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From innovation to inclusion: The dynamic influence of fintech on financial accessibility and future scopes in India

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Abstract

Purpose – The purpose of this paper is analyze the effects of Fintech and its various sub-sets on Financial Inclusion. Additionally, the authors have analyzed the presence of Fintech in India, its emergence, and its future scope.

Design/methodology/approach – As a literature review, no specific methodology is required. Findings – Research has shown core sub-sectors of Fintech like Reg-tech, Insur-Tech, Online Banking, and Digital Lending to be sectors that contribute the most to financial inclusion from Fintech if further investment is made these sectors have promising potential

Research limitations/implications – The review would prove to be a dire catalyst in the research of present Fintech situations, aiding professionals in finding key sectors where further attention and investment in financial inclusion can prove to provide positive outcomes.

Practical implications – The study highlights areas of Fintech that have the most positive impact on financial inclusion providing a clear path to investors and government officials on which areas to focus on.

Social implications – As a literature review, there are only indirect social implications in the sense that the studies reviewed could be used to impact people's lives.

Originality/value – As a literature review, originality is not an applicable criterion, however, the study adds value for the reader by highlighting gaps in the current body of knowledge and bringing together various studies in one location.

Keywords: Fintech; Financial Inclusion; Under-privileged segment; Poverty Reduction; Reg-tech; Online Banking, Insur-Tech; Digital Lending

1. Introduction

Finance technology, popularly known as Fintech, has established a formidable presence over the past few decades. At its core, Fintech is a cluster of software and technologies that provides businesses, organizations, and consumers convenience to better manage their financial operations and lives. It is quoted by respected professionals in the field of finance as a marriage of financial services and informational technology (Arner et al., 2015). However, this interlinkage is far from new, the existence of FinTech goes back to the early 21st century. In its early stages, Fintech was used as backend technology solely in financial institutions like banks. The first trace of Fintech can be found back in 1958 with the establishment of the first Trans-Atlantic transmission cable, this improvement later went on to establish Telex and hence improving related financial services. From 2018 onwards, there have massive changes to customer-oriented

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services, which broadened Fintech to different fields like online banking, peer-to-peer lending, Cyber Security, Insurance Technology, Blockchain and Cryptocurrency, data analytics and machine learning, etc. Presently, two-thirds of consumers use at least 2 or more Fintech Services (EY, 2019) and actively acknowledge the contribution of Fintech in their daily lives. Fintech has taken pre-existing finance practices and added a touch of technology to make it accessible and convenient to each person. Today, the world sees the impact this new industry has made FinTech has not only made an impact, it has planted its roots deep in the life of the common citizen. So much so, that it reflected in the numbers. Global investments in Fintech companies hit US 24.7 billion across 1076 deals in 2016 (KPMG, 2017). The FinTech Pulse Report states that global FinTech investment which was 50.5 Billion in 2017, to 111.8 billion in 2018 which was more than doubling, an unprecedented event. In 2023, Fintech investments witnessed a drop in ASPAC(Asia-Pacific) funding from 51.3 billion in 2022 to 10.8 in 2023. However, this drop is believed to be a transient correction in further permanent growth of Fintech (Boston Consulting Group,2023)

Table 1 India FinTech Investments Trends (2019-Q12020)

STAGE	Total Funding	Total No of deals
Angel	4.55	7
Seed	165.5	97
Series A	330.2	48
Series B	868.8	26
Series C	484.3	18
Series D	180.8	8
Series E	105.3	3
Series G	1818	3
Others	1452.5	53

Source: India Fintech Report 2020

A landmark moment for Fintech in India was during the demonetization drive in 2016. This drive can safely be referred to as a pivotal point for Fintech startups in India. The demonetization drive led to the ban on 500 and 1000 rupee notes, leading to a discontinuation of 86.4 % of cash from the economy overnight (RBSA, 2021). This provided a perfect opportunity for the switch from conventional cash transactions to digital payments and cashless transactions. From that point onwards, The Fintech industry has skyrocketed to unimaginable heights. Today, India has taken its position as one of the fastest-growing Fintech markets in the world. As of 2023, India has over 3,085 companies operating in the Fintech segment with the cities Bengaluru and Mumbai being the headquartered cities for Fintech operations. Sum Investments made in the Fintech sector in India crossed the 10 billion mark during the 2016- Q12020 period, the distribution of which is shown in Table 1. A 60% hike in Fintech investment was seen during the Covid-19 crisis, $1467 million in H12020 compared to the same period in previous years(RBSA,2021)

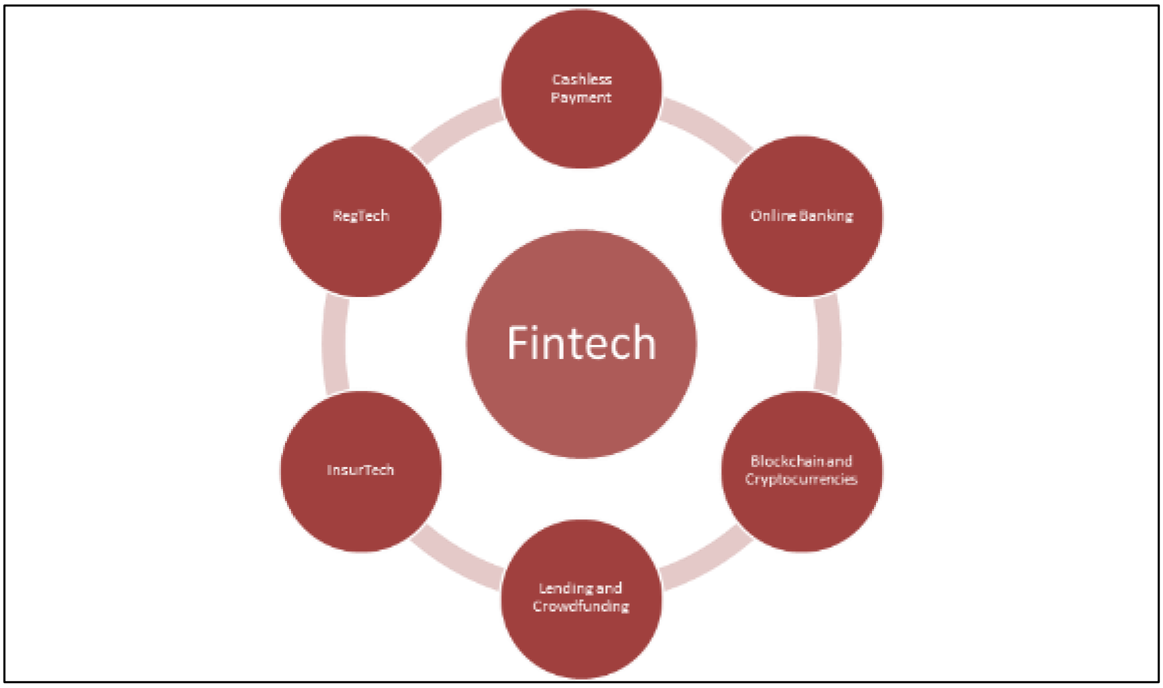
Table 2 Top FinTech companies in India

Ranking	Company Name	Business Category	City	Total Funding
1	Paytm	Mobile wallet, e-commerce platform, and payment ban	Noida	870M
2	MobiKwik	Mobile wallet, recharge, bill payments	Gurgaon	86.8M
3	BankBazaar	Online marketplace providing customized rate quotes on loans and insurance products	Chennai	80M
4	policy bazaar	Leading online insurance aggregator in India	Gurgaon	69.6M
5	FINO PayTech	Financial inclusion technology provider	Mumbai	65M
6	ItzCash	Multi-Purpose Prepaid Cash Card	Mumbai	50.6M

7	Capital Float	Online lending platform for small businesses	Bangalore	42M
8	Mswipe	PoS terminal for accepting card payments	Mumbai	35M
9	Ezetap	Payment device maker	Bangalore	35M
10	Citrus Pay	Payment gateway and mobile wallet	Mumbai	34.5M

Source: (Vijai, 2019)

Additionally, The Fintech industry spans far beyond just the banking sector, including integrations, for example, Wealth Management and Robo-Advisors, Personal Finance Management, Artificial Intelligence, and Machine Learning as shown in Figure 1



