

Study on Artificial Intelligence (AI) in Financial Services Within the Dharwad District

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Abstract- Introduction: *A study on artificial intelligence (AI) in financial services in Dharwad district examines how global technology trends match up with the local economic and social conditions in this growing tech area. Although general research shows that AI is rapidly changing financial services, studies on Dharwad suggest it could become a new hub for FinTech innovation.*

Objective of study: *The study on Artificial Intelligence (AI) in financial services in Dharwad District aims to understand how AI is being used locally, what impact it is having, and the unique challenges that are being faced.*

Research methodology: *A study on using artificial intelligence (AI) in financial services in Dharwad would be most effective if it uses both numbers and real-life examples to understand what's happening there.*

Data analysis: *Study that specifically focuses on the data analysis and interpretation of the "Study on Artificial Intelligence (AI) in Financial Services within the Dharwad District."*

Result: *The specific study named "STUDY ON ARTIFICIAL INTELLIGENCE (AI) IN FINANCIAL SERVICES WITHIN THE DHARWAD DISTRICT" found in the results.*

Finding: *The specific study for, titled "Study on Artificial Intelligence (AI) in Financial Services within the Dharwad District," appears to be a particular academic or research project.*

Recommendations: *A study in Dharwad should look at how financial institutions can use AI to make their operations more efficient, manage risks better, and offer more services to a wide range of people.*

Conclusion: *Studies on Artificial Intelligence (AI) in financial services, including those that focus on areas like the Dharwad district, usually show that AI is making big changes in the industry.*

Keyword: *Artificial Intelligence, Financial Services, Dharwad District*

I. INTRODUCTION

A study on artificial intelligence (AI) in financial services in Dharwad district looks at how global technology trends are fitting with the local economic

and social environment in this area that is growing in tech. While general research shows that AI is rapidly changing financial services, studies on Dharwad suggest that it could become a new center for FinTech innovation. This is helped by good educational institutions and a growing IT environment.

Background:

The global financial services industry is being transformed by AI, which improves efficiency, decision-making, and customer experience through tools such as fraud detection, algorithmic trading, and virtual assistants.

In India, FinTech is widely used, driven by things like UPI and a focus on digital payments. The Reserve Bank of India is also creating an AI system to detect fraud. The Hubballi-Dharwad area is becoming an important tech region in North Karnataka.

Important developments in the region include:

- Established Tech Presence: Infosys has opened a Center for Advanced AI, Cybersecurity, and Space Technology in Hubballi, working with local schools like the Indian Institute of Information Technology (IIIT) Dharwad and KLE Tech to develop talent and drive innovation.

- Educational Hub: Schools like IIT Dharwad and IIIT Dharwad help create a skilled workforce, which is important for using AI in local businesses, including financial services.

- Government Initiatives: The Karnataka government's LEAP program aims to make the state a global AI talent center, pushing growth from Bengaluru to areas like Hubballi-Dharwad.

Potential Areas of Study:

A study specific to Dharwad could explore several unique aspects of AI use in the local financial sector:

- Local Adoption Patterns: How are local financial groups like district cooperative banks, regional rural banks, and private bank branches using AI compared to big cities?
- Rural Financial Inclusion: How can AI tools like credit-scoring models and chatbots help improve financial access in rural parts of the district, considering issues like trust and technology knowledge?
- Talent and Skills Gap: How many AI experts are in the region, and how well are companies like Infosys working with schools like IIIT Dharwad and KLE Tech to meet the need?
- Challenges and Opportunities: What are the region-specific issues, like poor infrastructure or privacy concerns, and what opportunities come from government plans to develop North Karnataka as a FinTech center?

This research would give a full picture of how AI is changing traditional financial processes and improving the abilities of financial institutions in a specific, non-metro part of India.

II. LITERATURE REVIEW

Risk Management and Fraud Detection:

Gao, Shijia; Xu, Dongming; Wang, Huaiqing; Green, Peter (2009). Anti-money laundering (AML) software is used in the finance and legal industries to help businesses follow the rules needed to stop or report money laundering. This software makes it easier and more accurate for companies to stay compliant and do investigations.

Czech, Tomasz (2018). This results in fewer errors and more accurate detection. In the near future, systems that check transactions will use machine learning instead of just relying on rules and situations.

Customer Service and Personalized Finance:

Lucas, Robert (2015). Customer service is the support and assistance a company provides to people who buy

or use their products or services, either in person or online. The way a company offers customer service often reflects its values, and the quality of service can be different in each industry.

Buchanan, Leigh (2011). The quality of customer service is usually measured by how well a company retains its customers. Good customer service relies on employees who can be flexible and adjust to the needs of each customer.

