Financial Literacy in the Digital Age: Understanding Generation Z's Learning Preferences and Content Consumption in Portugal

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Abstract

Financial literacy is essential for effective financial decision-making, yet Portugal ranks lowest among EU countries in financial literacy levels. This study investigates how Generation Z in Portugal consumes financial literacy content, analyzing preferred platforms, content formats, and the correlation between consumption frequency and financial knowledge. A quantitative survey (N=170) was conducted, assessing financial literacy levels, content engagement, and learning preferences. Findings reveal that social media and video platforms are the dominant sources of financial education, with Instagram, TikTok, and YouTube leading in usage. A strong preference for dynamic visual content, such as videos and infographics, correlates with higher financial literacy scores. Additionally, frequent engagement with financial literacy content positively influences financial knowledge, though excessive consumption exhibits diminishing returns. Regression analysis confirms significant relationships between content type, platform choice, and financial literacy. These results highlight the importance of tailoring financial education to Gen Z's digital consumption habits, emphasizing accessible, credible, and engaging content. The study provides insights for policymakers, educators, and financial institutions to develop effective strategies for improving financial literacy among younger generations. Future research should explore long-term behavioral impacts of digital financial education and platform-specific engagement strategies.

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Resumo

A literacia financeira é essencial para a tomada de decisões financeiras informadas, mas Portugal apresenta os níveis mais baixos entre os países da União Europeia. Este estudo investiga como a Geração Z em Portugal consome conteúdos de literacia financeira, analisando as plataformas preferidas, os formatos de conteúdo e a correlação entre a frequência de consumo e o nível de conhecimento financeiro. Foi realizado um inquérito quantitativo (N=170) para

avaliar os níveis de literacia financeira, o envolvimento com conteúdos e as preferências de aprendizagem. Os resultados revelam que as redes sociais e as plataformas de vídeo são as principais fontes de educação financeira, com destaque para Instagram, TikTok e YouTube. Existe uma forte preferência por conteúdos visuais dinâmicos, como vídeos e infográficos, que se correlacionam positivamente com pontuações mais altas em literacia financeira. Além disso, o consumo frequente de conteúdos financeiros influencia positivamente o conhecimento financeiro, embora o excesso de exposição demonstre retornos decrescentes. A análise de regressão confirma relações significativas entre tipo de conteúdo, escolha da plataforma e nível de literacia financeira. Estes resultados sublinham a necessidade de adaptar a educação financeira aos hábitos digitais da Geração Z, priorizando conteúdos acessíveis, credíveis e envolventes. O estudo oferece insights estratégicos para decisores políticos, educadores e instituições financeiras, promovendo abordagens mais eficazes para o aumento da literacia financeira entre os jovens. Pesquisas futuras devem explorar o impacto de longo prazo da educação financeira digital e estratégias de engajamento específicas para cada plataforma.

Título: Literacia Financeira na Era Digital: Compreender as Preferências de Aprendizagem e o Consumo de Conteúdo da Geração Z em Portugal
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Palavras-chave: Literacia financeira, Geração Z, redes sociais, consumo de conteúdo, educação digital, Portugal.

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1. Introduction:

The ability to manage personal finances effectively has become increasingly important in today's complex economic environment. Financial literacy provides individuals to make informed decisions, fostering financial stability, avoiding excessive debt, and planning for major life goals such as homeownership, retirement, and education Given the significant importance of this topic, the European Union aims to equip individuals across Europe with the necessary skills and attitudes to make informed financial decisions (European Commission, 2023). However, many European countries face challenges in effectively educating their populations on this matter. The July 2023 EU financial literacy report reveals a concerning finding: Portugal ranks lowest among all member states, with only 11% of its population achieving a high score in financial literacy, just behind Latvia (European Commission, 2023). This indicates a significant problem with the education level in financial literacy within Portugal, underscoring the urgent need for innovative approaches to effectively reach individuals with educational materials. Such low levels indicate a significant problem with the financial literacy education level in Portugal, underscoring the urgent need for innovative approaches to effectively reach individuals. This is where a Portuguese fin-tech company namely, Doutor Finanças comes into play. Doutor Finanças is dedicated to empowering individuals to make informed financial decisions, with a particular focus on Housing Credit, Consolidated Credit, and Insurance. To support this mission, they actively promote financial literacy through a range of free resources on their portal, including articles, savings tips, tools, and simulators. By offering these tools, Doutor Finanças aims to enhance financial awareness and improve decision-making for their users (Doutor Finanças, n.d.). In an increasingly digitalized world, the ways in which different age groups consume educational content are evolving rapidly. Financial literacy is no exception, as numerous platforms and formats offer diverse approaches to teaching financial concepts. The aim of this research is to investigate the preferred platforms and formats through which Generation Z engages with financial literacy, with the broader goal of assisting Doutor Finanças in expanding its reach and effectiveness. This thesis dives deep into Gen Z's preferences, identifying what makes financial edication attractive. Focusing on uncovering which formats and platforms are most favored, sheeding light on the drivers of their behaviors. Another key aspect is how design and communication style shape the effectiveness of financial literacy content, exploring how these elements influence engagement and retention. Together, these research questions aim to generate actionable insights that can inform more effective financial literacy strategies.

2. Foundations of Financial Literacy: Key Concepts and Emerging Trends

2.1 Defining Financial Literacy: Evolution and Contemporary Relevance

Financial literacy is a concept that has gained growing attention in academic and policy discussions. “In fact, financial literacy has become its own field of study and many countries have mandated financial literacy in school, beginning with elementary education” (Lusardi & Mitchell, 2023). At its core, financial literacy it is the ability to process economic information and make informed decisions about financial planning, wealth accumulation, debt, and pensions (Lusardi & Mitchell, 2007) Naturally, the definition of financial literacy has evolved over the years alongside the growing research and the increase in complexity in financial markets. Today, financial literacy is no longer just about having the knowledge and skills to process and use economic and financial information. Instead, it includes an individual’s attitudes, behaviors and awareness regarding economic and financial matters. A modern definition, likely regarded as the most prominent, was introduced by the OECD (Atkinson & Messy, 2012), where financial literacy is defined as a combination of awareness, knowledge, skill, attitude and behavior necessary to make sound financial decisions and ultimately achieve individual financial wellbeing (Atkinson & Messy, 2012) (OECD, 2020). Beyond individual decision-making, financial literacy also influences broader financial outcomes, including retirement planning, financial inclusion, return on wealth, and risk diversification (Zaimovic et al., 2023). Research further supports the notion that financial literacy is closely linked to financial behaviors and overall financial well-being, emphasizing its role in shaping responsible financial decision-making and long-term financial security (Angrisani et al., 2023). This evolution of the financial literacy definition reflects its growing significance in today’s dynamic economic landscape. Globalization, inflation, and the rise of new technologies like digital banking and crypto assets have made financial literacy a global priority as individuals are navigating complex financial markets, avoiding scams, and managing personal finances (Kaiser & Lusardi, 2024).

By 2020, more than 70 countries and economies were developing or implementing national financial literacy strategies, establishing it as a long-term policy priority to drive financial inclusion, strengthen market oversight, and enhance regulatory frameworks (OECD, 2020). In July 2021, at the G20 Finance Ministers and Central Bank Governors Meeting, financial literacy was recognized as a fundamental life skill for the 21st century, empowering individuals to enhance personal and societal well-being, advance financial inclusion, and strengthen consumer protection (G20 Finance Ministers and Central Bank Governors, 2021). Numerous previous research suggests a positive impact of

financial literacy on a variety of economic decisions and outcomes and financial well-being (e.g., Bai, 2023; Lusardi & Mitchell, 2011, 2014; Sajid et al., 2024). Even though a lot of the previous research highlights the positive impact of financial literacy on individual and societal well-being, there is growing evidence that traditional financial literacy programs, particularly "one-size-fits-all" approaches, have limited effectiveness. For example, research by Fernandes et al. (2014) highlights the minimal impact of such standardized programs on financial behaviors. To tackle these challenges and maximize the reach and engagement of financial literacy initiatives among Gen Z, this thesis focuses on identifying the most effective strategies to capture their interest and encourage active participation. It emphasizes the importance of adapting content to their preferences and learning behaviors while leveraging innovative digital approaches to ensure financial education is not only accessible but also engaging, relevant, and widely consumed.

2.2 Assessing Financial Literacy: Methods, Metrics, and Challenges

Attempts to measure financial literacy in the population have long been a part of academia. The survey of consumer finances in the year 1947 carried out by the Federal Reserve of the USA was, to my knowledge, the first study which touched the subject. At that time, the term financial literacy had not yet been introduced, and the primary focus of the Survey of Consumer Finances was not financial literacy but rather the large-scale documentation of household's financial behavior, income, assets, and debt. Nevertheless, numerous researchers have built their studies on the 1947 Survey of Consumer Finances or its annual successors, establishing it as a foundational resource for subsequent financial research (Hanna et al., 2018). Arthur B. Kennickell, often referred to as Mr. Survey of Consumer Finances, emphasizes the importance of this survey for understanding the financial characteristics of households (Kennickell et al., 1996).

However, the academic study of financial literacy gained significant attention beginning in the early 2000s (Lusardi & Mitchell, 2011, 2023). Early studies focused often on observational measurement methods (e.g., Lusardi & Mitchell, 2007; van Rooij et al., 2011). During this period, Lusardi and Mitchell (2008) formulated three fundamental questions to assess financial literacy. These questions, each addressing a distinct concept – compound interest, risk diversification, and inflation – later became widely recognized as the "Big Three" (Lusardi & Mitchell, 2023). Due to the increased attention the field received in the 2000s and the diverse range of measurement methods employed in various studies, it is difficult to determine which approaches were introduced first and which emerged later. That said, this chronology is not of primary importance. What is important is that research on

financial literacy predominantly relies on three measurement approaches: objective, subjective, and observational. Many studies, however, combine these measurement methods to provide a more comprehensive analysis (e.g., OECD, 2023). Although most studies employ either one or a combination of these measurement approaches, Huston (2010) argued that financial literacy lacks a consistent and standardized measurement tool. Yet, more recently, two studies have been identified as providing a more standardized approach to measuring financial literacy. First, the S&P Global FinLit Survey (Klapper et al., 2014), which is the world's largest measurement of financial literacy, conducted in more than 140 states. This S&P survey was designed to include one question for each of the four key financial literacy topics: Risk Diversification, Inflation, Numeracy (Interest), and Compound Interest. Notably, its structure closely aligns with the "Big Three" framework established by Lusardi and Mitchell (2008), covering the same core topics while incorporating an additional focus on Numeracy (Interest). Secondly, the OECD/INFE Toolkit for Measuring Financial Literacy and Financial Inclusion. It was first published in 2010, with various updates over the years (e.g., OECD 2018), and the most recent version released in 2022 (OECD 2022). To the best of my knowledge, it remains the most standardized measurement tool currently available. In comparison to other frameworks, the OECD/INFE Toolkit offers a comprehensive methodology for designing and conducting financial literacy surveys. It covers over 40 questions and integrates both objective and subjective assessment methods, including self-rated evaluations of financial knowledge. Moreover, the toolkit has undergone multiple revisions to incorporate emerging and relevant topics, ensuring its continued relevance in the evolving landscape of financial literacy research (OECD, 2022). Subjective assessments of financial literacy often exhibit weak correlations with objective measurements. Nevertheless, they play a crucial role in evaluating financial literacy, as they capture individuals' self-perception and confidence in their financial knowledge, which can influence financial behavior and decision-making (Rieger, 2020). Although the OECD/INFE Toolkit offers a significantly more complete framework compared to the other measurement approaches discussed, it still places considerable importance on the "Big Three" financial literacy questions developed by Lusardi and Mitchell (2008).

The third measurement approach, the observational measurement approach, is a research method used to assess behaviors, skills, or competencies by systematically observing individuals in real-world or controlled settings, rather than relying on self-reports or direct questioning (e.g., Calvet et al., 2009; Choi et al., 2001).

