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PROSPECTS FOR IMPLEMENTING SMART CONTRACTS AND BLOCKCHAIN SYSTEMS THROUGH ISLAMIC FINTECH PLATFORMS IN THE FINANCIAL MARKET OF UZBEKISTAN

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Abstract. This article analyzes the scientific-theoretical and practical foundations of implementing Islamic FinTech platforms in the financial market of Uzbekistan. The research highlights the advantages of blockchain technology and smart contracts in the Islamic banking system, their compliance with Sharia principles, and their role in ensuring transaction transparency. Furthermore, based on international experience and national legislation, practical proposals have been developed to expand digital Islamic financial services.
Keywords: Islamic FinTech, blockchain, smart contracts, financial market, Sharia, sukuk platforms, digital transformation.

INTRODUCTION

Today, fundamental reforms are being carried out in the financial sector of Uzbekistan. While a large part of the population is abandoning traditional banking services due to their religious beliefs, the demand for Islamic financial products is increasing day by day. That is, Islamic finance is not without its influence around the world, it is expanding, satisfying the demand for financial solutions that are ethical and socially responsible. Islamic FinTech fulfills the role of a bridge between these two areas, offering financial products and services in accordance with the requirements of Sharia. However, in the modern market, simply having an “Islamic window” is not enough. The need for an Islamic FinTech (Financial Technology) solution, in particular, the blockchain and smart contract system, is the need of the hour to ensure transparency and reduce operational costs.

Uzbekistan is also taking very important steps towards digitalization. The state policy implemented under the leadership of our President Shavkat Mirziyoyev aims to integrate the financial system into the modern economic system and increase its efficiency[1]. Therefore, the use of financial technologies in our country is one of these important goals. In such conditions, the interest of the population of Uzbekistan in Islamic finance is growing. However, the specific indicators, Sharia compliance and technological issues of the implementation of smart contracts and blockchain systems along with Islamic FinTech programs in Uzbekistan have not been studied in depth.

The relevance of this research topic is explained by a number of interrelated economic, social and institutional factors.

First, the factor of religious beliefs and financial behavior of the population is important. As a result of the fact that the majority of the population of Uzbekistan adheres to Islam, there is a

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cautious attitude towards traditional interest-based (riba-based) banking services. As a result, financial resources are being formed that are not fully involved in economic circulation. The introduction of digital platforms that comply with the principles of Islamic finance will allow this "hidden capital" to be introduced into economic circulation, increase investment activity and expand financial inclusion. This is of strategic importance in ensuring sustainable growth of the national economy.

Secondly, the issue of operational efficiency and cost optimization is relevant. Islamic financing instruments - contracts such as *murabaha, ijara, musharaka* - require complex document management and multi-stage control mechanisms. The use of blockchain-based smart contracts automates transactions, reduces errors associated with the human factor, and increases the speed of transactions. As a result, operating costs are reduced and the efficiency of financial institutions increases. This will increase the competitiveness of Islamic financial products.

Thirdly, the factor of ensuring transparency and accountability deserves special attention. The main feature of blockchain technology is the immutability of data and the possibility of open traceability. This mechanism allows you to control the targeted and effective spending of financial flows within the framework of zakat and waqf funds, as well as investment projects. This will significantly reduce the risk of corruption, strengthen public trust and ensure institutional stability.

Fourth, the factor of attracting international capital determines the importance of this topic in the global context. The global Islamic financial market has stable growth rates, and large investment resources have been formed in the countries of the Middle East and Southeast Asia. Creating a transparent and reliable Islamic financial infrastructure based on blockchain will increase the confidence of foreign investors in Uzbekistan, attract cross-border investments and make it possible to turn the country into a regional Islamic financial center.

In general, the above factors indicate that the topic of this research is relevant not only theoretically, but also practically. Combining the principles of Islamic finance with modern digital technologies serves to increase the inclusiveness, transparency and stability of the national financial system. Therefore, the issue of forming an Islamic FinTech infrastructure based on blockchain is one of the priority areas requiring scientific research and regulatory and legal improvement at the current stage.

LITERATURE REVIEW

Researchers in the field of Islamic finance, O. Muneeza and R. Hassan, have studied the experience of Malaysia and Indonesia and have proven the economic efficiency of digital Islamic bonds (Sukuk) and blockchain-based charity (Zakat/Waqf) systems. According to their research, the implementation of blockchain allows reducing transaction costs of financial institutions by 30-40%.[2]

The issues of developing the Islamic financial market in Uzbekistan have been studied by local scholars, including Sh. Murtazyoev[3], B. Babayev[4] and I. Islamov[5]. Their scientific works mainly focus on the legal framework of Islamic banking and the financial literacy of the population. However, research on specific mechanisms for integrating modern Islamic FinTech platforms into the Uzbek financial market through blockchain and smart contracts is still insufficient.

