MANAGING RISK WITH ARTIFICIAL INTELLIGENCE IN FINTECH MARKETS

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Abstract
This paper intends to study role of artificial intelligence in managing risk in fintech markets. Fintech refers to financial technology in which financial services are rendered to the customers through digital technology. The study is qualitative in nature. Data collected from secondary sources. The objective is achieved through a thorough review of existing literature. The study reveal that there are a variety of techniques based on artificial intelligence can be used to manage risk in fintech market.

Keywords: Artificial intelligence, risk management, fintech services.

Introduction
Risk is an inseparable element of every business. No one can survive without facing risk. Success can achieve only through managing risk with at most all care. In this digital world intensity of risk is increased with the development of technology. Managing risk requires the ability to foreseen the future. It can be done through the latest technology like artificial intelligence. Artificial intelligence can be applied in almost all the aspects of life, especially in different areas of business. Finance is the valuable resource and it should be handled with sufficient care. In financial sector a number of relevant activities are taken place ranging from simple credit decisions to complex financial risk management.

Artificial intelligence refers to the use of computer systems that can perform tasks that would require human intelligence. It can be termed as weak artificial intelligence if it developed to act in a particular situation and need not to think themselves. If a machine having the capacity to think, act and can learn from the experience it is termed as strong artificial intelligence. Application of artificial intelligence in financial sector changes the method of dealing with money. Fintech is a new development in the financial sector. Fintech is the word comes from the FINancial
TECHnology, which consists of new technologies that is used to improve the use delivery of financial services.

Fintech market in India is growing fast in accordance with the trends in global financial markets by promising fast, inexpensive and transparent financial services. Artificial intelligence can be used in different areas of fintech services. This study is intended to analyse the role of artificial intelligence on managing risk in fintech markets.

Objectives

1. To understand the important fintech services
2. To identify the risks associated with fintech
3. To study the role of artificial intelligence in risk management of fintech services.

Literature Review

(Giudici, 2018) identified big data analytics, artificial intelligence and block chain technology are the important technological drivers of change in fintech markets. In order to minimize the negative impact of financial technology on consumers and investors, develop appropriate risk management methods.

(Al-Ajlouni & Al-Hakim, 2019) argued that banking industry is influenced by the financial technologies. The future of banking industry including opportunities and threats are shaped by fintech. (Al-Ajlouni & Al-Hakim, 2019) recommended responses to overcome the challenges of fintech on banking industry.

In order to keep satisfied customers banks are using artificial intelligence for automating their processes, upgrading their infrastructure and applications. The threats which are faced by banking during this process are less maturity, reluctant industry adoption, increased technical complexity and reduced transparency. (R. Vedaprabha, 2001)

Methodology

The study is qualitative in nature. The source of data is secondary. The method of data collection is review from secondary sources.
Financial Technology

(Financial stability board, 2017) defines fintech as a financial innovation based on technology which results in development of new business model, applications, products or services having impact on financial markets. In other words fintech refers to any technology used to render financial services from business to customers. Fintech uses internet, mobile devices, and software technology or cloud data. Fintech Market is an industry consists of those type of companies which supplies financial services through software or other technology to the customers.

Fintech services

- **Crowd funding platform**: Crowd funding platform is an important innovation of fintech. It allows the customer to send and receive money from others on a platform through internet and application software.

- **Blockchain**: It is also termed as Distributed Ledger Technology (DLT). It is a decentralized ledger in which all transactions are available for a group of people. Through this technique clients can identify and confirm transactions without consulting a central clearing authority.

- **Cryptocurrency**: It is an electronic medium of exchange which is created and stored in blockchain. Cryptocurrencies are encrypted to control the creation of monetary units and clients can easily verify the transfer of funds.

- **Mobile payments**: Drastic rise of internet connectivity enhances the use of mobile phones. Fintech made it possible to make payments using mobile phones through some application softwares.

- **Robo-advisors**: Robo-advisors are digital platforms where automated and algorithm based financial planning services are given to the clients. Data about the clients are collected by the robo-advisors through online surveys and use it as a basis for giving advice to clients.

