

Financial Technology for the Sustainable Development

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Abstract:

The Sustainable Development Goals (SDGs) are the critical goals for every country in the world. A stable global financial system is needed these days to satisfy its duty to boost private capital mobilization to achieve sustainable development and steady economic growth. However, several obstacles limiting such financial mobilization have been identified by scholars, practitioners, and standard setters. In recent times digital transformation and advancement, specifically in the finance sector, include a wide range of technological

developments, and applications such as blockchain, the Internet of things, big data, and artificial intelligence are promised to enhance performance in the financial sector. The potential of digital applications in the finance sector to resolve critical obstacles in financing for inclusive and sustainable growth becomes evident. Financial inclusion is indisputably one of the most significant processes towards achieving the Sustainable Development Goals and FinTech is one of the best methods for these goals to be accomplished.

The Fintech industry in India is rapidly expanding and the purpose of this paper is to discuss issues such as fintech drivers, shortcomings of traditional financial services, and the role of technological advancement. The paper also addresses issues relating to fintech investment and disturbance. Financial technology faces challenges such as investment management, customer management, and regulation. The paper examines the evolution of fintech in the banking sector over time. But as we are aware a country like India lacks proper infrastructure

and management and the objectives of banking can't not be attained easily. All the issues and challenges faced by the government and financial institutions have been discussed in this paper along with the important and different strategies adopted by them. The study is based on secondary data and a literature review.

India has surpassed the global fintech adoption rate to promote financial transactions with the help of technology. Demonetisation and implementation of the GST (goods and services tax) have also played a major role in the adoption of financial technologies among the masses. Also, the announcement made by the government in 2017 to decrease the amount of paper currency in circulation has elevated its awareness. Blockchain is another financial technology that is being used in the industry. Out of the total "fintech" technologies, blockchain was developed for finance which is directly connected to financial institutions. The main aim of Blockchain in financial services is decentralization where we do not trust a third party to execute transactions. It includes services such as transferring funds between banks and companies. While trading in capital markets, innovative electronic trading platforms facilitate online trade and real-time transfers. Trading networks allow investors to observe the trading behavior of their peers and expert traders

and to follow their investment strategies on currency exchange and capital markets. These platforms require either very little or no knowledge about financial markets. An automated financial advisor provides financial advice or online investment management with moderate minimal human intervention.

Financial technology, better known as 'fintech', is one of the fastest growing areas of the information technology industry. The sector emerged from the integration of technology and traditional financial services. The digitization of financial services and money creates opportunities to build more efficient and inclusive financial services which thereby enhances economic development. Incorporation and implementation of the opportunities and policies not only empowers the country but also encourages safe financial innovation and adoption.

Due to the advancement in technology the boundaries of both financial firms and the financial sector are increasing. Innovative infrastructures provide products such as business models, and market structures which shapes market outcomes in thoughtful ways. The market outcomes remain aligned with core policy objectives as the financial sector continues to transform with policy trade-offs. This publication explores the implications of financial technology (fintech) and the digital transformation of financial services for market products by playing the role of the regulatory body and also supervises financial services. It offers high-level perspective for senior policymakers accompanied by a set of technical notes that focus in detail on selected salient issues for a more technical audience.

Globally India's fintech adoption rate recorded the highest in the world with 87% which is well above his global average of 64%. Digital India initiative, the enabling policy environment, and the presence of a sizeable talent pool are some of the factors included in it.

Due the pandemic almost all other sectors experienced slowdowns in their growth except the fintech sector which boomed because of COVID-based restrictions i.e. limited physical movement that has encouraged contactless transactions. As per the study conducted by the Boston Consulting Group (BCG) in association with the Indian Chamber of Commerce movement that promoted contactless transactions and concluded that India's fintech industry could reach \$150-160 billion by 2025.

India faces many developmental obstacles which are majorly achieved by SDGs. Substantial investments in infrastructure, education, healthcare, and job creation are needed to accomplish the SDGs in India. Some targeted initiatives were also taken to support the most vulnerable people. Although the success of these actions largely depends on having a sound financial system which can be enhanced by making financial services available at affordable and widely acceptable. Fintech contributes particularly in alleviating poverty, advancing sustainable agriculture and food security, expanding access to healthcare, advancing gender equality, and facilitating the use of clean energy across India. For addressing the framework of the world's most critical concerns which are provided by Sustainable Development Goals (SDGs) i.e. poverty, hunger, gender inequality, and climate change are some

LITERATURE REVIEW

The Factors of Fintech by Thien Phat Pham et al.

