



RACIAL DISPARITIES IN CRYPTOCURRENCY: A DECOMPOSITION ANALYSIS

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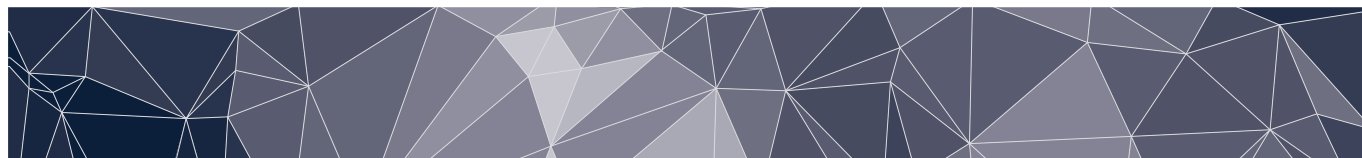
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Key words:

crypto, cryptocurrency,
diversity, Fairlie decomposition,
investment, racial disparities

ABSTRACT

This study investigates racial and ethnic disparities in cryptocurrency (crypto) ownership using data from the 2021 Survey of Household Economics and Decision-Making (SHED). While prior research has explored general determinants of crypto market participation, such as risk tolerance, financial literacy, and investment experience, this study specifically focuses on how these factors differ across racial groups. Using logistic regression and Fairlie decomposition analysis, we find that Black respondents are significantly more likely to invest in crypto compared to White respondents. Key contributors to this disparity include age, financial literacy, risk tolerance, and stock ownership. Notably, while some factors, such as younger age and higher risk tolerance, narrow the participation gap, others, including differences in total savings and stock ownership, widen it. These findings highlight the need for targeted financial education and inclusive investment policies to promote equitable participation in emerging digital financial markets. Implications for financial literacy, consumer protection, and broader economic policy are discussed.



Introduction and Motivation

The cryptocurrency financial (crypto) market is anticipated to experience a 13.1% growth rate between 2025 and 2030, and the crypto market is expected to reach \$11.71 billion by 2030 (Research and Markets, 2024). However, the crypto market has been adversely affected by systemic risks, such as global supply chain shortages during the COVID-19 pandemic, and unsystematic risks, such as recent crypto exchange scandals (Research and Markets, 2024). Consequently, the rapidly growing crypto market has been paralleled by the market's high volatility (Liu & Serletis, 2019). Currently, over 9,400 cryptocurrencies trade on open exchanges, with \$78.52 billion trading hands daily. As of March 2025, the global crypto market capitalisation is \$2.86 trillion (Coin Market Cap, 2025). The world's top three cryptocurrencies are Bitcoin, Ethereum, and Tether (Coin Market Cap, 2025). Bitcoin, invented by Satoshi Nakamoto (2008), is the dominant player in the crypto market. Currently, crypto can be used to pay for goods and services through peer-to-peer (P2P) systems (Chuen et al., 2018). P2P systems also provide flexibility, transparency, quick processing speed, and low transaction fees (Chuen et al., 2018). Unlike other currency markets, the attributes of crypto markets have increased investors' attention (Abdeldayem & Aldulaimi, 2020; Chuen et al., 2018).

The central question of this study is whether cryptocurrency investments exhibit significant racial disparities, and if so, what underlying factors drive these differences. In particular, the authors explore whether minority households are more actively involved in crypto markets than their White counterparts, and what observable characteristics might explain such gaps. This question is of broad economic and policy importance. Racial wealth gaps in the United States remain persistent, and traditional investment channels have shown unequal participation rates (Addo et al., 2024; Lin et al., 2023). If emerging financial technologies such as crypto are engaging historically underrepresented groups at higher rates, this could signal a new avenue for expanding financial inclusion. On the other hand, if disparities in crypto ownership mirror or even exacerbate existing inequalities, there are implications for consumer risk exposure and the design of inclusive financial policies. Understanding who invests in crypto speaks to larger debates on financial inclusion, wealth inequality, and the role of fintech in democratising finance.

