Research on the precise positioning system of financial tech in big data and blockchain model

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Abstract. After the beginning of the comprehensive implementation of targeted poverty alleviation, social livelihood issues have been comprehensively improved, but the actual poverty alleviation system still exists data tampering, information opacity and other problems, resulting in poverty alleviation work cannot play its role. The direct application of big data technology and blockchain mode to targeted poverty alleviation can guide the rapid development of rural fintech. Therefore, on the basis of understanding the mode of big data and blockchain, this paper deeply discusses how to implement the precision positioning system of fintech based on the mode of big data and blockchain, according to the four innovations of targeted poverty alleviation by fintech in the new era.

Keywords: Big data; Blockchain model; Fintech; Precise positioning; Rural revitalization.

1. Introducion

In the steady development of modern society and economy, facing increasingly fierce competition in the market environment, how to build an all-round well-off society and win the battle against poverty has become the core issues discussed by government departments and social enterprises. Since the comprehensive implementation of targeted poverty alleviation in China, although there are still many problems in the poverty alleviation system, the advanced technology theory represented by big data has transformed the traditional development mode, accelerated the pace of rural financial technology development, and laid the foundation for realizing the development strategy of rural revitalization. Therefore, under the background of the new era, how to use big data and blockchain mode to realize the precise positioning of financial technology for poverty alleviation has become the main topic discussed by research scholars. For example, some scholars have developed and designed a collection transaction system based on pricing model and blockchain technology. [1-3]Some scholars have proposed the architecture of blockchain system by using blockchain platforms such as Hyperledger, Ethereum and Bitcoin. Some scholars found that supply chain and technical barriers are the core content of industry scholars, and these barriers can further achieve the sustainable development Goals in theory and practice; On the basis of sorting out and analyzing the theory and technical framework of big data, some scholars have systematically outlined the research direction and application field of smart grid big data, defined the development line of smart grid big data technology, and determined the effective measures of targeted poverty alleviation in the new era. Some scholars clearly proposed that national and provincial poverty census should be carried out as soon as possible, and classified management should be carried out for poor villages, and a top-down or bottom-up system should be proposed to identify and help poor households.

By integrating the research results of domestic and foreign scholars, the application research of big data and blockchain technology is becoming more and more mature, but there are few research literatures that apply them to targeted poverty alleviation. With the continuous improvement of modern economy and science and technology, the promotion effect of China's targeted poverty alleviation work is becoming more and more clear, and it needs more theoretical and technical support to solve the problems existing in the existing targeted poverty alleviation system. Therefore, this paper mainly discusses how to build a fintech precision positioning system in line with the development of The Times based on big data and blockchain mode, so as to solve the problems of

rural poverty and urban-rural economic differences as soon as possible, and lay a foundation for the realization of building a moderately prosperous society in an all-round way.[4-7]

