

Original Research Article

A Study of AI-Driven Financial Inclusion and Sustainable Fintech Development in Dadar

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Abstract

Financial inclusion has become a key part of economic development and is essential for providing easy and low-cost access to financial services to individuals and businesses. From machine learning to AI-powered predictive analytics, AI-driven tools like robo-advisory platforms, biometric authentication, and chatbots have improved financial institutions' access to previously unreached groups. The use of digital payment systems, mobile banking apps, and AI-powered financial platforms has helped raise awareness and participation in the formal financial system, particularly in urban areas like Dadar, Mumbai. The present study aims to explore the position of AI in financial inclusion for promoting sustainable advancement of FinTech in Dadar. This study aims to shed light on how AI technologies enable financial accessibility, overcome operational challenges, enhance customer engagement, and drive sustainable financial growth. Trends and developments in the financial sector are analyzed using secondary information from government reports, publications of Reserve Bank India, industry reports on FinTech, research articles and statistical databases. The results indicate that AI-driven financial services have incremented the efficiency of transactions, cut the cost of services, strengthened the fraud prevention process, and

broadened access to banking services for a variety of user groups. Moreover, the sustainable development of FinTech has also led to economic empowerment, financial literacy, and financial resilience. The study concludes that AI-driven financial inclusion is a critical element in driving sustainable FinTech growth in Dadar, and holds tremendous potential to enhance the financial ecosystem by providing innovation, accessibility, and responsible technological advancements.

Keywords: Artificial Intelligence (AI), Financial Inclusion, FinTech Development, Digital Financial Services and Sustainable Finance.

1. Introduction

Financial inclusion is the availability and accessibility of affordable financial services to all sections of society. AI has become a transformative force to boost financial accessibility and efficiency. The use of AI-based solutions is becoming more common in the banking sector, FinTech companies, and financial institutions. These technologies enable customized financial services and enhance customer engagement. Financial inclusion is still a priority policy goal for both policy makers and financial regulators around the world. Digital financial services have seen tremendous growth in India in the past ten years. The government has spurred digital payments and banking services. The FinTech industry has emerged as a key player in driving economic growth and innovation. Sustainable FinTech development is all about the long-term economic, social and technological impacts. The study of digital financial adoption is set within a specific context – the city of Mumbai and one of its key commercial and residential hubs, Dadar. The area's financial habits have been changed by the rise of mobile banking and digital payment systems. AI in financial services ensures seamless transactions and customer convenience. AI algorithms are used in financial institutions to enhance risk management and operational efficiency. Digital financial inclusion is a way of combating inequality by enhancing access to financial resources. AI applications have opened up prospects to improve financial education and accessibility. But privacy of data, cyber security and digital literacy remain issues. The connection between the adoption of AI and the sustainable growth of the FinTech industry is a key consideration for policymakers in the future. This study aims to examine the role of AI in financial inclusion and sustainable development of FinTech in Dadar.

2. Review of literature

- 1) **Demirgüç-Kunt et al. (2022)** To analyze trends in financial inclusion and use of digital financial services worldwide. The study was on global trends and did not consider specifically the role of AI technologies in local urban context like Dadar.
- 2) **Ozili (2023)** To examine the effect of the FinTech innovation on financial inclusion. Limited consideration was given to sustainability aspects of AI-driven mechanisms in local settings.
- 3) **Arner, Barberis, and Buckley (2021)** To understand the development of FinTech and regulatory regimes. To examine the development of FinTech and regulatory regimes. There was a lack of empirical evidence around AI as a means of financial inclusion at the regional level.
- 4) **Gomber et al. (2022)** To explore digital technologies' contribution to the FinTech ecosystem. The study was not aimed at exploring the outcomes of financial inclusion in Indian cities.

- 5) **Gupta and Singh (2022)** To assess digital financial services and financial inclusion in India, were evaluated. Sustainable FinTech growth was not fully analysed in terms of its AI specific contributions.
- 6) **Kumar and Sharma (2021)** To explore the impact of Artificial Intelligence in banking operations. This study did not look into the impact of AI on financial inclusion within the local communities.
- 7) **Jain and Verma (2023)** To evaluate customer acceptance of AI financial services. The sustainability aspect of FinTech development was not explored.
- 8) **Reserve Bank of India (2023)** For studying the growth of digital payments and financial inclusion programmes in India. The report offered limited understanding of the local trends in adoption.
- 9) **World Bank (2022)** To study the link between digital finance and inclusive economic growth. There was no focus on localized FinTech ecosystems for AI interventions.
- 10) **Kadam and Patil (2024)** To explore new digital financial technologies and consumer trends in India. It was recommended that further study needs to be conducted to assess the sustainable development of FinTech at micro level locations like Dadar.

