimbursement. OOPE remains a dominant component of health financing in India, often due to underinvestment in public services and dependence on private providers.

According to NHA 2021-22: Kerala had the highest per capita OOPE at approximately ?7,889, with OOPE accounting for 59.1% of the state's total health expenditure.

Bihar recorded the lowest per capita OOPE at around ?984, where OOPE contributed 37.1% to the total health expenditure.

This variation is influenced by several factors, including availability and accessibility of public health facilities, insurance penetration, literacy levels, and urban-rural divides. States with high OOPE often witness households falling into poverty due to catastrophic health expenditures, which can erode overall productivity by reducing disposable income and discouraging preventive care.

The trends also indicate that in states where public health systems are better developed, reliance on private care and OOPE tends to be lower, promoting more equitable access to services and healthier workforces.

Economic Productivity Indicators- Economic productivity is a critical measure of a region's capacity to generate income and sustain growth. It is closely tied to the health and efficiency of the labour force, which in turn is influenced by the quality and accessibility of healthcare services. In the context of Indian states, productivity is typically assessed using Gross State Domestic Product (GSDP)-a regional equivalent of Gross Domestic Product (GDP) that reflects the total value of goods and services produced within a state's geographical boundaries.

1. Gross State Domestic Product (GSDP) per Capita- GSDP per capita serves as a proxy for both economic well-being and productivity. During the fiscal year 2021-22, Indian states displayed wide variations in GSDP per capita, which often mirrored disparities in health expenditure, educational attainment, and infrastructure development.

Maharashtra, Tamil Nadu, and Gujarat ranked among the top-performing states in terms of total and per capita GSDP. These states benefit from a diversified industrial base, better health infrastructure, and relatively high levels of human capital. Bihar, Uttar Pradesh, and Jharkhand, on the other hand, reported significantly lower per capita GSDP, reflecting challenges such as lower public investment in health and education, high population density, and weaker administrative capacity.

The productivity gap between high- and low-performing states is reinforced by systemic differences in social sector investments, particularly in health and education, which directly affect the quality and efficiency of the workforce.

2. Health-Linked Economic Metrics- In addition to GSDP, other socioeconomic indicators help illustrate the connection between health and productivity:

Workforce Participation Rate (WPR): States with better health outcomes tend to report higher WPRs. For instance, Kerala and Tamil Nadu have higher labour force participation, partly due to improved public health infrastructure and lower disease burden.

Life Expectancy: Longer life expectancy, indicative of better healthcare access and outcomes, correlates positively with productivity. States like Himachal Pradesh and Kerala lead in this metric, reflecting their consistent focus on healthcare. Literacy and Educational Attainment: Education and health are interlinked components of human capital. States with higher literacy rates typically report higher health awareness, better health-seeking behaviour, and improved labour productivity.

These indicators, taken together, offer a multidimensional perspective on how health investment not only improves well-being but also enhances economic output. They further suggest that improvements in health metrics can yield substantial economic dividends, particularly in labour-intensive economies like India's.

Correlation between Health Expenditure and Economic Productivity- The relationship between health expenditure and economic productivity is complex, yet evidence increasingly points to a strong and positive correlation. A healthy population tends to be more productive, while economically robust states are better positioned to invest in health services. This section presents empirical observations and interpretive insights into how health financing influences economic performance at the state level in India, with a particular focus on the fiscal year 2021-22.

1. Observed Patterns and Correlation Trends- The comparative analysis of state-level data reveals a clear trend:

states that invest more in public health systems tend to experience better economic outcomes over time. For instance:

Kerala, which consistently allocates a significant share of its budget to health and boasts a relatively well-developed public health infrastructure, shows strong human development indicators and moderate-to-high GSDP per capita.

Tamil Nadu and Maharashtra, known for both high economic output and relatively strong healthcare systems, further illustrate this positive association.

In contrast, Bihar and Uttar Pradesh, which face long-standing challenges in healthcare access and quality, lag behind in GSDP growth despite having made improvements in budget allocations in recent years.

A basic Pearson correlation analysis between public health expenditure as a percentage of GSDP and GSDP per capita shows a modest but statistically significant positive relationship, suggesting that higher public spending on health is associated with increased economic productivity.

2. Impact of Out-of-Pocket Expenditure (OOPE)- While public health expenditure tends to support economic growth, excessive out-of-pocket spending often has the opposite effect. High OOPE can lead to financial distress, reduced consumption capacity, and lower access to timely medical care, all of which can suppress workforce participation and efficiency.

States with high OOPE, such as Kerala, despite strong health infrastructure, face a paradox: public health facilities may be underutilized due to trust or accessibility issues, leading people to depend on costly private healthcare. In contrast, Bihar reports lower per capita OOPE, but this may reflect limited access to healthcare services rather than lower financial burden.

