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Do Public Expenditures on Education and Health Improve Service Delivery: Evidence from Lucknow District of Uttar Pradesh

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Abstract

This study examines whether government funding has improved services in Lucknow, Uttar Pradesh. Using primary survey data collected from 250 respondents across four development blocks of Lucknow district, the study examines infrastructure quality, accessibility, staffing adequacy, service standards, and beneficiary satisfaction. The study assessed the effectiveness of public health and educational services using descriptive statistics, percent breakdowns, and a Service Delivery Index. The study found that public spending has improved education and healthcare infrastructure, access, and service quality. However, challenges related to digital infrastructure, medical staff shortages, medicine availability, and waiting times continue to persist. Also, there are differences in how well services are delivered across different areas, which suggests we need targeted solutions. The study finally suggested that while more funding has helped, the researchers say we also need to focus on using money effectively, boosting accountability, and raising standards to really make a difference.

Keywords: Public Expenditures, Education, Health, Uttar Pradesh

1. Introduction

Public expenditure on health as well as on education is widely recognized as a fundamental driver of human capital (HC) and socio-economic development. Since health and education are crucial to the development of HC, governments devote significant financial resources to these fields. Higher production, better living conditions, and increased social welfare are all facilitated by a healthy and educated populace. As a result, investments in healthcare and education are frequently seen as strategic investments that yield long-term developmental and economic benefits.

In developing nations like India, public spending is crucial to guaranteeing fair access to healthcare and education. For their educational and medical requirements, a sizable portion of the population still relies on government supported schools, universities, hospitals, and primary health centers. Over the past three decades, economic development has enhanced India's fiscal capacity, but it is still unclear if higher government expenditure has resulted in appreciable gains in service delivery. The efficiency with which resources are used to raise the calibre, responsiveness, and accessibility of public services is just as important to the efficacy of public spending as the total amount spent.

While health spending supports hospitals, medical staff, illness preventive initiatives, and public health infrastructure, education improves knowledge and skills that allow people to engage in economic and social activities. These sectors work together to achieve the Sustainable Development Goals (SDGs), especially those pertaining to decreased inequality, decent health, and high-quality education. Through programs like the Right to Education Act, Samagra Shiksha, National Health Mission, Ayushman Bharat, and the National Education Policy 2020, public spending on education and health has gradually increased in India. Despite these efforts, learning outcomes, poor healthcare facilities, teacher shortages, inadequate infrastructure, a lack of medical staff, and regional differences in service delivery continue to exist. These challenges imply that higher spending by itself could not always lead to better service delivery.

Uttar Pradesh offers a crucial background for examining the connection between public spending and service provision. Indicators pertaining to literacy, learning attainment, maternal health, child health, and healthcare accessibility continue to show significant discrepancies despite the state's efforts to increase school enrolment, improve healthcare facilities, and adopt different social programs. Delivering high-quality healthcare and education to a vast and varied population is a major issue for the most populous state in India. The majority of assessments focus on outcome indicators and aggregate spending data, which offers little insight into how residents really use public services. Few studies have looked at service delivery results from the viewpoint of recipients, despite the fact that previous research has looked closely at the connection between public spending and economic development. Assessing infrastructure sufficiency, beneficiary satisfaction, staff responsiveness, service quality, and accessibility can yield important information about how well government investment is working.

In light of this, the current study evaluates whether public spending on health and education has enhanced the provision of services in the Uttar Pradesh district of Lucknow. The study analyses important aspects of service delivery, such as accessibility, infrastructure, service quality, personnel availability, and overall satisfaction, using primary survey data gathered from recipients of public healthcare facilities and government educational institutions.

2. Review of Literature

It is generally recognized that public spending on health and education is a major factor in the development of HC and socioeconomic advancement. HC Theory (Schultz, 1961; Becker, 1964) states that expenditures in health and education improve labour market results, increase individual productivity, and support long-term economic growth. Human capital accumulation is a crucial factor in determining sustainable development, according to endogenous growth theorists like Lucas (1988) and Romer (1990).

According to empirical studies, public spending may enhance health and educational outcomes when expenditure by the government are distributed effectively and are backed by stable government. Although results heavily depend on institutional quality, Gupta et al. (2002) showed that public spending on healthcare and education typically improves social indices in developing nations. Rajkumar and Swaroop (2008) analysed that accountability and governance are critical factors in determining the efficacy of public spending. Hanushek and Woessmann (2010) contended that educational quality is more important in the field of education than just spending levels. Thus, studies conducted in India have revealed enduring issues with teacher absenteeism, poor infrastructure, and lax accountability (Kingdon, 2007). Although enrolment rates have significantly increased, learning outcomes still differ between areas, according to recent ASER (2023) data, indicating that service quality is still a key problem.