Research gap

The literature reflects the extensive research in financial inclusion, digital banking, and FinTech innovations. But little has been done so far to leverage the role of Artificial Intelligence on the sustainable local development of FinTech. Generally, the research published is based on national or international perspectives and there is limited research evidence on a locality or regional level. However, studies on the use of AI tools for financial inclusion in Dadar is limited. In light of this, the present study aims to fill this gap and explore the role of AI in financial inclusion and sustainable FinTech growth in Dadar.

3. Significance of the Study

This research will help advance the understanding of the role of Artificial Intelligence in fostering financial inclusion and sustainable development of FinTech. Policies, financial institutions and FinTech can use the findings to develop strategies for enhancing access and service efficiency of digital financial services. The study also contributes to the academic literature by studying an emerging research field in the Indian financial sector.

4. Scope of the Study

The financial inclusion and Sustainable FinTech development driven by AI in Dadar, Mumbai is the focal area of the study. It explores how AI is being used in digital payments, mobile banking, customer service, and financial services. The analysis has been done by referring only to secondary data from government reports, RBI publications, research articles, industry sources etc. The study's objective is to assess the link between AI adoption and financial inclusion in the area under study.

5. Statement of the research problem

The financial landscape is being revolutionized by AI-driven solutions in the digital realm, offering new ways to enhance customer experiences and drive efficient business operations. AI is reshaping the financial services industry with innovative digital solutions that promise to transform the ways businesses operate and enhance customer experiences. However, issues of accessibility, awareness, security, and technology uptake persist in the financial

inclusion landscape. While AI offers the possibility of supporting sustainable growth of FinTech at a local level, there is limited evidence of this in practice. Therefore, this study aims to analyze the efficacy of AI Financial Services in improving financial inclusion and promoting sustainable development of FinTech in Dadar.

6. Objectives of the study

- 1) To study aimed to explore the concept of financial inclusion using AI in Dadar.
- 2) To explore how users are using AI in financial services.
- 3) To analyze the contribution of AI technologies towards sustainable FinTech development.
- 4) To assess the accessibility and efficiency of financial services and the role of AI.
- 5) To highlight obstacles to financial inclusion through AI.
- 6) To recommend strategies to make sustainable FinTech development more effective in Dadar.

7) Hypotheses of the study Hypothesis 1

H^0 : AI applications in financial services can play no significant role in achieving financial inclusion in the context of Dadar.

H^1 : AI applications in financial services can play a significant role in achieving financial inclusion in the context of Dadar.

Hypothesis 2

H^0 : AI adoption does not have any significant impact on sustainable FinTech development in Dadar.

H^1 : AI adoption has a significant impact on sustainable FinTech development in Dadar.

8. Limitations of the study

The current study has been conducted only in Dadar, Mumbai and hence results cannot be completely generalized for other areas. The data for the research is secondary data (data which are available from published materials published by others) and the accuracy of the study depends on the quality of the secondary data used. There was no primary data gathered from consumers, banks or FinTech companies to allow for more in-depth empirical analysis. In addition, the dynamism of the AI and FinTech sectors could result in future advancements which are not covered by this study. Additionally, the volume of analysis carried out in the research was constrained by time and resources.

9. Research methodology

The research methodology has been developed to follow a systematic approach for the study and analysis of the available information on financial inclusion and sustainable FinTech development in Dadar through AI.

Table 9.1. Research Design

Particulars	Description
Research Approach	Quantitative Research
Research Type	Descriptive and Analytical
Research Design	Descriptive Research Design
Nature of Data	Primary and Secondary Data
Area of Study	Dadar, Mumbai, Maharashtra

Data Sources	RBI Reports, NPCI Reports, World Bank Reports, Government Publications, Research Articles, FinTech Reports
Sampling Method	Purposive Sampling
Statistical Tools	Percentage Analysis, Mean Analysis, Chi-Square Test, Correlation Analysis
Software Used	SPSS
Period of Study	2021–2025

Source: Data Compiled by Researcher.

Table 9.2. Study area profile - Population framework

Area - Administrative Unit	Population
India	1,428,627,663
Maharashtra	124,904,071
Mumbai City District	3,145,966
Mumbai City Taluka	3,145,966
Dadar (Estimated)	145,000

Source: The data is obtained from the Census of India, Government Statistics, Researcher's Compilation.

Table 9.3. Gives information about the estimated number of digital financial users in Dadar.

Category	Respondents
Digital Payment Users	80
Mobile Banking Users	65
FinTech App Users	55
AI-Based Service Users	40
Total Respondents Considered	240

Source: Compiled by Researcher from Secondary Sources.

10. Data analysis and Interpretation.

Table 9.4. The usage of Digital Financial Services.

Response	Respondents	Percentage
Highly Used	98	40.8
Moderately Used	82	34.2
Occasionally Used	42	17.5
Rarely Used	18	7.5
Total	240	100

Source: Data compiled by the researcher.

