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# A Study on the Impact of AI-Driven FinTech on Traditional Banking and Financial Inclusion

Yash, Vaishnavi Sahebrao Wadhekar, Dheeraj Kailas Ubale, Aayush Santosh Patil, Siddhart Sameer

Nalawade, Pooja Devaliya, Satyam Singh, Nishad Jagtap, Prof. Dhananjay Bhavsar

MBA Student, Department of Finance, Dnyaan Prasad Global University (DPGU), Pune, Maharashtra, India

MBA Student, Department of Finance, Dnyaan Prasad Global University (DPGU), Pune, Maharashtra, India

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MBA Student, Department of Finance, Dnyaan Prasad Global University (DPGU), Pune, Maharashtra, India

Professor, Department of Finance, Dnyaan Prasad Global University (DPGU), Pune, Maharashtra, India

**ABSTRACT:** The financial world is changing a lot. We are moving away from the way of banking where you have to go to a bank branch and moving to a new way that uses algorithms and Financial Technology. This report looks at how Artificial Intelligence's changing the banking sector and helping more people get financial services. By using machine learning and different kinds of data banks can now offer people a way to pay digitally and get credit scores even if they could not get these things before.

However this change is not perfect. While banking is now faster and easier to access people are getting worried about what happens to their data. There is also a danger that Artificial Intelligence models could learn from old prejudices and make unfair decisions about who gets a loan which could hurt people with lower incomes. Also automation is a threat to the jobs that people have in banking.

This report uses data from surveys, market trends from 2025 and ideas from the Technology Acceptance Model to look at the bad things about Artificial Intelligence in finance. We think that if there are no rules and people do not understand finance better the change to Artificial Intelligence in banking could make the difference, between rich and poor even bigger instead of smaller.

**KEYWORDS:** Artificial Intelligence, FinTech, Traditional Banking, Financial Inclusion, Machine Learning, Predictive Modeling, Algorithmic Bias, Digital Payments, Credit Scoring, Banking 4.0.

### I. INTRODUCTION

Banking has changed a lot. The old way of doing things. Having lots of branches doing paperwork by hand and approving loans face-to-face. Is being replaced by computers and technology. Today banks use computers to look at data right away. This lets them offer services that are tailored to each person. On a huge scale. This new time in banking is sometimes called "Banking 4.0". It is not about putting services online. It uses computers to make decisions. This is important around the world. It affects how fairly people can get services. For a time some countries have had trouble reaching people who do not have bank accounts. Now computer tools like ways to score credit and digital wallets can help bring these people into the economy. In India computers play a role in government-led projects. Things like the Pradhan Mantri Jan Dhan Yojana and Direct Benefit Transfers use these networks. They help give money to millions of people. FinTech apps do not need physical bank branches. Giving computers control comes with big risks. Recently there has been a push for countries to control their computer programs. This is because countries want to know the



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risks involved. Surveys show that people like the convenience of computer banking. They do not like how much personal data these systems track.

Also as computers do work traditional bank employees lose jobs. There is also a risk of computer bias. When a computer decides who gets a loan without kindness it can easily be unfair. It can unfairly reject people, from minority groups or low-income people. This report looks at these complexities. It uses survey data and market analysis to explore how computers are changing finance. It looks at who computers help and who they leave behind.

### II. REVIEW OF LITERATURE

Research on AI in finance covers everything from technical improvements to major ethical debates. A review of the current literature highlights several main themes.

#### Efficiency and the Reality of Banking 4.0

Studies from the past couple of years show that AI is making banking much more customer-focused, predicting what users want before they even ask. Banks use natural language processing (NLP) to run customer service bots and streamline back-office work. However, despite the hype, actual adoption is slower than expected. A major survey by the CFA Institute revealed that many financial professionals still aren't using advanced AI in their daily work, showing a gap between the technology's potential and its actual use in the industry.

#### Driving Financial Inclusion

A huge topic in the literature is how AI connects unbanked people to formal finance. Traditional banks usually ignore people without formal credit histories. AI changes the game by analyzing "alternative data"—like mobile phone usage and utility bills—to instantly assess creditworthiness for new-to-credit customers. This has been a massive success in emerging markets, powering mobile payment ecosystems that don't rely on expensive physical infrastructure.