Source: Authors Compilation

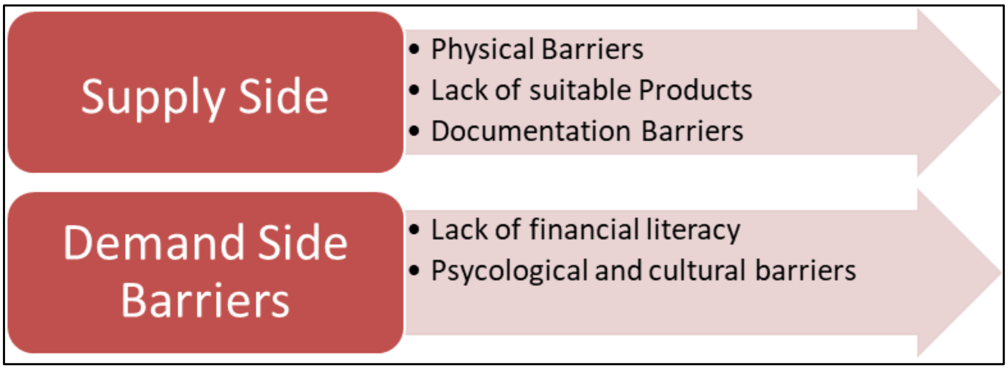
Figure 1 Key Sectors of Fintech Ecosystem

All of the aforementioned sectors come together to provide the convenience and efficiency that we often associate with Fintech. Each of these sectors contributes to providing services and obtaining the main objective of Fintech which is accessibility for the underprivileged and work towards eradication of Financial exclusion.

"Financial exclusion" is the process that serves to prevent certain social groups and individuals from gaining access to the financial system" (Leyshon and Thrift, 1995). The unquenching thirst for profit has brought upon this system that focuses on "class banking "rather than "mass banking", sullying the original theme of "social and economic development" (Kumar and D. B. P, 2011). This issue is prevalent all over the globe and in most cases acts like a barrier keeping that segment underprivileged. Financial exclusion is also one of the main factors that sustain poverty. However, Financial exclusion isn't an unprecedented concept, it dates back to before modern times, the major difference, although, is that at the time financial exclusion included a segment of inaccessibility to basic mainframe financial services due to the absence of branches of banks in rural areas and private ownership of banks. Honohan (2008) curated a composite data set to measure financial services access for 160 countries, which proved to be a "synthetic headline indicator" of access, measuring the percentage of adults with an account with a financial intermediary. The results portrayed a vast variance in the number of financial access in different countries with 100 percent in the Netherlands and 48% in India (Shankar S, 2013). In 1969, the nationalization of banks took place which ensured branches of banks were spread out, now geographical factors do not seem to be the major issue facilitating financial exclusion, although other factors have risen. This exclusion exists in many forms: -

- Access exclusion: Restriction of access under the faux title of risk management

- Condition exclusion: Wherein certain conditions are applied to financial products that result in them being unattainable to some people.
- Price Exclusion: wherein high prices are set in association with certain financial products so they are out of reach to certain people.
- Marketing exclusion: in this strategy, a social class or individual is excluded through strategic marketing.
- Self-exclusion: wherein people themselves decide to withdraw from purchasing financial products in fear of rejection, due to past incidents or inherent beliefs that “they will deny me this product due to my class, race or any factor of the such”. Further, as conveyed in Figure 2



(Source: Shankar S, 2013)

Figure 2 Banking barriers

There is no debate that finances may qualify as one of the most vital resources needed to survive in the existing period. During such a time, a concept such as financial exclusion can prove to be dire harm to society and the underprivileged segment. To combat this menace, initiatives for financial inclusion are established and implemented. A well-functioning financial system provides facilities like risk management, credit payment, offering savings programs (World Bank Document,2012). Financial inclusion systems, that are no-price, are formulated to work in favor of the under-privileged. Without these financial inclusion systems in place, the cycle of the underprivileged remaining underprivileged remains perpetual. This segment of people earns a small sum of money and is habitual to using the same sum for their livelihood, therefore, leaving a null amount for savings, investments or to better their living situation. To aid this segment of people, we introduce and endorse financial inclusion programs. In this paper, the authors explore financial inclusion and the different aspects of Fintech that have endorsed this concept.

2. Review of literature

This review of literature has been undertaken to achieve clear knowledge of the fields covered in the paper. The following papers, reports, and articles have been assorted through thorough research, having included articles with direct co-relations to the objectives of this study.

(Schueffel, 2016) The article aims to provide a short and clear definition of Fintech, that is easy to digest yet covers the full range of its application. After a thorough review of material dating up to 40 years, the author has devised this paper. This paper considers parts of both academia and practicality, that play vital roles in drawing the definition of Fintech and finally concludes that Fintech is a new financial industry that uses technology to improve financial activities.

(Romānova & Kudinska, 2016) This article analyzed Fintech integrated into Banking, diving into recent trends in the field, risks, and opportunities of this integration. Additionally, the article has touched on the changes brought into the banking sector due to the uprising of Fintech like increased investments in Fintech, rethinking business consumer models highlighting the business-to-consumers model, and increasing further standardization of back-office channels.

(Arner et al., 2015) This article has delved deep into the essence of Fintech, its origins, and how it progressed over the past 150 years. The author gives the audience an insight into the different eras of Finance Technology, taking them through the analog era, then the twentieth century where the digitalization of finance took place and finally ending at a deep analysis of the new developing and developed era. This article in every sense has portrayed the basis and foundation of Fintech while still providing an argument against its rigid regulation of the juncture.

(Appiah-Otoo & Song, 2021) Motivated by the agenda of Sustainable development goals of ending poverty by 2030, this study has used a panel of 31 provinces in China to ascertain the effect of Fintech and its sub-factors on poverty measurement in China. After the study, the author concluded that Fintech endeavors have proven to decrease poverty in China.

(UN,2015), this article studies the effects that FinTech has on poverty measured by household per capita consumption. This study was based in China and proved that FinTech has a huge impact on poverty reduction and economic growth of the country.

(Garg & Agarwal, 2014) This article aims to understand the definition of financial inclusion and the impact it has on the economic growth of the country. Furthermore, it focuses on the initiatives taken by Indian banks to promote financial inclusion in a way that contributes to the growth of the society and the Nation's economy.

(Iqbal & Sami, 2017) This article uses secondary data to analyze the impact of financial inclusion on the growth of the economy over 7 years. At the end of the study, the author found results to show that there was a positive and dire impact of the number of bank branches and credit deposit ratio on the GDP of the country.

(Arner et al., 2020) The author suggests that Fintech is the key breakthrough needed for financial inclusion and sustainability, and for the same, the author focuses on 4 primary pillars. The paper acutely explores and explains each pillar. The first pillar deals with the building of digital presence, or opening an account, followed by the opening of interoperable payment systems. The third pillar includes using the first two pillars to facilitate the Electronic provision of government services. Concluding with The fourth pillar includes the design of financial markets.

(Raj & Upadhyay, 2020) This paper analyzes the integration of technology in the finance sector and how it has shaped finance in India. The paper is thoroughly researched using sources like leading FinTech firms as well as discussions from prominent figures in the industry, Additionally, the author addresses topics like increases in the integration of banks and Fintech firms for mutual benefit, risks and mitigation to Fintech, and initiatives to harness. In conclusion, the author establishes a need to facilitate this sector through regulatory and supervisory advances.

(Kandpal, 2019) The author conducts a deep analysis of the growth of the Fintech sector in this paper. The paper includes measures taken by the government to support uprising Fintech Initiatives. Additionally, this paper sheds light on the areas of Fintech that are yet to be developed in India, addressing problems and uncertainties that may be faced by the citizens of the country due to this new uprising.

(Kovid et al.,2020) This study offers a research framework acting as a scale to measure the adoption of different financial services. With this study, the researchers aimed to provide a better understanding of the wider market targeted by the financial services field. This study uses three attributes: adoption, behavior, and technology, and explores its variation with financial services.

(Leong & Sung, 2018) This study claims to provide a reference to researchers on how to identify and develop new fintech solutions. Throughout the paper, the author dives into various segments of Fintech, touching on the history, definition, and business value in Fintech way until finally providing a satisfying conclusion.

