

AI-ENABLED FINANCIAL LITERACY AND INVESTMENT DECISION QUALITY AMONG RETAIL INVESTORS IN KANYAKUMARI DISTRICT

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ABSTRACT

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Modern financial applications, powered by Artificial Intelligence (AI), have revolutionized the way retail investors access market data and evaluate investment options, leading to a significant shift in personal portfolio management. Market participants today must have a thorough understanding of algorithm-based recommendation systems, their operational boundaries, reliability, and data privacy risks, in addition to having access to conventional financial knowledge. This empirical study investigates five crucial aspects of contemporary retail finance, namely AI Financial Knowledge, AI Tool Adoption, Algorithmic Trust, Perceived Security Risk, and Investment Decision Quality among retail investors in Kanyakumari District, Tamil Nadu. They are the focus of this research. 75 retail investors were surveyed using a purposive sampling strategy, which involved filling out dozens of questions on the 5-point Likert scale with structured data. Basic percentage analysis, as well as arithmetic mean and standard deviation, were utilized to evaluate the collected answers. These discoveries establish a baseline empirical evidence for how local investors perceive AI investment tools, their confidence in automated advice, the security of their data and their quality of decision-making. To ensure investors use automated financial platforms responsibly, the study emphasizes the importance of fostering digital financial awareness through practical education along side basic financial literacy..

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1. Introduction:

Rapid digital infrastructure has brought about a significant shift in the way financial services are delivered internationally. Artificial Intelligence technology's ability to process vast amounts of market data quickly, identify subtle investment trends, and support automated decision-making has contributed to this shift. Despite the fact that

retail trading platforms use algorithm-driven tools, robo-advisors, and predictive market models to assist investors in monitoring their portfolios. However, using AI-based tools requires more advanced financial literacy than usual. The most effective tools can be found on artificial intelligence platforms. While basic financial literacy focuses on fundamental concepts such as budgeting, interest rates, risk-return tradeoffs, and long-term savings, users in the digital world must understand how automated recommendations work, assess data reliability from data sources, identify software flaws (e.g, fraud detection by artificial means), and protect online financial information stored in databases. Despite the fact that AI platforms simplify research and reduce transaction delays, relying too heavily on automated tools poses additional problems with output accuracy as well as system transparency and privacy of personal data. The success of these tools is dependent on investor support. The assessment of machine recommendations can be heightened by investors who possess solid ground knowledge.". The adoption of financial software depends on its perceived safety, platform security, and trustworthiness. The study of retail investors in Kanyakumari District provides valuable insights, as it is possible to determine how educational levels and technology access impact investor usage of automated tools.

1.1 STATEMENT OF THE PROBLEM

The technical and risk-perceived understanding of AI investment tools is not uniform among individual retail investors, despite their widespread use. Distinctions based on digital exposure frequently result in varying levels of confidence in automated outputs and concerns about data privacy. Current studies typically concentrate on conventional financial literacy, broader FinTech adoption, or robo-advisory services in isolation. The quality of investment decisions, algorithmic trust, security perceptions, and AI knowledge are not extensively studied at the district level. By providing practical insights into retail investor behavior in Kanyakumari District, this study fills the gap left by empirical research.

1.2. OBJECTIVES OF THE STUDY

1. To investigate the composition of retail investors in Kanyakumari District.
2. To examine the typical degrees of AI financial knowledge, artificial intelligence tool adoption, algorithmic trust, perceived security risk and quality of investment decisions.
3. To propose practical solutions for promoting the safe and efficient use of AI investment tools among retailers.

2. REVIEW OF LITERATURE

Bhatia, Chandani, and Chhateja (2020) examined robo-advisory platforms in India and concluded that they can decrease human behavioral biases in retailing. The significance of automated financial advice in retail markets was underscored by the research conducted by **Amnas et al. (2023)**, which utilized the UTAUT2 framework and trust principles to examine FinTech adoption. This resulted in this finding. Unless users are confident in the reliability and safety of the system, technical quality is not a sufficient factor for adoption of new platforms, according to their study. **In 2023 Nourallah**, Ohman and Amin conducted research on how robo-advisors foster trust among young retail investors. The study concludes: Their research proved that long-term tool usage is influenced by both risk perceptions and trust in automated platforms.

