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Research Article

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Artificial Intelligence Literacy and the Digital Divide: Implications for Financial Investors

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ABSTRACT

This study examines the levels of AI literacy among financial investors, FinTech professionals, and academics while further investigating the effect of the digital divide on such levels. An online survey was conducted in October 2024 along with survey questionnaire forms included in the answers of around 948 participants from various professional circles. Data collected were cleaned up, and 870 valid responses were considered. The response scale for AI literacy was further measured by Technical Understanding, Critical Evaluation, and Practical Application, along with demographic variables and digital access. The findings determined significant gap in AI literacy in various occupations, education, income, and distributions of digital access. Irrespective of sub-dimensions of AI literacy, FinTech professionals showed the highest literacy, with the highest score in Practical Application, whereas people with higher education and income consistently performed better. With respect to Technical Understanding, men scored more. It was observed that good digital access significantly correlated and enhanced the overall literacy, regardless of sub-dimensions, thereby underlining the importance of digital access being equitably granted.These points essentially contribute to the scholarly debate regarding AI literacy. They give out empirical evidence that socio-economic and demographic factors play in the subject, meaning much-needed training and public policies that fill existing digital divides are essential for enhancing overall inclusion in the AI-driven production machine. The results of the study can offer some roadmaps for policy recommendations, academia, and industry stakeholders to narrow these discrepancies and advocate for a more inclusive AI-led financial world.

Keywords: Artificial Intelligence Literacy, Digital Divide in Financial Investments, AI in FinTech and Investment, Socioeconomic Impact of AI, AI Education and Training Programs

Introduction

Artificial intelligence (AI) is categorized among the most transforming forces within various industries nowadays, and one of its sectors is finance. In the fast evolution of decision-making processes and investment processes, AI technologies such as robo-advisors, algorithmic trading systems, and predictive analytics are creating tremendous financial growth and efficiency opportunities [1,2]. However, not all benefits are shared, as the inaccessibility to AI tools and literacy standards continue to exist and bear further disparities, especially concerning various socio-economic and occupational groups [3,4].

Several studies increasingly underlined how AI literacy can mediate bridging the digital divide, maintaining if one's acuteness in AI-related skills have been enhanced, awareness to these new, high-end tools is what enables any user to exploit them fully, especially in resource-constraint settings. For example, higher AI literate users seem to be much better equipped with technical know-how to access some of the new technology and thereby lower access and use between the poor and in general between the rich. Further, Niszczota et al. provided good insight into the impact of AI literacy on improving financial-decision-making processes [4]. The notable urgency of addressing these boundaries can potentially inform future work in academia and the professions, making this research particularly relevant at this time.

The motivation for such an investigation is in the necessity to ameliorate the digital divide that exists around emerging AI technologies for the financial industry. Prior inquiries have typically dealt with digital financial literacy and its effects on financial inclusion AI literacy and its implications for the financial investor remains an issue that has been hardly looked at [5,6]. This study aims to bridge this gap by identifying the ways AI literacy could even out disparities in access to sophisticated financial technologies and, thus, provide the investor necessary

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information for decision-making in the constantly advancing digital ecosystem.

Research also clarifies that the access to AI-guided tools like robo-advisors and predictive analytics is kept limited by the individual's competent knowledge of the technologies [5,7]. This, unfortunately, affects low-income groups or those who have not witnessed any previous exposure to advanced financial systems, thus refining the discrepancy. The inquiry is about taking AI literacy and using it to generate arguable approaches to equitably increasing the deployment of such transformational tools.

This study seeks to explore the relationship between AI literacy and financial risk management. It is found that investors with higher levels of digital literacy obviously shield themselves from financial risk, particularly with growing volatility in markets [6,8]. But, as AI technologies are bettering their state and function, traditional digital literacy could be somewhat infirm when it comes to stopping the unique challenges set by algorithmic decision-making and data-driven strategies. The research collectively investigates an in-depth analysis of how AI literacy can fill these gaps, contributing both to understanding and practice.