2.3 Learning Preferences and Financial Education: Theoretical Perspectives

In education and psychology, the concept of learning styles, which suggests that individuals learn best when information is presented in their preferred format, has sparked both interest and controversy. While models like VARK categorize learners as visual, auditory, reading/writing, or kinesthetic (Fleming & Mills, 1992), empirical evidence supporting these distinctions remains limited (Kirschner, 2017; Newton, 2015; Pashler et al., 2008). Nonetheless, the way information is presented undeniably influences engagement and perception (Lackmann et al., 2021; Rogha et al., 2024; Stepien-Bernabe et al., 2019), particularly in the digital era. As financial literacy is widely recognized as a key aspect of navigating adulthood (Kaiser & Lusardi, 2024), understanding how Gen Z engages with financial content across diverse platforms provides meaningful insights into their learning behaviors.

Both formal and informal learning play a role in improving financial literacy, each contributing in distinct ways. Formal education, such as school curricula and courses, offers a structured approach to financial concepts, ensuring learners build a solid foundation (Chen et al., 2022; Hastings et al., 2013). Informal learning, on the other hand, happens organically through experiences like discussing finances with family (Webley & Nyhus, 2006) or engaging with financial content on social media and other online platforms (Cao et al., 2020; Shvaher et al., 2021). Financial literacy is also shaped by broader social influences, including interactions with peers, family discussions, and media exposure, which play a crucial role in how individuals acquire financial knowledge (Rehman & Mia, 2024) Since financial literacy needs vary across age groups and life stages, long-term efforts are required to provide tailored educational opportunities, from school programs for young learners to workplace and community initiatives for adults (Yakoboski et al., 2024). While both approaches strengthen financial knowledge and skills (Kaiser & Lusardi, 2024), research suggests that combining them leads to even better outcomes. Informal learning reinforces formal instruction by making financial concepts more practical and relevant, which helps improve real-world application and long-term retention (Hanson & Olson, 2018; Kim et al., 2021).

2.4 The Digital Transformation of Financial Education: Opportunities and Challenges

The digital revolution has fundamentally changed the way people live and interact, with continuous developments driving further transformation. Today, humanity can easily access enormous amounts of information while also being able to create, process, and store large amounts of data efficiently (Hoehe & Thibaut, 2020). Therefore, digital media, particularly the internet, are increasingly shaping

modern life and influencing how people connect, work, and access information (Korte, 2020). Digital technologies have also transformed education, reshaping teaching methods and redefining how knowledge is delivered and accessed (Timotheou et al., 2023). Consequently, information and communication technologies, especially social media, are becoming increasingly influential in education by enhancing learning opportunities and encouraging new forms of collaboration, ultimately contributing to the ongoing transformation of education (Arcila-Calderón & Blanco-Herrero, 2021).

In an era of widespread digitalization, where 61.4% of the global population actively engages with social media (Marzo et al., 2024), these platforms have become central to communication, information exchange, and everyday interactions. With the rapid evolution of digital finance, financial literacy is increasingly shaped by technological advancements, highlighting the growing need for digital financial literacy (Zaimovic et al., 2023). Kaplan and Haenlein (2010) define social media as a group of internet-based applications that build on the ideological and technological foundations of Web 2.0, allowing the creation and exchange of user-generated content. The rise of social media has not only transformed entertainment and marketing but also opened new pathways for learning and knowledge sharing (Sivakumar et al., 2023). Overall, social media has a positive impact on student learning (Perez et al., 2023), a topic that has been extensively explored in existing research (e.g., Gikas & Grant, 2013; Junco et al., 2011; Manca, 2020; Manca & Ranieri, 2016). Moreover, social networks support not only formal education but also informal learning, such as engaging in discussions beyond the classroom (Kaplan & Haenlein, 2016) or acquiring useful knowledge beyond an academic incentive (Ansari & Khan, 2020).

2.5 Generation Z and Financial Literacy: A Digital-First Perspective

Gen Z, also known as Generation Z, iGen or Zoomers, are individuals born in the late 1990s to early 2000s, with exact time frames varying across sources. However, Generation Z is more accurately defined by its distinction as the first generation to grow up with the internet, rather than by pinpointing exact birth years. This has earned them the label "digital natives," as they are the first generation to have the internet deeply embedded in their everyday lives from a young age (Cohen Zilka, 2023). They are spending significant time online for work, shopping, dating, and socializing, are highly engaged with social media and tailor their online presence carefully. Known for their idealism, Gen Z values inclusivity, sustainability, and social equity, demanding accountability and the creation of opportunities for diverse and underrepresented groups (McKinsey, 2024). However, despite their

digital fluency, young people often lack fundamental financial knowledge, making financial literacy an essential yet underdeveloped skill in this generation (Lusardi & Messy, 2023). Recent research highlights that financial literacy remains critically low among younger generations, particularly Gen Z and millennials (Hasler et al., 2023).

3. Research Methodology

3.1 Survey Design & Methodological Approach

This study employs a quantitative, cross-sectional survey design to analyze how Generation Z in Portugal engages with financial literacy content. Concretely, it investigates where they acquire financial knowledge, what their preferred content formats are, and the relationship between content consumption and financial literacy levels. The design directly aligns with the study's research objectives, by identifying key factors that influence Gen Z's financial literacy engagement, knowledge acquisition and retention. A survey was selected for its efficiency in collecting structured responses within a mostly Portguese participant pool while allowing for statistical analysis of behavioral patterns.

The survey consists of four sections: financial literacy habits (including content consumption frequency), platform and content preferences, financial literacy knowledge assessment (using an objective scoring method), and demographics to enable subgroup analysis and control variable adjustments (Appendix 20).

To measure financial literacy, the Big Three financial literacy questions (Q6-Q8) developed by Lusardi and Mitchell (2008, 2023) are used, assessing compound interest, inflation, and risk diversification. As discussed earlier, these questions are widely validated as reliable indicators of financial knowledge and frequently used in large-scale assessments (OECD, 2022, Klapper et al., 2014). To improve accessibility, text-based questions were prioritized to accommodate individuals with math anxiety, ensuring a more representative sample (Douglas & LeFevre, 2018)

In addition to objective measures, the survey includes a self-assessment question (Q5) to capture confidence in financial knowledge. Research suggests that subjective financial literacy often weakly correlates with actual knowledge, with many individuals overestimating their competence (Rieger, 2020; OECD, 2022). By incorporating this measure it becomes possible to identify overconfidence bias, a well-documented phenomenon in financial decision-making (Fernandes et al., 2014).

The categorization of content formats (Q11) follows the VARK learning model (Fleming & Mills, 1992), which classifies learners as visual, auditory, reading/writing, or kinesthetic. Given Gen Z's strong preference for digital and multimedia content, an additional category for dynamic visual content (e.g., videos, animations) was incorporated, supported by research on engagement and retention (Mayer & Moreno, 2002). Similarly, social media platform preferences (Q9-Q10) were included based on evidence that Gen Z relies on social media for financial education (Cao et al., 2020; Shvaher et al., 2021) and that such platforms facilitate collaborative learning and engagement beyond traditional academic settings (Ansari & Khan, 2020; Arcila-Calderón & Blanco-Herrero, 2021).

To ensure data integrity, multiple quality control measures were incorporated. An attention check question (Q13) helped identify inattentive responses, while follow-up questions (Q4, Q10) provided deeper insights into platform choices and engagement. Participation in the survey was voluntary and anonymous. Respondents were informed about the study's objectives, data confidentiality, and their right to withdraw at any time. No personally identifiable information was collected, and all responses were securely stored and analyzed collectively.

3.2 Research Hypotheses: Understanding Gen Z's Financial Literacy Behavior

The Role of Social Media in Financial Literacy Education

Social media has become a widely used tool for both formal and informal learning, allowing individuals to acquire knowledge beyond traditional academic settings (Ansari & Khan, 2020; Kaplan & Haenlein, 2016). With 61.4% of the global population actively engaging with social media (Marzo et al., 2024), these platforms provide an accessible and interactive space for education, including financial literacy.

Kaplan and Haenlein (2010) define social media as a set of internet-based applications that facilitate the creation and exchange of user-generated content, making it a natural medium for sharing financial knowledge. Research highlights that Gen Z increasingly relies on social media for financial learning (Cao et al., 2020; Shvaher et al., 2021), reflecting a shift away from traditional financial education sources. Additionally, social media is found to enhance collaborative learning and knowledge exchange beyond the classroom environment (Gikas & Grant, 2013; Manca, 2020; Manca & Ranieri, 2016). Research also suggests that social media facilitates engagement and participation in learning

processes, making it a valuable tool for educational content dissemination (Arcila-Calderón & Blanco-Herrero, 2021; Sivakumar et al., 2023).

Given the growing influence of digital platforms in education and financial decision-making, understanding how they shape financial literacy behaviors among younger generations provides valuable insights.

H1: Social media serves as a primary source of financial information for Gen Z.

Content Format and Financial Literacy Engagement: A Behavioral Analysis

The format in which financial literacy content is presented significantly influences engagement, comprehension, and ultimately, financial knowledge acquisition. While learning styles remain a debated topic, empirical research supports the idea that content format impacts retention and understanding (Lackmann et al., 2021; Rogha et al., 2024; Stepien-Bernabe et al., 2019). Studies suggest that visually dynamic and interactive content, such as videos, infographics, and animations, can enhance learning experiences by increasing engagement, cognitive processing, and recall (Rehman & Mia, 2024; Timotheou et al., 2023). This aligns with broader research highlighting how digital technologies have reshaped knowledge delivery and access, fostering new learning opportunities through interactive media (Timotheou et al., 2023).

Gen Z, often characterized as digital natives (Cohen Zilka, 2023), has a strong preference for visual and interactive digital media. Given their continuous exposure to short-form video content and other visually engaging formats on platforms such as TikTok, Instagram, and YouTube, it is reasonable to assume that financial literacy content that aligns with these preferences may yield better learning outcomes. Research on digital education highlights the effectiveness of multimedia-based approaches in improving knowledge retention, especially when compared to traditional text-based learning (Perez et al., 2023). The rise of social media has opened new pathways for informal learning, enabling Gen Z to absorb financial knowledge through dynamic, user-driven content (Arcila-Calderón & Blanco-Herrero, 2021). Social media platforms have been shown to enhance student learning experiences (Perez et al., 2023) and serve as a medium for knowledge exchange beyond traditional academic settings (Ansari & Khan, 2020; Kaplan & Haenlein, 2016).

With prior research establishing a positive correlation between content engagement and knowledge acquisition (Arcila-Calderón & Blanco-Herrero, 2021; Sivakumar et al., 2023), investigating whether a preference for dynamic visual financial literacy content aligns with higher financial literacy scores becomes pertinent.

H2: The preference for dynamic visual financial literacy content is positively associated with higher financial literacy scores.

Financial Content Consumption and Knowledge Acquisition: Examining the Correlation

Financial literacy plays a key role in enabling informed financial decision-making and supporting economic well-being (Lusardi & Mitchell, 2007, 2014, 2023). Despite efforts to improve financial education, literacy levels remain low, highlighting the need for more effective and accessible learning approaches (OECD, 2020; European Commission, 2023).

Research indicates that higher financial literacy is linked to improved financial behaviors and well-being (Bai, 2023; Lusardi & Mitchell, 2014; Sajid et al., 2024). However, traditional financial education programs often show limited long-term impact (Fernandes et al., 2014). In contrast, frequent exposure to financial literacy content through various channels has been associated with better financial knowledge (OECD, 2022).

Given the connection between financial literacy engagement and knowledge acquisition, exploring whether frequent exposure to financial literacy content contributes to higher financial literacy scores offers valuable insights.

H3: Frequent consumption of financial literacy content is positively correlated with higher financial literacy scores.

