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## The Role of Fintech in Promoting Financial Inclusion - India's Experience -

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### Abstract:

This study aimed to introduce "FinTech" and the advantages it offers in the field of financial services, and its role in boosting financial inclusion. India was studied as a racing model for the application of financial technology, through the number of companies active in it and the volume of investments pumped by India in order to promote financial services and enhance financial inclusion. The study concluded that the Indian experience was successful to a large extent, as financial technology contributed to providing more efficient and comprehensive business models and expanding the group of financial services suppliers, especially lending, which reduced the negative effects of traditional financial services, despite India facing many challenges

**Keywords:** FinTech; Financial Inclusion; Financial services; Fintech companies; FinTech Investments.

**Jel Classification Codes:** F30, O30, G20.

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### 1. Introduction:

The emergence and use of financial technology has had a great impact in defining the features of many industries in the twenty-first century, especially the banking industry, as banks tried to change the pattern of their services, relying on the advantages and techniques offered by financial technology, and benefiting from technological innovations that allowed them to keep pace with the desires of various consumer and customer segments, which are now based on everything that is digital, which made financial technology, despite its modernity, reserve a prominent position in the global economic sector, enabling it to achieve great profits in various fields. Through the provision of digital financial products at the lowest cost and the least effort possible, and at the required speed, which facilitated their spread in various countries of the world such as China, India, Britain and the United States of America. One of the most important things that contributed to this spread is the ability of the services provided by FinTech to enhance financial inclusion, thus reaching the majority of customers, who had difficulty benefiting from traditional financial and banking services, because of the difficulty of procedures and the large population density of many countries of the world, which made access to banking or financial services in general limited to certain groups, and through. The above raised the following problem: **“How has the use of “FinTech” contributed to the promotion of financial inclusion in India?”**

#### 1.1. Hypothesis of the Study

For familiarity with the problem at hand, the study relied on the following hypothesis:

**Indian’s Fintech companies have taken the benefits of smaller operating models to customers and weaned away the weight of outdated processes, expensive IT systems and physical networks. This allowed in promoting the spread of financial services.**

#### 1.2. Study Importance

The importance of this study lies in its presentation of a subject that constitutes the future of the financial industry in the world, and this is by presenting the major techniques and areas that have formed the general framework of FinTech, which is still in continuous development, with continuous innovation and technological and digital development in particular, as well as the role that FinTech has played in promoting financial inclusion, as a solution to the dilemmas that traditional financial services have been unable to solve.

#### 1.3. The main Objectives of the study

This study aimed to:

- Understand the basics of FinTech.
- Understand FinTech techniques and their role in enhancing financial inclusion.
- Highlight the impact of FinTech on the Indian financial sector
- challenges faced by India in the application of fintech.

## 1.4. Methodology of the study

The study adopted the descriptive approach that enables us to conduct the study as it is a theoretical study related to India's experience in adopting financial technology during successive periods of time, and the analytical approach to try to shed light on the success or failure of India in applying FinTech and highlighting the most important challenges it faced, and its impact on the access of financial services to the largest possible segment of the population.

## 2. The definition and characteristics of financial technology "FinTech"

The concept of financial technology has been linked to innovation in the provision of financial services, therefore all definitions agreed on its characteristics in overcoming obstacles to the development of these services

### 2.1. The concept of FinTech

Financial technology can be defined as technologically enabled financial innovation that creates new business models, applications or products that materially impact financial services, markets and institutions" (Vijai, 2019, p. 43). It can also be defined as the "consisting of two parts, the first is "technology", and the second is "finance", which depends mainly on innovative startups, which use technology to reconsider financial and banking services. The global financial crisis in 2008 contributed to the withdrawal of a large number of bankers and traders from financial centers in the world, and they embarked on entrepreneurial adventures. (Harfouch, 2019, p. 726). Dhar and Stein define it as "financial sector innovations that adopt technology-enabled business models that allow for the elimination of intermediation; revolutionizing the delivery of products and services; addressing challenges related to privacy, regulation, and law enforcement; and providing new outlets for entrepreneurship," (Pham phat, Abdul, Arif, & al, 2021, p. 396), where financial services can encompass a wide range of services such as payments, credit, savings, remittances, and insurance that are done digitally. Digital financial service models typically use other agents and intermediary networks to improve accessibility and reduce the overall costs of services. (ESCWA, 2019, p. 45)

### 2.2 characteristics of "FinTech"

Financial technology has many characteristics, including: (ABED El redha, Haider, & Harjen, 2021, p. 129)

- Satisfy customer desires by providing a range of methods and skills
- Fintech is a means of employing technological innovations to meet the needs of individuals and institutions, not a goal in itself.
- **Diversity:** The use of FinTech is not limited to financial and banking services, but can affect different administrative methods.