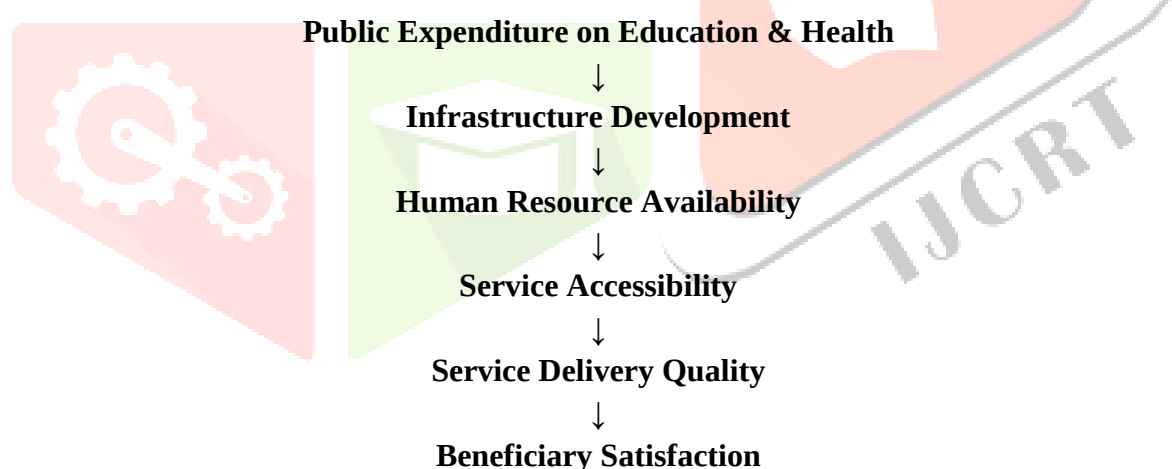
In underdeveloped nations, healthcare spending has yielded inconsistent results. Higher health spending may not necessarily result in better health outcomes because of inefficiencies and inadequate implementation mechanisms, according to Filmer and Pritchett (1999). Mohanty and Rout (2021) discovered that waiting times, staff conduct, infrastructure quality, and doctor availability all had a major impact on patient satisfaction in public healthcare facilities. Healthcare service delivery in India is still hampered by a lack of medical professionals, poor infrastructure, and unequal resource distribution, according to Berman and Ahuja (2008) and Rao et al. (2011).

The World Bank (2023) stressed that institutional efficacy and monitoring systems, in addition to increased investment, are necessary for improvements in healthcare and educational results. Significant inter-state differences in healthcare accessibility and educational attainment were observed by NITI Aayog (2024), demonstrating inconsistent service delivery effectiveness throughout India. Similarly, the Economic Survey (2024-2025) emphasised that enhancing the developmental effect of public spending requires bolstering frontline service delivery organisations. Despite more public investment, studies on Uttar Pradesh show persistent difficulties. Dreze and Sen (2013) pointed out that while recent state-level evaluations show ongoing disparities in healthcare accessibility, medical staff availability, and service quality, educational outcomes in a number of districts continue to fall short of national norms.

Three significant gaps are found in an examination of the literature. First, rather than service delivery performance, the majority of research concentrate on macro-level outcomes and spending levels. Second, very few studies use primary survey data to get opinions on public services from beneficiaries. Third, only a small amount of research, especially in Uttar Pradesh, concurrently looks at the provision of healthcare and education services within a single analytical framework. In order to bridge these gaps, the current study uses primary survey data to assess whether public spending on health and education has improved the service delivery results in Lucknow. The study adds to a more thorough knowledge of the efficacy of public spending in human development sectors by concentrating on infrastructure, accessibility, human resource availability, service quality, and beneficiary satisfaction.

3. Conceptual Framework

The study is based on the idea that public expenditure on education and health enhances service delivery by improving accessibility, infrastructure, and human resources.