Al reviewed the literature for scholars. They confirm that fintech is the essential factor in the financial industry. After review and discussion, they determined that banking fintech and external fintech are key components of fintech. Fintech Outsides consists of Outside's disruptive technology and business environment.

Implications of the Fintech Revolution on the Future of Banking:

Opportunities and Risks (VICTOR MURINDE et al.) Future opportunities and threats for banks in the financial services sector, reviewing the growing literature on FinTech and Fintech-enabled services. Focus on They show how regulations, global structures and geopolitical frictions will shape the future of the banking sector around the world, and also provide the most important policy implications of previous research.

Digital Markets and Fintech to Support Agricultural Sustainability by MUHAMMAD ANSHARI et al.

It was argued that agricultural sustainability can be enhanced by enabling innovation in services such as FinTech and digital markets. Fintech-fuelled digital markets have the potential to make agribusiness processes more sustainable in terms of financing and distribution.

The study aims to fulfil the following research objectives

1. To comprehend the significance of Fintech in terms of financial inclusion.
2. To investigate the role of Fintech in achieving Sustainable Development Goal: Building resilient Infrastructure and Digital Payment Systems.
3. To comprehend the key growth drivers that contributed to the transition from a cash-driven economy to a tech-savvy economy.
4. To analyse the awareness of digital transformation of financial and fintech services.
5. To find the major preferences in the fintech services.
6. To research the rights and responsibilities of various stakeholders (government, institutions, corporate bodies, regulatory bodies) to establish a fintech-enabled ecosystem.

RESEARCH METHODOLOGY

Research methodology is the main key point of any kind of research which we have done during our research study time. In the research methodology we find out the different types of solutions from the neutral people or say from real market survey, from the questioning or say direct interview with the industry people as well as students and other peoples who are currently working or have some basic knowledge with the any kind of or related our research industry so we can easily asked them some questions about our research like in our project we can asked that about FINTECH how it will be in their past and what are their future demand. By that questions answer we easily analyse our research and made some good frame for our project.

Source of data collection

The data collection method utilized for the research purpose was primary and secondary in nature. Primary data collected from by questionnaire with the help of google form. Secondary data collected from various sources like google scholars, Wikipedia, lead squared etc.

Research type

For the study purpose I have use Qualitative Research methodology. Qualitative research involves no numerical data, such as opinions and literature. Examples of qualitative data may include survey, participant comment, observation, google form etc.

Constraints of the Study

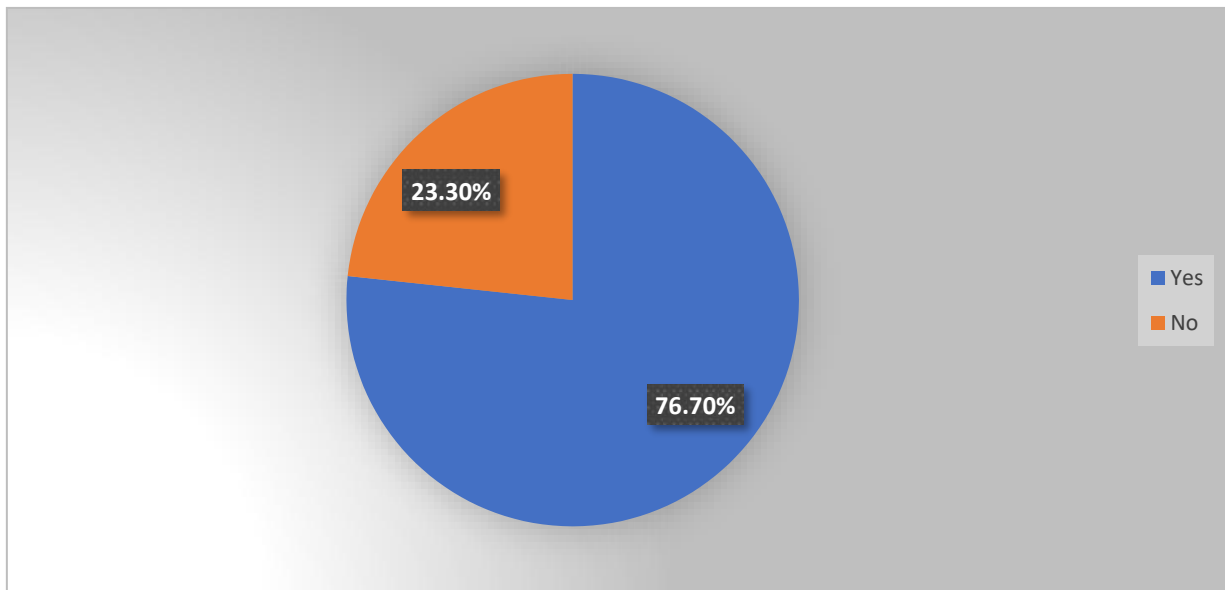
The constraints of this research paper are in the survey which is conducted via google forms. We cannot take whole people opinions; we can take only few people to get information and their opinions towards fintech and digital transformation of financial service. On the basis of that respondent, we have collected

