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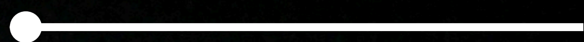
Enhancing Financial Health and Wealth in the EU:

A Comprehensive Approach to Boosting Retail Investor Participation in Capital Markets

CONCEPTUAL PAPER



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Enhancing Financial Health and Wealth in the EU: A Comprehensive Approach to Boosting Retail Investor Participation in Capital Markets

Conceptual Paper

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1 Executive Summary

Retail investor participation in the European Union's capital markets remains limited despite growing access to financial tools and services. Based on extensive literature review, the report highlights gaps in knowledge and provides policy recommendations to improve retail participation in EU markets.

This conceptual paper explores strategies to enhance financial health and wealth in the European Union (EU) by focusing on three interrelated pillars: financial education, financial advice, and digital tools. It emphasizes the need for a holistic approach to address systemic challenges such as low financial literacy, accessibility barriers, and demographic disparities, fostering greater inclusion and resilience in the financial ecosystem.

Financial education serves as a foundation for informed financial decision-making, improving literacy levels and fostering positive behaviours like budgeting, saving, and credit management. Evidence highlights its transformative impact on financial resilience and stress reduction. However, issues such as knowledge decay, limited outreach to vulnerable populations, and a lack of tailored program designs persist. Integrating gamified digital tools into financial education initiatives enhances engagement and scalability, particularly for underserved groups.

Financial advice plays a complementary role by bridging the gap between knowledge and actionable decisions. Personalized advice improves behaviours such as portfolio diversification and retirement planning, while also reducing financial anxiety. However, access barriers, cost, and potential conflicts of interest (non-independent advice) limit its reach. Solutions include regulatory oversight of fee structures, promoting independent advisory services, and leveraging AI-driven platforms to democratize access. Trust-building measures and transparency in advisory services are also crucial to enhancing client confidence and engagement.

Digital tools and applications are reshaping financial literacy and behaviour through innovations like gamification and AI-driven platforms. These tools improve user engagement, provide real-time insights, and empower individuals to monitor and manage their financial health effectively. However, ethical considerations regarding gamification and the digital divide require attention. Ensuring equitable access to technology and embedding safeguards against exploitative practices are vital to optimizing their benefits.

The integration of these pillars demonstrates significant synergies. Financial literacy programs provide foundational knowledge, personalized advice contextualizes this knowledge into actionable strategies, and digital tools translate it into consistent behaviour. Together, they address critical challenges such as demographic disparities and financial inclusion, promoting greater participation in capital markets and fostering long-term wealth creation.

Policy recommendations focus on cohesive strategies at both the EU and national levels. EU-level actions include implementing standardized financial literacy frameworks, incentivizing fintech innovation, and harmonizing advisory standards.

National-level measures emphasize localized outreach for vulnerable populations, fiscal incentives for market participation, and grants supporting independent financial tools. By aligning these efforts, stakeholders can create a resilient and inclusive financial ecosystem.

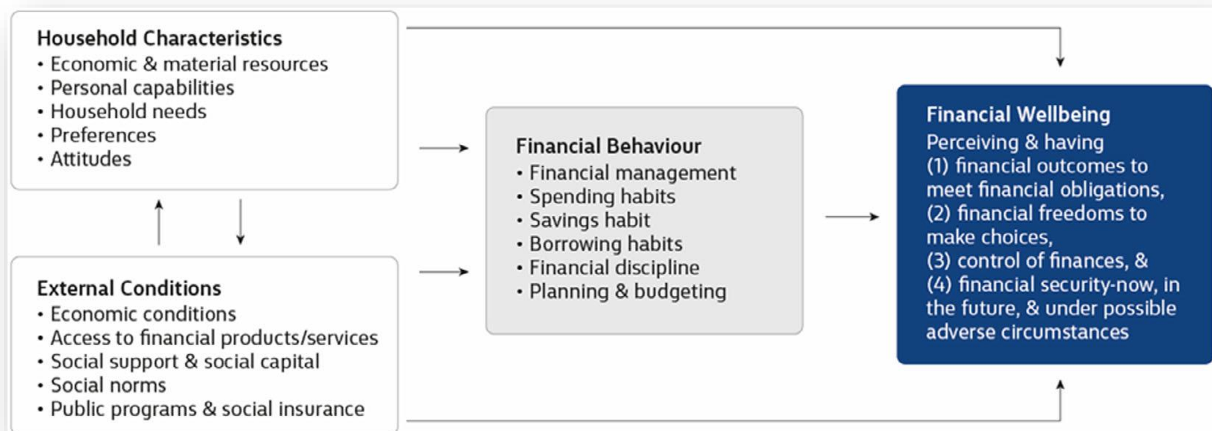
In conclusion, the paper underscores the importance of an integrated approach to improving financial well-being in the EU. Leveraging education, advice, and technology offers a pathway to greater financial resilience, inclusivity, and sustainable wealth generation for individuals and households across diverse demographics.

2 Introduction

This conceptual paper aims to evaluate the effectiveness of financial education, advice, and applications in promoting financial decisions and behaviour and improving retail investor engagement via enhancing the financial well-being of EU individuals and households. It provides actionable insights for policymakers and stakeholders to enhance individual financial well-being and participation in capital markets across the EU.

The concept of individual financial well-being and the related concept of financial resilience have gained prominence in recent years. The 2008 Global financial crisis highlighted the need to focus on financial well-being and to ensure that people's interactions with the financial system were meaningful and beneficial to people's needs. Since then, the impact of the COVID-19 pandemic and cost of living pressures have highlighted the importance of protecting and supporting individuals and households to be able to face unexpected financial shocks. Financial education aims to make individuals better prepared at managing their money and finances, reaching their financial goals and avoiding stress related to financial problems, thereby improving individuals' financial well-being (OECD, 2023).

Figure 1 Conceptual Model of the Determinants of Financial Well-being



Source: *Comerton-Forde, C., de New, J., Salamanca, N., Ribar, D.C., Nicastro, A. and Ross, J. (2022), Measuring Financial Wellbeing with Self-Reported and Bank Record Data**

When considering factors influencing the financial well-being of individuals and households, the definition should include the directions of research. We use the definition of Comerton-Forde (2022) as "financial outcomes that people experience" and not focusing on all conditions, characteristics and behaviours that might contribute to those outcomes. Financial well-being has objective components that can be observed in people's financial records or reports of their financial outcomes. It also has subjective components that people report based on their valuation of the objective attainments. Financial well-being has temporal elements, including financial outcomes people face day-to-day, outcomes that prepare them for unexpected adverse events (shocks), and outcomes that allow them to sustain their well-being over time and achieve long-term goals. **Financial well-being definition includes goals and objectives** that people and financial planners commonly identify (Prawitz et al., 2006; Brüggen et al., 2017; Netemeyer et al., 2018). These goals focus on meeting financial obligations, financial freedom to enjoy extra consumption, control over their finances, and be secure and free from financial worries.

Financial well-being should be considered as a continuum (Comerton-Forde et al., 2022) and should cover ***financial outcomes in which individuals/households meet financial obligations; financial freedom to make choices that allow to enjoy life; control over personal finances and financial security now as well as in the future under possible adverse circumstances (shocks)***.

Above presented definition of financial well-being inevitably intersects with the financial health concept. Brune at al. (2020) define the financial health as *"the ability to move money across time, space, and risky outcomes as cost-effectively as possible."* They encompass access to liquidity as the ability to access funds quickly

and affordably to meet unexpected needs or seize opportunities, financial behaviour explained by prudent practices like saving, planning, managing credit, and self-control over spending and finally, the access to finance explained by the availability and use of financial tools such as savings accounts, credit, and payment mechanisms. Financial health is measured not only by formal financial access but also by informal mechanisms, resilience to shocks, and the ability to manage day-to-day financial needs while maintaining a positive long-term outlook. They both influence the ability to make sound financial decisions improving financial well-being of individuals and households (Parker at al., 2016).

Castro-González et al. (2019) examined the role of attitudes toward money in shaping financial behaviours and well-being using structural equation modelling on a dataset of 8,554 participants in Spain. **Positive attitudes toward money are associated with longer financial planning horizons, higher risk tolerance, and improved financial well-being. However, the study also identifies structural challenges in Spain, including low savings rates and high-risk aversion, which hinder the broader application of these findings.** The authors argue that leveraging shifts in attitudes through targeted financial education and incentives could promote long-term saving and risk diversification. "***Our findings suggest that attitudes play a pivotal role in financial well-being, emphasizing the need for interventions that foster positive money perceptions***".

Many papers presented in this conceptual paper suggest that financial education programmes, financial advice and technologies (applications oriented on financial decisions) play a crucial role in increasing financial well-being.

Financial literacy has an important role to play not only to support safe and responsible use of financial products and services, but also more broadly to make wise financial choices and to do it with confidence. Digital financial literacy can have an especially important role in supporting a safe use of digital financial services. Quantitative and qualitative studies carried out in emerging and developed economies showed that greater financial knowledge and skills were associated with higher financial well-being, mostly via improved financial decisions and behaviours, such as budgeting, managing spending, planning, saving, managing debt effectively, shopping around for financial products, or seeking information (Gutter and Copur, 2011; Anvari-Clark and Ansong, 2022; Malone et al., 2010; Kim, Garman and Sorhaindo, 2003; Gutman et al., 2015; Comerton-Forde et al., 2022). Quantitative research in the UK identified having control over personal finances as one of the most significant drivers of financial well-being (Vlaev and Elliott, 2014). It is important to note that the link between knowledge and behaviour was found to be mediated by individual characteristics like attitudes and non-cognitive skills, such as financial control or discipline, and by the context in which financial decisions are made or action is taken (Fu, 2020). In particular, **evidence shows the importance of individual financial behaviour in supporting (or harming) financial well-being**.