Several socio-economic trends suggest that crypto could both appeal to and benefit marginalised groups. Minority communities have often faced barriers in traditional financial systems, ranging from lower trust in banks to limited access to investment opportunities due to discrimination or income constraints (Bone, 2023; Perzynski et al., 2023). These legacies can influence investment behaviour in two ways. First, lower trust in established institutions may push some investors toward decentralised alternatives like crypto that are perceived as more transparent or within personal control. Second, weaker ties to traditional financial networks may lead minority investors to seek information through alternative channels where cryptocurrencies are heavily promoted, such as community groups or social media. Further, the accessibility and low entry barriers of crypto platforms, such as user-friendly mobile apps and no minimum balance requirements, can disproportionately attract individuals who have been excluded from conventional finance. Opening a crypto account is often easier and less stigmatising than navigating legacy banking procedures, which lowers the threshold for participation in investing.

To investigate these questions, we leverage data from the 2021 Survey of Household Economics and Decision-Making (SHED), an annual survey conducted by the Federal Reserve Board that



documents U.S. households' financial conditions and decision-making. Notably, the 2021 wave of the SHED was the first to include questions on crypto usage. This newly available data provides a unique opportunity to analyse crypto participation across demographic groups on a nationally representative scale. Using this dataset, our study examines racial differences in crypto investment behaviour with a two-pronged empirical strategy. First, we estimate logistic regression models to identify how various factors, such as income, education, financial literacy, and risk tolerance, correlate with the likelihood of owning crypto. Specifically, we analyse whether race predicts crypto ownership after controlling for these factors. Second, we apply a non-linear Fairlie decomposition technique (Fairlie, 2005) to quantify how differences in characteristics between groups contribute to differences in crypto ownership rates. This decomposition allows this study to isolate the share of the racial gap attributable to observable factors versus unexplained factors. Through this approach, we contribute new evidence to the literature on fintech and economic disparities.

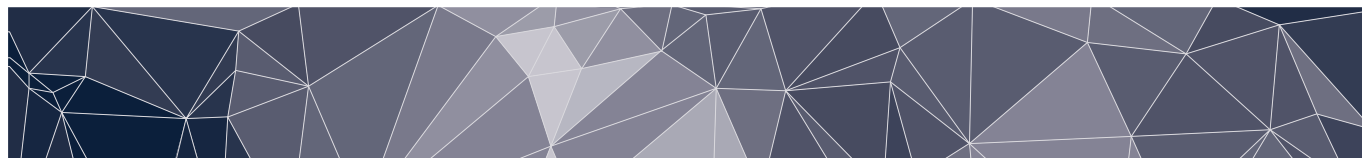
To the authors' knowledge, there is a limited understanding of the racial and ethnic disparities in crypto ownership. We offer one of the first detailed examinations of crypto participation across racial groups, utilising representative data, and highlight practical implications for financial education and inclusion initiatives. In summary, our analysis provides both a measurement of the crypto ownership gap and insight into the drivers of that gap, thereby informing ongoing discussions in finance, economics, and public policy about equitable access to emerging financial markets.

Literature Review

This study aims to investigate racial disparities in crypto ownership using data from the Federal Reserve's 2021 Survey of Household Economics and Decision-Making (SHED). While crypto adoption has attracted growing interest, research to date has rarely examined the differences in crypto market participation across racial groups. Prior studies have primarily focused on general factors influencing crypto participation, such as risk tolerance, investment experience, and financial literacy, with comparatively little attention to racial or ethnic disparities. This gap in the literature highlights the need to review existing scholarship on investment behaviour and the demographic influences of crypto ownership. Accordingly, this section provides a review of relevant literature on financial investment behaviour and the role of demographic characteristics, thereby establishing a context for the present analysis of racial disparities in crypto ownership.

Racial differences in investing and holding crypto

Investment behaviours have been shown to vary significantly by wealth gaps, especially after the Great Recession of 2007-2009 (Weller & Hanks, 2018). Gutter et al. (1999) suggested that wealth gap variations could be a by-product of the differences in risk preference among demographic and ethnic groups, where Whites preferred to hold riskier financial investments, such as common stock, while Blacks preferred to hold relatively low-risk securities, bank savings, and treasury bonds in their investment portfolios. Generally, Black households were less likely to invest in the equity markets than White households (Gutter et al., 1999; Gutter & Fontes, 2006). Gutter et al. (1999) also posited that differences in wealth gaps came from household size.