(Vijai, 2019) This paper assesses the opportunities and challenges faced by the Fintech sector in India. The author does thorough research on the growth of Fintech in India as well as its present position in the market. Additionally, the paper provides an analysis of different aspects of the aforementioned, for example, the digitalization of financial services, and a thesis of how the Fintech industry stands to forever change the financial habits of the country.

(Sarma & Pais, 2011) This paper analyses the relation between financial inclusion and the overall development of a country. The author bases this paper on investigating country-specific factors that are related to the degree of financial inclusion. Concluding that financial inclusion indeed goes hand-in-hand with the development of a country. Furthermore, concluding that while the state of the banking sector of a country does not affect financial inclusion, ownership pattern does play a role.

(Ozili, 2020) This paper aims to provide multiple theories on financial inclusion that may act as a guiding compass to researchers and professors seeking to understand financial inclusion. The author groups Financial inclusion into different groups that may prove easier to digest (Morgan & Pontines, 2014) This paper contributes to the literature aspect of financial inclusion, providing a plethora of measures contributing to financial stability. Additionally, the author has unearthed evidence pointing towards measures like lending to small-medium businesses proving to facilitate financial stability.

(Pal & Pal, 2014) This paper seeks to identify the reason behind financial exclusion in a developing country such as India. The author took the responses of 100 respondents in the state of West Bengal to draw out this paper. The paper concluded that 'work status', 'head of (Koku, 2015) This paper is a review of the literature that highlights plotholes in the current research on financial exclusion and presents a direction for future research. This study focuses on Fintech, credit systems, personal finance, and borrowing.

(Leyshon and Thrift, 1995) This paper is an attempt to bring to light the series of events taking place in the UK and the United States that resulted in the facilitation of financial exclusion. This paper dissects what the cause of this financial exclusion was and how the endeavor came into existence, the different pieces that finally came together to form the system of financial exclusion in the aforementioned countries.

(Kumar & D. B. P,2011) This paper dives into a comprehensive study of Financial exclusion and its sub-categories. The author discusses the factors endorsing financial exclusion, theories of financial exclusion, and strategies addressing financial exclusion and derives an informative and concise conclusion about financial exclusion.

(Sanderson et al.,2018) The author aims to explore the determinants of financial exclusion in the audience of Zimbabwe. The author identifies the negative and positive factors that influence financial inclusion. Additionally, the paper offers solutions and ideas to the government to enable financial inclusion in the country.

(Barik & Sharma,2019) This paper aims to unearth the present and upcoming progress revolving around financial inclusion. The author highlights the Pradhan Mantri Jan Dhan Yojana and its positive impact on financial inclusion in India. Furthermore, it includes the areas that need further excelling, bringing to light the different segments that have been ostracized from gaining financial literacy and therefore financial inclusion.

(Chowhan & Pande 2014) This paper focuses on financial inclusion and The Pradhan Mantri Jan Dhan Yojana (PMJDY). The author explores the positive acceleration of financial inclusivity after the announcement and implementation of the scheme. Additionally, a deep analysis of the scheme, its effects, and its sub-sectors are covered in this paper.

(Lusardi & Mitchell, 2011) This paper contributes theories towards the understanding of financial literacy. The author uses researched information to draw light on the similar financial literacy rates in developed and developing countries. Furthermore, the paper highlights the marginalized group that isn't exposed to the same privilege, hence eschewing the same opportunities a more financially literate person would gain. Additionally, the author states that financially literate individuals are more susceptible to curating a retirement plan. Concluding that, the globe's financial literacy rate is critical for retirement society.

(Garg & Singh, 2018) This paper is a literature review analyzing the rates of financial literacy among the youth. The author focuses on two topics, the first being socioeconomic factors that affect financial literacy, followed by the interdependence between financial knowledge, financial attitude, and financial behavior. Through the author's findings, it is concluded that the financial literacy rates among the youth are at a concerning down-swing. This study provides a reference for future policies made in the interest of financial literacy among the youth.

(Agarwal et al.,2015). The author intends to understand financial literacy and planning rates. The paper uses 3 fields of measurement, first collecting data through surveys on 3 questions used to determine financial literacy. Secondly, using the survey-driven data to compare data across socioeconomic and demographic groups. Finally, examining the investment behavior, liability choice, risk behavior, etc. To conclude the 3 fields.

(Diniz et al.,2012). This article uses an ICT-based model to study the scenario of financial inclusion in Autazecs, a county in the Amazon region that just as recently as 2002 was served with the opening of banks and therefore introduced the world of banking services. The author explores the negative and positive effects of this change in the population of Autazecs. Concluding that while Fintech services are a healthy way of endorsing financial inclusion, financial education, and other inclusive measures should be taken along with them (Anagnostopoulos, 2018). This paper aims to understand the position and effects of Fintech in the financial ecosystem. The paper aims to bridge academic research and practicality. This paper aims to offer valuable insight to market participants to further improve the financial services.

(Arner et al.,2016). This paper addresses the shortcomings of digitizing analog processes in the context of digital finance, lays the groundwork for a useful grasp of regtech, and suggests a series of incremental changes that regulators, businesses, and entrepreneurs in the financial industry or other may be advantageous (Butler & O'Brien.,2019). This paper dives into RegTech and the role this subset of Fintech can play in making regulatory compliance more efficient and effective. Furthermore, the author argues that semantic technologies are the gateway to RegTech efficiency.

(Charoenwong et al., 2023). This study explores the relationship between regtech and technology adaptation. Throughout the study, the author elaborates on how regtech affects technology adaptation and by default market structure and non-compliance functions.

(Tripathi & Tabassum,2022). This paper endeavors to elucidate and scrutinize the factors contributing to the proliferation of the Fintech sector, as well as the possible obstacles and opportunities that this industry is presently confronting within the Indian milieu, (Abidi, 2021). This paper hypothesizes that when compared to advanced economies and emerging markets, the relative amount and growth trend of financial assets in India provide rise to a promising future for the country's financial sector.

(Carriere-Swallow et al.,2021). This paper commences with some information on the Indian financial landscape pre-adaptation of the financial stack reforms. Further, it elaborates on the reforms that have shaped India's stance on open data and banking. Lastly, it addresses the primary design decision made for the India stack and its possible ramifications. It also offers some analysis regarding the applicability of certain Indian approach components in other nations.

(Buckley et al., 2019) This paper follows the research of (Arner et al., 2020), scrutinizing the 4 pillars, surfacing the notion that they are and will continue to endorse the growth of the RegTech ecosystem in Europe. We contend that the regulatory reforms about financial services and data protection implemented by the European Union have inadvertently stimulated the adoption of regulatory technologies, or RegTech, by intermediaries, supervisors, and regulators, and created an atmosphere conducive to RegTech's growth. Europe's experiences in this process will help other societies build their own RegTech ecosystems to support inclusive, stable, and more effective financial systems.

(Afjal, 2023) The author aims to identify influential authors, institutions, and journals, analyze, publications trends, evaluate geographic distribution, identify research themes, and identify highly cited articles are all goals of the projects. The conclusions highlight the importance of digital financial services in addressing the shortcomings of traditional financial institutions and show a rise in interdisciplinary interest in FinTech and financial inclusion since 2016.

(Liu et al., 2021) This study sought to determine the empirical role of Financial inclusion, Green Financing, and Fintech on the energy efficiency of E7 economies. Furthermore, this study also provided a conclusion to the stand of the three in the aforementioned terms. Concluding that Green Finance is the most pivot for energy efficiency.

(Kwon et al., 2023) This paper elucidates the factors of Fintech acquisition in banks. The author released three scenarios based on hand-collected data, (1) female majority bank boards and CEOs with longer tenure were more susceptible to investing in Fintech services (2) banks that had a heavy investment in IT services did not have a penchant for Fintech services and (3) Smaller banks with less investment in IT sector were more inclined to Fintech investments.

(Najaf et al., 2023) This study aims to shed light on the relationship between corporate governance and market performance in times of crisis, offering keen insights to start-up owners, government, policymakers, etc. The findings of this study highlight the significance of corporate governance in times of financial distress and its impact on shareholder perception, particularly about fintech companies.