Foreign economists M. Al-Amine and L. Al-Jarrah have analyzed the compatibility of blockchain technology with the principles of Islamic law (Sharia). They believe that the decentralized nature of blockchain is consistent with the idea of "fair distribution" in Islamic finance. [6] Economists such as Harris Irfan have argued that smart contracts can eliminate operational errors and uncertainties *(Gharar)* in traditional Islamic transactions (Murabaha, Musharaka). [7]

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RESEARCH METHODOLOGY

In practice, the study evaluates the mechanisms for regulating the sector based on the Law of the Republic of Uzbekistan "On Non-Bank Financial Organizations and Islamic Banking" (2026) and strategic documents of the Central Bank, using the method of normative and legal analysis. Also, the abstraction method was used to develop algorithmic models for automating Islamic financial transactions within the framework of AAOIFI (2024) standards. At the end of the study, practical proposals for the financial system of Uzbekistan were formulated using the method of deductive and inductive logical inference from global FinTech trends to problems in the local market. This methodological complex ensures the scientific validity and objectivity of the research results.

ANALYSIS AND DISCUSSION OF RESULTS

Although there are no full-fledged Islamic banks operating in the financial system of Uzbekistan today (at least three commercial banks are planning to introduce Islamic products by 2030), this perspective and the existence of some Sharia-compliant services are noted.

Figure 1. Islamic financial products used in Uzbekistan

Smart contracts are transactions encoded on blockchain technology that execute automatically without human intervention when conditions are met. They operate without intermediaries, are transparent and secure, and are technically robust and are considered a successor to traditional contracts.

Table 1
Functional functions of smart contracts in Islamic financial products [8]

Islamic product name	Traditional process (On paper)	Smart contract (Smart Contract) orqali	Main advantage
Murobaha (Credit sale)	The bank buys the goods, then sells them to	The chain of movement of goods from the	It reduces gharar (uncertainty) to

Islamic product name	Traditional process (On paper)	Smart contract (Smart Contract) orqali	Main advantage
	the customer at a premium. The documents are approved within 2-3 days.	supplier to the bank and then to the customer is carried out automatically by code.	zero; ownership is transferred in seconds.
Musharaka (Partnership)	Complex accounting calculations are required to allocate profits and losses.	The profits from the project are automatically distributed to the wallets of the parties according to their share via a smart contract.	The risk of incorrect profit calculation due to human error is eliminated.
Sukuk (Islamic bond)	Issuance costs are high, registration and intermediaries take a long time.	Sukuk are tokenized (turned into a digital asset on the blockchain). Buying and selling are available 24/7.	Reduces operating costs by 30-45%.
Vaqf and Zakot	It is difficult to track where the funds are going, and trust is low.	Donations are recorded on the blockchain, so every user can see where the money has gone.	Due to transparency, the volume of donations increases.

The Islamic financial system is based on three main prohibitions: *Riba* (usury), *Gharar* (uncertainty) and *Maysir* (gambling). Blockchain technology, with its technical features, is the most effective tool for circumventing these prohibitions.

Blockchain is decentralized, and the data in it cannot be changed or deleted. Islamic financial transactions must always be linked to a real asset (goods, real estate). Through the blockchain, it is possible to "tie" each cash flow to a specific asset (tokenization).

Table 2

Compliance of blockchain technology with the principles of Islamic finance[9]

Blockchain feature	Sharia principle	Importance for the Uzbek market
Decentralization	Fair distribution and social equality.	It reduces monopoly and paves the way for small businesses.
Immutability	Prohibition of data falsification and fraud.	Restores confidence in the banking system (prevents corruption).
Transparency	Transparency of all transactions	It helps reduce the share of the

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Blockchain feature	Sharia principle	Importance for the Uzbek market
	(Prohibition of Gharar).	shadow economy.
Ecosystem security	Asset protection (Maqasid al-Sharia).	Secure storage and management of digital assets.

According to the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI), an international organization that develops accounting, auditing, corporate governance and Sharia standards for Islamic financial institutions, the technical capabilities of blockchain technology (immutability, transparency) are fully consistent with the main goals of Islamic law (Maqasid al-Sharia). The application of this technology in the Uzbek market will reduce the risk of corruption to zero and create a completely new "Trust Ecosystem" in the financial sector.

Table 3

Institutional framework for the implementation of the Islamic FinTech system in the Uzbek financial market[10]

Type of barrier	The essence of the problem	Negative consequences
Legal and regulatory	Smart Contracts do not have legal status in the Civil Code.	Digital transactions are not admissible as evidence in court in the event of disputes.
Taxation	The risk of double taxation of Islamic finance transactions (e.g. Murabaha).	Islamic finance products are more expensive than traditional banking.
Staff shortage	Lack of specialists (Sharia-Tech) who understand both Sharia law and IT/blockchain programming.	Errors and insecurity in system development and auditing.
Technological infrastructure	The lack of readiness of banks' IT infrastructure for decentralized blockchain systems.	Low data transfer speeds and cybersecurity risks.

