Democratizing Finance: How Digital Investment Platforms Have Transformed Retail Investors Behavior

Alessia Sansone

Dissertation written under the supervision of Professor Miguel Rita

Dissertation submitted in partial fulfilment of requirements for the MSc in International Management with Specialization in Strategy and Consulting, at Universidade Católica Portuguesa and for the MSc in International Business at Smith School of Business, Queen's University, 27/05/2025.

Democratizing Finance: How Digital Investment Platforms Transform Retail Investor Behavior

Author: Alessia Sansone

Keywords: Digital investment platforms, trading apps, retail investor behavior, financial literacy, technology adoption, risk management, generational investing.

Abstract: This dissertation investigates the ways in which digital investment platforms have reshaped retail investor behavior by lowering traditional barriers to market entry and introducing new drivers of participation, risk-taking, and education. Drawing on behavioral finance theories (Prospect Theory, Modern Portfolio Theory, Efficient Market Hypothesis) and technology adoption frameworks (Technology Acceptance Model, Diffusion of Innovations), the study combines a qualitative interviewswith an industry expert and a quantitative survey on 200 investors.

The primary objectives are to (1) assess how digital investment platforms influences market participation and asset allocation, (2) evaluate the role of perceived ease of use and usefulness in technology uptake, (3) identify gaps in financial literacy and their impact on risk exposure, and (4) explore generational differences in digital investment strategies linked to technology adoption. Key findings reveal that digital platforms significantly increase participation among younger cohorts, encourage higher allocation to volatile assets such as cryptocurrencies, and amplify speculative behavior in the absence of structured educational content. Perceived ease of use and usefulness emerge as dominant factors driving adoption, while self-directed learning through informal channels does not always translate into prudent investment decisions.

The dissertation concludes that digital platforms hold great promise for democratizing finance but must integrate learning modules, AI-driven risk assessments, and hybrid advisory services to foster informed decision-making and sustainable investor engagement. These insights contribute to both academic discourse and practical platform design, offering recommendations for policymakers and financial institutions to balance innovation with investor protection and long-term market stability.

Democratizar as finanças: Como as Plataformas de Investimento Digital Transformam o Comportamento do Investidor de Retalho

Autor: Alessia Sansone

Palavras-chave: Plataformas de investimento digital, trading apps, comportamento do investidor de retalho, literacia financeira, adoção de tecnologia, gestão de risco, investimento geracional.

Resumo: Esta dissertação investiga a forma como as plataformas de investimento digital remodelaram o comportamento do investidor de retalho, reduzindo as barreiras tradicionais à entrada no mercado e introduzindo novos factores de participação, assunção de riscos e educação. Baseando-se em teorias de finanças comportamentais (Teoria da Perspetiva, Teoria Moderna da Carteira, Hipótese do Mercado Eficiente) e em quadros de adoção de tecnologia (Modelo de Aceitação de Tecnologia, Difusão de Inovações), o estudo combina uma entrevista qualitativa com um perito do sector e um inquérito quantitativo a 200 investidores.

Os principais objectivos são avaliar a forma como as plataformas de investimento digital influenciam a participação no mercado, avaliar o papel da perceção da facilidade de utilização e da utilidade na adoção de tecnologia, identificar lacunas na literacia financeira e o seu impacto na exposição ao risco, e explorar as diferenças geracionais nas estratégias de investimento digital associadas à adoção de tecnologias. As principais conclusões revelam que as plataformas digitais aumentam significativamente a participação entre os grupos mais jovens, incentivam uma maior afetação a ativos voláteis, como as criptomoedas, e amplificam o comportamento especulativo na ausência de conteúdos educativos estruturados

A dissertação conclui que as plataformas digitais são muito promissoras para democratizar as finanças, mas devem integrar módulos de aprendizagem, avaliações de risco baseadas em IA e serviços de consultoria híbridos para promover a tomada de decisões informadas e o envolvimento sustentável dos investidores.

Table of Contents

1. Literature Review

1.1 Introduction

In recent years, the global financial landscape has faced a fast digital transformation, radically reshaping the way investors access, manage, and grow their wealth. This change is particularly evident in the investment industry, where digital platforms – going from online discount brokers to robo-advisors and AI-powered trading systems – have emerged as powerful alternatives to traditional financial advisory services. Historically, retail investors relied on in-person interactions with banks, brokers, and financial advisors, often incurring high transaction fees and experiencing limited access to real-time market data. Today, technological advancements have laid the foundation for digital solutions that offer lower costs, higher accessibility, and improved portfolio management tools[1].

The evolution from traditional to digital investment platforms is driven by several factors. Mobile technology and big data analytics have enabled the creation of sophisticated tools that provide real-time market insights and personalized investment recommendations[2]; at the same time, it's important to consider that modern investors are increasingly tech-savvy and financially cautious, driving a change in their expectations of financial services. The Technology Acceptance Model (TAM) proposed by Davis (Exhibit 1) and the Diffusion of Innovations Theory by Rogers (2003) offer valuable frameworks for understanding the determinants of digital platform adoption – studying how factors such as perceived usefulness, ease of use, and social influence play critical roles in shaping investors behavior.

The impact of this digital shift goes beyond simple convenience; they influence key investment decisions related to risk tolerance, capital allocation, and portfolio diversification. Traditional investment theories, such as the Modern Portfolio Theory advanced by Markowitz (1952) and the Efficient Markets Hypothesis by Fama (1970), provide a solid fundation for understanding traditional investment behaviors. However, the introduction of digital platforms challenges these conservative paradigms by democratizing investment access and potentially altering risk exposure. Early evidence suggests that retail investors who adopt digital investment platforms

[1] Arner, D. W., Barberis, J., & Buckley, R. P. (2016). The evolution of Fintech: A new post-crisis paradigm? *Georgetown Journal of International Law, 47.*

[2] Gomber, P., Koch, J. A., & Siering, M. (2017). Digital finance and fintech: Current research and future research directions. Journal of Business Economics.

may be inclined to invest larger amounts, pursue higher-risk strategies, or diversify their portfolios in new ways compared to those relying solely on traditional advisory services[3].

This literature review aims to synthesize the existing acdemic findings that cover traditional investment practices, digital financial innovations, and behavioral finance. The identification of research gaps will serve as a foundation for the current study, which investigates the extent to which recent investment technologies have contributed to significant changes in investors' behaviors, including their investment amounts, risk preferences, and choices between digital versus traditional advisory services.

1.2 Historical Evolution of Investment Methods

The art of investing is as old as human economic behavior itself. Its earliest manifestation can be linked to the decisions traders made about risk and reward in long-distance commerce. For instance, people from the Jordan Valley traded obsidian, wheat, and sheep with communities in the Zagros-Taurus region of what is now Turkey. These innovative merchants faced significant risks during their journeys, assessing the trade-offs between danger and profit[4]. An important event characterizing the evolution of this practice can be tracked back in the 1600s, when institutions such as acceptance houses and merchant banks started financing international trade for governments, monarchies, and individuals, while also pooling funds for long-term overseas projects. In America, the New York Stock Exchange first opened its doors in 1792 as the nation embarked on its journey[5].

In the early days of modern investing, retail investors primarily relied on banks, financial advisors, and stock brokers to manage their portfolios. During this period, investment strategies were deeply rooted in established financial theories. For exmaple, the Modern Portfolio Theory, introduced by Markowitz (1952), laid the foundation for asset diversification by emphasizing the construction of an "efficient frontier" that balanced risk and return. In a similar way, the Efficient Market Hypothesis elaborated by Fama (1970) argued that asset prices fully reflect all available information, making the aim of exceeding market performance with expert advice a difficult aspiration.

---

[3] Sironi, P. (2016). *FinTech innovation: From robo-advisors to goal-based investing and gamification*. Wiley.
[4] Schmidt, M. (2017). Digital investment strategies. In L. Müller (Ed.), Digital finance and innovation. De Gruyter.
[5] Paul Miller Advisor. (n.d.). Brief history of investments.

Traditional investment methods are characterized by a heavy reliance on human evaluation and personal interactions, making it a highly time-consuming and costly process. As noted by Malkiel, the high fees and limited access to real time market data characterizing these methods often prevented investors from taking advantage of emerging market opportunities[6]. The integration of technology started to alter this landscape gradually, in fact, in the second half of the twentieth century the adoption of computing and telecommunications initiated a transformation within investment practices. Investment firms began to leverage the power of computers to manage large volumes of data, and the introduction of electronic trading systems during the 1970s and 1980s significantly enhanced the speed and accuracy of trade processes.

The advent of the internet in the 1990s further accelerated this transformation by providing retail investors with access to financial information and markets. Online trading platforms emerged during this time, reducing the dependency on traditional intermediaries and lowering transaction costs. Investors could now access real-time market updates and execute transactions more efficiently, a development that set the stage for the digital revolution in investment services. As digital platforms began to emerge, they incorporated advanced technologies such as big data analytics and in a second stage artificial intelligence, which enabled personalized investment recommendations[7].

In the twenty-first century, digital investment platforms have continued to evolve rapidly. Robo-advisors and online brokers, such as Betterment, Wealthfront and Schwab Intelligent Portfolios, have disrupted traditional models by offering automated, algorithm-driven portfolio management at significantly lower fees. These digital advisors leverage data analytics to customize investment strategies based on individual risk tolerance and financial goals. Furthermore, traditional banks have also embraced this digital shift by integrating investment features into their mobile applications. Banking investment apps, such as Revolut, Intesa Sanpaolo, and N26, allow customers to manage their investments alongside everyday banking services, streamlining access to real-time market insights and personalized financial planning. The integration of AI-driven analytics into these platforms has further transformed investment practices by providing dynamic portfolio rebalancing and real-time decision-making advices.