the data.

Results and Discussion

1. People aware about the fintech services.

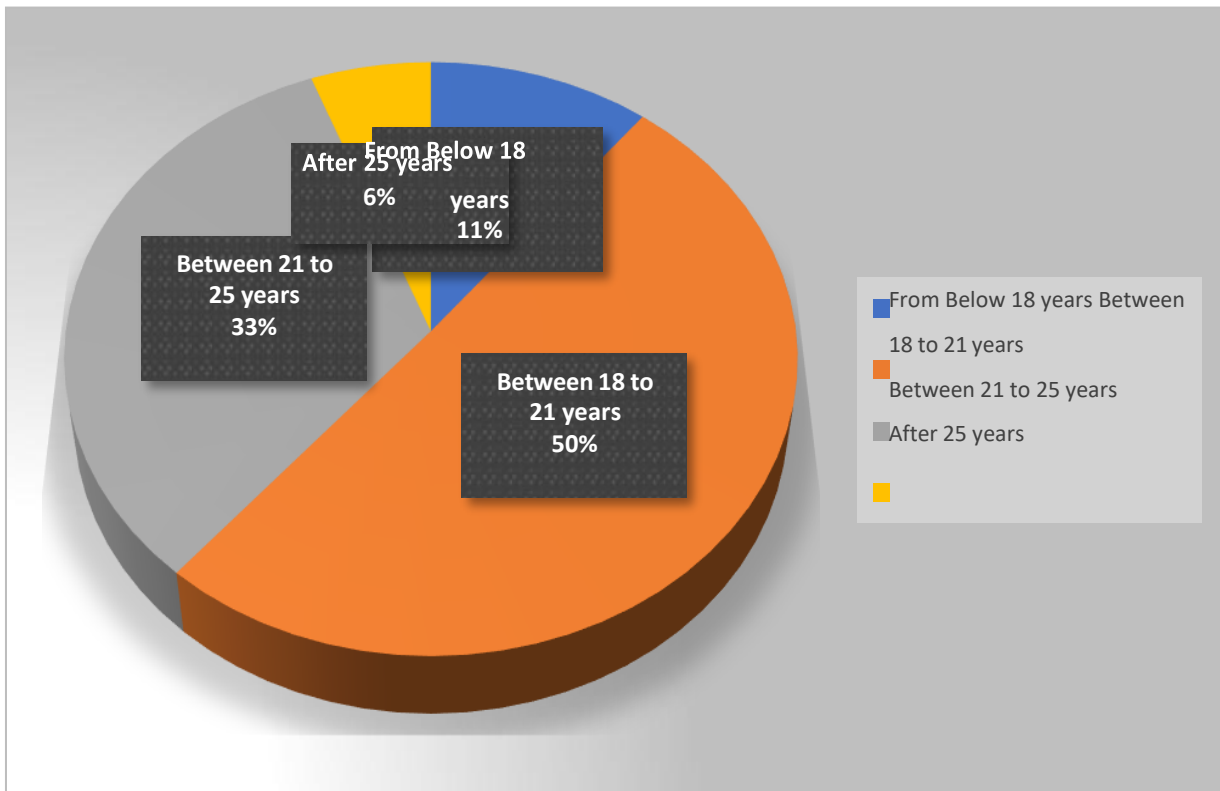
Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	79	76.7	76.7	100.0
No	24	23.3	23.3	23.3
Total	103	100	100	



Interpretation: As per the analysis done it was found that 76.7% people are aware about fintech service and 23.3% of people are not aware about the fintech and digital transformation of financial services. In our country, some people are aware about the fintech services and they use those services but there are some portions of people that aren't aware of the services.

