

INNOVATION SCIENCE AND TECHNOLOGY



Scopus || Electronic journal specializing in Scopus

ISSUE 11



Acceptance of papers **November, 2025**



**Acceptance of
papers**

Published monthly



Topics

economics,
technology, social
sciences

**EDITOR-IN-CHIEF:**

Mirzaliyev Sanjar Makhmatjon ugli

DEPUTY EDITOR-IN-CHIEF:

Makhmudov Nosir Makhmudovich
DSc., Prof., Academician

DEPUTY EDITOR-IN-CHIEF:

Ochilov Bobur Bakhtiyor ugli – Senior
lecturer at TSUI

THE SCIENTIFIC-POPULAR ELECTRONIC
JOURNAL **"INNOVATION SCIENCE AND
TECHNOLOGY"** HAS BEEN REGISTERED
UNDER THE NUMBER **C-5669633** BY THE
AGENCY FOR INFORMATION AND MASS
COMMUNICATIONS (AOKA) OF THE
REPUBLIC OF UZBEKISTAN, EFFECTIVE
FROM OCTOBER 9, 2024.

CONTACTS

Phone: **+998 50 737 87 88**

Website: <https://ist-journal.uz>

Email: innovationist2025@gmail.com

The scientific electronic journal "Innovation Science and Technology" has been included in the list of scientific publications recommended for the publication of main scientific results of dissertations for the award of PhD and DSc degrees in economics and technical sciences, in accordance with the Resolution No. 370 of the Presidium of the Higher Attestation Commission of the Republic of Uzbekistan, dated May 8, 2025.

Electronic publication, Issue 11. 72 pages.
Approved for publication on November, 2025.

Editorial board:

Sharipov Kongirاتبay Avezimbetovich,
Doctor of Technical Sciences (DSc), Professor



Abdurakhmanova Gulnora Kalandarovna,
Doctor of Economic Sciences (DSc), Professor



Cham Tat Huei,
Doctor of Philosophy (PhD), Professor (Malaysia)



Muhammad Imran Sadiq
Doctor of Philosophy in Economics (PhD),
Professor, Malaysia



Ahmed Aziz Ismail
Doctor of Technical Sciences (DSc),
Professor (Egypt)



Lee Chin
Doctor of Philosophy in Economics (PhD),
(Malaysia)



Asongu Simplice
Doctor of Philosophy in Economics (PhD),
Cameroon



Rui Dang
Doctor of Chemistry (DSc), Professor, China



Zahoor Ahmed
Doctor of Philosophy in Economics (PhD), Turkey



Shujaat Abbas
Doctor of Philosophy in Economics (PhD), Russia



Tina A Coffelt
Doctor of Philosophy in Educational Sciences
(PhD), USA

CONTENTS

POVERTY AND DEVELOPMENT	14
Kholmirzayev Abdulhamid Khapizovich	
WAYS TO ACHIEVE ECONOMIC STABILITY THROUGH THE IMPLEMENTATION OF INNOVATIVE TECHNOLOGIES IN INDUSTRIAL ENTERPRISES	23
Sadriddinov Bakhtiyor	
STRUCTURE-PROPERTY RELATIONSHIP OF ORGANOSILICON MATERIALS: EVALUATION BASED ON THERMOGRAVIMETRIC ANALYSIS	36
Tosheva Dilfuza Farxodovna, Siddikov Ikrom Iminjonovich, Rakhimov Firuz Fazlidinovich	
"CREATING AN ALGORITHM AND SOFTWARE TOOL FOR PERSONAL IDENTIFICATION USING FACIAL SCANNING TO PROTECT THE OPERATING SYSTEM"	43
Usmonov Maxsud Tulqin o'g'li	
ENSURING INTERDISCIPLINARY INTEGRATION BASED ON MOBILE LEARNING TECHNOLOGIES.....	51
Zaripov Olimjan Kuvandiq son	
MONITORING OF THE AYDAR-ARNASAY LAKE SYSTEM AND ASSESSMENT OF THE CHEMICAL COMPOSITION OF COLLECTOR WATER INFLOWS INTO THE LAKE ECOSYSTEM.....	55
Erkabayev Furkat Ilyasovich, Madrimov Rajabboy Masharipovich, Aminov Khamza Khusanovich	
APPROBATION OF THE RESISTANCE OF BRICKS MADE FROM "ANGREN" SECONDARY KAOLIN TO THE EFFECT OF LIQUID METAL.....	62
Umurov Ulug'bek Meylievich	
THEORETICAL AND PRACTICAL FOUNDATIONS OF PERFORMANCE-BASED BUDGETING.....	68
Allakuliev Akmal Baltayevich	