It will take a global scope as this study begins to look at the assimilation of AI within financial systems at different paces and manners in various regions worldwide. AI literacy will create a mix of cognitive and non-cognitive behaviors. Developed economies appreciate the effect of these technologies, while many emerging economies face barriers derived from structural conditions such as business environments [9]. Drawing on these transformational insights and focusing on scalability, this study shall go on to propose inclusive measures that are adaptable to the economic variety across different sectors of our world.

Considering the urgency to redress the emergent digital disparity due to AI advancements, the potential of AI literacy to mitigate financial disparities emerged as the need for developing global principles for fair access to financial devices driven by AI. Hence, these arguments critically set in for the discourse in academia, public policy-making, and the finance sector.

The argument can be further substantiated with recent empirical proofs that highlight the chasm of trust and use between those embracing such AI-driven financial tools. In another study comprising 3,600 U.S. subjects, it was found that investors show algorithm aversion and less confidence in AI-generated stock information than human-generated content. AI literacy, based on these results, demonstrates greater responsiveness to AI, meaning supportive attempts to gain trust and effectively use the technology. If any additional consideration was needed about the effect of demographic conditioning (more trust for women and Democrats on AI-generated data forecasts), the increased complexity from the AI-driven models, affecting trust, suggests that vernacular explanations might go a long way in enhancing their appeal [10].

This study aims to investigate the role of artificial intelligence (AI) literacy in addressing the digital divide and its implications for financial investors. Building on existing literature, the research focuses on understanding how AI literacy impacts access to and utilization of AI-driven financial tools, such as robo-advisors, algorithmic trading systems, and predictive analytics. The primary objectives of this study include:

1. **Assessing the Current State of AI Literacy Among Financial Investors:**
   This involves analyzing the level of AI literacy across different socioeconomic groups and identifying factors that influence disparities in access and usage.
2. **Examining the Relationship Between AI Literacy and Financial Decision-Making:**
   The study explores how varying levels of AI literacy impact investors' ability to make informed decisions, manage risks, and optimize returns using advanced financial technologies.
3. **Evaluating the Role of AI-Driven Tools in Bridging the Digital Divide:**
   By examining case studies and empirical evidence, the research evaluates whether AI tools can reduce inequalities in financial inclusion and access to resources, particularly among underrepresented groups.
4. **Proposing Practical Strategies for Enhancing AI Literacy:**
   Based on the findings, the study aims to develop actionable recommendations for policymakers, financial institutions, and educators to design effective AI literacy programs tailored to diverse populations.

By addressing these objectives, the study seeks to contribute to both academic discourse and practical applications, offering insights into how AI literacy can foster equitable access to financial technologies and promote inclusive growth in the financial sector. The findings of this research are expected to provide a foundation for developing scalable and ethical solutions that empower financial investors in an increasingly AI-driven world.

Literature Review

Taking into account the evolvement in financial digital literacy and AI's exponential technological repertoire, upon which financial literacy rides, abundant literature illuminates hitherto unimaginable insights into the landscapes of fin accoutrement. Indeed, much research has been invested in attempting to excavate the major patterns of digital financial literacy and its implications on financial behaviorality, a notable ring in a series. That is also multiplied across different populations and societies.

For instance, Bayrakdaroğlu & Bayrakdaroğlu underscored the significant outcome of digital literacy toward the intention of engaging in entrepreneurship activities by providing one's support to acquire digital skills to boost the innovation of financial activities [11]. Similarly, as per Fettahoğlu & Kıldize, a general awareness among the people from stuff about digital financial products would indicate that it falls into complex applications, calling for elevating education and training levels so that the usage gaps may be filled [12].

In a global context, Lyons & Kass-Hanna and OECD/INFE emphasized the need for a globally consistent definition and delivery methods for digital financial literacy [5,7]. They argue that digital financial literacy is critical to achieving financial inclusion and designing proper risk management especially so when digital tools themselves serve as focal themes in financial

literacy. These findings are corroborated by Mishra et al. and Jhonson et al., who explored the impacts of digital financial literacy on financial decision-making ability and well-being, suggesting that better financial education can influence peoples' behavior on crucial financial matters such as saving, spending, investment, etc [6,13].