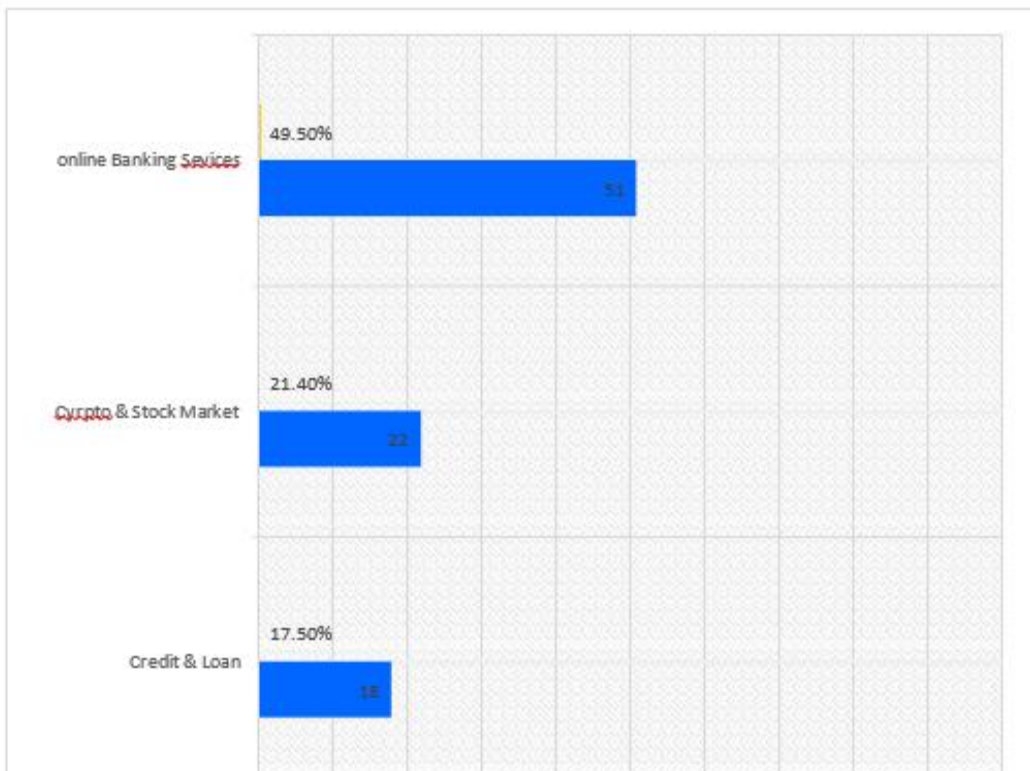
2. From which age of people are aware and use the fintech service?

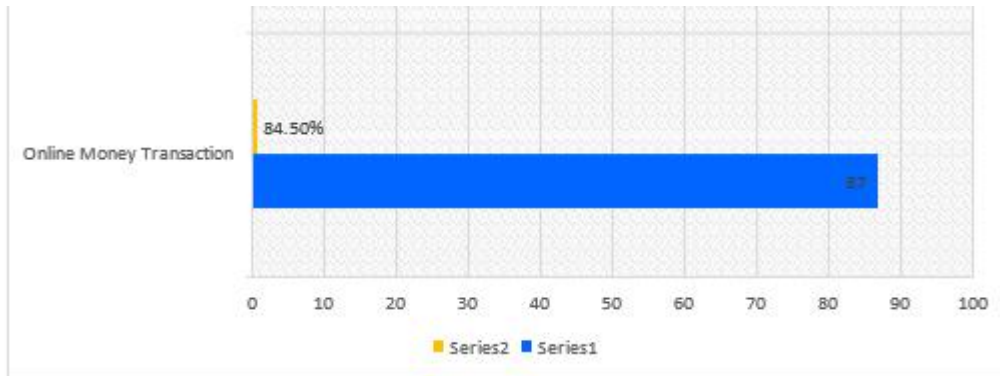
	Frequency	Percent	Valid Percent	Cumulative Percent
From Below 18 years	11	10.7	10.7	10.7
Between 18 to 21 years	52	50.5	50.5	61.2
Between 21 to 25 years	24	30.0	30.0	94.2
After 25 years	6	5.8	5.8	100.0
Total	103	100	100	



