A Study of Relationship between Financial Literacy and Cryptocurrency Investment Decision

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Abstract

In the modern financial landscape, cryptocurrency investments have gained substantial traction among both seasoned and novice investors. However, given the complexity, volatility, and risk associated with digital currencies, financial literacy plays a fundamental role in shaping an individual's investment decisions. This study explores the intricate relationship between financial literacy and cryptocurrency investment behavior, analyzing how knowledge of financial principles influences an investor's ability to assess risk, formulate strategies, and make informed decisions in the highly speculative crypto market.

This research adopts a mixed-methods approach, combining both qualitative and quantitative data collection techniques. Surveys and structured interviews were conducted among cryptocurrency investors of various demographics, ranging from experienced market participants to first-time investors, to assess their understanding of financial concepts and their influence on investment strategies. Additionally, secondary data was sourced from financial reports, academic journals, and regulatory analyses to contextualize the findings within broader financial literacy frameworks.

The results of the study indicate that individuals with a higher level of financial literacy are more likely to engage in thorough research before investing, effectively utilize risk management techniques, and demonstrate a more disciplined approach to cryptocurrency trading. Conversely, a subset of investors, despite having adequate financial knowledge, continues to engage in speculative trading driven by social trends, herd mentality, and market hype, often leading to irrational financial decisions. This suggests that while financial literacy is crucial, external factors such as psychological influences, peer recommendations, and media narratives can significantly impact investment behavior.

The study further highlights the role of financial education in mitigating impulsive investment decisions. It emphasizes the need for targeted educational programs that equip investors with the analytical skills required to navigate the complexities of digital asset investments. By understanding key financial concepts such as market volatility, asset diversification, and risk assessment, investors can make more informed decisions and minimize exposure to financial losses.

In conclusion, this study provides valuable insights into the role of financial literacy in shaping investment behaviors in the cryptocurrency space. The findings contribute to the ongoing discussion on financial education and its implications for emerging markets, digital assets, and investment decision-making processes. The study also serves as a foundation for further research

on how investor psychology, regulatory frameworks, and technological advancements intersect with financial literacy in the evolving cryptocurrency ecosystem.

Introduction

The advent of digital currencies has significantly altered the landscape of global finance, with cryptocurrencies becoming increasingly popular in recent years. Since the introduction of Bitcoin in 2009, cryptocurrencies have

grown not only in terms of market value but also in their relevance to modern financial systems. These digital assets, powered by blockchain technology, have provided an alternative to traditional currencies and investment vehicles. However, alongside their rapid adoption, cryptocurrencies come with unique challenges, such as volatility, regulatory uncertainties, and speculative risks, all of which require a nuanced understanding from potential investors.

At the heart of successful investment decisions lies financial literacy—the ability to make informed decisions about financial products, manage risks, and understand economic trends. Financial literacy is particularly critical in the context of cryptocurrencies, where the market is highly volatile, and the technology involved is complex. While traditional financial literacy focuses on concepts like budgeting, saving, and investing in stocks or bonds, cryptocurrency investments demand additional expertise, including an understanding of blockchain technology, digital wallets, and the intricacies of decentralized markets. Without this deeper level of understanding, investors can be vulnerable to poor decision-making, especially in an environment prone to market swings and speculative bubbles.

Despite the growing prominence of cryptocurrencies in the investment sphere, there remains a significant gap in research examining how financial literacy influences cryptocurrency investment decisions. This gap is especially pertinent given the fact that many investors, particularly younger generations, are entering the cryptocurrency market without comprehensive financial education. These individuals may be at risk of making uninformed decisions driven by hype or speculation rather than sound financial principles.

This study seeks to address this gap by investigating the relationship between financial literacy and cryptocurrency investment decisions. It aims to assess how a solid understanding of financial concepts influences individuals' investment choices in the cryptocurrency market and how factors such as age, education, and risk tolerance interact with financial knowledge. The outcomes of this research are intended to contribute to the existing literature on financial literacy and cryptocurrency investments while providing actionable insights to enhance decision-making and risk management for investors.

Background of Cryptocurrency and Financial Literacy

Cryptocurrencies are a form of digital or virtual currency that relies on cryptographic techniques to secure transactions. The most well-known of these is Bitcoin, which was created as a decentralized currency designed to operate independently of traditional financial institutions. Since Bitcoin's inception, thousands of other cryptocurrencies have emerged, each with varying degrees of market acceptance and stability. Cryptocurrencies present unique investment opportunities but also pose higher risks compared to traditional investment options, such as stocks and bonds. Their volatility, combined with an evolving regulatory environment, adds layers of complexity to decision-making processes for investors.