THEORETICAL AND PRACTICAL FOUNDATIONS OF PERFORMANCE-BASED BUDGETING

Allakuliev Akmal Baltayevich

PhD, Acting Professor, Rector of Kimyo International University in Tashkent

Annotatsiya: This paper examines the theoretical and methodological foundations of performance-based budgeting (PBB), its role in public financial management, and its practical importance in improving fiscal efficiency. The research scientifically justifies that the transition from expenditure control to outcome management represents a critical stage in the modernization of public budgeting. The findings demonstrate that the adoption of performance-based budgeting enhances the efficiency of fiscal policy, ensures rational resource allocation, and institutionalizes the principle of performance orientation within public administration culture.

Kalit so'zlar: performance-based budgeting, fiscal efficiency, accountability, transparency, public finance.

Abstract: Ushbu maqolada samaradorlikka asoslangan byudjetlashtirishning (PBB) nazariy va metodologik asoslari, uning davlat moliyasini boshqarishdagi roli va moliyaviy samaradorlikni oshirishdagi amaliy ahamiyati o'rganiladi. Tadqiqot xarajatlarni nazorat qilishdan natijalarni boshqarishga o'tish davlat byudjetlashtirishni modernizatsiya qilishda muhim bosqich ekanligini ilmiy jihatdan asoslaydi. Tadqiqot natijalari shuni ko'rsatadiki, samaradorlikka asoslangan byudjetlashtirishni qabul qilish fiskal siyosat samaradorligini oshiradi, resurslarni oqilona taqsimlashni ta'minlaydi va davlat boshqaruvi madaniyatida samaradorlikka yo'naltirilganlik tamoyilini institutsionalizatsiya qiladi.

Key words: samaradorlikka asoslangan byudjetlashtirish, moliyaviy samaradorlik, hisobdorlik, shaffoflik, davlat moliya.

Аннотация: В данной статье рассматриваются теоретические и методологические основы бюджетирования, ориентированного на результат (БП), его роль в управлении государственными финансами и практическое значение для повышения фискальной эффективности. В исследовании научно обосновано, что переход от контроля расходов к управлению результатами представляет собой критически важный этап модернизации государственного бюджетирования. Результаты показывают, что внедрение бюджетирования, ориентированного на результат, повышает эффективность фискальной политики, обеспечивает рациональное распределение ресурсов и закрепляет принцип ориентации на результат в культуре государственного управления.

Ключевые слова: бюджетирование, ориентированное на результат, фискальная эффективность, подотчётность, прозрачность, государственные финансы.

INTRODUCTION

In a market-oriented economy, the efficiency and effectiveness of fiscal policy serve as key indicators of good governance. In the context of globalization, the rational use of public resources and the achievement of measurable socio-economic outcomes have become strategic imperatives. Budgeting, therefore, must evolve beyond expenditure allocation to become a tool for achieving tangible economic and social results.

Traditional budgeting emphasizes resource distribution, expenditure control, and procedural compliance. However, performance-based budgeting (PBB) shifts the focus to the outcomes of spending asking not "how much was spent?" but rather "what was achieved with the allocated funds?". This paradigm is grounded in the "resources-activities-results-impact" model, demanding a reorientation of fiscal planning toward measurable performance indicators.

Originating in advanced economies such as the United States, the United Kingdom, Canada, France, and South Korea, PBB has proven effective in enhancing fiscal discipline, transparency, and efficiency. In Uzbekistan, a gradual transition toward performance-oriented budgeting has been initiated through reforms aimed at increasing budget transparency, accountability, and program performance evaluation.