Interpretation: From the above table and chart, it was evident from the information that maximum number of people who are using fintech services are in the age group of between 18 to 21 which is approx 50.5% of whole population and there is a small number of people which uses fintech service after the age of 25.

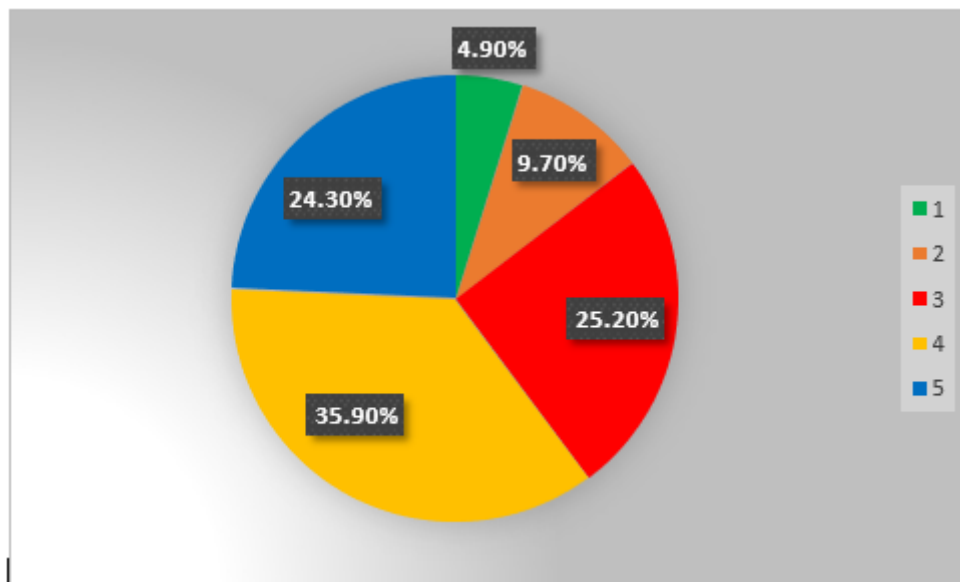
3. What kind of fintech service is more useful by the people?





Interpretation: According to the research it was found that mostly people use fintech for online money transaction with 49.50 %. Although there are various other options like credit and loan, crypto and stock market, online banking service where people use for online money transaction and for online banking service is more. Majority of people use online money transaction with highest percentage of 84.5 %.

4. What is the rating of fintech on basis of security level



Interpretation: From the above pie chart, it can be interpreted that 35.9 % of people give four rating out of five to fintech on the basis of security, 25.2% people give three rating out of the five and there are only 4.9% of the people who give 1 rating out of five which shows that less people feel secure while using fintech services.

Contribution of Digital Finance to achieve 17 SDGS

Financial inclusion and FinTech are not impartial and the financial service sector plays an important relation to UN SDGs. Both the dimensions play a critical role in creating a prosperous world in the future. Capital markets overcome the difficulties that are faced in payment services, long-term lending, insurance services and savings/investment options to support the financial service sector through FinTech. It also contributes to all of the 17 UN SDGs.