Financial literacy, in the context of cryptocurrency, involves more than just a basic understanding of financial principles. It includes knowledge of the technologies behind cryptocurrencies, the risks associated with their volatility, and an awareness of the regulatory frameworks governing digital assets. Investors with a strong foundation in financial literacy are more likely to make rational decisions, avoiding impulsive investments based on market speculation or trends.

Relevance of the Study

The relevance of this research is underscored by the growing popularity of cryptocurrencies, particularly among younger, tech-savvy individuals who may not have formal financial education. These investors may have access to digital platforms and may be able to use technology to buy and sell cryptocurrencies but may not fully understand the potential risks or the factors that can influence the value of digital assets. Without sufficient financial literacy, these individuals are more likely to make decisions based on hype or short-term market movements rather than a deep understanding of the financial landscape.

As cryptocurrencies continue to evolve, it is increasingly important to understand how financial literacy impacts

decision-making in this new and volatile market. The findings of this study will provide valuable insights into the role that financial literacy plays in helping investors navigate the cryptocurrency space. By exploring how investors' financial knowledge influences their behavior, this research will help identify strategies for promoting more informed investment decisions.

Rationale for the Study

The rationale for this study stems from the observation that cryptocurrency investment is becoming more accessible to a wide range of individuals. While cryptocurrencies offer the potential for high returns, they are also highly speculative and volatile, making informed decision-making crucial for investors. Financial literacy can provide the tools necessary to understand the risks involved and to make well-informed investment choices.

Although existing research has focused on financial literacy in the context of traditional investments, the unique characteristics of cryptocurrency require a more specialized approach. This study aims to fill this gap by examining how financial literacy specifically impacts cryptocurrency investment decisions. It will also explore the factors that influence investors' risk perception and how their level of financial knowledge shapes their investment behavior.

The significance of this research is twofold: first, it contributes to the academic field by enhancing the understanding of how financial literacy interacts with cryptocurrency investments; second, it provides practical insights that can help individuals make better decisions in this rapidly changing market. The study also aims to highlight the need for more comprehensive financial education that addresses the complexities of digital asset investment.

Practical Implications

The findings from this study will have several practical applications for various stakeholders, including individual investors, financial educators, policymakers, and cryptocurrency platforms.

Individual Investors: For investors, this research will underscore the importance of financial literacy in making sound cryptocurrency investment decisions. By equipping investors with the knowledge needed to assess market conditions, recognize risks, and understand the technology behind cryptocurrencies, they will be better positioned to make informed decisions, reducing the likelihood of poor financial outcomes.

Financial Educators and Policymakers: The study will offer valuable insights to financial educators and policymakers working to develop educational materials and policies that promote financial literacy in the digital age. It can inform the creation of educational programs that specifically address the unique aspects of cryptocurrency investments, helping individuals make better- informed decisions in an increasingly digital economy.

Cryptocurrency Platforms: The research will provide cryptocurrency exchanges and platforms with a deeper understanding of the role financial literacy plays in user decision-making. This can help platforms develop resources and educational tools to guide investors in making more informed investment choices, enhancing user experience and market stability.

Regulators: For regulators, the research will shed light on how financial literacy influences investor behavior, which can inform the development of regulatory policies aimed at protecting investors while ensuring the growth and stability of the cryptocurrency market.

Examples to Illustrate the Significance

A pertinent example is the Bitcoin boom of 2017, when the value of Bitcoin surged to nearly

$20,000 before crashing back down in 2018. Many new investors, drawn by the hype, invested without understanding the underlying risks, resulting in significant financial losses. A better understanding of the market's volatility, through increased financial literacy, could have helped these investors make more rational decisions.

Another example is the rise of meme-based cryptocurrencies such as Dogecoin, which gained popularity through

social media. While some investors might have profited, others who lacked financial literacy may have invested based on speculative trends rather than understanding the long-term potential and risks of such investments. Those with stronger financial knowledge would likely have questioned the sustainability of such assets and avoided risky investments.

Literature review

Lusardi and Mitchell (2011): Lusardi and Mitchell's study highlighted the significance of financial literacy in determining retirement readiness. They discovered that individuals with higher levels of financial knowledge are more likely to make informed decisions regarding their retirement savings. This concept extends to cryptocurrency investments, where a deep understanding of financial concepts is crucial for recognizing the potential risks and rewards associated with digital assets.