LITERATURE REVIEW

The theoretical foundations of performance-based budgeting originate from the work of Richard Musgrave, who identified three essential functions of public budgeting: allocation, stabilization, and redistribution. He

argued that budgets should be evaluated in terms of their contribution to social welfare rather than through narrow financial indicators [1]. Aaron Wildavsky subsequently expanded this perspective by conceptualizing budgeting as a complex political and economic process, proposing that performance-oriented frameworks enhance accountability and improve decision-making within governance structures [2]. Anwar Shah further advanced the theory by emphasizing the interconnection among resources, activities, results, and impact as a central framework for effective public sector management. He advocated for the creation of budgetary systems that simultaneously measure fiscal discipline and social outcomes [3]. In parallel, Allen and Tommasi [4] formulated the “value for money” principle, suggesting that government expenditures should be appraised through the combined criteria of efficiency, economy, and effectiveness. Robert Robinson [5] expanded the analytical scope of performance-based budgeting by integrating institutional and social dimensions. He proposed that budgets must account not only for financial efficiency but also for the wider developmental effects of public expenditure on human capital, infrastructure, and societal well-being. Complementing these theoretical perspectives, scholars such as Joseph Stiglitz, Vito Tanzi, and Olivier Blanchard [6] highlighted that performance-based budgeting strengthens fiscal transparency, democratic accountability, and trust between the state and society.

Empirical research supports these conceptual premises. David Ben’s analysis of U.S. state-level budgeting reforms revealed significant improvements in expenditure control and alignment between resource allocation and outcomes following the adoption of performance-based budgeting [7]. Similarly, Gregory and Boyne’s cross-national study of European economies confirmed a strong positive relationship between performance-oriented budgeting and sustainable economic growth [8]. Evidence from South Korea, as demonstrated in the research of Kim Sunjoon and Lee Jonghoon [9], showed that the implementation of electronic budget monitoring systems enhanced the efficiency of public investment by approximately twenty percent, providing a model for integrating performance-based budgeting with digital fiscal management practices.

Together, these theoretical and empirical contributions provide a robust intellectual foundation for understanding performance-based budgeting as both a managerial innovation and a mechanism for promoting transparency, accountability, and sustainable economic governance.

RESEARCH METHODOLOGY

In the article, the author utilized methods of scientific abstraction, systematic analysis, induction, and deduction.

ANALYSIS AND RESULTS

The effectiveness of PBB lies in its integration of institutional, managerial, and methodological mechanisms. It establishes a systemic link between fiscal inputs and measurable social outcomes.

Table 1. Conceptual Components of Performance-Based Budgeting

Component	Description	Theoretical Basis
Strategic Planning	Aligning fiscal policies with national development strategies through goal-oriented programs.	R. Musgrave (1959); A. Shah (2005)
Indicator System	Establishing measurable efficiency and effectiveness indicators.	J. Allen & D. Tommasi (2001)
Monitoring and Evaluation	Assessing program performance and reallocating resources based on outcomes.	R. Robinson (2007)
Accountability and Transparency	Ensuring public disclosure of budget execution and performance reports.	OECD, World Bank principles

Source: Compiled by the author based on research findings.

This table illustrates that PBB is not merely a financial mechanism but a comprehensive governance framework. Its interconnected components strategic planning, measurable indicators, continuous monitoring, and institutional accountability collectively reinforce evidence-based policymaking.

Table 2. Comparison Between Traditional and Performance-Based Budgeting

Criterion	Traditional Budgeting	Performance-Based Budgeting
Planning Approach	Focused on expenditure allocation.	Focused on program goals and measurable results.
Decision-Making	Based on expenditure categories.	Based on efficiency and outcome indicators.
Management Style	Centralized and procedural.	Decentralized and responsibility-driven.
Control Mechanisms	External audits focus on compliance.	Internal and external evaluation through indicators.
Primary Objective	Maintain fiscal discipline.	Achieve measurable socio-economic outcomes.

Source: Compiled by the author based on research findings.

The analysis shows that performance-based budgeting transforms fiscal management from a compliance-oriented model into a results-oriented paradigm. This shift improves public accountability, enhances efficiency, and ensures that public expenditures generate measurable benefits.