Digital solutions and infrastructure have also a key role to play in supporting financial inclusion, prudent decisions, and ultimately promoting financial well-

being. Digital technologies can enhance efficiency, enable financial institutions to reduce costs, improve service delivery, and allow to expand financial access to underserved populations through digital banking and other tech-driven solutions. A safe, secure and sound digital financial ecosystem can contribute to ensuring smooth transactions, and ultimately to individuals feeling satisfied and confident about their financial lives. On the other hand, consumers should have access to digital tools and adequate digital and financial skills to benefit from these innovations. Moreover, care must be taken that digital solutions (like traditional ones) do not encourage inappropriate use of some financial services, like the one deriving from predatory offers of digital credit. Ensuring that financial products and services match consumers' financial circumstances and needs and that they support their financial well-being also means empowering and protecting consumers.

Beckmann & Kiesl-Reiter (2023) studied financial vulnerability of individuals in Eastern Europe during inflationary times. They found that inflation exacerbates financial vulnerability in Eastern Europe, disproportionately affecting low-income households and individuals with limited financial literacy. A 1% increase in inflation correlates with a 2.5% decrease in the purchasing power of vulnerable households. Financially literate individuals are more likely to adopt protective strategies, such as investing in inflation-protected assets or increasing precautionary savings. Financial literacy rates are lowest in rural areas, where inflationary pressures have the greatest impact. Policy efforts should be therefore focused on inflation-targeting measures. Digital financial tools tailored for rural populations could also mitigate geographic disparities.

Digital era is mostly welcomed by younger population which uses apps for almost every single aspect of their lives. Van Rooij et al. (2024) studied the financial literacy in the Netherlands and found that financial literacy levels in the Netherlands have improved over the past two decades, driven by mandatory school-based financial education programs and employer-sponsored literacy initiatives. The increasing adoption of fintech apps among Dutch households correlates with enhanced financial literacy and improved behaviours, such as higher savings rates and better investment diversification. Younger cohorts (aged 18–34) display higher literacy scores compared to older generations, with an average improvement of 12% in correct answers to literacy questions over 20 years. Despite overall improvements, women and individuals with lower socioeconomic status continue to lag in financial literacy and wealth accumulation. They suggest a continued integration of financial literacy into digital tools and targeted interventions for underserved groups are essential to sustaining progress and addressing disparities.

Conceptual paper focus on 3 key areas in this context: financial education; financial advice; financial applications – digital tools with the aim of understanding the efficiency, potential synergies and policies of these areas with the objective of increasing financial well-being.

Further text therefore focuses on three critical areas influencing financial literacy and financial well-being:

- **Financial Education**: Its role in building foundational knowledge and long-term resilience.
- **Financial Advice**: Personalized guidance and its influence on confidence and decision-making.
- **Financial Applications (digital tools)**: Use of digital tools and gamification to increase engagement.

3 Comparative Analysis of Financial Education, Financial Advice and Financial Digital Tools and Their Effectiveness

The studies collectively underscore the critical role of financial literacy in mitigating economic vulnerability, enhancing financial resilience, and addressing systemic inequalities. While progress has been observed in regions like the Netherlands, gaps in rural and underserved populations persist, especially in Italy and Eastern Europe. Integrating tailored financial education, leveraging digital tools, and addressing inflation-specific vulnerabilities are essential strategies for fostering equitable financial well-being.

3.1 Financial Education

The latest complex research on the financial education and financial literacy has been presented by Kaiser and Lusardi (2024). Financial education programmes aim to enhance individuals' understanding of financial concepts such as savings, investments, debt management, and risk diversification. These programmes are implemented through diverse channels including schools, workplaces, community initiatives, and digital platforms. Examples include mandated high school courses, employer-sponsored retirement planning workshops, and app-based gamified learning tools. Financial education programmes are structured interventions aimed at enhancing financial knowledge, decision-making, and behaviours. These programmes range from classroom instruction to digital tools and gamified learning, with goals to improve literacy in topics such as budgeting, credit, savings, and risk management. The impact on financial behaviours, including budgeting, saving, and credit management, averages 0.10 standard deviation units (Kaiser, T., Lusardi, A., Menkhoff, L., & Urban, C., 2024):

- Savings Behaviour: Demonstrates the strongest and most consistent improvements.
- Budgeting and Debt Management: Show moderate but positive effects.
- Insurance and Remittances: Results are less conclusive due to limited data.

Effective programmes require comprehensive curricula with high-intensity (programmes involving over 10 hours of instruction yield measurable impacts on financial literacy and behaviours), long-term programmes tailored for and targeting specific life stages (e.g., retirement planning for adults), interactive and gamified approaches including tools that incorporate active learning and behavioural nudges (e.g., financial apps) and thus improve engagement and retention and programmes designed for at-risk demographics, such as low-income households (Kaiser and Lusardi, 2024).

On the other hand, ineffective programmes have light-touch interventions, such as simple information provision (brochures or one-off seminars), non-contextual approaches including generic content not linked to real-life financial decisions, which often fails to sustain behaviour changes.

Financial literacy remains critically low worldwide, with only 33% of adults able to answer basic questions on interest, inflation, and risk diversification. Meta-analyses of Kaiser and Lusardi (2024) suggests that financial education programmes increase financial literacy scores only by 15–20% of a standard deviation, with greater improvements observed among younger participants and those exposed to intensive, context-specific interventions. Financial education programmes demonstrated only 6–10% improvement in sound financial behaviours in areas such as retirement savings and stock market participation, debt management and avoidance of predatory financial products. If the education programmes incorporate digital tools, the results suggest greater resilience against financial shocks. Financial education programs with interactive content, such as simulations and gamification, show significantly higher engagement and retention rates (0.18 standard deviation improvement in literacy scores). Digital tools are highlighted as scalable solutions for improving literacy among hard-to-reach populations.

Kaiser and Menkhoff (2017) conducted a meta-analysis of 126 impact evaluation studies, including randomized controlled trials (RCTs). Meta-analysis revealed that financial education programs have a measurable impact on both financial literacy and behaviour. Financial education programs yield an average improvement of **0.15 standard deviations** in financial literacy. **While financial literacy improvements are significant, behavioural changes show smaller effect sizes** (**0.07 - 0.10 standard deviations**), indicating a gap between knowledge and application. Programs targeting low-income groups, younger populations, and women demonstrate higher effectiveness. Program design (e.g., duration and interactivity) significantly influences outcomes, which highlights the need for targeted and interactive education programs delivered at decision-critical moments.

Financial education improves both financial literacy and behaviour, with larger impacts seen in low-income and young populations. Meta-analysis reports an average effect size of 0.15 standard deviations for financial behaviours. Program effectiveness is amplified by high intensity and targeting specific decision-making contexts, such as budgeting and debt management.

To comprehensively understand the impact of financial education programs on individuals' financial decisions and long-term wealth, we quote the study by Nolan and Doorley (2019) titled "*Financial Literacy and Preparation for Retirement*" who analysed the data from the Irish Longitudinal Study on Ageing (TILDA) focusing on individuals aged 50 and above. This research investigates the role of financial literacy in retirement planning among the pre-retirement population in Ireland, highlighting its association with higher household wealth and lower financial stress. Individuals with higher financial literacy accumulate 30% more household wealth and report lower financial stress compared to less literate peers. Financial education programmes equip individuals with knowledge and skills to navigate financial decisions, particularly in preparation for retirement. In Ireland, these programmes aim to address gaps in financial literacy, especially in understanding pensions, wealth accumulation, and financial planning. They also confirm that effective programmes include targeted programmes for specific groups (interventions tailored for pre-retirement individuals and self-employed populations are more effective), numeracy-driven content (questions emphasizing compound interest and savings calculation improved financial decision-making) and interactive modules (use of active learning components, like real-life financial scenarios). Ineffective programs included a one-size-fits-all approach and models with generic programmes not adapted to specific demographic needs showed limited impact and short-term interventions with brief sessions without follow-ups. Higher financial literacy correlates with increased household wealth and better retirement planning outcomes. Financial literacy is directly associated with reduced stress in retirement planning. However, gaps persist among older populations, particularly women and lower-income groups. Their study confirmed that individuals scoring higher had approximately twice the wealth of those with low scores. Households in the top quintile of literacy levels accumulate 30% more wealth than those in the bottom quintile. A reduction of 16–24% in financial stress was observed among individuals with higher literacy. However, the main negative finding of their study was that **financial literacy did not significantly increase supplementary pension coverage**. Financial literacy shows limited direct influence on supplementary pension coverage, attributed to systemic barriers and inertia in pension decisions. They also highlight the need for targeted retirement literacy programs, particularly for at-risk groups with direct focus is on enhancing numeracy, awareness of financial concepts, and practical applications of financial knowledge.

Bottazzi & Oggero (2023) in their study focusing on financial literacy and resilience in Italy found that financial literacy in Italy is critically low, with less than **30%** of the population answering basic financial literacy questions correctly. Lower literacy rates were observed among women, elderly individuals, and those with lower levels of formal education. Individuals with higher financial literacy are **45% less likely** to experience financial fragility, such as being unable to cover unexpected expenses or facing over-indebtedness. High literacy levels correlate with better debt management and reduced likelihood of borrowing for consumption purposes.

