

# APPLICATION OF BLOCKCHAIN SMART CONTRACTS FOR POVERTY ALLEVIATION

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**Abstract:** - In recent years, blockchain technologies and Cryptocurrencies have created a new crypto-economy that has impacted the financial sector. Second, smart contracts enable the next generation of decentralized applications, which are computer protocols that automate the negotiation and enforcement of agreements between multiple untrustworthy parties.

There are still a number of challenges to alleviating poverty at the current stage, such as information asymmetry among subjects, high costs, and difficulties in advancing and withdrawing funds. Because of its characteristics of non-tampering and real-time traceability, block chain technology plays a positive and important role in implementing targeted poverty relief, enhancing the transparency of fund use, and enhancing the ability of government departments to efficiently coordinate their functions.

## 1. INTRODUCTION

During the past decade, blockchain has gained popularity as a technology that records all transactions that have taken place in a peer-to-peer network. In contrast to centralization, it is a method of distributed computing that successfully overcomes the issues associated with trust. A blockchain is a distributed database maintained and secured by several nodes without the need for a third party.

With blockchain-based smart contracts, untrustworthy parties can enter into, execute, and enforce agreements without relying on a third party. The technology has been used in automating network processes and digitally executing contracts. Unlike traditional contracts, smart contracts automate transactions without the oversight of a central authority, allowing users to codify their agreements and trust relations. The blockchain network copies smart contracts to every node in order to prevent tampering. By utilizing blockchain platforms and enabling computers to execute the operations, human error can be reduced, thereby reducing the chance of disputes arising from such contracts.

## 2. BACKGROUND

As a distributed computing paradigm, blockchain technology has overcome the problem of centralized trust. Therefore, in a blockchain network, several nodes collaborate among themselves to secure and maintain a set of shared transaction records in a distributed manner without relying on any trusted third party. A distributed public ledger known as the blockchain is maintained by a network of nodes known as

miners.

With Bitcoin [69] users were able to transfer currencies (bitcoins) securely without a centralized authority. The blockchain network relies on miners to accumulate transactions, solve computational puzzles (proof-of-work) to reach consensus, and add the transactions as blocks to the blockchain.

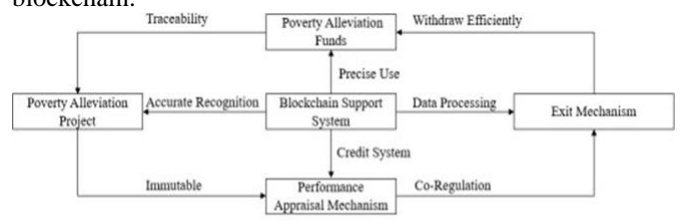


Figure1 The application of blockchain in poverty alleviation

1. The importance of blockchain for targeted poverty alleviation

1.1. Blockchain technology assists in targeted poverty alleviation

Precision poverty alleviation is primarily about identifying people who are reducing poverty. Combining blockchain and big data technology can be useful for solving relevant problems [2]. All personnel information shall be standardised and incorporated into the block chain recognition system, as well as other relevant data of poverty causes, such as savings, medical care, tax, and other privacy indicators, shall be combined to establish the poverty level of the object and determine whether assistance is required. A blockchain's immutability increases the cost of counterfeiting when the information is uploaded. Data fraud can be traced back to the source through the block chain, ensuring the authenticity and reliability of targeted poverty alleviation. With blockchain technology, the information asymmetry between government departments and the objects of assistance can be eliminated. The database compares all the information of the objects to identify the ones with real financial needs in real time.

1.2. Blockchain technology reduces poverty alleviation costs

Due to issues such as staff cognition and work ability, traditional poverty alleviation work will inevitably result in investments, allocations, and uses of funds. Through the use of blockchain technology, it is able to match the funds of poverty alleviation projects efficiently. It is essential to implement various financial poverty alleviation policies

effectively in order to alleviate the problem of high input costs caused by the wide coverage of financial resources in poverty alleviation, so as to achieve the combination of social and economic benefits in financial poverty alleviation.