Racial disparities in crypto ownership have been shown to be ambiguous. Elu and William (2022) examined the hedging effect of crypto during the COVID-19 pandemic, and the results indicated that, on average, Whites benefited more from crypto ownership than Hispanics and Blacks. Although Blacks who were more reluctant to invest in traditional stock markets became more active in the crypto market, Whites were the only group that had experienced positive premia from investing in the crypto market (Elu & Williams, 2022). In addition, Mills and Nower (2019) estimated the gambling behaviour in crypto investing due to high volatility and outcome variation using post-hoc techniques. The results showed that Hispanics were more passionate about investing and holding crypto than other races, including Whites, Blacks, and Asian/others. In addition, Hispanics tended to trade cryptos more frequently (Mills & Nower, 2019). However, other research showed that there was no statistically significant association between race and cryptos (Kim et al., 2022). As such, although inequity among ethnicities has been investigated, research regarding crypto ownership differences among racial and ethnic demographics has not been conclusive.

Other determinants of investing in crypto

The crypto market is widely followed and crypto has been adopted for its diversification benefits. Due to its low correlation to other asset classes, holding crypto is an option for portfolio diversification (Chuen et al., 2017; Corbet et al., 2018; Goodell & Goutte, 2021; Pearson & Guillemette, 2020). Similarly, Bouri et al. (2017) utilised a dynamic conditional correlation model to show that Bitcoin was a poor hedge against systematic risk, but it may be suitable for diversification among a wide range of portfolio assets. Anyfantaki et al. (2018) posited that an Ethereum-augmented portfolio was a good diversification option in the long run, even though the crypto market had high volatility with positive skewness and kurtosis. Goodell and Goutte (2021) contributed to diversifying equity with crypto during the COVID-19 pandemic and found that the crypto market and equity indices were positively associated.

When compared to investing in the stock market, investing in the crypto market has been shown to be generally riskier and potentially less profitable (Abdeldayem & Aldulaimi, 2020). Regarding crypto investment decisions, investment behaviour links an individual's risk tolerance, investment experience, and financial knowledge (Pearson et al., 2022; Zhao & Zhang, 2021). Using the 2018 National Financial Capability Study (NFCS), Zhao and Zhang (2021) found that only subjective financial knowledge was negatively associated with investing in the crypto market. Specifically, financial literacy and investment experience, such as a history of holding risky assets, played dominant roles in deciding to invest in crypto (Zhao & Zhang, 2021). Similar results were also found by Kim et al. (2022), showing that overconfident investors were more likely to hold crypto. In addition, investors with investment experience had a higher probability of investing in crypto (Nurbarani & Soepriyanto, 2022; Pearson, 2021; Pearson, 2022; Xi et al., 2020; Zhao & Zhang, 2021).

Prior research suggested that investors who invested and held crypto tend to be younger (Kim et al., 2022; Zhao & Zhang, 2021), single (Kim et al., 2022), male (Henry et al., 2018), had higher income levels (Ante et al., 2022; Xi et al., 2020), and had higher education levels (Henry et al., 2018). Xi et al. (2020) also highlighted that employment was statistically associated with crypto ownership, finding that households who were employed in the education sector had a lower probability of investing in crypto.



Given that there is a trend in the fast growth of the crypto market, the authors have raised the following questions: (1) Are minorities more actively involved in crypto? and (2) What factors might explain the racial disparities in crypto investment? Moreover, this study aims to answer these questions by examining the racial and ethnic differences in investing in crypto. This study begins by revisiting the determinants of crypto ownership. Second, this study applies the Fairlie decomposition technique (Fairlie, 2005) to explore the disparities between White respondents and other groups.

Theoretical Motivation

Social cognitive theory, developed by Bandura (1989), posited that consumers make decisions based on their cognitive, vicarious, self-reflective, and self-regulatory processes. As such, crypto ownership may be related to individuals' relevant cognitive abilities, such as previous investment experience (Korankye et al., 2024; Zhao & Zhang, 2021), financial literacy (Kim et al., 2022), and cultural experiences (Zhang et al., 2020). Moreover, differences in social capital and institutional trust mean that not all groups evaluate these investments the same way. Racial groups differ systematically in factors such as financial resources, exposure to financial education, and trust in traditional institutions (Ante et al., 2022; Cherry et al., 2025; Zhao & Zhang, 2021). These differences create distinct mechanisms that can drive higher or lower crypto adoption for one group versus another group. Below, we articulate this study's key hypotheses and clarify why they are plausible under this theoretical lens, focusing on how risk preferences, financial literacy, trust in institutions, and related factors result in the observed disparities in crypto ownership.