2. Methods

2.1 Blockchain technology

Blockchain, as a technical term in the field of information technology, can be regarded as a shared database, which will store a large amount of data information and has the characteristics of being impossible to forge, open and transparent, and traceable. Based on the analysis of these characteristics, it can be seen that the application of blockchain technology in the fintech precision positioning system not only lays a solid foundation of trust, but also creates an effective cooperation mechanism, which has broad development prospects in practice and development. Combined with the technical structure analysis of blockchain shown in Figure 1 below, it can be seen that a block chain has multiple blocks, each block contains block head and block body. The block header contains the version number, previous block hash, timestamp, random number, target hash, Merkle root, and the ledger information recorded through the Merkle tree in the block body.[8-9]
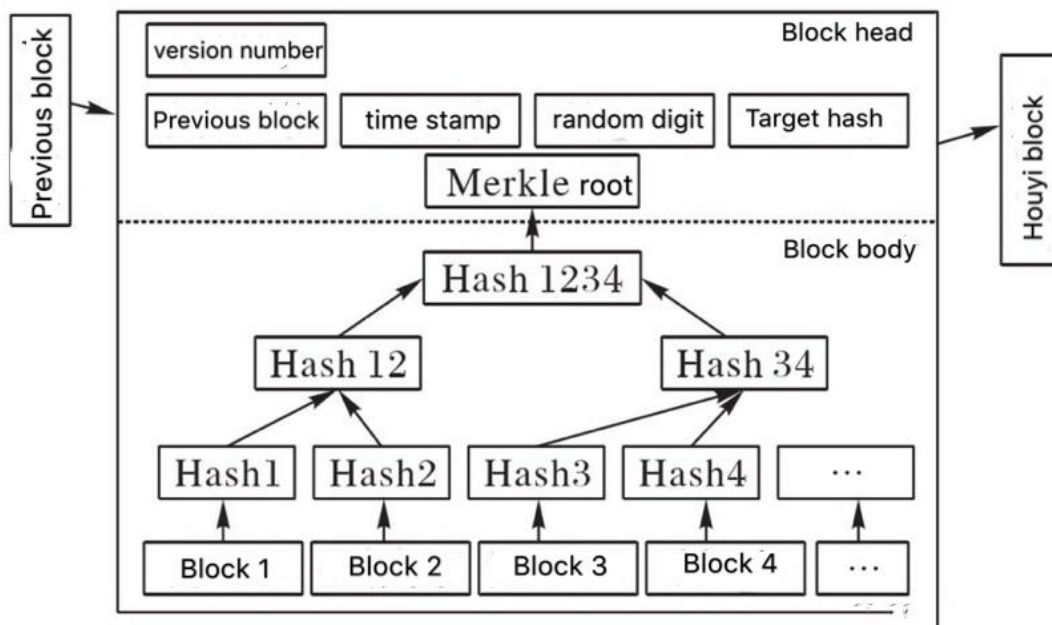

Figure 1 Blockchain technical architecture diagram

2.2 Fintech precision positioning system

With the steady development of modern technology, financial services are integrated with blockchain and big data, and finally an information distribution method and system with blockchain offline payment and digital finance as the core has been formed, which can detect abnormal conditions according to a large amount of transaction information collected in history and put forward various encryption and decryption strategies accordingly. The final completion of the pre-business security certified payment transaction server and digital financial service terminal proposed tasks. Although such system design can improve the security of offline payment, there are also many problems. Therefore, based on the integration of relevant technical issues, scholars now propose a location service system that can improve the accuracy and praise rate of digital financial positioning services. The specific structure is shown in Figure 2 below:[10-15]
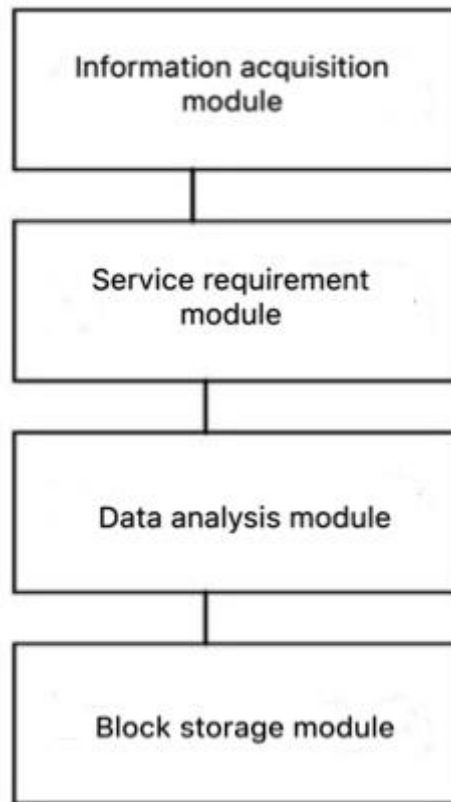
Figure 2 System architecture diagram