This historical progression shows a deep paradigm shift in investment management. The foundational theories of Markowitz (1952) and Fama (1970) have gradually given way to

[6] Malkiel, B. G. (2003). The efficient market hypothesis and its critics. *Journal of Economic Perspectives, 17*.
[7] Gomber, P., Koch, J. A., & Siering, M. (2017). Digital finance and fintech: Current research and future research directions. *Journal of Business Economics, 87*.

innovative digital platforms that utilize real-time data and AI-driven insights. This evolution provides essential context for understanding how technological advancements have reshaped investor behavior and decision-making processes in today's financial markets.

1.3 Theoretical Frameworks on Investment Behavior and Technology Adoption

Digital transformation in the investment landscape is deeply influenced by behavioral and technological frameworks that shape investor decision-making. Traditional finance models often assume that investors behave rationally; however, research in behavioral finance has demonstrated that decision-making is also significantly impacted by subjective risk perceptions and cognitive biases. For instance, the Prospect Theory[8] (Exhibit 3), reveals that investors are not driven just by rational calculations, but are influenced by other cognitive frameworks such as loss aversion and overconfidence, which affect how they perceive and respond to risks under uncertainty. This theory helps explain why investors may avoid certain high-risk opportunities or overreact to market downturns.

In addition to these behavioral insights, there are also established theories that explain the adoption of technology criteria. The Technology Acceptance Model published by Davis in 1989 states that an individual's decision to adopt a new technology is mainly determined by the perceived usefulness and ease of use of that technology. This perspective is particularly relevant when considering the growing popularity of digital investment platforms, as these platforms are usually adopted by investors who find them intuitive and beneficial for managing their portfolios. Additionally, Rogers' Diffusion of Innovations Theory (2003) further explains how and why digital investment tools penetrated the market. Rogers emphasizes that factors such as relative advantage, compatibility, complexity, and observability are critical in determining the speed and extent of a technology's adoption. When applied to digital investment platforms, these models highlight that both the psychological factors influencing risk behavior and the practical attributes of technology play crucial roles in shaping investor behavior, and together, these theoretical frameworks provide a better understanding of the dynamics behind technology adoption in the investment sector.

[8] Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk.

Digital investment platforms have revolutionized financial markets, providing investors with tools that offer greater accessibility, lower costs, and automation. These platforms fall into different categories based on their functionalities and target users:

- Online discount brokers, such as Interactive Brokers and Charles Schwab, serve autonomous investors by offering low-cost access to a wide range of assets[9].
- Robo-advisors, like Betterment and Wealthfront, leverage AI-driven algorithms to manage portfolios automatically, appealing to passive investors preferring automated portfolio strategies[10].
- Social and copy trading platforms, including eToro and ZuluTrade, allow users to mirror the trades of more experienced investors, lowering in this way the barrier for market entry[11].
- Cryptocurrency and alternative asset platforms, including Binance and OpenSea, facilitate investment in digital assets, NFTs, and decentralized finance[12].

The emergence and adoption of these technologies align with broader trends in fintech innovation. According to Gartner's Hype Cycle for Digital Banking Transformation of 2022 (Exhibit 4), decentralized finance and blockchain asset tokenization were at the peak of inflated expectations, reflecting high levels of interest but also skepticism regarding their stability in the upcoming years. Artificial intelligence and hyperautomation tools, which power algorithmic trading and AI-driven investment models, are expected to see a broad adoption in the next two to seven years, suggesting there will be continued advancements in predictive modeling and automated decision-making.

While some innovations face challenges, others are advancing toward maturity. For example, technologies in the slope of enlightenment, such as real-time payments, chatbots, and financial services super apps, have already begun demonstrating benefits for investors and financial institutions. For istance, real-time payment systems improve transaction efficiency, reducing delays in executing trades and fund transfers, becoming in this way extremely adopted escpecially by younger generations. Moreover, the rise of financial super apps consolidates banking, investing, and payment solutions into a single platform, offering a great convenience

[9] Nasdaq (2023). *Algorithmic trading market report: Trends and impact on financial markets.* Nasdaq Market Research.
[10] Statista. (2023). Robo-advisory market forecast 2023-2027. Retrieved from www.statista.com
[11] Bloomberg. (2023). *AI-driven trading portfolios outperform human managers by 2.5% annually.* Bloomberg Financial Research.
[12] CoinGecko. (2023). Crypto Market Overview 2023: Trends and Adoption Statistics. Retrieved from www.coingecko.com

and accessibility for all users. These advancements suggest that the financial ecosystem is moving toward greater integration, making investment decisions more efficient and data-driven.

The rapid evolution of these technologies raises important questions about their long-term impact on investment decisions and financial markets, and understanding how retail investors engage with these platforms is essential to assess to what extent digitalization has led to higher investment amounts, increased risk-taking, and improved diversification strategies.

1.4 The Impact of Digital Investment Platforms on Investor Behavior

The advent of digital investment platforms has significantly transformed financial markets by reducing entry barriers, transaction costs, and complexity for retail investors. This section examines whether these technological innovations have led to an increase in retail market participation and investment activity over time, relying on historical data, academic research, and statistical trends.

Retail investor participation in financial markets remained relatively low until the widespread adoption of the internet. A study conducted by Bogan (2008) highlights that before the 1990s, fewer than one-third of U.S. households held stocks, a statistics that remained fixed despite economic growth and rising stock valuations. This limited engagement can be attributed to various barriers, including high brokerage fees, restricted access to real-time market information, and a general lack of financial literacy among the broader population. The emergence of online trading in the mid-1990s introduced an important shift, reducing both information and transaction costs. Charles Schwab, one of the earliest adopters of online brokerage services, saw the percentage of its client trades executed online rise from less than 25% in 1995 to over 80% by 2002, reflecting a dramatic shift in investor behavior (Exhibit 5). This transition was not only technological but also cultural, as individual investors began to view direct market participation as more attainable and less intimidating. By the early 2000s, the expansion of discount brokers and digital investment platforms had facilitated an record increase in stock market participation. According to data from the Survey of Consumer Finances (SCF), stock ownership among U.S. households increased from 19.5% in 1983 to 49.9% in 2001, coinciding with the increase of internet access[13].

[13] Bogan, V. (2008). Stock Market Participation and the Internet. *Journal of Financial and Quantitative Analysis*

Similar trends were observed in Europe, where differences in stock market participation between countries were correlated with internet penetration rates. Countries with more developed online financial services, such as the Netherlands and the United Kingdom, experienced more significant increases in participation compared to economies with limited digital infrastructure (Exhibit 6)[14]. This variation underscores the importance of national digital policy and investment in broadband infrastructure as enablers of financial inclusion.

One of the most significant contributions of digital investment tools is their role in reducing transaction costs and simplifying market entry for non-experts in the field. According to Bogan (2008), the introduction of online discount brokers in the late 1990s, such as Ameritrade and E*TRADE, drastically reduced commission fees, in some cases by over 79% compared to traditional brokers. The introduction on the market of commission-free trading platforms in the 2010s, such as Robinhood and Webull, further accelerated market participation. By removing nearly all cost-related barriers, these platforms significantly widened access to investing for first-time users. The elimination of minimum deposit requirements and the ability to trade fractional shares have allowed also individuals with limited capital to enter financial markets. This innovation, in fact, that has been particularly influential among younger and lower-income investors. A 2022 report by FINRA indicates that younger investors are more inclined to use mobile trading apps and engage in riskier investments such as cryptocurrencies and options[15]. This aligns with behavioral finance theories suggesting that younger individuals have a higher risk tolerance and shorter investment horizons.

Several studies have analyzed the relationship between digital investment tools and market participation. The abovementioned research by Bogan found that households with internet access were substantially more likely to participate in the stock market, with an impact equivalent to having an additional $27,000 in household income or two years of education more. This finding suggests that digitalization reduces traditional barriers such as financial literacy and access to investment resources (Exhibit 7). More recent studies confirm this trend. A study published in the Journal of Banking & Finance (2022) analyzed European financial markets and found that stock market participation increased by over 30% in countries that implemented online investment platforms[16]. Additionally, a 2023 Statista report highlights that global retail

[14] Guiso, L., Haliassos, M., & Jappelli, T. (2003). Household Stockholding in Europe: Where Do We Stand and Where Do We Go? *Economic Policy*
[15] FINRA Investor Education Foundation. (2022). Investors in the United States: The changing landscape.
[16] Kaustia, M., Conlin, A., & Luotonen, N. (2022). What drives stock market participation? The role of institutional, traditional, and behavioral factors. Journal of Banking & Finance.

investor participation in stock markets has doubled since 2010, with online platforms accounting for over 70% of all retail trades. This finding is also confirmed by researches by the Everest Group, highlighting that in 2023 retail investors held approximately half of all global wealth, driven by increased access to digital investment platforms, blockchain-backed assets, and user-friendly financial services.

The increase in retail investor participation was also observed in a 2023 study by the JPMorgan Chase Institute. In the past 5 years, transfers from checking to brokerage accounts were reported to be three to four times higher than in previous years. As a result, the share of U.S. households holding stocks reached a record in 2022, a trend facilitated by the accessibility of online brokerage accounts. In addition to participation rates, there has been an increase in capital at risk per retail investor. This stufy also found that market risk in retail investors' portfolios increased by an average of 15% from 2019 to 2021, and remained elevated through 2023, driven by active trading and the appreciation of riskier securities.

Another important finding is represented by the evidence that younger investors, particularly Gen Z and Millennials, demonstrated the highest market risk exposure, whereas older investors (Gen X and Boomers) maintained more diversified portfolios with lower volatility, which aligns with lifecycle investment theory (Exhibit 8). The driving forces behind these trends were various, including the COVID-19 pandemic played a crucial role by increasing household savings. However, the emergence of commission-free trading platforms had a significant impact on the market partecipation, lowering entry barriers and making investing more affordable and accessible to a broader demographic[17].