In coordination with the previous literature, the hypotheses of this study are as follows:

H1: Households with greater investment experience, as measured by prior stock ownership, are more likely to invest in crypto. This hypothesis follows naturally from a utility-maximisation perspective. Prior investment experience equips individuals with the financial, psychological, and informational knowledge necessary to venture into a new asset class like crypto. Experienced investors are more comfortable assessing risky investments and navigating trading platforms (Cheah et al., 2011; Liu et al., 2023; Kim et al., 2022; Nurbarani & Soepriyanto, 2022). Moreover, experienced investors may have broader social networks or exposure to investment opportunities. A substantially smaller share of Black households have participated in the stock market compared to White households, thus experience is unevenly distributed across race (Mills & Nower, 2019).

H2: Households with higher financial literacy are more likely to invest in crypto. From a utility maximisation and behavioural finance standpoint, greater financial literacy should enable individuals to better understand the risks and rewards of crypto. High financial literacy can enhance one's ability to evaluate complex financial products and diversify appropriately, thereby increasing the perceived benefits or reducing the perceived risks of crypto ownership. By contrast, individuals with limited financial knowledge may be hesitant to invest in novel and volatile assets due to uncertainty or misperceptions (Kim et al., 2022; Zhao & Zhang, 2021).



H3: Households with higher levels of risk tolerance are more likely to invest in crypto. This hypothesis flows directly from the high volatility and speculative nature of crypto markets. Investors' risk tolerance is a key parameter in their utility function, as those willing to tolerate above-average risk will have higher expected utility of holding crypto, given its high potential returns paired with its high standard deviation of returns. By contrast, risk-averse individuals derive less utility from volatile investments and are more likely to avoid volatile assets in favour of less volatile assets. It is expected that across all racial groups, the probability of owning crypto rises with one's appetite for financial risk.

H4: Racial minority investors are more likely to invest in crypto than White households. This hypothesis encapsulates the core disparity that motivated this study. Several theoretical arguments support this expectation. Early studies suggested that Black households tend to be more conservative in their investments, preferring safer assets and exhibiting lower stock-market participation than White households (Gutter & Fontes, 2006; Hong et al., 2001). This traditional pattern would predict lower crypto involvement by Black investors if they are, on average, more risk-averse. However, from an economic standpoint, differences in wealth and opportunity create different incentives for investment. Facing a significant wealth gap, minorities may be motivated to take on greater risks in the hope of achieving higher returns, effectively displaying a higher risk tolerance in the context of crypto.

Secondly, sociological factors, such as trust in financial institutions and social capital, play a significant role. Minority communities have historically faced exclusion or discrimination in mainstream financial systems (Bone, 2023; Perzynski et al., 2023). This has two effects that bolster crypto adoption. On the one hand, lower trust in established institutions can prompt individuals to seek decentralised alternatives that are perceived as more transparent or under their personal control. Crypto, which operates on blockchain with public ledgers and does not require intermediaries, may be viewed as more trustworthy by those who are skeptical of traditional financial institutions. On the other hand, lacking strong ties to traditional financial networks means minority investors might rely on alternative networks and information channels to learn about investments, such as community groups, online forums, or social media. These channels have popularised crypto as a potentially inclusive opportunity, possibly leading to higher awareness and adoption within these communities.

Third, the accessibility and low entry barriers of crypto can disproportionately benefit those who have faced barriers in traditional finance. For example, opening a crypto account on a mobile app is often easier than meeting minimum balance requirements or credit checks at financial institutions. Democratised access to crypto offers a form of financial inclusion that may appeal to these groups. Crypto investment does not require formal approval, extensive paperwork, or personal connections in the financial industry, lowering the threshold for participation. This aligns with social capital theory, as groups with less institutional financial inclusion can more readily participate in a decentralised market that runs on open networks.

Finally, there may be a cultural and demographic element that could reinforce these trends. Minority populations in the U.S. have a younger median age than White populations (Johnson & Lichter, 2010), and younger adults are generally more open to new technologies. This suggests



that minority investors may inherently exhibit a proactive interest in crypto. Taking these factors together, this study's framework predicts higher crypto participation among minority groups compared to Whites. In this sense, race itself may be viewed as a proxy for underlying social and economic differences, and is hypothesised to be a significant predictor of crypto ownership.