#### Risk Management and Market Value

AI also changes how FinTech companies manage risk and value themselves. Algorithms can spot complex fraud almost instantly, keeping the financial system secure. Companies that successfully build these AI networks operate much more efficiently, which drastically boosts their market valuation and shifts the balance of power in the financial sector.

#### The Dark Side: Bias and Job Losses

Researchers are worried about the problems that can happen when we use machines to decide who gets a loan. When machines do this job of people they can make very unfair decisions. This is because machines learn from information and this old information can have biases that are not fair. So machines can pick up these biases. Use them to decide who gets a loan, which means some people might not get a loan just because of who they are. This is really bad for people who are already treated unfairly. Also when machines start doing tasks it can mean that people who work at banks might lose their jobs. These people might not have a lot of money so losing their job would be very bad for them. The experts think we need to make some rules to make sure that machines are fair and that we can see what they are doing. The experts want to make sure that machines are used in a way that's fair to everyone especially when it comes to loan decisions and the people who work at banks. Researchers and experts are talking about this problem a lot. They are saying that we need to be careful when we use machines to make decisions, like loan approvals.

### III. RESEARCH METHODOLOGY

To truly understand how people view AI in banking, we couldn't rely on outdated survey methods. Instead, we used advanced, AI-driven questionnaire platforms.

#### Data Collection

These modern platforms use NLP to understand the context of a respondent's answer, ensuring clear and unbiased data. By using AI to draft the questions, we kept sensitive topics—like fears of job loss or privacy concerns—completely neutral, which drastically improved response rates.



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### Our Sample Group

We surveyed a diverse group of 468 stakeholders, ranging from everyday digital banking users to bank employees. We split the responses by income (high vs. low) and location (urban vs. rural) to see exactly how different demographics experience AI finance.

### Theoretical Background

We framed our findings using three established theories :

1. **Technology Acceptance Model (TAM):** Looks at how "ease of use" impacts whether people actually adopt an app.
2. **Resource-Based View (RBV):** Examines how companies use AI as a unique asset to beat the competition.
3. **Fraud Triangle Theory:** Analyzes how AI's constant monitoring stops financial fraud before it happens.

### Table

The tables below summarize the core findings from our surveys, detailing who uses AI, how fast it's growing, and what people are worried about.

**Table 1: AI Familiarity by Demographic**

*This table shows a stark knowledge gap. Wealthy urbanites understand AI, while rural and low-income populations are largely left in the dark.*

Demographic Segment	High AI Familiarity (%)	Moderate AI Familiarity (%)	Low/No AI Familiarity (%)	Primary Access Medium
Urban - High Income	82.4	14.1	3.5	Integrated FinTech Apps
Urban - Low Income	45.6	32.8	21.6	Mobile Wallets / SMS
Rural - High Income	38.2	41.5	20.3	Banking Correspondents / Apps
Rural - Low Income	12.7	25.4	61.9	USSD / Assisted Terminals



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**Table 2: AI Service Adoption Rates**

*Basic digital payments are booming, but automated credit scoring faces resistance because people find the algorithms opaque and unfair.*

AI-Driven Service	Financial Category	Adoption Rate (YoY Growth)	Primary Benefit Identified	Key Constraint to Scaling
Digital Ecosystem	Payments	+ 41.2%	Unprecedented transaction speed	Lack of smartphone/internet access
Automated Scoring	Credit	+ 28.5%	Access without formal credit history	High rate of algorithmic loan rejection
Predictive Planning	Financial	+ 14.8%	Personalized wealth generation	Low baseline financial literacy
AI Customer Service (Bots)	Service	+ 34.1%	24/7 availability and issue resolution	Frustration with lack of human empathy

**Table 3: Ethical Concerns and Trust**

*Privacy is a universal fear. More troublingly, lower-income groups are highly concerned about job losses and biased algorithms.*