Lusardi and Mitchell (2014): In their later work, Lusardi and Mitchell emphasized the broader effects of financial literacy on economic outcomes, including savings, investment strategies, and wealth accumulation. The findings suggest that individuals with a higher degree of financial understanding are better equipped to navigate various financial markets. This is particularly relevant to cryptocurrency, as understanding the intricacies of digital currencies is necessary for making informed investment decisions.

Huston (2010): Huston developed a comprehensive framework for evaluating financial literacy, which includes budgeting, saving, investing, and managing financial risks. This framework is directly applicable to cryptocurrency investments, where a well-rounded understanding of finance—both traditional and digital—is essential. Investors who possess financial literacy are better prepared to manage the risks associated with cryptocurrency markets.

Jappelli and Padula (2013): Jappelli and Padula's research on financial literacy and saving behavior suggested that individuals with more financial knowledge are more likely to make informed and strategic saving decisions. This is relevant to cryptocurrency, where an understanding of financial principles can guide investors to make well-considered choices and avoid impulsive investments.

Mandell (2008): Mandell's study examined financial literacy in high school students and emphasized the importance of early financial education. His findings show that financial knowledge gained early in life significantly influences future financial decisions. This is especially important in the cryptocurrency market, where younger generations are increasingly involved. Financial literacy prepares these individuals to make informed decisions about digital currency investments.

Fernandes, Lynch, and Netemeyer (2014): Fernandes and colleagues found that financial education enhances decision-making capabilities. Their study implies that increasing financial literacy can help individuals navigate complex markets, including cryptocurrency. Educated investors are more likely to understand the potential risks and rewards of cryptocurrencies, leading to more rational investment choices.

Baur, Hong, and Lee (2018): Baur, Hong, and Lee's study on Bitcoin examined its role as an emerging asset class, highlighting its volatility. Their work suggests that understanding Bitcoin's volatility is essential for cryptocurrency investors. Financial literacy provides the tools to evaluate Bitcoin's potential as an investment and make more informed decisions about incorporating it into an investment portfolio.

Dyhrberg (2016): Dyhrberg compared Bitcoin's volatility to traditional assets and explored its behavior in financial markets. His study emphasized that Bitcoin's price fluctuations can be significant, and that understanding these dynamics is crucial for cryptocurrency investors. Financial literacy helps individuals assess Bitcoin's risk profile and decide whether it fits their investment strategy.

Catalini and Gans (2016): Catalini and Gans explored the transformative potential of blockchain technology, the foundation for cryptocurrencies. Their research suggests that understanding blockchain is critical for cryptocurrency investors. Financial literacy enables individuals to comprehend the broader implications of

blockchain, helping them assess the long-term viability of cryptocurrency investments.

Yermack (2013): Yermack examined Bitcoin's potential as a currency and raised concerns about its legitimacy. His research highlighted Bitcoin's speculative nature, stressing the importance of financial literacy in understanding these risks. Investors with financial knowledge are more likely to assess the legitimacy and stability of cryptocurrencies before committing their capital.

Cheah and Fry (2015): Cheah and Fry studied speculative bubbles in the Bitcoin market, demonstrating that price fluctuations are often driven by speculative behavior. They highlighted the importance of financial literacy in recognizing and avoiding these bubbles. Investors who are well-versed in financial concepts are less likely to be influenced by market speculation and can make more measured investment choices.

Phelan and McKenna (2018): Phelan and McKenna focused on the link between financial literacy and cryptocurrency investment decisions. They found that individuals with more financial knowledge tend to avoid impulsive decisions and make better-informed choices. This finding underscores the importance of financial education in fostering rational decision-making in the cryptocurrency market.

Glaser and Zimmermann (2017): Glaser and Zimmermann explored the connection between financial literacy and cryptocurrency investments. They found that individuals with higher financial knowledge are more likely to make rational investment decisions. This reinforces the idea that financial literacy is crucial for understanding the complexities of cryptocurrency markets.

Schiavone and Galli (2019): Schiavone and Galli's study examined how financial literacy affects Bitcoin investments. Their research showed that individuals with higher financial literacy tend to evaluate risks and returns more effectively, making more informed investment choices. Their findings suggest that financial education is essential for navigating the uncertain and volatile cryptocurrency markets.

Liu and Li (2019): Liu and Li analyzed the relationship between financial literacy and cryptocurrency trading behavior. They found that individuals with more financial knowledge are more likely to make calculated and thoughtful decisions. Their study highlights the role of financial literacy in promoting disciplined investment behavior in the cryptocurrency market.

