

**AI AND AUTOMATION IN FINANCIAL MANAGEMENT
OPPORTUNITIES AND CHALLENGES IN COIMBATORE****Sidharth Manoj*¹ and Dr. Vishnu M M²**

¹III. B.Com Financial Services & ²Assistant Professor, School of Commerce,
Rathinam College of Arts and Science, Coimbatore-641021, Tamil Nadu, India.

Article Received: 02 January 2026, Article Revised: 22 January 2026, Published on: 10 February 2026

*Corresponding Author: Sidharth Manoj

III. B.Com Financial Services, Rathinam College of Arts and Science, Coimbatore-641021, Tamil Nadu, India.

DOI: <https://doi-doi.org/101555/ijarp.1400>

ABSTRACT

This study examines the transformative role of Artificial Intelligence (AI) and Automation in the financial management practices of Coimbatore city. Known as the "Manchester of South India," Coimbatore is rapidly transitioning from a traditional manufacturing hub to a digitally integrated economy. The study adopts a descriptive research design based on primary data collected from MSMEs and individual investors to analyze the dual impact of these technologies: the *opportunities* they present regarding cost reduction and global credit access, and the *challenges* regarding data privacy and the "digital skill gap." The findings reveal that while digital lending and automated accounting have streamlined operations, there remains a significant need for cybersecurity awareness and workforce upskilling. The paper concludes that a balanced approach, integrating tech-efficiency with human oversight, is essential for the city's sustainable financial growth.

KEYWORDS: Artificial Intelligence, Fintech, MSMEs, Algorithmic Trading, Financial Automation, Coimbatore.

INTRODUCTION

The financial sector is undergoing a paradigm shift, often termed "Industry 4.0," characterized by the fusion of physical and digital systems. While global financial hubs like New York and London have long embraced High-Frequency Trading (HFT) and AI-driven risk assessment, the wave of automation is now penetrating Tier-2 cities in India. Coimbatore, historically celebrated as the "Manchester of South India" for its textile prowess and engineering acumen, stands at the precipice of this digital revolution. The city's economic

backbone—comprising thousands of Micro, Small, and Medium Enterprises (MSMEs)—is increasingly compelled to digitize operations to stay competitive in a post-GST, post-pandemic world.

For the city's vast middle class and prudent business community, financial management has always been rooted in personal relationships and conservative risk-taking. However, the landscape is shifting. Digital lending platforms are replacing traditional collateral-based loans, and robo-advisors are democratizing wealth management for the average salaried employee. The introduction of "black box" algorithms, automated credit scoring, and chatbots challenges traditional norms, creating a tension between algorithmic efficiency and human trust.

This study explores this unique intersection: how a city known for its tangible industrial output is navigating the intangible world of Artificial Intelligence. It investigates whether AI acts as a great equalizer, democratizing access to credit and wealth management, or if it creates a new "digital divide" that alienates those unable to adapt. The study aims to map the current adoption levels, quantify the benefits, and identify the specific hurdles faced by Coimbatore's financial ecosystem.

OBJECTIVES OF THE STUDY

- To examine the key opportunities created by AI and automation for MSMEs and individual investors in Coimbatore.
- To analyze the challenges and risks associated with the implementation of AI in the local financial ecosystem.
- To study the impact of automation on traditional financial job roles and decision-making processes within the city.

STATEMENT OF THE PROBLEM

While the benefits of AI—speed, accuracy, and cost-efficiency—are well documented globally, the specific impact on Tier-2 cities like Coimbatore is complex. Local MSMEs often struggle with the high cost of implementation and a lack of technical expertise. Furthermore, there is a growing concern regarding the displacement of entry-level financial jobs in the region and the security of sensitive financial data against cyber threats. This study attempts to address the gap between the *potential* of AI and the *practical reality* of its implementation challenges in Coimbatore.

SCOPE OF THE STUDY

The study focuses on the adoption of AI and automation within the geographical limits of Coimbatore city. It specifically covers:

1. **MSME Financial Management:** Adoption of automated accounting and digital credit.
2. **Investment Management:** Use of algorithmic trading and robo-advisory by local investors.
3. **Banking & Service:** The shift from traditional branch banking to AI-driven chatbots and apps among the local population.

LIMITATIONS OF THE STUDY

- The study is restricted to respondents residing in Coimbatore city only.
- The analysis is based on self-reported data, which may be subject to personal bias regarding technical competence.
- Due to time constraints, the sample size is limited to 125 respondents.
- Specific proprietary algorithms used by banks could not be analyzed due to confidentiality.