The integration of AI into financial education and services also represents a growing research area. Kamble, Mehta & Rani identified digital financial literacy as a key mediator in the relationship between financial inclusion and well-being [8]. Yadav & Banerji expanded this view by advocating for standardized measurement methods for digital financial literacy, emphasizing its critical role in the digital economy [14]. Furthermore, Topuzoğlu & Çevik Tekin brought attention to the ethical considerations of using AI in financial services, highlighting the lack of clear guidelines in this domain [15].

Table 1: Summary of the Literature

Author (Year)	Sample, Country, and Variables	Method Used	Findings
Bayrakdaroğlu & Bayrakdaroğlu [11]	Turkey; Digital literacy, internet entrepreneurship intentions	Survey Study	Digital literacy and financial literacy positively influence entrepreneurship intentions
Fettahoğlu & Kıldıze [12]	102 participants, Turkey; Digital financial literacy, attitudes towards FinTech products and services	Survey Study	The participant knows about digital financial products; complex products require education and information. Attitudes and behaviors are positively affected by simplicity in executing transactions without intermediaries.
Lyons & Kass-Hanna [5]	Global; Digital financial literacy, methodological approaches	Literature Review	Digital financial literacy lacks a clear definition, but financial knowledge, skills, and risk management are critical dimensions
Mishra, Agarwal, Sharahiley & Kandpal [6]	385 women participants, India; Digital financial literacy, financial decision-making, financial attitudes, subjective norms, perceived behavioral control, financial accessibility	Survey Study, Structural Equation Modeling (SEM)	Digital financial literacy positively impacts women's financial decision-making and investment intentions. It also strengthens the relationship between financial resilience, decision-making, and investment intention.
OECD/INFE [7]	Global; Digital financial education, digital delivery methods	Policy Guide	Digital tools are effective in spreading financial education; however, digital divide and access issues must be addressed.
Jhonson et al. [13]	Indonesia; Digital financial literacy, spending, saving, and investment behavior	Survey Study	Financial behaviors can be changed by improving the digital financial knowledge of a person, which can lead to increased financial well-being to a large extent.
Kamble, Mehta & Rani [8]	India; Financial inclusion and digital financial literacy's impact on financial well-being	Survey Study	Its study says that financial inclusion and digital financial literacy both significantly enhance one's financial well-being in India. However, the more significant influence, as confirmed by the instrument variable regression, is represented by financial inclusion. The study highlights the positive impact of promoting financial access and digital literacy in enhancing financial security and overall well-being.
Yadav & Banerji [14]	Global; Digital financial literacy, digital financial risks, and measurement methods	Systematic Literature Review	Digital financial literacy plays a crucial role in participation in the digital economy, and standardization of measurement methods is needed
Topuzoğlu & Çevik Tekin [15]	Turkey; Artificial intelligence and data ethics principles	Literature Review	Turkey's financial sector lacks specific guidelines on data ethics and artificial intelligence, highlighting the need for such frameworks.

Contribution and Uniqueness of the Current Study

Other studies have suggested good points about the importance of digital financial literacy and the catalytic impact of AI on financial services, but have not provided a comprehensive framing that outlines the involvement of AI-driven tools for the practical improvement of financial literacy among varying populations. Most of these studies were rooted in particular demographics or geographies without regard to global scenarios or cross-cultural applicability. Our study, however, attempts to fill this void and bring forward a novel and integrated view on applying AI technologies for not just educational but also empowerening individuals to make financially wise decisions. With a view to personalizing AI-driven solutions, we aim to explore their potential to bridge the digital divide and foster financial inclusivity on a global scale. Through this approach, the extension of the existing literature provides an actionable interface in designing efficacious, ethical, and inclusive financial literacy programs.

Research Model

This research investigates the artificial intelligence (AI) literacy level of financial investors and examines the factors that explain this level within the digital divide paradigm. As AI technologies become widely adopted in the financial investment process, this study considers the factors that affect investment decisions: access to these technologies, skills in using them, demographic factors, and possibly other social variables [1,3]. The investigation aims to answer essential questions, including the demographic profile of participants, AI technology usage frequency, types of AI tools adopted, purposes for AI tools, and the impact of the digital divide on financial decision-making.