3.3 Variable Definitions & Measurement

Understanding how Generation Z engages with financial literacy content requires analysing where they seek financial information, how they prefer to learn, and whether their consumption habits impact their financial knowledge. Hence, this study focuses on three key aspects: the role of social media as a primary information source, preferences for different content formats, and the relationship

between content consumption frequency and financial literacy levels. The justification for these variables has been discussed in "Research Design & Survey Development". To explore these dynamics, the study defines and measures the following key variables:

Table 1 Key Variables (Source Appendix 20)

Variable	Question(s) Used	Measurement Scale
Preferred Source of Financial Literacy	Q9. Preferred way of acquiring financial knowledge	Categorial (multiple choice)
Content Format Preference	Q11. What form of financial literacy content do you find most engaging or useful?	Categorical (multiple choice)
Frequency of Financial Literacy Consumption	Q2. How often do you consume financial literacy content?	5-Point Likert Scale (Daily - Never)
Financial Literacy Score	Q6, Q7, Q8. Big Three financial literacy questions	Continuous (0-3 scale, sum of correct answers)

Preferred Source of Financial Literacy

refers to the platforms through which individuals acquire financial knowledge. Respondents could select from a range of sources, including social media, video platforms, blogs, podcasts, financial news, institutional websites, books, seminars, university courses, and personal networks. Understanding these preferences provides insights into where financial education is consumed and which platforms exert the greatest influence.

Content Format Preference

reflects the types of financial literacy materials respondents consider most engaging and useful. The categories are grounded in the VARK learning model, with additional clategories for dynamic visual content (e.g., videos, animations, interactive media) and collaborative learning, aligning with contemporary digital learning trends. Identifying content preferences enables a deeper understanding of how financial knowledge is most effectively communicated to Gen Z.

Frequency of Financial Literacy Consumption

measures engagement with financial education materials. Responses are recorded on a 5-point Likert scale, ranging from daily consumption to no engagement. This variable is critical for assessing the extent to which financial literacy exposure correlates with financial knowledge levels.

Financial Literacy Score

serves as an objective measure of financial knowledge, derived from three fundamental financial literacy questions adapted from Lusardi and Mitchell's Big Three financial literacy framework. Each correct response is assigned one point, yielding a score between 0 and 3. The questions assess comprehension of compound interest, inflation, and risk diversification, which are considered fundamental to financial decision-making.

Control Variables

To ensure that the analysis is not influenced by external factors, the study controls for self-perceived financial knowledge, demographic characteristics, and platform usage. Self-perceived financial knowledge is measured on a 5-point Likert scale, allowing for a comparison between confidence in financial literacy and actual knowledge levels.

Demographic factors such as age, gender, education, employment status, and field of study help identify differences across population subgroups. Additionally, platform usage, measured by time spent on social media per day, accounts for varying levels of online engagement, ensuring that differences in financial literacy are not simply a reflection of screen time.

3.4 Sampling, Data Collection & Analytical Approach

The sample size is 170 participants, with a primary focus on Portugal. A convenience sampling method was employed, leveraging university networks in Portugal, Instagram, and a startup partnership for distribution. Data collection was conducted via Qualtrics. While a larger sample would improve generalizability, this size was selected based on feasibility within the scope of a Master's thesis and is sufficient for identifying meaningful trends within the target population.

To ensure data quality, incomplete responses and those failing the control question were excluded. This approach enhances the validity and reliability of the dataset, ensuring that only engaged and attentive participants contribute to the analysis.

Given the quantitative nature of this research, the dataset is analyzed using two complementary methods to assess financial literacy consumption patterns and their relationship with financial knowledge. First, descriptive statistics and frequency analysis (e.g., frequencies, means) are applied to summarize trends in Gen Z's financial literacy behaviors, platform usage, and content preferences.

To examine the relationships between financial literacy content consumption and financial literacy scores, linear regression analysis is employed as the primary method. Additionally, hypothesis testing is conducted to evaluate the statistical significance of observed patterns, providing a robust examination of the proposed hypotheses. The following chapter details the statistical procedures and results in depth.

4. Empirical Findings: Financial Literacy Preferences and Trends Among Gen Z

In this study, I analyze the financial literacy of Generation Z in Portugal, exploring their preferred platforms for financial information and the content formats they engage with most.

Table 2: Nationality (Source Data)

Nationality		
Descriptice Statistics		
Nationality	**N**	**%**
Portugal	159	93.5
Austria	3	1.8
Germany	2	1.2
France	2	1.2
Italy	1	0.6
Spain	1	0.5
Other	2	1.2
Total	**170**	**100**

The sample consists of 170 valid answers, with an overwhelming majority being Portuguese (93.5%), ensuring that the findings primarily reflect the financial literacy landscape within Portugal (Table 3). A small number of respondents come from Austria (1.8%), France (1.2%), Germany (1.2%), Italy (0.6%), and Spain (0.6%), providing a limited but valuable international perspective.

Table 3: Age (Source: Data)

Age		
Descriptice Statistics		
Age	**N**	**%**
18-22	46	27.1
23-27	78	45.9
28-35	23	13.5
Older than 35	23	13.5
Total	**170**	**100**

In terms of age distribution, the sample is largely composed of Gen Z individuals, with 45.9% aged 23-27 and 27.1% aged 18-22, together making up nearly three-quarters and 124 respondents (Table 2). Additionally, 13.5% are aged 28-35, and another 13.5% are older than 35, forming a control group that allows for comparative insights into how financial literacy evolves beyond Gen Z.

The sample is also gender-diverse, with 52.4% identifying as female, 47.1% as male, and 0.5% as non-binary (Appendix 1). This balance ensures a well-rounded perspective on potential gender differences in financial literacy and behavior.

Beyond demographic characteristics, participants exhibit varied educational and professional backgrounds. The majority have attained higher education, with 46.5% holding an undergraduate degree and 28.2% a postgraduate qualification, while 18.8% completed high school. Employment is widespread, with 57.1% working full-time and a significant portion of students, many of whom combine studies with part-time work. These aspects are essential, as both education and employment status are closely linked to financial literacy levels and financial decision-making.

A detailed demographic breakdown, including education, employment, and areas of expertise, can be found in Appendix 1.

For the purposes of this study, only respondents within the 18-22 and 23-27 age groups are included in further analyses, ensuring that all findings directly reflect the financial literacy behaviors and preferences of Gen Z. Resulting in a sample size of N=124.

4.1 Sample Characteristics and Descriptive Analysis

Understanding the distribution of key variables allows for a deeper contextualization of the findings of this study. This section analyses financial literacy scores, content format preferences, and social media usage among Gen Z in Portugal, providing a visual representation of their distribution. By identifying patterns and potential variations, these insights lay the foundation for the subsequent correlation and regression analyses.

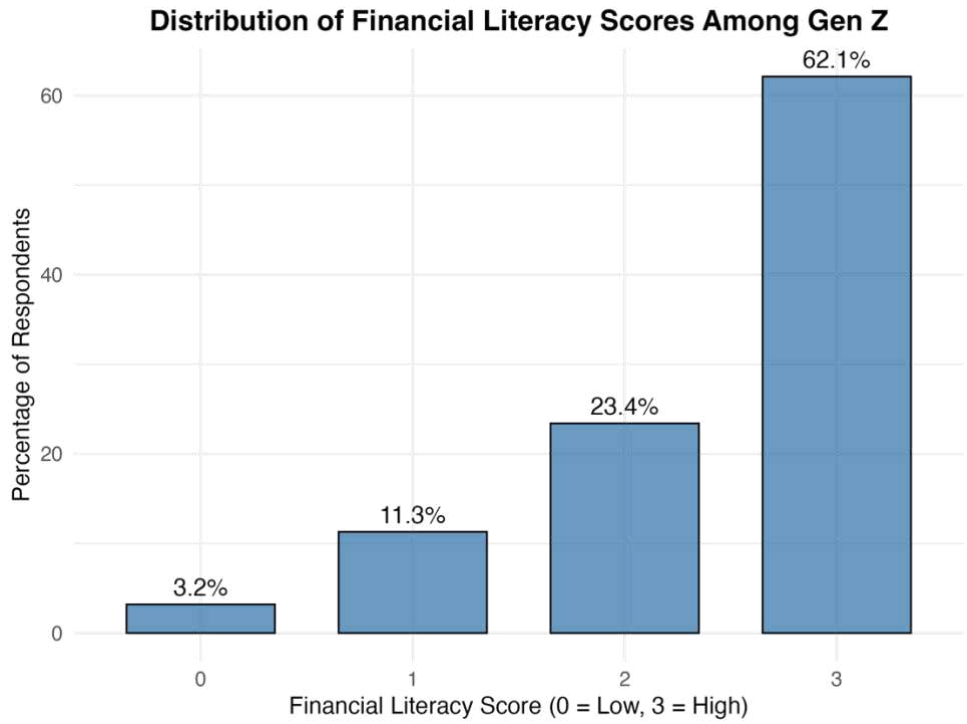


Figure 1: Distribution of Financial Literacy Scores among Gen Z (Source Data)x

Financial literacy among Gen Z participants is predominantly moderate to high, with over 60% scoring 3 and another 23% respondents scoring a 2. Lower scores are far less common, as only 11% participants scored 1, and just 3% received the lowest score of 0. This right-skewed pattern suggests that most respondents possess a solid foundation in financial literacy, though a small subset lags behind.

These findings align with research highlighting Gen Z's increasing exposure to financial education, particularly through digital platforms. The distribution of scores is visually represented in Figure 1, reinforcing the concentration of higher financial literacy levels within the sample.

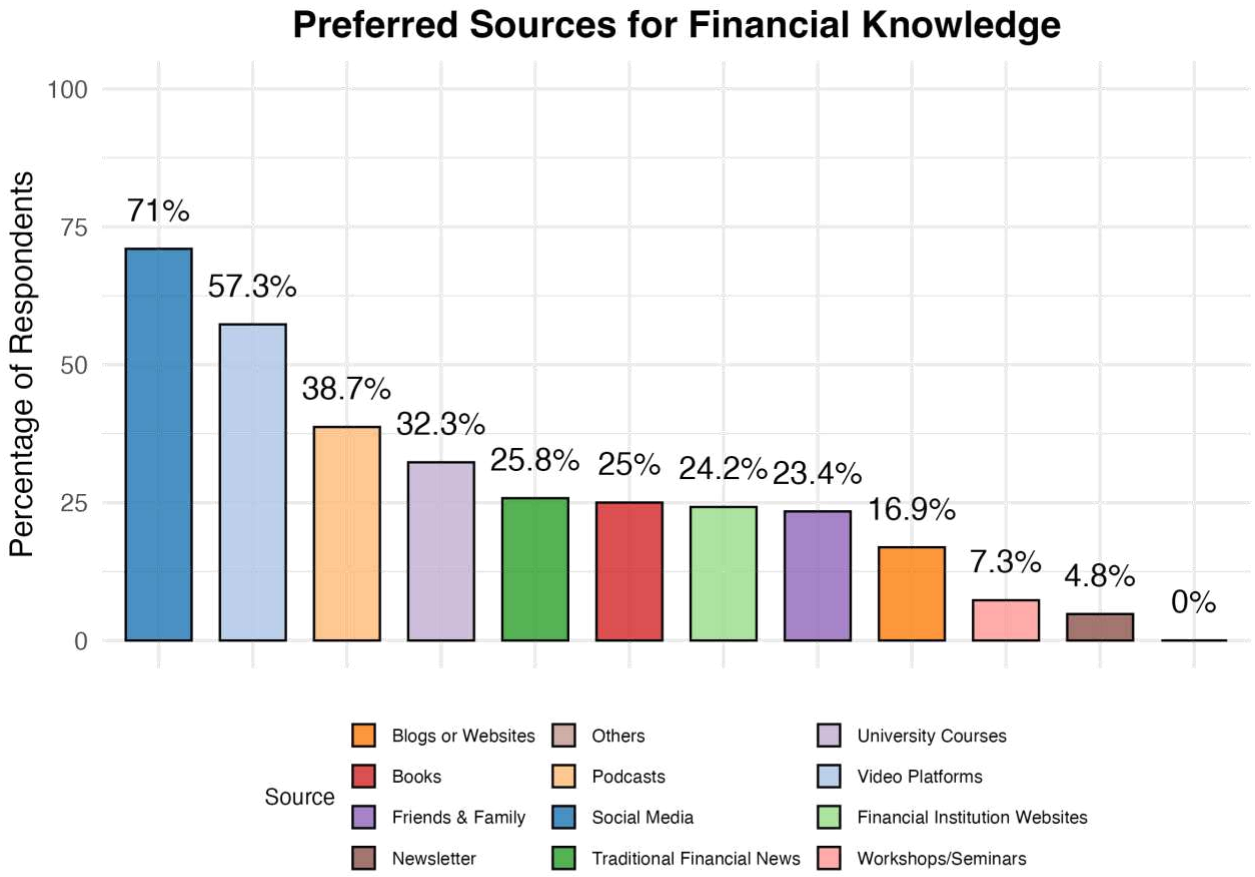


Figure 2: Peferred Sources of Financial Literacy (Source Data)x

The findings reveal a clear preference for digital sources when it comes to acquiring financial knowledge. Social media (71%) is the most frequently used platform, followed closely by video platforms (57%) and podcasts (39%). These results highlight Gen Z's tendency to engage with dynamic, easily digestible content over traditional financial education methods.