The increasing reliance on digital platforms for investing raises important considerations regarding financial stability and market dynamics. While accessibility has improved, concerns regarding overtrading, speculative investment behavior, and lack of financial literacy among new investors have also emerged. Studies by Barber & Odean indicate that new investors who enter the market through digital platforms tend to trade more frequently and with higher levels of risk, which can lead to lower long-term returns[18].

Looking ahead, the adoption of decentralized finance (DeFi), blockchain-based asset trading, and AI-powered investment tools is expected to further transform retail investing. According to

[17] JPMorgan Chase Institute. (2024). Retail risk: Investors' portfolios during the pandemic. JPMorgan Chase & Co.
[18] Barber, B. M., & Odean, T. (2002). Online investors: Do the slow die first? *The Review of Financial Studies*, 15

Gartner's Hype Cycle for Digital Banking Transformation of 2022, technologies such as robo-advisor 2.0 and blockchain asset tokenization are currently in the early stages of adoption but have the potential to significantly impact financial markets in the coming decade. The evidence strongly suggests that digital investment platforms have played a crucial role in expanding stock market participation worldwide. As digitalization continues to shape financial markets, further research will be needed to evaluate its long-term implications on investor behavior, financial literacy, and market stability.

In conclusion, the proliferation of digital investment platforms has markedly reshaped retail investor behavior and participation in global financial markets. Historical data and academic studies consistently demonstrate a strong correlation between technological innovations and increased market access for retail investors. By significantly lowering entry barriers, reducing transaction costs, and simplifying complex financial processes, digital platforms have democratized investing, enabling broader participation across income levels, age groups, and geographies.

The shift has been especially pronounced among younger and less experienced investors, who have been drawn to mobile trading apps and commission-free platforms. While this transformation has empowered a new generation of investors and diversified market participation, it has also introduced new challenges, including increased risk exposure, speculative trading behavior, and concerns about financial literacy.

Looking forward, emerging technologies such as decentralized finance, blockchain asset tokenization, and AI-driven investment tools are poised to further disrupt the retail investing space. As these innovations gain traction, ongoing research will be essential to understand their long-term effects on investor outcomes, market dynamics, and financial stability. Ultimately, the digitalization of investing represents both an unprecedented opportunity and a critical area for policy and regulatory attention.

1.5 Qualitative Analysis

Building on the quantitative trends explored earlier, this section offers a qualitative perspective on how digitalization has reshaped the retail investment landscape. Drawing from expert insights and real-world examples, it examines the broader structural, behavioral, and psychological shifts driven by digital financial platforms, highlighting both the opportunities and the emerging risks associated with this transformation.

As highlighted by an expert in the retail investment field, the process of digitalization has led to an increasing operational and informational disintermediation. This evolution has granted retail investors greater autonomy in their decision-making while reducing the traditionally prominent role of financial intermediaries. Sophisticated, scalable, and user-friendly digital platforms have emerged as the new paradigm, and the significant contribution of digital investments - accounting for 3.1% of the total Italian retail sector revenue in 2023 - demonstrates the far-reaching impact of this change.

On a global scale, complementary phenomena have accelerated this transition. The exponential rise of e-commerce, the broad adoption of omnichannel solutions, and the increasing interconnection between digital and social behaviors are reshaping consumer habits. In the United States, for instance, online sales exceeded one trillion dollars in 2022, with mobile commerce represented 40% of transactions[19]. Such developments underscore how digitalization extends beyond mere technological improvement, influencing the very fabric of retail investment and consumer behavior.

During our conversation, the expert drew attention to the historical evolution of digital platforms within the financial sector. He recalled that early automation experiments - ranging from the establishment of the NASDAQ in 1971 and the introduction of the Globex system in 1987 to the adoption of the FIX protocol in the 1990s - set the stage for the eventual rise of online brokers and later, zero-commission platforms such as Robinhood. In Italy, the digitalization of the Borsa in 1999 marked a turning point that facilitated the proliferation of digital operators like Fineco and Directa. Data from the Osservatorio Finanza Digitale by BG Saxo highlight that 40% of Italian digital investors are under 35 years of age, while female participation has reached 42.7% as of 2023, being clear indicators of a broadening investor base shaped by digital trends.

He also underlined the transformation in the range of investment instruments available to the retail investor. For example, exchange-traded funds have gained popularity for their transparency, diversification, and cost efficiency. Comparative studies he referenced have shown that well-structured passive ETFs can offer risk-adjusted returns competitive with those of actively managed funds. However, the expert warned that the ease of access to complex instruments such as derivatives, leveraged products, and cryptocurrencies has introduced

[19] U.S. Census Bureau. (2023). *Quarterly Retail E-Commerce Sales 4th Quarter 2022*. https://www.census.gov

elevated levels of risk, which are often underestimated by retail investors. To address this, regulatory measures like the MiFID II questionnaires have been implemented to systematically assess investors' technical proficiency, investment horizons, and risk tolerance.

In the course of the discussion, it was also stressed that digital platforms have revolutionized not only the supply side of financial services but also addressed some of the inherent challenges on the demand side. Advanced platforms like FinecoX now offer integrated ecosystems that combine banking services, advisory functions, educational resources, and global operational capabilities. These systems leverage artificial intelligence for personalized portfolio allocation while simultaneously facing challenges such as increased intraday volatility due to algorithmic trading strategies. According to the expert, such dynamics pose serious challenges. He explained that concepts from Prospect Theory, such as loss aversion, show that losses can have a psychological impact far exceeding the satisfaction of equal gains, often leading to inefficient decision-making like premature asset liquidation or delayed divestment in unfavorable markets. Similarly, he mentioned that phenomena such as herding behavior and overconfidence intensify market volatility by fueling imitative decisions and excessive trading, which tend to harm long-term investment outcomes.

Moreover, during the conversation the expert expressed concern that the focus on digital convenience might be overshadowing essential elements of investor preparation. He argued that while technological advancements and simplified access to trading have significantly increased market participation and operational efficiency, there appears to be a diminishing emphasis on the mental and strategic preparation necessary for responsible investing. The expert observed that discussions often emphasize technology and ease of trading, leaving critical aspects, such as financial and psychological awareness, insufficiently addressed. He suggested that financial education should start early, with initiatives in schools, accessible training courses, and targeted divulgative content; he even mentioned that social media could be used more effectively to foster awareness, thus preventing trading from becoming a mere fleeting trend lacking understanding.

These qualitative insights, drawn from the expert's extensive experience in retail investment, underscore that digital platforms have become a pivotal element in democratizing finance. They not only facilitate enhanced market access and more autonomous decision-making for retail investors but also impose a greater weight of individual responsibility and financial acumen. The challenge now, as the discussion highlighted, lies in balancing technological innovation

with measures that ensure investors are adequately prepared to navigate the complexities of modern financial markets. Digitalization continues to be a powerful engine for innovation in the financial sector; however, it simultaneously poses new risks, demanding a renewed focus on financial literacy and investor education to nurture a sustainable and well-informed investment culture.

1.6 Hypotheses Formulation

Based on the findings of the literature review and supported by insights from the qualitative analysis, several testable hypotheses can be formulated to explore the relationship between digital investment platforms and investor behavior. These hypotheses address key themes such as market participation, risk-taking, technology adoption, financial literacy, and generational differences, each reflecting critical dynamics identified in both academic research and expert perspectives.

1. **Increased Market Participation Hypothesis**
   H_1: The use of digital investment platforms increases retail market participation compared to traditional investment methods.
   Rationale: Studies cited in the literature and confirmed in the qualitative analysis -indicate that online trading and commission-free platforms have lowered entry barriers, thereby increasing retail market participation.

2. **Risk Behavior Hypothesis**
   H_2: Retail investors using digital platforms tend to take on higher market risks compared to those using traditional advisory services, particularly when these platforms do not integrate sufficient educational or preparatory features..
   Rationale: Evidence suggests that digital investment platforms not only reduce barriers to entry but also make it easier for investors, especially younger ones, to engage in riskier investments such as cryptocurrencies.

3. **Technology Adoption Hypothesis**
   H_3: The adoption of digital investment platforms is positively correlated with perceived ease of use, usefulness, and social influence, as explained by the Technology Acceptance Model (TAM) and Diffusion of Innovations Theory.

Rationale: The literature outlines that investor behavior is significantly affected by these factors, influencing both the rate and manner of technology adoption.

4. **Financial Literacy Hypothesis**

   H_4: Higher levels of financial literacy and psychological preparedness among retail investors using digital platforms are associated with more prudent investment strategies and lower levels of excessive risk-taking.

   Rationale: As highlighted by the qualitative analysis, knowledge could mitigate some of the potential downsides of the ease-of-use that digital platforms offer.

5. **Generational Differences Hypothesis**

   H_5: Younger investors (Gen Z and Millennials) are more likely to adopt digital investment platforms and exhibit riskier investment behavior than older investors (Gen X and Boomers).

   Rationale: Research shows that younger demographics are more tech-savvy and are more inclined to use mobile trading apps and digital advisory tools.

