

RESEARCH ARTICLE

IMPACT OF FINTECH ON THE SUSTAINABLE DEVELOPMENT GOALS IN INDIA

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Abstract: The financial sector is the backbone of every economy and it needs to upgrade itself as per the global conditions. Fintech is one such revolution that impacted all countries. In fast developing economies like India, the implementation of Fintech technology became essential. This study explores the viability of Fintech in view of a long-run sustainable development goals. It is a review paper and during the review, it was found that there are many solutions provided by big and small fintech companies in India and which also support most of the Sustainability Development Goals but their long-run effect is yet to be ensured. There are major challenges that are yet to be resolved by corporates as well as by government.

Keywords: *Fintech, Technological disruption, Sustainable Development, Governance, Digitalization.*

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INTRODUCTION

In the present dynamic world, achieving Sustainable Development Goals (SDG) is the most critical goal for any country. Not only it helps in keeping good economic growth of the country but also helps in adopting best governance practices in the country. Financial sector specially banking industry had also faced this dynamism during recent phase. With the advent of Financial Technology (Fintech) around the world, the financial systems had seen huge changes.

A wide range of technological advancements like blockchain, internet of things, big data, artificial intelligence, machine learning, etc. had enhanced the performance of financial sector to a great extent. Fintech helped in solving many critical financial problems and providing sustainable solutions for the financial institutions of the world. Many banking services are now been taken care of by Fintech companies like Know Your Customer (KYC) verification, Payment solutions, Remittances, Insurance, Stock Market investments, storage and maintenance of records, credit scoring, etc.

Asian countries, specially India has also seen tremendous changes in the banking system. According to the report 'FinTech & Digital Banking 2025' (Asia Pacific) by Backbase and IDC, 48% of banks in Asia Pacific (APAC) will take advantage of fintech technologies by 2025. 87% of Indian people are already using Fintech, and the world average of 33%.

At present, there are 7,000 plus Fintech companies in India with 23 Unicorns with a CAGR of around 20%. The major fintech are from the areas of Insurtech, Neobanking, Wealth Tech, Lending Fintech and Paytechs [1]. It is also reported that the country is expected to generate \$200 Billion from the Fintech industry by 2030 and will continue to grow as the largest Fintech globally. Even the adoption rate of fintech is the highest in the world against the world average of 67%.

Now, Fintech solutions are questioned for being sustainable or not. Many researches indicated that digital finance or FinTech has a great influence on the ecological and social benefits of the country [2].

It was also supported by researchers such as [3] who have stated that the main benefit of FinTech is its ability to build a more inclusive society. As suggested by United

Nations, there are 17 Sustainable Development Goals (SDGs) 'Insert Table 1' and 169 targets to be achieved by 2030 by various global communities [4].

Table 1: Sustainable development GOALS as per United Nations

Goal 1	No Poverty	Goal 9	Industry, innovation and infrastructure
Goal 2	Zero Hunger	Goal 10	Reduced Inequality
Goal 3	Good Health and Well Being	Goal 11	Sustainable cities and communities
Goal 4	Quality Education	Goal 12	Responsible consumption and communities
Goal 5	Gender Equality	Goal 13	Climate Action
Goal 6	Clean water and Sanitation	Goal 14	Life below Water
Goal 7	Affordable and clean energy	Goal 15	Life on Land
Goal 8	Decent work and Economic Growth	Goal 16	Peace and Justice Strong Institutions
Goal 17	Partnerships to achieve the goal		

Various studies show that there is an evident impact of Fintech impact on economic development as well as ecological and social upliftment of the country but meeting all SDGs as shown in Table 1 is not very evident. This study is going to critically examine the impact of Indian Fintech on sustainable development of the country. Coming sections will also try to examine the how fintech companies in India will help the country to meet the SDGs given by United Nation.

LITERATURE REVIEW

Attainment of Sustainable Goals is a very subjective and debatable matter among all countries. In this Volatile, Uncertain, Complex and Ambiguous (VUCA) world, getting a sustainable solution that too in finance is very difficult. This section will discuss various aspects of the researchers in testing Fintech on the grounds of meeting SDGs.

