Blockchain Security for Pension System

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Abstract

This paper's purpose is to describe how blockchain security and its features like leger keeping and tracking combined with pension system can be easy and helpful for pensioners. Similar different research are conducted and noted by the different researchers which was also taken in consideration during this review research paper. The main objective is to implement the following features and security into the existing pension system. If in future by using this research one can create a blockchain pension secured app or software which will bring ease in day to day life. The research methodology and Analysis & findings shows how this concept will be used or adopted by the public or not for further use. This paper describes an overview around the vast world of blockchain its feature and concepts with applications and example with respects to the pension system. The security of blockchain can be implemented in the existing system of pension or not can be conclude with the conducted survey and other methods mentioned in this paper.

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Keywords: Blockchain security for pension, Pension system, Blockchain, Pension system in India, Blockchain India, Blockchain uses, Blockchain advantages.

Introduction:

Nowadays there is a situation where multiple processes and functions are performed by different people. Peoples with different roles, designation, responsibility, etc carry out the process to achieve success of the process. From this several processes and tasks one is "**Pension**". The word pension may bring you a picture of an older person getting money in the bank but earlier this pension was given in physical form through Postman. Pension received by the postman was deducted with several charges and corruptions hands tax. The end result pension was less than the actual figure which was issued. To change this system current pension system got implemented, where the pensioner can directly go to the bank and collect the pension. However this system has also got a catch. The pension is processed with different charges and taxes also sometimes the bank states the pension is not been credited or the company/government hasn't given the pension. To overcome such problem and situation "**Blockchain**" can be used. Blockchain by using its unique features can help tracking from the pension raised point (A) to pension received by pensioner point (B). The blocks will help to understand whether the pension was actually raised or failed to raise. Also it is secure since no tampering can be done in Blockchain system. Connected to person birth & death blockchain it will be helpful to find out whether the pensioner is still alive or not and is eligible to get pension or not. The records will be encrypted and since there are no middle man the charges will be eliminated, which will directly result an exact pay to pensioner in easy, safest and fastest way. "**Blockchain for Pension**" will be able solve the problem like pension raised or not,

is it tamper in between, the money received success status, whether the pensioner is still alive, etc. Blockchain for pension system is a mixture of existing system from which different role people (Banks and other company staffs) are removed and a direct peer to peer connection is set to complete the transaction of pension.

Literature Review:

"Blockchain Enabled Applications" by Vikram Dhillon, David Metcalf, Max Hooper. Helps you understand the blockchain ecosystem and how to make it work for you. The book refers to different blockchain applications also which makes the understanding for the reader more clear about blockchain. "Blockchain", Blueprint for a new economy book author by Melanie Swan is a book which helps reader to understand overall blockchain concepts. As a new beginner it makes reader understand about Currency, Contracts (Ledgers), Economics & Markets, Advanced Concepts, Limitations, Cryptocurrency Basics and much more. "Nudge: improving decisions about pensions using blockchain technology". Author - Martin vander Schans, Joris Cramwinckel, Stanimir Ivanov. Has mentioned in his paper that how the cryptocurrencies & blockchain pension together can bring wealth and prosperity to ones life. The paper states that the pension given if invested in same blockchain technology can make them rich and gain profit on their existing pension money.

The pension system plays an important role in the retired person life. The medical expenses, food, clothes, treatment, etc. may depend on the pension which he/she earns. The pension is money which they receives and blockchain is used to keep track of money transaction from its many features. It helps to make it more secure, track able, easy to use and accessible for old people.

Problem Definition:

As we moved from post or hand to hand pension system to a system where the pension was started sending through bank under strict guidance of different role authors. But as the post / hand to hand pension system was having some problem similarly, this system also have some problem too. The problems like not proper

ledgers, pension roadmap dislocation, not sending pension to the pensioner even if he/she is alive and etc.

These problem were there from the very beginning but as it is said that nothing is perfect, we accepted this problem system and continued working. People still didn't get pension and the reasons remain unknown "*Bank says it's from the company and Company says we have send it check it with your bank*". To solve this problem we need a ledger who will hold a record from the very beginning or we can say it as from the roots i.e. from creating the user and making him/his pension available to bank a software / app which will keep transparent records of money send, money received, money spent, user is alive or not? Etc.