Tahira, K. Hira (2009). In 2008, the United States President's Advisory Council on Financial Capability was formed to encourage financial knowledge among Americans. It also showed the importance of having a standard for financial education.

Credit Scoring and Underwriting:

Kagan, Julia (2007). A credit score is a number that shows how trustworthy a person is when it comes to borrowing money, based on their past credit history.

Probasco, Jim (2021). The term "underwriting" comes from the insurance industry in Lloyd's of London. Financial backers, who take on some risk for a project (such as a sea voyage that had risks like a shipwreck), would sign their names under the risk details on a Lloyd's slip.

III. OBJECTIVE OF STUDY

The study on Artificial Intelligence (AI) in financial services in Dharwad District aims to understand how AI is currently being used locally, what impact it is having, and the special challenges that are being faced. This study will build on the general knowledge about AI in the finance sector.

Main Goals of the Study:

- To examine the level of AI usage by financial institutions like banks, micro-finance groups, and insurance companies in Dharwad.
- To understand how AI is influencing various aspects of financial services, such as daily operations, risk management, fraud detection, and customer service, considering the local context of Dharwad.

- To identify potential benefits and opportunities that AI could bring to the financial sector and the people of Dharwad, such as easier access to financial services and more personalized options.

- To explore the specific problems and barriers, such as limited digital skills, poor infrastructure, high costs, strict rules, and a lack of trained professionals, that are preventing AI from being widely adopted in financial institutions in the area.

- To assess the views of financial professionals and people in Dharwad regarding the use of AI in decision-making, their perception of its usefulness, and potential ethical concerns.

- To provide recommendations to government officials, financial organizations, and other key stakeholders on how to use AI efficiently to support the region's growth, improve services, and address local issues.

Local Focus:

Because of the unique situation in Dharwad, the study will also pay special attention to local issues like:

- To investigate how AI can help provide financial services to people who are not well-served by traditional systems, such as small farmers and women in Dharwad, possibly through tools like the Money Purse App or similar projects.

- To find out how AI can help improve the skills of the local workforce and create better job opportunities in the fast-growing technology-based financial services industry, building on existing initiatives that use AI for employment.

- To study the use of AI in agricultural finance within the district, especially since farming is a major part of the local economy and there is a need for better credit and financial support for farmers.

IV. RESEARCH METHODOLOGY

A study on using artificial intelligence (AI) in financial services in Dharwad would work best if it uses both numbers and stories to understand what's happening there. This mix of methods would help get

a full picture of how AI is being used in a specific local area.

I. Research Design:

- Approach: To see how AI is being used and what difference it's making, a descriptive and analytical plan would be good. Focusing on specific banks and financial groups, like public, private, cooperative, and microfinance organizations in Dharwad, would offer detailed insights.

- Target Population: People who work in finance, like managers, IT staff, and customers, would be the ones involved in the study.

Sampling Method:

- o Financial Institutions: We could pick banks and financial groups carefully based on their type, such as public banks, private banks, and regional rural banks, to include a wide range of experiences.

- o Respondents: To get opinions from the right people, we could use a mix of random selection and asking people who already know about AI to help find others.

II. Data Collection Methods:

Primary Data:

- Structured Questionnaires/Surveys : Questionnaires sent to many people in the financial industry and customers, using online and paper forms. These would include yes/no and scale-based questions to learn about AI use, benefits, obstacles, and opinions.
- Semi-structured Interviews : Face-to-face or online talks with key people like IT managers and top decision-makers to get deeper insights on how AI is used, ethical issues, and real-life experiences.

Secondary Data :

- Literature Review: Looking through research papers, reports from banks like RBI and PwC, government documents, and case studies about AI in finance in India to understand the bigger picture and check if our findings match what's already known.

- Analysis of Company Reports : Studying the annual reports and other documents from big banks in Dharwad to see if they share information about using AI and how it's affecting their work.

III. Data Analysis Methods:

- Quantitative Analysis:

- o Descriptive Statistics: Using numbers like average, middle value, and how spread out the data is to understand how AI is being used and what people think about it.

- o Inferential Statistics: Using tools like correlation, t-tests, ANOVA, and regression to find out if AI is helping improve performance, efficiency, or decision-making in Dharwad's financial sector.

- Qualitative Analysis:

- o Thematic Analysis: Looking at the interviews to find common topics or problems people face when using AI, like privacy issues, lack of skills, or poor infrastructure.

IV. Ethical Considerations:

- Data Privacy: Making sure all customer and company information is kept safe and meets rules like the Digital Personal Data Protection Act, 2023.