However, more conventional sources still hold relevance, traditional financial news (26%), books (25%), and financial institution websites (24%) remain important, albeit less dominant. The lower reliance on newsletters (5%) and workshops/seminars (7%) suggests that Gen Z prefers on-demand, self-paced learning over structured formats.

This distribution underscores a shifting paradigm in financial education, where interactive, visually appealing content takes precedence over text-heavy and static materials (Figure 2). Notably, among those who use social media for financial literacy consumption, Instagram emerges as the dominant source for financial content (83%), followed by TikTok (50%) and LinkedIn (37.5%), further reinforcing the importance of visual and interactive learning experiences (Appendix 2).

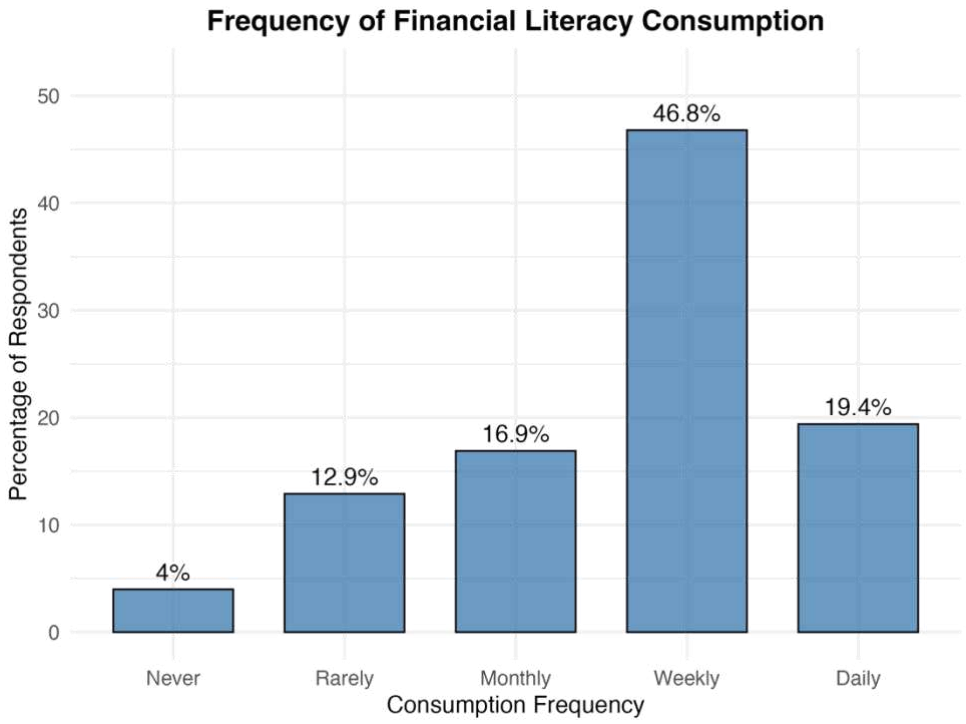


Figure 3: Frequency of Financial Literacy Consumption (Source: Data)

The results indicate that weekly financial literacy consumption is the most common, with 47% respondents engaging at this frequency. Daily engagement follows (19%), while monthly (17%) and rarely (13%) are less frequent. Very few participants (4%) report never consuming financial literacy content. This suggests that most Gen Z respondents engage with financial literacy on a regular basis. (Figure 3).

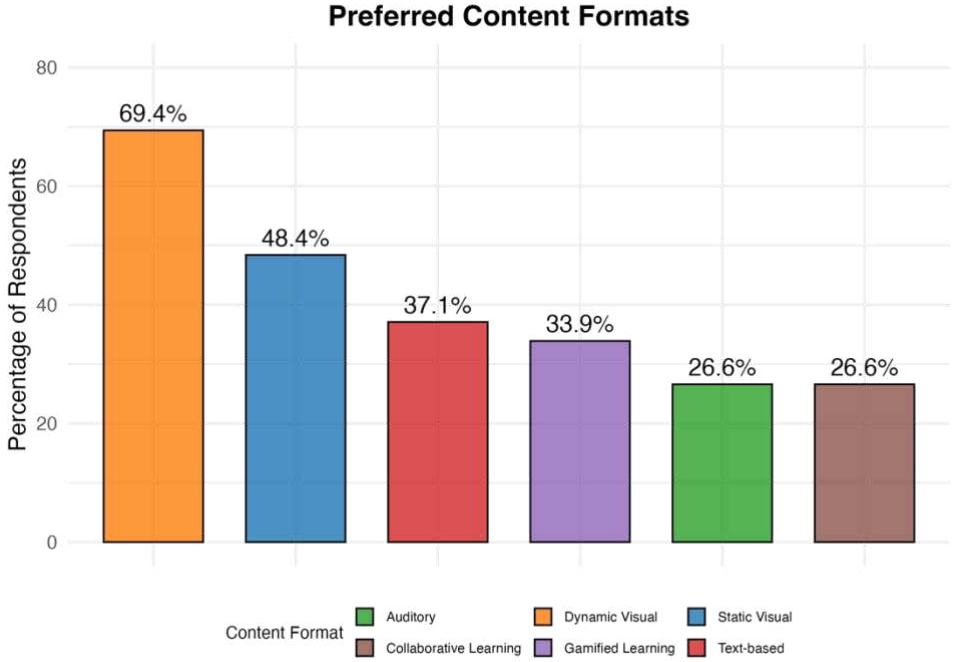


Figure 4: Preferred Content Formats (Source: Data)

The results indicate a clear preference for dynamic and visually engaging content formats in financial literacy. Dynamic visual content (videos) is the most favored (69%), followed by static visual formats like infographics and charts (48%). Text-based content (37%) and gamified learning (34%) also attract considerable interest, suggesting that interactive and structured formats remain relevant.

In contrast, collaborative learning and auditory formats like podcasts, both 27%, are the least preferred, indicating that Gen Z may favor self-paced, visually immersive learning experiences over discussion-based or purely audio-driven methods (Figure 4).

4.2 Exploring Relationships Between Financial Literacy, Consumption, and Content Preferences

Understanding the relationships between key variables provides a foundation for unraveling the factors that shape financial literacy among Gen Z. While previous research has explored various drivers of financial knowledge, the interplay between content preferences, platform usage, financial literacy levels, and demographic factors, to my knowledge, remains an open question. To bridge this gap, this section employs correlation analysis to examine how these variables interact, shedding light on potential patterns that can inform targeted financial education strategies.

In this study, correlation analysis explores links between behaviors like frequent social media use or a preference for dynamic visual content and higher financial literacy scores, without implying causation. Additionally, demographic factors such as age, education, and financial literacy consumption frequency will be examined to determine whether they exhibit meaningful relationships with financial knowledge levels.

To quantify these relationships, Pearson's (1896) correlation coefficient (r) will be utilized, measuring the strength and direction of linear associations between variables. The coefficient ranges from -1 to +1, where:

- $r > 0$ indicates a positive correlation (e.g., higher financial literacy scores align with higher financial content consumption).
- $r < 0$ suggests a negative correlation (e.g., increased social media reliance is linked to lower financial literacy levels, if applicable).
- $r \approx 0$ signifies no meaningful relationship between variables.

For interpretability, correlations will be classified as:

- Weak (0.1–0.3)
- Moderate (0.3–0.5)
- Strong (>0.5)

By systematically assessing these relationships, the analysis aims to uncover underlying trends in financial literacy behaviors, offering valuable insights into how Gen Z learns, engages with, and internalizes financial knowledge. These findings will serve as a foundation for subsequent analyses, helping to refine strategies for effective financial education interventions tailored to this generation's consumption habits.

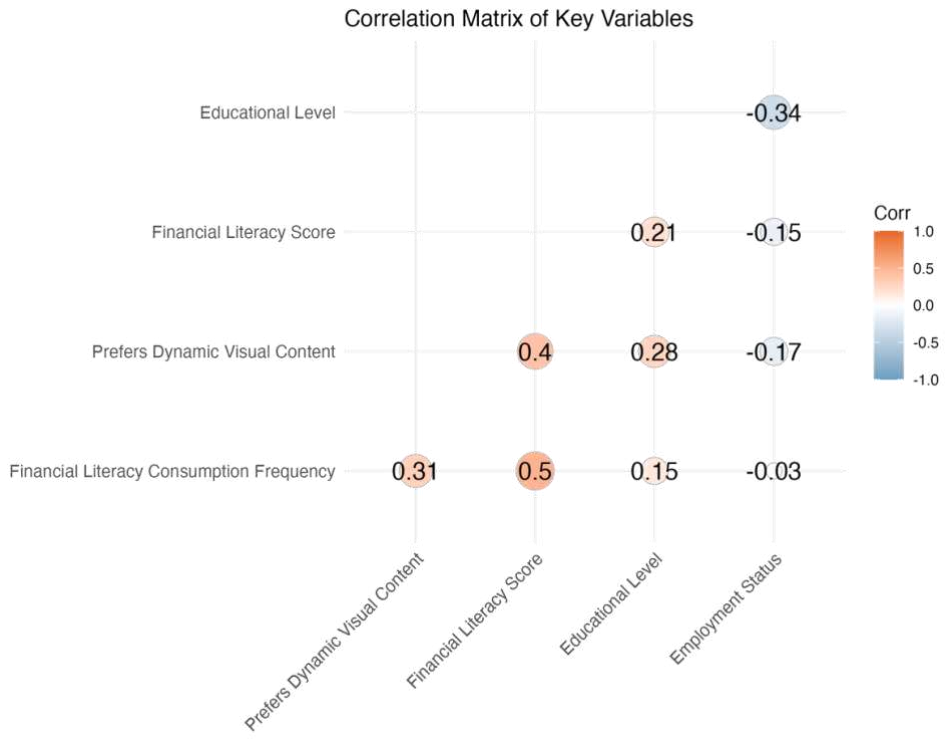


Figure 5: Correlation Matrix of Key Variables (Source: Data)

The correlation matrix reveals key relationships that support further analysis and confirm that the selected variables are meaningfully connected. While correlation does not establish causality, these findings provide a strong foundation for hypothesis testing.

Higher Financial Literacy Scores Are Linked to More Frequent Engagement

A moderate positive correlation between Financial Literacy Consumption Frequency and Financial Literacy Score (r = 0.50) suggests that individuals who engage with financial literacy content more

frequently tend to have higher financial literacy scores. This relationship supports H3, indicating that regular exposure to financial knowledge may contribute to financial competence.