Objective / Scope:

The scope includes mainly focus on blockchain implementation in the current existing pension system for more security. These similar changes has been carried out by different researches for different purposes. We have gathered information and referred from various book, survey, Google, internet, etc. No new technology, software, hardware creation has took placed or created during this research.
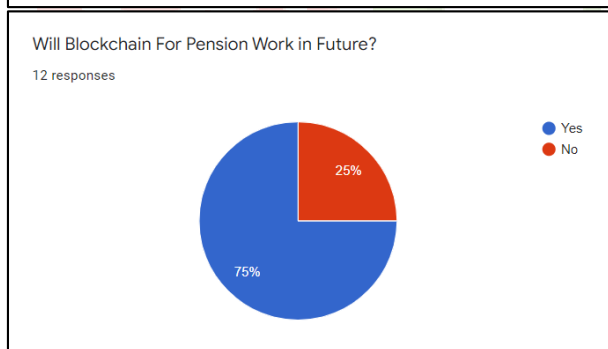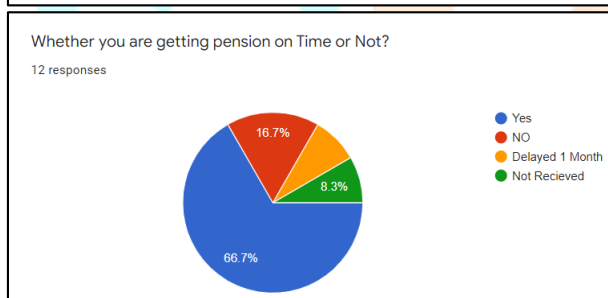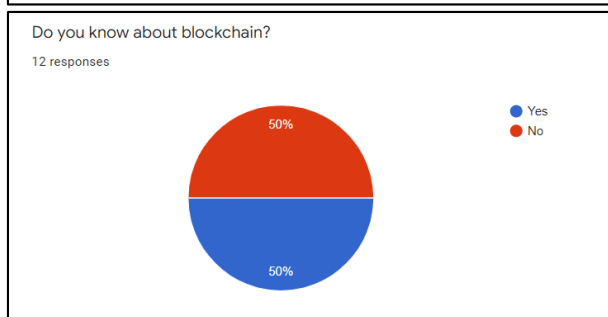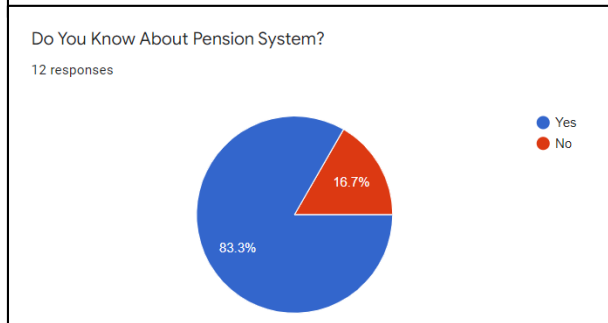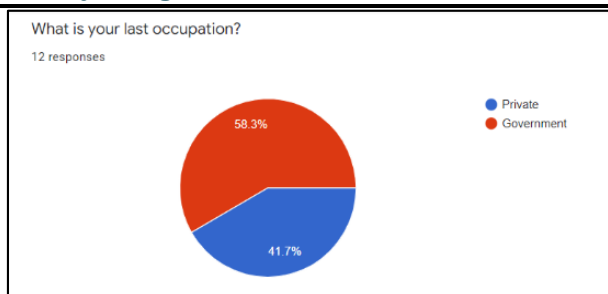
The main objective of the research study is to show how blockchain implementation in pension system can make the process easy, fast, secure and efficient in real time. Also it will help everyone to know whether the error factors involved in the research got solved or not.
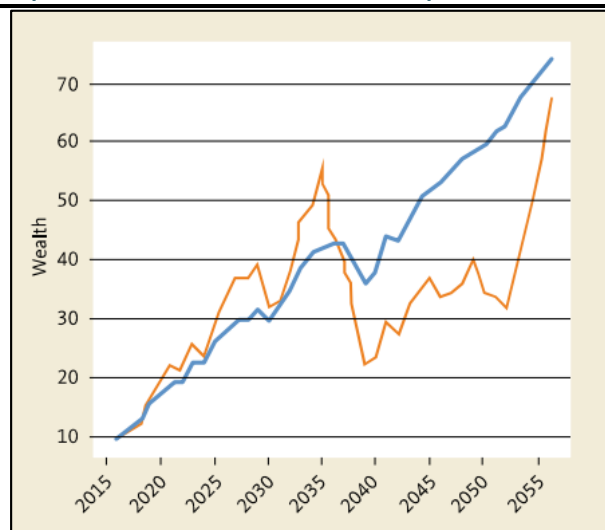
Research Methodology:

The research methodology consists of different techniques like surveys, reading and gathering data, information gathering, etc. To create the hybrid research methodology we gained a broad knowledge about Blockchain first, then how the pension system in India works. The main motive of this research methodology was to get an outcome and understand the public demand. Taking a survey is the best answer to the question of "*what public demands*?"

a) Survey:

We carried a survey with X number of people. We explained them about both current pension system as well as the new blockchain for pension system and collected the data. This gathered data we recreated in the graph/pie/bars and pictorial form for easy understanding and is shown below

What is your last occupation?
12 responses

- Private
- Government

58.3%
41.7%

Do You Know About Pension System?
12 responses

- Yes
- No

83.3%
16.7%

Do you know about blockchain?
12 responses

- Yes
- No

50%
50%

Whether you are getting pension on Time or Not?
12 responses

- Yes
- NO
- Delayed 1 Month
- Not Recieved

66.7%
16.7%
8.3%

Will Blockchain For Pension Work in Future?
12 responses

- Yes
- No

75%
25%

Graph image is been referred from [1]

Also we referred the chart from the reference published research paper which mentions that wealth if grown also by using different blockchain technology or currency is more promising than using equity, plotting for different 5 year tenure.

b) What is Blockchain?

Blockchain is a technology which uses a public ledger that stores transactions history and which cannot be tampered since it is publically available. Blockchain changes are made publically for eg. If A sends money to B then A, B, C … N no. of persons who are in blockchain chain will get an update that A has sent money to B. They will vote and make it written in public ledger, as this changes are done publically everyone has a copy of this ledger and hence it cannot be changed and if anyone try to change a new block will be created or if the hacker perform change then it will lose track to next block.

c) What is Pension?

Pension means the money which an individual gets in his retirement age (after 58 to 60) for his/her service which they performed for specific year of time. Pension can be also stated as a saving which a person does to get it monthly after the retirement as a monthly income to use it for his/her and family expenses. Earlier pension was allocated to only government employees but after 2004 onwards the new pension act has been implemented in which every individual save money from his/her monthly income for retirement.

d) Data Flow Diagram
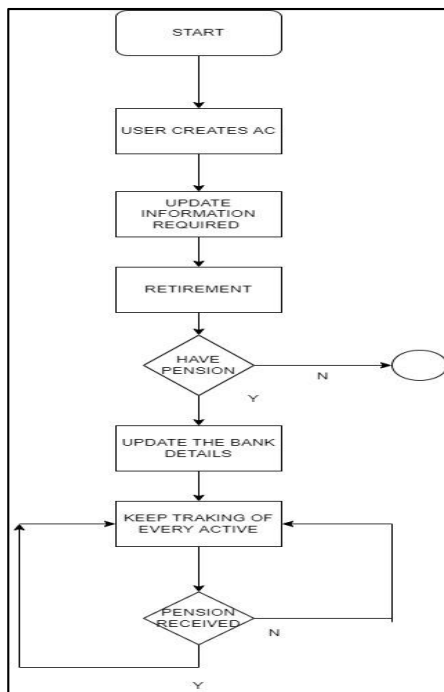
Analysis & Findings:

According to the survey we found that 50% people know about blockchain and 75% think that this new technology can be utilised for the existing pension system. This can be revolution to the pension system by eliminating the existing pension system with new ledger method, which will keep transparency between both the parties. This will led more security from the pension side and even the end user or the pensioner will never able to forget that he /she received pension or not? Also the findings shows that it would be helpful for the senior citizen not go the bank and save their time by using any device which is connected to internet to do the further transaction. Since blockchain currency if used with the pension system they can be spend directly to the user /retailer or for any other purpose.

Limitation & Future Scope:

The difficulty of this work is adjusted so as to limit the rate at which new blocks can be generated by the network to one every 10 minutes.

Due to the very low probability of successful generation, this makes it unpredictable which worker computer in the network will be able to generate the next block [6].

Similarly, By developing an dedicately for this will help to establish this blockchain security in reality.

Today there are so many other applications and crypto currencies who has adopted this new technology and has bring new changes in day to day lifestyle.

Conclusion:

Seeing the data, analysis and after reviewing the other researches we can conclude that blockchain technology will revolutionize the pension system with some limitations too. But the blockchain if implemented in a right way with the existing pension system can make utilize its core services to 100% and can help to solve the problems which existing system have.

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