TECHNOLOGICAL APPLICATIONS IN FINANCIAL SECTOR

2.1. Mobile (or Cell) Technology

Technological developments of mobile have allowed ‘mobile money’ and activated computer programs

to work on smartphones through applications which provide access to a wide range of goods and services. These techno-financial transactions, commonly known as mobilemoney (MM), m-banking, or mobile transfers, are gradually being incorporated into the global financial capital structure. Enabling and endorsing technology-aided resources for maximising financial inclusion is a repeated theme in the United Nations Sustainable Development Goals (Ochara & Mawela, 2015; Hoang et al., 2020). Electronic payment systems have transformed mobile telephones into interfaces with the financial sector and are now trusted by billion people. Electronic payment systems (EPS) in developing countries have included a new delivery mechanism (through agent networks, secure communication and a power supply for them) and improved compatibility so that users of various applications and technologies can make seamless transactions that are as good as cash (Foth et al., 2011). During crises and pandemics, digital payment technology has contributed a lot in socio-economic development through financial inclusion and security protection. Originally, mobile money platforms (MMPs) and mobile wallet technologies allowed electronic transactions through smartphones were developed for person-to-person (P2P) and money transfers, with the potential for broad accessibility (Ochara & Mawela, 2015).

Some of the used technologies inside the financial services industry are artificial intelligence (AI), big data, robotic process automation (RPA), and blockchain.

2.2. Machine Learning & Artificial Intelligence (MLAI)

Artificial Intelligence is a comprehensive term for many different technologies. Under the "fintech" industry, AI is used in various forms. Use of AI algorithms can be put to predict changes in the stock market and give insight into the economy. It provides insight on customer spending habits and allows financial institutions to better understand their clients. Another AI-driven tool is Chatbots which banks have started to help their customers.

2.3. Big Data

Another "fintech" technology is Big Data that financial institutions utilize. For building new strategies and portfolios, big data can be used to predict client investments and market changes in the finance sector. It can also be used to analyse customer spending habits and which thereby improves fraud detection. Segmented marketing strategies can be used to optimize the operations of a company with the help of Big Data.

Robotic Process Automation is other artificial intelligence technology that focuses on automating specific repetitive tasks. In terms of "fintech", RPA is used to perform manual tasks that are often repetitive and to be completed on a daily basis. The tasks involve the input information into a system and do not require much skill. Thus, RPA can complete the task more efficiently and quicker. Financial information such as accounts payable and receivable are processed more efficiently with the help of RPA instead of the manual process

with accuracy. The productivity of the financial company can be increase with the use of RPA.

2.4. Blockchain Technology

Blockchain is another important financial technology that is to be used in the finance industry. Blockchain was developed for the purposes of finance and thus has direct ties to financial institutions. The main purpose of using Blockchain in financial services is because of decentralization, where we do not need to trust a third party to execute transactions. However, blockchain is still an emerging technology for many companies recognizes its impact and are investing accordingly.

The other forms of fintech technologies are that act to supplement and enhances the existing financial services. These include services such as transferring funds between banks by companies such as Plaid

(company) and augmenting payroll services for consumers by companies such as Clair.

2.5. Satellite Imagery

Governments corporations take Satellite images which are also known as earth images captured by imaging satellites operated by around the world. Satellite mapping providers sell these images to governments and corporations, such as Apple Maps and Google Maps, by licensing them. Increased amount of complex and large data which is collected from a number of diverse internal and external channels, big data is summed up for providing consumers with more possibilities of real-time market perspectives. In the viewpoint of the financial sector, the analyst can access satellite images, which enable investigators to estimate historical and forecast future data such as timing and value of yields, farm crop yields, planting cycles, trends in production, the timing of the arrival of agricultural products, which can help to facilitate insights for credit assessment. In short, the introduction and development of satellite imagery-based forecast is still in its initial stages, emerging research in this area proves that satellite imagery forecasts will be able to reduce transaction expenses of accessing rural farmers, which makes financial capital more affordable for farmers, especially those in developing countries.