(Beck, 2020) This paper focuses on three areas (1) Financial inclusion development mainly in Asia, (2) the impact of novelty Financial technology on the progression of Financial inclusion, (3) the implications of the growing presence of Fintech and big companies on financial inclusion (Demir et al., 2020) This paper scrutinizes the parallels between Financial Inclusion, FinTech, and Income Inequality for a panel of 140 countries. The author argues that through Financial inclusion, Fintech has a direct and indirect impact on income inequality. The author uses quantile regression analysis to prove this theory across varying regions.

(Goswami et al., 2022) This paper analyses the success factors involving the endorsement of disruptive financial technology. The author suggests that the social influence-building factors have a positive impact on the behavioral intention to use manager technology in India's rural areas.

(Makina, 2019) This paper scrutinizes how Fintech is making considerable enhancements to financial inclusion. The author touches on the history of Fintech globally, as well as in Africa. Additionally, the author also highlights the two fields that have the highest contribution and potential for financial inclusion which are mobile technology and crowdfunding. Concluding on the note that while immense potential exists, this potential can only be tapped into by expanding internet services in Africa (Singh et al., 2014) The purpose of this paper is to highlight the dire role of mobile banking in achieving financial inclusion in a country like India. The author suggests a tripartite institutional structure that includes a large network like India Post, to maximize this theory.

(Iyengar & Belvalkar, 2010) This paper analyses the trends, behaviors, and expectations about Online Banking in India. The author uses data from a large case study on customers of 4 banks. The author mentions challenges faced in the acceptance of online banking, from apprehension to lack of knowledge. The author offers suggestions on the design of the Online Banking structure to be inclined towards the comfortability of the customer, providing security, simplicity, and convenience.

(Shankar, S. 2013). This article scrutinizes the efficiency of microfinance institutions(MFI) in breaking down hindrances in the path to financial inclusion. First, the author offers the reality of MFI installation in India, bringing light to problems like the uneven distribution of MFI limited to only the areas the banking sector has reached. Furthermore, the areas MFI's do reach, the underprivileged segment is still unable to tap into these services. Additionally, the author offers solutions to improve these problems in the MFL's system.

(Nasir, S. 2013). This paper identifies the gap that still exists in the way MFIs operate. These gaps include practice related to the delivery of credit, a lack of product diversification, customer duplication and overlapping, consumption and individual loan demand without mitigation measures, a lack of emphasis on enterprise loans, the collection of loans, and high interest rates in MFIs. The author concludes the paper with some do-able recommendations for resolving the problems and obstacles related to microfinance in India.

(Dey, S. K. 2015). With the objective of sustainable development of the Micro-finance industry in India, the author has delved into immersive research to highlight the challenges to the microfinance industry in India and solutions for growth of MFI's (Sarkar, S. 2021) This article is an endeavor to analyze the growth of Insurtech in India. Furthermore, the author scrutinizes the major trends and potential of the field and also assesses hindrances for the same. In conclusion, the author highlights the upcoming potential of the Insurtech industry, consisting of the competitive landscape, market dynamics, and regulatory framework.

(Gautam et al., 2021) This study aims to understand the relation between financial inclusion and Fintech. The author uses data from 29 states over 3 fiscal years (2018-2020) to understand the derivates of this relation. Furthermore, the author offers an analysis of the current situation, along with putting forward solutions to further optimize fintech in terms of financial inclusion.

Objectives

- To study the role of Fintech in expanding financial inclusion
- To assess the impact of digital innovations on the accessibility of financial services
- To assess the role of Fintech in different fields in the past versus the role it plays in the present and its impact.
- To assess the future scope of Fintech in India

3. Results and discussion

3.1. Financial inclusion

"Financial Inclusion" describes an endeavor that guarantees all segments in an economy have easy access to the formal financial system and utilization of the aforementioned. This endeavor translates as an effective distribution of financial resources. Financial exclusion is, to put it in simple terms, the optimization of a certain group of society from basic financial services like banking, ATMs, etc This optimization pushes the marginalized segment into informal financial services. Financial inclusivity provides a hindrance in the path of informal financial practices that are more often exploitive for example, money lenders. Additionally, financial inclusivity affects the overall health of the economy, lowering poverty rates and income inequality (National Strategy for Financial Inclusion 2019-2024). Financial inclusivity includes access to financial services that are not exclusively limited to banking but also include financial services like loans, equity, and insurance products (Garg, N., & Singh, S, 2018, January 8). Hence, the concept of financial inclusivity has gained traction all over the globe. As a result, many countries have taken the initiative to introduce programs and laws to facilitate financial inclusion. In the United States, the Community Reinvestment Act(1997) mandates banks to oversee appropriate prevalence in the area of operations, not only limiting itself to the privileged segment. In France, the Law of Exclusion (1998) brought to light the importance of individual bank accounts. Similarly, In India 'The Pradhan Mantri Jan Dhan Yojana (PMJDY),2014' was introduced. This scheme was introduced to endorse financial inclusion in India. The main aim of PMJDY was to provide prevalent banking facilities to all households in India. This endeavor included introducing zero-balance bank accounts, endorsing Ru-Pay debit cards, emphasizing financial awareness and literacy, and introducing cost-effective insurance plans and Direct Benefit Transfer (DBT). This scheme was launched in 2014 and has shown to be among the most efficient initiatives for financial inclusivity in India. This scheme was launched under the National Mission for Financial Inclusivity (NMFI)

Apart from Government initiatives, there exist various approaches in favor of financial inclusion (Sarma & Pais, 2011), including but not limited to bank-led approaches, Product approaches, Knowledge-Based Approaches, Technology-Based Approaches, and Regulator Led Approach.

3.2. Product led approach

The Reserve Bank of India (RBI) conceptualized Non-Frill Accounts (NFA's) in November of 2005. Under this approach, RBI provided bank accounts with zero balance to the under-privileged. In 2012, this concept was further evolved when the Basic Savings Bank Deposit Accounts (BSBDA) additionally provided debit cards, checkbooks, and Internet banking.

Another example of a product launched for financial inclusion was the Kisan Credit Cards (KCC). During 2012, private and public banks alike distributed an astonishing 1.2 million cards that could provide credit support to be used for farm-entrepreneurial expenditures specifically.

3.3. Knowledge-based approach

Financial inclusion, financial education, and financial stability are three pillars used to facilitate the use of financial services among the underprivileged. While financial inclusion contributes to the supply aspect, financial education plays a pivotal role in facilitating demand (Garg & Singh, 2018)

3.4. Government based approach

Financial inclusion commences as a whole problem; the economy of the country can have a direct relation to the financial exclusion/inclusion practices prevailing in the country. In such circumstances, it is the government's responsibility to endorse financial inclusion to the best of its might. A few examples of government initiatives to endorse financial inclusion in India are as follows.

Stand up India Loan: The objective of this loan is to provide a loan within the range of 10 Lakh to 1 crore to at least one SC/Stand one women borrower per individual branch to establish a greenfield business in fields of service, manufacture, or trade.

The Pradhan Mantri MUDRA Yojana (PMMY) is the scheme introduced on April 8, 2015, to lend up to Rs. 10 to small businesses that are not corporations or farms. These loans are classified as MUNDRA loans under PMMY and are offered by commercial banks, Regional Rural Banks (RCCs), Small Finance Banks, Micro Finance Institutions (MFI's), and Non-Banking Finance Companies.

Sukhyana Samriddhi Yojana was launched in 2015 under the Beti Bachao Beti Padhao campaign, which offered a small deposit customed for the girl child.

Swarnajayanti Gram Swarozgar Yojana (SGSY) is a centrally funded initiative that covers all aspects of a self-owned business for poor households, from the curation of Self Help Groups (SHGs), training credit, and technology. Marketing and infrastructure.

Venture Capital Funds for SC: - In February of 2014, the Honorable Finance Minister during his budget speech for FY14-15 mentioned that IFCI would set up a Venture Fund for SC with an initial amount of 200 crores that could be supplemented each year. This initiative was taken to promote entrepreneurship among the scheduled caste.