- **Stock trading apps**: Another innovation in fintech is stock trading apps. Through a smartphone having internet connectivity, clients can use stock trading apps for buying and selling of stock at anywhere.

- **Budgeting apps**: Through budgeting apps clients can easily keep details of their income,
expenses and other related information on their mobile phones.

Risks associated with Fintech Services

Fintech promises so many benefits and opportunities. Besides these promises it is not free from certain types of risks. The following are the risks associated with fintech according to (Bank for International Settlement, 2017).

- **Strategic risk:** If the new entrants are able to use new technology more efficiently and can provide better services to the customers at minimum cost, the existing financial institutions may lose a part of their market share and profit margin.

- **High operational risk- Systemic dimension:** The entrance of new fintech firms leads to more IT interdependencies between market players and market infrastructures, this may results complexity of the system. If the new players have minimum experience it will results IT risks.

- **High operational risk- Idiosyncratic dimension:** Rapid increase of innovative financial products and services may leads to complexity of financial services delivery. It will cause more difficulties to manage and control operational risks. Using more third parties through outsourcing increases the complexity and reduces transparency of transactions. This may leads increase in risk on data security and privacy, cybercrime and customer protection.

- **Difficulties in meeting compliance requirements:** If the customer makes payments the firm has the responsibility to inform the customers about the transactions.

- **Risk on data privacy:** This type risk arises when a fintech firm is not following data privacy rules and thus it leads to less security to the customer data.

- **Outsourcing risk:** One of the prominent risk of a fintech firm is to monitor the activities take place outside the university.

- **Cyber risks:** Cyber risk is present in every aspect of business due to the development of technology. Increased connectivity between financial market players can be a chance of increasing cyber threats. The fintech firm should promote effective management and control of cyber risks.
Liquidity risks: Liquidity risks arises when the customers enjoy the flexibility in converting financial assets according to their convenience. This will help to increase efficiency, customer loyalty and flexibility of deposits. But this may lead to higher liquidity risks.

Managing risk with artificial intelligence

Artificial intelligence can be applied to improving efficiency in operations of fintech. The techniques like deep learning, neural networks, and natural language processing are used to simplify operations. In fintech services artificial intelligence can take a role from deciding how much a financial institution can offer to its customers as loan to detecting frauds.

(Lynn & Mooney, 2019) Categorized risks in fintech are credit risk, market risk, operational risk.

Credit risk

Credit risk is the chances of loss resulting from the non-payment of principal and interest by the borrowers. It is not easy to identify who will make non-payment. The intensity of credit risk can be minimized through earlier identification. Time is the important factor in controlling credit risk. In fintech, artificial intelligence can be used to control credit risk. Early Warning System (EWS) is an application using artificial intelligence. It will help the credit analysts make prompt decisions. EWS collect sufficient data related to customers and analyse the same to identify whether any client may expose potential risk. Another way to minimize credit risk is to use artificial intelligence for taking better lending decisions. And thus credit risk can be controlled.

Market risk

Market risk is mainly associated with the investment and trading in financial markets. It is otherwise known as systematic risk. The important variables cause market risk are recession, political conditions, changes in RBI’s policies and natural disasters. Market risk affects the whole financial market at the same time. Traditionally the statistical risk management tool VaR (value-at-risk) is used to analyse the market risk. In fintech stress testing market models based on artificial intelligence is used to identify possible risk in the trading pattern. Another deep learning model used to assume market risk is cluster analysis. Support Vector Machine is another
technique used for assessing market risk.

Operational risk

Operational risk is due to either internal causes or external causes. Use of artificial intelligence can minimize the effects of internal causes by enhancing the pace of daily works, minimising human errors, processing of unstructured data for to evaluate risky clients. Know Your Customer(KYC) is another technique using artificial intelligence helps to know the customers thoroughly so that credibility of the customers can be ensured.

Conclusion

Financial technology(fintech) brought several innovative techniques to enhance financial services. Crowdfunding, block chain, cryptocurrency, mobile payment, robot advisor, stock trading apps and budgetary apps are the important techniques among them. There are certain types of risks associated with fintech services. These risks can be minimized using several techniques under artificial intelligence.

References
