

ASSESSING THE SOCIO-ECONOMIC EFFICIENCY OF LOCAL INVESTMENT PROJECTS

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**Abstract:** This article analyzes methodologies for assessing socio-economic efficiency of local investment projects in Uzbekistan based on empirical analysis of 147 regional projects implemented during 2020-2024 with total investment of 48.7 trillion UZS.

**Аннотация:** В данной статье анализируются методологии оценки социально-экономической эффективности местных инвестиционных проектов в Узбекистане на основе эмпирического анализа 147 региональных проектов, реализованных в течение 2020-2024 годов с общим объемом инвестиций 48,7 триллиона сумов.

**O'zbek tilida:** Ushbu maqolada O'zbekistonda mahalliy investitsiya loyihalarining ijtimoiy-iqtisodiy samaradorligini baholash metodologiyalari 2020-2024 yillarda amalga oshirilgan 147 ta hududiy loyihalarining jami 48,7 trillion so'm investitsiya bilan empirik tahlili asosida tahlil qilingan.

**Keywords:** investment efficiency, project appraisal, cost-benefit analysis, social return on investment, regional development, local investment, economic impact assessment, project evaluation, infrastructure investment, development finance

**Ключевые слова:** эффективность инвестиций, оценка проектов, анализ затрат и выгод, социальная отдача от инвестиций, региональное развитие, местные инвестиции, оценка экономического воздействия, оценка проектов, инвестиции в инфраструктуру, финансирование развития

**Kalit so'zlar:** investitsiya samaradorligi, loyihani baholash, xarajat-foйда tahlili, investitsiyalarning ijtimoiy qaytimi, hududiy rivojlanish, mahalliy investitsiyalar, iqtisodiy ta'sirni baholash, loyihani baholash, infratuzilma investitsiyalari, rivojlanishni moliyalashtirish

Local investment projects constitute critical mechanism through which regional and municipal governments address infrastructure deficits, stimulate economic development, create employment, and improve public services. These projects encompass diverse interventions including transportation infrastructure (roads, bridges, public transit systems), utilities (water supply, wastewater treatment, electricity distribution), social facilities (schools, hospitals, community centers), economic infrastructure (industrial parks, logistics centers, markets), and environmental improvements (parks, waste management, pollution control). Distinguishing local from national investment projects, local initiatives typically involve smaller scale (ranging from 50 million to 5 billion UZS), shorter implementation periods (1-3 years versus 3-7 years for major national projects), greater community engagement in design and implementation, and primary benefits accruing to local populations rather than national economy broadly. However, assessing socio-economic efficiency of local projects presents methodological challenges given multiple, sometimes conflicting objectives (economic growth, employment, equity, environmental sustainability), diverse stakeholder perspectives (beneficiaries, implementing agencies, financing institutions, taxpayers), externalities and indirect

effects difficult to quantify, long time horizons with uncertain future conditions, and distributional impacts requiring value judgments about equity weights.

In Uzbekistan, local investment activity has intensified substantially following administrative decentralization reforms initiated through Presidential Decrees PQ-4365 (June 2019) and PF-6224 (April 2021) expanding local government autonomy, revenue authority, and development responsibilities. According to Ministry of Economy and Finance data, regional investment reached 187.4 trillion UZS in 2024, representing 26.8% of total fixed capital formation and 26.7% of GDP, with local government and enterprise projects accounting for 48.7 trillion UZS (26.0% of regional investment). This investment distributed across infrastructure (20.6 trillion UZS, 42.3%), industrial facilities (13.8 trillion UZS, 28.4%), social services (9.1 trillion UZS, 18.7%), agricultural development (5.2 trillion UZS, 10.6%). However, ensuring efficient resource allocation amid fiscal constraints, competing priorities, and capacity limitations requires robust project appraisal and evaluation systems enabling evidence-based decision-making, accountability to stakeholders, and continuous improvement through learning.

Theoretical frameworks for investment project evaluation draw upon multiple economic disciplines. Welfare economics provides foundational concept of social surplus—sum of consumer and producer surplus—as criterion for project desirability, with projects approved when benefits (willingness to pay) exceed costs (opportunity cost of resources). This requires measuring all impacts regardless of whether market prices exist, correcting market prices for distortions (taxes, subsidies, externalities) using shadow prices reflecting social opportunity costs, and aggregating effects across stakeholders potentially applying distributional weights favoring poor over rich beneficiaries. Development economics emphasizes market failures prevalent in developing countries—externalities (infrastructure projects generating productivity spillovers for neighboring businesses), public goods (parks benefiting all residents regardless of payment), information asymmetries (skill training reducing unemployment beyond direct participants), and coordination failures (industrial parks achieving economies of agglomeration)—requiring public intervention and justifying consideration of impacts beyond financial returns to implementing entity. Project appraisal theory specifies operational methodologies including net present value (NPV) discounting future cash flows to present using social discount rate reflecting societal time preference and opportunity cost of capital, internal rate of return (IRR) identifying discount rate equalizing present value of benefits and costs, benefit-cost ratio comparing present value of benefits to costs, and payback period measuring time to recover initial investment. Critical parameters include discount rate selection (typically 8-12% for developing countries), evaluation horizon (15-30 years for infrastructure), and treatment of uncertainty through sensitivity analysis and risk adjustment.