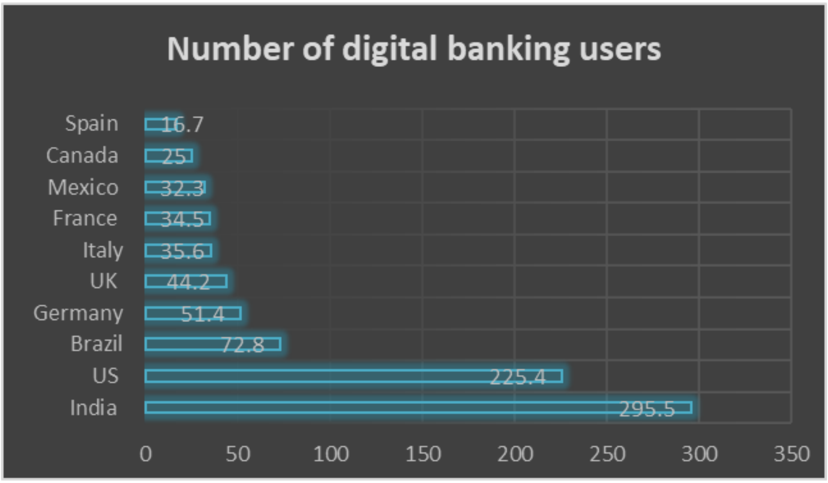
3.4.1. Fintech and its contribution to financial inclusion

As the growth of Fintech emerges in an upswing graph, the vast potential Fintech has to create a more inclusive financial system and drive economic growth is very conspicuous (Raj & Upadhyay, 2020). Recent research alludes to a strong relationship between financial inclusion stronger GDP growth and decreased income inequality. (Ravi, Shamika ,2019).

The first step to financial inclusion is possessing a bank account and having a digital presence (Arner et al., 2020). Here, KYC and biometric systems are proving to aid. In India, the adoption of Aadhaar, which is a biometric-linked identity has vastly aided the unbanked segment in completing the first step to financial inclusion and opening bank accounts and electronic wallets.

3.4.2. Online Banking

Furthermore, Online Banking played a pivotal role in driving financial inclusion. In India, the concept of Online Banking first emerged in the late 1990s. ICICI was the first to introduce the Indian population to online banking (Iyengar & Belvalkar, 2010). Since that pivotal point in history, the banking industry has never been the same. Soon the concept of Internet Banking or 'Anywhere Banking' became a trend that respective banks were eager to adopt. Over time, customers started to adopt the endeavor of online banking as an extension of banks rather than the initially intended sub-service of the bank. The convenience and availability of the banking service were unprecedented, providing primary crucial services like fund transfer, account status, loan applications, credit card verifications, etc apart from the convenience of not having to travel to bank branches (Iyengar & Belvalkar, 2010). In 2022, India established itself as the country with the highest number of digital banking users. The number of users in India stood at a whopping 295.5 million (Statista Research Department, 7 Jun 2023).



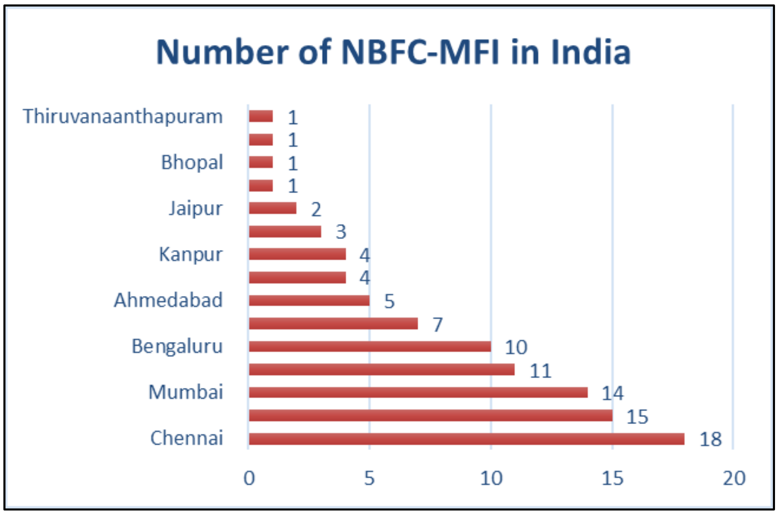
Source:(Statista Research Department, 7 Jun 2023)

Figure 3 Number of digital banking users

The Reserve Bank of India has taken advantage of FIPs to study the advancement of banks under financial inclusion endeavors. With this data, RBI has been able to make vital observations that were used in favor of financial inclusion facilitation, like in FIP 2010-2013, RBI studied while there was a hike in accounts opened (as shown on a global basis in Figure 3), the number of transactions remained a limited amount. Abiding by this information, RBI shifted its focus to increasing the volume of transactions in the three-year FIP 2013-2016. According to the information, there was a relation between the number of bank branches and the credit deposit ratio. Furthermore, the major link to the increase in financial inclusion was proven to be through increased ATM's.

3.5. Microfinance and digital lending

Microfinance can be termed as the "provision of thrift, credit, and other financial services and products in very small amounts to the poor in rural, semi-urban, and urban areas, for enabling them to increase their income levels and living standards" (Nasir, S. 2013). Microfinance has emerged as one of the main contributors in the field of finance inclusion. The concept of Microfinance is birthed through the Garmeen Model launched in the 1970's. Since then, the global market size of the Microfinance industry is estimated to grow by 122.46 billion USD from 2021 to 2026 which is an annual growth rate of 11.61%. As of June 2022, the collective gross loan portfolio for the microfinance industry in India stood at 2,930 billion INR (Next Gen Microfinance: The Role of Digital Technology, Pwb 2022)



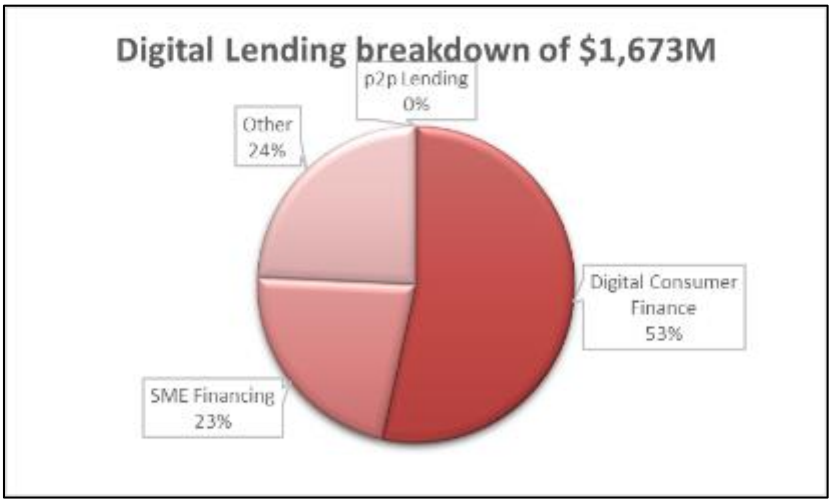
Source: Statista,2024

Figure 4 Number of NBFC-MFI in India

The Microfinance endeavor operates mainly in 2 ways.

- Self-Helf Group- Bank Linkage Programmes (SHG-BLP): SHGs are a small group of 20 people belonging to the underprivileged segment, that comes together to provide a social, economic, and financial advantage. The SHQ-BLP is an initiative brought forward in February 1992, with the intent of providing payment and credit facilities to SHGs through banks that view them as a segment. The SHG is the largest Microfinance contributor with a cumulative membership of over 11.9 million in India as of March 2022
- Microfinance Institutions (MFIs): MFIs are institutions that are focused on providing loans to the poor. MFIs use a model referred to as a Joint Liability Group (JLG). A JLG is an informal group of 5-10 customers. Figure 4 conveys the stats of NBFC-MFI's as of 2024

Additionally, the emergence of government-backed digital public goods for example Open Credit Enablement Network (OCEN), which connects lenders and loan service providers, increasing the convenience of the process and decreasing the time, travel, and complication, and the Account Aggregator (AA), an RBI-regulated entity having an NBFC AA license that helps the people gain access and provide information digitally through financial institutions. Furthermore, apart from being able to disburse loans in smaller amounts, AA and OCEN will endorse the large-scale development of creative financial credit products, proving to be a revolutionary endeavor by integrating with pre-existing technology like Aadhaar and UPI (EY,2023). Digital lending saw an investment of 1,673M as of 2020 according to India Fintech Report 2020, the distribution of which is shown in Figure 5.