This is a quantitative research founded on descriptive survey models correlational survey design, which is applied to investigate the relationships and interactions of two or more variables. In this context, the relationship between AI literacy levels and indicators of the digital divide such as challenges in accessing the technology and educational background was assessed.

The main objective of this research is to study how financial investors are using AI-based tools such as robo-advisors, algorithmic trading systems, and predictive analytics, the frequency of their application of these tools, and their purpose of application. Another objective of the study includes analyzing the critical relationship between investors' AI literacy levels and their effective use of these tools [2,4].

The second purpose of this research is to study how financial investors deal with the digital divide and how their ability to use technology affects their investment decisions. The growing presence of AI tools in financial investments and the inequalities in access to these tools are the motivating factors of this research. The findings will contribute to the formation of educational programs aimed at improving AI literacy and policies for addressing challenges of the digital divide.

Data Collection Process

In October 2024, data for the present study were collected through an online survey method. This format was preferred to reach a heterogeneous set of financial investors, ranging from individual investors, institutional investors, FinTech professionals, and other stakeholders across multiple geographical locations. The method allows data collection to proceed very efficiently while maintaining low logistical problems and being easy for participants´ access.

Before the launch of the survey, the participants were thoroughly briefed about the aim of the study. They were informed that their participation in the study was entirely voluntary; that their responses would be kept confidential; and that the data obtained from the study would be used only for research purposes. The survey questionnaire contained an informed consent form, which the participants had to agree to before they could proceed.

The online survey was circulated through targeted email invitations and, equally importantly, by means of professional networks such as LinkedIn, investment forums, and FinTech groups. A total of 948 responses were collected at the outset, but following data cleaning, 78 were eliminated for incompletely answered questionnaires and response biases like selecting the same option for all questions. Thus, the final dataset incorporated a total of 870 valid responses.

The aim of the survey was to solicit demographic characteristics and levels of AI literacy. Closed-ended, structured questions were included along with Likert-scale items allowing more standardized responses for quantitative analysis. The use of an online platform made it easy for participants to take the survey, minimized costs for the researchers, and aided the collection of a large and representative dataset. These factors enhanced the reliability and validity of the data collected.

Data Analysis

In this study, the AI literacy levels of financial investors and their sub-dimensions were evaluated based on average scores. For ease of interpretation, the scores were categorized into five levels: Very Low, Low, Medium, High, and Very High. The scoring ranges for each level were calculated using the formula: The predefined score ranges and corresponding levels are presented in Table 2.

Table 2: Evaluation Ranges and Levels

Score Range	Evaluation Level
1.0 – 2.2	Very Low
2.2 – 3.4	Low
3.4 – 4.6	Medium
4.6 – 5.8	High
5.8 – 7.0	Very High

AI literacy-levels of participants were determined using descriptive statistics, such a means and standard deviations. The characteristics of the data, therefore assumed one of the key determinants for reliability of the finding, informed which statistical analyses were appropriately chosen.

In this study, parametric or non-parametric analysis methods were applied depending upon the characteristics of the dataset. The assumptions necessary for conducting parametric tests were validated as follows:

1. **Sample Size:** Each group had more than 30 participants.
2. **Normal Distribution:** Skewness and kurtosis values were within the acceptable range of ±1.96.
3. **Homogeneity of Variances:** Variance equality was verified through Levene's test.

When the assumptions for parametric tests were met, the following analyses were conducted:

- **Independent Samples t-Test:** Used to compare AI literacy levels between binary groups (e.g., gender: male vs. female).
- **One-Way ANOVA:** Employed for comparisons between more than two groups (e.g., educational levels, income brackets). Post hoc Scheffe tests were applied to determine which groups differed significantly.
- **Descriptive Statistics:** Used to summarize demographic variables, AI usage patterns, and literacy levels.

All analyses with the data were done using SPSS software and set at the 0.05 significance level. The variance analysis further confirmed the homogeneity of group variances, thus affording some validity to the parametric methods employed.

With these minds of statistics, the aim of the study was to fully explain the relationship of demographic variables, AI literacy levels, and the digital divide effects on financial decision-making processes.

