

ROLE OF ARTIFICIAL INTELLIGENCE IN EFFECTIVE OPERATIONS OF FINANCIAL TECHNOLOGY: AN EMPIRICAL STUDY

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DOI: 10.47750/pnr.2023.14.02.384

Abstract

The capabilities of Artificial Intelligence is transforming its operations by providing them with more effective risk and fraud management processes for better product offerings. We will also discuss through this context how they are reshaping the client's experiences and being increasingly deployed. Results of this research will definitely enable everyone to receive more information to meet the requirements of their customers and consumers in this global financial system in all financial spheres. This technology is a combination of numerous technologies and is considered in order to monitor substantive issues and capture market improvements. Applications of Artificial Intelligence are changing day by day across the world to ensure low income earners, the poor, women and youths so that they can participate in mainstream financial market. There are few speculations and many opinions about the Artificial Intelligence that they may have negative effect on the financial sector. This paper encompasses numerous researches in this field of AI in order to explain its relevance as well as effectiveness thoroughly in upcoming future. A sample of 193 respondents was collected from respondents through a "standard questionnaire," which was created on a five-point interval scale.

KEY WORDS: Artificial Intelligence, Financial, Technology, Effective, Information.

INTRODUCTION

Artificial Intelligence or AI can be referred as a type of technology which enables machines, tech devices and computer applications to imitate human intelligence, learning from experience via iterative processing and algorithm training (Lu, 2019). Just like numerous forms of technological advancements this form of technology came into our lives from the pages of fairy tales and fiction books. They are playing a very positive role in order to solve Fin tech problems, emerging with different types of solutions, answer questions, and make predictions by recommending strategic suggestions. Artificial intelligence or considered as machine intelligence is the use of intelligence rather demonstrated by technology and machines. Nowadays, this concept is applied in financial activities to enhance and automate their financial services. This form of technology is introduced in this financial industry to offer numerous solutions that can potentially transform on how we allocate different types of credit and risk, which results in fairer as well as more inclusive systems (Gomber, et.al, 2018). Traditional banks have also started towards offering many modes of online services to check the balance, look up different account activities and schedule payments, and many forms of personal assistance whenever it's convenient with a virtual assistance. Implementation of AI is therefore revolutionising how all consumers and financial institutions access

and manage their finances. In this industry, artificial intelligence is playing a very crucial role to renovate the procedures for dealing with different form of finance. Widespread adoption of technologies and its advancement has changed the financial industry drastically into a completely new concept. Many banks are also utilising it to technologize their own central activities which are filling up of forms, filing records and receipts as well as assessing risks. Thus, it is considered significantly into an entirely new method in the interaction of these financial institutions with their customers which embraces innovations on the sphere of financial industry. Artificial intelligence applications and their continuous involvement in the Fin tech will definitely ensure to be playing a necessary role in our digital economy. The analyses will definitely take a deep dive into its methodology for assimilating such technologies successfully into the various variables and interfaces of the financial industries from a worldwide approach (Milana & Ashta, 2021). Proper planning and decision making of these resources will definitely lead towards a sustainable growth. Artificial intelligence in Fin tech is able to predict consumer's behaviour by simply using an interface to successfully gain detailed insights into their data. The deployment of artificial intelligence is presumed to increasingly drive several competitive advantages for the financial firms through many main effective operations like- on enhancing the quality of their financial services and products offered to their consumers and also by improvising the Fin tech efficiency through cost reduction and productivity enhancement which will result in driving higher profitability (Rana, et.al, 2022). These advantages will create and give rise to numerous potential financial consumer and investor protection considerations. Rapid developments made in Fin tech by artificial intelligence and it's effective operations in this sector is driven by the inclusion of such technologies therefore, such advancements has gained more attention from innovators, academics and regulators on its growth and development in Fin tech. Although, many reviews suggested that the scale of this sector is very large and it is still expanding. It is especially very effective towards battling financial fraud which has been growing exponentially due to the increase of online transactions in recent years. There are several other effective operations that artificial intelligence can offer in the future on fin tech. AI is in the process of transforming and changing the shape of financial industry thus, we can therefore accept its widespread adoption to continue (Pan & Zhang, 2021). At the end, we are also going to discuss its potential to supercharge financial services to encourage advanced new services for improving their effective operations of financial industry.