Methods

Data

This study examined data collected from the 2021 Survey of Household Economics and Decision-making (SHED) from the Federal Reserve Board. The SHED is conducted every year and focuses on economic well-being and financial considerations, such as savings, retirement planning, debt, and investment behaviour. The original data file includes 11,874 observations. After dropping missing values, the final sample size used in the analyses is ($n = 8,575$).

Variables

Crypto data was collected for the first time in the 2021 wave. The specific question asked: 'In the past year, have you done the following with cryptocurrencies, such as Bitcoin or Ethereum?' The possible responses included: (1) bought or held as an investment, (2) used to buy something or make a payment, and (3) used to send money to friends or family. The current study examines racial disparities from an investment perspective. Consequently, a variable was created and coded as a '1' if the respondent answered 'Yes' to 'bought or held as an investment', and '0' is coded otherwise.

The racial and ethnicity data was comprised of four groups: White, Black, Hispanic, Asian/others. Control variables were also examined. Age was measured as a continuous variable. Gender was measured as a dichotomous variable, taking the value of '1' if the respondent identified as male and a '0' otherwise. Marital status took the form of a dummy variable, coded as '1' if the respondent was married and a '0' otherwise. Educational attainment was examined as a categorical variable, and the possible categories including high school or lower, some college, bachelor's degree, and master's degree or higher. Household size was measured continuously, indicating the number of people within the household.

The economic variables included household income, financial status, financial condition, home ownership, emergency access, total savings and investment, and stock ownership. Household income was examined as a categorical variable, which included six categories: less than \$24,999, \$25,000 to \$49,999, \$50,000 to \$74,999, \$75,000 to \$99,999, \$100,000 to \$149,999, and \$150,000+. The group with less than \$24,999 was the reference group to which other groups compared. Financial condition was determined by answering the following question: 'Compared to two years ago (2019), would you say that you (and your family) are better off, the same, or worse off financially?' The responses included 'much worse off, somewhat worse off, about the same, somewhat better off, and much better off.' Respondents who answered 'much worse off' were the reference group to which the other groups were compared. For home ownership, if the respondent owned a home with a mortgage or loan and/or owned the home free and clear, the value was coded as a '1.' If the respondent rented, the value was coded as a '0.'



Emergency fund access was a dummy variable that took the value of '1' if the respondent had an emergency fund that would cover expenses for at least 3 months in the event of sickness, job loss, economic downturn, or other emergencies, and a '0' is coded otherwise. Total savings and investment were a categorical variable including: under \$50,000, \$50,000 to \$99,999, \$100,000 to \$249,999, \$250,000 to \$499,999, \$500,000 to \$999,999, and \$1,000,000 or more. The following question determined stock ownership: 'Do you own any individual stock in publicly traded companies directly (i.e., not through a mutual fund or exchange-traded fund (ETF)? Please also include any in stock held in a 401(k) or other pension plan.' If the respondent chose 'yes', the value coded was a '1' and a '0' is coded otherwise.

Other variables included financial literacy, risk tolerance, physical health status, employment status, and retirement status. Financial literacy was determined by answering the 'Big Three' including stock, inflation, and interest rate. If the respondent answered each of the questions correctly, 1 point was given and 0 otherwise. Consequently, financial literacy ranged from 0 to 3. Risk tolerance was measured with a range from 0 to 10, where a '0' means not willing to take a risk and a '10' indicated the respondent was very willing to take the risk. Physical health status comprised of four groups: poor/fair, good, very good, and excellent. The reference group was poor/fair health. Employment status was a dichotomous variable that took a value of '1' if respondents worked full-time or part-time, and a '0' if respondents did not work. Retirement status was a dummy variable. If the respondents were retired, the value was coded as 1 and 0 otherwise. Those who answered 'Do not know' or had incomplete data were dropped.

Analyses

This study estimated the following logistic regression via maximum likelihood:

$$\Pr(Y = 1) = F(\beta_0 + \beta_1 \text{Demographics} + \beta_2 \text{Economics} + \beta_3 \text{Others})$$

where Y is the binary outcome variable that indicates the decision to buy or hold crypto for investment. Demographics include race/ethnicity, age, gender, marital status, educational attainment, and household size. Economics is the matrix comprising household income, financial status, financial condition, home ownership, emergency access, household savings and investment, and stock ownership. Others represent financial literacy, risk tolerance, physical health, employment status, and retirement status.