Similarly, Lusardi and Mitchell (2023) highlight the correlation between financial literacy and financial well-being, emphasizing the necessity for effective financial education initiatives. Financial literacy is strongly linked to financial well-being, with a regression coefficient of 0.30. Higher literacy levels lead to better financial outcomes, including higher savings rates, improved credit scores, and increased participation in capital markets. The study emphasizes the compounding effect of literacy on wealth accumulation, particularly when combined with professional financial advice.

Fernandes, Lynch Jr. and Netemeyer (2014) performed conducted a meta-analysis of the relationship of financial literacy and of financial education to financial behaviours in 155 papers covering 188 prior studies. They found that **interventions to improve financial literacy explain only 0.1% of the variance in financial behaviours studied**, with weaker effects in low-income samples. Like other education, financial education decays over time; **even large interventions with many hours of instruction have negligible effects on behaviour 20 months or more from the time of intervention**. Correlational studies that measure financial literacy find stronger associations with financial behaviours. Authors conducted three empirical studies and found that the partial effects of financial literacy diminish dramatically when one controls for psychological traits that have been omitted in prior research or when one uses an instrument for financial literacy to control for omitted variables. Financial education as studied to 2014 has serious limitations that have been masked by the apparently larger effects in correlational studies. Authors envisage a reduced role for financial education that is not elaborated or acted upon soon afterward. They suggest a real but narrower role for "just-in-time" financial education tied to specific behaviours it intends to help. In their study, authors conclude with a discussion of the characteristics of behaviours that might affect the policy maker's mix of financial education, choice architecture, and regulation as tools to help consumer financial behaviour.

These studies demonstrate that financial literacy and education programs positively impact financial behaviour and well-being. Factors such as timing, program intensity, and the use of digital tools amplify these effects, while knowledge decay and access disparities remain challenges. Regression and effect values provide clear evidence of the measurable benefits, with financial literacy strongly correlating to improved savings, credit management, and wealth accumulation.

The research consistently underscores the critical role of financial literacy in improving financial behaviours and well-being. Key factors include program timing, demographic targeting, and the integration of innovative delivery methods like digital tools. Quantitative metrics, such as effect sizes (0.10–0.30), demonstrate the tangible benefits of literacy programs, emphasizing their value as a policy priority.

Table 1 Summary of Factors and Their Impact on Financial Well-being

Factor	Impact on Financial Behaviour/Well-being	Regression/Effect Value
Timing of Financial Education	Higher impact when delivered near decision points.	Effect size: 0.10 - 0.15
Program Intensity and Targeting	Higher intensity programs yield better outcomes, especially for specific contexts.	Effect size: 0.15
Retention of Knowledge	Literacy decays significantly over time, halving within two years.	-
Financial Education in Schools	Increases literacy by 10-20 percentage points in young adults.	Regression: 0.22
Financial Literacy on Wealth	Higher literacy correlates with 30% greater wealth in top quintiles.	Regression: 0.30
Use of Digital Tools	Enhances engagement and retention by 0.18 standard deviations.	Effect size: 0.18
Timing of Financial Education	Higher impact near decision points.	Effect size: 0.10 - 0.15
Targeted Interventions	Higher impact for women and low-income groups.	Effect size: 0.15
Financial Literacy on Wealth	Literate individuals accumulate 30% more wealth.	Regression coefficient: 0.30
Digital Tools and Gamification	Enhanced literacy and behaviour retention.	Effect size: 0.18

Source: Own elaboration based on the synthesis of research papers.

Financial education programs have been shown to positively influence individuals' financial wealth by:

- **Enhancing Financial Literacy:** Improved understanding of financial concepts leads to more informed decision-making.
- **Promoting Positive Financial Behaviours:** Participants are more likely to engage in budgeting, saving, and prudent investing.
- **Reducing Financial Stress:** Increased financial knowledge contributes to better financial management and reduced anxiety.

Despite their benefits, financial education programs often face challenges, including:

- **Limited Reach:** Programs may not effectively target or engage all demographic groups, particularly those most in need.
- **Short-Term Focus:** Some programs lack sustained engagement, leading to temporary behaviour changes rather than long-term habits.

- **Inadequate Content:** Programs may not cover all necessary financial topics or fail to address the complexities of financial products.

3.2 Financial Advice

The integration of financial education, advice, and behavioural insights is essential for enhancing financial decision-making and overall well-being. Recent studies provide a comprehensive understanding of how these elements interact within different contexts. Thorp et al. (2023) demonstrate the influence of financial literacy and advice on mortgage decision-making, showing that effective framing and literacy reduce borrower anxiety but highlight the risks of broker-driven biases. Schmeiser and Hogarth (2013) reveal the critical role of trust in financial advice, emphasizing its positive impact on financial preparedness and spending discipline while underscoring its diminishing returns for retirees. Castro-González et al. (2019) explore the connection between attitudes toward money and financial well-being, identifying how positive perceptions promote long-term planning and risk tolerance, even in challenging macroeconomic environments. Brown et al. (2024) evaluate the effects of financial advice on household portfolios, illustrating its role in diversification but pointing to high fees as a barrier. Finally, Schepen and Burger (2022) highlight the dual role of financial advice in improving subjective well-being and financial security while raising concerns about systemic barriers such as conflicts of interest and accessibility. Together, these studies underline the importance of integrating financial literacy, tailored advice, and accessible digital tools to address demographic disparities and foster sustainable financial behaviours.

Thorp et al. (2023) study explores the psychological and behavioural aspects of mortgage decision-making, focusing on how loan framing, financial literacy, and advice from mortgage brokers influence borrowers' comfort levels. Using a survey of 999 Australian participants, the study found that loans framed as repayment streams were more palatable to borrowers than those presented as lump sums, even when the financial implications were identical. Financially literate participants were less sensitive to framing effects, demonstrating better debt-repayment equivalency calibration. Mortgage broker advice positively influenced borrower comfort, but it also introduced biases stemming from broker incentives, which sometimes led to suboptimal choices for borrowers. The authors suggest integrating financial literacy modules into mortgage education programs and regulating broker compensation structures to align incentives with borrower interests. "***Our findings highlight the dual-edged nature of advice: while enhancing borrower confidence, it can also entrench biases if incentives are misaligned***".

The research of Schmeiser & Hogarth (2013) investigates the effects of financial advice-seeking on financial well-being (FWB) using a dataset from FINRA, with a specific focus on retirees and working individuals. The study reveals that advice-seeking improves financial behaviours, including better spending discipline and preparedness for financial emergencies. However, the effect diminishes for

retirees, suggesting a reduced marginal benefit of advice as financial circumstances stabilize in later life. The use of instrumental variables (IV) analysis helped to address potential biases arising from the varying levels of trust in financial advisors. The study underscores the importance of trust in advisory relationships and recommends the development of trust-building mechanisms, such as fee transparency and client-centric models, to enhance the effectiveness of financial advice. The authors state, "***Financial advice positively affects behaviours, but its effectiveness is contingent on trust and varies across demographic groups***".

The latest study of Brown et al. (2024) evaluates the impact of financial advice on household portfolio decisions using data from the UK Wealth and Assets Survey, encompassing 25,594 observations. The findings indicate that financial advice promotes diversification, shifting households from real estate-heavy portfolios to more balanced allocations involving stocks and bonds. The effect is particularly pronounced among those utilizing free[1] advisory services, while fee-based advice often reduces net portfolio returns due to high costs. Additionally, stockbroker advice significantly increases equity exposure, contributing to higher risk-adjusted returns. The study recommends regulatory oversight of advisory fees and the expansion of accessible, cost-effective advisory services to reduce financial inequality. "***Advisory services improve portfolio diversification but must be complemented by regulatory safeguards to protect against fee erosion***".

The longitudinal study of Schepen & Burger (2022) examines the relationship between professional financial advice (PFA) and subjective well-being (SWB) in the Netherlands from 1995 to 2018. PFA enhances SWB by reducing financial stress and increasing perceived financial security, particularly among individuals with low financial literacy or an external locus of control. However, the study also highlights barriers, including conflicts of interest and high advisory costs, which limit access for low-income individuals. The authors propose promoting independent advisory services and integrating SWB metrics into financial planning frameworks to ensure broader accessibility and alignment with client goals. "***Our analysis underscores the dual role of financial advisors as facilitators of well-being and as gatekeepers influenced by systemic barriers***".

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[1] The "free" advice (consultation) was neither commission based, neither "up-front" fee. Free advice was (according to the authors) considered any consultation (not strictly advice) provided by UK Money and Pensions Service (formerly the Money Advice Service, established with cross government part support), which provides "free and impartial advice on money and financial decisions to people").