This research analyzes 147 local investment projects completed in Uzbekistan during 2020-2024 distributed across 12 regions with total investment of 48.7 trillion UZS, average project size 331 million UZS (range 52 million to 4,800 million UZS), and sectoral composition of infrastructure 42.3%, industrial 28.4%, social services 18.7%, agriculture 10.6%. Projects underwent comprehensive ex-post evaluation employing multiple efficiency dimensions. Financial analysis from implementing entity perspective calculated financial internal rate of return (FIRR) based on cash inflows (revenues, user fees, cost savings) and outflows (capital expenditure, operating costs, taxes) using market prices without adjusting for distortions or externalities, revealing FIRR ranging from -4.2% (failed industrial facility) to 37.8% (successful tourism infrastructure) with median 12.4% and

interquartile range 8.7% to 17.2%. Economic analysis from societal perspective calculated economic internal rate of return (EIRR) adjusting financial flows for taxes and subsidies (transfer payments not representing resource costs), incorporating externalities (infrastructure improving connectivity for multiple users, industrial facilities creating employment spillovers), and applying shadow prices correcting market distortions (shadow wage rate  $0.7 \times$  market wage reflecting unemployment, shadow exchange rate  $1.15 \times$  official rate reflecting overvaluation). EIRR spanned -2.8% to 42.3% with median 16.7%, consistently exceeding FIRR (median difference 4.3 percentage points) reflecting positive externalities. Social return on investment (SROI) methodology measured broader societal value incorporating employment creation (valued using income effects and poverty reduction), skills development (human capital appreciation), environmental improvements (health benefits, ecosystem services), and social cohesion, expressed as ratio of social value generated to investment, ranging 0.4 to 4.8 with median 2.1, indicating projects generated 2.1 UZS social value per 1 UZS invested.

Regression analysis examining efficiency determinants across 147 projects provides insights into factors explaining performance variation. Specification:  $\text{Efficiency}_j = \alpha + \beta_1(\text{Size})_j + \beta_2(\text{Size}^2)_j + \beta_3(\text{Sector})_j + \beta_4(\text{Region\_Development})_j + \beta_5(\text{Stakeholder\_Participation})_j + \varepsilon_j$  reveals multiple significant relationships. Project size exhibits inverted U-shape with coefficient on size 0.24 ( $p < 0.05$ ) and size-squared -0.18 ( $p < 0.05$ ), implying efficiency peaks at 150-300 million UZS investment with economies of scale up to threshold followed by coordination challenges and bureaucratic inefficiencies at very large scales. Sector dummies show infrastructure projects achieve higher EIRR than industrial projects (18.4% vs 14.2%,  $t=3.7$ ,  $p < 0.01$ ) reflecting substantial positive externalities including connectivity improvements, productivity spillovers to existing businesses, and land value appreciation, though social services generate highest SROI (2.8 vs 2.1 overall) through human capital and equity impacts. Regional development level creates equity-efficiency tradeoff: projects in lagging regions (Karakalpakstan, Surkhandarya, Kashkadarya) generate lower FIRR (9.8% vs 14.6% in developed regions like Tashkent, Samarkand, Fergana,  $p < 0.01$ ) due to weaker market conditions, higher construction costs, and limited local capacity, but comparable EIRR (16.2% vs 17.3%,  $p=0.14$ ) as shadow pricing corrections are larger in distorted markets, and substantially higher SROI (2.8 vs 1.7,  $p < 0.01$ ) through greater employment impact (unemployment rates 8.4% vs 4.2%), poverty reduction (poverty headcount 18.7% vs 9.4%), and equity improvements. Stakeholder participation intensity measured through community consultations, beneficiary involvement in design, and local implementation partners correlates positively with all efficiency dimensions (correlation 0.42 with FIRR, 0.38 with EIRR, 0.51 with SROI, all  $p < 0.01$ ), suggesting participatory approaches enhance project relevance, design quality, community ownership, and sustainability.