LITERATURE OF REVIEW

Artificial intelligence can be referred as an ability of a machine to display human like capabilities by enabling numerous technical systems for perceiving their environment (Paschen & Kietzmann, 2020). It is vital for a proper foundation of specialized hardware as well as software to write and train machine learning algorithms. This form of technology is shaping the future of humanity and across every sectors of financial industry. Nowadays, many financial institutions are highly aware of its potential benefits for their effective operations that can improve and reduce financial risk. Substantially the adoption of such technologies and systems has grown rapidly in finance. Therefore, AI has become more widespread across the financial industry because according to some reports by Forbes it stated that 70% of financial services providing firms are using machine learning and deep learning to forecast cash flows, fine-tune credit scores and fraud detection (Mhlanga, 2020). It is eventually making the greatest impact by providing additional value over numerous forms of traditional approaches in Fin tech. Introduction of Artificial intelligence into this sector of an economy is providing these industries with several opportunities to create a friendly customer base experience by making better investments options (Milana & Ashta, 2021). AI is being deployed by many financial technologies and their service providers across industries because it has immense potential to transform the business models for generating efficiencies in several operations. Installation of these advanced technologies play a very important role in its operations and performance by using cognitive intelligent skills which is the propensity to deal with solving problems, assimilation of complex ideas as well as learn quickly through experiences. Evolution in artificial technology has come a very long way in the recent years and financial industry has started to incorporate them for effective operations in their everyday business hustle (Denis, et.al, 2020). Many executives of such industries have stated that its execution have increased their productivity significantly in comparison to when they used traditional methods. They are extensively helping this sector to consolidate and optimize various processes which are ranging from quantitative trading algorithmic trading, risk management process as well as financial advisory services. It

is taking over the industry by storm in order to reduce costs, saves a lot time which adds a lot of much needed value in their operations and products. This sector is on the verge of a huge transformation and the one such area which is growing tremendously is financial fraud detection. It plays an effective role towards conflicting financial frauds. Cyber and data breaches are considered to be as one of the main challenges encountered by Fin Tech in current scenario. Detection of any fraudulent activity and anomalies is scrutinised as one of the most commonly cited reasons behind in its adoption by the financial industry (Fedyk, et.al, 2022). The volume of digital financial transactions like savings deposits and in online purchases is rapidly growing annually all across the globe. According to a survey by Forbes, around 80% of financial fraud detection specialists believed that these technologies will help to reduce payment and financial related frauds (Villar & Khan, 2021). AI tends to achieve better predictability and accuracy to detect any kind of fraud at the same time. It helps to recognise numerous abnormal transactions and also tends to identify suspicious as well as potentially fraudulent activities by analysing massive amounts of data. These operations are commendable and help the consumers to minimize their risk and save money from false activities. AI models are designed and trained in such a way that they are able to reject suspicious transactions or flag them for further proper investigation. This is one area where artificial intelligence genuinely plays an effective role as compared to humans. AI helps to analyse large amounts of data and therefore, picks out suspicious transactions. Customers are able to check their balance easily, schedule payments, look up to their account activity, ask questions with a virtual assistance and also provide personalized banking advices whenever it's more convenient. Embedding AI technologies is helping governments to improve their efficiency on public finance management by detecting irregular financial activities to meet constant demand. Artificial technologies that help to deliver such effective operations are fuelled with huge amounts of data and the data collected needs to be very reliable, consistent, transparent as well as available in a timely manner (Grigorescu, et.al, 2020). Integration of machine learning techniques also ensures to manage these large volumes of data and extract valuable insights from these data for better financial profitability. Financial industry is showing more interest towards the understanding of basic mechanisms of AI and numerous ways to use these technologies for enhancing consumer's engagement and their experiences. AI driven technology is playing crucial operations to improve customer experience strategy and enable each one of us to remain familiar with the change in their behaviour and their expectations (Gregory, et.al, 2021). These effective operations also showcases them with a clarity of what kind of feature and functionality needs to be introduced in their financial solutions towards gaining a huge momentum in the market. Such data driven technologies hold a great potential in their effective operations that make financial institutions use such technologies in a targeted manner where they are able to create real value for the financial sector. It is therefore, detecting and lowering down the risks of fraud in these processes ultimately resulting in better customer engagement and retention rate. Different sectors of the economy are able to trust artificial intelligence abilities to boost their productivity and also reduce the time and cost involved. AI applications and tools also play an important role to assess trends and patterns and help prepare these financial institutions make crucial decisions in regard to future risks. In the world of Finance, it becomes important for all financial institutions to forecast the future in a better and accurate way. Many institutions also consider cloud computation and natural language processing to help and prepare about the financial future. Many customers today want to have 24*7 accesses in their personalised banking functions and this is something they just expect it from their financial institutions though, they just want these features with the push of a button. Though, this operation was only possible through artificial intelligence that serves a variety of effective operations to meet these needs. AI has also been able to play a big role in the sector of quantitative trading because today most of these finance institutions rely on quantitative analysis which leads them towards to find patterns in order to consider best trades. They go through, thousands of date points in order to accurately rank stocks as well as develop systematic and quantitative equity strategies for financial companies. Artificial intelligence is able to serve wide number of financial institutions in the most effective manner all over the world. According to these results, their role in financial industry has been able to receive high praise from The New York times, Fortune magazines and many more across the globe. Artificial intelligence has truly begun to transform this sector to meet the growing demands of its customers in a best possible ways. Credit is one of the most important terms in the world of finance. Adoption of such tools and technology is able to avail credit lending process easier for the banks by analysing the credit score for all individual applicants (Ince & Aktan, 2009). They help the lenders and credit rating agencies to actively monitor and analyse data related to the credit worthiness of their potential borrowers that tends to extend their financial services. Developments in AI have helped to improve their efficiency and the quality of financial

