

Donation Tracker Blockchain: Every contribution logs immutably, showing real-time allocation to causes

Antim Rani, Dr. Sneha, Dr. Anupam Bhatia

¹MCA Student, ³Asst. Prof., ²Associate Professor

Deptt. of Comp. Sc. and Application, Chaudhary Ranbir Singh University, Jind, Haryana, India

Abstract: This paper presents a Blockchain-based system for tracking charity donation. Its goal is to make donations are transparent and secure. Blockchain allows the donor to track their donation. In the traditional system, donors cannot see how their money is used. It allows real-time tracking of donations. This is a simple and secure way to manage charity donations. Every transaction is permanently recorded in Blockchain. Once a transaction takes place in Blockchain technology, it cannot be altered. The Blockchain technology ensures the safety of the fund transfer. It creates a trustworthy environment between donors and charity organisations. The purpose of this research is to create an effective platform in Blockchain technology that has benefits for both donors and charities.

Keywords: Blockchain technology, Charity, Smart Contracts, Security, Transparency, Donation Tracking.

1. Introduction:

Today, online donation platforms are widely used to help people and charitable organizations. Traditional donation systems have many problems. In many cases, donors cannot track how their money is used and it properly goes to the recipient or not. The Blockchain system helps donors to track their donation and reduce fraud. In Blockchain, every donation is permanently recorded because it is immutable. Donation transaction does not change when any transaction can be done so, it is secure. A Smart contract helps in systematize the donation process and confirms that the fund is properly going to the beneficiary.

Traditional donation systems face problems like lack of transparency, fraud, misuse of funds and low donor trust. In many cases, donors cannot track how their donations are used, which reduces trust in charitable organizations. Using smart contracts, Blockchain technology provides a transparent, secure and decentralised mechanism to track charitable donations [1]. A transparent and safe platform for monitoring charitable contributions can be developed using Blockchain technology. Transparency and fraud prevention are the main targets of Blockchain technology's decentralised and tamper-proof design. In donation tracking system, it has immutable records of all transactions. Traditional contribution systems have limitations that effect on transparency, accountability and efficiency. One important limitation is the lack of transparency in the contribution process, making it difficult for donors to trace their money and the money are used for the intended purpose. A Blockchain system does not need any intermediaries. Transaction fees charged by intermediaries like banks and payment processors. In result less money is reach to the beneficiary. Donation system must be

transparent and trustworthy. Fee charges by bank and payment processors, Blockchain and Smart contract can solve these type problems.

Blockchain eliminates intermediaries, reducing transaction costs and allow more donation funds to reach the actual recipient [1]. In Blockchain donation system donors can track their donation easily. They can see where donation money is used. In Blockchain technology, security is the important feature. Once information is stored it cannot be possible to change. Blockchain system is highly secure. Blockchain also uses distributed storage, where every participant has a copy of the data. This reduces the risk of data loss and cyber-attacks. In Blockchain, there is no central server so it becomes very difficult for hackers to change the records. These security features make Blockchain is suitable for banking, healthcare, education, and donation tracking systems. Blockchain makes charity donations more secure and transparent. Donors can track their donations at any time. This can build trust of donors and charity organisation.

Charitable donations play an important role in helping people and supporting people to provide by the things and money which are helpful for them. At present, mostly people donate through online platforms. The previous donation system is centralized in nature and the Blockchain donation system is decentralized in nature. In previous system donors cannot easily know where their donations reach and which reduces their trust in charitable organizations. Blockchain technology provides a secure and transparent way to manage donations. Researchers have proposed Blockchain and smart contracts to bring more transparency, security and accountability in donation systems.

This research focuses on developing a Blockchain-based donation system that improves the limitations of previous system. Using Blockchain technology, the system aims is to reduce fraud, increase donor confidence, and improve the donation process also. The Blockchain system enables contributors, track their real-time donations. Transparency, accountability and trust are increases by showing how donated money is used.