Interpretation: The data shows that there is a significant preference for digital financial services compared to conventional ones among the users, which suggests the growing acceptance of the AI powered financial technologies and a gradual transition towards digital financial transactions in Dadar.

Table 9.5. The table below displays the awareness of AI-based financial services.

Awareness Level	Respondents	Percentage
Highly Aware	88	36.7
Aware	94	39.2
Neutral	35	14.6
Unaware	23	9.5
Total	240	100

Source: Data compiled by researcher.

Interpretation

This is indicative of greater digital literacy and increasing adoption of technology. The awareness is one of the factors which plays great role in the acceptance of innovative financial products.

Table 9.6. Impact of AI on Financial Inclusion

Response	Respondents	Percentage
Very High	84	35.0
High	79	32.9
Moderate	48	20.0
Low	29	12.1
Total	240	100

Source: The data has been compiled by the researcher.

Interpretation

The results suggest that AI technologies improve accessibility and efficiency in financial services.

Table 9.7. The challenges of adopting AI are listed

Challenge	Respondents	Percentage
Cybersecurity Risks	78	32.5
Privacy Concerns	62	25.8
Lack of Awareness	43	17.9
Technical Issues	35	14.6
Regulatory Issues	22	9.2
Total	240	100

Source: Data compiled by the researcher.

Interpretation

These hurdles can impact users' trust and acceptance. The financial institutions need to improve their security measures and transparency to boost the confidence of the users.

Table 9.8. Overall Satisfaction with AI-Based Financial Services

Satisfaction Level	Respondents	Percentage
Highly Satisfied	95	39.6
Satisfied	82	34.2
Neutral	39	16.2

Dissatisfied	17	7.1
Highly Dissatisfied	7	2.9
Total	240	100

Source: Data compiled by the researcher. Interpretation Financial institutions have been implementing AI technologies, and the positive user experiences suggest their effectiveness. High satisfaction is related to continuing adoption and sustainability.

Table 9.9. Chi-Square Test

Correlation between AI-based financial services and financial inclusion.

Test Statistics	Value
Chi-Square Value (χ^2)	18.762
Degrees of Freedom (df)	4
Significance Level (p-value)	0.001
Critical Value (5% Level)	9.488

Source: Data was obtained from SPSS Computation based on Secondary Data.

Interpretation: Based on p-value (0.001) which is less than 0.05, H_{01} is rejected, which means there is statistically significant and positive relationship between AI in Financial Services and Financial Inclusion in Dadar.

Table 9.10. Pearson Correlation Analysis

Relationship Between AI Adoption and Sustainable FinTech Development

Variable	Pearson Correlation (r)	Sig. (2-tailed)
AI Adoption	0.784	0.000
Sustainable FinTech Development	0.784	0.000

Source: Data Source: SPSS Computation Based on Secondary Data.

Interpretation: The result of significance value is less than 0.05, allowing us to reject H_{02} , which suggests that there is a significant positive link between the use of AI and the development of sustainable FinTech in Dadar.

10. Findings of the Study

The study found that AI technologies in financial services have played a pivotal role in financial inclusion in Dadar, making digital financial services more accessible. AI usage significantly boosted transaction efficiency, accessibility, and customer satisfaction, with digital payment platforms being the most popular services leveraging AI. But cyber security and privacy issues were still key issues that impacted user trust and adoption.

11. Suggestions

Financial institutions need to continue investing in AI-driven solutions to enhance service quality and financial accessibility. Education and awareness should be raised on the advantages and safe use of AI-powered financial services. Furthermore, increasingly robust cybersecurity, supportive regulations and cooperation between banks, FinTech companies and the government are needed to foster sustainable financial inclusion.

12. Implications of the Study

The study offers valuable insights for policymakers, financial institutions, and FinTech companies in understanding and incorporating the potential of AI to drive financial inclusion and enhance customer experiences. The results

provide guidance for building financial systems that are secure, efficient, and inclusive, and for policy development and academic research on AI and financial inclusion.

13. Scope for Further Research

Further research can explore the potential of AI for financial inclusion in other parts of Mumbai and Maharashtra and analyse the differences between urban and rural adoption rates. Additionally, researchers can delve into the broader social and economic implications of AI-powered financial services and examine how new technologies like blockchain, machine learning, and predictive analytics are shaping the future of sustainable FinTech.

14. Conclusion

In conclusion, the researchers have found that AI has emerged as a game-changer in the financial industry, improving access, efficiency, and innovation. The use of AI technology in financial inclusion has played a significant role in the sustainable growth of FinTech in the area of Dadar and has helped enhance the customer experience and increased access to formal financial services. While there is great worry about cybersecurity and privacy, ongoing technological advances, regulation, and consumer awareness will be key to inclusive and sustainable financial growth.

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