According to the analysis in the figure above, the overall system operation involves the following steps: First, after obtaining the preset financial service information, the information waiting for the basic information input of financial customers is logged into the terminal, and the first block information node is generated according to the current financial service demand data. Second, after mastering the basic information of financial customers, the service demand data of financial customers waiting for service can be obtained, including the requirements of financial service cycle and financial service income. Third, the basic information of the current financial customer is sent to the preset data analysis and positioning model, and after analysis and processing in the model, the initial financial service scheme provided by the model is obtained, thus generating the second block node; Fourth, accurately judge whether the initial financial service plan meets the basic requirements of financial customers waiting for service according to the financial service plan, service cycle requirements and service income requirements provided. If the judgment is consistent, the financial service report can be directly generated, and relevant information can be directly displayed in the interface. At the same time, the second block information node can be generated, and then stored in the preset block chain storage module. If the initial financial service plan does not meet the requirements of financial customers waiting for service according to the judgment and analysis of the service plan, service cycle requirements and service income requirements, then the service data that does not meet the requirements will be obtained, and the preferred subject and alternative subject matching the service data will be collected from the preset financial service management database. Each of the standard financial service subjects corresponds to a service and a field of expertise, such as being good at short-term investment, high risk and high return investment, etc. Fifth, after waiting for the service financial customers to obtain the corresponding service report, they can get the service feedback information at a preset time, which includes the result of financial income and the result of financial service feeling. The overall operation process is shown in Figure 3 below:
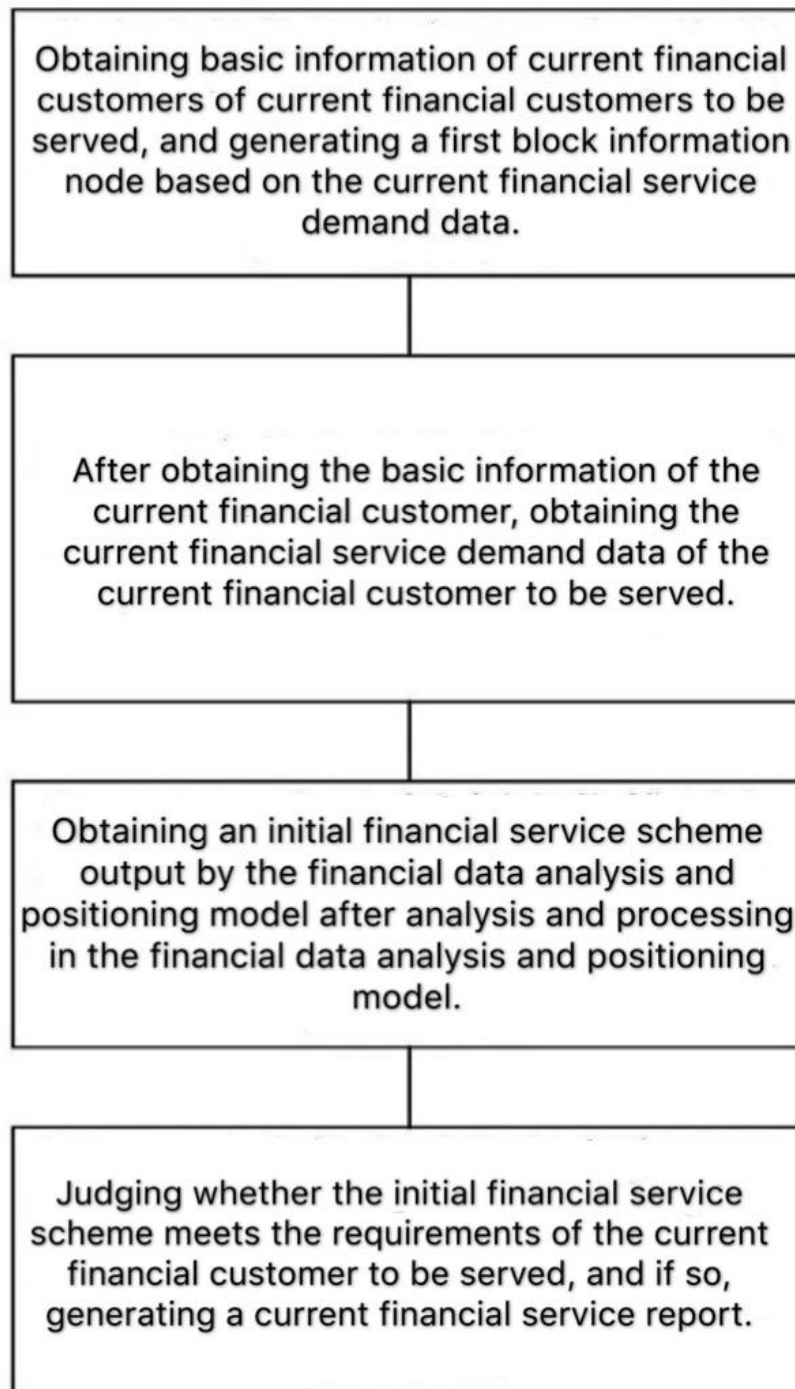
Obtaining basic information of current financial customers of current financial customers to be served, and generating a first block information node based on the current financial service demand data.