Dynamic Visual Content May Encourage Learning

The Preference for Dynamic Visual Content correlates moderately with both Financial Literacy Score (r = 0.28) and Consumption Frequency (r = 0.31). This suggests that individuals who prefer videos and interactive formats tend to engage more frequently with financial literacy content and achieve higher financial literacy scores. These findings support H2, reinforcing the idea that engaging, visually driven financial education could be particularly effective for Gen Z.

Formal Education Alone Is Not a Strong Predictor of Financial Literacy

The negative correlation between Educational Level and Financial Literacy Score (r = -0.34) suggests that formal education does not necessarily equate to higher financial literacy. This highlights the importance of alternative learning approaches, such as self-directed digital financial education, which Gen Z actively pursues.

4.3 The Role of Social Media in Financial Education for Gen Z

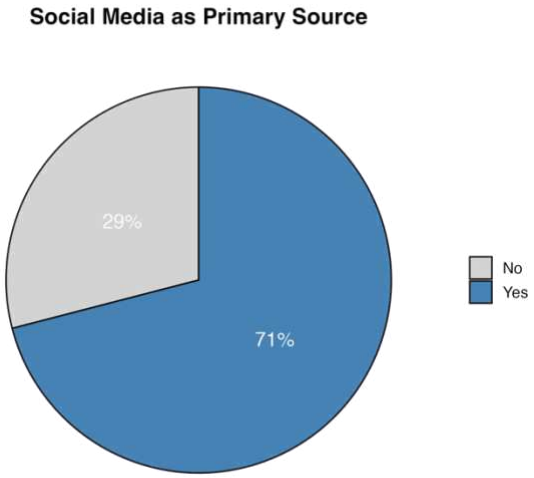


Figure 6: Social Media as Primary Source (Source: Data)

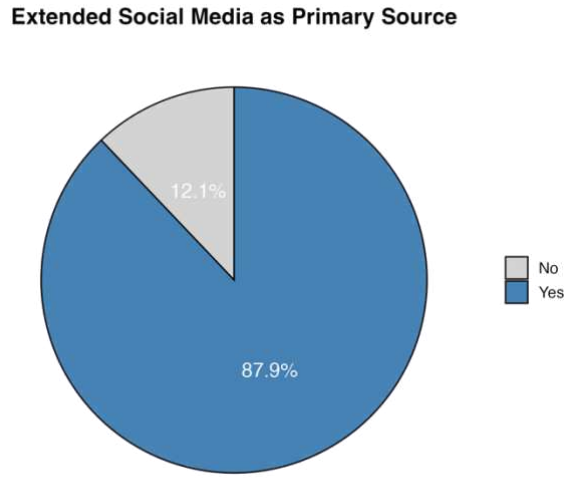


Figure7: Extended Social Media as Primary Source (Source: Data)

The analysis provides strong evidence that social media is a primary source of financial information for Gen Z. Descriptive statistics show that 71.0% of respondents turn to social media for financial knowledge (Appendix 3), making it the most frequently used source. Video platforms, such as

YouTube, follow closely at 57.3%, reinforcing the preference for dynamic, visually engaging content. Given that platforms like YouTube are often considered a form of social media, the true reliance on social-driven financial literacy may be even higher.

Pie chart analysis further highlights this trend. When considering social media alone, 71.0% of respondents report using it as their main source of financial literacy (Figure 7). However, when expanding the definition to include video platforms, this figure surges to 87.9% (Figure 6).

Statistical analysis supports these patterns. The Chi-square test comparing social media to all other sources yields $\chi^2 = 21.806$, $p < 0.001$ (Appendix 4), confirming a highly significant relationship. When video platforms are included, the association strengthens further ($\chi^2 = 71.258$, $p < 0.001$), reinforcing the idea that this preference is not random but indicative of a substantial behavioral shift.

These findings highlight a transformation in financial education, where Gen Z prioritizes accessibility, brevity, and interactive content over traditional resources. The strong reliance on social media and video platforms suggests that financial literacy initiatives targeting this demographic should embrace these digital mediums to maximize engagement and impact.

4.4 The Impact of Content Format on Financial Literacy Engagement

Hypothesis 2 proposed that a preference for dynamic visual financial literacy content is positively associated with higher financial literacy scores. The regression analysis confirms a statistically significant relationship between dynamic visual content preference and financial literacy, yet the effect size suggests that while visual learning contributes to financial literacy, it is not the most dominant predictor. The model demonstrates strong explanatory power, with an R^2 of 0.550, meaning that 55.0% of the variation in financial literacy scores is explained by the included predictors. After adjusting for the number of variables, the adjusted R^2 of 0.470 further supports the robustness of the model. Additionally, the standard error of 0.156 indicates a reasonable level of accuracy in the predictions (Appendix 5).

The findings show that individuals who prefer dynamic visual content, such as videos and animations, tend to have higher financial literacy scores ($\beta = 0.120$, $SE = 0.041$, $p < 0.01$). This supports the assumption that engaging and visually stimulating educational formats enhance financial

understanding. However, the moderate effect size suggests that dynamic visuals alone do not fully account for financial literacy levels, emphasizing the importance of additional factors.

A particularly noteworthy finding is that the use of video platforms, such as YouTube, is positively associated with financial literacy ($\beta = 0.130$, $p < 0.01$). Such a finding suggests that structured, long-form video content may provide a more effective means of financial education than other digital sources. Given that social media platforms are treated separately in this analysis, it is evident that simply engaging with financial content online is not enough, the type of platform matters (Appendix 7).

Interestingly, financial institutions remain a relevant source of financial literacy. Individuals who turn to banks, investment firms, and other financial institutions for information tend to have higher financial literacy scores ($\beta = 0.120$, $p < 0.01$). This suggests that institutional credibility and structured financial information continue to play an important role in financial education, despite the growing dominance of online content. Additionally, participation in workshops is negatively associated with financial literacy scores ($\beta = -0.155$, $p < 0.1$). While this result is only marginally significant, it raises questions about the effectiveness of workshops as a financial education tool. This could indicate that workshop participants seek financial education due to pre-existing gaps in knowledge, rather than workshops actively reducing financial literacy.

In contrast, the findings indicate that spending more time on social media is negatively associated with financial literacy scores ($\beta = -0.040$, $p < 0.1$). This suggests that passive engagement with social media, which often includes unverified financial advice and entertainment-driven content, may hinder rather than enhance financial literacy. The distinction between video platforms (YouTube) and social media platforms (TikTok, Instagram, etc.) in this analysis further reinforces the idea that not all digital content is equally beneficial for financial education.

Another relevant result concerns gender differences. Being male is associated with slightly lower financial literacy scores compared to female ($\beta = -0.079$, $p < 0.05$). Which stands in contrast to previous studies, which often find that men score higher in financial literacy assessments. The reversal of this trend within the Gen Z sample warrants further exploration and could indicate a shift in financial education engagement or confidence across genders.

Additionally, primary knowledge areas appear to play a role. Those in Law, Government, and Public Administration ($\beta = -0.191$, $p < 0.01$), Media, Communications, and Creative Industries ($\beta = -0.318$, $p < 0.01$) and Healthcare, Medicine, and Life Sciences ($\beta = -0.122$, $p < 0.05$) tend to have significantly lower financial literacy scores. In contrast, those in Science, Technology, Engineering, and Mathematics (STEM) show no significant difference, suggesting that financial literacy gaps may be more pronounced in certain fields.

Overall, these findings suggest that financial literacy is shaped by multiple factors, including content type, platform choice and learning preferences. While dynamic visual content supports financial learning, its impact is shaped by the platforms through which it is consumed and the broader digital environment in which financial education takes place (Appendix 7).

To ensure the robustness of the regression model for H2, a series of diagnostic tests were conducted. First, normality was assessed using the Shapiro-Wilk test (Appendix 10), which indicated mild deviations from normality ($p = 0.0008085$). However, given the large sample size and the use of HC0 robust standard errors, which account for potential non-normality, this was not deemed problematic.

Homoscedasticity was evaluated through the Breusch-Pagan test (Appendix 12), which detected heteroscedasticity ($p = 0.0004637$). To address this, HC0 robust standard errors were applied, mitigating any biases in standard errors. Additionally, the Durbin-Watson test (Appendix 14) confirmed that there was no significant autocorrelation in the residuals ($DW = 1.7504$, $p = 0.09102$), indicating that residuals were independent.

Multicollinearity was checked using Variance Inflation Factors (VIF), with all values remaining well below 5, confirming that no strong multicollinearity was present among predictors. Linearity was assessed, and since the key independent variable (Dynamic Visual Preference) is binary, no additional transformations were necessary. The residuals vs. fitted plot (Appendix 13) showed structured patterns, likely due to categorical predictors, but no major violations of model assumptions were found.

To improve model reliability, outliers and high-leverage points were removed in two rounds. The original sample size was 124, which was reduced to 106 after the first round of removals and 101 after the second round. The model was optimized using AIC stepwise regression, and financial literacy scores were log-transformed to account for skewness. Given these adjustments and

diagnostic confirmations, the final model provides a statistically sound basis for interpreting the relationship between Dynamic Visual Preference and Financial Literacy Scores.

4.5 Analyzing the Relationship Between Financial Literacy Consumption and Knowledge

Hypothesis 3 proposed that frequent consumption of financial literacy content is positively correlated with higher financial literacy scores. The regression analysis supports this hypothesis, demonstrating a statistically significant relationship between financial literacy engagement and knowledge acquisition. The model explains a substantial proportion of variance in financial literacy scores, with an R^2 of 0.738, indicating that 73.8% of the variation is accounted for by the included predictors. Even after adjusting for the number of variables, the adjusted R^2 remains high at 0.667, reinforcing the explanatory strength of the model. The standard error of 0.120 further indicates that the predictions are relatively precise (Appendix 6).

The findings confirm that frequent consumption of financial literacy content is positively associated with higher financial literacy scores ($\beta = 0.043$, SE = 0.017, $p < 0.05$). This supports the expectation that regular engagement with financial education enhances financial knowledge. However, the analysis also reveals a nonlinear relationship, as indicated by the negative coefficient for the squared consumption frequency variable ($\beta = -0.026$, SE = 0.010, $p < 0.05$). This suggests that while moderate engagement improves financial literacy, excessive consumption leads to diminishing returns. One explanation for this finding is that overexposure to financial content, particularly from multiple or conflicting sources, may result in information overload, thereby making it more difficult to process and retain relevant knowledge (Appendix 9).

Beyond consumption frequency, several learning channels and accessibility factors significantly contribute to financial literacy. The findings indicate that dynamic visual content ($\beta = 0.123$, $p < 0.01$) plays a substantial role, reinforcing the importance of visually structured educational formats such as videos and animations. The role of social discussions in financial knowledge acquisition is also evident, as friends and family ($\beta = 0.113$, $p < 0.01$) demonstrate a strong positive association with financial literacy scores. Furthermore, video platforms such as YouTube ($\beta = 0.105$, $p < 0.01$) serve as an effective medium for financial education, highlighting the importance of structured, long-form content in supporting financial learning. The findings further reinforce the continued relevance of financial institutions ($\beta = 0.090$, $p < 0.01$), suggesting that expert-driven and structured sources

remain a valuable component of financial literacy development. Additionally, ease of access to financial content ($\beta = 0.060$, $p < 0.05$) emerges as a significant predictor, indicating that individuals who can conveniently obtain financial literacy resources, whether through digital platforms or other means, exhibit higher financial literacy levels. Similarly, cost considerations ($\beta = 0.084$, $p < 0.05$) appear to have a positive effect, which may suggest that individuals who are more financially aware or cost-conscious actively seek financial education.