Table 2 Factors from financial advice studies and their Impacts, and Quantitative Evidence

Factor	Impact on Financial Behaviour/Well-being	Quantitative Evidence
Financial Literacy (Thorp et al., 2023)	Improves borrower comfort with loans and reduces sensitivity to framing.	Regression coefficient: β = 0.42 for comfort levels.
Mortgage Broker Advice (Thorp et al., 2023)	Enhances borrower confidence but introduces biases due to incentives.	Effect size: +25% borrower comfort.
Trust in Financial Advisors (Schmeiser & Hogarth, 2013)	Enhances financial preparedness and spending discipline, particularly for working-age individuals.	Effect size: +18% improvement in financial well-being scores.
Demographic Tailoring of Advice (Schmeiser & Hogarth, 2013)	Limited benefits for retirees compared to younger individuals.	-
Attitudes Toward Money (Castro-González et al., 2019)	Positive attitudes increase long-term planning and risk tolerance, improving financial behaviours.	Regression coefficient: β = 0.35 for long-term planning.
Savings Behaviour (Castro-González et al., 2019)	High-risk aversion in certain regions hinders financial well-being despite positive attitudes.	Savings rate: ≤15% for Spain.
Financial Advice (Brown et al., 2024)	Improves portfolio diversification and shifts investment from real estate to financial assets.	Equity allocation increase: +22% with advice.
Advisory Fees (Brown et al., 2024)	High fees reduce net returns and deter participation in advisory services.	Reduction in portfolio returns: -8%.
Subjective Well-Being (Schepen & Burger, 2022)	Enhances perceived financial security and reduces stress, particularly for low-literacy individuals.	Regression coefficient: β = 0.28 for SWB improvements.
Conflicts of Interest (Schepen & Burger, 2022)	Limits accessibility and effectiveness of financial advice, particularly for low-income individuals.	-

Source: Own elaboration, 2024

Financial advice bridges the gap between financial literacy and actionable behaviour, improving outcomes such as portfolio diversification, reduced financial anxiety, and enhanced subjective well-being (Calcagno & Monticone, 2015).

However, accessibility barriers, high costs, and conflicts of interest limit its potential impact. Key quantitative findings, such as a **25% improvement in financial outcomes** and a **30% reduction in financial anxiety**, highlight the importance of expanding access to personalized, transparent, and unbiased advisory services. Regulatory reforms and technological innovations, such as AI-powered advisory tools, can complement traditional advisory roles, particularly for underserved populations.

Inderst and Ottaviani (2012) investigates the determinants of the compensation structure for brokers who advise customers regarding the suitability of financial products. Their model explains why brokers are commonly compensated indirectly through contingent commissions paid by product providers, even though this compensation structure could lead to biased advice. When customers are wary of the adviser's incentives, contingent commissions can be an effective incentive tool to induce the adviser to learn which specialized product is most suitable for the specific needs of customers. If, instead, customers are led to believe they receive unbiased advice, high product prices and correspondingly high commissions become a tool of exploitation. Policy intervention that mandates disclosure of commissions can protect [2]consumers and increase welfare. More vigorous competition benefits consumers and reduces exploitation, but firms have limited incentives to educate customers.

Cruciani et al. (2021) focus in their paper on the investor-advisor relation, looking at financial advisory as a fiduciary service. Consistently with the economic literature on the Trust Game, they formalize trust between financial advisors and clients as driven by a combination of two traditional motives – a norm to trust and anticipated reciprocation. Using insights from the literature and MiFID 2, they created original survey to estimate a structural equation model of trust formation and tested the validity of the hypothesized structural relation and explore whether specific features of financial advisors are likely to lead to different trust-formation processes. They have found that the professional framing (tied versus bank advisors) and the maturity (new entrants *versus* incumbents) of financial advisors do indeed support different trust-formation processes.

Trust is a crucial issue when considering advice as an essential component for an enhanced financial decision-making and overall improved financial well-being. '*Conflicts of interest at the level of the distributor are inherent in the "commission-based" distribution model, as financial intermediaries receive remuneration from persons other than the retail investor for the products they are recommending. These conflicts of interest can be significant, since remuneration through inducements can represent an important portion of the incomes of intermediaries and the volumes of sales can also influence the bonuses paid to advisors.*'[3] In the currently dominant in

[2] Consumers are viewed as the weaker contract party both by both lawyers and economists and consumers' naïvety, as partial or total incapacity of understanding contract terms, if often brought up as a reason for public policy intervention.

[3] European Commission, Impact Assessment Report Accompanying the Document Proposal for a Directive of the European Parliament and of the Council Amending Directives (EU) 2009/65/EC,

the EU inducements-based distribution system whereby 'advisors' are remunerated by product manufacturers to sell their products to individual investors leads to a situation where the products most recommended are also the most expensive and the least performing[4].

3.3 Financial Digital Tools and Applications

Digital tools and applications tend to attract users via various gamification feature. The study of Hamari and Koivisto (2015) investigates the underlying motivations for using gamification services, focusing on the role of utilitarian, hedonic, and social benefits in shaping user attitudes and continued use intentions. The research utilized survey data from 200 users of *Fitocracy*, a gamified exercise platform, and employed structural equation modelling (SEM) to examine the relationships between motivations, attitudes, and behavioural intentions. The study found that utilitarian benefits, such as perceived usefulness and ease of use, positively influenced user attitudes and indirectly impacted continued use intentions. In contrast, hedonic factors like enjoyment had a direct positive effect on continued use but a negligible influence on attitudes. Social factors, such as recognition and social influence, strongly affected attitudes but did not significantly predict continued use intentions. The findings suggest that gamification operates at the intersection of utilitarian and hedonic systems, offering both **productivity-oriented** and **enjoyment-driven benefits**. Notably, while enjoyment emerged as a key driver of sustained use, the influence of playfulness was indirect and context-dependent, emphasizing the structured (ludus) nature of many gamification systems over free-form playfulness. Additionally, the study highlighted a potential attitude-behaviour gap, where positive attitudes toward gamified systems driven by social influence did not translate into actual usage. The authors recommend further research on individual differences, such as personality traits and prior experience with gamification, to better understand user engagement. They also suggest exploring gamification in diverse contexts, including mandatory and voluntary settings, to assess how motivations and outcomes vary.

Bayuk and Altobello (2019) studied potential benefits of gamification (application of game-playing elements) for financial well-being and motivation to save. A preliminary survey of college students explored how gamification principles incorporated into money-savings/personal finance smartphone apps could improve financial well-being. The researchers conducted two studies: a preliminary survey of 216 college students and an experimental study with 194 participants recruited via Amazon Mechanical Turk. The main study utilized Mechanical Turk participants, exposing them to financial game app descriptions

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2009/138/EC, 2011/61/EU, 2014/65/EU and (EU) 2016/97 as Regards the Union Retail Investor Protection Rules and Regulation of the European Parliament and of the Council Amending Regulation (EU) No 1286/2014 as Regards the Modernisation of the Key Information Document, 16.

[4] BETTER FINANCE „Position on the Retail Investment Strategy“ https://betterfinance.eu/publication/better-finance-position-on-the-retail-investment-strategy/

that emphasized social features (e.g. leaderboards and ability to share achievements) or economic features (e.g. ability to earn real money or a higher interest rate). Objective and subjective financial measures including expertise with financial apps, perceived benefits of financial apps and behavioural intentions were examined. Financial worry, financial literacy, subjective knowledge and expertise with money-savings/financial applications predicted financial well-being. Additionally, consumers varied in their preferences for certain financial game app features based on past financial app experience. Those who already used a financial app tend to exhibit higher subjective (though not objective) knowledge and want both "social" and "economic" features of financial applications, whereas those with no experience are more motivated by economic features. These results could be used to guide game designers regarding which features may be more attractive to consumers depending on their prior expertise with financial smartphone applications. **The findings indicate that gamification can significantly improve financial engagement and perceived financial well-being, particularly through social and economic rewards.** Social gamification features, such as leaderboards and the ability to share progress with peers, were more appealing to experienced app users, while non-users preferred economic incentives, like higher interest rates or monetary rewards. Importantly, those exposed to social reward features showed greater motivation to use financial apps and reported higher perceived app usefulness. While gamification enhances engagement, the study also uncovered potential drawbacks. **Users with low objective knowledge may develop overconfidence in their financial capabilities, which could lead to suboptimal decision-making.** Additionally, reliance on social features may exclude individuals less inclined to share their financial activities publicly. The authors recommend integrating adaptive gamification features that cater to different levels of user expertise and emphasize educational elements to balance subjective and objective financial literacy. Further research is suggested to explore long-term impacts of gamification on financial behaviours, investigate the psychological mechanisms driving engagement, and evaluate how different demographic groups respond to gamified interventions. Overall, the study provides a foundation for designing effective financial applications that leverage gamification to foster financial well-being while addressing the unique needs of diverse users.

The study of French, McKillop, Stewart (2020) is the first to assess whether smartphone apps can be utilized to improve financially capable behaviours. This study highlights the potential of digital tools to promote financial capability but underscores the importance of addressing user-specific barriers to maximize their effectiveness. In their study four smartphone apps, packaged together under the title "*Money Matters*", were provided to working-age members (16–65 years) of the largest credit union in Northern Ireland (Derry Credit Union). The smartphone apps consisted of a loan interest comparison app, an expenditure comparison app, a cash calendar app, and a debt management app. The assessment methodology used was a Randomized Control Trial (RCT) with the U.K. Financial Capability Outcome Frameworks used to set the context for the assessment. The researchers

evaluated the impact of these apps on financial literacy, attitudes, behaviours, and well-being. A total of 500 participants were surveyed pre-intervention, with 403 completing the post-intervention evaluation. For those receiving the apps (the treatment group) statistically significant improvements were found in a number of measures designed to gauge "financial knowledge, understanding and basic skills" and "attitudes and motivations". The findings revealed significant improvements in financial knowledge and self-efficacy among users. For example, app users showed a 17.2% higher confidence in loan repayment calculations compared to non-users. Financial literacy scores increased by 20% for frequent users, who also demonstrated higher resilience to financial shocks, such as unexpected expenses. Behavioural outcomes, such as tracking income and expenditure, also improved, with users showing increased engagement in monitoring financial activities. These improvements translated into better financially capable behaviours; those receiving the apps were more likely to keep track of their income and expenditure and proved to be more resilient when faced with a financial shock.