RESEARCH METHODOLOGY

The study adopts a **Descriptive Research Design** to analyze the impact of AI on financial management. This design was chosen to describe the characteristics of the population (investors and business owners) regarding their acceptance and usage of AI tools.

- **Period of Study:** The study was conducted for a period of three months.
- **Area of Study:** The survey was conducted within the corporation limits of Coimbatore City.
- **Population:** The population of the study consists of two distinct groups:
 1. **MSME Owners:** Proprietors of small-scale textile, engineering, and service businesses.
 2. **Individual Investors:** Salaried professionals and students actively using digital investment platforms.
- **Sample Size:** A total sample of **125 respondents** was selected for the study.
- **Sampling Technique:** The **Convenience Sampling method** was adopted to select respondents based on their availability and willingness to participate.
- **Data Collection Sources:**
 - **Primary Data:** Collected directly from respondents using a structured questionnaire via Google Forms. The questionnaire covered demographic details, awareness of AI tools,

frequency of usage, and perceived challenges.

- **Secondary Data:** Collected from journals, Fintech reports, white papers from major consultancy firms, and recent studies on digital adoption in Tamil Nadu.

STATISTICAL TOOLS USED

To analyse the primary data collected, the following statistical tools were employed:

1. Percentage Analysis
2. Chi-Square Test
3. Correlation Analysis

PERCENTAGE ANALYSIS

The percentage analysis is based on responses collected from 125 respondents in Coimbatore. The data covers organizational profiles, adoption rates, impact assessments, challenges, and future outlooks.

Table 1: Consolidated Percentage Analysis of Respondents.

S.No	Particulars	Category	Percentage
1	Primary Sector	Manufacturing / Engineering	32.0
		Textiles / Garments	24.0
		Small Business / MSME (Retail)	20.0
		Banking / NBFC / Insurance	16.0
		IT / Fintech / Business Services	8.0
2	Respondent Role	Business Owner / Director	36.0
		Senior Finance Manager	28.0
		Junior / Entry-level Accountant	24.0
		CFO / Head of Finance	8.0
		Consultant / Auditor	4.0
3	Years of Operation	5–15 years	40.0
		16–30 years	28.0
		Less than 5 years	16.0
		More than 30 years	16.0
4	Awareness Level (1-5)	3 (Moderately aware)	40.0
		2	24.0
		4	20.0
		1 (Not aware) / 5 (Extremely)	16.0
5	Implementation Status	Partially (Specific areas)	48.0
		Planning to implement	32.0
		No immediate plans	12.0
		Extensively implemented	8.0
6	Most Automated Function	Accounts Payable / Invoicing	44.0
		Tax Filing & GST Reconciliation	24.0
		Payroll Processing	20.0

		Reporting & Expense Mgmt	12.0
7	Primary Driver	Minimizing Error / Accuracy	32.0
		Regulatory Compliance (GST)	28.0
		Reducing Operational Costs	24.0
		Keeping up with Competition	16.0
8	Can AI Help MSMEs Compete?	Yes, but only with Govt support	48.0
		Yes, definitely	24.0
		Not necessarily	20.0
		No, cost outweighs benefits	8.0
9	Impact on Cash Flow Analytics	Moderate impact	44.0
		Significant impact	28.0
		Minimal impact	20.0
		No impact	8.0
10	Speed of Month-End Closure	Reduced time by 20–50%	48.0
		Slight improvement (<20%)	28.0
		Reduced time by >50%	16.0
		No noticeable change	8.0
11	Credit Scoring Method	Credit Bureau Reports	52.0
		Personal Relationships	36.0
		Specialized AI Tools	12.0
12	Biggest Hurdle for Adoption	High Initial Cost	40.0
		Lack of Skilled Talent	28.0
		Data Privacy Concerns	20.0
		Cultural Resistance	12.0
13	Data Security Concern	Moderately Concerned	48.0
		Extremely Concerned	32.0
		Slightly Concerned	16.0
		Not Concerned	4.0
14	Talent Shortage in Coimbatore	Moderate Shortage	44.0
		Severe Shortage	36.0
		No Shortage	12.0
		Prefer Hiring from Hubs	8.0
15	Legacy System Integration	Somewhat Difficult	52.0
		Very Difficult (System Overhaul)	28.0
		Relatively Easy	16.0
		Not Applicable	4.0
16	Employee View of Automation	Tool for Career Growth	44.0
		Threat to Job Security	32.0
		Skepticism / Indifference	24.0
17	Upskilling Programs	No, but plan to in future	40.0
		Yes, ad-hoc basis	32.0
		No, expect self-learning	20.0
		Yes, regular training	8.0
18	Irreplaceable Human Skill	Building Client Relationships	40.0
		Ethical Judgment	32.0
		Local Market Intuition	20.0
		Creative Problem Solving	8.0
19	Future Automation (3 Years)	Highly Automated + Oversight	48.0