To start with, there are many authors who gave this argument that Fintech cannot or has limited access to SDGs and in no way can help any country in achieving it [5], [6], [7], [8]. Looking at the financial profitability, limited reach to the poor people and requirement for advanced electronic devices, this argument was framed by the researchers. One of the author suggested that the FinTech environment may have an impact on the application mechanism of monetary policy and the efficient application of macro-prudential government policies in shaping the financial cycle which may later constrain economic development [9]. Some also argued that most of the Fintech

companies are startups and hence, the profitability and sustainability of their existence are also questionable [8]. In addition, there is no such constructive study being done to prove the relationship between Fintech and SDGs [6]. This argument was tested by various authors and most of them found some or other relation of Fintech with SDGs.

According to Puschmann and Deng et al. mentioned in their studies that FinTech can be incorporated into new businesses and social organisations that could boost economic development [10] [2]. Digital finance or FinTech has a great influence on ecological and social benefits. The technology can be used to speed up the deployment of investments for energy security and environmental initiatives, encourage the construction of renewable energy and environmental facilities, and contribute to environmental development by providing cheap and adequate funding.

Zhao et al. mentioned that the users of Fintech were able to use mobile financial services to do banking transactions like deposits and withdrawals, personal-to-business payments, payment of taxes, collection of payments from businesses and governments, investment, insurance planning and make investments contributing to the widespread inclusion of non-banking companies in the financial system [11].

These services may have a positive impact on health (SDG 3), jobs (SDG 8), education (SDG 4) and poverty alleviation (SDG 1) through improved productivity [12].

Looking at the ease of doing such transactions, many customers are inspired and also use it as institutional investors and as public pension policyholders, to balance environmental development goals with business behaviour in the most sustainable way [13].

Block chain Technology had also been seen as a major breakthrough in this regard. According to Farfaro et al., “Block Chain 3.0”, focuses on applications in areas beyond business and finance, such as “government, health, literacy, culture and art” [14]. Although, there was another concern for the use of Blockchain technology, especially in terms of sustainable development is the enormous power consumption of this technology [15].

Yun and Wei also found a positive effect of blockchain on ‘green’ credit [16]. The study by Nassiry shows how the application of blockchain technology can reduce costs and increase incentives to provide funds for renewable energies, decentralized electricity and carbon credit markets, as well as climate finance [17].

Hinson et al. in their study mentioned that capital markets have reached a high degree of sophistication by offering payment services, long-term lending, insurance services and savings/investment options to support the financial service sector through

FinTech that could indeed contribute to all of the 17 UN SDGs [18].

Ironically, in one of the study it was found that in their 6 regressions, a composite of the SDGs statistically significantly correlates FinTech development in China [2]. They found a non-linear relationship between the number of FinTech platforms operating in the country, and a statistically created measure of sustainable development and in another study it was mentioned that besides the environmental perspective, some other aspects of sustainable development must also be considered [19].

OBJECTIVES OF THE STUDY

On the basis of literature reviewed, the following objectives are identified for this study:

- To critically examine the impact of fintech on various sustainable development goals in India
- To provide a suggestive framework for sustainable use of fintech technologies.

Indian Fintech and SDGS

Indian Fintech companies are contributing towards the upliftment of society and economy to a large extent. ‘Insert Table 2’ shows the goals, type of Fintech companies helping in it, how they are contributing and the literature in support of findings.

Table 2: Achievement of SDGs by fintech companies in India

Sustainable Development Goals	Indian Fintechs to help	Examples	References
Goal 1: No Poverty	Fintech Lenders	With the help of Paytm, Bhim UPI and many other Digital wallets, it was easy for the customers to pay the poor vendors. Also, many Payment banks are providing Micro-Finance after their tie-ups with Fintech companies	[20]
Goal 2: Zero Hunger	Payment Banks	Communication and cooperation between farmers and financial institutions is now easy with Fintech Lenders and Payment Banks with more transparency.	
Goal 3: Good Health and well being	Insuretech	FinTech can help reduce financial anxiety, minimize financial stress, offer convenience, and promote well-being.	[21]
Goal 4: Quality Education	Fintech Lenders and Payment Banks	Digitalization of education loan and easy availability of various options helped in providing quality education to various poor students.	[22]