- **development:** Banks can develop their services according to the development in technology, which suits the desire of individuals and institutions.
- Providing a huge database that enables customers to obtain financial services without resorting to traditional methods, which shortens time and reduces costs.

### 3. The role of financial technology in promoting financial inclusion

FinTech and financial inclusion has become a priority issue for policymakers and academics in the last two decades of the twenty-first century, by linking digital media such as mobile phones, the Internet and cards to secure digital payment systems. FinTech also contributes to avoiding problems that still exist for individuals, companies, governments and economies. Digitization affects the level of financial inclusion in addition to many advantages, such as reducing the financial cost of financial institutes and Fintech providers, providing fast and safe financial services, improving GDP, and a positive long-term impact on banking performance. It can be emphasized that the emergence of new digital technologies, digital platforms, and digital infrastructure has jumped innovation and entrepreneurship to advanced levels. (Chehatah, 2020, p. 207)

**Sarma and Pais** argue that financial inclusion enables a large segment of customers to access to a wide range of financial products and services at a fair price. "Technology companies act as a catalyst for the growth of micro, small and medium enterprises through the deployment of digital technologies in all aspects of financial services, which have a significant impact on financial inclusion (Goel, Kulsrestha, & Maurya, 2022, p. 43). More over, the increasing reliance on the Internet and some FinTech techniques such as artificial intelligence and big data, and the multiplicity of blockchain technology platforms and payment without intermediaries, which contribute to increasing competition for the provision of financial services, and raising consumer expectations about their access to more distinguished financial services. multiplicity of blockchain technology platforms and payment without intermediaries, which contributed to increasing competition for the provision of financial services, and raising consumer expectations about their access to more distinguished financial services.

Wich made financial systems realize the importance of financial technology in improving financial inclusion. financial systems aware of the importance of FinTech in improving financial inclusion, through the opportunities it gives to the disadvantaged or excluded groups of financial services, through digital financing, as well as the entry of transfers and payments for a low cost and its ability to enhance financial inclusion, through the opportunities it gives to the disadvantaged or excluded groups of financial services, through digital financing, as well as the entry of transfers and payments for a low cost. (Attia, 2021, pp. 393-394), and the following table shows the development of financial technology sectors during the period between 2018 and 2021 .

**Table N01: Investment activity in financial technology by Segment from 2018 to 2021**

FinTech 's Segment	Deal	2018	2019	2020	2021
Payments	Deal Value	50.1	110.7	29.1	51.7
	Deal Count	490	502	540	777
Insurtech	Deal Value	27.9	13.1	16.3	14.4
	Deal Count	439	414	327	418
Regtech	Deal Value	8.1	3.8	10.3	9.9
	Deal Count	209	219	247	312
Wealthtech	Deal Value	0.7	0.5	0.6	1.6
	Deal Count	60	44	33	66
Blockchain/cryptocurrency	Deal Value	8.2	5.6	5.5	30.2
	Deal Count	901	648	627	1332
Cybersecurity	Deal Value	0.5	0.9	2.1	4.8
	Deal Count	52	54	51	47

Source: KPMG, Pulse of Fintech H2'21, 2022, pp14-24.  
<https://assets.kpmg.com/content/dam/kpmg/xx/pdf/2022/02/pulse-of-fintech-h2-21.pdf>

Table No. 01, we shows that the total value of deals for the year 2021 in financial technology amounted to \$210 billion with a number of deals exceeding 5,600 deals, and the most invested payments sector witnessed in 2021, driven by the continuous acceleration of digital trends, Global investment of risk capital in the payments sector rose to an annual record level, as mergers and acquisitions took over the largest deals this year, and this is after the decline in this sector in 2020 affected by the Corona pandemic.

The insurance technology sector continued to gain a great deal of attention in the second half of 2021, especially in the venture capital market. The United States continued to dominate the vast majority of in-house insurance deals, and the emergence and expansion of in-house technology ecosystems in other regions helped stimulate investment in this sector.