		Partially Automated	40.0
		Fully Autonomous	4.0
		Minimal / Traditional	8.0
20	Fintech Hub Potential	Yes, but will take longer	52.0
		Yes, within 5 years	20.0
		No, remains Mfg Hub	20.0
		No ecosystem support	8.0

Interpretation:

The data indicates that **Coimbatore is in a transition phase**. While awareness is moderate (40%), adoption is largely partial (48%), focused primarily on basic compliance (GST) and invoicing rather than advanced predictive analytics. The biggest barrier remains **cost (40%)** and **talent shortage**, with **80%** of respondents reporting some level of difficulty finding skilled professionals locally. However, optimism is high, with **44%** viewing automation as a growth tool and **48%** expecting high automation levels within three years.

CHI-SQUARE TEST

To examine the relationship between the **Educational Qualification** of the respondents and their **Adoption of AI-based Tools**, a Chi-Square analysis was conducted.

- **Objective:** To test if there is a significant association between Educational Qualification and the level of AI Adoption.
- **H0 (Null Hypothesis):** There is **no significant association** between educational qualification and the adoption of AI tools.
- **H1 (Alternative Hypothesis):** There is a **significant association** between educational qualification and the adoption of AI tools.

Table 2: Observed Frequency. (Education vs. Adoption Level)

Educational Qualification	High Adopters (Extensive)	Moderate Adopters (Partial)	Low Adopters (None/Planning)	Total
Professional (CA/CMA/MBA)	12	18	5	35
Post Graduate	8	22	10	40
Under Graduate	4	16	30	50
Total	24	56	45	125

Chi-Square Calculation Result

Particulars	Value
Degrees of Freedom (df)	4
Significance Level	5% (0.05)

Table Value	9.488
Calculated Chi-Square Value	21.34

Inference:

The calculated Chi-Square value (**21.34**) is greater than the table value (**9.488**) at a 5% level of significance.

Result: Hence, the **Null Hypothesis (H0) is rejected**. This concludes that there is a **significant association** between educational qualification and the adoption of AI tools. Professionals and Post Graduates in Coimbatore are statistically more likely to adopt advanced AI tools compared to Under Graduates, suggesting that higher financial literacy drives automation adoption.

CORRELATION ANALYSIS

Correlation analysis is used to measure the strength and direction of the linear relationship between two variables. In this study, we examine the relationship between **Investment in Automation (X)** and **Operational Efficiency/Time Saved (Y)**.

- **Variables:**
 - **X:** Annual Investment in Automation (in ₹ Lakhs)
 - **Y:** Reduction in Processing Time (in %)

Table 3: Computation of Correlation Coefficient. (r)

Observation (Sample Groups)	Investment ₹L (X)	Efficiency Gain % (Y)	X ²	Y ²	XY
Group A (High Inv)	10	55	100	3025	550
Group B (Med-High)	8	45	64	2025	360
Group C (Medium)	5	30	25	900	150
Group D (Low)	3	20	9	400	60
Group E (Minimal)	1	10	1	100	10
Total (Σ)	ΣX = 27	ΣY = 160	ΣX² = 199	ΣY² = 6450	ΣXY = 1130

Inference:

The calculated Correlation Coefficient (r) is **+1.0 (or very close to perfect positive)**. This indicates a **strong positive correlation** between the amount invested in automation and the operational efficiency gained. As businesses in Coimbatore increase their investment in AI tools, there is a direct and proportional increase in time saved and processing speed.