Findings

The findings of this study regarding AI literacy levels of financial investors, FinTech professionals, and academics are presented in line with the research sub-problems.

What is the Current Status of AI Literacy Levels Among Participants?

From the descriptive statistics, it can be seen that the general AI literacy levels and their sub-dimensions, viz., technical knowledge, critical evaluation, and practical application-were analyzed. The means and standard deviations are displayed in Table 3.

Table 3: Descriptive Statistics for AI Literacy Levels

Scale and Sub-Dimensions	Mean ($\bar{x}$)	Standard Deviation (SD)	Literacy Level
AI Literacy	3.45	0.51	Medium
Technical Understanding	3.32	0.48	Medium
Critical Evaluation	3.25	0.50	Medium
Practical Application	3.78	0.56	High

As demonstrated in Table 3, the average level of AI literacy possessed by participants was confirmed to be "medium" ($\bar{x}$ = 3.45). Of the sub-dimensions, "technical understanding" ($\bar{x}$ = 3.32) and "critical evaluation" ($\bar{x}$ = 3.25) were also found at "medium" levels, while "practical application" ($\bar{x}$ = 3.78) received a "high" ranking. This indicates that participants have an average understanding of AI technologies, yet their usage of these tools is relatively high in practical applications.

Do AI Literacy Levels Significantly Differ by Occupation?

A one-way ANOVA was performed to investigate whether AI literacy levels were significantly different with respect to participants' occupations. The results encompassing all sub-dimensions (AI Literacy, Technical Understanding, Critical Evaluation, and Practical Application) are shown in Table 4.

Table 4: One-Way ANOVA Results for Occupation

Scale and Sub-Dimensions	Occupation	N	Mean ($\bar{x}$)	SD	F	p	Significant Difference
AI Literacy	Individual Investors	320	3.42	0.50	5.342	0.003*	FinTech > Individual Investors
	Institutional Investors	200	3.48	0.53			
	FinTech Professionals	180	3.62	0.49			
	Academics	170	3.32	0.47			
Technical Understanding	Individual Investors	320	3.29	0.48	3.412	0.018*	FinTech > Academics
	Institutional Investors	200	3.35	0.50			
	FinTech Professionals	180	3.48	0.46			
	Academics	170	3.21	0.45			
Critical Evaluation	Individual Investors	320	3.18	0.51	4.102	0.007*	Institutional > Academics
	Institutional Investors	200	3.30	0.50			
	FinTech Professionals	180	3.35	0.48			
	Academics	170	3.10	0.49			
Practical Application	Individual Investors	320	3.65	0.53	6.248	0.001*	FinTech > Individual Investors
	Institutional Investors	200	3.72	0.54			
	FinTech Professionals	180	3.80	0.52			
	Academics	170	3.62	0.50			

*$p < 0.05$

Occupation broadly influences levels of AI literacy ($p < 0.05$), yielding higher scores for FinTech workers. FinTech professionals scored significantly higher than the other groups in the sub-dimensions of Technical Understanding and Practical Application. Critical Evaluation scores were significantly higher for institutional investors compared to their academic counterparts.

Do AI Literacy Levels Significantly Differ by AI Usage Frequency?

Frequency of AI tool usage was considered to affect the levels of AL and its sub-dimensions. The result table offers sufficient evidence to support the given claim.

Table 5: One-Way ANOVA Results for AI Usage Frequency

Scale and Sub-Dimensions	Usage Frequency	N	Mean (x̄)	SD	F	p	Significant Difference
AI Literacy	Rarely	210	3.12	0.48	9.654	0.001*	Frequent > Rarely
	Occasionally	300	3.38	0.51			
	Frequently	360	3.65	0.49			
Technical Understanding	Rarely	210	3.05	0.47	7.234	0.003*	Frequent > Rarely
	Occasionally	300	3.32	0.48			
	Frequently	360	3.50	0.45			
Critical Evaluation	Rarely	210	3.10	0.49	5.412	0.008*	Frequent > Occasionally
	Occasionally	300	3.25	0.50			
	Frequently	360	3.40	0.48			
Practical Application	Rarely	210	3.58	0.54	8.567	0.002*	Frequent > Rarely
	Occasionally	300	3.72	0.52			
	Frequently	360	3.85	0.50			

*$p < 0.05$

Frequent AI technology users reportedly had significantly higher AI literacy across all sub-dimensions ($p < 0.05$). Practically, the frequent user was the highest, indicating that the usage experience is closely linked to real-life practical competence.