Goal 5: Gender Equality	Payment Bank, Financial Lender and Wealth Tech	Various women-specific programs, financial literacy programs, and financial inclusion initiatives help Indian women of India to take a financial decision where it is still considered as men's preview.	[23]
Goal 6: Clean water and sanitation	Not under the purview of Fintech		
Goal 7: Affordable and clean energy	Payment Banks, Insuretech, Neobanking, Wealthtech and Fintech Lenders	Government has developed an India Industrial Land Bank (earlier known as Industrial Information System) which provides a GIS-enabled database of industrial areas including clusters, parks, nodes, zones, etc. across the country to help investors identify their preferred location for investment.	[24]
Goal 8: Decent work and economic growth	Payment Banks, Insuretech, Neobanking, Wealthtech and Fintech Lenders	Fintech companies using latest technologies like Artificial Intelligence, Block chain Technology, etc. had changed the business world with the help of revolutionary steps such as by eliminating third parties, reducing operational time and cost, enhancing the identity verification process	[25]
Goal 9: Industry innovation and infrastructure	Payment Banks, Neobanking and Fintech Lenders	While UPI has been the biggest game-changer in shaping India's payments ecosystem, the emergence of innovations such as 'Buy now, pay later' models and voice-enabled payments had made massive change in banking industry.	[26]
Goal 10: Reduced inequality	WealthTech and Financial Lenders	Equal and equated financial products for urban and rural areas of India are been designed by the financial institutions. It helps in building women entrepreneurs and provide financial literacy to all of its customers.	[23]
Goal 11: Sustainable cities and communities	Payment Banks, Insuretech, Neobanking, Wealthtech and Fintech Lenders	Environmental, Social, Governance (ESG) Matrix helps to evaluate the impact that an investment can have in building an inclusive and sustainable economy for the future.	[27]
Goal 12: Responsible consumption and communities	Payment Banks, Insuretech, Neobanking, Wealthtech and Fintech Lenders	A financial literacy platform created by the biggest stockbroker in India receives more than 80k page visits every day and has one million+ app downloads	[27]
Goal 13: Climate action	Insuretech, Fintech Lenders	FinTech could aid in the resilience of households, individuals, and companies in the case of a rapid climate event or the gradual effects of changing rainfall patterns, rising sea levels, or salter water incursion.	[28]
Goal 14: Life below Water	Not under the purview of Fintech		
Goal 15: Life on Land	Payment Banks, Insuretech, Neobanking, Wealthtech and Fintech Lenders	FinTech companies and financial institutions use AI and machine learning to increase efficiency and provide consumers	[29]

		with more relevant, affordable, and intuitive financial services and products to meet their banking needs	
Goal 16: Peace and Justice strong institutions	Payment Banks, Insuretech, Neobanking, Wealthtech and Fintech Lenders	Social media platforms and Big fintechs have medium impact on peace and strong institutions.	[30]
Goal 17: Partnership to achieve the goal	Financial Institutions, Insuretech and Wealthtech players	More efficient and low-cost financial services are provided to the users with more transparency and clarity	[31]

The table shows that except SDG 6 and 14, Fintech companies are directly contributing to the accomplishment of SDGs. There are certain Goals where all types of Fintech companies are contributing and there are some goals like 1,2,3,4 and 10 where the coverage is limited.

SUGGESTIONS IN IMPLEMENTING SDGS IN FINTECH INDUSTRY

While the Fintech industry is getting very competitive and responsible nowadays but they also face many challenges while trying to provide sustainable solutions [32]. Some suggestions to the respective challenges are:

- Compatibility of IT systems with the changing requirements: Companies should invest in their Research and Development more and keep on updating their backend support as per the global requirement.
- Breach of security due to less trained employees and cyber-attacks: The companies should either hire skilled manpower or provide regular training to their existing knowledge workers for technical updation and adherence to cyber code of conduct.
- The functionalities, customer interaction and emerging business models need to be in sync with regulatory framework of the country [33] specially for startups: Government should provide more support and funding to the Fintech startups so that they can come up with new age ideas. Also, strict compliance should be followed for ensuring good governance.
- Availability of highly specialized manpower [34]: It is suggested to Educational Institutions to upgrade their curriculum so as to match the industry requirement and provide the required skilled manpower.