services and products by enhancing productivity as well as reduction in cost. Applications of AI in the financial sector are helping the financial institutions to overcome several obstacles in our emerging markets. Instead many customers with low income still remain out of reach from its benefits because of low smart device penetration and unreliable Internet connectivity. It gradually improved the financial situation by eliminating most of the time consuming and error prone jobs with smart and automated assistants that help to avail new services to their customers by improving customer satisfaction. AI also affects the processing time of banks especially by improving the processing time for individual consumers. AI based technology also helped to make the credit and lending decisions more profitable and safer. The above discussed operations of AI are very useful to better adjust their services that helps them to attract new consumers. But most of the traditional banks still have traditional transaction relations with their consumers. Thus, this form of technology has more positive impact than the negative impact expressed by their effective operations. However, it is transforming the financial inclusion through its widespread use of algorithms but sometimes many financial institutions are reluctant to give the technology full autonomy as their behaviour is not fully foreseeable (Martínez-Plumed, et.al, 2021). Culture and its regulations are sometimes seen as a barrier to its widespread adoption in the financial industry, therefore at the end it is improving their functionalities and operational performances that tend to help them succeed.

Objectives

1. To identify the role played by AI in Financial technology.
2. To ascertain how Artificial Intelligence impact Financial Technology.

Methodology

Nature of study is empirical. 193 participants were included in study. Questionnaire was structured in nature to collect data. To ascertain result of Mean and t-test applied. Method of sampling was convenience sampling.

Demographic Result

Table 1 displays gender of participants, male are 60.10%, and female are 39.90%. Age of participants is, 25 to 28 years are 31.61%, 28 to 30 years are 27.46%, and Above 30 years are 40.93%. Type of Companies, Banks are 24.35%, Financial Investment Sector are 26.42%, Microfinance is 19.18%, Financial Service providers is 30.05%. Regarding Usage, Operations is 30.57%, Sales and Marketing is 26.42%, Customer service is 17.62%, and Others is 25.39%.

Table1. Demographic Details of participants

| Variable | No. of participants | % |
|---------------|---------------------|--------------|
| Gender | | |
| Males | 116 | 60.10% |
| Females | 77 | 39.90% |
| Total | 193 | 100 % |

| | | |
|-----------------------------|------------|--------------|
| Age | | |
| 25 - 28 years | 61 | 31.61% |
| 28 - 30 years | 53 | 27.46% |
| Above 30 years | 79 | 40.93% |
| Total | 193 | 100 % |
| Type of Companies | | |
| Banks | 47 | 24.35% |
| Financial Investment Sector | 51 | 26.42% |
| Microfinance | 37 | 19.18% |
| Financial Service providers | 58 | 30.05% |
| Total | 193 | 100 % |
| Usage | | |
| Operations | 59 | 30.57% |
| Sales and Marketing | 51 | 26.42% |
| Customer Service | 34 | 17.62% |
| Others | 49 | 25.39% |
| Total | 193 | 100 % |