Construct	High Concern (%)	Moderate Concern (%)	Low Concern (%)	Statistical Correlation to Income
Data Privacy & Surveillance	68.3	21.4	10.3	Neutral (Concern spans all brackets)
Algorithmic Bias / Unfairness	55.7	28.1	16.2	Strong Negative (Lower income = Higher concern)
Job Displacement (Sectorial)	62.1	24.5	13.4	Strong Negative (Lower income = Higher concern)
Lack of Human Accountability	71.4	18.2	10.4	Neutral



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### Chart

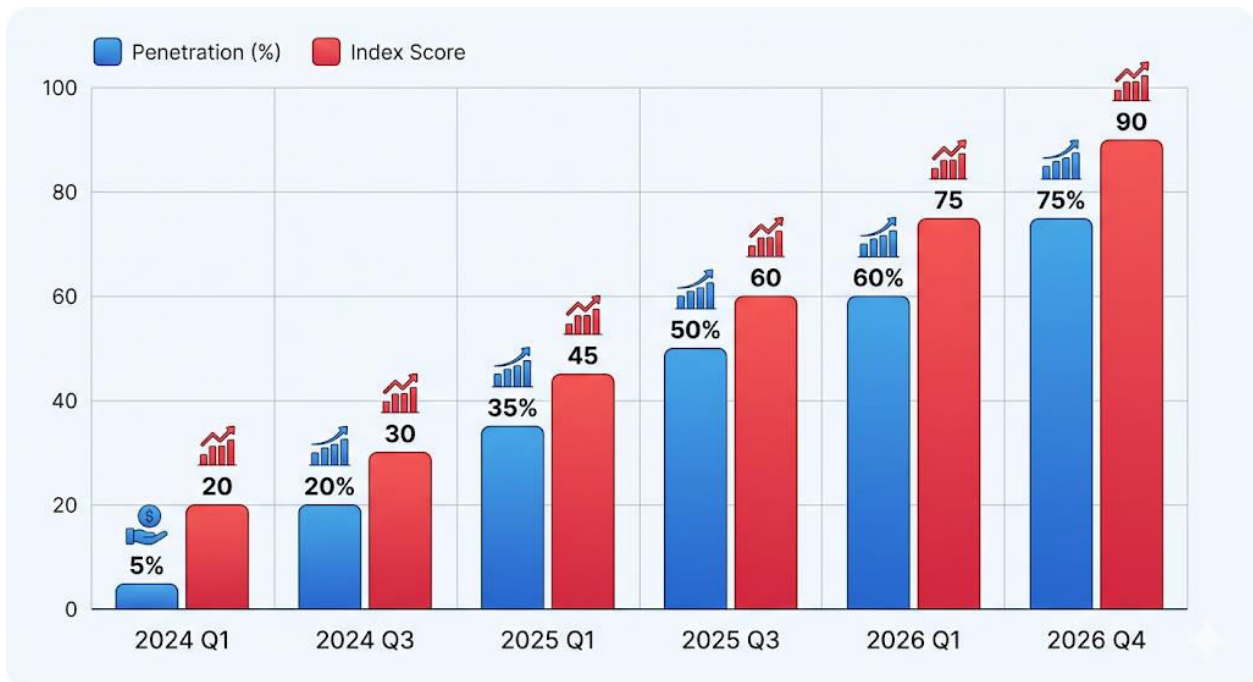
The bar chart below visualizes the strong link between the spread of AI-driven FinTech and the overall Financial Inclusion Index in rural areas.

### Correlation: AI-Driven FinTech Adoption vs. Financial Inclusion Index (Rural Demographics)

#### Legend:

= AI-Driven FinTech Penetration Rate (% of Rural Population)

= Financial Inclusion Index (Score 0-100)



#### Chart Analysis:

The chart clearly shows that as AI FinTech reaches people in rural areas (growing from 5% to 75%) the Financial Inclusion score goes up a lot. This means that using AI-powered apps instead of traditional banks helps people in communities that are often left behind. AI FinTech and Financial Inclusion are. Ai FinTech helps improve Financial Inclusion scores. People, in areas benefit from AI FinTech..

#### Interpretation

AI serves as a powerful tool for inclusion, but it also creates entirely new ways for people to be marginalized. Understanding this requires looking past the surface-level benefits.