2.6. Internet of things (IoT)

Internet of things (IoT) can be described as a global network of interconnected objects that is exclusively addressable, based on common communication protocols. In addition, Salam (2020) stated that IoT could be used as a complex and global network system based on common and integrated networking protocols and with self-configuring functionalities. In this particular network infrastructure, physical and virtual “objects” are embedded, have identities, physical attributes and virtual personalities, employ smart interfaces, and are seamlessly integrated into the information network. In the case of IoT, this new layer of “things” can be seen as an expansion of collective human-computer interactions and communications. More explicitly, IoT can be a mutualistic connection between the physical and virtual worlds, which enables people and “things” to be linked at any time, everywhere, with everything and everyone, preferably using any path/network and service via low-cost connected sensors, and AI contributes to machine learning that automates exploration, enables smart computers to perform non-routine tasks (Khatua et al., 2020). IoT can change the relationship between companies and customers by contributing to the fulfilment of communication and interconnectivity, then integrating intelligence into devices to process information and make real-time autonomous intelligent decisions without requiring any human involvement and/or intervention ((Del Vecchio et al., 2018b; Salam, 2020). There are diverse applications of IoT in the financial service sector such as immediate customer connection, smart customer navigation, customer satisfaction enhancement, and security and business efficiency improvements. First, through the capability of IoT and MLAI, a financial institution can develop an online customer support centre, which can provide customer support services 24 hours a day and reduce the physical contact between the customer and financial providers, thus saving costs, time and human resource-intensive for both the customer and the financial institution. In addition, the IoT allows the prediction and forecast of customer shopping behaviours based on their shopping history. The business users of IoT can thus navigate and introduce customers to new products and services related to historical shopping records (Hribar & DaSilva, 2019). Therefore, this simple approach enhances efficiency and customer satisfaction. In addition, IoT can also help to generate and send personalised emails and messages with personalised financial plans, hence, enhancing customer care and services. Another application of IoT comes from authentication and security, in which customer biometrics such as fingerprints can also be stored as a security approach in accessing online banking services. Finally, the most important application of IoT comes from the possibility of

automation, in which IoT allows the deployment of daily automated financial services in the business; for instance, Citibank allows customers to access and withdraw money from the ATMs using their smartphone instead of a card, thus improving customer service and reducing the need for human resources (Perera & Zaslavsky, 2014). This section has outlined the current development in financial technologies.

In the next part, the importance of sustainable development goals is discussed.

Despite the progress in banking and online lending platforms in India and extending financial services to underserved populations, there are still obstacles to overcome, such as a lack of regulations, inadequate investment in fintech infrastructure, and a lack of coordination between fintech startups and traditional financial institutions.

Fintech adoption optimization can increase financial access to traditional financial institutions, especially for vulnerable populations like the unbanked population, which is primarily concentrated in rural areas away from traditional financial institutions. It is impossible to overstate the potential of fintech to promote financial inclusion in developing economies

However, India's financial system exhibits weaknesses from its levels of financial exclusion. This is primarily due to banks' reluctance to establish branches in neighbouring Indian countries, especially in rural areas. It is observed that 60-70% of transactions are heavily dependent on cash transactions. The continued reliance on cash transactions and the elimination of a portion of the population from the financial system highlights the urgent necessity for increased efforts towards enhancing financial inclusion in India. Also, contribution of financial inclusion to India's progress towards the Sustainable Development Goals, these obstacles must be overcome. The full potential of fintech to support the SDGs may be realized with a progressive approach to the development of underlying infrastructure and to support digital financial transformation.

Financial Technology for Sustainable Development with special reference to G20

Financial technology, also known as FinTech, has become increasingly important in driving economic growth and sustainable development. It offers innovative solutions to financial challenges, particularly in the context of the G20 countries. By leveraging the power of data science and artificial intelligence, smart FinTech enables more efficient, safe, and modern financial transactions. Financial technology has gathered significant attention in recent years due to its potential to drive economic growth and sustainable development due to its innovative solutions offered by FinTech which can revolutionize traditional financial practices. One of the key drivers behind the transformative power of FinTech is its ability to harness data science and artificial intelligence to streamline financial transactions, making them more efficient and secure.

Moreover, it has the potential to address key issues such as financial inclusion, access to capital for small and medium-sized enterprises, and reducing the cost and time involved in financial services.

By incorporating sustainable practices into its operations, such as through green lending and investing in renewable energy projects, FinTech can contribute to a more sustainable and resilient global economy. In addition, FinTech can also enhance financial transparency and integrity, which is crucial for promoting good governance and combatting corruption.

Generally, the adoption and promotion of FinTech within the G20 countries can contribute to inclusive economic growth, job creation, and poverty reduction.

In the context of the G20 countries, the potential of FinTech to address critical financial challenges cannot be understated. It can improve financial inclusion by expanding access to financial services, particularly

for underserved communities. Additionally, FinTech has the potential to facilitate access to capital for small and medium-sized enterprises, which are vital for sustainable economic development and job creation.

