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The Impact of Gender and Age on Attitudes toward Technology in Investment Decision-Making

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Abstract: This research examines the influence of demographic factors—specifically gender and age - on perceptions of technology in the investment process. Using ANOVA analysis, significant differences were identified in how various demographic groups engage with investment technology, with younger respondents displaying higher familiarity and usage rates. Gender differences also revealed varying attitudes toward technology's impact on investment decisions. The findings underscore the necessity for tailored financial products and educational resources that cater to diverse investor profiles. This study provides a foundation for future research exploring additional demographic variables, the effects of global events on investment behaviors, and the intersection of technology with socially responsible investing. Ultimately, the insights gained aim to promote inclusivity and enhance financial literacy among diverse investor populations.

Keywords: investment technology, demographic factors, financial literacy, gender differences

INTRODUCTION

The dynamic landscape of investment decision-making has been profoundly influenced by advances in technology, reshaping traditional approaches to equity pricing, risk assessment, and financial management (Suharmanto et al., 2024). As technological innovations continue to permeate financial markets, investors are increasingly relying on sophisticated tools and methodologies to inform their decisions (Arfiriandi et al., 2024). This paper explores the multifaceted impact of technological advancements on investment decisions, focusing on key

components such as equity pricing models, data analytics methodologies, and communication protocols. Recent literature highlights the evolving nature of investment strategies in response to technological developments. Coleman (2019) presents a Four-Component Model of Equity Pricing, which integrates various technological inputs to refine valuation techniques and enhance predictive accuracy. This model underscores the importance of technology in addressing the complexities of equity valuation in a rapidly changing market environment . Similarly, Dong et al. (2023) investigate the cost implications of data breaches during the COVID-19 pandemic, emphasizing the critical role of information security in investment decisions and the need for robust technological safeguards.

The influence of sentiment analysis and behavioral insights on asset pricing is another significant area of interest. Eachempati and Srivastava (2021) delve into the impact of unadjusted news sentiment on asset pricing, revealing how technological tools for sentiment analysis can offer valuable insights into market behavior. This complements Jain et al. (2023), who examine how investor personality traits and biases, mediated by technological tools, predict investment intentions. Technological advancements are also reshaping investment decisions in the context of broader economic variables. For instance, Jamaani and Alawadhi (2023) explore the interplay between inflation, stock market growth, and IPO withdrawals, highlighting how technological tools can enhance understanding of these complex relationships. Moreover, Kang and Yang (2023) analyze investment decisions related to internet financial products, illustrating how network externalities and technological innovations influence investor behavior.

The integration of AI and machine learning into investment strategies is another critical development. Kong et al. (2011) discuss how asymmetric information affects firm investment and stock prices, emphasizing the role of advanced analytics in mitigating information asymmetry. Meanwhile, El-Masry and Reck (2008) highlight the adoption of continuous online auditing as a response to regulatory requirements, showcasing how technology-driven approaches can enhance transparency and accountability in investment management.

The ethical and practical dimensions of technology in investment management are also crucial. Findlay and Moran (2019) address the phenomenon of purpose-washing in impact investing, raising concerns about the genuine application of technology in aligning investments with social and environmental goals. Ahmad (2024) further explores cognitive biases in investment management, emphasizing the need for technological tools that can mitigate these biases and improve market efficiency. Additionally, the role of fintech in fraud prevention and equity investment safeguarding, as discussed by Roszkowska (2021), demonstrates how technological innovations are employed to enhance the security and integrity of financial transactions. Tan et al. (2024) investigate the adoption of technology post-COVID-19 and its effects on noise trading and investor sentiment, offering insights into how technological advancements can influence market behavior across different cultural contexts. Lastly, the interplay of technology and personal investor traits is examined by Tauni et al. (2017), who explore how Big Five personality traits impact information acquisition and trading behavior. Song et al. (2021) further contribute to this discussion by analyzing risk investment decisions through deterministic models, illustrating how technology enhances the precision of risk assessments.

In summary, the integration of technology into investment decision-making processes has introduced new paradigms and methodologies that significantly influence financial markets. By examining the contributions of recent research and technological advancements, this paper aims to provide a comprehensive understanding of how technology impacts investment decisions, shaping the future of financial management.