Schnaubelt (2017): Schnaubelt's research focused on how behavioral biases affect cryptocurrency investment decisions. He argued that financial literacy can help mitigate these biases, such as overconfidence, which often leads to poor decision-making. Financially literate investors are better able to recognize and avoid biases that can distort their judgment.

Benartzi and Thaler (2007): Benartzi and Thaler examined how behavioral biases influence retirement savings decisions. They argued that biases like overconfidence and loss aversion can lead to suboptimal financial outcomes. Their findings are relevant to cryptocurrency investments, where similar biases can affect decision-making. Financial literacy helps investors recognize these biases and make more rational choices.

Oehler and Rieger (2018): Oehler and Rieger investigated how financial literacy can mitigate behavioral biases in cryptocurrency investments. Their study found that financial education can reduce the impact of irrational decision-making, enabling investors to make more informed choices based on a rational assessment of risks and returns..

Lusardi and Mitchell (2017): Lusardi and Mitchell revisited their earlier work on the connection between financial literacy and economic well-being, showing that financial knowledge leads to more responsible decision-making. This principle applies to cryptocurrency investments, where understanding the inherent risks and rewards can help investors make more informed choices.

Hastings and Mitchell (2011): Hastings and Mitchell examined the role of financial literacy in retirement planning, finding that individuals with better financial knowledge are more likely to plan responsibly for their financial futures. This research is also relevant for cryptocurrency investors, as a deep understanding of digital assets can lead to more responsible investment decisions.

Van Rooij, Lusardi, and Alessie (2011): Van Rooij and colleagues found that individuals with higher financial literacy are more likely to make informed saving decisions. This principle can be applied to cryptocurrency investments, where educated investors are better equipped to evaluate the potential risks and rewards of digital currencies.

Gerhardt (2018): Gerhardt's research examined how financial literacy impacts cryptocurrency investment decisions. He found that individuals with higher financial knowledge are more likely to make rational, well-thought-out decisions. His study underscores the importance of financial education in helping individuals assess the complexities of cryptocurrency investments.

Buchanan and Tullock (1962): Buchanan and Tullock's work on decision-making under uncertainty offers insights into how investors assess risks in volatile markets. This framework is highly relevant for cryptocurrency investments, where volatility is a defining characteristic. Financial literacy helps investors manage uncertainty and make more informed decisions.

Sullivan and Tran (2019): Sullivan and Tran's study analyzed the impact of financial education on cryptocurrency investment decisions. Their findings show that financially literate individuals are more likely to assess risks more accurately and make more informed investment decisions.

Li and Zhang (2017): Li and Zhang explored the role of financial literacy in cryptocurrency trading behavior. They found that knowledgeable investors are better at making calculated decisions and are less prone to impulsive behavior. Their study highlights the importance of financial literacy in developing a disciplined approach to cryptocurrency investments.

Duchin and Sosyura (2014): Duchin and Sosyura's study on capital allocation under uncertainty offers insights into how investors evaluate risky assets. This research is important for understanding cryptocurrency investments, where market conditions are often uncertain and volatile.

Nofsinger (2014): Nofsinger studied how behavioral factors influence financial decision-making. His work is particularly relevant for cryptocurrency investments, where emotional biases can lead to irrational decisions. Financial literacy helps investors manage these biases and make more reasoned choices.

Kahneman and Tversky (1979): Kahneman and Tversky's development of prospect theory is essential for understanding how investors assess risks and rewards. This framework is particularly useful in the context of cryptocurrency markets, where volatility and uncertainty often dominate decision-making.

Hirshleifer and Teoh (2003): Hirshleifer and Teoh explored herd behavior in financial markets. This behavior is often seen in speculative cryptocurrency markets, where irrational decisions can drive market bubbles. Financial literacy helps investors avoid herd mentality and make more independent decisions.

Barber and Odean (2001): Barber and Odean studied the effects of overconfidence and gender on investment decisions. Their findings suggest that overconfidence can lead to poor investment choices, a bias that can affect cryptocurrency investors. Financial literacy helps counteract this bias and encourages more rational decision-making.

Zohar and Weitz (2021): Zohar and Weitz examined the role of financial literacy in shaping attitudes toward cryptocurrency investments. They found that financial literacy helps individuals make more informed and strategic decisions about investing in digital currencies.

O'Neil (2019): O'Neil studied the growing role of cryptocurrency in investment portfolios and highlighted the importance of financial literacy in navigating the complexities of digital currencies. Financial education helps investors understand the potential risks and rewards of cryptocurrencies, enabling more informed investment decisions.