As for the regulatory technology sector, the total global investment in it was remarkable in 2021, with a wide range of deals that paid nearly \$10 billion in investment, which is the same as what happened with the cybersecurity sector, driven by the turmoil that has gained international attention,

Global investment and the count of wealth tech deals, both reached new high levels in 2021, driven by increased investment in venture capital. The number of deals doubled compared to 2020 and the value of deals reached \$1.6 billion.

As for blockchain and cryptocurrencies, it jumped to over \$30 billion in 2021, highlighting the importance of the blockchain sector. It broke the 2018 record of \$8.2 billion, which witnessed a decline in 2019 and 2020 due to the Corona pandemic.

4. The main factors for the success of the Indian's FinTech experience:

India has been quick to adopt new technologies to upgrade its financial services and get rid of traditional services, and their negative effects, so it adopted the approach of enhancing reliance on Fintech services, as these initiatives were one of the most important factors of India's success in implementing Fintech.

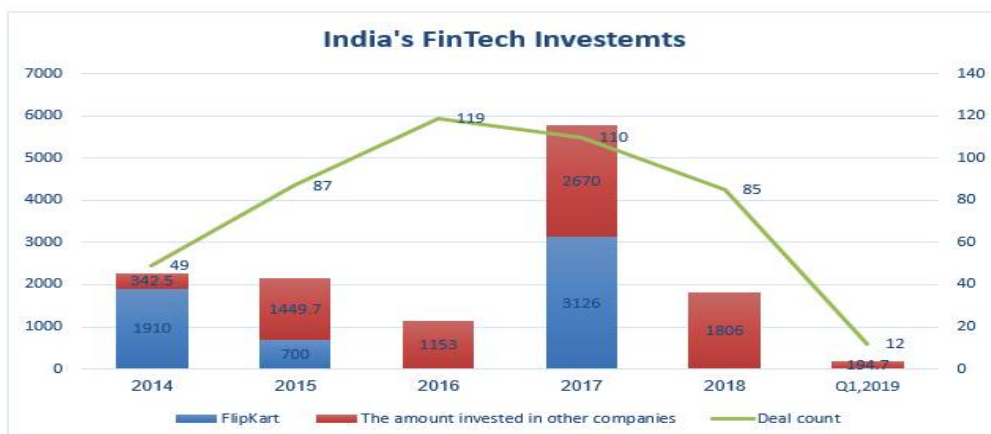
4.1 Efforts by the Indian Government:

The coordinated approach between the Indian government and other non-governmental public authorities and stakeholders, allowed for the expansion of the use of Fintech, by facilitating financial access and digitized the provision of support and payments for the health sector, and was able to achieve about 750 million dollars. The Indian government and public authorities have undertaken several initiatives, including (Ahmed Mamdouh, 2020, p. 498):

- Establishment of the **Aadhaar** Payment System, and the **Aadhaar** Payment Bridge in 2011, by The National Payments Corporation of India (NPCI).
- The Aadhaar scheme was launched in 2009, and the PMJDY scheme, known as Jan Dhan, was launched in 2014.
- The electronic signature was released in 2015,
- The Belt and Road Initiative's licensing of new sectors of financial institutions called Payment Banks and Microfinance Banks, by the Reserve Bank of India
- The establishment of the **Locker Digital** platform to facilitate electronic issuance and verification of documents, was one of the most important non-governmental initiatives.
- The Indian Software Product Industry Initiative (SPIRIT) to develop APIs and systems

The Government of India has also spearheaded initiatives for technology innovators such as the National Payments Council of India (NPCI), Digital India Programme, and Jan Dhan Yojana. In addition to tax advantages for companies and customers in relation to electronic payments (Srinivasa Rao & Rajesh C, 2021, p. 616)

Fig 01: India's FinTech Investments



Source: Mohanasundaram T, Sathyanarayana S, and Rizwana M, **Disruptions on India's FinTech landscape: The 5G wave**, ITM Web of Conferences 37, (2021), p05.