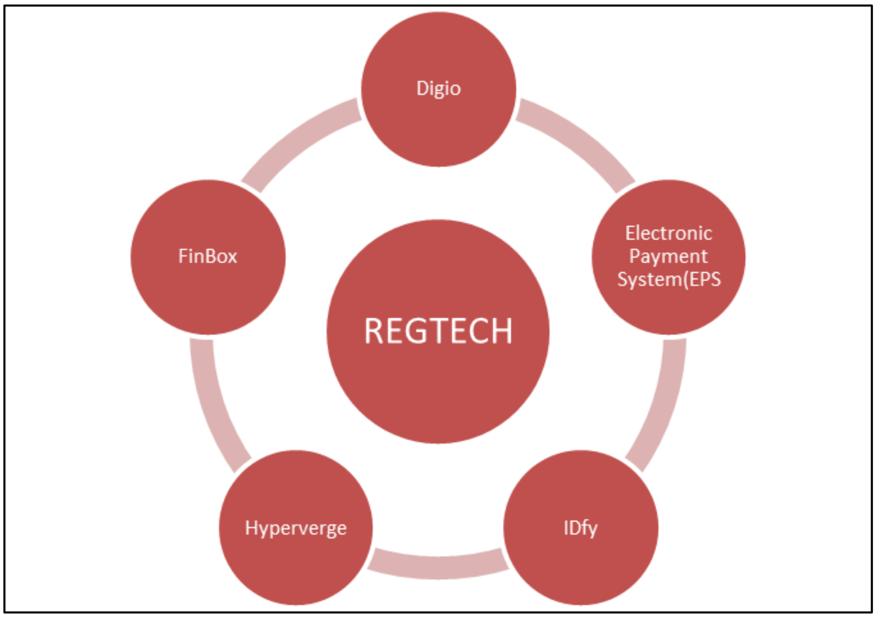


Source: India Fintech Report 2020

Figure 5 Digital Lending Breakdown of US Dollar 1,673M

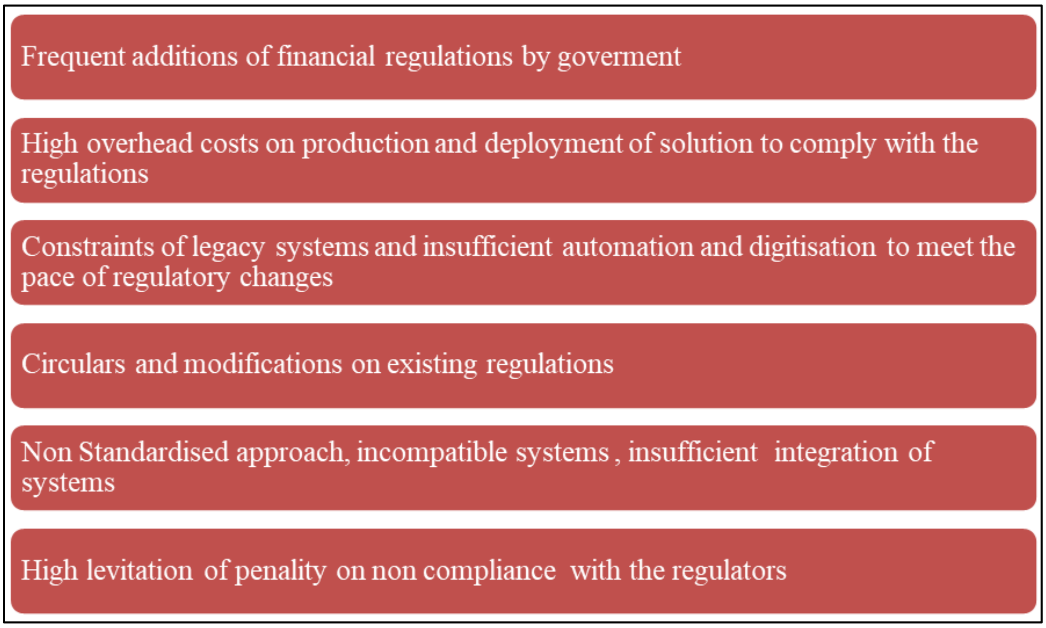
3.5.1. Reg-Tech

The main concern in the adoption of digital pathways of payment was security and regulatory conditions. For millions, the concept of fintech requires them to share their bank details with formal and informal digital gateways which can inspire some apprehension. Reg-Tech plays a dire role in this scenario. At its core, Reg-Tech is a cluster of incessantly evolving technology committed to aiding financial institutions, including but not limited to banks and Fintech companies navigate and adhere to regulatory conditions(IBSi,2024). In India, Reg-Tech is growing speedily due to the complex regulatory environment and the growing importance of risk management solutions and compliance automation(IBSi,2024). Figure 6 conveys some leading companies in the field of Regtech



Source: (IBSi,2024)

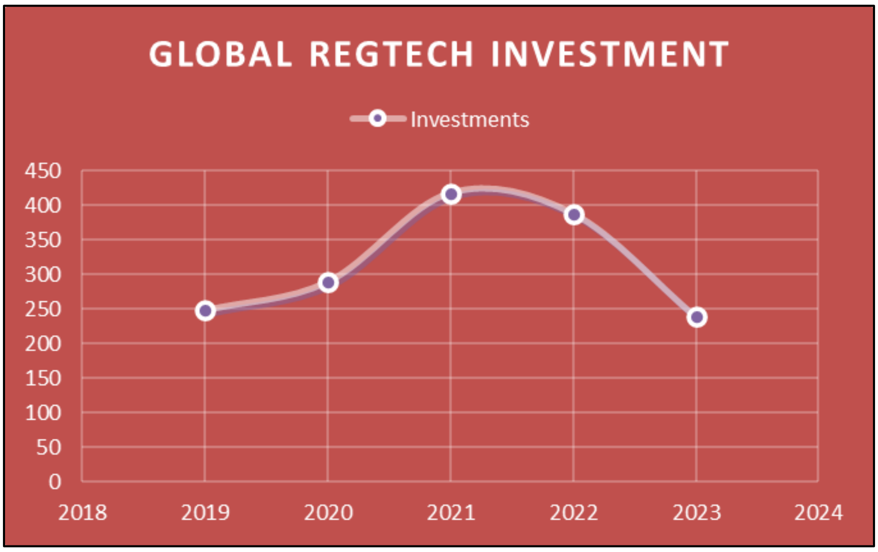
Figure 6 Regtech pioneers



Source: (IBSi,2024)

Figure 7 Challenges in FI

The challenges shown above in Figure 7 are forecasted to only evolve to be more complex in the future(PWC,2024). Reg-Tech holds the potential to combat these challenges. Financial institutions can collect data and automatically generate reports in compliance with the format and timeline mandated by different regulatory bodies with the use of technology-based systems. Globally, FI's spent over $30 billion on RegTech in 2020, and is estimated to pass $130 billion. As shown in Figure 8 below, the spread of global regtech investments throughout 2019-2023

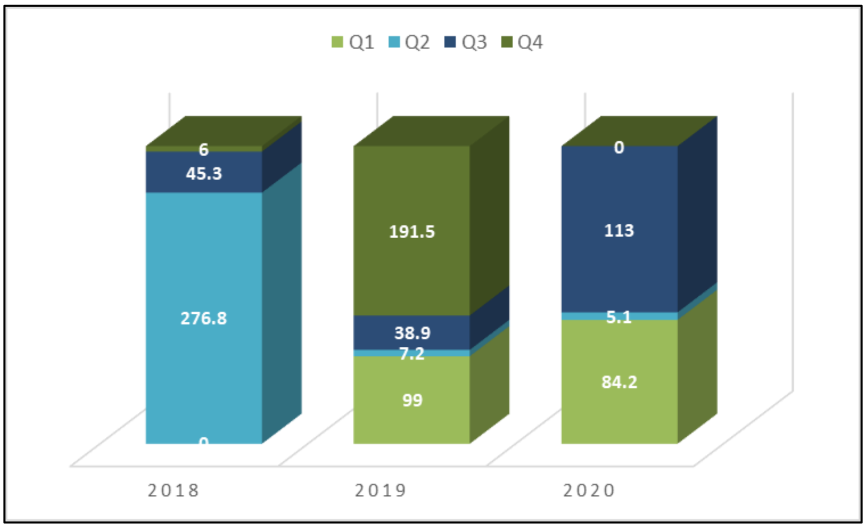


Source: Statista,2024

Figure 8 Global RegTech Investment

3.5.2. Insur-Tech

Insur-Tech is the use of technology to optimize the insurance industry's potential and enhance the customer experience. It is a subset of Fintech, having the aim of improving accessibility of financial services through technology. Globally, the average funding invested in InsurTech increased from 5 Million in 2011 to $22 million in 2015 (Source: Panorama Insurtech Database of McKinsey & Company). Till 2020, an investment of 445M was made in InsurTech,sector-wise distribution of which is shown in Figure 10. Further in 2023, the funding amount reached a whopping 4.3 billion. Below, we can see the Quarterly Investment of Insurtech from 2018 to 2020