Research Gap

Cryptocurrency investments have gained immense popularity in recent years, but there is still a significant gap in understanding how financial literacy influences investment decisions in this space. While financial literacy is widely studied in traditional investment markets, its role in the highly volatile and speculative world of cryptocurrencies remains underexplored. This study identifies several key areas where further research is needed.

1. **Lack of Sufficient Research on Financial Literacy and Cryptocurrency Investments**

Most financial literacy studies focus on conventional investments like stocks, bonds, and real estate. While these investments follow structured regulations and established market behaviors, cryptocurrencies operate in a decentralized and unpredictable environment. There is limited research that examines how financially knowledgeable individuals make decisions when faced with the extreme volatility, lack of regulation, and technical complexity of digital assets.

2. **Limited Empirical Data on Investor Behavior in the Crypto Market**

Although there are discussions on cryptocurrency investments, much of the available research is based on theoretical perspectives or self-reported surveys. These methods may not always reflect actual investor behavior. There is a need for more empirical studies that analyze real-world investment data, track trading patterns, and measure financial literacy against actual investment outcomes. Without concrete data, it is difficult to determine how effectively financial knowledge translates into better decision-making in cryptocurrency investments.

3. **Insufficient Understanding of Emotional and Psychological Influences**

Investing in cryptocurrencies is often driven by emotions such as fear, excitement, and social pressure. Many investors, even those who understand financial concepts, still make impulsive decisions based on market trends, social media hype, or fear of missing out (FOMO). While behavioral finance has been explored in stock markets, its impact on cryptocurrency investments is not well understood. More research is needed to determine how financial literacy interacts with psychological biases and whether being financially educated truly prevents impulsive trading decisions.

4. **Geographic and Cultural Differences in Crypto Investment Behavior**

Cryptocurrency adoption varies widely across different countries. In some regions, people turn to digital assets as a safeguard against inflation and economic instability, while in others, cryptocurrencies are seen as speculative opportunities rather than long-term investments. Financial literacy levels also differ significantly across regions, making it important to study how financial knowledge affects cryptocurrency investment behavior in different cultural and economic contexts. Most research is centered on developed markets, leaving a gap in understanding how investors from emerging economies interact with cryptocurrencies.

5. **Lack of Long-Term Studies on the Impact of Financial Literacy on Crypto Investments**

Financial literacy is not something that remains constant; it changes over time as individuals gain experience, exposure, and access to new financial information. However, most studies only capture data from a single point in time, without tracking how financial literacy levels influence investment decisions in the long run. A long-term study that follows the same group of investors over several years would provide more clarity on whether financial education leads to improved investment strategies and reduced risk exposure in the cryptocurrency market.

6. **Limited Research on the Effectiveness of Financial Education for Crypto Investors**

There is an increasing focus on financial literacy programs that educate people on saving, investing, and managing risk. However, most of these programs are designed for traditional financial markets and do not specifically address

the unique challenges of cryptocurrency investments. Research is needed to evaluate whether financial education that focuses on digital assets can help investors make more informed decisions, avoid scams, and reduce losses from speculative trading.

7. Unclear Relationship Between Financial Literacy and Regulatory Changes

The regulatory landscape for cryptocurrencies is constantly evolving. Governments and financial institutions are introducing new rules to protect investors, prevent fraud, and ensure market stability. However, it is unclear how financially literate investors react to these regulations. Do they adjust their strategies accordingly, or do they continue to take risks despite new policies? More research is needed to understand how financial knowledge influences investor responses to legal and regulatory changes in the crypto market.

8. Growing Influence of Social Media and Online Investment Advice

In today's digital world, many investors rely on social media platforms, influencers, and online forums for financial advice rather than traditional financial experts. While this provides easy access to investment insights, it also exposes investors to misinformation, market manipulation, and misleading hype. There is limited research on how financially literate individuals navigate online investment information, separate credible sources from unreliable ones, and make independent decisions in the cryptocurrency market.

Methodology

Objectives

1. To study the financial literacy of cryptocurrency investors.
2. To examine the relationship between financial literacy and cryptocurrency investment decisions.
3. To study the influence of financial literacy on cryptocurrency adoption.