2. Quantitative Analysis

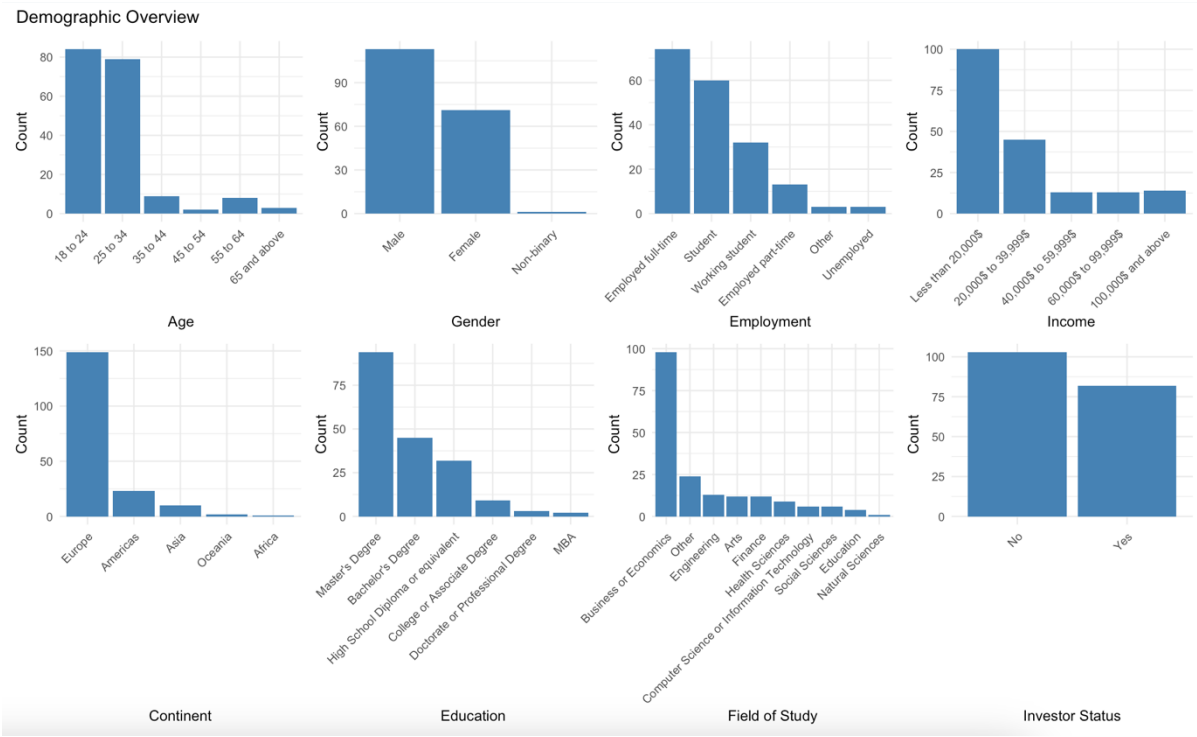
This section presents the results of the quantitative analysis conducted to empirically test the hypotheses derived from the literature review. The analysis draws on data collected through a structured questionnaire distributed via Qualtrics, which targeted both retail investors and non-investors to capture a broad spectrum of behaviors and attitudes toward digital investment platforms. The survey was designed to collect information on demographics, investment behavior, platform usage, financial literacy, and technology acceptance, and included both multiple-choice and Likert-scale questions. In total, responses were obtained from 202 individuals, primarily located in Europe. Data cleaning, statistical testing, and visualization were performed using RStudio, leveraging packages for descriptive and inferential analysis. This section explores key trends in market participation, risk appetite, platform preferences, and generational differences, validating each hypothesis through quantitative evidence.

2.1 Limitations and Constraints

Prior to present the quantitative analysis, it is important to acknowledge several limitations that constrain the generalizability of this study's findings. First, the survey sample is relatively narrow, with a strong concentration of respondents aged between 18 and 34 years. This introduces a potential age bias, as the investment behaviors, risk attitudes, and technology adoption levels of older generations are not adequately captured. Additionally, the geographic distribution of respondents is skewed toward Europe, particularly Italy, which limits the cross-cultural applicability of the results. Participants from other continents, especially Asia, North America, and emerging markets, are underrepresented, which is a notable constraint given the global diversity in investment habits and access to digital platforms. Moreover, the sample size, though sufficient for exploratory analysis, may not support robust inferential conclusions across demographic subgroups. Another limitation lies in the use of self-reported data, which is vulnerable to social desirability bias and subjective interpretation of survey items - particularly in relation to risk perception. Finally, while the study uses well-established theoretical models such as TAM and Prospect Theory, the integration of these frameworks may oversimplify complex behavioral and contextual factors influencing digital investment decisions. These constraints highlight the need for future research to adopt broader, more diverse samples and potentially mixed-methods approaches to validate and deepen the findings presented here.

2.2 Participant Demographics

For this study, participants were recruited through online channels and personal network, and their demographic characteristics reflect a predominantly young, European, and well-educated sample. The following dashboard exposes a graphical summary of participants' characteristics.



As shown by the Demographic Overview Dashboard, nearly half of the respondents (47%) fall within the 18–24 age bracket, while an almost identical proportion (46%) are aged 25–34; only a small-minority are older than 34. This concentration in the 18–34 range underscores the predominance of young adults in the sample, consistent with prior findings that younger groups are more inclined to explore digital investment solutions. Males account for approximately 60% of respondents, with females comprising the remaining 40%.

In terms of employment status, about 40% hold full-time positions, 30% identify as students, and 20% characterize themselves as working students. The remaining participants report part-time employment, unemployment, or other categories. Annual income levels also skew toward lower brackets: 55% earn under $20,000 per year, and another 25% report annual earnings between $20,000 and $40,000. Thus, the majority of the sample is either in early-career stages or still pursuing education.

Regarding geographic background, 85% of participants reside in Europe, and minorities in America and Asia. As for education, half of the sample has completed a master's degree, and a further 25% hold a bachelor's degree. This high level of educational attainment is further reflected in academic specializations: 55% studied business or economics, followed by smaller shares in engineering, finance, or related fields. Taken together, these demographics illustrate a predominantly young, male, European group with considerable post-secondary education and lower-to-mid-range incomes.

2.3 Investment Participation and Motivations

Of the 202 respondents, 45% reported that they do invest in financial markets, while the remaining percentage does not. Among non-investors, a majority (55%) cited a lack of knowledge as the primary reason for refraining from investment. Other reasons included limited capital, perceived market complexity, or concerns about losing money. In narrative form, this finding suggests that inadequate financial literacy remains a substantial barrier to market entry, particularly for younger and less experienced individuals.

As for respondants that participates to financial markets, a correlation analysis has been run to identify which factors are related to the decision of investing.

As shown in Exhibit 9 (Correlation of Demogrtaphic with Investor Status), and further demonstrated by Exhibit 10 (Investor Status by Demographic Factors), male participants demonstrated a higher likelihood of being investors compared to female participants, indicating a gender gap in risk taking or confidence in financial matters. Other variables - such as employment status, income bracket, or field of study - exhibited less pronounced effects on the decision to invest.

Among those who do invest, asset-type preferences reveal that stocks are the most common instrument (70%), followed by exchange-traded funds (ETFs) at 60%, cryptocurrencies at 35%, and bonds at 27%. The predominance of equities and ETFs points to a general appetite for diversified, long-term vehicles, but the group involved in cryptocurrencies also underscores a subset willing to tolerate considerable volatility. Regarding investor experience, 61% of those who invest began within the past one to five years, 15% classify themselves as novice investors (with under one year of experience), and 25% are relatively seasoned (more than five years).

This distribution indicates both an increasing interest among newcomers and continous involvement by experienced individuals.

2.4 Investment Frequency and Capital Allocation

Investment frequency among participants is typically low: 75% of investors place trades either rarely or on a monthly basis, while 25% invest more often - weekly or even daily. This suggests that the majority of participants approach investing with a long-term mindset, rather than seeking short-term gains through high-frequency strategies. The predominance of occasional investors implies that most respondents do not treat the market as a day-trading environment but rather allocate capital periodically. Such behavior is consistent with a preference for passive or semi-active investment strategies, possibly influenced by limited time availability, risk aversion, or a lack of in-depth market knowledge. This pattern aligns with a cautiously exploratory mindset, especially among those who have yet to build extensive portfolios or develop trading routines. It may also reflect the broader trend of younger investors treating investing as a form of financial learning or future planning, rather than immediate income generation.

A clear majority of respondents allocate only a modest share of their personal resources to investments: as shown in Exhibit 11 (Investment Percentage and Risk Capital Distributions), nearly one-third of participants invest between 0 and 25% of their available capital. This conservative allocation likely reflects a desire to maintain liquidity or preserve funds for other financial priorities, such as education, rent, or short-term savings goals. The distribution of risk capital further reinforces this prudent profile; the single largest group is comfortable risking between $5,000 and $25,000. This range suggests a willingness to engage with the market but within clearly defined boundaries of acceptable loss, which is characteristic of individuals in early stages of wealth accumulation. The modal investor in this sample is neither ultra-conservative nor ultra-aggressive; they tend to choose a midrange level of risk capital, indicating moderate confidence in their ability to manage market fluctuations without overcommitting their entire savings. Such behavior may also be influenced by the increasing availability of diversified investment options - such as ETFs and robo-advisors - which allow investors to mitigate risk without needing advanced financial expertise. Overall, this profile paints a picture of a thoughtful, restrained investor who is open to market participation but still prioritizes financial security and gradual growth over speculative strategies.

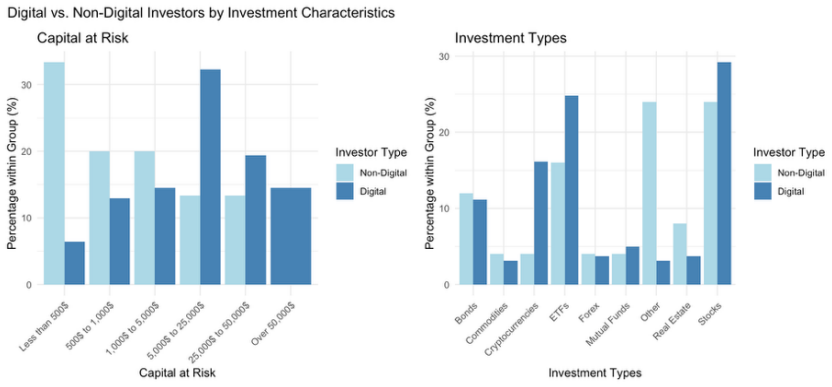
2.5 Digital Investment Platform Usage

Eighty percent of respondents use digital investment platforms; only 20% rely exclusively on non-digital means (such as traditional brokers or in-person advisory services).