### 1.3. Blockchain helps to manage capital flow

Technology such as blockchain is able to manage the entire process of financial poverty alleviation, and can track, supervise, and manage the information regarding poverty alleviation. To form an effective synergy between all parties involved in financial poverty alleviation, it provides financial institutions with the ability to control risks and evaluate the effects of financial poverty alleviation. A block chain system permits all participants to join the system on an equal basis, rendering project information open and transparent.

Furthermore, the targeted work of poverty alleviation at the grassroots level can be promoted by evaluating rewards and punishments according to the level of poverty alleviation. Dynamically adjusting poverty alleviation targets must be based on the actual situation of the poverty alleviation targets.

## 2. Suggestion on How Blockchain Can Help Alleviate Poverty

### 2.1. Increased support and support for policy through multi-party cooperation

The government takes the initiative to develop appropriate local blockchain support systems in collaboration with government departments, financial institutions, and third parties.

Among its uses are identifying poverty alleviation targets, allocating funds, and evaluating performance. To promote the development of "blockchain + targeted poverty alleviation" technology, the government will provide policy support and implementation, as well as financial subsidies. Provide basic support for the use of "blockchain + targeted poverty alleviation" as a means of constructing Internet infrastructure in poverty-stricken areas.

### 2.2. Encourage the application of blockchain technologies to targeted poverty alleviation.

We encourage financial institutions and related enterprises to invest more in relevant research. A key element of the government's key funding for research and development will be to support the development and promotion of the block chain + targeted poverty alleviation application scenario. After piloting [3], we will also promote the "Blockchain + Precision Poverty Alleviation" principle. Regions with advanced experiences are encouraged to submit them, and once the application conditions are mature, they can be gradually promoted across the country.

### 2.3. Establishing processes for managing funds to alleviate

poverty

The development of technology for "blockchain + precision poverty alleviation" application scenarios should be guided and encouraged by all types of social capital. A wide range of departments will improve investment and financing models for R&D and applications, as well as provide long-term financial support to "blockchain + targeted poverty alleviation". The efforts will also be directed to cultivating and developing industries in poverty-stricken areas, as well as strengthening the training of existing chain technology R & D and application personnel.

### 3. The challenge of applying blockchain technology to poverty alleviation

As a tool for targeted poverty alleviation, blockchain has great benefits, but there is a long process of adaptation due to its acceptance, understanding, and application of new Internet technologies. It is also a considerable cost to invest at the early stage, and the construction of large infrastructure projects will have an effect on the financial department [4]. It is also challenging to make sure that all participant interfaces operate smoothly. With the rapid development of blockchain technology and the growing number of applications, the amount of practitioners is obviously insufficient, resulting in a shortfall of interdisciplinary talent. A short-term centralized training should be provided to cadets with rich experience in poverty alleviation so they can get acquainted more easily with block chain technology and adapt quickly to its application in the development of targeted poverty alleviation. It is becoming increasingly difficult to adapt traditional methods and concepts of regulation to the rapidly developing blockchain technology. It is possible to protect data between the government and poor households using the technical features of blockchain, however, data can be easily leaked when broadcast across the Internet. Stronger laws and government regulations are therefore needed.

## 3. CONCLUSION

Recent achievements in poverty alleviation have been remarkable in our country. A blockchain application in poverty alleviation work is conducive to the efficient identification of poor populations, the reduction of capital costs, and the effective management of capital advances, retreats, and other processes. However, advancing the blockchain is not without challenges. Thus, it would be advantageous to combine the characteristics of different regions to increase poverty alleviation's operability. Additionally, the relevant departments should invest more in research to support targeted poverty alleviation using blockchain technology, so that blockchain can truly be used to improve poverty alleviation.

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