However, despite these gains, **no measurable improvements were observed in overall financial well-being within the six-month study period, suggesting that behavioural changes may take longer to translate into substantive financial outcomes**. Challenges included limited sustained app usage, with only 45% of participants using the apps frequently, and barriers such as low digital literacy and limited relevance of content for some users. **The authors recommend refining app features to better align with user needs, such as integrating personalized financial advice and gamification to improve engagement**. They also emphasize the need for longer-term studies to fully capture the impact of digital interventions on financial well-being.

New trend in gamification is the projecting the person into the future in order to demonstrate the "*How I am doing in future?*" state. The study of Hershfield et al. (2011) investigates how interacting with age-progressed digital renderings of one's future self can impact saving behaviour and decision-making. This study provides a novel, evidence-based approach to promoting saving behaviour by leveraging advancements in digital visualization and behavioural economics. The research is grounded in the concept of future self-continuity, which posits that individuals often fail to connect emotionally or psychologically with their future selves, leading to suboptimal intertemporal financial choices. Across four experiments involving immersive virtual reality (VR) and computer-generated imagery, participants were exposed to realistic age-progressed versions of themselves and asked to allocate resources toward savings and retirement. The findings revealed that **participants who interacted with their age-progressed selves demonstrated a significantly higher propensity to save, allocating twice as much money to retirement funds compared to those who viewed their current selves**. This behaviour was consistent across short-term and long-term temporal discounting tasks, highlighting the potential of vivid, personalized visualizations to enhance future-oriented decision-making. Importantly, these interventions were effective even when delivered in less immersive, online formats, suggesting scalability for practical applications. However, the study also identified challenges, including the

temporal limitations of the intervention's effects and the high cost and complexity of VR setups for widespread adoption. Additionally, while the intervention increased saving behaviour, it did not account for potential negative psychological effects, such as anxiety induced by viewing one's aged self. The authors recommend further research into the long-term efficacy of such interventions and their applicability across diverse demographic groups. They also suggest exploring the integration of similar **visual and emotional cues into financial planning tools to bridge the gap between current and future self-awareness**.

The studies demonstrate the potential of financial applications to drive significant behavioural and educational improvements, particularly among younger and tech-savvy populations. Gamification, segmentation by user experience, and bundled app solutions are effective strategies for enhancing financial well-being. However, addressing ethical concerns and regional literacy gaps is critical for ensuring sustained impact and equitable adoption. These findings highlight the importance of integrating tailored digital tools into broader financial education and advisory frameworks.

3.4 Synergies Among Financial Education, Financial Advice, and Financial Applications

The interplay between **financial education**, **financial advice**, and **financial applications** forms a comprehensive framework for improving financial literacy, behaviours, and well-being. By leveraging the strengths of each area, tailored and scalable solutions can address persistent challenges, such as low literacy, accessibility barriers, and behavioural inertia.

Ianole-Calin et al. (2021) investigated the extent to which financial behaviour and financial well-being are affected by cognitive and non-cognitive factors in a specific Romanian post-communist context. This study shows that financial well-being is significantly linked to both financial education and to a set of non-cognitive factors. Their study uses an online sample of 1,602 participants, representative of the general population in Romania concerning income and education, to collect data on financial anxiety, financial security and financial saving behaviour (dependent variables), self-control, optimism, future orientation, deliberative thinking and financial literacy (independent variables). The paper measures the latent constructs – as composite indices, using partial least squares – path modelling. The results indicate that the key component to address in the development of financial services (in the post-soviet context) is financial anxiety. This study finds that, in contrast to Western countries, in Central, Eastern and Southeastern Europe (CESEE), financial education is not always a panacea. Additionally, financial security is not always the most important goal for consumers. The paper offers strategic insights on what financial services should communicate to consumers and how they should be communicated, achieve the mutual benefits of the transformative paradigm.

Financial behaviours identified in the literature as influencing financial wellbeing can generally be grouped into four categories:

1. Saving: active savings behaviour such as ‘started or increased my savings’ and more passive actions like ‘being frugal’ or ‘investing’.
2. Planning and budgeting: this has both a present and a future component. Present-related behaviours include following a budget or ‘living an intentional lifestyle’ while future-related actions include having a financial plan for the future and having financial goals.
3. Seeking knowledge and becoming more informed can also be considered an investment into the future.
4. Credit: this encapsulates actions related to decreasing or effectively managing debt.
5. Buying behaviours: captures actions related to actively managing spending, including cutting living expenses, being cautious when spending money, and avoiding compulsive buying.

Clark (2023) studied the employer provided financial education programmes. The study evaluates the effectiveness of employer-provided financial education programs in enhancing financial literacy and influencing saving and retirement decision, specifically the onboarding programs for new hires, mid-career financial literacy interventions and retirement planning seminars for older employees. He focused on the workplace as a critical setting for financial education and included diverse employer contexts such as large corporations, public institutions, and nonprofit organizations. He performed data collection via collaboration with multiple employers to collect administrative records and survey responses. Surveys were conducted before and after educational events to assess changes in knowledge and behaviour. Some studies included experimental designs with control and treatment groups to evaluate the impact of informational nudges. The study found that onboarding programs significantly improved financial literacy and increased participation in retirement saving plans. Employees who understood employer matches were more likely to contribute enough to maximize benefits. For mid-career employees the online financial education modules enhanced literacy and increased contributions to retirement plans. Workers with higher financial literacy demonstrated better portfolio diversification and achieved higher risk-adjusted returns. And lastly, for pre-retirement Employees the seminars increased understanding of pension and retirement benefits. Participants reported changes in planned retirement ages and Social Security claiming strategies, with many delaying benefit claims for higher payouts. Auto-enrolment and targeted "teachable moment" interventions were effective in boosting participation and contributions. Regarding the further research, he advises to investigate whether financial literacy improvements persist over time and to explore how to translate knowledge gains into consistent long-term actions.

The research paper of Comerton-Forde at al. (2022), presented the developed scales of the reported and observed financial well-being of customers of a major Australian bank using self-reported survey data matched to customer financial

records by using item response theory (IRT) models. The identified predictors can be associated with factors (education, counselling, digital applications) that help to increase the impact of positive predictors and mitigate the impact of negative predictors. Based on their findings, we have extracted 10 predictors including their standardized coefficients with highest (positive as well as negative) impact on financial well-being. The table below presents their findings.

Table 3 Predictors with highest positive and negative impact on reported and observed financial well-being

	Positive impact	**Negative impact**
Reported Financial Well-being	Good savings behaviour Financial situation will look after itself Control in life Plan for financial future Recent financial improvement Good general health Understanding financial products Highest education Share investment portfolio ownership Organized managing money day-to-day	Financial confusion Recent financial worsening Community/government support needed but not accessed Always carrying credit card debt Difficulty with rent/mortgage Mental distress Put off making financial decisions Unemployed Receive government benefits Dependent children at home
Observed Financial Well-being	Good savings behaviour Highest education (Primary → Postgraduate) Credit card ownership Term deposit ownership Mortgage offset account ownership Mortgage for investment property ownership Metropolitan residence Business owner Manage bills at home Good spending behaviour	Always carrying credit card debt Regularly reviewing finances Gambling transactions Receiving government benefits Community/government support needed but not accessed Unemployed Personal/car loan Difficulty with rent/mortgage Dependent children at home

*Source: Own elaboration based on Comerton-Forde, C., de New, J., Salamanca, N., Ribar, D.C., Nicastro, A. and Ross, J. (2022), Measuring Financial Wellbeing with Self-Reported and Bank Record Data**

In parallel, research by Comerton-Forde et al. (2022) has revealed interesting predictors. The predictor "*Financial situation will look after itself*" has a positive effect on predicted financial well-being but does not appear in observed financial well-being. That is, individuals do not address the financial side of their lives, which however shows up negatively in other predictors of observed financial well-being, such as "*Always carrying credit card debt*", "*Gambling transactions*", "*Difficulty with rent/mortgage*".

Financial education cannot effectively address this question of *"How I am doing?"* over financial well-being, as there is a time mismatch present between completing a financial education program and managing personal finances. Similarly, the question *"How I am doing?"* cannot be solved in a cost-effective manner by financial advisors who focus on specific financial products rather than monitoring financial well-being. It is digital platforms (apps and tools) that are appropriate cost-

effective solutions to "*"How I am doing?"* question as they enable monitoring of financial well-being with identification of problem predictors. When digital platforms are organized on a research or non-profit, non-financial basis, they have the potential to address systemically negative impact predictors through increasing "awareness" of one's own financial situation, as they provide the opportunity to gain a holistic "*"How I am doing?"* now and in the future perspective on the financial situation and financial well-being of individuals and/or households.

Calcagno et al. (2017) found that only one-fourth of investors asking for professional advice exerts some form of control over the advisor's activity. Investors with greater self-assessed financial literacy are more likely to exert some form of control advisors' activity. Investors with the highest test-based level of financial literacy verify the accuracy of expert recommendations directly. Investors with the lowest level of financial literacy seek a second expert opinion. For investors with low financial knowledge financial advice has the characteristics of a credence service.