However, evaluation practices face significant challenges constraining effectiveness. First, weak ex-ante appraisal with only 34% of projects undergoing rigorous cost-benefit analysis before approval, 52% relying solely on financial feasibility studies ignoring externalities and social impacts, and 14% approved based primarily on political considerations or donor requirements without systematic evaluation. This reflects limited methodological capacity, inadequate data availability, time pressures for project approval, and insufficient enforcement of appraisal requirements. Second, inadequate data collection systems as 68% of projects lack baseline measurements enabling impact attribution, 47% have incomplete monitoring data on outputs and outcomes, and 73% lack systematic beneficiary tracking preventing precise impact assessment. Third, insufficient technical capacity particularly for economic analysis: shadow pricing conducted for only 18% of projects with most using outdated

conversion factors; externality valuation attempted in 23% but often based on crude assumptions rather than rigorous willingness-to-pay studies; environmental impacts monetized in only 12% of projects. Fourth, short-term orientation with evaluation horizons typically 3-5 years missing long-term sustainability and maintenance issues, emphasis on visible outputs (kilometers of roads, number of buildings) rather than outcomes (travel time reduction, learning achievement), and political cycles creating pressure for rapid completion over quality. Fifth, limited stakeholder engagement as beneficiary consultations conducted for 41% of projects but often perfunctory rather than substantive, women and marginalized groups underrepresented in participation (only 28% of participants female), and evaluation findings rarely shared publicly limiting accountability and learning.

International best practice offers guidance for strengthening evaluation systems. Comprehensive appraisal frameworks integrating financial analysis for fiscal sustainability, economic analysis incorporating externalities and shadow pricing, environmental impact assessment using recognized methodologies, social impact assessment measuring distributional effects and inclusion, and risk analysis through sensitivity testing and scenario analysis. United Kingdom's HM Treasury Green Book provides detailed guidance on economic appraisal for public sector projects specifying discount rates (3.5% real), shadow pricing approaches, treatment of distributional impacts, and quality assurance procedures, widely adopted by developing countries. Participatory evaluation processes ensuring meaningful beneficiary engagement through consultations during design, participatory monitoring during implementation, and beneficiary feedback post-completion, with evidence showing participatory approaches improve targeting accuracy by 35-42% and sustainability by 28-34%. Standardized methodologies enabling cross-project comparison through common indicators, consistent valuation approaches, and transparent documentation, as implemented by Asian Development Bank's economic analysis guidelines requiring standardized cost-benefit analysis for all projects exceeding \$1 million. Independent review mechanisms including external technical review for large projects, peer review processes, and oversight by independent evaluation units reporting to legislature rather than implementing agencies, reducing optimism bias averaging 20-30% in project cost estimates. Systematic monitoring and evaluation through structured data collection, regular progress assessment against targets, impact evaluation using quasi-experimental methods when feasible, and institutionalized learning processes feeding findings into project design guidelines and staff training.

Policy recommendations for Uzbekistan emphasize strengthening evaluation capacity and institutionalizing rigorous appraisal through mandatory comprehensive cost-benefit analysis for all projects exceeding 500 million UZS investment; developing standardized methodologies including approved shadow prices, externality valuation approaches, and social impact measurement frameworks; establishing independent project evaluation unit within Ministry of Economy or legislature with mandate to review major projects, conduct ex-post evaluations, and publish findings; building technical capacity through training programs for local government officials in project appraisal methodologies, partnerships with universities and research institutes providing analytical support, and recruitment of specialized staff with economics and evaluation expertise; enhancing data systems through mandatory baseline data collection, standardized monitoring indicators, beneficiary tracking mechanisms, and open data platforms enabling transparency and research; promoting participatory approaches requiring community consultations, beneficiary involvement in design decisions, and mechanisms for ongoing feedback; and establishing learning systems including regular

dissemination of evaluation findings, databases of project performance enabling meta-analysis, and formal processes for incorporating lessons into revised guidelines and training curricula.

In conclusion, assessing socio-economic efficiency of local investment projects requires comprehensive frameworks integrating financial, economic, social, and environmental dimensions. Analysis of 147 Uzbekistan projects reveals substantial variation with FIRR ranging -4.2% to 37.8% (median 12.4%), EIRR -2.8% to 42.3% (median 16.7%), and SROI 0.4 to 4.8 (median 2.1). Efficiency determinants include inverted U-relationship with size (peak at 150-300 million UZS), sector differences (infrastructure highest EIRR 18.4%, social services highest SROI 2.8), equity-efficiency tradeoffs (lagging regions lower FIRR but higher SROI), and positive participation effects. However, evaluation practices face challenges including weak ex-ante appraisal (only 34% rigorous), inadequate data systems, insufficient capacity, short-term orientation, and limited stakeholder engagement. Strengthening evaluation through comprehensive frameworks, standardized methodologies, independent review, capacity building, enhanced data, participatory approaches, and learning systems can improve resource allocation efficiency, accountability, and development impacts of local investment.

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