2.1. RESEARCH GAP

Almost all previous studies concentrate either on national FinTech trends or generic robo-advisory features.[A]. AI Knowledge, Tool Adoption, Trust, Risk, and Decision Quality are not extensively evaluated in existing literature as an

integrated research framework. In addition, there is a scarcity of empirical evidence focused on retail investors in Kanyakumari District. The gap is what this study seeks to close..

2.2. THEORETICAL FRAMEWORK

The theory employed in this study is based on the Unified Theory of Acceptance and Use of Technology (UTAUT) and theories of user trust. The quality of investment decisions is primarily determined by operational factors such as technical knowledge, trust in algorithms, security perceptions, and domain knowledge.

2.3. CONCEPTUAL FRAMEWORK

- AI Financial Knowledge (AFK) is a key factor in measuring the effectiveness of investment in financial technology.
- The frequency and scope of AI tool adoption (ATA) for portfolio tracking and investment research.
- ALT is the term used to describe trust between users and algorithmic recommendations. This feature enhances user confidence in algorithms.
- Investors are concerned about the potential risks of data loss, platform breach security, and privacy leaks.
- Investment Decision Quality (IDQ) is the measure of investment decisions' effectiveness, structure, and logic.

3. RESEARCH METHODOLOGY

3.1. Research Design

This study employs a quantitative survey approach that incorporates both descriptive and empirical research methods. A descriptive approach is desirable as it provides an accurate representation of investor demographics, awareness levels, risk perceptions and decision patterns without any change in the underlying variables.

3.2. Area of the Study

Kanyakumari District, Tamil Nadu India is the only location where research is conducted. The choice of this location was due to its high literacy rate and the growing use of online trading apps (and other digital financial tools) among suburban and rural investors.

3.3. Target Population

The target market is targeted at retail investors in Kanyakumari District who manage their personal investments through online trading applications, robo-advisors, or AI-enabled financial tools.

3.4 Sampling Technique

The non-probability purposive sampling method was employed to reach out to investors who are knowledgeable about technology-based financial tools. The data collected was sourced directly from relevant digital platform users.

3.5. Sample Size

The empirical study involved the examination of 75 valid responses. Each participant is a group of retail investors living in Kanyakumari District who employ technology-based investment tools.

3.6. Data Sources

Directly obtained primary data from retail investors through a structured questionnaire. Secondary Data is obtained from peer-reviewed journals, research articles, conference records, and published financial reports.

3.7. Data Collection Instrument

A questionnaire was administered that was categorized into two primary areas:

- I. **Section A** presents the background information on respondents, including their gender, education level, and age.
- II. **Section B** contains the self-assessed items for AI: AFS, ATA, AL, PSR, and IDQ. index of value is 5.04.

3.8. Measurement Scale

Section B involved the quantitative measurement of investor views through a 5-point Likert Scale (1 = Strongly Disagree to 5 = Highly Agree) for construct statements.

3.9. Statistical Tools Applied

Data was collected and analyzed using statistical software. The following analytical instruments were employed:

1. Frequency and percentage analysis is employed to provide a summary of the demographic data of respondents.
2. To determine the average agreement levels for each study variable, use Arithmetic Mean.
3. The Standard Deviation is used to determine the degree of variation in responses and the level of agreement around the mean values

4. DATA ANALYSIS AND INTERPRETATION

4.1. Demographic Profile of Respondents.

The 75 retail investors surveyed in the Kanyakumari District are presented in demographics as follows. The population in question comprises a diverse group of retail investors who are educated and relatively young, with varying genders.