METHOD

This study aims to investigate the impact of demographic factors—specifically gender and age—on perceptions of technology in the investment process. The primary objectives are to determine how familiarity with investment concepts, usage of investment apps, and attitudes toward technology's role in reducing investment risk differ across demographic groups. A total of 100 responses were collected through a randomized sampling method to ensure a diverse participant pool. Participants were asked to complete a structured questionnaire designed to assess their familiarity with investment technology, comfort levels with using such technologies, and perceptions of artificial intelligence in investment management. To analyze the collected data, SPSS (Statistical Package for the Social Sciences) was employed, utilizing ANOVA to explore differences between demographic groups. The following hypotheses were tested:
H1: There are significant differences in familiarity with investment concepts based on gender.
H2: Age influences the likelihood of using mobile apps for investing.
H3: Perceptions of technology's impact on reducing investment risk vary by age and gender.
The findings from this study will contribute to a deeper understanding of how demographic factors shape engagement with investment technologies.

RESULTS AND DISCUSSION

The demographic data presented in Tables 1 and 2 provide valuable insights into the gender and age distribution of the respondents in this study. Table 1 reveals a predominance of male participants, comprising 60% of the sample, while female respondents account for 40%. This gender distribution suggests a male-dominant demographic, which may influence the findings related to investment behavior and technology adoption. Understanding the gender dynamics is crucial, as it may reflect varying investment preferences, risk tolerance, and engagement with financial technologies.

Table 1: Gender

		FREQUENCY	PERCENT	VALID PERCENT
VALID	Male	60	60.0	60.0
	Female	40	40.0	40.0
	Other	100	100.0	100.0

Table 2 focuses on age distribution, highlighting a significant concentration of respondents in the 18-25 age group, which represents 67% of the sample. This youthful demographic indicates a strong engagement with modern financial tools and investment opportunities, possibly influenced by factors such as digital literacy and access to information. The subsequent age group, 26-35, comprises 23%, while those aged 36-45 make up the remaining 10%. The substantial representation of younger individuals suggests that the findings may be particularly relevant to understanding the behaviors and preferences of a generation that is more familiar with technology and digital finance.

Table 2: Age

		FREQUENCY	PERCENT	VALID PERCENT
VALID	18-25	67	67.0	67.0
	26-35	23	23.0	23.0
	36-45	10	10.0	10.0
	Other	100	100.0	100.0

Together, these tables underscore the importance of considering demographic factors in financial research. The male-dominant and youthful profile of respondents may shape their attitudes towards investment strategies, risk management, and technology use in financial decision-making. This demographic context is essential for interpreting the results and drawing conclusions about investment behaviors in relation to the technological advancements highlighted in the studies referenced.

Table 3: ANOVA Between Gender and Factor

		Sum of Squares	df	Mean Square	F	Sig.
How familiar are you with the concept of investment?	Between Groups	.731	2	.366	.856	.428
	Within Groups	41.459	97	.427		
	Total	42.190	99			
How do you think tech2logy impacts the investment process?	Between Groups	3.908	2	1.954	4.218	.018
	Within Groups	44.932	97	.463		
	Total	48.840	99			
Have you ever used a mobile app for investing?	Between Groups	3.330	2	1.665	3.235	.044
	Within Groups	49.910	97	.515		
	Total	53.240	99			
Do you think tech2logy reduces the risk of losing money while investing?	Between Groups	.477	2	.239	.398	.672
	Within Groups	58.113	97	.599		
	Total	58.590	99			
What role do you think AI will play in the future of investing?	Between Groups	5.047	2	2.523	6.042	.003
	Within Groups	40.513	97	.418		
	Total	45.560	99			
How comfortable are you with using tech2logy to manage personal investments in the future?	Between Groups	3.371	2	1.685	3.835	.025
	Within Groups	42.629	97	.439		
	Total	46.000	99			

The ANOVA results presented in Tables 3 and 4 highlight the influence of gender and age on various factors related to investment perceptions and technology usage among respondents. In Table 3, notable differences emerge in responses based on gender. For instance, the question regarding the impact of technology on the investment process shows a significant F-value of 4.218 (p = 0.018), indicating that men and women perceive technology's role differently. Similarly, the use of mobile apps for investing also reveals significance (F = 3.235, p = 0.044), suggesting gender influences how respondents engage with digital investment platforms. In contrast, familiarity with investment concepts and beliefs about technology reducing investment risk did not yield significant differences, emphasizing that while gender affects certain attitudes towards technology in investing, other aspects remain neutral.