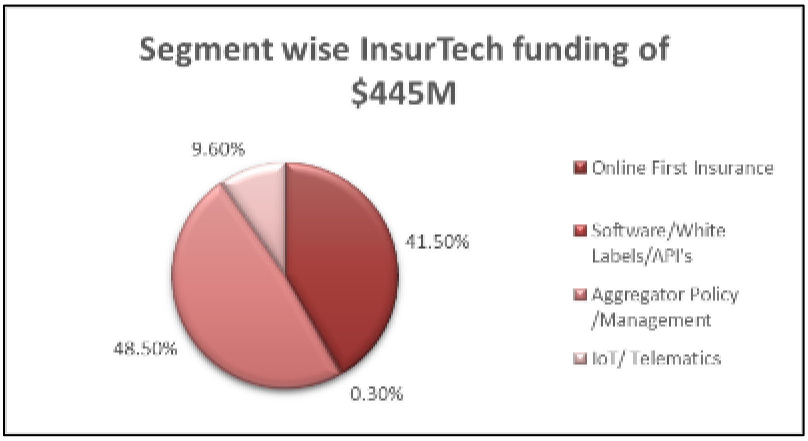


Source: India Insurtech Report 2020

Figure 9 Insur-Tech Investment spread across the 4 Quarters in 2018-2020

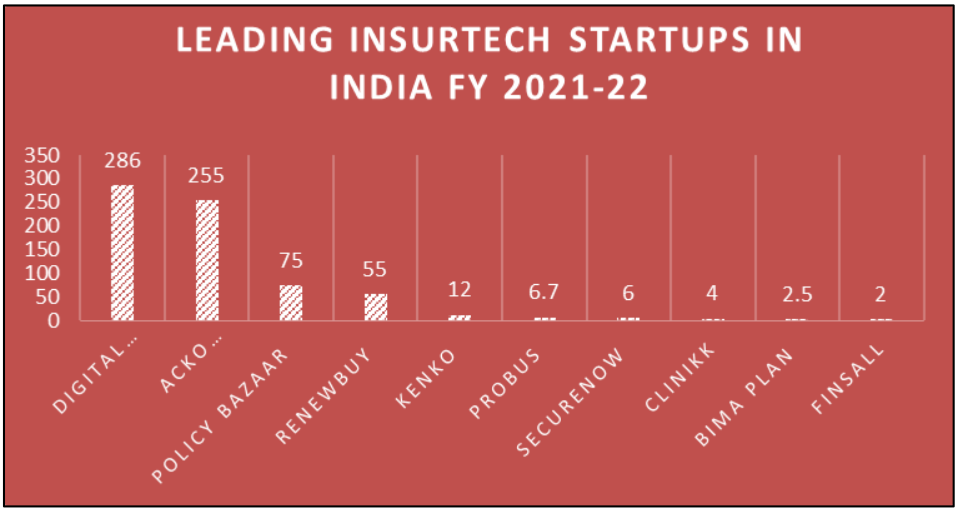
If put under a microscope, several inadequacies can be viewed in the conventional insurance industry, ranging from product management, sales, and distribution, unreasonable prices, delaying documentation processes, and customer service failing in quality. These requirements make the customer experience expensive, and time-consuming and decrease the customer on-boarding rate (Sarkar, S.,2021). Insurtech can provide dire aid in increasing the ease of the whole process. Insurtech is divided into 5 sub-segments (MEDICI Insurtech Report 2020). Figure 11 shows the Leading Insurtech startups for FY 2021-2022

- Software/White Label/APIs: These Insurtech companies offer brokerage houses and insurance companies a range of software solutions. Risk assessment, fraud detection, underwriting, policy, administration, data aggregation, online sales, chatbots, customer relationship management (CRM) tools, API, regulations, and other white-label tools are just a few of the solutions they offer
- Internet of Things: The businesses in this market use connected device technology. They assess and evaluate user risk using wearable and sensors, and, as a result, assist in designing specialized goods at competitive prices. Examples include customized options for life and home insurance, as well as usage-based telematics programs in auto insurance that involve routine driver monitoring.
- Online-First Insurance: The companies in this sector mainly use digital platforms to market their insurance products, which include property and casualty, health and life insurance
- Claims: These companies assist in digitizing the claim processing process by utilizing technological innovations like self-service portals and video calls. They also make use of technology like artificial intelligence, robotics, and machine learning to create cognitive learning systems that enable faster responses.
- Policy/Aggregators Management: These companies provide consumers with online tools that let them look up contrast, and locate reasonable0020rates from different insurance companies that sell products. Players who assist users in managing policies and/or financing premiums through a single platform might be included.



Source: India Fintech Report 2020

Figure 10 Segment wise Insurtech funding



Source: Statista,2024

Figure 11 Lending Insurteck Startups in India for the FY 2021-22

4. Conclusion

Poverty rates in India skimmed to 4.5-5% in 2023 according to the research released by State Bank of India. Financial Inclusion plays a vital role in poverty reduction It has been empirically demonstrated that financial inclusion can lower income inequality as indicated by the number of banks. Financial Inclusion must lessen poverty and inequality while furthermore positively impacting the expansion of businesses. Financial inclusion in this area positively correlates to financial stability. Inequality and poverty must be reduced; Financial inclusion has a positive impact on business growth. Fintech has the potential to push financial inclusion in India, specifically in rural areas, which can aid in lowering poverty and increasing income. Financial inclusion and Fintech intersect in the commonly shared aim to provide low-cost financial services to the underprivileged. In this study, the authors collected and analysed the various fields of Fintech that work individually and as facilitators towards financial inclusion. In conclusion, the fields of online banking, Micro Finance, Digital Lending, RegTech, and InsurTech play the most prominent role in facilitating financial inclusion by aiding in ways to make financial services accessible and cost-efficient to the underprivileged segment.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

References

[1] Schueffel, P. (2016, January 1). Taming the Beast: A Scientific Definition of Fintech | Journal of Innovation Management. https://doi.org/10.24840/2183-0606_004.004_0004

[2] Romānova, I., & Kudinska, M. (2016, October 28). Banking and Fintech: A Challenge or Opportunity? Contemporary Studies in Economic and Financial Analysis. https://doi.org/10.1108/s1569-375920160000098002

[3] Arner, D. W., Barberis, J., & Buckley, R. P. (2015). The evolution of Fintech: A new post-crisis paradigm. Geo. J. Int'l L., 47, 1271.

[4] Appiah-Otoo, I., & Song, N. (2021, May 7). The Impact of Fintech on Poverty Reduction: Evidence from China. Sustainability. https://doi.org/10.3390/su13095225

[5] Garg, S., & Agarwal, P. (2014). Financial inclusion in India–a Review of initiatives and achievements. IOSR journal of business and Management, 16(6), 52-61.

[6] Iqbal, B. A., & Sami, S. (2017, April 1). Role of banks in financial inclusion in India. Contaduría Y Administración. https://doi.org/10.1016/j.cya.2017.01.007

[7] Arner, D. W., Buckley, R. P., Zetzsche, D. A., & Veidt, R. (2020, March 1). Sustainability, FinTech and Financial Inclusion. European Business Organization Law Review. https://doi.org/10.1007/s40804-020-00183-y

[8] Raj, B., & Upadhyay, V. (2020, January 1). Role of FinTech in Accelerating Financial Inclusion in India. Social Science Research Network. https://doi.org/10.2139/ssrn.3591018

[9] Kandpal, V. (2019, March 13). Financial Inclusion: The Role of Fintech and Digital FinancialServicesinIndia. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3485038

[10] Singh, S., Sahni, M. M., & Kovid, R. K. (2020). What drives FinTech adoption? A multi-method evaluation using an adapted technology acceptance model. Management Decision, 58(8), 1675-1697.