Table 4.1: Demographic Profile of Respondents

PARTICULARS	CATEGORY	NO.OF RESPONDENTS	PERCENTAGE
Gender	Male	42	56
	Female	33	44
Age	Below 25	12	16
	25–35	27	36
	36–45	20	26.67
	46–55	11	14.67
	Above 55	5	6.67
Education	Higher Secondary	8	10.67
	Undergraduate	20	26.67
	Postgraduate	31	41.33
	Professional	12	16.00
	Others	4	5.33

Source: Primary Data

Out of the 75 individuals surveyed, 56% were male and 44% were female. Young adults and 36% individuals aged 25-35 participated actively. Among postgraduates, 41.33% of participants were highly educated, while undergraduate students (26.67%) were the second most knowledgeable.

4.2. Descriptive Statistics of Study Variables

A 5-point Likert scale was utilized to determine the mean and standard deviation of all five variables in this study, as described in the Descriptive Statistics of Study Variables. Compared to those receiving lower scores for tool adoption

and security risk awareness, the respondents scored higher on average in decision quality, trust, and AI knowledge. However, the survey findings did not reveal any significant data collection outcomes.

Table 4.2: Descriptive Statistics

Variables	Mean	Std. Deviation
AI Financial Knowledge	3.78	0.67
AI Tool Adoption	3.69	0.72
Algorithmic Trust	3.79	0.69
Perceived Security Risk	3.21	0.81
Investment Decision Quality	3.83	0.64

Source: Primary Data

The highest mean score was achieved by Investment Decision Quality (Mean = 3.83, SD = 0.64), with Algorithmic Trust (3.79) and AI Financial Knowledge (3.78) coming in close pursuit. AI Tool Adoption had a mean of 3.69, and Perceived Security Risk had an average of 1.07 (SD = 0.81) for both.

5. FINDINGS

Findings from empirical studies indicate important insights into the demography and attitudes of retail investors in Kanyakumari District towards AI-assisted financial services.

1. The sample size is 56.00% male and 44.00% female.
2. The most populous cohort is comprised of individuals aged 25-35, with 36.00% and 26.67% for those aged 36-45.
3. The highest percentage of postgraduates is (41.33%), with undergraduates following at (26.67%). What does this mean?
4. With an AFS of 3.78 (SD = 0.67), the student's overall knowledge of AI tools was deemed satisfactory.
5. AI Tool Adoption (ATA) scored a mean of 3.69 (with 0.72), indicating consistent use of investment software.
6. The average score for Algorithmic Trust (ALT) is 3.79 (with a negative SD value), suggesting optimum use of automated recommendations.
7. Assessed Security Risk (PSR): Records an average score of 3.21 points (SD = 0.81), with moderate level of worry about online data safety.
8. Users' investment decision quality score was the highest on the IQ scale, with a mean of 3.83 (with an SD coefficient of 0.64) indicating positive decision perceptions.

1. 6.SUGGESTIONS

1. It is recommended that financial institutions conduct targeted workshops to teach retail investors about the workings of investment algorithms.
2. Investors should view AI-generated recommendations as analytical aid rather than automatic trade execution triggers.
3. FinTech application developers must account for the logic and risk assumptions behind automated advisory tools.

4. To address user privacy concerns, platform providers must enhance security measures, including multi-factor authentication.
5. It is important to ensure that application interfaces are easily accessible to individuals with diverse technical backgrounds.

7. CONCLUSION

The implementation of artificial intelligence in retail investment habits is resulting in the integration of automated market analysis and advisory tools with conventional decision-making. According to an empirical survey of 75 retail investors in Kanyakumari District, AI financial tools have received a favorable response. Among the groups with the highest mean scores were Investment Decision Quality (Mean = 3.83, SD = 0.64), Algorithmic Trust (metropol to 5.77, metro to 6.69, microsd) and AI Financial Knowledge (major-valued at 2.39). In the meantime, moderated mean scores for AI Tool Adoption (Mean = 3.69, SD = 0.72) and Perceived Security Risk (Montreal Data Warehouse) indicate that investors prioritize technological tools but digital security concerns can influence usage habits. In the end, technology alone cannot make optimal financial decisions without sufficient user awareness. The most effective way to leverage AI tools is for FinTech companies to enhance data security and system clarity, while educational institutions should offer hands-on digital literacy programs. Investors will be safer and more likely to participate in digital financial markets by utilizing AI platforms as analytical decision support, rather than replacing human judgement.

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