Table 4: ANOVA Between Age and Factor

		Sum of Squares	df	Mean Square	F	Sig.
How familiar are you with the concept of investment?	Between Groups	2.940	1	2.940	7.341	.008
	Within Groups	39.250	98	.401		
	Total	42.190	99			
How do you think tech2logy impacts the investment process?	Between Groups	.807	1	.807	1.646	.203
	Within Groups	48.033	98	.490		
	Total	48.840	99			
Have you ever used a mobile app for investing?	Between Groups	3.682	1	3.682	7.280	.008
	Within Groups	49.558	98	.506		
	Total	53.240	99			
Do you think tech2logy reduces the risk of losing money while investing?	Between Groups	.807	1	.807	1.368	.245
	Within Groups	57.783	98	.590		
	Total	58.590	99			
What role do you think AI will play in the future of investing?	Between Groups	2.802	1	2.802	6.421	.013
	Within Groups	42.758	98	.436		
	Total	45.560	99			
How comfortable are you with using tech2logy to manage personal investments in the future?	Between Groups	.042	1	.042	.089	.766
	Within Groups	45.958	98	.469		
	Total	46.000	99			

Table 4 focuses on age differences, revealing significant results for familiarity with investment concepts (F = 7.341, p = 0.008) and the use of mobile apps for investing (F = 7.280, p = 0.008). This indicates that younger respondents may have a higher familiarity and engagement with investment technologies compared to older individuals. Furthermore, the role of AI in investing also demonstrates a significant age-related difference (F = 6.421, p = 0.013),

suggesting generational shifts in perception regarding emerging technologies in finance. However, other areas, such as comfort in managing personal investments through technology, did not show significant age effects.

These findings contribute to understanding how demographic factors shape investment behaviors and perceptions in a rapidly evolving technological landscape, aligning with Coleman (2019) and others' emphasis on the interplay between technology and investor behavior. Recognizing these differences can help tailor financial products and educational resources to meet diverse needs in the investment community.

CONCLUSION

In conclusion, this research provides valuable insights into the interplay between demographic factors—specifically gender and age—and perceptions of technology's role in the investment landscape. The findings indicate significant differences in how various demographic groups engage with technology, impacting their investment behaviors and attitudes. For instance, the results reveal that younger respondents demonstrate higher familiarity with investment concepts and a greater propensity to use digital platforms for investing, highlighting a generational shift in financial engagement. Gender differences also play a crucial role, particularly in how men and women perceive the impact of technology on investment processes. Such insights are critical, as they underscore the need for tailored financial products and educational resources that resonate with diverse investor profiles.

The implications of this study extend beyond the immediate findings, offering substantial future research opportunities. Further studies could explore additional demographic variables, such as education level or socioeconomic status, to provide a more comprehensive understanding of investment behavior. Additionally, longitudinal studies could assess how attitudes towards technology in investing evolve over time, especially as new financial technologies emerge and gain traction. Researchers might also investigate the effectiveness of educational interventions designed to enhance technological literacy among underrepresented groups, ensuring equitable access to investment opportunities.

On a global scale, this research contributes to a broader understanding of how technological advancements influence investment practices across different cultures and economies. As the financial landscape becomes increasingly digital, the insights gained here can inform policymakers and financial institutions seeking to promote inclusivity in investment participation. Recognizing that demographic factors shape perceptions of technology can help design strategies that foster greater engagement among diverse investor populations, ultimately enhancing market participation and stability. The findings can serve as a foundational framework for studying the effects of global events—such as the COVID-19 pandemic—on investment behaviors. The pandemic has accelerated the adoption of digital finance and reshaped investor sentiments, presenting an opportunity for future research to examine how such shifts might affect the dynamics of technology in investing across various demographics.

In light of the growing emphasis on socially responsible and sustainable investing, future studies could also explore how perceptions of technology intersect with ethical considerations in investment decisions. Understanding how demographic factors influence preferences for socially responsible investments can guide the development of more impactful investment products that align with investors' values. As technology continues to reshape the investment landscape, ongoing research in this area will be vital. The global impact of these findings extends to enhancing financial literacy, promoting investor confidence, and ensuring that technological advancements serve to democratize access to financial markets. By bridging the gap between technology and investor demographics, this research not only enriches our

understanding of current investment behaviors but also paves the way for more inclusive and equitable financial futures.

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