2. Literature Review:

Nairi et al. developed a donation tracking system called Donate Blocks. It improves transparency and security in charitable donations. The system allow donor to track their donation. It helps reduce fraud and improve trust between donors and charitable organizations [1].Crypto-Go-Charity Blockchain based donation tracking platform is developed by Jadhav et al. The platform involves NGOs, donors, and student beneficiaries for scholarship distribution. The system improves trust and transparency [2]. Nadar et al. proposed a Blockchain-based charity donation tracking platform. The technology allows contributors to trace their donations. The system helps prevent fraud and misuse of donation funds [3].Charity-chain Blockchain-based fundraising tracking system is developed by Shevtekar et al. It reduces fraud. It confirms that the donated funds reach the intended beneficiaries through Smart contract [4].

Saraswat et al. presented UpHaaR, a Blockchain-based charitable donation system. The system uses smart contracts, which allow safe and transparent donation tracking. It enables donors to trace their donations. It confirms that the funds are transferred safely to the beneficiaries. The proposed method increases the openness, security and confidence in the

contribution process, and reduces the risk of fraud [5]. Yasir et al. suggested the Blockchain-based charity donation system. The purpose of the system is to build trust in charitable organizations. The system allows contributors to track their donations in real time. It confirms that funds are used for their intended purpose. Smart contracts automate the donation process. Its help in prevent fraud and misuse of funds [6].

Tofer et al. projected a Blockchain-based donation crowd funding system. The system helps in increase transparency security, and accountability in fundraising. The technology utilises smart contracts to automate donations. It allows donors to track their transactions securely [7]. Karmayoga et al. projected the fundraising systems which are Blockchain based to improve transparency in donation management. The system uses Blockchain and smart contracts to record donation transactions securely and transparently. It enables donors to verify donations, reduces fund misuse and increases trust in crowd funding platforms [8].

Raikar et al. [9] proposed a Blockchain-based donation platform with AI-enhanced invoice verification. In this system, Blockchain is used to record donation transactions in a secure and transparent way. AI and OCR are used to verify invoices before releasing the donation funds to the NGOs. This process is helps to reduce fraud, improves transparency, and increases donor trust. Mariyam et al. [10] suggested the Blockchain-based framework to make charity donations more transparent and secure. The technology allows contributors to trace their donations until they reach to the recipient. It uses Blockchain and smart contracts to store donation records safely and prevent fraud. The proposed method increases trust, accountability and transparency in the contribution process. Authors accomplish that this framework is an effective solution for modern charity donation systems.

3. Problem Statement:

- a) A major difficulty with charitable donations is the lack of openness in the process.
- b) Donors do not have clearly see how their funds are used which creates doubts will they send money to the intended person.
- c) There is also a risk of fraud and misuse of funds because donation records can be changed or hidden. So, a secure and transparent donation tracking system is needed.
- d) One of the biggest problems is the absence of proper tracking mechanisms. When people can't track their donations they hesitate to donate and it reduce donors trust also.

4. Research Gap:

Many researchers have developed Blockchain-based donation systems to improve transparency and security. Some existing systems do not provide real-time donation tracking. Existing system are difficult for users to understand. So, there is a need for a simple

Blockchain-based donation tracking system which records every donation securely. The method enables donors to track how their funds are used. The traditional system we know that it's centralized and with lack of transparency.

- a) Blockchain storage requirements every transaction is store permanently which creating storage issues.
- b) Many systems do not provide proper verification of donors and beneficiaries.
- c) For beneficiary verification, some platforms lack a secure process.
- d) The Existing studies do not fully solve the problem of donor identity verification.
- e) The Existing systems have scalability issues when the number of transactions increases.
- f) Many systems still have limitations in transparency and real-time tracking.

5. Research Objectives:

The main objectives of this research are:

1. To study existing methods for predicting donation for charity whether it is going properly NGOs to beneficiary.
2. To find shortcomings among them in existing system.
3. To design more secure, efficient and transparent donation system.
4. To test and validate the existing framework for the donation purpose.