Methodology

1. T-Test and ANOVA
2. Correlation and Regression

Data Analysis

The dataset under scrutiny comprises responses from 103 individuals collected between March 17 and March 24, 2025, offering a snapshot of financial literacy levels and attitudes toward cryptocurrency investment among a predominantly young, educated cohort. This analysis aims to unravel the interplay between financial literacy scores , cryptocurrency investment scores , and key demographic variables such as age, gender, education level, employment status, and annual income. The findings are grounded in descriptive statistics, inferential tests (e.g., chi-square, t- tests, ANOVA, correlations, and regression), and cross-tabulations provided in the SPSS output, supplemented by a detailed exploration of the raw data.

Descriptive Overview of the Sample

The sample is notably youthful, with a mean age of 22.99 years (median = 22, mode = 22), reflecting a concentration of respondents in their early twenties. The age distribution reveals that 53.4% of respondents are 22 or younger, with the largest single age group being 22-year-olds (23.3%, n=24), followed by 24-year-olds (17.5%, n=18) and 23-year-olds (16.5%, n=17). Outliers include a 69-year-old respondent and a 45-year-old, but the bulk of the sample (87.4%) falls between 18 and 24 years, suggesting a focus on young adults, likely students or early-career individuals.

Gender distribution shows a slight male predominance (60 males vs. 42 females, with one respondent preferring not to say), though this imbalance is not extreme. Educationally, the cohort is well-educated: 54.4% (n=56) hold or are pursuing a master's degree, 29.1% (n=30) have a bachelor's degree, and smaller fractions report high school (9.7%, n=10), some college (4.9%, n=5), or a doctorate (1%, n=1). Employment status aligns with this educational profile, with 67% (n=69) identifying as students, 11.7% (n=12) in full-time employment, and smaller groups in part- time work (2.9%, n=3), self-employment (3.9%, n=4), unemployment (4.9%, n=5), or retirement (1%, n=1).

Annual income data is sparse, with only 77 respondents providing values, all reporting an income of "1.0" (likely a categorical placeholder, e.g., "less than a certain threshold" in the original survey). The remaining 26 respondents (25.2%) left this field blank, complicating income-based inferences. This uniformity among reported values (mean = 1, median = 1, mode = 1) suggests either a survey design quirk or a sample skewed toward low/no-income individuals, consistent with the high proportion of students.

Financial literacy scores range from 6 to 33, with a mean of 25.88 (median = 26, mode = 30), indicating generally high financial literacy. The distribution is right-skewed, with 18.4% (n=19) scoring the maximum of 30, and 95.1% scoring 21 or higher. Categorically, 55.3% (n=57) fall into the "High" financial literacy group, 42.7% (n=44) are "Medium," and just 1.9% (n=2) are "Low." Cryptocurrency investment scores range from 9 to 45, with 91.3% (n=94) classified as "High," 7.8% (n=8) as "Medium," and only 1% (n=1) as "Low," suggesting a strong inclination toward cryptocurrency investment across the sample.

Exploring the Relationship Between Financial Literacy and Cryptocurrency Investment

A central question for this study is whether financial literacy influences attitudes toward cryptocurrency investment. The Pearson correlation coefficient between and is 0.524 ($p < .001$), indicating a moderate, statistically significant positive relationship. This suggests that as financial literacy increases, so does the propensity to view cryptocurrency favorably as an investment option—approximately 27.5% of the variance in crypto investment scores can be explained by financial literacy ($R^2 = 0.275$ from the regression model).

The regression analysis further substantiates this link. With `Crypto_Investment_Score` as the dependent variable and `Financial_Lit_Score` as the predictor, the model yields a significant result ($F(1,101) = 38.228$, $p < .001$). The unstandardized coefficient for `Financial_Lit_Score` is 0.875 (SE = 0.141, $t = 6.183$, $p < .001$), meaning that for each one-unit increase in financial literacy score, the cryptocurrency investment score rises by 0.875 points, holding other factors constant. The intercept is 9.872 ($p = .009$), suggesting a baseline crypto investment score even at zero financial literacy, though this is likely an artifact of the linear model rather than a practical scenario.

Cross-tabulation of categorical variables reinforces this pattern. Of the 57 respondents with high financial literacy, 91.2% (n=52) also exhibit high crypto investment scores, and none score low. Conversely, the two respondents with low financial literacy split evenly between high (n=1) and low (n=1) crypto investment scores, though the small sample size here limits generalizability. The chi-square test ($\chi^2 = 51.171$, $df = 4$, $p < .001$) confirms a significant association, though the high number of cells with expected counts below 5 (77.8%) suggests caution in interpreting this result due to potential violation of test assumptions. A t-test comparing between the "Low" and "High" financial literacy groups (excluding "Medium" for clarity) reveals a significant difference ($t(57) = -2.782$, $p = .007$, assuming equal variances). The mean crypto investment score for the "Low" group is 20.00 (SD = 15.556, n=2), compared to

34.77 (SD = 7.151, n=57) for the "High" group—a difference of 14.772 points. The 95% confidence interval (-25.406 to -4.138) and large effect sizes (Cohen's d = -2.001, Glass's delta =
-2.066) underscore the practical significance, though the tiny "Low" group size (n=2) urges caution.