RECOMMENDATIONS AND CONCLUSION

Performance-based budgeting constitutes a transformative paradigm in contemporary public financial governance, shifting emphasis from expenditure control to the achievement of measurable socio-economic outcomes. The successful institutionalization of this model in Uzbekistan requires a coherent strategy integrating institutional, technological, and human capital reforms. First, institutional restructuring should prioritize the establishment of specialized Performance Budgeting Units within each ministry to design performance indicators, monitor implementation, and evaluate program efficiency. Second, digital transformation must be advanced through the comprehensive development of the e-Budget platform, which would integrate all stages of the budgeting process planning, execution, monitoring, and reporting into a unified digital ecosystem that ensures real-time transparency and public access to fiscal data. Third, capacity building initiatives are essential to develop technical expertise among financial administrators and policymakers through targeted training in performance metrics, data analytics, and evidence-based decision-making. Finally, public accountability should be reinforced via annual open hearings in Parliament and the publication of accessible reports on key national programs, fostering civic oversight and institutional trust.

In essence, transitioning to performance-based budgeting is a cornerstone of Uzbekistan's fiscal modernization agenda. It enhances the efficiency and transparency of public financial management, deepens institutional accountability, and ensures that public expenditures are strategically aligned with measurable developmental objectives. This model elevates the role of the state budget from a procedural financial plan to a dynamic instrument of strategic governance and sustainable socio-economic progress.

References:

1. Musgrave R. The Theory of Public Finance. - New York: McGraw-Hill, 1959. - 450 p.
2. Wildavsky A. The Politics of the Budgetary Process. - Boston: Little, Brown and Company, 1975. - 398 p.
3. Shah A. Public Sector Governance and Accountability. - Washington, DC: World Bank Publications, 2005. - 372 p.
4. Allen J., Tommasi D. Managing Public Expenditure: A Reference Book for Transition Countries. - Paris: OECD Publishing, 2001. - 512 p.
5. Robinson M. Performance Budgeting: Linking Funding and Results. - London: Palgrave Macmillan, 2007. - 336 p.
6. Stiglitz J., Tanzi V., Blanchard O. Economics of the Public Sector. - New York: WW Norton & Company, 2002. - 589 p.
7. Behn D. Why Measure Performance? Different Purposes Require Different Measures. // Public Administration Review. - 2003. - No. 5. - P. 45–57.
8. Gregory S., Boyne J. Performance-Based Budgeting in European Countries: Lessons and Outcomes. // International Review of Administrative Sciences. - 2014. - No. 4. - P. 78–91.
9. Kim S., Lee J. E-Budgeting and Performance Management in Korea. // Asian Economic Research Journal. - 2012. - No. 3. - P. 102–118.

Proofreader: Zokir ALIBEKOV

Layout and Designer: Oloviddin Sobir ugli

2025. № 11

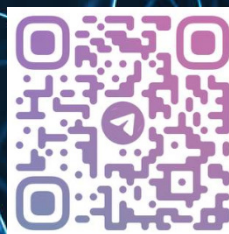
© When materials are reproduced, the INNOVATION SCIENCE AND TECHNOLOGY journal must be cited as the source. Authors are responsible for the accuracy of the information in materials and advertisements published in the journal. Editorial opinions may not always align with those of the authors. Submitted materials will not be returned to the editorial office.

To publish articles in this journal, you may submit articles, advertisements, stories, and other creative materials through the following links. Materials and advertisements are published on a paid basis.

You may subscribe to the journal at any time using the following details. Once subscribed, please send a screenshot or photo of your payment confirmation to our Telegram page @iqtisodiyot_77. Based on this, we will send the latest issue of the journal to your address each month.

“The journal “INNOVATION SCIENCE AND TECHNOLOGY” has been registered by the Agency for Information and Mass Communications under the Administration of the President of the Republic of Uzbekistan from 09.10.2024 under the registration number №390637. License number: C-5669633. PNFL: 30407832680027

Our address: Tashkent city, Yunusobod district, 19th block,
House 17.



Acceptance of articles

Published every
monthly



Directions

Social, economic, political,
technological, scientific



Scopus || Scientific electronic journal specializing in Scopus

CERTIFICATE NUMBER: №390637

**ORDER NUMBER ACCORDING TO
THE LICENSE REGISTER: C-5669633**

CONTACT:



Contact us
+998 50 737 87 88



Telegram channel
t.me/scopus_IST2100



Journal official website
<https://ist-journal.uz/index.php/IST>