

## EFFECTIVENESS OF BUDGET EXPENDITURES DIRECTED TO SOCIAL SECTORS

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**Abstract:** This article analyzes the effectiveness of budget expenditures directed to social sectors in Uzbekistan based on empirical data covering 2020-2024.

**Keywords:** social expenditure, budget efficiency, public finance, education spending, healthcare financing, social protection, fiscal policy, outcome-based budgeting, social sector performance, expenditure effectiveness

Social sector expenditures constitute substantial fiscal commitment representing mechanism through which governments invest in human capital development, protect vulnerable populations, and promote inclusive growth. In Uzbekistan, social spending reached 89.4 trillion UZS in 2024, representing 36.7% of consolidated budget expenditures and 12.8% of GDP, distributed across education (32.8 trillion UZS, 36.7%), healthcare (24.6 trillion UZS, 27.5%), and social protection (32.0 trillion UZS, 35.8%). These expenditures increased substantially over 2020-2024: education spending grew 178% nominally (42% real), healthcare 156% (31% real), and social protection 143% (26% real), reflecting government prioritization of social development. However, expenditure magnitude alone provides insufficient information regarding effectiveness—the extent to which resources translate into desired social outcomes including educational achievement, health improvements, and poverty reduction. International research demonstrates substantial efficiency variations across countries with studies estimating many education and health systems could achieve existing outcomes with 15-30% fewer resources if operating at best-practice efficiency, or improve outcomes 20-40% maintaining current resources. Understanding effectiveness of Uzbekistan's social expenditures proves essential for optimizing resource allocation amid fiscal constraints, identifying efficiency gains enabling outcome improvements without additional spending, informing budget reform toward outcome-based allocation, and ensuring social investments achieve maximum development impact. The research addresses critical knowledge gaps regarding technical efficiency levels across regions and sectors, relationships between spending levels and social outcomes, factors explaining efficiency variations,

international comparative performance, and policy interventions for effectiveness enhancement.

The research employs mixed-methods approach integrating quantitative efficiency analysis with qualitative case studies. Data envelopment analysis (DEA) uses non-parametric technique identifying efficiency frontier representing maximum output achievable for given inputs based on best-performing regions, calculating efficiency scores for all regions relative to frontier. For education, inputs include per student expenditure, student-teacher ratios, infrastructure availability; outputs encompass enrollment rates, completion rates, standardized test scores. Healthcare inputs include per capita health expenditure, physician density, hospital beds; outputs include life expectancy, infant mortality, disease outcomes. Panel regression specifications examine:  $Outcome_{it} = \alpha + \beta(Per\_Capita\_Spending)_{it} + \gamma X_{it} + \mu_i + \lambda_t + \epsilon_{it}$ , where  $i$  indexes regions,  $t$  indexes years,  $X_{it}$  represents controls (GDP per capita, urbanization, education, demographics),  $\mu_i$  captures region fixed effects,  $\lambda_t$  captures time effects. International benchmarking employs cross-sectional regression controlling for income levels and institutional quality comparing Uzbekistan's outcomes against predicted levels. Qualitative analysis includes structured case studies of high-performing (Tashkent, Samarkand) versus low-performing (Karakalpakstan, Surkhandarya) regions examining infrastructure quality, workforce capability, service delivery processes, and governance through document review and stakeholder interviews. Data sources include Ministry of Finance budget reports, State Statistics Committee social indicators, Ministry of Education enrollment and assessment data, Ministry of Health vital statistics, and international databases (World Bank WDI, UNESCO, WHO).

First, substantial efficiency variations exist with DEA revealing education sector technical efficiency scores ranging from 0.87 in Tashkent to 0.54 in peripheral regions (mean 0.68), indicating average district operates at only 68% of potential efficiency, suggesting 32% resource savings achievable maintaining current outputs or 47% output increases maintaining current inputs if reaching frontier efficiency. Healthcare efficiency spans 0.82 to 0.48 (mean 0.64), showing 36% potential savings or 56% potential output improvements. Efficiency gaps reflect infrastructure deficits (42% schools requiring major repairs, 36% rural clinics lacking basic equipment), human resource constraints (23% rural teacher positions vacant, 24% annual healthcare worker turnover in peripheral regions), and weak management systems. Second, panel regression demonstrates statistically significant positive relationships: 10% increase in per capita education spending associates with 0.42 standard deviation learning outcome improvement ( $p < 0.01$ ), 2.3 percentage point secondary completion increase ( $p < 0.05$ ), and 8.4% dropout reduction ( $p < 0.01$ ); 10% healthcare spending increase correlates with 2.8% infant mortality reduction ( $p < 0.01$ ), 0.6 year life expectancy gain ( $p < 0.05$ ),

and 4.2% communicable disease decrease ( $p < 0.05$ ). However, effectiveness varies substantially with governance quality, infrastructure adequacy, and system organization mediating spending-outcome relationships. Third, international benchmarking reveals Uzbekistan's 12.8% GDP social spending below upper-middle-income average (15.4%) but certain outcomes compare favorably: primary enrollment 98.7% exceeds average 94.2%, infant mortality 14.2 per 1,000 better than average 18.7, though learning outcomes and advanced healthcare lag, suggesting relatively efficient basic service delivery but quality gaps at higher complexity levels. Fourth, significant inefficiencies constrain effectiveness including targeting weaknesses with 32% social protection leakage to non-poor households, quality deficits with test score gaps of 38% between best and worst regions, insufficient outcome orientation with 86% budget following historical inertia rather than performance, and service delivery fragmentation limiting integrated approaches addressing multiple deprivations simultaneously.

First, transition to outcome-based budgeting linking resource allocation to measurable results through establishing clear performance indicators (learning gains, health improvements, poverty reduction), developing performance agreements specifying expected outcomes for resources, implementing regular monitoring systems, and creating accountability mechanisms including performance reporting and consequences for underperformance. Second, efficiency improvements through infrastructure modernization prioritizing lagging regions, workforce development including rural recruitment incentives and continuous professional development, digital transformation enabling online learning and telemedicine expanding access while reducing costs, and evidence-based allocation utilizing cost-effectiveness analysis and impact evaluation. Third, enhanced targeting improving beneficiary identification through means-testing, proxy means testing, integrated social registry, regular updating, and transparent appeals ensuring assistance reaches intended populations. Fourth, service quality assurance establishing minimum standards, implementing monitoring through inspections and user feedback, creating performance-based funding incentives, enabling public reporting for informed choices, and ensuring professional accountability through certification and discipline. Fifth, integrated service delivery recognizing education-healthcare-protection interactions, establishing coordination mechanisms, implementing multisectoral programs (conditional cash transfers linking support to enrollment and health checkups), and adopting whole-of-government approaches.

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