Despite these positive associations, the analysis identifies several factors that negatively correlate with financial literacy. The time spent on social media ($\beta = -0.051$, $p < 0.01$) is negatively associated with financial literacy, reinforcing the notion that passive engagement with social media does not enhance financial knowledge. This finding suggests that while financial education content exists on social media, its effectiveness may be undermined by the prevalence of unverified information and entertainment-driven financial narratives. In addition, participation in workshops ($\beta = -0.181$, $p < 0.01$) is unexpectedly linked to lower financial literacy scores. One possible explanation for this finding is that individuals who attend workshops may already have lower financial literacy levels, and their engagement in these educational sessions does not necessarily translate into an immediate improvement in financial knowledge.

The findings also reveal a significant relationship between financial literacy and primary academic knowledge areas. Individuals in the fields of law, government, and public administration ($\beta = -0.140$, $p < 0.01$) exhibit lower financial literacy scores, suggesting that these domains may not incorporate sufficient financial education within their training or professional development. A similar pattern is observed among individuals in media, communications, and creative industries ($\beta = -0.267$, $p < 0.01$), where financial literacy appears to be particularly low. This result may reflect the prioritization of other skill sets in these professions, leading to reduced exposure to financial education. Similarly, the healthcare, medicine, and life sciences sector ($\beta = -0.087$, $p < 0.05$) demonstrates a negative association with financial literacy, which may be attributed to the absence of financial education in medical training.

An additional noteworthy finding concerns the relationship between interactivity preferences and financial literacy. The analysis indicates that individuals who prefer interactive content over passive learning methods tend to have lower financial literacy scores ($\beta = -0.135$, $p < 0.01$). This suggests that while interactive learning formats, such as gamified finance apps or discussion-based learning, may be engaging, they do not necessarily result in higher financial knowledge retention. Instead,

individuals who rely heavily on interactive content may be less likely to develop a deep conceptual understanding of financial principles.

Notably, the analysis also highlights an exception to the trend observed across primary knowledge areas. Unlike other academic domains, individuals with a background in science, technology, engineering, and mathematics (STEM) exhibit a slight positive association with financial literacy ($\beta = 0.081$, $p < 0.05$). This finding suggests that numerical proficiency, analytical reasoning, and data-driven decision-making, which are often emphasized in STEM education, may contribute to enhanced financial literacy.

Taken together, these findings emphasize the complexity of financial literacy development and the interdependence of multiple influencing factors. While frequent engagement with financial content enhances financial literacy, the evidence suggests that the format, source, and quantity of financial education all play a critical role. Structured content, such as that provided by video platforms, financial institutions, and personal networks, appears to be particularly effective in fostering financial knowledge. In contrast, passive engagement with social media and an overreliance on interactive learning tools do not seem to yield the same benefits. Furthermore, financial literacy disparities across different academic disciplines suggest that tailored financial education interventions may be necessary to address gaps among individuals in creative, legal, and healthcare-related fields.

These results underscore the need for well-structured, high-quality financial education that not only promotes regular engagement with financial content but also ensures that individuals are exposed to credible and effective learning resources. While engagement with financial content is a crucial driver of financial literacy, excessive consumption without critical evaluation of content sources may lead to diminishing returns. The findings suggest that financial literacy strategies should be designed to balance engagement with quality, ensuring that individuals are equipped with the necessary skills to navigate financial decision-making effectively.

To ensure the robustness of the regression model for H3, multiple diagnostic tests were conducted. First, normality of residuals was assessed using the Shapiro-Wilk test ($W = 0.97981$, $p = 0.1285$) (Appendix 15) and a Q-Q plot (Appendix 16), both confirming approximate normality. Homoscedasticity was tested using the Breusch-Pagan test ($BP = 9.5758$, $p = 0.00197$) (Appendix 17), indicating heteroskedasticity, which was addressed by applying robust standard errors (HC0).

To mitigate potential multicollinearity, Consumption Frequency was mean-centered, and Variance Inflation Factors (VIFs) were examined, with all values remaining well below critical thresholds (VIF < 5), confirming that multicollinearity was not a concern. No significant autocorrelation was detected in the Durbin-Watson test (DW = 1.825, p = 0.1682) (Appendix 19), indicating independent residuals.

The model selection was optimized using an AIC Stepwise selection process, ensuring an efficient predictor set. To address potential outliers and high-leverage points, a systematic removal approach was implemented: The original dataset consisted of 124 observations. Following the removal of outliers, the number of observations was reduced to 111. Subsequent identification and elimination of the first high-leverage point further decreased the sample size to 105, and the removal of a second high-leverage point resulted in a final dataset of 100 observations.

This iterative approach improved model stability without excessively reducing the sample size. Additionally, Log transformation was applied to the Financial Literacy Score to address skewness and improve model fit.

With these adjustments, the final regression model satisfied all key robustness checks, ensuring reliable and unbiased parameter estimation.

5. Discussion

This study investigates financial literacy behaviors among Generation Z in Portugal, focusing on their preferred platforms, content formats, and the relationship between financial literacy engagement and knowledge acquisition. It examines whether social media serves as the primary financial education source, if dynamic visual content enhances financial literacy, and whether frequent engagement correlates with higher financial knowledge.

Findings reveal that while social media and video platforms dominate financial learning, passive consumption does not necessarily translate into improved financial literacy. A preference for dynamic visual content is linked to higher literacy scores, yet content quality and critical engagement remain crucial. Frequent financial literacy engagement fosters knowledge acquisition, but excessive exposure may lead to diminishing returns. Traditional education alone is not a strong predictor, underscoring

the growing influence of self-directed digital learning. These insights highlight the need for structured, engaging, and credible financial education tailored to Gen Z's learning preferences.

5.1 Interpretation and Theoretical Contribution

The results align with prior research indicating that Gen Z relies heavily on digital platforms for financial education (Rehman & Mia, 2024; Timotheou et al., 2023). The strong preference for social media and video-based learning reinforces findings that digital literacy plays a crucial role in modern financial education (OECD, 2022, 2023). However, the study also highlights an important distinction: while Gen Z consumes financial content online, passive engagement with social media does not necessarily translate into higher financial literacy. This aligns with concerns raised by Fernandes et al. (2014), who found that traditional financial literacy programs often fail to influence financial behavior, suggesting that engagement quality is more critical than exposure alone.

The preference for dynamic visual content as an effective financial literacy tool supports prior literature on digital learning styles (Rehman & Mia, 2024; Sivakumar et al., 2023; Timotheou et al., 2023). However, the findings suggest that while visual learning contributes to financial literacy, it is not the sole determinant of knowledge acquisition. This nuance is consistent with (Kirschner, 2017), who questioned the effectiveness of simplistic learning style categorizations, emphasizing the need for structured content rather than just format preferences.

A key insight from this study is the diminishing returns of excessive financial literacy consumption, indicating that beyond a certain threshold, more engagement does not equate to better knowledge retention. This aligns with the argument that financial literacy must be paired with critical thinking skills to be effective (OECD, 2022, 2023). Additionally, the finding that formal education is not a strong predictor of financial literacy echoes prior research (Fernandes et al., 2014), reinforcing the importance of self-directed, real-world financial learning over standardized curricula.

Finally, the demographic disparities observed, such as lower financial literacy among individuals in media, law, and healthcare, underscore systemic gaps in financial education, confirming previous findings that financial literacy levels vary significantly across academic and professional backgrounds (Lusardi & Mitchell, 2023). The observed reversal of gender-based financial literacy trends, where women outperformed men in this sample, contrasts with historical patterns (Hasler et al., 2023;

Lusardi & Mitchell, 2014, 2023), suggesting a potential generational shift in financial education engagement.

Overall, these results confirm the evolving nature of financial literacy acquisition and reinforce the need for digital-first, high-quality financial education strategies tailored to Gen Z's consumption habits.

5.2 Implications

The findings of this study provide insights for financial educators, policymakers and institutions seeking to improve financial literacy among Generation Z. The strong reliance on digital platforms highlights the need to integrate financial education into online spaces, but also underscores the challenge of ensuring content credibility and engagement effectiveness.

For financial educators and policymakers, these results suggest that traditional financial literacy programs may need to be adapted to better suit Gen Z's digital consumption habits. Simply increasing access to financial content is insufficient—structured, high-quality learning experiences should be embedded within frequently used platforms. Expert-driven content and interactive formats may enhance engagement and retention.

For content creators, the preference for dynamic visual content reinforces the importance of producing engaging yet substantive financial education materials. While short-form financial content can capture attention, it should be complemented with more comprehensive resources to foster deeper financial understanding.

For financial institutions and educational systems, the findings suggest that formal education alone does not adequately equip young individuals with financial literacy skills. Universities and secondary schools should integrate more practical financial education modules into curricula, focusing on real-world applications. Additionally, partnerships with industry professionals could help create more relevant, engaging financial learning opportunities.

Finally, the observed disciplinary differences in financial literacy suggest that tailored approaches may be necessary. Fields such as law, media, and healthcare may benefit from financial education strategies designed specifically for their professional and economic contexts.

While this study highlights meaningful trends, financial literacy remains a complex and evolving subject. Future research should explore how different digital engagement strategies impact long-term financial decision-making. In the meantime, ensuring that financial literacy content is accessible, reliable, and structured remains a priority for effectively educating the next generation.

5.3 Limitations and Future Research Directions

This study provides valuable insights into the financial literacy behaviors of Generation Z in Portugal, but several limitations must be acknowledged.

First, the sampling method limits the generalizability of findings. The convenience sample, drawn mainly from university networks, resulted in a participant pool where 74.7% held undergraduate or postgraduate degrees. Given that financial literacy levels often correlate with education, the results may not fully represent the broader Gen Z population.

Second, the Hypothesis 2 and Hypothesis 3 regression models faced challenges related to sample reduction and heteroskedasticity. The removal of outliers and high-leverage points reduced the sample sizes to 101 and 100, respectively, improving model validity but potentially limiting statistical power. Additionally, while HC0 robust standard errors corrected for heteroskedasticity, the underlying variance instability remains unaddressed. The use of AIC stepwise selection, while optimizing predictor inclusion, is sensitive to small dataset fluctuations. Future studies could explore alternative approaches such as LASSO regression for greater robustness.

Finally, reliance on self-reported financial literacy measures introduces the possibility of response bias. While log-transformation helped address score skewness, future research could incorporate objective financial literacy tests to enhance measurement accuracy.

Future research should build on these findings by addressing platform-specific financial literacy effects. This study confirmed that social media is a key financial education source, but it did not differentiate between platforms such as YouTube, TikTok, and Instagram. Investigating which platforms yield the highest financial literacy improvements would provide more targeted insights.

Additionally, alternative statistical methods such as LASSO regression or generalized least squares (GLS) could refine predictor selection and improve model robustness. Expanding research beyond university-educated participants would also enhance generalizability.

Finally, future studies could explore engagement depth in financial literacy acquisition—examining whether interactive content, gamification, or expert-driven financial education leads to better learning outcomes. By addressing these areas, financial literacy strategies can be further refined to meet Gen Z's learning preferences effectively.

6. Conclusion:

This study offers a detailed perspective of Generation Z's financial literacy landscape in Portugal, highlighting a definitive shift toward digital-first learning. Social media and video platforms have emerged as dominant educational resources, yet passive engagement alone does not foster financial competence. Instead, structured, high-quality financial content, particularly dynamic visual formats, proves most effective when paired with critical engagement. While frequent exposure to financial education correlates with higher financial knowledge, excessive consumption may yield diminishing returns.