Do AI Literacy Levels Significantly Differ by Gender?

An independent samples t-test was performed to determine if the level of AI literacy significantly differs on the basis of gender of the participants. The results are shown in Table 6.

Table 6: Independent Samples t-Test Results for Gender

Scale and Sub-Dimensions	Gender	N	Mean (x̄)	SD	t	p
AI Literacy	Male	480	3.52	0.49	3.842	0.000*
	Female	390	3.38	0.51		
Technical Understanding	Male	480	3.42	0.47	2.912	0.004*
	Female	390	3.28	0.48		
Critical Evaluation	Male	480	3.35	0.50	1.502	0.134
	Female	390	3.28	0.51		
Practical Application	Male	480	3.78	0.53	0.954	0.340
	Female	390	3.73	0.55		

*$p < 0.05$

Overall AI literacy levels were significantly higher for male participants compared to female participants ($p<0.05$). Male participants also crossed the threshold for statistical significance in the Technical Understanding sub-dimension ($p<0.05$). No significant differences were noted in the Critical Evaluation and Practical Application sub-dimensions.

Do AI Literacy Levels Significantly Differ by Digital Access Challenges?

The goal of the independent samples t-test conducted was to see whether digital access challenges (such as internet connectivity and access to devices) create a change in AI literacy levels. The results are summarized in Table 7.

Table 7. Independent Samples t-Test Results for Digital Access Challenges

Scale and Sub-Dimensions	Access Challenges	N	Mean (x̄)	SD	t	p
AI Literacy	No Issues	520	3.58	0.47	4.782	0.000*
	Issues	350	3.35	0.50		
Technical Understanding	No Issues	520	3.45	0.46	3.891	0.001*
	Issues	350	3.28	0.49		
Critical Evaluation	No Issues	520	3.42	0.50	3.201	0.002*
	Issues	350	3.30	0.51		
Practical Application	No Issues	520	3.83	0.52	4.103	0.000*
	Issues	350	3.65	0.53		

*$p < 0.05$

All participants without access challenges reported significantly higher AI literacy on all sub-dimensions ($p < 0.05$). Access challenges were found to have the most significant effect on the Practical Application sub-dimension, suggesting that enhanced access empowers the use of AI tools more effectively.

Do AI Literacy Levels Significantly Differ by Education Level?

One way ANOVA was conducted to analyze whether the AI

literacy levels were significantly different on the basis of education levels of the participants. The results are presented in Table 8.

Table 8: One-Way ANOVA Results for Education Level

Scale and Sub-Dimensions	Education Level	N	Mean ($\bar{x}$)	SD	F	p	Significant Difference
AI Literacy	High School	150	3.20	0.48	8.654	0.001*	Graduate > High School
	Bachelor's	350	3.50	0.51			
	Master's	250	3.70	0.49			
	Doctorate	120	3.85	0.46			
Technical Understanding	High School	150	3.10	0.47	6.123	0.003*	Doctorate > High School
	Bachelor's	350	3.40	0.48			
	Master's	250	3.60	0.45			
	Doctorate	120	3.75	0.44			
Critical Evaluation	High School	150	3.15	0.50	5.452	0.007*	Master's > High School
	Bachelor's	350	3.35	0.50			
	Master's	250	3.55	0.48			
	Doctorate	120	3.65	0.49			
Practical Application	High School	150	3.50	0.53	7.234	0.002*	Doctorate > High School
	Bachelor's	350	3.70	0.52			
	Master's	250	3.80	0.51			
	Doctorate	120	3.90	0.50			

*$p < 0.05$

Do AI Literacy Levels Significantly Differ by Income Level?

A one-way ANOVA was conducted to analyze whether AI literacy levels significantly differed based on participants' income levels. The results are summarized in Table 9.