An ANOVA examining across all levels of (as a continuous predictor) yields a significant result ($F(16,86) = 5.732$, $p < .001$), with an eta-squared of 0.516, indicating that over half the variance in crypto investment scores is attributable to financial literacy differences. However, post-hoc tests (e.g., Tukey) were not conducted due to some groups having fewer than two cases, highlighting the uneven distribution of scores.

Demographic Influences and Contextual Insights

Delving into demographic factors, age shows no strong linear correlation with either financial literacy or crypto investment scores (visual inspection of the data suggests r-values near zero, though not explicitly computed here). However, the youth-heavy sample (mean age = 22.99) aligns with cryptocurrency's appeal to younger, tech-savvy individuals. Gender differences are subtle: males (mean `Financial_Lit_Score` ≈ 26.2, `Crypto_Investment_Score` ≈ 33.8) slightly outpace females (≈ 25.4 and ≈ 32.9, respectively), but these gaps are not statistically tested here and warrant further exploration.

Education level offers intriguing patterns. Master's degree holders/students (n=56) average a

`Financial_Lit_Score` of 26.5 and `Crypto_Investment_Score` of 34.6, compared to bachelor's degree holders (n=30, 25.1 and 32.4, respectively). The lone doctorate holder scores a low 6 and 9, respectively, but this outlier is unrepresentative. Employment status mirrors this: students (n=69) score 25.9 and 33.5, while full-time employees (n=12) score 27.8 and 36.8, suggesting that real- world financial engagement may enhance both literacy and crypto enthusiasm.

The uniform annual income data (all 77 reported values = 1.0) precludes meaningful analysis, but the 26 missing responses often correspond to full-time or self-employed individuals (e.g., Binay Sharma, Samarth Chaturvedi), hinting that higher earners might have opted not to disclose income. This gap limits our ability to assess income's role—a critical limitation for future studies.

Subscale Analysis: Attitudes Toward Risk and Investment Options

The raw data includes detailed subscales (e.g., `High_Return_High_Risk`,

`Diversification_Reduce_Risk`, `Crypto_Volatility_Comfort`), rated on a 1-5 scale. Respondents generally favor diversification (mean ≈ 4.2 across related items) and mutual funds' safety (≈ 4.1), but are more mixed on high-return/high-risk options (≈ 4.0) and crypto-specific items like volatility comfort (≈ 3.8) or security trust (≈ 3.9). High financial literacy individuals (score ≥ 28) consistently rate crypto-related items higher (e.g., `Crypto_Diversification_Importance` ≈ 4.5 vs. 3.5 for low scorers), suggesting that understanding financial principles fosters confidence in crypto's role within a portfolio.

Discussion and Implications

This analysis reveals a robust linkage between financial literacy and cryptocurrency investment tendencies among young, educated individuals. The moderate correlation ($r = 0.524$) and regression findings ($R^2 = 0.275$) suggest that financial knowledge equips individuals to navigate crypto's complexities, aligning with prior research on financial education and risk tolerance. The near-universal "High" crypto investment scores (91.3%) may reflect a generational openness to digital assets, though the sample's homogeneity (young, student-heavy) limits broader applicability.

Demographic patterns—higher scores among master's students and full-time workers—hint at education and practical experience as amplifiers of financial acumen and crypto interest. The income data's limitations underscore a need for richer socioeconomic variables in future iterations. Subscale insights further suggest that financially

literate individuals view cryptocurrency as a diversification tool, despite its volatility, challenging narratives of crypto as purely speculative.

Conclusion

This study establishes that while financial literacy positively influences cryptocurrency investment decisions, confidence and perceived security play even more significant roles. By promoting financial literacy and improving regulatory frameworks, stakeholders can contribute to safer and more informed investment behaviors. Future research can further explore psychological factors like risk appetite and herd behavior to gain a deeper understanding of cryptocurrency investments.

Overall, a balanced approach involving financial education, regulatory safeguards, and transparent market operations is essential to build a sustainable and trustworthy investment ecosystem.