With respect to specific platforms, the most frequently cited apps are participants' own bank account applications. Secondary preferences include Trade Republic, Coinbase, and Interactive Brokers. The prominence of bank apps suggests that incumbent financial institutions that embed investment features in their mobile channels have succeeded in capturing a significant share of new investors, presumably leveraging existing trust relationships.

Survey respondents rated the importance of various factors that motivate them to value digital investment platforms. As shown by Exhibit 12 (Most Valuable Online Platforms Features), ease of access emerged as the most commonly cited reason. In narrative form, this supports the theory that minimal barriers to engagement, such as no lengthy paperwork, instantaneous account creation, and real-time order execution, are key drivers of adoption. Accordingly to the literature review, this result affirms the Technology Adoption Hypothesis (H_3) that the adoption of digital investment platforms is positively correlated with perceived ease of use and usefulness, as explained by the Technology Acceptance Model (TAM).

Importantly, when comparing those who use digital platforms to those who do not, several differences emerge in risk behavior and asset allocation:



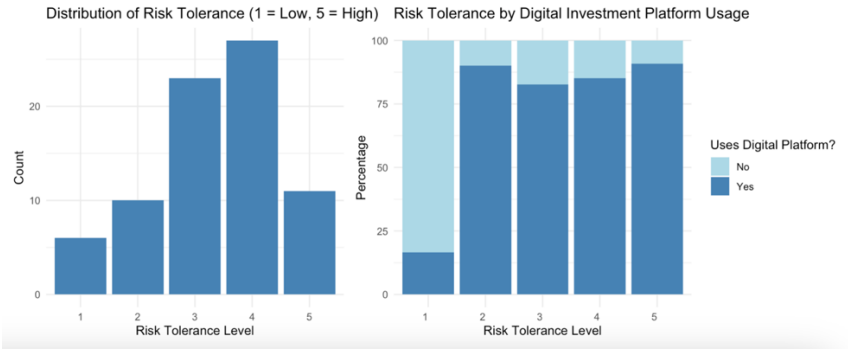
1. Capital at Risk: The average capital at risk among digital platform users exceeds that of non-digital investors. In narrative form, this suggests that digital platform users are willing to commit a larger portion of their disposable funds to market exposure,

indicating a lower overall risk aversion or a greater sense of familiarity with trading technologies.

2. Financial Instruments Choices: Among both groups, equities remain the dominant asset, but digital investors hold a greater share in stocks compared to their non-digital counterparts. Digital investors allocate a larger proportion of their portfolio to cryptocurrencies, a notably volatile asset class. In contrast, non-digital investors frequently select bonds, ETFs, and other traditional instruments associated with lower risk such as treasury securities and municipal bonds. This divergence suggests that ease of access through digital platforms may encourage individuals to experiment high-risk assets.

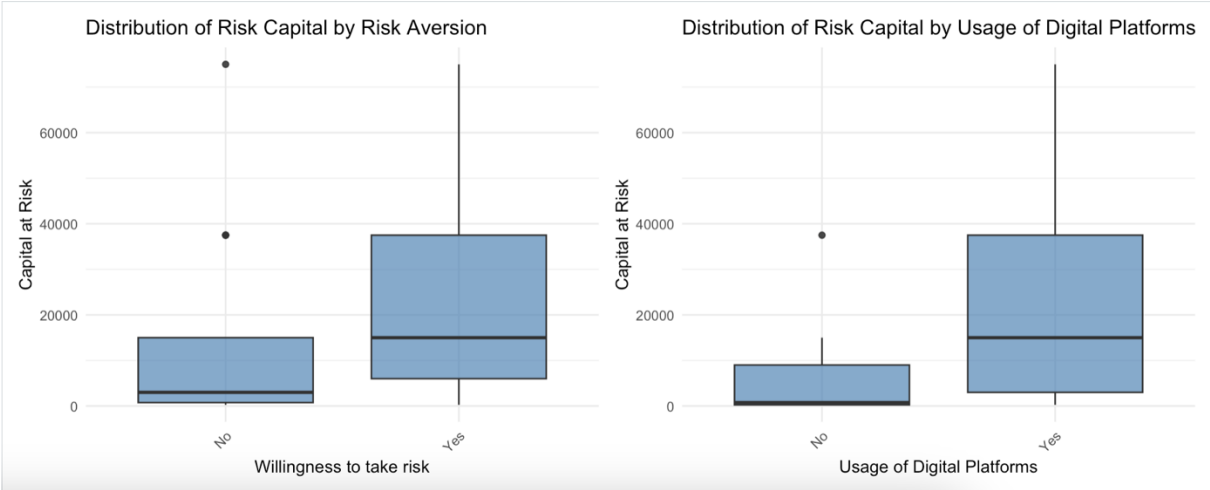
To better define the risk tolerance of respondants, the following question has been asked:

"On a scale from 1 to 5, rate: I am comfortable taking high risks in pursuit of higher returns"



The left panel reveals that most respondents cluster in the mid-range of the risk-tolerance scale. Very few participants rate themselves at the lowest level of risk. Instead, the majority fall into "3" and "4," indicating a moderate appetite for market fluctuations. This suggests that most investors in the sample balance caution with a willingness to accept some downside in pursuit of growth.

The right panel illustrates a clear dichotomy: non-digital investors tend to exhibit greater risk aversion - favoring traditional, lower-volatility strategies - whereas those who utilize digital platforms demonstrate higher tolerance for uncertainty, willingly assuming additional risk in pursuit of potentially higher returns.



To better demonstrate it, the two above box plots illustrate how capital at risk varies based on investors' willingness to take risks and their use of digital investment platforms. In the first plot, as expected, individuals who report being willing to take risks generally allocate a higher amount of capital compared to those who are risk-averse. The median capital at risk is noticeably higher among risk-takers, and the distribution is more spread out, indicating a greater variability in investment levels. There are also a few outliers, especially among those who are not willing to take risks, suggesting that while most risk-averse individuals invest conservatively, a small number may still allocate substantial capital – that could be eventually explained by a higher annual income. In the second plot, a similar pattern emerges when comparing users and non-users of digital platforms. Those who use digital platforms tend to invest more, with a higher median capital at risk and a broader range of investment amounts. Like in the previous plot, here one outlier is present, but the overall trend indicates that digital platform users are more likely to commit larger amounts of capital.

Overall, both plots suggest a positive relationship between risk-taking behavior and investment size, as well as between the adoption of digital investment tools and the amount of capital at risk. These visual imply that individuals who are more comfortable with risk or more technologically engaged tend to invest more heavily. In sum, these findings support the Risk Behavior Hypothesis (H_2) that retail investors using digital platforms tend to assume higher market risks risks compared to those using traditional advisory services.

2.6 Financial Literacy

Another key factor to take into account when assessing investors' behaviour is financial literacy. Exploring how respondents build their financial knowledge showcase distinct patterns between digital and non-digital investors. As shown by Exhibit 13 (Investment Courses Taken by Investor Type), digital investors frequently cite university coursework and online social media channels (such as financial influencers on YouTube or TikTok) as their primary sources. This indicates a preference for informal, fast-paced, and on-demand learning, which reflects both generational habits and the nature of digital consumption today. In contrast, non-digital investors are likelier to attend formal trading courses delivered through professional training programs or tailored online platforms. These programs often involve structured curricula, assessments, and instructor feedback, providing a more traditional learning experience that appeals to investors seeking depth, credibility, and clarity. In narrative terms, this suggests that digital investors rely more on informal, decentralized knowledge sources, whereas non-digital investors seek structured education.

These patterns validate the Financial Literacy Hypothesis (H_4): higher levels of financial literacy correlate with more prudent investment strategies. Our findings indicate that, even when digital investors pursue learning, the form and content of that learning matter. Consuming fragmented information through social media may result in overconfidence or misinterpretation, particularly when financial influencers promote high-risk assets or speculative trading strategies. Resonating with qualitative observations, it appears that better-designed educational components could mitigate the drawbacks of easily accessible, game-like trading interfaces.

2.7 Advisory Preferences and Generational Differences

Approximately 40% of respondents reported consulting human financial advisors at some point. However, fewer than half of those say they prefer human advisors over digital alternatives. This reveals a notable shift in investor behavior, as traditional advisory models - once considered essential for financial decision-making - are increasingly being bypassed. In plain terms, this indicates that trust in traditional advisory channels is diminishing; many have tried an in-person advisor but still gravitate toward digital solutions for convenience or lower fees. Digital platforms offer a more autonomous experience, often allowing users to research, invest, and

monitor portfolios at their own pace, without the perceived pressure or formality of in-person consultations. Moreover, cost remains a critical factor: algorithmic and AI-driven advisory services are typically free or significantly cheaper than human advisors, making them more attractive to budget-conscious and younger investors. This preference for digital over human guidance also aligns with broader technological trends, in which users expect immediate, on-demand support and personalization from online services.

Despite these trends, individuals who continue to use in-person financial advisors tend to demonstrate a more cautious investment approach. Human advisors often emphasize long-term financial planning, capital preservation, and diversification - principles that resonate more with risk-averse individuals. The in-person format may also foster greater accountability and emotional discipline, discouraging impulsive decisions during market fluctuations. For these reasons, non-digital investors are typically more prudent, favoring traditional assets such as bonds or balanced mutual funds. Their reliance on expert judgment, rather than self-guided decision-making, contributes to a more conservative risk profile.