4. Research Methodology and Database

The study is mostly based on primary data that was gathered from 250 respondents in the district's four development blocks-Bakshi Ka Talab, Chinhat, Malihabad, and Sarojininagar-using a structured questionnaire. In order to evaluate the efficacy of public spending on health and education services in the Lucknow district of Uttar Pradesh, this study uses a descriptive and cross-sectional research approach. The questionnaire collected data on important aspects of service delivery, such as beneficiary satisfaction, personnel sufficiency, infrastructure availability, accessibility, and service quality. Likert scales with five points were used to gauge responses. The survey data was examined using descriptive statistical methods such frequency distribution, percentages, mean scores, and standard deviations. To guarantee participation from both the education and healthcare sectors, a multistage purposive selection approach was used to pick the respondents, who comprised students, parents, teachers, patients, and healthcare professionals.

Furthermore, a Service Delivery Index (SDI) was created to assess the general effectiveness of healthcare and public education services throughout the chosen blocks. Eight indicators were selected for each sector based on infrastructure availability, human resources, accessibility, service quality, and beneficiary satisfaction. The Service Delivery Index (SDI) assesses the overall effectiveness of education and healthcare service delivery. Responses were measured using a five-point Likert scale. The SDI was calculated by averaging the scores of all indicators and converting them into a percentage scale using:

$$\text{SDI} = (\text{Observed Mean Score} / \text{Maximum Possible Score}) \times 100$$

Higher SDI values indicate better service delivery performance.

Table 1: Components Used in SDI Construction

Dimension	Education Indicators	Healthcare Indicators
Infrastructure	Classroom Availability, Electricity, Toilet Facilities	Hospital Infrastructure, Cleanliness
Human Resources	Teacher Availability, Teacher Punctuality	Availability of Doctors, Staff Responsiveness
Accessibility	Drinking Water Facilities	Accessibility of Healthcare Services
Service Quality	Quality of Teaching, Digital Learning Facilities	Quality of Treatment, Waiting Time Satisfaction
Satisfaction	Beneficiary Satisfaction	Beneficiary Satisfaction

5. Results and Discussion

5.1 Socio-Economic Profile of Respondents

Public education and healthcare service delivery requires an understanding of the socioeconomic characteristics of respondents. A thorough profile of the sample population was created by taking into account variables including gender, age, educational attainment, employment, monthly family income, and location of residence. Beneficiaries and service providers from both sectors, representing a range of socioeconomic and demographic backgrounds, were among the respondents.

Table 2: Socio-Economic Profile of Respondents

Variable	Category	Frequency	Percentage (%)
Gender	Male	140	56.0
	Female	110	44.0
Age Group (Years)	Below 20	45	18.0
	20–30	70	28.0
	31–40	62	24.8
	41–50	43	17.2
	Above 50	30	12.0
Educational Qualification	Primary	28	11.2
	Secondary	55	22.0
	Higher Secondary	50	20.0
	Graduate	82	32.8
	Postgraduate & Above	35	14.0
Place of Residence	Rural	155	62.0
	Urban	95	38.0

Source: Field Survey.

The socioeconomic profile of the study participants is shown in Table 2. The sample's gender representation was well equal, with 56.0 percent of respondents being men and 44.0 percent being women. Respondents between the ages of 20 and 30 made up the largest group (28.0%), followed by those between the ages of 31 and 40 (24.8%). The survey's representativeness is improved and a variety

of experiences with public service delivery are captured by the participation of respondents from a range of age groups.

The majority of respondents (62.0%) lived in rural regions, whilst 38.0% lived in urban areas. Given the persistent differences between rural and urban areas' access to healthcare and educational resources, this distribution is especially pertinent. In terms of educational achievement, the highest percentage of respondents (32.8%) was graduates, followed by those with secondary education (22.0%) and upper secondary education (20.0%). The respondents' comparatively high educational profile indicates that they have enough knowledge to assess the efficacy and quality of public healthcare and education services. Overall, the socioeconomic features show that the sample included respondents from a variety of educational and demographic backgrounds, offering a thorough foundation for evaluating service delivery results in the chosen Lucknow district blocks.