Figure 01 shows the beginning of India with “FinTech” through FlipKart, which in 2014 invested approximately \$2 billion in exchange for other investments in the same field of \$342 million and 49 deals. In 2015, it became 87 deals with a total value of \$2 billion and \$149 million, of which FlipKart's share was \$700 million. In 2016, it witnessed a remarkable increase in the number of deals with an investment value of \$1 billion and \$153 million. The development continued in 2017 to reach 110 deals, but with a total investment value of about \$5.6 billion, of which \$3.126 billion was for FlipKart alone, which was absent in 2016 from investing in this field. In 2017, it was the peak of Indian investments in “FinTech”, taking advantage of the returns or advantages achieved by investing in financial technology in previous years. In 2018, the investment decreased to \$1.8 billion and the number of deals decreased to 85 deals. The first quarter of 2019 witnessed the registration of only 12 deals with an investment amount of approximately \$195 million.

It can be said that India was among the countries most invested in financial technology, but it can spend more on a sector that enables it to solve many of its economic dilemmas, especially in light of the large population density.

India has thousands of companies active in financial technology, making them pioneers in this field, as they are active in various segments, such as insurance, lending and payments, and the following table is a sample of the top 20 Indian companies active in FinTech.

**Table 02: Top 20 Indian FinTech Companies**

Company	Capital	Segment
Paytm Payments Bank	2.77 billion	Payments
ItzCash Card	174 million	Payments
MobiKwik	161.81 million	Payments
Financial Software & Systems	99.51 million	Payments
Bank Bazaar	80 million	Personal finance & business administration
InCred	75 million	Lending
Policy Bazaar	69.79 million	Insurance
Ezetap Mobile Solutions	66.1 million	Payments
Kart for Lending	64.5 million	Lending
Fino Payments Bank	59.31 million	Payments
Mswipe Technologies	56 million	Payments
Capital Float	45.8 million	Lending
E Services and Payments	40 million	Payments
Neo Growth Credit	36.6 million	Lending
CCAvenue	31.31 million	Payments
Coverfox	29 million	Insurance
Clear Tax	15.43 million	Personal finance & business administration
India's Fund	15.23 million	Personal finance & business administration
FlexiLoans	15 million	Lending

Source: Pooja Goel & all, **Fintech Unfolding: Financial Revolution in India, Thailand and The World**

Economy | Vol. 40, No.2, May - August 2022, pp 43.44.

Through Table No. 02, it is clear that financial technology in India relied on more than one field and did not focus on only one field, and this is given to the 20 first companies in this field, but this did not prevent them from focusing on a specific area, which is payments, as this sector constitutes almost 50% of the total of the 20 leading financial technology companies in India, and holds the majority of the capital invested in it. This is not strange if we look at India's problems in traditional financial services and the difficulties it was facing. A large segment of potential customers were unable to access the service in its traditional form in terms of payments. India is characterized by a large population density, which made this service among the most in-demand financial services if not the most in-demand at all. On the other hand, lending, insurance, people's finances, and business management, as they are the segments provided by India's FinTech companies.

### 5. The Impact of Fintech on the Indian Financial system

The Indian financial market, along with China, is among the fastest growing in the adoption of financial technology for digital payments by 87% among digitally active users (Pant, 2020, p. 50). The digital infrastructure created by the Indian's government and the Reserve Bank of India has been the foundation for developments in digital technology used in financial services, especially payments and credit. Many measures have been taken to provide low-cost financial services for all (Raj & Upadhyay, 2020, p. 13), and many believe that banks and financial institutions adopt financial technology developments in their core business may take some time due to strict regulations. Although regulatory guidelines are not a barrier to innovation and change, strict guidelines put banks under pressure from safeguards and innovative measures. Financial technology offers many advantages such as easy access to financial markets by ordinary consumers and provision of financial services easily. FinTech companies in different regions are increasing the competitiveness of current banking and financial institutions around the world. Whether it is to explore new financial sectors or to facilitate access to foreign markets. (Mohanasundaram, Vetrivel, & Prakash, Fintech and its effect on india's changing financial landscape : an exploratory study, 2020, pp. 4-5)

Regulators in India are trying to promote innovative products and services through regulatory labs in every sector, but they are finding it difficult due to the regulatory authorities, so regulators are still working to improve and regulate their rules (Shashidhar, 2020, p. 6).

India is poised to bring the fintech sector to US \$150-160 billion by 2025, which will create an added value of around US \$100 billion. Therefore, The Indian fintech sector will need an infusion of \$20-25 billion over the next five years, India's fintech industry includes more than 2,100 fintech companies, 67% of which were established before 2020 (Girish Kumar & D. Paul, 2021, p. 5423).