With respect to generational patterns, younger groups are disproportionately represented among digital investors. This group tends to embrace financial innovation more readily, likely influenced by their digital background and higher comfort level with new technologies. They are also the group most likely to invest in cryptocurrencies and to trade more frequently. This behavior reflects a greater appetite for volatility and potentially higher returns, coupled with a familiarity with emerging asset classes that older investors may find intimidating or speculative. In contrast, older participants tend to allocate more heavily to bonds or diversified mutual funds, trading less often and reporting lower comfort levels with mobile trading interfaces. These preferences suggest a more conservative and income-stable investment approach, shaped by different financial priorities and past experiences with market downturns. These data support the Generational Differences Hypothesis (H_5), whereby younger investors adopt digital platforms more rapidly and reveal higher risk tolerance than their older counterparts.

2.8 Summary of Quantitative Findings and Hypotheses Validation

The quantitative survey yields several key insights forming the basis for strategic and managerial recommendations. The respondants are predominantly young (18–34), male, European, and well-educated, with the majority earning under $40,000 annually. Fortyfive percent of respondents invest; digital investment platforms capture 80% of users. Among digital

users, banking apps are the most common entry point, followed by specialized fintech platforms. Digital investors assume greater risk, evident in their higher allocations to cryptocurrencies and larger capital at risk. Non-digital investors skew toward traditional bonds and treasuries. Investment frequency remains generally low, with 75% trading rarely or monthly. Perceived ease of access emerges as the single most important factor in platform selection, corroborating TAM's emphasis on simplicity and usefulness. Although both digital and non-digital investors pursue educational resources, digital users lean toward informal channels such as social media, which may not equip them properly for complex market decisions. On the other hand, non-digital investors' structured courses correlate with lower risk profiles. Ultimately, ounger investors display higher risk tolerance and faster adoption of digital platforms, while older investors maintain more traditional, risk-averse portfolios.

Collectively, these findings confirm that digital investment platforms are reshaping participation, risk, and learning patterns among retail investors. They also highlight the critical need for platforms to embed high-quality educational content to complement convenience. Synthesizing the above results, all five hypotheses articulated in Chapter 1.6 are substantiated to varying degrees:

- **H_1: Increased Market Participation.** Because 45% of surveyed respondents do invest - a proportion substantially higher than historic benchmarks for similar age groups - digital platforms clearly stimulate greater retail market participation among young adults.
- **H_2: Risk Behavior.** The disproportionate exposure that digital investors hold in cryptocurrencies, paired with higher capital at risk relative to non-digital peers, confirms that digital platform usage correlates with elevated risk-taking.
- **H_3: Technology Adoption.** Ease of access stands out as the top motivator among digital investors. This result links with TAM and Diffusion of Innovations Theory, demonstrating that perceived usefulness (e.g., lower costs, real-time data) and ease of use drive platform uptake.
- **H_4: Financial Literacy.** Although digital investors frequently cite university coursework and social media as their learning sources, this does not translate into more prudent portfolios; indeed, they assume greater risks. Non-digital investors, who attend specialized trading courses, show a more conservative behaviour. Hence, merely having

educational exposure is not equivalent to achieving financial literacy; the depth and specificity of instruction matter.

- **H_5: Generational Differences.** Younger groups are both more likely to adopt digital platforms and more willing to hold riskier assets. Older participants show a clear preference for traditional investment vehicles and human advisory services, aligning with lifecycle theories of risk aversion.

Taken as a whole, the quantitative analysis demonstrates that digital investment platforms profoundly influence investor behavior - not only by boosting participation but also by shaping risk preferences and decision-making pathways. The presence of ease-of-use features accelerates adoption but may encourage less informed, high-risk strategies. Structured financial education, ideally integrated directly within platform interfaces, could mitigate these challenges. Building on these findings, the next chapter explores the practical management implications for financial service providers and platform developers, outlining strategies to better engage investors while promoting responsible investment behaviors.

3. Management implications

Digital banking has become present globally, and the next frontier for traditional banks is to integrate online trading applications directly into their mobile and web platforms. In fact, some major banks have already introduced in-app trading features, allowing customers to buy and sell assets without leaving their primary banking interface; survey responses confirm that a significant proportion of investors now rely on their bank's mobile app as their main trading platform. By offering an in-house trading app, banks can leverage existing customer relationships to promote seamless access to investment services - no additional account setup, fewer intermediaries, and lower commission fees for end users. Ease of access is the key: as soon as a user logs into their banking app, they should be able to view real-time market prices, execute trades with a few taps, and monitor portfolio performance alongside their checking and savings balances. These conveniences not only encourage more clients to participate in financial markets but also serve as a competitive differentiator for banks, since low commissions and a familiar interface reduce both psychological barriers and cost concerns for new investors.

Within this integrated trading environment, education plays a supportive role. Embedding a dedicated learning section - complete with short video tutorials on basic trading concepts, interactive modules on asset classes and risk management, and periodic market-update newsletters - helps bridge the knowledge gap that many new investors face. Users can explore sample portfolios, simulate trades, and review case studies of past market swings before committing real capital. By granting immediate access to curated content on trading strategies, portfolio diversification, and position sizing, banks can cultivate more informed customers who are better equipped to make decisions regarding their long-term goals and risk exposure.

To further support investor decision-making, platforms should incorporate an AI-driven chatbot assistant available 24/7. This virtual advisor can answer questions such as "How does dollar-cost averaging work?" or "What factors should I consider when evaluating a stock?", providing concise explanations and linking to deeper resources within the app. In cases where the chatbot detects signs of confusion - repeated inquiries about the same topic or unusually large single trades - it can suggest a human advisor consultation or direct the user toward additional learning materials. By combining artificial intelligence and human expertise, banks can accommodate differen preferences without imposing excessive fees or extended wait times.

Beyond education, refining risk profiling is essential. As already implemented by some fintech firms, platforms can deploy dynamic algorithms that analyze trading patterns, portfolio concentration, and holding periods to generate up-to-date risk scores. If a user consistently allocates large sums to volatile instruments without sufficient diversification, the system could display a gentle “second look” prompt - recommending broader-market ETFs or fixed-income options. Additionally, offering a hybrid advisory model, where low-fee robo-advice is augmented by optional human consultations, is optimal for those who seek personalized guidance without sacrificing cost efficiency. This combination ensures that even cost-conscious investors receive recommendations to temper potentially impulsive behavior.

Incorporating these elements will enable banks to meet evolving customer expectations and foster sustainable growth. By lowering entry barriers and providing ongoing support, financial institutions can transform passive account holders into engaged, knowledgeable investors while maintaining responsible risk management practices.

Some fintech leaders have already begun to act on these insights. For example, Revolut, a British digital bank, has integrated in-app trading courses, real-time explanations of financial terms, risk warnings before executing complex trades, and automated budget tracking. This educational layer, embedded directly into the platform, lowers the entry barrier for inexperienced users while increasing engagement.

For incumbent banks aiming to modernize their investment services, a step-by-step roadmap can be proposed:

1. Platform Integration and Simplification: Merge existing banking and investing functions within a single app interface. Ensure the investment process - from onboarding to portfolio tracking - is intuitive, mobile-optimized, and visually digestible.
2. "Just-in-Time" Learning Modules: Embed short educational prompts triggered contextually - e.g., when a user selects a new asset class or attempts to set up an ETF. These can be modeled after microlearning formats that are proven to increase knowledge retention.
3. Dynamic Risk-Profiling Tools: Implement AI-enhanced tools that assess risk appetite based on user behavior, transaction history, and even sentiment analysis from chat interactions. These tools can then dynamically adjust portfolio recommendations in real time.

By following this roadmap, banks and fintechs alike can build trust, reduce financial illiteracy, and drive adoption among a new generation of investors while aligning with the behavioral patterns highlighted in this research.

4. Conclusion

In conclusion, digital investment platforms have fundamentally transformed the landscape of retail finance by making market participation more accessible, fostering innovative ways to engage with assets, and challenging traditional notions of risk management. By lowering fees and minimum capital thresholds, these platforms have enabled a big number of younger investors - predominantly Millennials and Gen Z - to enter markets once dominated by more established participants. Yet this democratization comes with mixed outcomes: accelerated adoption has led many to pursue higher-risk strategies, such as increased allocation to volatile assets like cryptocurrencies, often without the benefit of structured educational support.

This investigation linked behavioral finance theories with technology adoption frameworks to reveal how ease of use and perceived usefulness drive platform engagement, while gaps in financial literacy influence investment behavior. Incumbent financial institutions that integrate trading features into familiar apps capture both the trust of seasoned investors and the curiosity of newcomers, underscoring the importance of user-centric design in fostering sustainable growth. However, the prevalence of self-directed learning through social media and informal channels highlights a critical need for embedded, bite-sized educational content. Without it, retail investors risk overexposure and speculative excess.

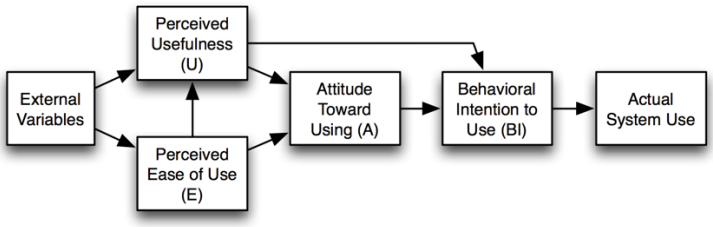
Although the study's sample focused on predominantly European, well-educated respondents, the patterns observed suggest clear generational divides: younger cohorts embrace digital tools and tolerate greater volatility, whereas older investors maintain more conservative portfolios. Future research should explore these dynamics across diverse geographies, income levels, and regulatory environments to understand how digital behaviors evolve over time and in response to policy changes.