5.2 Education Service Delivery Analysis

According to the descriptive data, classroom availability had the highest mean score (4.02), indicating that most respondents thought the infrastructure in the classroom was adequate. Positive assessments were also given to drinking water facilities (3.76), electricity facilities (3.84), and teacher availability (3.81), indicating advancements in the fundamental infrastructure of education. The mean score for quality of instruction was 3.72, suggesting that recipients were only moderately satisfied. The somewhat lower score of 3.58 for restrooms indicates that sanitary infrastructure is still a problem that needs further work. The 3.65 rating for teacher timeliness highlighted issues with institutional discipline and consistency. Digital learning facilities had the lowest mean score (3.31), suggesting that many government schools still lack basic technology infrastructure. The standard deviation numbers indicate that respondent judgements vary moderately across several metrics. Overall, the findings imply that public expenditure has contributed positively to strengthening educational infrastructure and service availability. However, the relatively lower scores for digital facilities and sanitation infrastructure suggest that future investments should prioritize technological integration and facility maintenance to enhance educational outcomes and beneficiary satisfaction. These findings are consistent with Gupta et al. (2002), who argued that public expenditure contributes significantly to improvements in educational outcomes when resources are effectively allocated. Similarly, Hanushek and Woessmann (2010) emphasized that educational quality depends not only on expenditure levels but also on how resources are utilized within institutions. The relatively lower scores for digital learning facilities support the findings of ASER (2023), which highlighted persistent technological gaps in government schools across India.

Table 3: Descriptive Statistics

Indicator	Mean	Std. Deviation
Availability of Classrooms	4.02	0.81
Electricity Facilities	3.84	0.89
Drinking Water Facilities	3.76	0.92
Toilet Facilities	3.58	0.98
Teacher Availability	3.81	0.84
Teacher Punctuality	3.65	0.88
Quality of Teaching	3.72	0.83
Digital Learning Facilities	3.31	1.06
Source: Author Calculation.		

According to the satisfaction analysis, most respondents had favourable opinions about educational services. 19.2 percent of respondents said they were extremely satisfied, compared to about 40.8 percent who said they were satisfied. These groups together make up 60.0 percent of the sample as a whole, indicating that a sizable percentage of recipients have benefited from public investments in education.

Table 4 Education Sector Satisfaction Level

Satisfaction Category	Frequency	Percentage (%)
Highly Satisfied	48	19.2
Satisfied	102	40.8
Neutral	56	22.4
Dissatisfied	31	12.4
Highly Dissatisfied	13	5.2
Total	250	100
Source: Author Calculation.		

However, 22.4 percent of respondents had no opinion, suggesting ambiguity or conflicting experiences with regard to service quality. In the meanwhile, nearly one-fifth of the respondents i.e. 12.4 percent and 5.2 percent respectively, reported unhappiness and significant discontent. These results imply that major obstacles still have an impact on user experiences despite advancements in infrastructure and service delivery. Lower satisfaction ratings among some groups may be caused by problems including poor digital facilities, hygienic issues, and inconsistent instruction. The general trend is that public spending has improved the provision of educational services, although not all recipients have benefited equally. Therefore, to raise general satisfaction and increase educational quality, ongoing monitoring and focused interventions are required.

5.3 Healthcare Service Delivery Analysis

According to the examination of healthcare indicators, hospital infrastructure had the highest mean score (3.88), indicating that beneficiaries were aware of changes made to healthcare facilities. Both cleanliness (3.82) and treatment quality (3.69) received favourable evaluations, suggesting that service standards were satisfactorily upheld. Accessibility received a score of 3.67, indicating that the majority of respondents thought healthcare facilities were sufficiently accessible. The mean score for staff responsiveness was 3.56, indicating a modest level of satisfaction with the interactions between medical staff and patients.

Table 5: Descriptive Statistics of Healthcare Indicators

Indicator	Mean	Std. Deviation
Hospital Infrastructure	3.88	0.84
Availability of Doctors	3.45	1.01
Availability of Medicines	3.24	1.08
Staff Responsiveness	3.56	0.92
Quality of Treatment	3.69	0.88
Waiting Time Satisfaction	3.10	1.12
Cleanliness	3.82	0.86
Accessibility	3.67	0.89
Source: Author Calculation.		

However, ratings for the availability of physicians (3.45) and medications (3.24) were much lower, indicating ongoing resource limitations in public healthcare facilities. The lowest mean score (3.10) was obtained for waiting time satisfaction, suggesting that beneficiaries continue to have serious concerns about delays in getting medical care. The standard deviation results show a considerable degree of response variability, which reflects variations in experiences across sites and institutions. Overall, the results indicate that public spending has enhanced treatment quality and physical infrastructure, but more expenditure in human resources, pharmaceutical supply chains, and operational effectiveness are required to improve healthcare service delivery.