Blockchain in Charity Donation:

Blockchain plays an important role in improving charity donation systems. Every donation is recorded securely on the Blockchain. Donors can check the status of their donations when they want. Blockchain system increases trust because all records are visible and cannot be changed without permission. Blockchain also reduces paperwork and minimizes the chances of fraud. In result, both donors and charitable organizations benefit from a secure and transparent donation process. Blockchain makes charity donations more secure and transparent. Donors can track their donations at any time. This increases trust between donors and charity organizations. It also reduces fraud and misused of donation. With the help of Blockchain donor can check the total money donated by donor is properly and fully going to the recipient.

Limitations of the Proposed System:

The proposed system also has some limitations. Users need basic knowledge of digital systems to use the platform effectively. It works easily with the help of internet connectivity. So, internet connectivity is important.

6. Proposed System Framework:

The proposed system is a Blockchain based donation tracking framework to increase transparency and trust in charity donations. This system allows donors to send donations directly through a secure platform. Every transaction can be done is permanently recorded on the system. The donation process is automated and controlled by smart contracts.

The system allows donors to see in real-time where their donations are going. All records are kept in safe and permanent, to help prevent fraud and misuse. The proposed framework thus makes the donation process more transparent, secure and reliable. So, it is very helpful also.

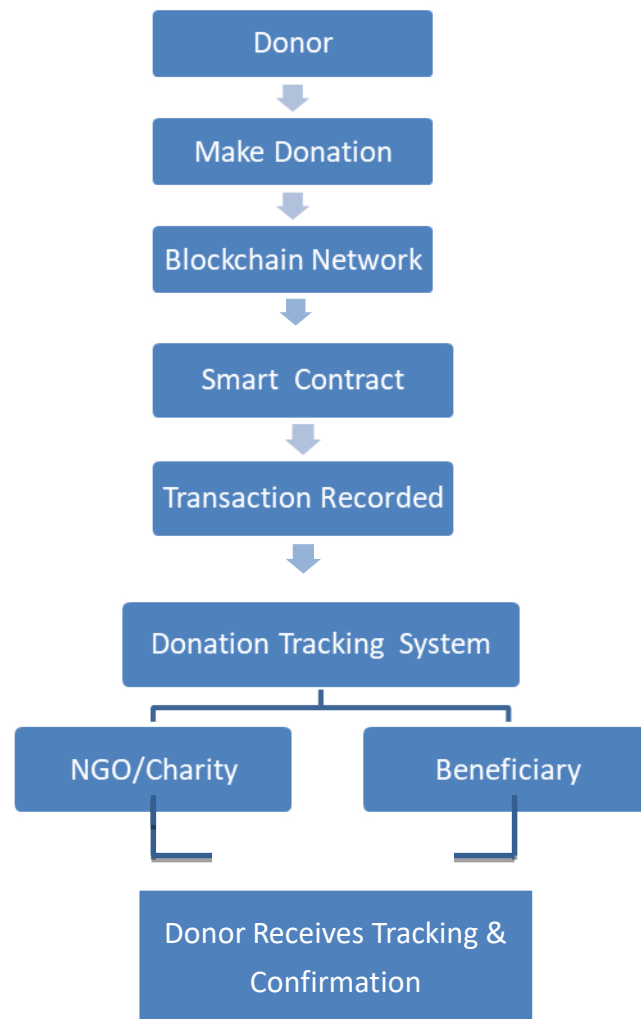


Fig.1. Blockchain Donation System Workflow

First of all the donor can donate the money and it store in the smart contract. Then it goes to the NGOs or organisation and then to the beneficiary. Donors can also easily track their donation with the help of Blockchain based donation system.

7. Existing donation systems:

Most of the current donation systems are centralised and lack transparency. Usually donors do not receive clear information on how their donations are spent or to where the money is transferred. There is also a risk of fund misuse and fraud due to the fact that transactions are not fully traceable. In many cases there is a middle-man involved which adds cost and reduces the amount of donation money received by recipient. These issues reduce trust between donors and organisations. The current system is not as secure, transparent and offers no real-time tracking of donations.