DISCUSSION

This study critically examined the fintech companies of India against the achieving of Sustainable Development Goals. Through literature review it was found that most of the Fintech companies are taking innovative initiatives and are acting as responsible institutions. Most of the goals were met by the companies but in the race of competition, there are major flaws like lack of trained manpower, IT infrastructure, data security and regulatory loopholes which restricts these companies to meet all goals.

Some suggestions are provided for the better application of SDGs in India. This study will help researchers in studying the mentioned companies in the form of case studies and will also help the government & companies to concentrate of the SDG goals where Fintech companies are still lagging behind.

CONCLUSION

Every country looks for sustainable solutions for handling its finances. With the advent of Fintech, a close watch is given to sustainable solutions by banking and other financial institutions. While looking for the sustainability of this industry, 16 goals defined by the United nations were referred and it was found that although Fintech companies are trying to cater to the maximum of them but the challenge of making it available and accessible to everyone, in the same manner, is still a challenge and government needs to provide more constructive measures to address this issue.

REFERENCES

1. State of the Fintech Union, BCG Matrix partners India. Extracted from <https://web-assets.bcg.com/7d/2f/002986714a27a0369a3>

- f85da6509/state-of-india-fintech-union-2022.pdf., 2022.
2. Deng, X., Huang, Z., & Cheng, X., (2019) FinTech and sustainable development: Evidence from China based on P2P data. *Sustainability*, 11(22):6434.
 3. Zhang, Y., Chen, J., Han, Y., Qian, M., Guo, X., Chen, R., Chen, Y., (2021) The contribution of Fintech to sustainable development in the digital age: Ant forest and land restoration in China. *Land Use Policy*, 103, 105306,
 4. Nanduri S. (2021) Digital Finance: Fintech for Financial Inclusion and Sustainability. *Turkish Online Journal of Qualitative Inquiry (TOJQI)*, 12(6):5135-5142
 5. Sahay, M. R., von Allmen, M. U. E., Lahreche, M. A., Khera, P., Ogawa, M. S., Bazarbash, M., & Beaton, M. K., The promise of fintech: Financial inclusion in the post COVID-19 era. *International Monetary Fund.*, 2020.
 6. Michael, Bryane., A Critical Look at Using FinTech Policy to Promote the SDGs. *Sustainable Development* 30(3), 2022. Available at SSRN: <https://ssrn.com/abstract=4043051> or <http://dx.doi.org/10.2139/ssrn.4043051>
 7. Thankor, Anjan., Fintech and Banking: What Do We Know? *Journal of Financial Intermediation*, 41, 2020.
 8. Piliyanti, I., Fintech achieving sustainable development: The side perspective of crowdfunding platform. *Shirkah: Journal of Economics and Business*, 3(2), 2019.
 9. Nicoletti, B., Fintech innovation. In *The Future of FinTech* , 2017, 81–159. Palgrave Macmillan.
 10. Puschmann, T., (2017) Fintech. *Business & Information Systems Engineering*, 59(1):69-76
 11. Zhao, H., Zhao, Q. H., & Ślusarczyk, B. (2019) Sustainability and digitalization of corporate management based on augmented/virtual reality tools usage: China and other world IT companies' experience. *Sustainability*, 11(17):4717.
 12. Ozili, P. K., (2018) Impact of digital finance on financial inclusion and stability. *Borsa Istanbul Review*, 18(4):329-340
 13. Nguyen, H. T., Hoang, T. G., Nguyen, L. Q. T., Le, H. P., & Mai, H. X. V., Green technology transfer in developing country: Mainstream practitioner views. *The International Journal of Organizational Analysis*, 2021. Advance online publication. doi:10.1108/IJOA-11-2019-1941
 14. Furfaro, A., Argento, L., Saccá, D., Angiulli, F., & Fassetti, F., An infrastructure for service accountability based on digital identity and blockchain 3.0. In *IEEE INFOCOM 2019-IEEE Conference on Computer Communications Workshops (INFOCOM WKSHPS)*, 2019, 632-637
 15. Li, J., Li, N., Peng, J., Cui, H., & Wu, Z., (2019) Energy consumption of cryptocurrency mining: A study of electricity consumption in mining cryptocurrencies. *Energy*, 168:160-168
 16. Yun, Zhang and Wei, Wei. (2018) Does Blockchain Technology Promote the Development of Green Finance? Evidence from China. *Advances in Economics. Business and Management Research* 118.
 17. Nassiry, Darius. (2019) The Role of Fintech in Unlocking Green Finance: Policy Insights for Developing Countries. *Asian Development Bank Institute Working Paper* 883
 18. Hinson, R., Lensink, R., & Mueller, A. (2019) Transforming agribusiness in developing countries: SDGs and the role of FinTech. *Current Opinion in Environmental Sustainability*, 41:1-9.
 19. Hoang T., G. N. T. Nguyen and D. A. Le, Developments in Financial Technologies for achieving the Sustainable Development Goals (SDGs): Fintech and SDGs. *IGI Global*. Extracted from: https://www.researchgate.net/publication/353600455_Developments_in_Financial_Technologies_for_Achieving_the_Sustainable_Development_Goals_SDGs, 2022.
 20. Vijay C., D. Joyace and M. Elayaraja (2020) Fintech in India. *International Journal of Future Generation Communication and Networking*. 13(3):4143-4150.
 21. Fintech News, How Fintech can help promote well-being in 2022. Extracted from: *How FinTech can help promote well-being in 2022 - Fintech News*, 2022.
 22. Sharma P., How Fintech empowering the education sector. Extracted from *How*