The findings of the healthcare satisfaction survey show that respondents' opinions are typically favourable. 16.0 percent of respondents said they were extremely happy with healthcare services, compared to about 43.2 percent who said they were satisfied. Together, these groups account for 59.2 percent of the sample, indicating that more government funding has improved public healthcare services. Nonetheless, 21.6 percent of respondents said they had neutral thoughts, meaning their encounters weren't particularly good or bad. The percentage of respondents who were unhappy and severely unsatisfied was 13.6 percent and 5.6 percent, respectively, indicating ongoing issues with service delivery.

Table 6: Healthcare Satisfaction Level

Satisfaction Category	Frequency	Percentage (%)
Highly Satisfied	40	16.0
Satisfied	108	43.2
Neutral	54	21.6
Dissatisfied	34	13.6
Highly Dissatisfied	14	5.6
Total	250	100
Source: Author Calculation.		

The relatively lower satisfaction levels may be associated with shortages of doctors, limited medicine availability, and long waiting times observed in the descriptive analysis. While improvements in infrastructure and cleanliness have positively influenced perceptions, operational inefficiencies continue to affect beneficiary experiences. The findings demonstrate that public healthcare expenditure has produced measurable improvements in service delivery, but further efforts are required to address bottlenecks related to staffing, resource availability, and patient management. Enhancing these aspects can contribute significantly to improving overall healthcare satisfaction and service effectiveness.

5.4 Block-wise Comparison

Significant differences in service delivery performance are shown by the block-wise comparison among the chosen study regions. With the highest Service Delivery Index score (74.8), Chinhhat demonstrated exceptional performance in terms of infrastructure, accessibility, human resources, and service quality. Sarojininagar came in second with a score of 72.5, indicating that public services were implemented rather successfully. Bakshi Ka Talab had a moderate score of 69.3, which indicates that their service delivery performance was adequate but significantly lower. Malihabad has the lowest score (66.7), suggesting more difficulties with service delivery.

Table 7: Average Service Delivery Index across Blocks

Block	Mean SDI Score
Chinhhat	74.8
Sarojininagar	72.5
Bakshi Ka Talab	69.3
Malihabad	66.7
Source: Author Calculation.	

These disparities can be the result of variations in population characteristics, infrastructural development, administrative effectiveness, and resource distribution among the blocks. The results imply that local institutional characteristics have a major impact on service effectiveness and that public spending does not provide consistent results across geographic areas. This observation is consistent with Rajkumar and Swaroop (2008), who emphasized that governance quality and administrative effectiveness significantly influence the outcomes of public expenditure. Variations in institutional capacity may therefore explain

the differences observed among the selected development blocks. The findings show that in order to lessen regional differences and provide fair access to high-quality healthcare and education services throughout the district, specific policy measures are required in lower-performing regions, especially Malihabad and Bakshi Ka Talab.

6. Conclusion and Policy Implications

Public expenditure on health and education constitutes a critical instrument for HC and socio-economic development. Using primary survey data collected from 250 respondents across four development blocks of Lucknow district, this study evaluated the effectiveness of government expenditure in improving service delivery outcomes in education and healthcare. The results show that both healthcare and education services have improved as a result of public investment. The analysis focused on infrastructure, accessibility, human resource availability, service quality, and beneficiary satisfaction. The majority of respondents said they were satisfied with the services offered by government agencies, indicating that recipients had benefited significantly from public spending. Service delivery is nevertheless impacted by a number of issues despite these favourable results. Respondents in the education sector mentioned basic infrastructure, teacher availability, and adequate classroom amenities. Teaching efficacy, sanitary infrastructure, and digital learning facilities are all areas where educational institutions struggle. Healthcare services also demonstrated advancements in hospital accessibility, sanitation, and infrastructure. Long wait times, insufficient access to medications, and physician shortages continue to be important issues in the healthcare industry. Additionally, the study found differences in service delivery within the Lucknow district's many blocks, suggesting that the advantages of public spending are not shared equally. The results imply that rising spending on its own is not enough to attain the best possible service delivery results. Investments in healthcare personnel, medication supply systems, digital educational infrastructure, and institutional monitoring systems should be given top priority by policymakers. Enhancing the effectiveness, responsibility, and quality of public services must get more focus. To lessen regional differences, lower-performing communities should also receive extra attention. Overall, the study finds that the Lucknow district's service delivery has improved as a result of public spending on health and education. To maximise the developmental impact of public investment and guarantee equal access to high-quality public services, however, consistent increases in service quality and efficient resource use are crucial.

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