Table 9: One-Way ANOVA Results for Income Level

Scale and Sub-Dimensions	Income Level	N	Mean ($\bar{x}$)	SD	F	p	Significant Difference
AI Literacy	0-5,000 TL	200	3.10	0.47	7.865	0.001*	30,000 TL > 0-5,000 TL
	5,001-15,000 TL	300	3.35	0.49			
	15,001-30,000 TL	250	3.55	0.50			
	>30,000 TL	120	3.70	0.48			
Technical Understanding	0-5,000 TL	200	3.05	0.45	6.542	0.003*	30,000 TL > 0-5,000 TL
	5,001-15,000 TL	300	3.30	0.48			
	15,001-30,000 TL	250	3.50	0.49			
	>30,000 TL	120	3.65	0.47			
Critical Evaluation	0-5,000 TL	200	3.12	0.48	5.632	0.005*	30,000 TL > 0-5,000 TL
	5,001-15,000 TL	300	3.30	0.49			
	15,001-30,000 TL	250	3.45	0.48			
	>30,000 TL	120	3.60	0.50			
Practical Application	0-5,000 TL	200	3.50	0.50	8.045	0.001*	30,000 TL > 0-5,000 TL
	5,001-15,000 TL	300	3.65	0.49			
	15,001-30,000 TL	250	3.75	0.48			
	>30,000 TL	120	3.85	0.47			

It was found that people with greater income levels reported significantly higher AI literacy across all sub-dimensions ($p < 0.05$). Among the Practical Application and Technical Understanding sub-dimensions, the differences were most pronounced, with the >30,000 TL group scoring highest.

The study shows a clear relationship between participants' demographics, access levels, and AI Literacy as per the tables and findings presented. Below is a synthesized analysis in line with the research objectives:

Occupation-Based Insights (Table 4)
Among the studied groups, FinTech workers reported the highest AI literacy levels, signifying their frequent interaction with AI tools: in particular, Technical Understanding ($\bar{x}$ = 3.48) and Practical Application skills ($\bar{x}$ = 3.80). The more pronounced Critical Evaluation skills, on the other hand, in institutional investors compared to academics may be indicative of the intensified practical demands of their work.

AI Usage Frequency Insights (Table 5)
Frequent users of AI technologies scored significantly higher than non-frequent users across all dimensions. Most affected of all may have been Practical Application ($\bar{x}$ = 3.85), indicating that the skills related to application may be more enhanced with continuous use.

Gender-Based Insights (Table 6)
The male participants scored higher in Technical Understanding than their female counterparts ($\bar{x}$ = 3.42 for males and $\bar{x}$ = 3.28 for females). Critical Evaluation and Practical Application showed no deference across sex, which may indicate that this is largely believed to be an equitable space of applied AI skills once identified weaknesses in the underlying knowledge are solved.

Digital Access Challenges Insights (Table 7)
Participants without any access challenges reported higher levels of literacy across the board including Practical Application ($\bar{x}$ = 3.83 vs. 3.65 for those with access challenges). This is indicative of how the digital divide curtails effective usage of AI tools.

Education Level Insights (Table 8)
Participants with a doctorate-level degree scored highest in AI Literacy ($\bar{x}$ = 3.85) and Practical Application ($\bar{x}$ = 3.90). This finding indicates that advanced education enhances the comprehension and application of AI tools.

Income Level Insights (Table 9)
Participants earning over 30,000 TL consistently performed better than those with lower incomes across all areas, especially in Practical Application ($\bar{x}$ = 3.85). This might indicate that economic stability facilitates access to education and tools that sharpen AI literacy.

These results relate most closely to the overall focus of the study in terms of understanding the various levels of AI literacy among finance investors and professionals and the effect of the digital divide. Results show that FinTech professionals and institutional investors are considered to be higher in AI literacy because they often interact with and engage in AI tools in their daily business. Practical exposure, indeed, helps in developing AI skills. The digital divide was indicated as another primary factor since the participants who had difficulty in accessing technologies scored low on all dimensions of AI Literacy. Education and income emerged from the results as the major players in AI literacy, with a situation whereby the higher the educational level and income, the better the performance in technical understanding and practical application. Therefore, these insights indicate that structural inequalities in access to education and technology must be addressed so that the AI literacy gap may be closed. In addition to that, targeted interventions can be developed to include the training of misrepresented groups (low-income earners and women) to address the disparities noted in the study and ensure equitable participation in an AI-driven financial landscape.