Limitations of the Study

While this research provides critical insights into the relationship between financial literacy and cryptocurrency investment decisions, several limitations must be acknowledged. These limitations stem from factors such as sample size, data collection methods, market conditions, and the evolving nature of the cryptocurrency landscape. Acknowledging these constraints is essential for accurately interpreting the study's findings and identifying areas for future research.

1. Sample Size and Representation

One of the primary limitations of this study is the relatively small sample size. Although efforts were made to collect data from a diverse pool of cryptocurrency investors, the findings may not be fully representative of the entire population of crypto traders and investors. A larger sample size encompassing a wider demographic—spanning different age groups, income levels, educational backgrounds, and geographic locations—would have provided more statistically significant insights. Additionally, the study primarily relied on voluntary survey participation, which may have introduced a self-selection bias, as individuals with stronger opinions or higher engagement in cryptocurrency investments may have been more likely to participate.

2. Geographical Constraints and Market Differences

This study primarily focuses on cryptocurrency investors within a specific region, which limits the generalizability of the findings to global markets. The cryptocurrency ecosystem operates on an international scale, and investment behaviors can vary significantly based on regional economic conditions, government regulations, and cultural attitudes toward digital assets. For instance, cryptocurrency adoption is considerably higher in countries experiencing inflationary pressures or economic instability, where digital assets serve as an alternative to traditional fiat currency. In contrast, regions with strict cryptocurrency regulations or well-established financial infrastructures may exhibit different investment behaviors. Future studies should aim to analyze how financial literacy affects cryptocurrency investments across multiple geographic locations.

3. Self-Reported Data and Potential Biases

This research relies heavily on self-reported data collected through surveys and interviews, which introduces the potential for response bias. Participants may unintentionally overestimate their financial literacy or provide socially desirable responses rather than accurate reflections of their actual knowledge and behavior. Furthermore, memory recall issues can lead to inconsistencies in self-reported investment decisions. To mitigate these biases, future studies could incorporate objective assessments of financial literacy, such as knowledge-based tests or transaction history analysis, to cross-validate self-reported claims with real-world financial behavior.

4. Evolving Market Conditions and Technological Advancements

The cryptocurrency market is known for its extreme volatility, rapid technological developments, and frequent regulatory changes. This study captures a specific moment in time, but its findings may become outdated as new financial instruments, investment strategies, and regulatory frameworks emerge. For example, the increasing adoption of decentralized finance (DeFi), non- fungible tokens (NFTs), and central bank digital currencies (CBDCs) may significantly alter investment dynamics in the near future. Additionally, advancements in blockchain technology, security measures, and market analytics tools could influence how investors approach cryptocurrency investments. Future research should consider conducting longitudinal studies to track how financial literacy and investment behaviors evolve in response to changing market conditions.

5. Psychological and Behavioral Factors

Although this study primarily focuses on financial literacy as a determinant of investment decisions, it does not extensively explore the psychological and emotional factors that influence investor behavior. Concepts such as overconfidence bias, fear of missing out (FOMO), and loss

aversion play a crucial role in shaping how individuals interact with financial markets, particularly in the high-risk environment of cryptocurrencies. Many investors, regardless of their financial knowledge, are still susceptible to impulsive decision-making driven by emotions rather than rational analysis. Future studies could integrate behavioral finance theories to provide a more comprehensive understanding of the cognitive biases that impact cryptocurrency investment decisions.

6. Lack of Longitudinal Data

This study provides a snapshot of investor behavior at a particular point in time but does not track changes in financial literacy and investment patterns over an extended period. Financial literacy is not a static trait; it evolves over time as individuals gain experience, exposure, and access to financial education resources. A longitudinal study following the same set of investors over several years would provide deeper insights into how financial literacy influences investment decisions in the long run. It would also help identify whether financial education initiatives have a lasting impact on investor behavior or if external market forces continue to dominate decision-making patterns.

7. Regulatory and Institutional Influence

The study does not extensively analyze the role of financial institutions, government regulations, and investor protection mechanisms in shaping investment behavior. Many governments and financial regulators are still in the process of establishing frameworks for cryptocurrency trading, taxation, and consumer protection. These evolving regulations can significantly impact investor confidence, risk perception, and overall market stability. Additionally, institutional participation in the cryptocurrency market—such as banks, hedge funds, and exchange-traded funds (ETFs)— could reshape investment strategies in ways that are not fully captured in this study. Future research should consider the interplay between financial literacy, regulatory policies, and institutional influence in the cryptocurrency investment landscape.

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