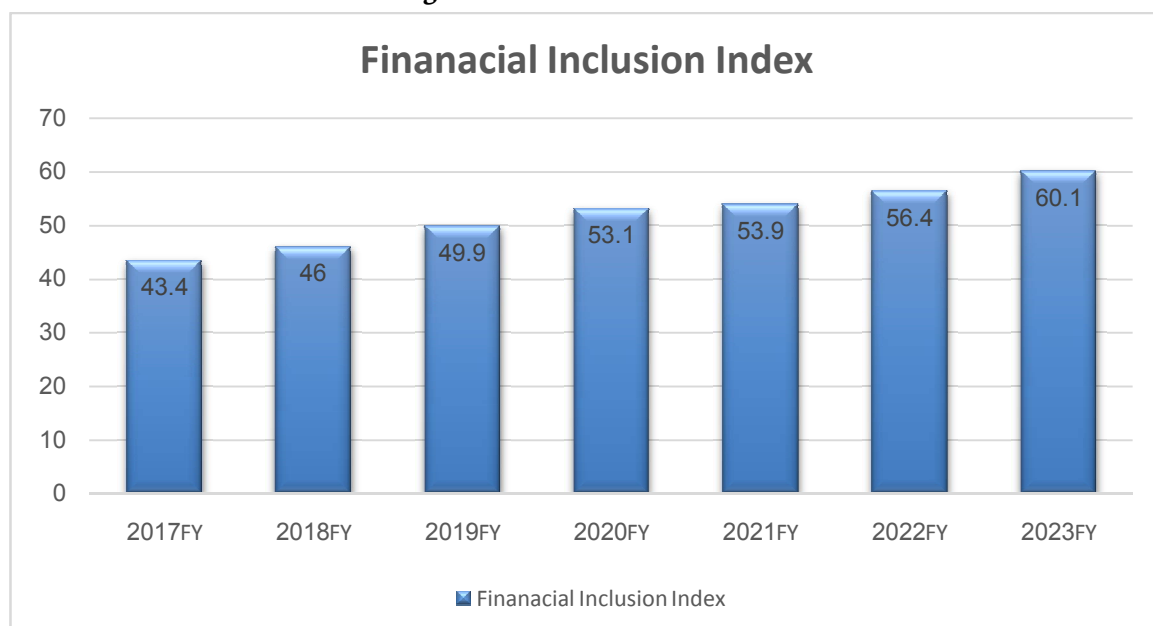
### 5.1 FinTech's role in increasing financial inclusion in India:

Financial technology in India has helped to address the barriers that have long stood in the way of financial inclusion, and has benefited the growth and development of the financial industry. The financial services industry has seen a rise to overcome geographical barriers to financial inclusion. According to the International Monetary Fund, integration is one of the areas in which the role of FinTech has been identified and its promotion has been confirmed in addressing many financial problems, the most important of which are (Brij & Updhyay, 2020, pp. 7-8):

- information asymmetry between customers and service providers, especially for the unbanked who lack the knowledge required to properly evaluate risk;
- inability to prove identity and difficulties fulfilling the standards of the customer's due diligence;
- Insufficient financial goods that cater to lower-income groups.
- It also helps fintech companies to (Dongare, Moharekar, & Moharekar, 2022, p. 214):
- Reduce costs and improve the quality of financial services
- Transfer the benefits of smaller operating models to customers and eliminate the weight of outdated processes, expensive IT systems and physical networks.
- Allows customers with a limited credit history to leverage the power of big data, machine learning and alternative data in promoting the spread of financial services
- creating a Stable Financial Services Ecosystem and Unique and Innovative Methods of Risk Assessment.

This is represented in the Indian Financial Inclusion Index, as the accompanying figure illustrates.

**Fig 02: India's Financial Inclusion Index**



Source: Financial inclusion index of India from financial year 2017 to 2023

<https://www.statista.com/statistics/1421253/india-financial-inclusion-index/>

Figure 02 shows that the financial inclusion index achieved a qualitative leap, rising from 43.3 in 2017 and reaching 60.1 in 2023, the Reserve Bank of India, indicating an improvement in the calibre of financial services offered and their availability to the majority of Indians. This improvement also indicates India's elimination of many traditional financial services problems.