After obtaining the basic information of the current financial customer, obtaining the current financial service demand data of the current financial customer to be served.

Obtaining an initial financial service scheme output by the financial data analysis and positioning model after analysis and processing in the financial data analysis and positioning model.

Judging whether the initial financial service scheme meets the requirements of the current financial customer to be served, and if so, generating a current financial service report.

Figure 3 System operation flow chart

3. Result analysis

3.1 Existing Problems

Although the fintech targeted poverty alleviation system with big data and blockchain model as its core can better deal with the problems faced by rural economic construction and development in the new era, the poverty alleviation model and chain shown in Figure 4 below show that the core of fintech is technology and the essence is finance, and its purpose is to improve the efficiency and quality of services. Integrating the current poverty alleviation development model of fintech, we can see that it mainly faces the following problems: First, it does not provide the function of financial

poverty alleviation to a certain financial institution accurately, so that all institutions can directly help the poverty alleviation. As a result, there are not many financial institutions participating in the connection of the registered poor households, and the practical work efficiency is not good. Secondly, the living area of registered poor households is too scattered, the actual living environment is bad, the overall quality of work is poor, there is no integrity record. The local government has limited ability to choose discount interest, interest free and risk compensation, and the guarantee, risk compensation and sharing mechanism proposed based on financial poverty alleviation loans are not perfect. However, the basic information of financial poverty alleviation targets is only recorded on the cards, which cannot be comprehensively studied, and ultimately financial institutions cannot accurately judge the direction and target of loans. Here, the system supervision is not in place, poverty alleviation departments have misappropriation, misappropriation and other bad behaviors; Finally, the poverty alleviation mode of fintech is deficient. Employees in the poverty alleviation chain cannot effectively coordinate their work, and information sharing and seamless connection are not truly realized.
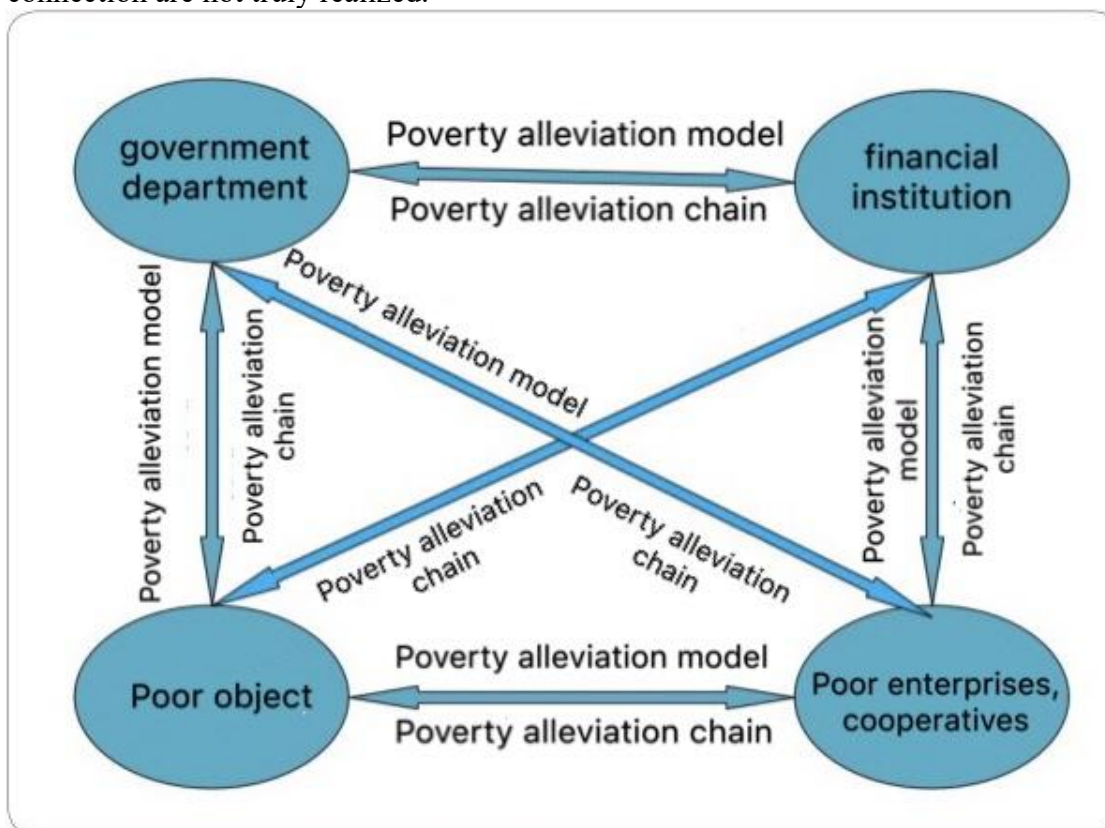