The overall effect is that high OOPE, when not complemented by adequate public investment or insurance coverage, dilutes the economic gains that health expenditure could otherwise yield.

3. Directionality and Causation- Some empirical models and past studies-particularly those applying Granger causality tests-suggest a bidirectional relationship between health expenditure and economic growth. In wealthier states, economic growth often precedes increases in health spending, allowing governments to allocate more resources toward public services. Conversely, in states that have prioritized health spending despite limited resources (e.g., Himachal Pradesh), improvements in health outcomes have, over time, contributed to economic expansion by boosting labour productivity and reducing disease-related work disruptions.

These findings point toward a feedback loop: better health leads to higher productivity and economic growth, which in turn creates fiscal space for greater health investments.

The findings of this study underscore the central role that health expenditure plays in shaping economic productivity across Indian states. While the data indicates a generally positive correlation between government health spending and GSDP, the relationship is nuanced and influenced by a range of structural, demographic, and policy-related factors.

1. Interpretation of Results- The analysis suggests that states investing adequately in healthcare infrastructure, human resources, and preventive services tend to experience better economic performance. This supports the hypothesis that healthier populations are more productive, better able to participate in the labour force, and contribute consistently to the economy.However, the strength of this relationship varies. In some cases, such as Kerala, high public and private spending on health contributes to impressive social indicators and a healthy, educated population. But in others, such as Bihar, the returns on health expenditure are diminished by systemic inefficiencies, underutilization of resources, and poor administrative capacity. The discussion also highlights the limitations of measuring productivity solely through GSDP. While GSDP captures overall economic output, it may overlook inequalities, underemployment, and informal sector contributions-areas where poor health can have an outsized impact.

2. Role of Out-of-Pocket Expenditure- High OOPE continues to be a barrier to equitable and effective health service utilization. In many states, the burden of health costs falls disproportionately on low-income households, leading to delayed treatment, untreated illnesses, and financial stress. This not only undermines individual well-being but also affects overall labour productivity by reducing the availability of healthy workers and increasing absenteeism.

The failure to adequately address OOPE through insurance schemes, public provisioning, or subsidies reflects a significant gap in India's health financing strategy. Bridging this gap is essential if health investment is to translate into broad-based economic gains.

3. Policy Implications- The results have important implications for health and economic policy. First, states need to

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ensure effective allocation and utilization of health funds, rather than merely increasing budgetary outlays. Second, reducing OOPE through strengthened public systems and better insurance coverage (e.g., under Ayushman Bharat) must be a key objective. Third, health investments should be closely aligned with strategies to improve education, sanitation, and nutrition, which act as complementary factors in enhancing productivity.

A coordinated approach involving inter-sectoral planning, capacity building, and greater transparency in health governance can enhance the economic return on health investments. Federal support and financial transfers to weaker states can also play a vital role in addressing regional disparities.

Conclusion and Policy Recommendations- This study reaffirms the crucial linkage between health expenditure and economic productivity at the state level in India during the fiscal year 2021-22. The analysis demonstrates that increased public investment in healthcare correlates positively with higher Gross State Domestic Product (GSDP), reflecting the broader economic benefits of a healthier workforce. However, the persistence of significant disparities in health financing and the high burden of out-of-pocket expenditure (OOPE) undermine these gains in many states.

The evidence suggests that states with more efficient, accessible, and better-funded health systems experience stronger economic outcomes, while those burdened by financial barriers and systemic inefficiencies lag behind. These findings emphasize the importance of not only increasing health expenditure but also ensuring its optimal utilization and reducing the direct cost burden on individuals.

Policy Recommendations:

1. Enhance Public Health Investment: States should prioritize increasing budgetary allocations for health, focusing on infrastructure development, human resource capacity, and essential medical services to improve accessibility and quality.
2. Reduce Out-of-Pocket Expenditure: Expanding health insurance coverage and strengthening public health facilities can lower OOPE, protecting households from catastrophic health costs and promoting timely healthcare utilization.
3. Improve Governance and Efficiency: Strengthening financial management, monitoring mechanisms, and transparency in health expenditure can maximize the impact of available resources and reduce wastage.
4. Promote Inter-sectoral Coordination: Health outcomes are influenced by factors beyond the health sector. Integrating policies related to nutrition, sanitation, education, and social protection will amplify productivity gains.
5. Address Regional Disparities: Federal support through targeted transfers and capacity-building initiatives is essential to assist economically weaker states in scaling up their health investments and achieving equitable growth.

In conclusion, strategic investments in health are indispensable for India's sustained economic development. By adopting a holistic, equitable, and evidence-based approach to health financing, Indian states can unlock the full potential of their human capital and foster inclusive economic prosperity.

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