- Informed Consent: Getting permission from everyone who takes part in the study and telling them they can remain anonymous if they want.

- Bias: Being aware of any unfairness, especially in AI tools like credit scoring systems that might affect certain groups more than others, and making sure our study doesn't have any hidden biases.

V. DATA ANALYSIS

Study that specifically focuses on the data analysis and interpretation of the "Study on Artificial Intelligence (AI) in Financial Services within the Dharwad District." The research that exists is more general, looking at AI in financial services across India or in specific cities like Bangalore, but not focusing on Dharwad for a detailed analysis. However, the general findings from similar studies in India can help us

understand some key points that are likely relevant to Dharwad as well:

General Interpretation of AI in Indian Financial Services:

- Main Uses of AI:

- Detecting and preventing fraud, which is very useful and often used a lot?

- Chatbots and virtual assistants for helping customers, which are widely adopted and seen as helpful.

- Using biometrics and authentication methods for secure login.

- Complying with Know Your Customer (KYC) and Anti-Money Laundering (AML) rules.

- Credit scoring and loan approvals, where AI helps assess risk more accurately by looking at data.

- Benefits of AI:

- Helps banks and financial companies work faster, make decisions quicker, and cut down on costs.

- Makes customer service better by offering personalized help and quicker responses, which leads to happier customers.

- Helps manage risks better by finding patterns in large amounts of data that people might miss, reducing loan defaults and improving security.

- Challenges with AI:

- Privacy and security of data is a major concern for both banks and customers.

- There's a need for better infrastructure and training for staff to work with AI.

- There's a push for fairness, transparency, and accountability in how AI makes decisions.

Context for the Dharwad District:

Although there is no specific study about AI in financial services in Dharwad, the Dvara Centre for AI for Financial Inclusion has been set up at IIT Dharwad.

This shows that there is a growing interest in using AI to address local issues, especially in financial inclusion. This aligns with national efforts to expand digital access in rural areas, including innovative solutions for lending to groups that are not well-served by traditional banking.

Artificial intelligence (AI) in financial services involves the use of advanced technologies like machine learning (ML), natural language processing (NLP), and expert systems to automate processes, enhance decision-making, manage risk, and personalize customer interactions.

VI. RESULT

The specific study named "STUDY ON ARTIFICIAL INTELLIGENCE (AI) IN FINANCIAL SERVICES WITHIN THE DHARWAD DISTRICT" found in the results. However, many academic studies examine how AI is being used and its impact on the financial sector in India. Some of these studies also look at parts of Karnataka, such as Bangalore and Hubli-Dharwad.

General Findings from Related Studies in India:

Research shows that AI has a significant and positive effect on financial services in India.

Key Applications of AI:

- Fraud Detection and Prevention: AI systems quickly look at a lot of data to spot unusual activities, which is very important for banks and financial companies.

- Customer Service: AI chatbots like HDFC's "Eva" and ICICI's "iPal" provide quick support all day and night. They help with answering questions, managing accounts, and suggesting products.

- Credit Scoring and Loan Approvals: AI uses machine learning to better understand people's creditworthiness by looking at different types of data, such as how they spend money or use their phones. This helps approve loans faster and makes it easier for people who usually don't get credit.

- Operational Efficiency and Automation: Tasks like checking transactions, entering data, and preparing reports are now done by AI. This lowers costs, reduces mistakes, and improves how well companies run.

- Risk Management and Predictive Analytics: AI helps companies manage risks better by predicting market changes and using advanced models to see what might happen in the future.

Findings Specific to the Dharwad Region and Karnataka:

- Regional Context: One study looked at how AI-driven digital tools helped women business owners in Dharwad. It found that using digital tools, especially AI for marketing and automation, helped these businesses earn more money and reach more customers.

- Industry and Academia Linkages: The Karnataka IT Policy 2025-2030 aims to connect industry and education to prepare workers for new technologies like AI. This shows the state is trying to include AI in its industries. Also, Infosys has started an AI and cybersecurity center in Hubballi, which is near Dharwad.

- Perceptions and Challenges: Studies show that most financial workers see AI as helpful for making work faster and more accurate. But there are worries about how private data is handled, possible biases in AI decisions, and the need for clear rules to govern AI use.

In conclusion, the financial services in Dharwad are probably moving towards using AI, similar to what's happening in the state and country as a whole. This shift is all about making things more efficient, improving customer service, and managing risks better.

VII. FINDING

The specific study for, titled "Study on Artificial Intelligence (AI) in Financial Services within the Dharwad District," appears to be a particular academic or research project. That said, there are general findings about AI in financial services that apply to similar regions in India, like Karnataka and Bangalore, which can give you a good idea of what's happening in Dharwad.