Figure 4 Poverty alleviation model and chain

3.2 Development mode

In the scenario of big data technology, by studying the production and life of poor objects and the causes of poverty and other data information, financial institutions can be helped to quickly predict the financial needs and repayment ability of each poor object, and finally propose targeted solutions to truly realize accurate loan issuance. At the same time, big data can also dynamically forecast and evaluate poverty alleviation projects, comprehensively optimize the implementation of financial poverty alleviation policies while reducing financial risks, fully demonstrate the application role of big data in information interconnection, and propose real and effective poverty alleviation solutions according to the real situation of poor objects.
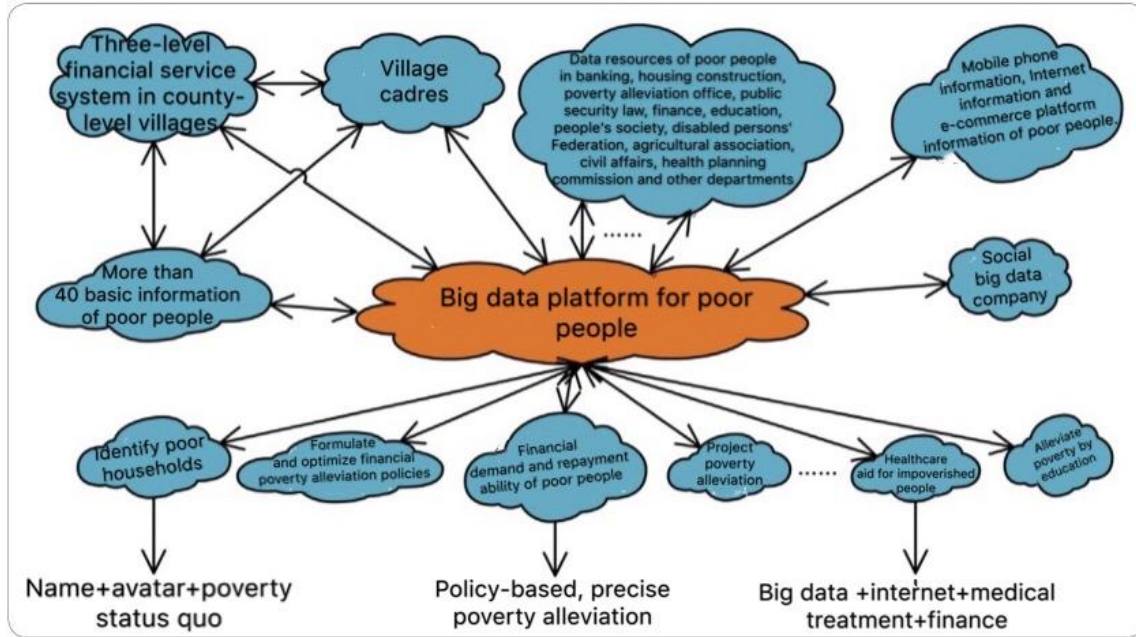
Figure 5 Fintech targeted poverty alleviation framework based on big data