- fintech empowering the education sector (easyshiksha.com), 2020
23. Monteiro, L., 3 FinTech companies helping reduce the financial gender disparity in India. IBS Intelligence. Retrieved from <https://ibsintelligence.com/ibsi-news/3-fintech-companies-helping-reduce-the-financial-gender-disparity-in-india/>, 2022
 24. Taxguru,. Key initiatives taken by Government for Fintech ecosystem in India. Editorial. Extracted from Key initiatives taken by Government for Fintech ecosystem in India (taxguru.in), 2021
 25. Srivastav, S., Blockchain in Fintech: A catalyst for Disruption in Finance world. Retrieved from <https://appinventiv.com/blog/blockchain-and-fintech/#:~:text=Blockchain technology is revamping the fintech industry in,are designed to help the sector transform digitally, 2020>
 26. Mehrotra I., How innovation in Fintech is changing the way India invests. Blog. Retrieved from FinTech Innovation changes the way India invests | Apps Flyer, 2022
 27. PwC-Assocham Report, The changing phase of financial services: Growth of Fintech in India. Extracted from <https://www.pwc.in/assets/pdfs/consulting/financial-services/fintech/publications/the-changing-face-of-financial-services-growth-of-fintech-in-india-v2.pdf>, 2022
 28. Mhlanga D., The role of financial inclusion and Fintech in addressing climate-related challenges in the industry 4.0: Lessons for sustainable development goals. *Frontiers in Climate*. 4:949178. doi: 10.3389/fclim.2022.949178, 2022
 29. Darcy, Tyrell (2020) Retrieved from <https://www.yodlee.com/fintech/fintech-ai>
 30. Foster K., S. Blakstad, M. Bos, C. Melkun and B. Shapiro, Big Fintech and their impact on sustainable development. UNDP Technical Paper. Extracted from <https://www.undp.org/sites/g/files/zskgke326/files/2021-07/UNDP-UNCDF-TP-1-1-Annexes1-6-BigFintechs-and-Their-Impacts-on-Sustainable-Development-EN.pdf>, 2021
 31. YS, T., Fintech will be a game changer in India's socioeconomic landscape. Retrieved from <https://yourstory.com/2017/11/Fintech-gamechanger-india-socioeconomic-landscape.>, 2017
 32. Ebrahim, R., Kumaraswamy, S. & Y. Abdulla (2021) Fintech in Banks: Opportunities and Challenges. Innovative strategies for implementing Fintech in India, 100-109.
 33. Rabbani, M.R., Khan, S. & Thallasinos, E.I., (2020) Fintech, Block chain and Islamic Finance: An extensive Literature Review. *International Journal of Economics and Business Administration*, 8(2):65-86.
 34. Lee, I., Shin, Y. J., (2018) Fintech: Ecosystem, Business Models, Investment Decisions, and Challenges. *Business Horizons*, 61(1):35-46.