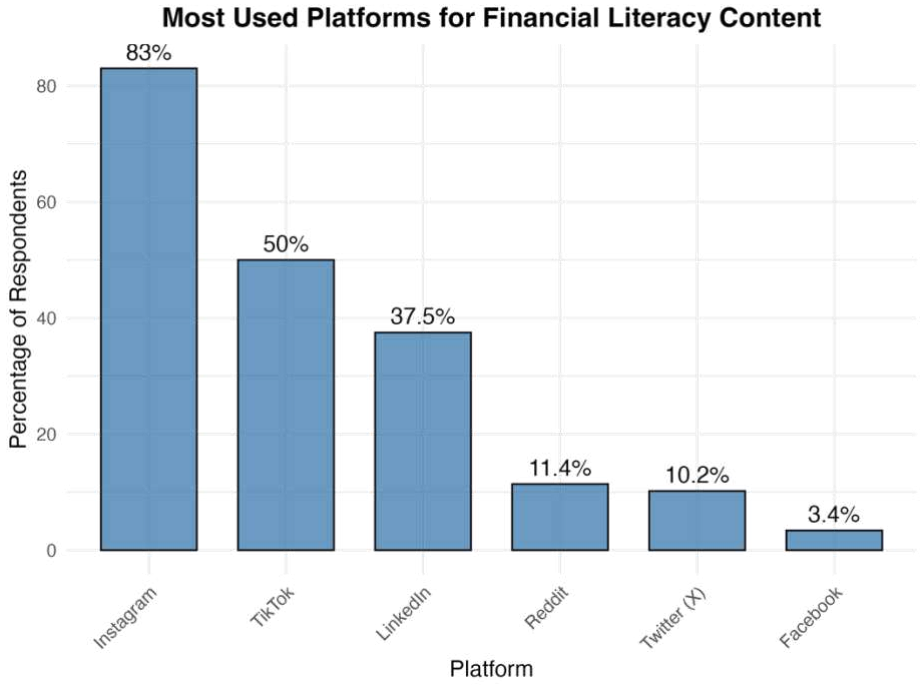
As financial decision-making grows increasingly complex, equipping Gen Z with effective, tailored financial education is essential. Integrating financial literacy into widely used digital spaces, while ensuring content accuracy and engagement, can empower this generation with the skills necessary for informed decision-making. The future of financial literacy hinges not just on accessibility, but on the depth, relevance, and adaptability of the educational content provided.

7. Appendices

Appendix 1: Overview Participants Demographics

Participant Demographics (%)						
Response	Age	Education	Employment	Field_of_Expertise	Gender	Nationality
23-27	45.9					
18-22	27.1					
28-35	13.5					
Older than 35	13.5					
Undergraduate		46.5				
Postgraduate		28.2				
High school		18.8				
Other		6.5		5.3		1.2
Full-time employed			57.1			
Student (not working)			21.2			
Student (part-time employed)			14.7			
Student (full-time employed)			4.1			
Unemployed			2.4			
Part-time employed			0.5			
Business, Finance, and Economics				29.4		
Science, Technology, Engineering, and Mathematics (STEM)				19.4		
Healthcare, Medicine, and Life Sciences				12.9		
Media, Communications, and Creative Industries				9.4		
Law, Government, and Public Administration				7.1		
Hospitality, Tourism, and Service Industries				6.5		
Arts, Humanities, and Social Sciences				4.7		
Education, Training, and Social Services				3.5		
Trades, Crafts, and Skilled Labor				1.8		
Female					52.4	
Male					47.1	
Non-binary					0.5	
Portugal						93.5
Austria						1.8
France						1.2
Germany						1.2
Italy						0.6
Spain						0.5

Appendix 2: Most Used Social Media Platforms for Financial Literacy



Appendix 3: Overview Preferred Sources of Financial Knowledge

Preferred Sources of Financial Knowledge

Desriptive Statistics

Information Source	**N**	**%**
Social Media	88	71.0
Video Platforms	71	57.3
Podcasts	48	38.7
University Courses	40	32.3
Traditional Financial News	32	25.8
Books	31	25.0
Financial Institution Websites	30	24.2
Friends & Family	29	23.4
Blogs or Websites	21	16.9
Workshops/Seminars	9	7.3
Newsletter	6	4.8
Other	0	0

Appendix 4: Chi-Sqare Test Social Media & Video Platforms

Chi-Square Test Results Statistical Significance of Social Media & Video Platforms as Primary FL Sources				
Comparison	Chi-Square (χ^2)	Degrees of Freedom	p-value	Significant ($p < 0.05$)
Social Media vs. Other Sources	21.806	1.000	<0.001	Yes
Social Media + Video vs. Other Sources	71.258	1.000	<0.001	Yes

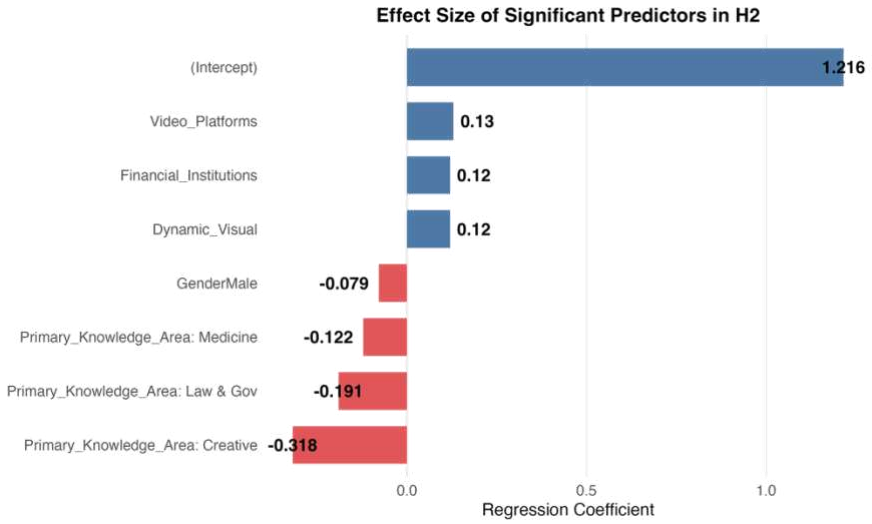
Appendix 5: Regression Results for Hypothesis 2

	Dependent variable:	
	Log_FinancialLiteracyScore	
	(1)	(2)
Dynamic_Visual	0.185***	0.120***
	(0.045)	(0.041)
Social_Media_Hours		-0.040*
		(0.021)
GenderMale		-0.079**
		(0.035)
Video_Platforms		0.130***
		(0.037)
Financial_Institutions		0.120***
		(0.039)
Workshops		-0.155*
		(0.082)
Friends_Family		0.064
		(0.039)
Cost		0.074
		(0.047)
Other		0.262
		(0.187)
Primary_Knowledge_AreaHealthcare, Medicine, and Life Sciences		-0.122**
		(0.049)
Primary_Knowledge_AreaHospitality, Tourism, and Service Industries		-0.040
		(0.079)
Primary_Knowledge_AreaLaw, Government, and Public Administration		-0.191***
		(0.065)
Primary_Knowledge_AreaMedia, Communications, and Creative Industries		-0.318***
		(0.055)
Primary_Knowledge_AreaScience, Technology, Engineering, and Mathematics (STEM)		0.048
		(0.046)
Podcasts		0.055
		(0.035)
Constant	1.125***	1.216***
	(0.039)	(0.066)
Observations	101	101
R^2	0.144	0.550
Adjusted R^2	0.135	0.470
Residual Std. Error	0.199 (df = 99)	0.156 (df = 85)
F Statistic	16.613*** (df = 1; 99)	6.923*** (df = 15; 85)
Note:		*p<0.1; **p<0.05; ***p<0.01

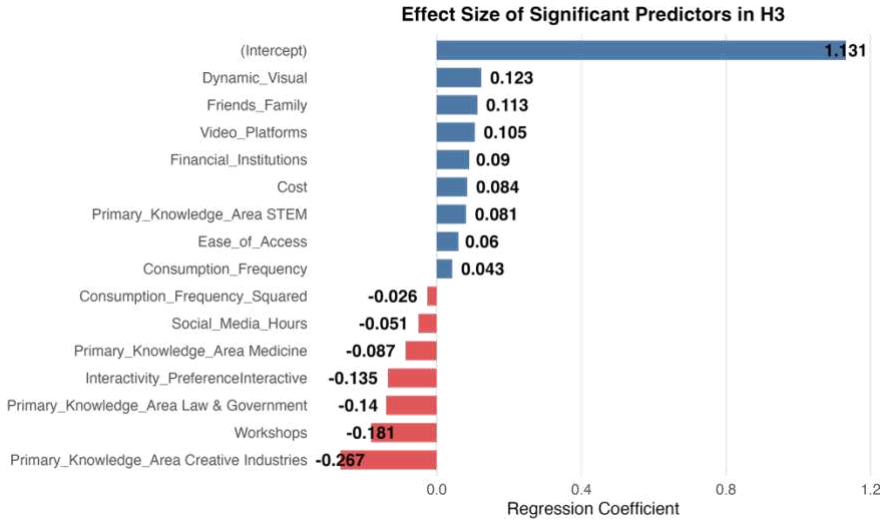
Appendix 6: Regression Results for Hypothesis 3

	Dependent variable:	
	Log_FinancialLiteracyScore	
	(1)	(2)
Consumption_Frequency	0.081***	0.043**
	(0.021)	(0.017)
Consumption_Frequency_Squared	-0.016	-0.026**
	(0.014)	(0.010)
Social_Media_Hours		-0.051***
		(0.017)
GenderMale		-0.053*
		(0.028)
Dynamic_Visual		0.123***
		(0.035)
Auditory		0.044
		(0.034)
Video_Platforms		0.105***
		(0.032)
Financial_Institutions		0.090***
		(0.033)
Books		-0.060*
		(0.030)
Workshops		-0.181***
		(0.059)
Friends_Family		0.113***
		(0.032)
Ease_of_Access		0.060**
		(0.029)
Cost		0.084**
		(0.036)
Primary_Knowledge_AreaHealthcare, Medicine, and Life Sciences		-0.087**
		(0.040)
Primary_Knowledge_AreaHospitality, Tourism, and Service Industries		0.029
		(0.063)
Primary_Knowledge_AreaLaw, Government, and Public Administration		-0.140***
		(0.052)
Primary_Knowledge_AreaMedia, Communications, and Creative Industries		-0.267***
		(0.051)
Primary_Knowledge_AreaOther		-0.100
		(0.077)
Primary_Knowledge_AreaScience, Technology, Engineering, and Mathematics (STEM)		0.081**
		(0.039)
Interactivity_PreferenceA mix of both		-0.057*
		(0.031)
Interactivity_PreferenceInteractive		-0.135***
		(0.041)
Constant	0.979***	1.131***
	(0.086)	(0.084)
Observations	100	100
R^2	0.222	0.738
Adjusted R^2	0.206	0.667
Residual Std. Error	0.185 (df = 97)	0.120 (df = 78)
F Statistic	13.869*** (df = 2; 97)	10.438*** (df = 21; 78)
Note:		*p<0.1; **p<0.05; ***p<0.01

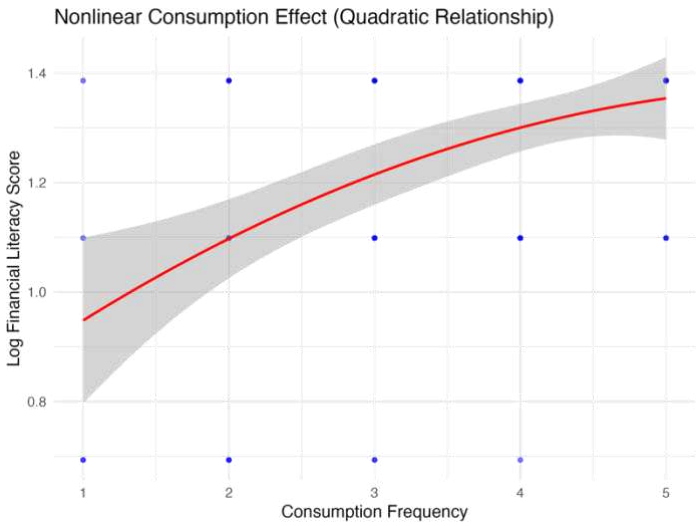
Appendix 7: Effect Size of Significant Predictors Hypothesis 2