Proposed System Benefits:

With the help of Blockchain, the proposed solution is more secure than the existing donation system. It maintains real-time tracking of donations and securely stores all records. That saves time and reduces paperwork. It also increases transparency and donor confidence. It has made the donation process more effective.

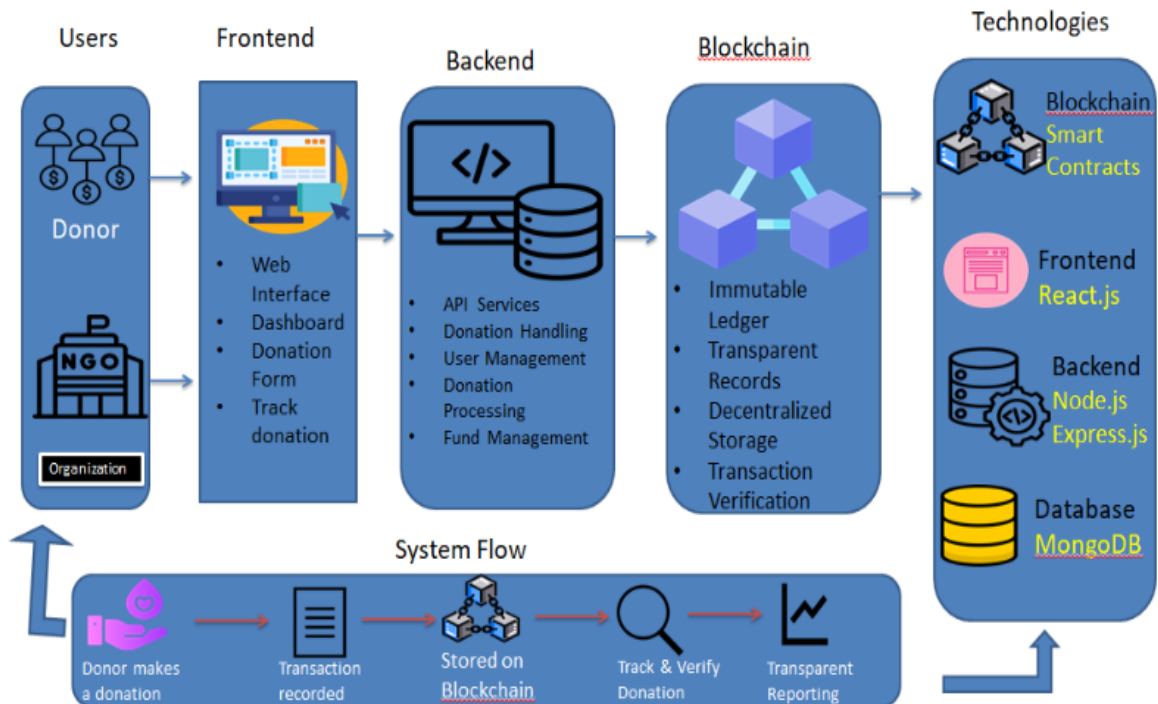


Fig.2. Blockchain Donation System Framework

In this system donor do donation and smart contract stores donation. The Blockchain system facilitates easy transfer of money to the beneficiary.

8. Conclusion & Future Scope:

This work proposes a Blockchain based donation tracking system to improve transparency, security and trust in the donation process. Traditional donation system face problems like lack of transparency and fraud. These problems make donors lose their confidence. It is hard to

track the use of donations. The proposed system uses Blockchain technology for securely and permanently recording each donation. Donors can see easily where their donations go. The funds can be managed by charitable organisations more transparently and accountably. The proposed framework helps reduce fraud, improve accountability and increase trust between donors and NGOs. It also provides a secure platform where records of donations cannot be altered or deleted. This makes the donation process more trustworthy and efficient. Artificial intelligence can also help analyse donation patterns. The system can be integrated with more government platforms and NGOs to increase the reach. Scalability and performance can be improved to handle a greater number of users and transactions efficiently.

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