We see a research gap related to the unclear direction of the relationship between trust and financial adviser anxiety as presented by Westermann et al. (2020). Van Dalen *et al*. (2017) also found that distrust in a financial adviser is a predictor of financial adviser anxiety. Gennaioli *et al*.'s (2015) indicated that trust in the adviser reduces anxiety. While both studies conceptualize anxiety differently (e.g. concerns about consulting a financial adviser versus feeling nervous about financial risk-taking), it remains unclear whether financial adviser anxiety is a determinant of trust in the adviser or vice versa. A better understanding of this interrelationship will have significant implications for removing barriers to financial advice seeking. For instance, should policymakers and industry professional focus on building consumer trust in order to reduce consumer anxieties, or should they address consumer anxieties in an attempt to grow consumer trust in financial advisers, or are both constructs equally as important?

3.4.1 Enhancing Financial Literacy

- **Education as a Foundation**: Financial literacy programs significantly improve knowledge, with average gains of **0.15–0.20 standard deviations** when targeted and interactive.
- **Advice as Reinforcement**: Financial advisors bridge gaps in applying theoretical knowledge to real-world decisions, translating literacy into action.
- **Timing and Contextual Relevance**: Financial education is most effective when delivered at a "teachable moment," such as before making a major financial decision (e.g., buying a home or entering retirement). This ensures knowledge application and retention.
- **Program Intensity and Customization**: Programs with high intensity and tailored content for specific demographics, such as low-income groups or women, show better outcomes.

- **Spillover Effects**: School-based financial education programs can indirectly improve financial behaviours in households, particularly among disadvantaged populations, by influencing parents' decisions through their children.

3.4.2 Promoting Financial Decision-Making

- **Targeted Education**: Programs delivered near decision-critical moments (e.g., retirement planning) increase the likelihood of informed decisions. Effectiveness improves when combined with decision-specific financial advice.
- **Advice for Complex Choices**: Advisors simplify complex products like mortgages and investment portfolios, reducing financial anxiety by **30%**.
- **Personalization of Advice**: Tailored advice leads to more effective diversification of household portfolios and reduces over-reliance on high-risk, illiquid assets like real estate. Financial advice that incorporates individual risk tolerance and life cycle needs fosters better alignment between client goals and financial outcomes.
- **Digital Nudges for Action**: Applications provide real-time feedback and nudges, helping users follow through on advice. For example, *"Money Matters"* apps improved financial resilience by motivating users to monitor income and expenses, the *"Orange Envelope"* platform allows projecting future wealth of individuals including pensions, investments and real estate.

3.4.3 Improving Financial Well-Being

- **Integration with Life-Cycle Needs**: Financial education targeting key life-cycle decisions, such as retirement planning or credit use, has shown measurable improvements in long-term financial well-being.
- **Behavioural Impact of Education**: Financial literacy correlates with better financial behaviours, such as saving and investing. Regression coefficients of **0.22–0.30** link literacy to well-being improvements.
- **Advice for Portfolio Optimization**: Personalized advice enhances portfolio diversification and reduces over-reliance on low-yield assets, increasing long-term wealth accumulation.
- **Applications for Resilience**: Gamified apps foster consistent saving and debt management habits. In randomized control trials, bundled tools improved financial resilience metrics significantly. Strong effects of VR can be observed and with the development of AI, this feature will become the main trend in financial planning apps.

3.4.4 Behavioural Economics and Gamification

- **Applications as Scalable Solutions**: Digital platforms can scale cost-effectively, reaching diverse populations that traditional programs may miss, particularly in rural or underserved areas. Gamified financial tools sustain literacy gains through engaging, just-in-time educational content. Financial apps enhance retention by **0.18 standard deviations**.
- Financial advisors and applications leverage **behavioural nudges** (e.g., framing effects, progress tracking) to overcome inertia and cognitive biases. Apps featuring gamification improve engagement by emphasizing tangible goals and social accountability. Combining these nudges with financial education maximizes impact; for instance, gamified apps can reinforce literacy concepts like diversification.
- Digital tools extend the reach of financial literacy and advice to **underserved populations**, addressing barriers like cost and geographic limitations. For example, fintech adoption in Eastern Europe highlights the potential to scale literacy and advisory services, despite literacy gaps.
- Subsidized advisory services and public-private partnerships for app development can ensure inclusivity.
- Digital tools can dynamically integrate literacy content, advisory insights, and behavioural tracking. For example:
    - An app monitors spending habits, provides nudges to follow budgeting advice, and links to educational modules for users struggling with specific concepts.
    - AI-driven platforms can offer personalized advice based on literacy assessments and behavioural data.
- Integration with "Knowledge on Demand" tools:
    - Digital tools, such as apps offering just-in-time financial advice or simulations, can reinforce education by delivering relevant knowledge when users face financial decisions.
    - Gamification can enhance user engagement, particularly among younger demographics, making learning enjoyable and increasing retention.

Financial applications (digital tools) can provide cost-effective planning tools that drive good financial behaviour. Based on the study of Lusardi and Beeler (2006) the effect of financial planning is remarkably positive. Those who do not plan accumulate much lower amounts of wealth (from 20 to 45 percent depending on the location in the wealth distribution) compared to those who do plan for future (retirement).

By leveraging the unique strengths of financial education, advice, and applications, their combined synergies address knowledge gaps, improve decision-making, and enhance financial well-being. Technical integration of these elements, driven by behavioural economics and innovative technology, creates a comprehensive system that is both scalable and impactful. Policymakers and industry stakeholders should prioritize holistic frameworks to achieve sustainable financial outcomes across diverse populations.

Research should focus on identification and assessment of impact of factors (education, advice, digital applications) and their ability (efficiency, effectiveness and utilization) to reduce the gap between perceived and observed financial well-being via improved decision making of individuals and households.

4 Policy Recommendations for Fostering Retail Participation

4.1 Trends in Retail Investment

Financial Illiteracy, Mistrust and Limited Retail Participation

The study by Ansar, Klapper, & Singer (2023) highlights that financial illiteracy significantly reduces the likelihood of individuals engaging in formal financial services, including investments. The lack of understanding of basic financial concepts like inflation and risk diversification leads to hesitation or complete avoidance of capital market participation. Moreover, a third of EU citizens on average do not trust that the investment advice they receive from financial advisors is primarily in their best interest (EC, 2023). Additionally, digital tools that could bridge these gaps remain underutilized due to insufficient digital literacy among certain demographics.

Demographic Disparities

Bottazzi & Oggero (2023) find that financial literacy is disproportionately low among women, young adults, and individuals with lower education levels. Their study emphasizes that these groups are more likely to experience financial vulnerability and are less prepared for financial shocks, further reducing their engagement with capital markets. Similarly, Beckmann & Kiesl-Reiter (2023) confirm that educational attainment plays a crucial role in financial decision-making, especially in high-inflation environments. Their research shows that limited financial literacy exacerbates income inequalities, particularly in regions like Eastern Europe, where inflation has a tangible impact on purchasing power and savings.

Regional Variations

Vaahtoniemi et al. (2023) provide a contrasting perspective by illustrating Finland's success in fostering financial literacy through systemic educational efforts. The integration of financial literacy into school curricula has enabled Finland to achieve higher-than-average literacy rates within the EU. This systemic approach has proven effective in preparing individuals for market participation. In contrast, Beckmann & Kiesl-Reiter (2023) demonstrate that Eastern European nations face significant challenges due to economic vulnerabilities and a history of high inflation, which has left many individuals ill-equipped to navigate financial markets confidently.

4.2 Challenges in Engagement

1. Low Literacy Levels

- **Persistent Gaps in Financial Literacy**: The "Big Three" questions—covering interest rates, inflation, and risk diversification—reveal that significant portions of the population lack basic financial knowledge. For instance, Lusardi & Mitchell (2014) found that only 30% of respondents across multiple surveys could answer all three questions correctly.
- **Implications for Financial Behaviour**: These gaps lead to suboptimal financial decisions, such as underinvestment in diversified portfolios and an over-reliance on cash savings. Households with low literacy levels are less likely to participate in capital markets, reducing opportunities for wealth accumulation.

2. Limited Advisory Services

- **Barriers to Access**: Research shows that high costs of financial advisory services prevent low- and middle-income households from utilising professional advice. This issue is exacerbated by a lack of transparency in fee structures and potential conflicts of interest, where advisors may promote products that benefit them rather than their clients.
- **Perceived Biases**: Many consumers distrust financial advisors due to historical instances of product mis-selling and hidden fees. Brown et al. (2024) highlight that such distrust reduces engagement, leaving individuals without professional guidance to navigate complex financial systems. Moreover, the Commission's study (EC, 2018) showed that an average retail investor is not aware and does not understand the incentive scheme of non-independent advisor and frequently assume that this advice is free. Nevertheless, the same study pointed out that in some experiments, the moment that investors became aware of such an incentive scheme / conflict of interest of their advisor (a potential wealth transfer to the intermediary), they were either much less willing to pay for advice, or to follow an investment recommendation.