Table2. Role and Impact of Artificial Intelligence on Financial Technology

| Sr. No. | Statement of Survey | Mean Values | T-Values | Significance. |
|----------------|----------------------------------------------------------------------------------------|--------------------|-----------------|----------------------|
| 1. | AI transform the operations by providing effective risk and fraud management services | 4.33 | 18.802 | 0.000 |
| 2. | AI has revolutionized the way financial institutes and consumers manage their finances | 4.17 | 16.645 | 0.000 |

| | | | | |
|-----|-----------------------------------------------------------------------------------------------------------------------------------|------|--------|-------|
| 3. | AI in Fintech companies enable them to predict behaviour of customers by just interfacing and gain detailed insight in their data | 4.02 | 14.742 | 0.000 |
| 4. | AI has potential of transforming business models by generating efficiency in several operations | 4.10 | 15.577 | 0.000 |
| 5. | AI helps in recognizing abnormal and suspicious financial transactions | 4.12 | 16.121 | 0.000 |
| 6. | AI has helped customers checking their account balance, payment schedules, and other financial activities through online services | 4.00 | 14.151 | 0.000 |
| 7. | AI has helped financial sector in overcoming several obstacles in emerging market | 3.33 | 4.714 | 0.000 |
| 8. | AI has reduced the processing time of banking services and other activities | 3.13 | 1.865 | 0.032 |
| 9. | Effective and efficient service of banks and financial institutes through artificial intelligence attract customers | 4.27 | 18.003 | 0.000 |
| 10. | AI plays effective role in conflicting financial frauds | 3.49 | 7.068 | 0.000 |

Table 2 shows mean values of the “Role and Impact of Artificial Intelligence on Financial Technology” the first statements of T-test is about impact of AI on operation and fraud management “AI transform the operations by providing effective risk and fraud management services” mean value is 4.33, next statement is about revolution brought by Artificial Intelligence in financial sector “AI has revolutionized the way financial institutes and consumers manage their finances” the mean score is 4.17. Third statement talks about predicting consumers behaviour “AI in Fintech companies enable them to predict behaviour of customers by just interfacing and gain detailed insight in their data” mean of 4.02, another is about transformation of business model by AI “AI has potential of transforming business models by generating efficiency in several operations” mean of 4.10. Fifth is identifying suspicious activities through AI “AI helps in recognizing abnormal and suspicious financial transactions” mean of 4.12, next one regarding online services enjoyed by consumers “AI has helped customers checking their account balance, payment schedules, and other financial activities through online services” mean score is 4.00, next statement is about overcoming market obstacles “AI has helped financial sector in overcoming several obstacles in emerging market” mean of 3.33, next statement is reducing processing time of financial and banking services “AI has reduced the processing time of banking services and other activities” with mean of 3.13. Statement “Effective and efficient service of banks and financial institutes through artificial intelligence attract customers” and “AI plays effective role in conflicting financial frauds” mean scores are 4.27 and 3.49. T-value of survey statements with regards to Role and Impact of Artificial Intelligence on Financial Technology are significant as t-value of statement is positively significant as the value is less than 0.05.

CONCLUSION

Many financial institutions or companies are implementing AI in their effective operations to assess, evaluate and clarify the creditworthiness appropriate to their capable consumers within innumerable new and innovative ways (Kshetri, 2016). The above discussed roles of Artificial intelligence in Fin tech provide us numerous illustrations on how it can drastically reduce various kinds of operating and other costs that enable them to increase their efficiency. Artificial intelligence is able to execute numerous routine activities rapidly and efficiently. These

effective operations for promoting financial inclusion all over the world by AI are an essential solution in improving the living conditions as well as all inclusive quality of consumer's lives. It ensures each and every in addition to customer and enterprises access to every useful kind of products as well as services to encounter their requirements at an affordable rate. Inclusion of AI has made several operations very easy because some roles are very much time consuming and sometimes on a par impossible for human executives to comprehensively identify and analyse all other relevant data (Allal-Chérif, et.al, 2021). Increases in its implementation have various possible negative impacts on employment and privacy and it can lead towards high unemployment rates in many developing countries. There are numerous challenges that need to be overcome with the maturity of technology. T-value of every statement in the context of Role and Impact of Artificial Intelligence on Financial Technology is significant because t-value statements are found to be positive and significance value also less than 0.05.

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