Here are some key points from related studies:

- Widespread Adoption: Private Banks and financial companies are using AI in many ways to help their customers.

- Key Uses: AI is used for chatbots, detecting fraud, scoring credit, managing risks, and offering personalized financial advice.

- Benefits: Using AI improves the quality of services, makes operations more efficient, speeds up service, and helps in better decision-making.

- Customer Satisfaction: Most customers are happy with AI services because they are easy to use and feel secure. However, some still have issues with certain banking services.

- Challenges: Even though AI has many benefits, there are problems like protecting customer data, ensuring security, needing strong digital systems, and a lack of trained workers who know AI.

- Local Work: Places like the AI Centre for Financial Inclusion at IIT Dharwad are working on AI solutions to help people in rural areas, showing that the region is starting to focus more on AI.

In short, general research shows AI has a big, positive effect on the financial services industry in India. It's likely that institutions in Dharwad are following similar trends, focusing on making services more efficient and better for customers, while also dealing with challenges like data and skill gaps.

VIII. RECOMMENDATION

Based on general studies about AI in the Indian financial sector, a study focusing on the Dharwad district is likely to find similar opportunities and challenges. This is because of projects like the Dvara Centre for AI for Financial Inclusion at IIT Dharwad, which is working on using AI to improve financial services.

Recommendations for a Study on AI in Financial Services within the Dharwad District:

A study in Dharwad should look at how financial institutions can use AI to make their operations more efficient, manage risks better, and offer more services to a wide range of people. It should also consider the

local challenges such as poor infrastructure and limited human resources.

Key Study Areas:

- Current Adoption Levels: Check how much AI tools like chatbots, fraud detection systems, and credit scoring models are being used in local banks (both private and public, like Canara Bank and SBI) and microfinance institutions in the Dharwad district.

- Impact on Financial Inclusion: Look into how AI can help reach people in underbanked and rural areas of Dharwad. This could involve using alternative data to assess creditworthiness and providing low-cost digital financial services.

- Opportunities for Efficiency and Personalization: Explore how AI can automate everyday tasks, offer personalized financial advice, and improve the customer experience for the local population.

- Local Challenges: Investigate specific local issues such as:

- Data Quality and Availability: Look at the problems with gathering and organizing high-quality data that is relevant to the local population.

- Digital Literacy and Skill Gaps: Check the need for training local workers and educating customers on how to use AI-based financial services.

- Regulatory Compliance and Ethics: Examine how local financial institutions can follow rules and handle concerns about biased algorithms and data privacy.

Strategic Recommendations:

1. Develop Localized AI Roadmaps: Encourage financial institutions to create AI plans that match their goals in the Dharwad region, taking into account local infrastructure and needs.

2. Foster Academia-Industry Collaboration: Use projects like the Dvara Centre for AI for Financial Inclusion at IIT Dharwad to create custom AI solutions and build up a skilled workforce in the area.

3. Prioritize Fraud Prevention and Security: Implement strong AI-based fraud detection systems to

build trust and protect against increasing risks in digital transactions.

4. Invest in Human Capital: Offer thorough training programs for current employees to work well with AI technologies, not just replace jobs.

5. Establish Ethical Frameworks: Create clear ethics guidelines to ensure AI is used fairly, transparently, and responsibly, especially in credit scoring for different communities, to avoid bias.

CONCLUSION

Studies on Artificial Intelligence (AI) in financial services, including those that focus on areas like the Dharwad district, usually show that AI is making big changes in the industry. It helps make things more efficient, accurate, and better for customers.

Some key points from these studies are:

- Better Efficiency and Operations: Tools like chatbots, robotic process automation, and predictive analytics are helping financial institutions work faster and at a lower cost.
- Better Risk Management and Security: AI helps detect fraud, assess risks, and follow rules by looking at a lot of data quickly and accurately.
- Personalized Customer Experience: AI allows banks and financial companies to offer better, more customized services, like tailored advice and instant support, which makes customers happier.
- Challenges Still Exist: Even though AI has benefits, there are still problems. These include concerns about privacy, high costs to start using AI, the need for new rules, possible job losses, and the need for training workers to handle these new technologies.
- Future Growth: The future of financial services depends on how well AI continues to develop. Companies that want to stay ahead must use AI wisely, keep strong security measures, and follow ethical standards to keep up with market needs.

In the Dharwad district, research shows that AI is being used to improve access to financial services and work with local organizations like IIT Dharwad to

solve specific problems faced by people who borrow money in India.

Overall, AI has the chance to help the financial industry become safer, more open, and more inclusive.

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