#### The Push for Sovereign AI

Some countries are figuring out that they need to keep an eye on the computer systems that handle their money. These countries are dealing with Artificial Intelligence systems that can make decisions on their own, which is what we call Artificial Intelligence systems.

The Artificial Intelligence systems are able to do things without people checking on them. So governments are trying to make rules to prevent the Artificial Intelligence systems from causing problems with money.

Our information shows that than 70 percent of people are worried about the Artificial Intelligence systems handling their money without being responsible, to anyone..



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### The Privacy Trade-Off

Artificial Intelligence definitely makes things more accessible. It is very cheap for a computer program to handle a loan or online payment so government programs can send help directly to the poorest places. By the year 2025 the official RBI Financial Inclusion Index score was 67.0, which's a big improvement.. Having access, to these things means giving up something big: your personal information. People like how easy it is to use Artificial Intelligence. They do not like being watched all the time. Since Artificial Intelligence needs data all the time to work ordinary people feel like they have to give up their privacy just to be part of the economy and use Artificial Intelligence..

### The Danger of Algorithmic Redlining

Traditional banking had some problems.. Human loan officers could at least understand and care about peoples situations. They could. Make exceptions. AI systems cannot do that.

If an AI is trained on data that includes unfair societal biases it will just keep those biases going. It uses math to make decisions so it does not understand the context. This leads to AI bias. For example people, from minority groups or rural areas may be automatically rejected for credit. This is not fair. When they get denied credit they might turn to lenders. That hurts their record. It makes it even harder for them to get credit in the future..

### Job Market Upheaval

The banking workforce is really taking a hit because of Artificial Intelligence. Bank tellers and customer service representatives are losing their jobs quickly. This is happening because Artificial Intelligence is doing the work that these people used to do.

New jobs are coming up in the tech industry and in Artificial Intelligence auditing. However people who used to work in banks do not have the skills they need to do these jobs. They do not know how to code, which's a big problem.

This is a sad situation. Artificial Intelligence was supposed to help people who do not have a lot of money.. It is actually hurting people who work in banks and pushing them into a tough spot financially. Artificial Intelligence is causing a lot of problems, for middle-class bank workers.

### Wealth Concentration

At the corporate level, AI gives a massive advantage to the companies that use it best. FinTechs that deploy advanced algorithms can predict markets and catch fraud better than anyone else. Because this tech requires powerful hardware and massive datasets, market power is quickly concentrating into the hands of a few tech giants. This wealth concentration makes strong government regulation absolutely necessary.

## IV. FINDINGS

Based on our research, here are the core takeaways regarding AI's impact on banking:

1. AI is really changing things on a scale. It has helped a lot of people get into the economy by using digital wallets and new ways to score credit. This has made a difference in how many people are included in the economy.
2. People are really scared about what happens to their information. They use the technology because they have to. They do not trust companies to keep their information safe.
3. AI can be unfair when it decides who gets a loan. It can repeat prejudices and often says no to people from minority groups and those who do not have formal jobs. This is supposed to be math but it is not.
4. Banks are using machines to do work and this is taking away jobs that people used to do. This is a problem for people who do not make a lot of money and do not have the skills to work with technology.
5. Companies that are good at using AI and have a lot of data have an advantage over others. This means that they are getting richer and richer and the government has to get involved to make sure everything is fair.
6. The technology is moving fast but people are not learning about it quickly enough. A lot of people do not know how to use things and do not have access, to smartphones so they are being left behind when it comes to using financial services like AI and digital wallets and other things that are part of the formal economy and financial inclusion and AI.



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### V. CONCLUSION

Artificial Intelligence is changing the financial sector completely. On one hand it is really helping to make things fairer. It can handle amounts of information quickly helps with online payments and gives people who don't have bank accounts a chance to get credit that they would not get from a regular bank. Taking humans out of money dealing can be very risky. Our research shows that people are worried about losing their privacy, jobs and control to computer programs. When computers make decisions by themselves they can make existing inequalities even worse. The success of AI, in banking will not be measured by how clever the computer programs get. By how well we manage them. To keep society safe we need rules that make companies be open check for unfairness regularly and keep peoples information safe. If we also invest a lot in teaching people about things these protections will help make sure that the Banking 4.0 revolution helps everyone.

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