Ultimately, the promise of digital investment platforms lies in their ability to marry innovation with responsibility. By embedding micro-learning modules, deploying AI-driven risk assessments, and offering hybrid advisory services, platform providers can empower retail

investors to make informed decisions and build portfolios that balance opportunity with prudence. In doing so, they will not only enhance user engagement but also strengthen the resilience of the broader financial ecosystem as it adapts to a rapidly changing digital era.

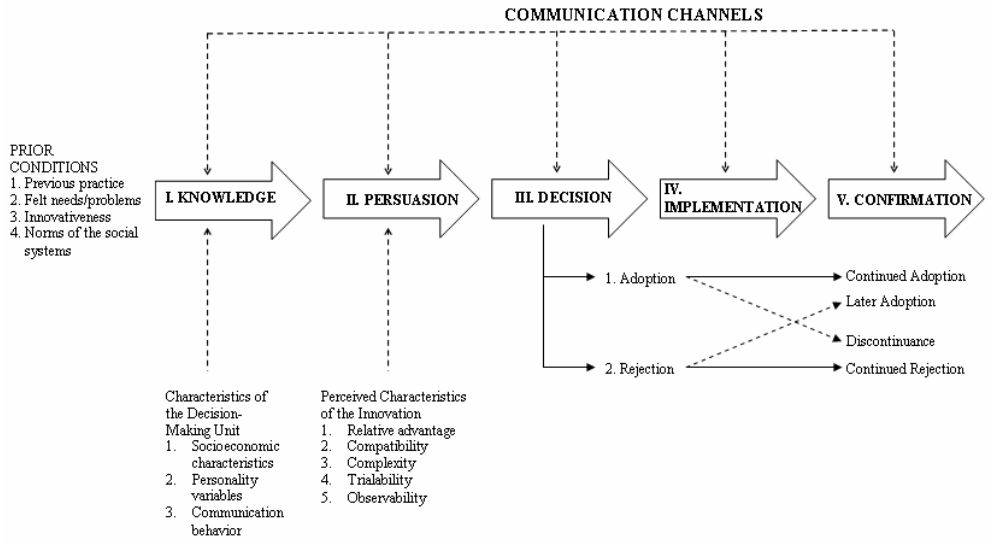
Appendix

Exhibit 1: Technology Acceptance Model (TAM), (Davis, 1989; Davis, Bagozzi, & Warshaw, 1989)



Source: Wikipedia

Exhibit 2: Diffusion of Innovations (Rogers, 2003)



Source: Researchgate

Exhibit 3: Prospect Theory (Kahneman & Tversky, 1979)

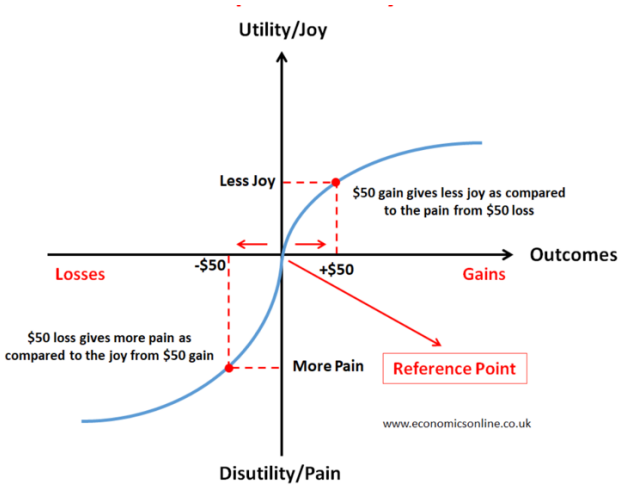
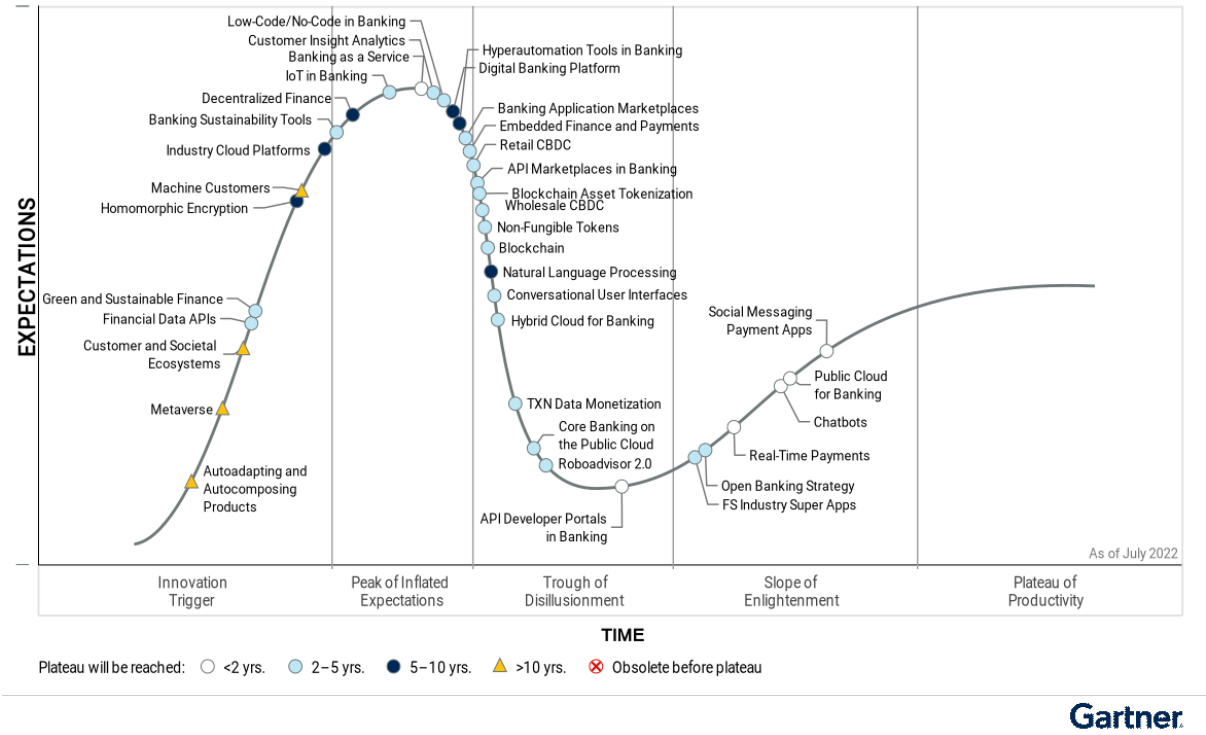
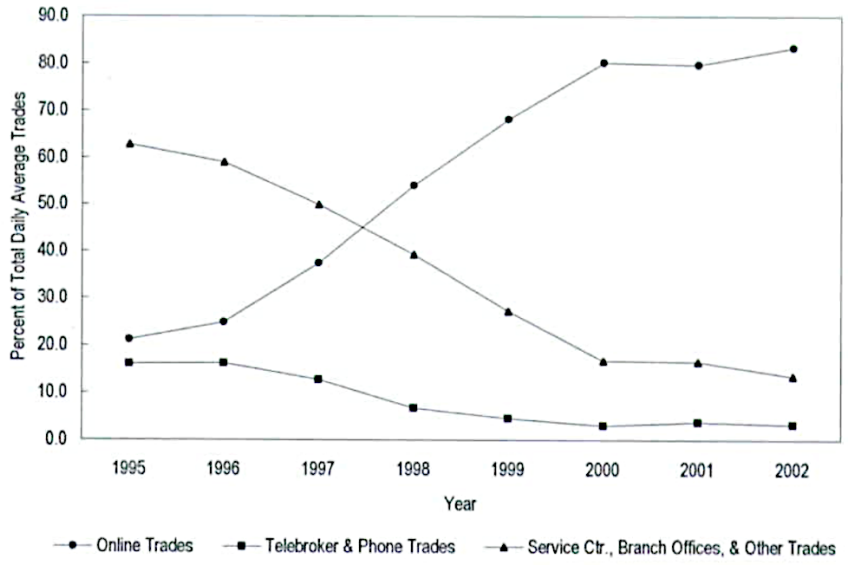


Exhibit 4: Gartner's Hype Cycle for Digital Banking Transformation (2022)



Source: Gartner

Exhibit 5: Charles Schwab Client Trading Activity



Source: Bogan, V. (2008). Stock Market Participation and the Internet.

Exhibit 6: Total stock market participation by country in the four waves.