Conclusion
This study is relevant because in the financial sector, heavy reliance on AI technologies has led to new disparities in access and use of these technologies due to differing levels of AI literacy. With the intention of addressing this issue concerning the digital divide and helping financial investors, this paper will review the role of AI literacy in promoting equitable access to AI-driven tools such as robo-advisors and algorithmic trading systems. This study uses a mixed-methods approach, which includes surveys of varying socioeconomic groups and reviews of global case studies, to give an encompassing perspective on AI literacy, its influence on making financial decisions, and inclusion.

The levels of AI literacy among the financial investors and professionals were researched for this study, with particular attention being paid to how demographic variables, challenges arising from limited digital access, and frequency of use all contribute to their capability to make full use of AI-driven tools. There were considerable differences between the two groups, especially where occupations were concerned: FinTech professionals indicated the highest levels of literacy in terms of technical knowledge ($\bar{x}$ = 3.48) and practical application ($\bar{x}$ = 3.80), largely due to greater exposure to AI technologies. Those participants with higher incomes (for example, >30,000 TL) and higher qualifications (for example, doctorate degrees) also on average performed significantly better than any other group across all dimensions of AI literacy, with practical application averaging $\bar{x}$ = 3.90 for the doctorate group. The findings indicate how important professional and socioeconomic settings are in determining AI literacy: Those individuals who possess significant resources and education have a higher capacity for the application of AI tools in financial decision making.

Between A and G data shows how digital inequalities really matter, as none of the participants without access challenges scoring significantly higher in AI literacy ($\bar{x}$ = 3.58) and practical application ($\bar{x}$ = 3.83) than those facing access issues ($\bar{x}$ = 3.35 and $\bar{x}$ = 3.65 respectively). The more frequent AI tool users performed best on all constructs, especially practical application ($\bar{x}$ = 3.85), suggesting that consistent exposure contributes to skill development. Disparities have been recorded on the basis of gender too-males scored better than female participants in technical understanding ($\bar{x}$ = 3.42 vs $\bar{x}$ = 3.28), while critical evaluation and practical application showed no significant differences. Overall, these findings call attention towards designing targeted interventions, like educative programs and policies to intervene into structural inequalities for equitable access to AI-driven financial technologies-to a larger extent.

The study corroborates existing literature that establishes the relevance of AI literacy in financial decisions while exhibiting inconsistencies in its work. It confirms that higher AI literacy levels contribute to better financial decision-making with

enhanced effects among heavy AI tool users ($\bar{x}$ = 3.85 in practical application), supporting Lyon & Kass-Hanna and Mishra et al [5,6]. The differences stemming from the educational background and income were similarly pronounced as by OECD/INFE, which highlighted the digital divide as a major obstacle in obtaining equitable access to AI technologies [7]. This study found that males registered higher scores in technical understanding ($\bar{x}$ = 3.42 vs. 3.28), revealing that the foundational gaps exist along the gender spectrum, contrasting Kass-Hanna & Lyons, which spoke of minimal gender differences in AI literacy [5]. In addition, the similarities in AI literacy levels between FinTech personnel and working professionals strengthen Jhonson et al.'s perspectives on occupational exposure as a critical factor for skill formation [13]. Together, these results underscore the urgent call for such interventions that could address disparities and ensure inclusive access to AI technologies.

This study adds to the academic literature by bridging the gap between AI literacy and financial decision-making and digital divide, with some empirical evidence on demographic disparities and access issues. The findings serve to alert investors to bettering their AI skills to improve decision-making and gain full advantage of AI driven tools. This need for inclusive AI-related interventions and infrastructure improvement are underlined for policymakers as a pressing issue if the structural inequalities that hamper financial participation must be addressed in a focused manner.

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