Appendix 8: Effect Size of Significant Predictors Hypothesis 3



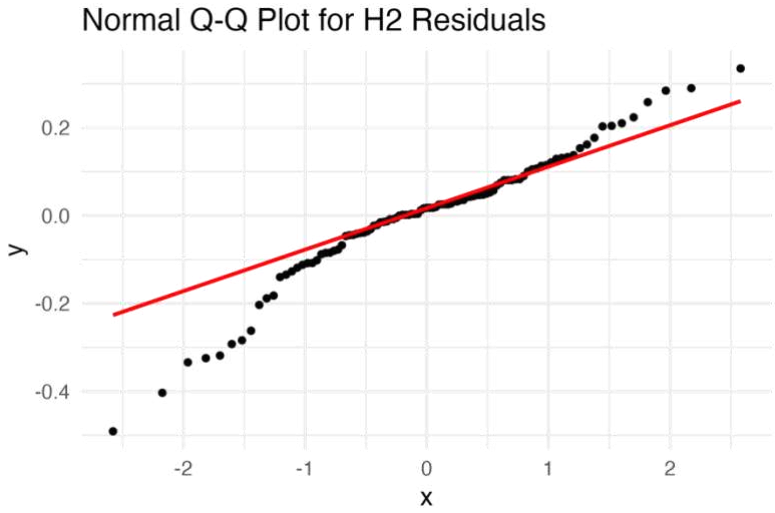
Appendix 9: Nonlinear Consumption Effect Hypothesis 3



Appendix 10: Shapiro-Wilk Normality Test Hypothesis 2

```
        Shapiro-Wilk normality test

data:  residuals_H2_robust
W = 0.95028, p-value = 0.0008085
```

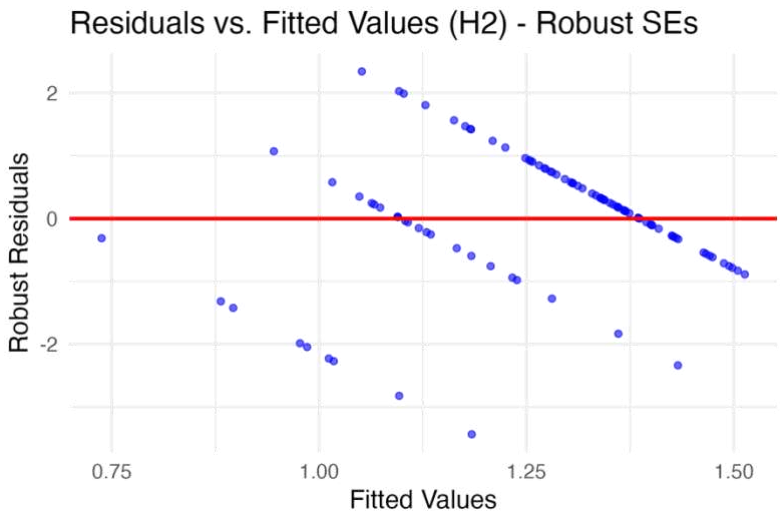
Appendix 11: Normal Q-Q Plot Hypothesis 2



Appendix 12: Breusch-Pagan Test Hypothesis 2

```
        studentized Breusch-Pagan test

data:  model_gen_z_stepwise_H2_final
BP = 12.256, df = 1, p-value = 0.0004637
```

Appendix 13: Residuals vs. Fitted Values Hypothesis 2



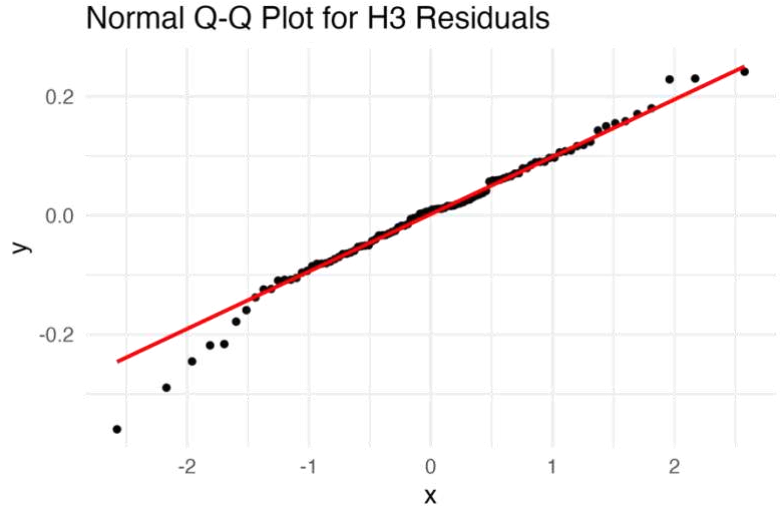
Appendix 14: Durbin-Watson Test Hypothesis 2

```
        Durbin-Watson test

data:  model_gen_z_stepwise_H2_final
DW = 1.7504, p-value = 0.09102
alternative hypothesis: true autocorrelation is greater than 0
```

Appendix 15: Shapiro-Wilk Normality Test Hypothesis 3

```
        Shapiro-Wilk normality test

data:  residuals_H3_robust
W = 0.97981, p-value = 0.1285
```

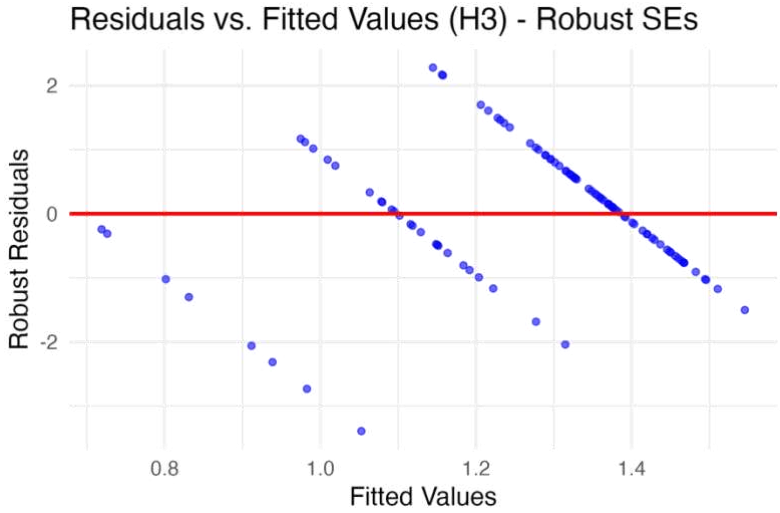
Apendix 16: Normal Q-Q Plot Hypothesis 3



Apendix 17: Breusch-Pagan Test Hypothesis 3

```
        studentized Breusch-Pagan test

data:  model_gen_z_stepwise_final
BP = 9.5758, df = 1, p-value = 0.001972
```

Apendix 18: Residuals vs Fitted Values Hypothesis 3



Apendix 19: Durbin-Watson Test Hypothesis 3

```
        Durbin-Watson test

data:  model_gen_z_stepwise_final
DW = 1.825, p-value = 0.1682
alternative hypothesis: true autocorrelation is greater than 0
```

Apendix 20: Survey

Questionnaire

This survey is part of a Master's Thesis in Financial Literacy at Católica Lisbon School of Business and Economics.

The goal is to explore people's preferences for personal finance and financial literacy content.

Financial literacy is the ability to understand and use basic financial skills, like budgeting, saving, and managing debt. It helps people make smart choices with their money to meet their needs and reach their goals.

Responses are completely anonymous and will be used solely for academic research. There are no right or wrong answers, so please feel free to respond openly.

Estimated time: 5 minutes

Thank you for your valuable input.

Financial Literacy Questions:

1. **How many hours a day do you typically spend on social media?**
   a. Less than 1 hour
   b. 1-2 hours
   c. 3-4 hours
   d. More than 4 hours
   e. I don't use social media

2. **How often do you consume financial literacy content?**
   a. daily
   b. weekly
   c. monthly
   d. rarely
   e. never

3. **What are the reasons you do not access financial literacy content? (Only shown if Q2 is "never")**
   a. Don't know where to access
   b. No interest
   c. Too difficult
   d. No time available
   e. Distrust the sources of information
   f. Lack of motivation or energy
   g. Overwhelmed by too much information
   h. Other

Financial Literacy Score:

4. **How would you rate your knowledge on financial literacy?**
   a. Very good
   b. Good
   c. Satisfactory
   d. Sufficient
   e. No knowledge

5. **What happens to your money if you keep it in a savings account that earns interest over time?**
   a. It grows faster each year as interest builds on previous interest
   b. It grows by the same amount each year
   c. It stays the same unless you add more money
   d. I don't know

6. **Imagine that the interest rate on your savings account is 1% per year, and inflation is 3% per year. After one year, how much will you be able to buy with the money in the savings account?**
   a. More than today
   b. Exactly the same as today
   c. Less than today
   d. I don't know

7. **If you are investing money, which approach is generally safer?**
   a. Putting all your money into one type of investment, like a single company's stock
   b. Spreading your money across different types of investments
   c. Both are equally risky
   d. I don't know

Consumption Preferences:

8. **Preferred way of acquiring financial knowledge? (Select all that apply)**
   a. Social media (Instagram, Facebook, ...)
   b. Video platforms (YouTube, ...)
   c. Blogs or websites
   d. Podcasts
   e. Traditional financial news
   f. Websites of financial institutions / companies
   g. Books
   h. Workshops or seminars
   i. Friends and family
   j. University websites/courses
   k. Newsletter
   l. Others (please specify)

9. **On which social media platforms do you consume financial literacy content? (Select all that apply) (Only shown if Q8 = Social Media)**
   a. Instagram
   b. Facebook
   c. TikTok
   d. Twitter (X)
   e. LinkedIn
   f. Reddit

10. **What form of financial literacy content do you find most engaging or useful? (Select all that apply)**
   a. Static Visual Content (diagrams, infographics, charts, ...)
   b. Dynamic Visual Content (videos, ...)
   c. Auditory (podcasts, audiobooks, ...)
   d. Text-based (books, articles, blogs, ...)
   e. Gamified learning (simulations, interactive tools, ...)
   f. Collaborative learning (discussion, teamwork, ...)

11. **Reasons for Choosing Certain Platforms/Resources? (Select all that apply)**
   a. Ease of access
   b. Information quality
   c. Trustworthiness
   d. Visual appeal
   e. Cost
   f. Other

12. **To confirm that you have read the questions carefully, please select "Instagram"**
   a. TikTok
   b. Instagram
   c. Facebook
   d. You Tube

13. **Do you prefer financial literacy content to be interactive (e.g., quizzes, challenges, live streams) or passive (e.g., watching videos, reading articles)?**
   a. Interactive
   b. Passive
   c. A mix of both
   d. No preference

Demographic Questions:

14. **Age**
   a. Under 18
   b. 18-22
   c. 23-27
   d. 28-35
   e. Older than 35

15. Gender

a. Male
b. Female
c. Non-binary
d. Prefer not to say

16. Current Education Level

a. High school
b. Undergraduate
c. Postgraduate
d. Other

17. Employment Status

a. Student (not working)
b. Student (part-time employed)
c. Student (full-time employed)
d. Full-time employed
e. Part-time employed
f. Unemployed

18. What is your primary area of knowledge or expertise (based on your studies or work experience)?

a. Science, Technology, Engineering, and Mathematics (STEM)
b. Business, Finance, and Economics
c. Arts, Humanities, and Social Sciences
d. Education, Training, and Social Services
e. Healthcare, Medicine, and Life Sciences
f. Law, Government, and Public Administration
g. Trades, Crafts, and Skilled Labor
h. Media, Communications, and Creative Industries
i. Hospitality, Tourism, and Service Industries
j. Other

19. Nationality

Open Answer with suggestions

8. List of Figures:

9. List of Tables:

10. References:

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