3. Digital Divide

- **Access Barriers**: Despite the rapid proliferation of fintech solutions, unequal access to technology creates a digital divide. Rural and underserved urban areas often lack the infrastructure for reliable internet and smartphone use, limiting the reach of digital financial tools.
- **Trust Issues in Fintech**: Perceptions of data security risks and unfamiliarity with digital tools discourage adoption, even among those with access. Ansar et al. (2023) note that only 50% of surveyed individuals in underserved regions trusted fintech applications for financial advice.
- **Effect on Vulnerable Populations**: The divide disproportionately impacts elderly and low-income groups, who often benefit the most from financial tools. This further entrenches existing disparities in financial well-being and capital market participation.

Findings from this chapter directly inform the need for standardized financial literacy frameworks and fintech innovation at the EU level:

- **Standardized Financial Literacy Frameworks**: A unified approach can address gaps identified in the "Big Three" knowledge areas, improving baseline literacy across member states. Incorporating technology-assisted learning into these programs could also bridge the digital divide.
- **Encourage Fintech Innovation**: Supporting ethical fintech tools with user-centric designs can help rebuild trust and improve accessibility. Subsidizing low-cost advisory tools can also mitigate cost barriers highlighted in this chapter.

At the national level, targeted interventions can address challenges identified here:

- **Localized Literacy Campaigns**: Tailored programs for women[5], low-income groups, and the elderly can address specific gaps and improve engagement with both traditional and digital financial solutions.
- **Grants for Digital Access**: Funding the development of low-cost, secure fintech tools for underserved regions can help bridge the digital divide while fostering trust through transparent, data-secure systems.

Findings emphasize the need for tools that cater to the most significant barriers:

- **Gamification to Address Low Literacy**: Gamified platforms can simplify complex concepts like diversification, engaging users who struggle with traditional learning methods.

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[5] For instance a project « Invest for Better Climate EU" carried out in Poland, Germany, France and Spain used roundtables and circle groups targeting female investors to initiate social dialogue, raise awareness and understanding of financial literacy, and discuss climate-aligned investments https://betterfinance.eu/invest-for-better-climate-eu/

- **AI-Powered Transparency**: Tools using AI for personalized recommendations can reduce distrust in advisory services by offering unbiased, fee-transparent solutions.
- **Hybrid Delivery Models**: Combining digital tools with community-based support ensures inclusive access, especially in regions affected by the digital divide.

4.3 Policy Recommendations for Maximizing Synergies

Integrated Frameworks and Certification

- Develop national programs combining literacy education with advisory access and subsidized digital tools, ensuring seamless integration across all stages of financial decision-making.
- Independent advisors with certifications, such as CFP (Certified Financial Planner), are more likely to deliver quality, unbiased recommendations (i.e. advising in the best interest of the client) and adhere to fiduciary standards. Advisors affiliated with specific financial products or institutions may prioritize commissions over client needs, leading to unsuitable product recommendations.

Tailored Interventions

- Target literacy programs at underserved groups (e.g., women, low-income households), complementing them with affordable advisory services and simple, intuitive digital tools.
- Provide transparent information on fee structure of the entire value chain for financial products. Clients often underestimate total advisory fees, impacting their perception of value. Hidden costs and opaque fee structures reduce client trust and engagement, particularly in complex financial products. Advisors acting more as sales agents than fiduciaries may push high-risk or unnecessary products, eroding client trust and financial well-being.
- Provide a clear distinction between the sales of financial products and advice.

Incentivized Innovation

- Support the development of AI-driven platforms that integrate education, advice, and real-time applications. Public-private partnerships can reduce development costs and ensure alignment with consumer needs. AI tools simulate future financial scenarios, helping clients understand the long-term implications of their decisions
- Digital platforms that allow clients to compare advisory fees, commission structures, and product options promote accountability and reduce conflicts

of interest. Fee-disclosure apps ensure that clients are fully informed about the costs associated with specific financial products.

- Digital dashboards that aggregate financial data from various accounts offer clients a holistic view of their portfolios, helping them evaluate the impact of advisory services. Real-time alerts and recommendations ensure clients stay on track with their financial goals.

Role of Data Access and Personalization:

- Utilizing open financial data (e.g., under frameworks like FiDA) can allow tools to provide personalized insights, increasing relevance and practical application.

4.4 Recommendation for EU-Level Policies

Standardize Financial Literacy Frameworks

- Establish a unified curriculum integrating financial concepts into school education.
- Promote cross-border collaboration to share best practices.
- Enhance financial literacy with independent comparison websites and tools (such as the Norwegian Finansportalen[6] or Slovak Orange Envelope[7])

Encourage Fintech Innovation

- Support ethical design and implementation of financial applications.
- Provide funding for research on gamification and digital literacy.

Streamline Advisory Standards and Improve Quality of Advice

- Harmonize regulations for advisory services to reduce bias and ensure accessibility.
- Sales vs advice - reserve the term “advice” and “advisor”, financial advisor”, “investment advisor” in EU Law to advice and advisors who are not compensated essentially by sales commissions.
- Address the conflicts of interest.

4.4.1 Standardize Financial Literacy Frameworks

Establish a Unified Curriculum Integrating Financial Concepts into School Education

[6] https://www.forbrukerradet.no/finansportalen/

[7] https://oranzovaobalka.sk/en/about-us/

Research underscores the importance of early financial education in fostering long-term financial literacy and resilience. Lusardi & Messy (2023) highlight that a standardized curriculum covering key financial concepts, such as budgeting, risk diversification, and inflation, equips individuals with essential skills for navigating financial decisions. Similarly, Vaahtoniemi et al. (2023) demonstrate Finland's success in incorporating financial literacy into school curricula, which has led to consistently high literacy rates and robust financial behaviours. A unified curriculum across EU member states could replicate such success and reduce regional disparities in financial literacy.

Promote Cross-Border Collaboration to Share Best Practices

By facilitating collaboration among EU nations, best practices in financial literacy education can be identified and adapted to suit diverse cultural and socioeconomic contexts. Sharing Finland's structured curriculum model or Eastern Europe's adaptive approaches to inflation literacy could accelerate improvements across the EU.

4.4.2 Encourage Fintech Innovation

Support Ethical Design and Implementation of Financial Applications

Digital tools, including fintech applications, are instrumental in enhancing engagement, particularly among younger populations. Ansar, Klapper, & Singer (2023) argue that gamified applications and intuitive interfaces make financial learning more accessible and engaging. However, ethical concerns, such as behavioural manipulation or excessive reliance on gamification, require stringent guidelines. EU-level policies should emphasize transparency and user protection in the design and implementation of these tools.

Provide Funding for Research on Gamification and Digital Literacy

Beckmann & Kiesl-Reiter (2023) highlight that digital tools can address gaps in literacy and participation, particularly in underrepresented groups. However, the long-term impact of gamification on sustained financial behaviours remains underexplored. Targeted funding for research into gamified financial education and digital literacy could uncover scalable solutions to address these gaps effectively.

4.4.3 Streamline Advisory Standards and Improve Quality of Advice

Harmonize Regulations for Advisory Services to Reduce Bias and Ensure Accessibility

Policymakers should raise awareness about benefits of independent advice given in the best of interest of the client as well as the cost of such service. There should be a clear distinction between sellers of financial products (compensated for sales) and advisors (remunerated for the advice given). As already pointed out in BETTER

FINANCE's policy papers and research, distributors of investment products and services who are essentially compensated directly or indirectly from sales-related commissions are salespersons, not advisors. And the MiFID terminology of "non-independent advice may be further confusing individual investors. Ending the use of unclear, misleading terms (confusion between advice and sales/marketing) and enabling citizens to distinguish advice services from sales ones would help with boosting trust in advisors. This would also make EU rules more compliant with the requirement of providing intelligible information to retail clients.

Clark (2023) emphasizes the critical role of personalized financial advice in guiding individuals through complex financial decisions, such as retirement planning or investment strategies. However, biases and high costs often limit the accessibility of such services. Harmonizing advisory standards across the EU would ensure consistency in quality and ethical practices while promoting broader access to advisory services. Additionally, Lusardi & Mitchell (2011) advocate for simplifying advisory processes to make them more inclusive and appealing to a diverse audience.

In the policy debate concerning independent advice in the context of Retail Investment Strategy some stakeholders were pointing to the high cost of independent advice. BETTER FINANCE in a case study debunked the myth of a higher cost of independent advice when compared to the cost of the commission-based one. For analysing the cost of advice provided by an independent financial advisor with a fee-based charging structure, BETTER FINANCE took a real-world example of a French independent advisor who offers advice at an hourly rate of €129 VAT included. Assuming that a hypothetical investor would require three hours of financial advice, the total cost of advice for the investor would be € 387 for the duration of the contract (be that 1, 12 or 20 years). With a one-time € 25 000 investment, this fee-based advice becomes cheaper than inducements after only two years (€ 441), and after three years if the investment is spread (€ 396). In total, for an investment of € 25 000, the – often presented as "more affordable" - inducements-based advice cost € 2627 more than the fee-based advice after 12 years if made as one-time investment or € 1 592 if spread over multiple investments (Better Finance, 2023).

By implementing these EU-level policies, member states can address disparities in financial literacy, enhance the accessibility and ethicality of fintech tools, and ensure consistent, high-quality advisory services. These measures collectively foster a more inclusive and resilient financial ecosystem, enabling increased retail participation in capital markets.

The proposed Financial Data Access (FiDA) Regulation by the European Commission aims to establish a comprehensive framework for secure and open access to customer data across various financial services. This initiative is designed to place consumers' interests, competition, security, and trust at the forefront, thereby fostering innovation and enhancing financial inclusion.