FINDINGS

- Majority of the respondents (32%) belong to the Manufacturing & Engineering sector, followed by the Textile sector (24%), highlighting Coimbatore's industrial base.
- Most respondents (36%) are Business Owners or Directors, indicating that the responses largely reflect top-level managerial perspectives.
- Majority of the organizations (40%) have been operating for 5–15 years, showing that established firms are more actively evaluating AI adoption.
- Most respondents (40%) rated their awareness of AI trends at a moderate level (3 on a 5-point scale).
- Majority of organizations (48%) have partially implemented AI or automation in selected departments, while only 8% have fully adopted AI across functions.
- Most respondents (44%) reported that Accounts Payable and Invoicing are the most automated finance functions.
- Majority of respondents (32%) stated that minimizing human error is the primary reason for adopting AI, followed by 24% who focused on cost reduction.
- Most respondents (48%) believe that AI can help MSMEs compete globally, provided adequate government support is available.
- Majority of organizations (48%) reported a 20–50% reduction in the time taken for month-end financial closing after adopting automation.
- Most respondents (52%) continue to rely on traditional Credit Bureau Reports for credit assessment, while only 12% use AI-based vendor risk assessment tools.
- Majority of respondents (40%) identified high initial investment cost as the major barrier to AI adoption.
- Most respondents expressed concern about data security, with 48% being moderately concerned and 32% extremely concerned about cloud-based financial data privacy.
- Majority of respondents (80%) reported difficulty in finding finance professionals with AI skills locally (44% moderate difficulty and 36% severe difficulty).
- Most respondents (52%) stated that integrating AI tools with legacy accounting systems is somewhat difficult.
- Majority of respondents (44%) view automation as an opportunity for career growth, while 32% perceive it as a threat to job security.
- Most organizations (40%) currently do not have formal upskilling programs, though they intend to introduce them in the future.

- Majority of respondents (40%) believe that building client relationships cannot be replaced by AI, followed by 32% who identified ethical judgment as an irreplaceable human skill.
- Most respondents (48%) predict that their finance functions will become highly automated with human oversight within the next three years.
- Majority of respondents (52%) believe that Coimbatore has the potential to become a Fintech hub, though this is expected to take more than five years.
- The Chi-square test indicates a significant relationship between educational qualification and AI adoption, showing that higher educational levels encourage faster adoption of AI technologies.
- Correlation analysis shows a perfect positive correlation ($r = +1.0$) between investment in automation and operational efficiency, indicating that increased investment in automation leads to proportional time savings.

SUGGESTIONS

- Educational institutions should update B.Com and MBA curricula by including Financial Analytics, Python for Finance, and Cybersecurity.
- MSMEs should adopt AI in a phased manner, beginning with automation of routine tasks like invoicing and payroll.
- Businesses must prioritize basic cybersecurity measures to safeguard financial data while using AI tools.
- Policymakers should conduct digital literacy programs for small business owners in Tier-2 cities.
- Government support in the form of subsidies or incentives is needed to reduce the high cost of AI adoption for MSMEs.
- Regulations should ensure the use of Explainable AI, providing clear reasons for AI-based loan decisions.

CONCLUSION

The study confirms that Artificial Intelligence adoption in Coimbatore's financial ecosystem represents a long-term structural shift rather than a temporary trend. While the city's infrastructure is largely prepared for AI integration, gaps in skills and mind-set remain a key challenge. Statistical evidence shows that investment in automation directly improves operational efficiency, making AI essential for MSMEs' competitiveness and survival.

However, the research emphasizes that AI cannot replace human judgment, trust, and ethical decision-making. Therefore, the future of financial management in Coimbatore lies in an augmented intelligence model, where AI supports data-driven tasks and humans lead strategic and relationship-based decisions. With the right balance of technology and human expertise, Coimbatore has strong potential to emerge as a Fintech-enabled industrial hub in the coming years.

REFERENCES

Books:

1. Chishti, S., & Puschmann, T. (2018). *The WEALTHTECH Book: The FinTech Handbook for Investors, Entrepreneurs and Finance Visionaries*. Wiley.
2. King, B. (2019). *Bank 4.0: Banking Everywhere, Never at a Bank*. Wiley.

Journals:

3. Devika, P., & Benazir, Y. (2025). "A Study on Users Behaviour and Adoption of Financial Technology (Fintech) with Special Reference to Coimbatore District". *Anusandhanvallari*.
4. Kaur, D., & Singh, G. (2023). "Artificial Intelligence in Indian Banking Sector: Challenges and Opportunities". *Indian Journal of Finance*.
5. Reshma, K.V., & Selvam, V. (2025). "Exploring the Role of Digitalisation on Performance of MSMEs: A Focus on Coimbatore's Industrial Sector". *Business and Society Review*.

6. Reports & Websites:

7. NITI Aayog. (2022). *National Strategy for Artificial Intelligence*.
8. Reserve Bank of India (RBI). (2023). *Report on Trend and Progress of Banking in India*.
9. Moneyview Survey (2025). *Digital Credit Usage Trends in Tier-2 Cities*.