Also, the role of FinTech in promoting green finance and advancing sustainable development goals cannot be overlooked. By integrating sustainable practices into its operations, such as through green lending and investment in renewable energy projects, FinTech can contribute to the development of a more environmentally conscious and resilient global economy.

In conclusion, the promotion and utilization of FinTech within the G20 countries have the potential to drive inclusive economic growth, job creation, and poverty reduction, while also advancing sustainable development goals and promoting financial integrity. As FinTech continues to develop, policymakers and stakeholders need to leverage its potential in advancing a more sustainable and inclusive global economy. In this context, the G20 and the

FinTech has the potential to contribute to sustainable development by promoting financial inclusion, enhancing access to capital for small businesses, supporting green finance initiatives, and fostering financial transparency and integrity. The integration of FinTech in the financial systems of G20 countries represents a promising opportunity to drive sustainable development and achieve goals related to financial inclusion, access to capital, green finance, and financial transparency. # Challenges and Opportunities for G20 Countries in Embracing FinTech

While the potential of FinTech to drive economic growth and sustainable development within the G20 countries is significant, several challenges need to be addressed to fully leverage its benefits.

Regulatory Framework and Collaboration

One of the primary challenges is the development of a coherent regulatory framework that effectively governs the use of FinTech. With the rapid advancement of technology, policymakers are tasked with creating regulations that strike a balance between innovation and consumer protection. Collaboration among G20 countries in standardizing regulations and addressing cross-border transactions is crucial for the seamless integration of FinTech.

Cybersecurity and Data Privacy

The increasing reliance on digital platforms for financial transactions raises concerns about cybersecurity and data privacy. G20 countries need to invest in robust cybersecurity measures and establish clear guidelines for data protection to safeguard against potential cyber threats and fraudulent activities.

Financial Inclusion and Accessibility

While FinTech has the potential to enhance financial inclusion, there is a need to ensure that underserved communities have access to digital financial services. Efforts should be made to bridge the digital divide and provide education and training to promote the use of FinTech among marginalized populations.

Ethical Use of Artificial Intelligence

As FinTech relies on data science and artificial intelligence, ethical considerations regarding the use of these technologies must be prioritized. G20 countries should establish ethical guidelines

Rising above all the odds

In spite of all the odds, the acceptance rate of Fintech has boomed in five to seven years, and covid-19

proved to be icing on the cake. The increasing rate of Fintech lending and the convenience it provides to its customers i.e. both the lenders and the buyers. Moreover, the benefits of Fintech include consistency through the usage of techniques like Crowdfunding, AI, Blockchain technology, P2P lending and so on and therefore, it can add more to Sustainability as it also encourages green financing. Fintech has not at all dominated the traditional banks instead, it has made access to finance more prominent. The infrastructure which Fintech has created with traditional banks is convenient and inclusive for the users. According to a report by KPMG, Top Fintech Trends for 2022 (2021), Fintech has seen immense growth and investment in the year 2021 and the report predicted the same will follow the in subsequent years too.

Future Scope of Research

There are more than 2000 Fintech start-ups in India, and out of that the biggest category is **Payments**. Irrespective of one's job, gender, or age, everyone has bills to pay, invoices to process, and online orders to pay for. India should develop its fintech infrastructure, specifically its payments architecture, decreasing the rate of cyber frauds, as well as its soft infrastructure, relating to rules and regulations of the fintech industry to mitigate the potential risk. There is also the emergence of new concepts related to Sustainable finance like Green Fintech, Greenwashing, and so on in which work can be contributed.

Lastly, fintech in India has also performed remarkably well in the last few years since its presence. The implementation of financial technology among consumers and businesses has been growing rapidly. The expansion of FinTech is anticipated to be dynamic in the nation's progression to a sustainable financial system and high-quality economic growth. It offers opportunities for retail investors to explore and invest in products that suit the objective of environmental sustainability coupled with high-quality economic growth. However, there is a gap in the supply and demand for funds in renewables which needs to be addressed urgently for overcoming the challenge. It quickens the growth of green finance by reducing information roughness for investors and stakeholders by improving efficiency, appreciating nature assets, and promoting sustainable lifestyles to support quality economic growth.

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