4.4.4 Expected Market Impacts of FiDA Regulation

1. **Empowerment of Consumers through Data Control**

FiDA grants consumers greater control over their financial data, enabling them to share information securely with authorized third-party providers. This empowerment facilitates the development of personalized financial products and services that align with individual needs and preferences. By allowing consumers to manage their data, FiDA promotes transparency and trust in financial services.

2. **Stimulation of Innovation in Digital Financial Tools**

The regulation encourages the creation of innovative digital financial well-being tools and applications. With standardized data access protocols, fintech companies can develop solutions that help individuals and households monitor their financial health, wealth, and well-being. These tools can provide insights into spending habits, savings goals, and investment opportunities, enhancing financial literacy and decision-making.

3. **Reduction of Reliance on Traditional Financial Intermediaries**

By facilitating direct access to financial data, FiDA reduces consumers' dependence on traditional financial agents who may have conflicts of interest or offer inappropriate products. This shift enables consumers to utilize digital platforms that provide unbiased, data-driven recommendations, leading to more suitable financial product choices and improved financial outcomes.

4. **Enhancement of Competition and Market Efficiency**

FiDA fosters a more competitive financial services market by lowering entry barriers for new and innovative providers. This increased competition can lead to better-quality services, more competitive pricing, and a broader range of financial products tailored to diverse consumer needs. Additionally, it encourages traditional financial institutions to innovate and improve their offerings.

5. **Personalized Financial Management Applications**

A fintech startup leverages FiDA to access standardized financial data across various institutions. It develops an application that aggregates a user's financial information, providing real-time insights into spending patterns, savings progress, and investment performance. The app offers personalized advice without selling financial products, empowering users to make informed decisions and improve their financial well-being.

6. **Enhanced Credit Assessment Tools**

With access to comprehensive financial data, a company creates a platform that offers consumers a detailed analysis of their creditworthiness. This tool educates users on factors affecting their credit scores and provides actionable steps to enhance their credit profiles, facilitating better access to financial products without intermediary bias.

7. **Independent Financial Advisory Services**

An independent advisory firm utilizes FiDA to develop a service that analyses a client's financial data to provide tailored investment advice. By operating without affiliations to specific financial products, the firm ensures recommendations are aligned with the client's best interests, promoting trust and better investment outcomes.

The FiDA Regulation is poised to transform the EU's financial landscape by empowering consumers, stimulating innovation, reducing reliance on traditional intermediaries, and enhancing market competition. By facilitating secure and open access to financial data, FiDA supports the development of digital tools that enable individuals and households to effectively monitor and manage their financial health and well-being.

4.5 Recommendations for National-Level Policies

Target Vulnerable Populations

Mandatory Financial Literacy in Schools: Enforce curriculum requirements with evaluations tied to long-term outcomes.

- Implement localized campaigns for women, low-income groups, and the elderly.
- Use community networks and NGOs for outreach.

Provide Fiscal Incentives

- Public-Private Partnerships: Collaborate with fintech companies to deliver scalable, gamified tools targeting underserved populations.
- Introduce tax benefits for retail investors.
- Subsidize independent financial education initiatives.
- Provide level-playing field tax incentives -wise to cost-efficient Pan-European products like PEPP

Monitor and Evaluate

- Monitoring and Evaluation of financial education programmes:
- Establish clear metrics to measure the effectiveness of interventions dynamically (Kaiser and Lusardi, 2024).

4.5.1 Target Vulnerable Populations

Localized Campaigns for Women, Low-Income Groups, and the Elderly:

- Design gender-sensitive educational programs that address the specific financial challenges faced by women, such as wage gaps and caregiving responsibilities.
- Launch outreach programs in low-income neighbourhoods to provide workshops on budgeting, saving, and accessing digital financial tools.
- Create senior-friendly financial education campaigns that focus on retirement planning, fraud prevention, and navigating inflation.
- Use trusted community networks, such as local NGOs, religious organizations, and schools, to disseminate financial education and promote the use of independent personal finance tools.

4.5.2 Provide Fiscal Incentives

Tax Benefits for Retail Investors:

- Introduce incentives such as deductions or credits for individuals investing in diversified portfolios, encouraging market participation while reducing risk aversion.
- Offer tax-free savings accounts that promote long-term wealth accumulation, accessible even to low-income groups and sharing best practices and insights into successful tools for individual investors like the Swedish Investment Savings Account (that was introduced in Sweden in 2012 and makes it **easy and simple** to save in shares, funds and other securities)[8].Provide level-playing field for tax incentives and market access to cost-efficient Pan-European products like PEPP (OPSG, 2024).

Subsidized Financial Education Initiatives:

- Fund community-based financial literacy programs that partner with schools, local organizations, and fintech providers.

[8] https://www.aktiespararna.se/guider/isk

- Provide grants to startups and educational institutions for the development of localized digital financial literacy tools.

National Grants and Research Funding for Independent Personal Financial Management Tools

- Direct Grant Support for Tool Development:
    - Allocate research funding for fintech startups and academic institutions to develop apps and platforms that provide:
        - Real-time financial health monitoring (e.g., budgeting, saving, and investment tracking).
        - Personalized, unbiased financial advice using artificial intelligence and data analytics.
    - Ensure these tools are designed with a focus on accessibility for low-income and less digitally literate users.
- Incentivizing Independent Platforms:
    - Create grants that prioritize solutions not tied to financial agents or institutions, ensuring unbiased recommendations.
    - Support projects integrating gamification to make financial education engaging and relatable, especially for younger demographics.
- Collaboration with Public and Private Entities:
    - Partner with local governments, educational institutions, and fintech companies to develop and distribute tools that are aligned with the national curriculum and FiDA standards.
    - Offer tax relief to companies contributing to open-source platforms for financial education and management.
- Promotion of Open-Access Resources:
    - Encourage the creation of publicly funded free-to-access financial literacy resources integrated into these tools.
    - Provide funding for research on the impact of these tools on financial behaviours and outcomes to continually refine and improve their effectiveness.

4.5.3 Monitor and Evaluate

- **Develop a national dashboard** with **key performance indicators (KPIs)** to measure:

    - Financial literacy improvements (pre- and post-program assessments).
    - Increases in retail investor participation among targeted demographics.
    - Reduction in financial vulnerability through metrics like debt levels and savings rates.
- Require **periodic evaluations of programs** and public reporting to ensure accountability and transparency.

National governments have a critical role in operationalizing the potential of EU-level policies like FiDA by tailoring them to local needs, mitigating risks of exploitation, and investing in independent, accessible tools for financial education and management. By combining fiscal incentives, regulatory oversight, and grant support for innovation, governments can empower individuals and households to take control of their financial well-being and foster a culture of financial inclusivity and resilience.

5 Conclusion

The conceptual paper on enhancing financial health and wealth in the European Union synthesizes critical findings from financial education, financial advice, and digital applications, highlighting their synergies and unique contributions to improving financial well-being and market participation.

Financial education emerges as a cornerstone for empowering individuals to make informed decisions, fostering long-term resilience, and mitigating financial stress. Evidence from studies underscores its positive impact on financial literacy and behaviour, with significant improvements observed in budgeting, saving, and credit management. However, challenges persist, including knowledge decay, limited reach to vulnerable populations, and a lack of contextual relevance in program designs. The integration of digital tools into education frameworks, such as gamified applications, enhances engagement and ensures scalability to underserved demographics.

Financial advice complements education by bridging the gap between knowledge and actionable decisions. Independent personalized advice in the best interest of the client significantly improves financial behaviours, such as portfolio diversification and retirement planning, while reducing financial anxiety. However, access barriers, costs, and potential conflicts of interest, resulting in mistrust, hinder widespread utilization. Addressing these barriers through regulatory oversight, transparent fee structures, and the promotion of independent advisory services is essential. The potential of AI-driven platforms and fintech innovations to democratize advisory services also represents a promising avenue for increasing inclusivity and trust.

Digital financial tools and applications represent a transformative approach to financial literacy and behaviour. Gamified platforms and AI-powered tools enhance user engagement and provide real-time, actionable insights, empowering individuals to monitor and improve their financial health. However, the ethical implications of gamification and the digital divide remain pressing concerns. Ensuring equitable access to technology and embedding safeguards against predatory practices are critical to maximizing the benefits of these innovations.

The synergies among these three pillars—education, advice, and digital tools—are evident. Financial literacy programs provide foundational knowledge, which is reinforced and contextualized by independent personalized advice in the best interest of the client and translated into behaviour through digital applications. These components collectively address systemic challenges, such as low literacy levels, demographic disparities, and accessibility barriers, creating a comprehensive framework for fostering financial resilience and inclusion.

Policy recommendations derived from this synthesis emphasize the importance of integrating these pillars into cohesive strategies. At the EU level, standardized financial literacy frameworks, incentivized fintech innovation, and harmonized advisory standards to deliver high quality advice in the best interest of the client are key to addressing regional disparities and promoting inclusivity. At the national level, localized campaigns targeting vulnerable populations, fiscal incentives for market participation, and grants for independent financial tools can further enhance outcomes.

In conclusion, the findings demonstrate the necessity of a holistic, multi-faceted approach to improving financial well-being in the EU. By leveraging education, independent good quality advice, and technology, policymakers and stakeholders can build a resilient and inclusive financial ecosystem, fostering greater participation in capital markets and ensuring sustainable wealth creation for individuals and households across diverse demographics.

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