[11] Leong, K., & Sung, A. (2018). FinTech (Financial Technology): What is it and how to use technologies to create business value in fintech way?. International Journal of Innovation, Management and Technology, 9(2), 74-78.

[12] Vijai, C. (2019, January 1). Fintech in India – Opportunities and Challenges. Social Science Research Network. https://doi.org/10.2139/ssrn.3354094

[13] Sarma, M., & Pais, J. (2011). Financial inclusion and development. Journal of international development, 23(5), 613-628. https://doi.org/10.1002/jid.1698

[14] Ozili, P. K. (2020, September 25). Theories of Financial Inclusion. Emerald Publishing Limited eBooks. https://doi.org/10.1108/978-1-80043-095-220201008

[15] Morgan, P. J., & Pontines, V. (2014, January 1). Financial Stability and Financial Inclusion. Social Science Research Network. https://doi.org/10.2139/ssrn.2464018

[16] Pal, R., & Pal, R. (2014). Income related inequality in financial inclusion and role of banks: Evidence on financial exclusion in India.

[17] Choudhury, S. R., & Bagchi, D. (2016). Financial exclusion-A paradox in developing countries. Journal of Economics and Finance, 3(1), 40-45.

[18] Koku, P. S. (2015, July 6). Financial exclusion of the poor: a literature review. International Journal of Bank Marketing. https://doi.org/10.1108/ijbm-09-2014-0134

[19] . Leyshon, A., & Thrift, N. (1995). Geographies of Financial Exclusion: Financial Abandonment in Britain and the United States. Transactions of the Institute of British Geographers, 20(3), 312–341. https://doi.org/10.2307/622654

[20] Kumar, D. B. P. (2011). Financial exclusion: A theoretical approach.

[21] Sanderson, A., Mutandwa, L., & Le Roux, P. (2018). A review of determinants of financial inclusion. International Journal of Economics and Financial Issues, 8(3), 1.

[22] Barik, R., & Sharma, P. (2019). Analyzing the progress and prospects of financial inclusion in India. Journal of Public Affairs, 19(4), e1948.

[23] Chowhan, S. S., & Pande, J. C. (2014). Pradhan Mantri Jan Dhan Yojana: A giant leap towards financial inclusion. International journal of research in management & business studies, 1(4), 19-22.

[24] Lusardi, A., & Mitchell, O. S. (2011, October 1). Financial literacy around the world: an overview. Journal of Pension Economics & Finance. https://doi.org/10.1017/s1474747211000448

[25] Garg, N., & Singh, S. (2018, January 8). Financial literacy among youth. International Journal of Social Economics. https://doi.org/10.1108/ijse-11-2016-0303

[26] Agarwal, S., Amromin, G., Ben-David, I., Chomsisengphet, S., & Evanoff, D. D. (2015). Financial literacy and financial planning: Evidence from India. Journal of Housing Economics, 27, 4-21.

[27] Diniz, E., Birochi, R., & Pozzebon, M. (2012). Triggers and barriers to financial inclusion: The use of ICT-based branchless banking in an Amazon county. Electronic Commerce Research and Applications, 11(5), 484-494.

[28] Anagnostopoulos, I. (2018). Fintech and regtech: Impact on regulators and banks. Journal of Economics and Business, 100, 7-25.

[29] Arner, D. W., Barberis, J., & Buckey, R. P. (2016). FinTech, RegTech, and the reconceptualization of financial regulation. Nw. J. Int'l L. & Bus., 37, 371

[30] Butler, T., & O'Brien, L. (2019). Understanding RegTech for digital regulatory compliance. Disrupting finance: FinTech and strategy in the 21st century, 85-102.

[31] Charoenwong, B., Kowaleski, Z. T., Kwan, A., & Sutherland, A. (2023). RegTech.

[32] Tripathi, N., & Tabassum, I. (2022). Growth of FinTech Unicorns in India: Recent Trends. Srusti Management Review, 15(2), 26-39.

[33] Abidi, Q. (2021). Indian Fintech: An Industry Perspective. Available at SSRN 3813788.

[34] Carriere-Swallow, M. Y., Haksar, M. V., & Patnam, M. (2021). India's approach to open banking: some implications for financial inclusion. International Monetary Fund.

[35] Buckley, R. P., Arner, D. W., Zetzsche, D. A., & Weber, R. H. (2019, May 27). The road to RegTech: the (astonishing) example of the European Union. Journal of Banking Regulation. https://doi.org/10.1057/s41261-019-00104-1

[36] Afjal, M. (2023). Bridging the financial divide: a bibliometric analysis on the role of digital financial services within FinTech in enhancing financial inclusion and economic development. Humanities & Social Sciences Communications, 10(1). https://doi.org/10.1057/s41599-023-02086-y

[37] Liu, H., Yao, P., Latif, S., Aslam, S., & Iqbal, N. (2021). Impact of Green financing, FinTech, and financial inclusion on energy efficiency. Environmental Science and Pollution Research International, 29(13), 18955–18966. https://doi.org/10.1007/s11356-021-16949-x

[38] Kwon, K. Y., Molyneux, P., Pancotto, L., & Reghezza, A. (2023). Banks and FinTech Acquisitions. Journal of Financial Services Research, 65(1), 41–75. https://doi.org/10.1007/s10693-022-00396-x

[39] Najaf, K., Chin, A., Fook, A. L. W., Dhiaf, M. M., & Asiaei, K. (2023). Fintech and corporate governance: at times of financial crisis. Electronic Commerce Research, 24(1), 605–628. https://doi.org/10.1007/s10660-023-09733-1

[40] Beck, T. (2020). Fintech and financial inclusion: Opportunities and pitfalls. https://hdl.handle.net/10419/238522

[41] Demir, A., Pesqué-Cela, V., Altunbas, Y., & Murinde, V. (2020). Fintech, financial inclusion and income inequality: a quantile regression approach. European Journal of Finance, 28(1), 86–107. https://doi.org/10.1080/1351847x.2020.1772335

[42] Goswami, S., Sharma, R. B., & Chouhan, V. (2022). Impact of Financial Technology (Fintech) on Financial Inclusion(FI) in Rural India. Universal Journal of Accounting and Finance, 10(2), 483–497. https://doi.org/10.13189/ujaf.2022.100213

[43] Makina, D. (2019). The Potential of FinTech in Enabling Financial Inclusion. In Elsevier eBooks (pp. 299–318). https://doi.org/10.1016/b978-0-12-814164-9.00014-1

[44] Singh, A. S., Venkataramani, B., & Ambarkhane, D. (2014). Role of Mobile Banking in Financial Inclusion. Social Science Research Network. https://doi.org/10.2139/ssrn.2485777

[45] Iyengar, J., & Belvalkar, M. (2010). Case Study of Online Banking in India: User Behaviors and Design Guidelines. In IFIP advances in information and communication technology (pp. 180–188). https://doi.org/10.1007/978-3-642-11762-6_15

[46] Shankar, S. (2013). Financial inclusion in India: Do microfinance institutions address access barriers. ACRN Journal of Entrepreneurship Perspectives, 2(1), 60-74.

[47] Nasir, S. (2013). Microfinance in India: Contemporary issues and challenges. Middle-east journal of scientific research, 15(2), 191-199.

[48] Dey, S. K. (2015). Challenges & issues of microfinance in India. Journal of economics and sustainable development, 6(7), 195-198

[49] Sarkar, S. (2021). The Evolving Role of Insurtech in India: Trends, Challenges and The Road Ahead. The Management Accountant Journal, 56(12), 30-37.

[50] Gautam, R. S., Kanoujiya, J., Bhimavarapu, V. M., & Rastogi, S. (2021). Financial Technology and Its Impact on Poverty in India. International Journal of Management and Humanities, 6(3), 1–10. https://doi.org/10.35940/ijmh.b1396.116321