

Structured And Transparent Community savings System for Low-Income Financial Inclusion

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Abstract- Financial inclusion is one of the major issues of low-income communities. This is enhanced by informal savings behavior, lack of adequate transparency in addition to lack of trust assessment system. The Structured and Transparent Community Savings System discussed in the given paper is an electronic and AI-driven system of trust scoring and community savings. Under this system, it is possible to make group savings in a safe manner, transparent transactions, and activities monitoring. The proposed system computerizes the savings activities of the community, calculates income-based trust ratings, and automatically creates groups to which all the activities are documented and stored safely. The system boosts better accountability, preventing fraud and encouraging sustainable financial operations by machine learning based on rules and safe transactions recording. The solution will be realistic, accessible, and acceptable in the real-life implementation especially to low-income earners.

Index Terms- — Financial Inclusion, Community Savings, AI based Trust Scoring, Digital Transactions, Transparency, Group Savings, Secure Record Management, E-Governance

I. INTRODUCTION

Many low-income populations, particularly in the developing regions, are limited to access formal financial services. A lot of families depend on organized informal community savings groups that are usually not structured with rules, transparency, or electronic documentation. Although there are short term benefits of these systems, they are susceptible to fraud, mismanagement, and accountability deficiency. As the number of web technologies and the emergence of data-driven decision systems increases, an opportunity to enhance the community savings via digital platforms appears. In this study, a web-based system will be described that will

integrate secure financial transactions, user evaluation that is based on trust, and monitoring activity transparency. It is aimed at developing a reputable online option that enhances financial inclusion ensuring the spirit of sharing of savings in communities. The system also has real-time data analysis and automated reporting. These are useful in allowing the members to monitor fund growth and contributions.

II. LITERATURE REVIEW

The growing use of financial technologies in the developing economies has created a lot of research concerning the digital financial inclusion. Trust is a factor that needs to be considered and accepted as it affects the adoption and sustained use of digital financial services. As the people move out of the banking industries to the online ones, they lose the trust to the human touch, and they leave it to the technology. Such change is important to underserved and low-income communities that use fintech and mobile solutions. The analysis of the digital payment technologies proves that mobile wallets, electronic payments, blockchain, and AI-supported services ease access to the payment and financial stability, especially during economic challenges. However, there is little exploitation of automated trust evaluation, tracking the activities of open activities, and community-based savings under a single platform. The latter gap contributes to the recognition of the need to have the system that will bring together trust scoring, group formation, and transparency in real time so that financial engagement could be inclusive and sustainable.

III. EXISTING SYSTEM

The current procedures of community savings are informal and manual mostly. They rely on written documents, oral promise and trust amongst members. This approach proves useful at a small scale, it lacks transparency in the financial operations. This complicates the situation of knowing contributions, withdrawals and balances made by the members. Without the digital records, the chances of fraud mistakes and mismanagement are higher due to the absence of an effective method of auditing the activity. Moreover, such systems fail to offer any standardized way how to measure the trust of the members or their repayment behavior and most of the time it creates a misconception. All the tasks are carried out manually thereby complicating and taking time to expand the system to accommodate additional members. Such lack of accountability and appropriate follow up also undermines user trust which translates to less involvement and hence financial growth in the long run in the community.

IV. PROPOSED SOLUTION

The suggested system is an online community savings model that will be used to counter the loopholes of the traditional informal savings model. It introduces a safe, open, and technological solution. The platform is structured with structured digital operations and AI trust score to instill equity and reliability among the members. It offers secure user registration and authentications that the users can comfortably handle and manage their personal and income-related information. The motivation of AI of the Income Trust Score is 0 to 100. It is a rating that is provided based on the patterns of income, behavior of contribution and record of repayment. The system also ensures that they automatically form balanced savings groups according to this score and match the users with the same trust level and income capabilities. All financial transactions such as the withdrawal and deposit are made online. Generally, the system creates a sense of financial discipline, breeds confidence among the user.

V. WORKING

The system is designed in a modular format so that it is clear and can be scaled and all operations of the

system effectively managed. It begins with a safe user registration and user log-in made-in module where the user registers by filling personal and income information. A module of income profiling and calculation of trust score is implemented after registration to analyze the users on the basis of income stability and behavior of transactions in order to generate a dynamic trust score. With this score, the group formation module automatically clusters users in appropriate savings groups according to their comparable income and trust ratings. The deposit and withdrawal module enables the user to conduct online transactions involving the use of digital means of payment and the balance of the account is updated in real time to provide them with accuracy. In order to be transparent, the activity monitoring module gives the user an opportunity to see their entire transaction history, group information, and their trust score changes any time. Finally the secure record maintenance module stores all the transactions and prevents tampering which guarantees data security, accountability and reliability of the system in the long term.

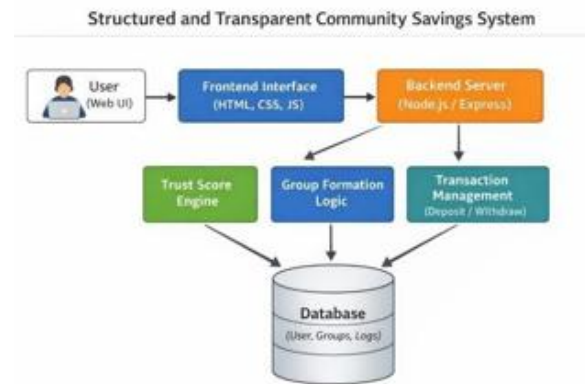


Fig. 1. Block diagram

VI. CONCLUSION

Structured and Transparent Community Savings System is a secure and scalable platform that was targeted to improve financial inclusion among the low-income groups that are under-served. The system allows fair information-grounded examination of the dependability of the members by the trust scoring which is founded on AI. The group formation is automated and as such there is balance

of participation and also the group is not as reliant on manual decisions. Monitoring of the activities and the inability to change the records of the transactions improves the accountability and reduces the chances of fraudulent transactions and eventual long-term confidence of the users. The site shows that the current web technologies could be effectively applied to revamp the old and informal savings patterns to an effective digital platform. The system fosters the expansion of the sustainable savings and dispute resolution besides improving the financial discipline and confidence of the user. It can be improved through enhancing prediction of trust with the help of machine learning models in the future, making it more available with the help of a mobile application, integrating it into formal banking and digital payment systems, and providing financial literacy tools to empower the representatives of the community to a larger degree.

VII. FUTURE WORK

There are ways through which Structured and Transparent Community Savings System can be enhanced in future by increasing the level of intelligence, scalability and accessibility. It will be feasible to apply the machine learning and deep learning models to predict the trust score based on long-term behavioral trends and other external financial indicators. The system will be expanded to a mobile application to be able to reach low-income users who do not have access to desktop applications. It can also work with formal banks, government welfare programmes and payment systems founded on the UPI to enhance financial inclusion and real life implementation. Moreover, blockchain or distributed ledger technologies can be used to improve monitoring and security of transactions. The future research may also include financial literacy modules and multilingual interfaces since they would enhance the user engagement, confidence as well as feasibility of community-based digital savings systems in the long run.

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