### 5.2 5G service and the future of fintech in India:

India had planned to launch 5G technology in 2018. Major telephone dealers in India encouraged the Telecommunications Department to put forward a detailed future plan on 5G frequency bands and spectrum allocation. In the same context, "Reliance Jio" planned to unveil its 5G network, as the launch of the fifth generation service in India faced many challenges, such as insufficient spectrum and the rise of the spectrum auction of the Indian Telecommunications Regulatory Authority. 5G has the potential to increase daily usage of banking products and services. Moreover, 5G can overcome the shortcomings of previous technologies such as inefficient processing of increasing financial transactions. The potential of 5G in Indian banking and financial technology is limitless, as the arrival of 5G coincides with a boom in the inventions of the Internet of Things, including smartphones and mobile devices. (Mohanasundaram, Sathyanarayana, & Rizwana, Disruptions on India's FinTech landscape: The 5G wave, 2021, p. 4)

### 6. Challenges faced by the trend of financial technology in India:

Any approach that adopts financial technology to promote financial inclusion will be a double-edged sword, if not based on a clear strategy. Only being driven by technology can have serious consequences such as biases caused by machine learning algorithms, fraud and misuse of technologies by developers and other problems (Douglas W, Ross P, & Dirk A, 2018, p. 19).

Among these challenges (Ramesh, 2019, p. 60):

- Lack of large-scale infrastructure for financial transactions, especially in rural India, not having a bank account and not recognising how to use apps and transactions online.
- The challenge of getting bank and financial institution loans, as lending depends on the submission of many documents and going through several stages such as verifying physical documents related to identification and salary.
- The low proportion of the population in control of digitization has made it difficult to access non-traditional banking and financial services designed to affect a large segment, where the number of digitally literate people is only 40 million.
- Lack of complete credit schemes focusing on women, entrepreneurs and social and collective finance, which are the areas most in demand to address widespread imbalances in relation to financial services,

In addition, Challenges related to the legislative aspect and risk management related to financial technology (Pejkovska, 2018, p. 32):

- The Indian financial sector lacks the necessary legislation and laws that allow it to stay up to date with the ongoing development of technologies and services related to financial technology. Like the European Union and the United States of America, the majority of India's present regulation pertaining to financial institution transactions is not enforced, which creates an environment conducive to the abuse of financial technology or parts of it
- Using fintech companies' services or products for illegal purposes such as money laundering, illegal transactions, and tax evasion.
- Low Internet Flow: The fintech sector needs a high Internet flow to grow, especially with a population as large as India's, which India lacks (Inay & Mehrotra, 2019, p. 88).
- Cybersecurity risks that include data breaches, third-party protection threats, malware risks, application security risks, cloud-based security threats, as well as virtual identity risks (Sreekala, Revathy, Rajeshwari, & Raja Lakshmi, 2023, p. 4782).

## 7. Conclusion

The emergence of new and innovative products, channels and business models. It promoted the rapid transformations witnessed by financial services under **FinTech**, which was primarily driven by the development of customer needs and digitization as well as regulatory and cost pressures, not to mention the profits achieved by the integration of innovative financial services, especially digital. All these things made the adoption of **FinTech** techniques inevitable for any country, and India was not an exception, as it was among the countries most used for **FinTech** applications and techniques, so it invested large amounts to include these services within its financial and banking system, and it established many companies and startups that are active in financial technology, which allowed it to achieve one of the most important goals set by various countries of the world in the twenty-first century, which is financial inclusion. It provides access to appropriate financial products and services that meet the needs of a large segment of society in general and vulnerable groups and low-income groups in particular, in a fair, transparent and affordable manner.

Through the study, it is possible to answer the problem posed by saying that "**FinTech**" has already contributed to the provision of more efficient and comprehensive business models and the expansion of the Financial Services Suppliers Group, especially in lending and payments, and has allowed various segments of society to obtain financial services at a reasonable cost in a fair and transparent manner, despite the challenges they faced."

More over, the following conclusions can be drawn:

- Relying on the application of financial technology does not eliminate the provision of traditional financial services, but rather complements them, and solves some of the dilemmas that you have faced.
- Spreading digital awareness in society and controlling digitization are the most important keys to the success of the application of financial technology
- The Indian financial arena lacks the necessary legislation and laws that enable it to keep pace with the development of financial technology services and technologies.
- Developing financial services to reach financial inclusion does not mean being driven by technology only as much as it means building a clear strategy.
- Absence of a policy on the risks associated with the use of FinTech and associated operations in India, such as risks related to "data privacy" and "cybersecurity"
- Fintech needs to invest in large risk capital, because it adopts digital technologies that cannot predict the risks associated with their use.

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