Blockchain refers to the information within a certain period of time is packaged into a block of information stamped with legal time stamps, information blocks will be connected to form a chain of information blocks. In fintech poverty alleviation work, blockchain technology is mainly divided into two modes. On the one hand, local governments take the lead and establish development system modules involving government departments, poverty alleviation objects, financial institutions and other units. On the other hand, the government departments establish the block chain for administrative poverty alleviation, and build a block for financial poverty alleviation in the financial system, thus integrating the two modules to run together. The specific architecture is shown in Figure 6 below:
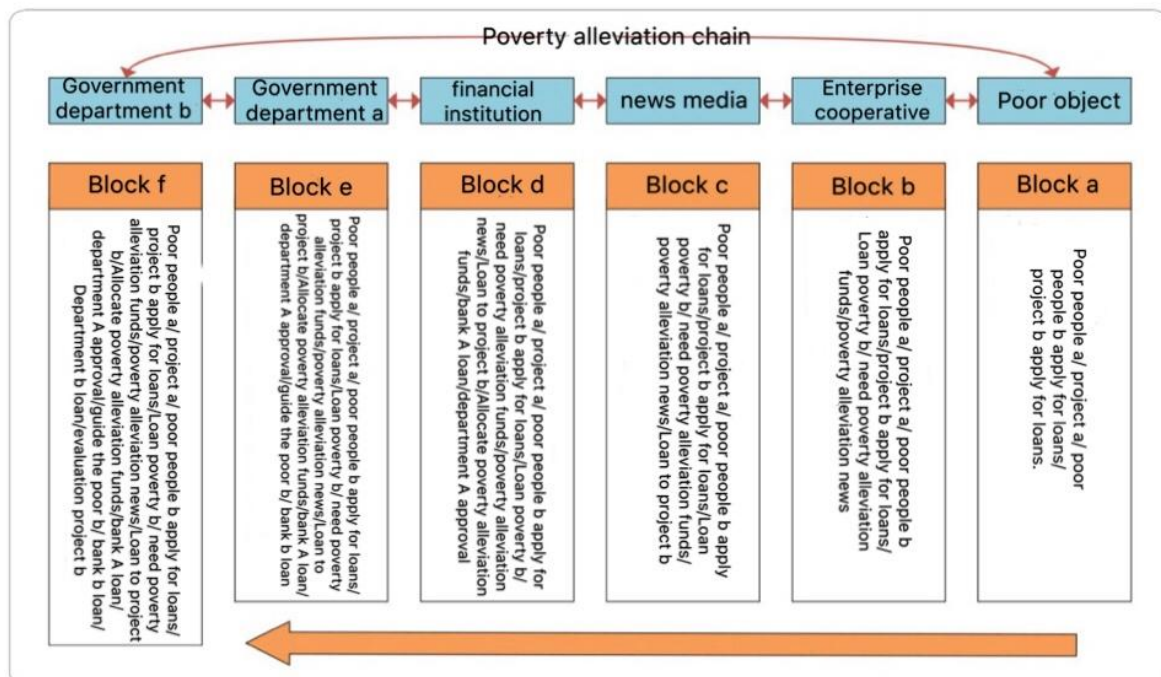

Figure 6 Fintech targeted poverty alleviation framework based on blockchain

From the perspective of practical development, the work content of the whole module involves the following points: First, the latest system mode should be accurately identified, the service demand should be accurately identified, and the development goal of poverty alleviation in industries should be truly realized. Among them, big data and blockchain have the basic

characteristics of information sharing and continuous tracking, which enables participating units to accurately understand the characteristics, industrial projects, operation and management status of each poor area, and then through systematic analysis, accurately excavate the financial needs and investment projects of each poor person, and then propose valuable and effective loans to them. Secondly, the latest system module can realize the precise delivery of poverty alleviation loans, improve the transparency of information and data, and optimize the overall management level. Participants of blockchain will enter the system as equals to ensure that the internal stored data can be shared and applied. Moreover, every approved item, every poverty alleviation loan and every approval link will be automatically recorded in the database and stamped with time to ensure that every node can see it. If a node is tampered with illegally, all nodes in the system can find it. Can ensure that information does not make mistakes; Finally, the latest system module can continuously improve the basic information of poverty alleviation objects and enterprises, automatically establish a fair, just and open integrity record, and provide an effective basis for subsequent poverty alleviation loans and financial management services.

Conclusion

To sum up, in the innovation and development of modern science and technology, the fintech precision positioning system with big data and blockchain model as the core plays an important role. Therefore, Chinese local governments and the financial sector should integrate advanced technology theories, gradually optimize the positioning system, while starting from the long-term perspective of our economic construction and development, formulate more perfect financial technology poverty alleviation work.

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