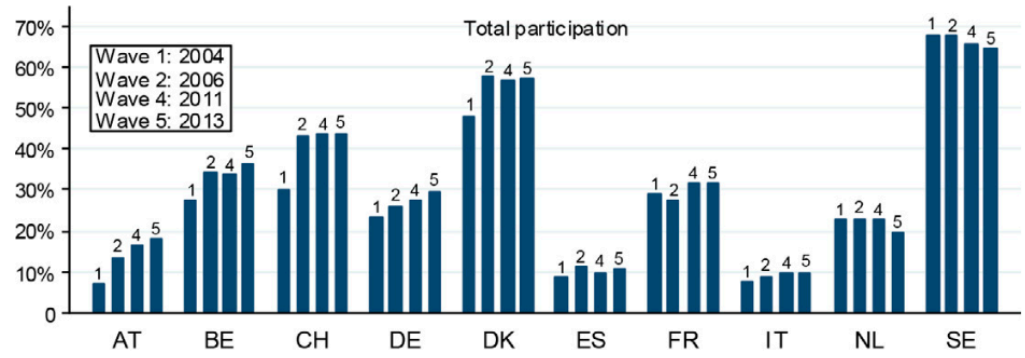


Exhibit 7: Impact of Computer Usage on Stockholding in 2002

	(1)			(2)		
	Coeff.	Std. Error	*t*-Ratio	Coeff.	Std. Error	*t*-Ratio
Dependent Variable: Own Stock in 2002						
Intercept	−0.9977	0.0357	−27.98	−5.7474	0.5381	−10.68
Own Stock in 1992 Dummy	1.3519	0.0642	21.07	0.8352	0.0715	11.69
1992 Computer Usage Dummy	0.5001	0.0583	8.58	0.1794	0.0663	2.71
Own Stock in 1992∗1992 Computer Usage	−0.3943	0.0953	−4.14	−0.1614	0.1005	−1.61
Age of Household Head				0.0002	0.0077	0.02
Average Years of Education of Household Head				0.0613	0.0105	5.86
Log of Household Income				0.1699	0.0283	6.01
Log of 1992 Household Net Worth				0.2046	0.0210	9.72
Have Voluntary Contribution Pension				0.0351	0.0639	0.55
Received Inheritance Dummy				0.2120	0.0569	3.72
Not Risk-Averse Dummy				0.0152	0.0595	0.26
Log Likelihood			−2038.83			−1787.72

Source: Bogan, V. (2008). Stock Market Participation and the Internet.

Exhibit 8: Average Portfolio risk metrics by investor generation

Exhibit 9: Correlation of Demogrtaphic with Investor Status

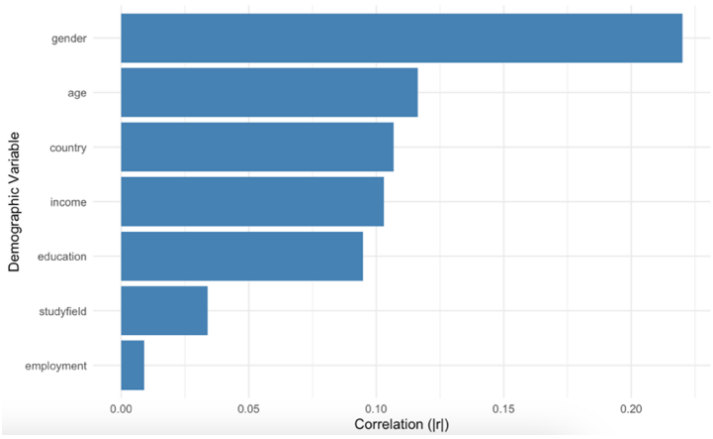


Exhibit 10: Investor Status by Demographic Factors

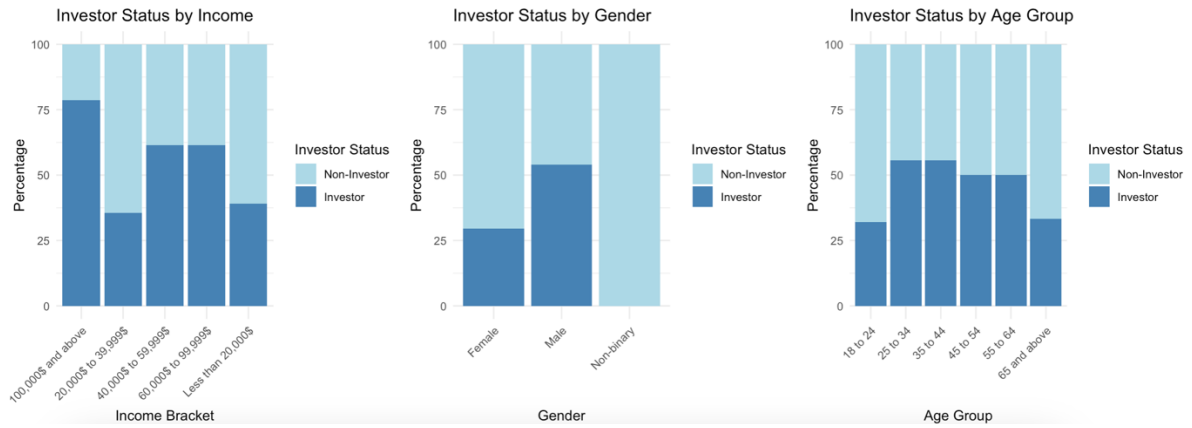


Exhibit 11: Investment Percentage and Risk Capital Distributions

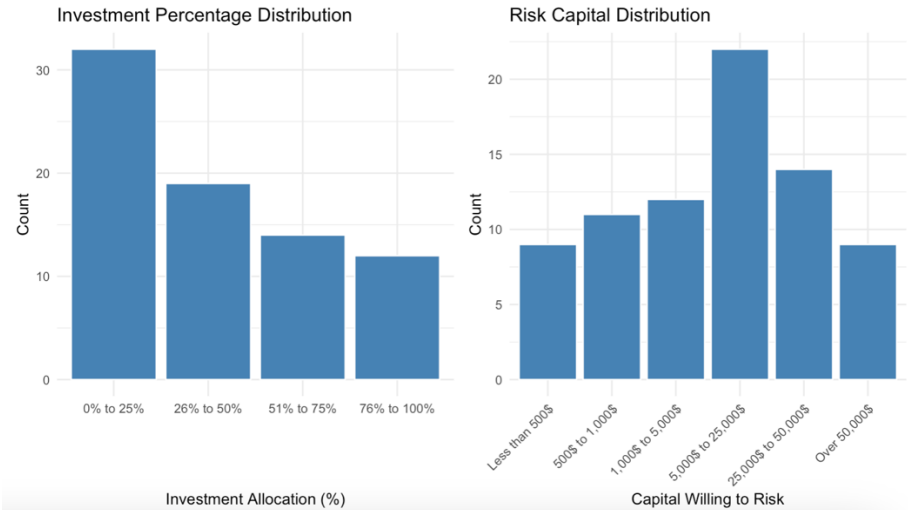
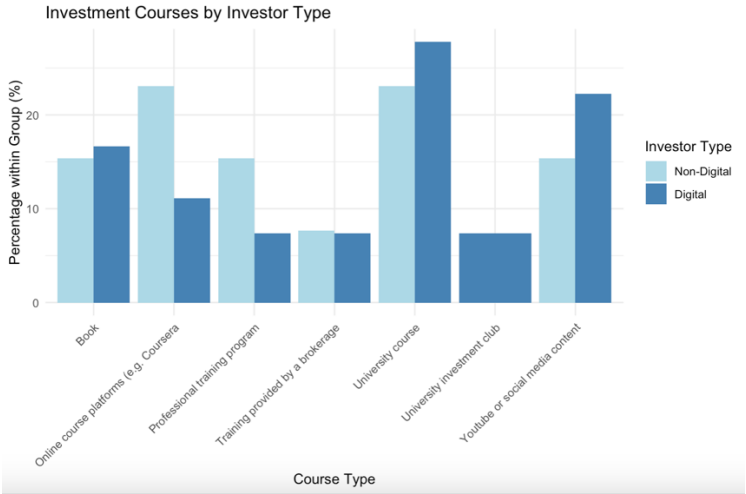


Exhibit 12: Most Valuable Online Platforms Features

Ease of access	49%
Access to wide range of financial instruments	41%
Tax reports and tracking tools of previous transactions	21%
Availability of different Stock Exchanges	18%
Other, please specify	10%
AI-driven recommendations	7%
Automation	6%

Exhibit 13: Investment Courses Taken by Investor Type



Bibliography

- Arner, D. W., Barberis, J., & Buckley, R. P. (2016). The evolution of Fintech: A new post-crisis paradigm? *Georgetown Journal of International Law, 47*.
- Gomber, P., Koch, J. A., & Siering, M. (2017). Digital finance and fintech: Current research and future research directions. Journal of Business Economics, 87.
- Sironi, P. (2016). *FinTech innovation: From robo-advisors to goal-based investing and gamification*. Wiley.
- Schmidt, M. (2017). Digital investment strategies. In L. Müller (Ed.), Digital finance and innovation. De Gruyter.
- Paul Miller Advisor. (n.d.). Brief history of investments.
- Malkiel, B. G. (2003). The efficient market hypothesis and its critics. Journal of Economic Perspectives, 17.
- Gomber, P., Koch, J. A., & Siering, M. (2017). Digital finance and fintech: Current research and future research directions. Journal of Business Economics, 87.
- Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk.
- Nasdaq (2023). Algorithmic trading market report: Trends and impact on financial markets. Nasdaq Market Research.
- Statista. (2023). Robo-advisory market forecast 2023-2027. Retrieved from www.statista.com
- Bloomberg. (2023). AI-driven trading portfolios outperform human managers by 2.5% annually. Bloomberg Financial Research.
- CoinGecko. (2023). Crypto Market Overview 2023: Trends and Adoption Statistics.
- Bogan, V. (2008). Stock Market Participation and the Internet. Journal of Financial and Quantitative Analysis
- Guiso, L., Haliassos, M., & Jappelli, T. (2003). Household Stockholding in Europe: Where Do We Stand and Where Do We Go? Economic Policy
- FINRA Investor Education Foundation. (2022). Investors in the United States: The changing landscape.
- Kaustia, M., Conlin, A., & Luotonen, N. (2022). What drives stock market participation? The role of institutional, traditional, and behavioral factors. Journal of Banking & Finance.
- JPMorgan Chase Institute. (2024). Retail risk: Investors' portfolios during the pandemic. JPMorgan Chase & Co.

- Barber, B. M., & Odean, T. (2002). Online investors: Do the slow die first? *The Review of Financial Studies*, 15
- U.S. Census Bureau. (2023). *Quarterly Retail E-Commerce Sales 4th Quarter 2022*. https://www.census.gov