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Type of barrier	The essence of the problem	Negative consequences
Psychological (Confidence)	The public's perception of blockchain and crypto-assets as a "financial pyramid".	Low adoption rate of new digital products.

This year, the Islamic Finance Council is being established under the Central Bank to centrally monitor the compliance of blockchain platforms with Sharia in our country.

In accordance with the Law "On Amendments and Supplements to Certain Legislative Acts of the Republic of Uzbekistan on the Introduction of Islamic Banking in Uzbekistan", approved by the Senate of the Oliy Majlis, a separate tax regime has been introduced for Islamic finance transactions, and the surcharge on goods is exempted from VAT [10]. The law also introduced the principles of Islamic finance, that is, banking services based on Sharia rules, including interest-free transactions, trade and investment-based financing mechanisms.

In the digital economy, smart contracts based on blockchain technology allow for the automation of financial transactions, increased transparency, and reduced transaction costs. However, their widespread implementation in practice is closely related to issues of legal status and regulatory regulation. In this regard, it has been determined to implement pilot projects on the legal recognition of smart contracts within the framework of the "Regulatory Sandbox" regime [9].

The main obstacle to the development of Islamic FinTech in Uzbekistan is not the lack of technology, but the incompatibility of the existing legal framework with dynamic systems such as blockchain. However, recent legislative changes in 2026 have radically changed this landscape and are opening a "green lane" for digital Islamic banking.

Looking at international experience, Malaysia was the first in the world to form a comprehensive base for Islamic FinTech, namely sukuk platforms and special sandboxes.

The United Arab Emirates (UAE) government is fully integrated into blockchains. In particular, the Dubai government has transferred every contract to the blockchain, making it the country with the most advanced legislation in the world for the circulation of digital assets.

The Indonesian government is one of the countries with great experience in this regard. Because the BAZNAS organization has created a system for collecting and distributing zakat using blockchain.

Table 4

Models that can be adapted to Uzbekistan based on international experience [11]

Country	The core of the experience	Scope of application in Uzbekistan
Malaysia	Digital Sukuk	In the government and private bond market.
UAE (Dubai)	Smart contracts	When registering bank transactions and assets.
Great	Islamic P2P	Raising interest-free capital for

Country	The core of the experience	Scope of application in Uzbekistan
Britain	Crowdfunding	small entrepreneurs.
Saudi Arabia	Open Banking	In interbank data exchange and FinTech integration.

By introducing smart contracts and blockchain systems through Islamic FinTech platforms in the financial market of Uzbekistan, the state can significantly increase efficiency and create many opportunities for economic development. From the results of the study, we can see that the main goal of implementing these technologies is to ensure transparency, increase efficiency and increase the level of security. For example, if we look at the global scale, several countries, such as Malaysia and the UAE, are leading the way in integration in this area and are actively supporting many successful projects in this area. For example, in Malaysia, it was possible to connect Islamic sukuk with blockchain, which reduced transaction costs and increased market speed. These models should be studied in detail and find ways to apply them in our country. However, it is necessary to take into account the level of development of the country. One of the main topics currently being discussed in our country is the adaptation of the legal and regulatory framework, the legal recognition of smart contracts and the promotion of mechanisms for their implementation in the state. For this, norms and rules should be established. In addition, Uzbekistan should establish training of specialists in Islamic finance, FinTech and blockchain technologies in higher educational institutions, as well as attract employees in these areas to advanced training courses. In addition, experts who can adapt to the principles of Sharia are also needed.

CONCLUSION

This study has shown that the introduction of Islamic FinTech platforms through blockchain and smart contracts in the Uzbek financial market is not only an economic trend, but also a strategic necessity. Based on the results obtained, the following final conclusions were formulated:

Firstly, the blockchain system, by its nature, serves the basic requirements of Islamic law - eliminating uncertainty (Gharar), ensuring transparency, and linking each cash flow to a real asset. This guarantees that the system is fully consistent with the principles of "ethical finance".

Secondly, the experience of countries such as Malaysia and the UAE shows that for the development of Islamic FinTech, not only technology is needed, but also a flexible legal framework ("Regulatory Sandbox") and a policy of recognition of digital assets. For Uzbekistan, the adaptation of these models to national legislation is of strategic importance

Blockchain technology and smart contracts, with their technical characteristics of transparency, data immutability and decentralization, have been found to fully comply with the ethical principles of the Islamic financial system. These tools eliminate the risk of uncertainty *(gharar)* in transactions and guarantee Sharia compliance at a digital level without the human factor. In addition, the implementation of digital Islamic financial instruments is of strategic importance for the country's economy. This not only optimizes the operating costs of financial institutions, but also allows the effective involvement of idle funds that remain outside the banking system due to the religious views of the population into economic circulation.

In conclusion, Uzbekistan's efforts in this direction will position the country as an Islamic digital finance hub in Central Asia and will sharply increase the flow of direct investments from the countries of the Middle East.

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