For further investigation of racial and ethnic disparities of crypto ownership, this paper utilised the following decomposition technique (Fairlie, 2005), which was developed from the Blinder-Oaxaca (1994):

$$\bar{C}^1 - \bar{C}^2 = \left[\frac{1}{N^1} \sum_{i=1}^{N^1} F(X_i^1 \hat{\beta}^1) - \frac{1}{N^2} \sum_{i=1}^{N^2} F(X_i^2 \hat{\beta}^1) \right] + \left[\frac{1}{N^2} \sum_{i=1}^{N^2} F(X_i^2 \hat{\beta}^1) - \frac{1}{N^2} \sum_{i=1}^{N^2} F(X_i^2 \hat{\beta}^2) \right]$$

Decomposition estimation allows for group comparisons among uneven sample sizes by utilising the mean of 100 estimations to estimate the gap across groups (Fairlie, 2005). In the equation, $\bar{C}^1, \bar{C}^2$ indicates the crypto ownership between two groups. $F(X\hat{\beta})$ is logistic regression. The first portion of the equation stands for the 'explained' part, which measures the racial/ethnic gap due to the different distribution of X. The second portion of the equation indicates the 'unexplained' racial/ethnic gap due to the unobserved effects, such as data restriction.

Results

Table 1 shows crypto ownership across groups. Roughly 10% of all respondents across groups owned crypto as an investment. While comparing across groups, Asians/others held the highest percentage, with about 15% of Asians and others owning crypto, compared to 12%, 12%, and 10% of Hispanics, Blacks, and Whites, respectively.

Table 2 represents the descriptive statistics of the pooled sample, the characteristics of respondents who own crypto, and the characteristics of those who do not own crypto. Among respondents who owned crypto, about 66% were White compared to 11%, 12%, and 11% for Black, Hispanic, Asian/others, respectively. Interestingly, respondents who owned crypto tended to be younger than those without crypto. About 71% of those who owned crypto were male. Respondents owning crypto had higher household income levels than those without crypto. Interestingly, about 71% of respondents with crypto had an emergency fund compared to 65% without crypto. About 74% of crypto investors owned stocks compared to only 38% for those without investing crypto. Respondents who owned crypto tended to be employed, had higher financial literacy scores, and had a higher risk tolerance.

Table 3 displays the results of logistic regression. Odds ratios and standard errors are shown across groups. In the pooled sample, the odds for Black respondents were 1.55, indicating that the odds of Black respondents investing in crypto were 1.55 times higher than White respondents. Younger respondents were more likely to invest in crypto. The odds of male investors investing in crypto were 1.57 times higher than females. Greater household size was associated with higher odds of crypto ownership. The odds of owning crypto were 0.25 times (25%) lower for respondents who own a home compared to those who do not. As expected, the higher total savings

Table 1. Racial/ethnic differences in crypto ownership

	Pooled	White	Black	Hispanic	Asian/others
Crypto ownership	10.43%	9.60%	11.79%	11.79%	14.94%
Sample size	8,575	6,199	814	933	629

Table 2. Descriptive statistics of crypto ownership

Variables	Pooled sample	Own cryptocurrency	Do not own cryptocurrency
Cryptocurrency ownership	0.1044 (0.3058)	1.0000	0.0000
Demographics			
Race			
White	0.7229 (0.4476)	0.6648 (0.4723)	0.7297 (0.4442)
Black	0.0949 (0.2931)	0.1073 (0.3096)	0.0935 (0.2911)
Hispanic	0.1088 (0.3114)	0.1229 (0.3285)	0.1072 (0.3093)
Asian/others	0.0734 (0.2607)	0.1050 (0.3068)	0.0697 (0.2546)

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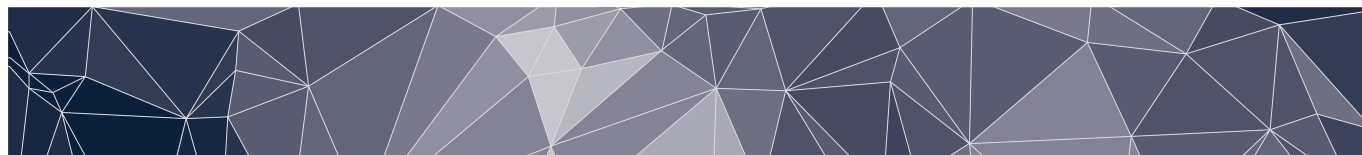


Table 2. Continued

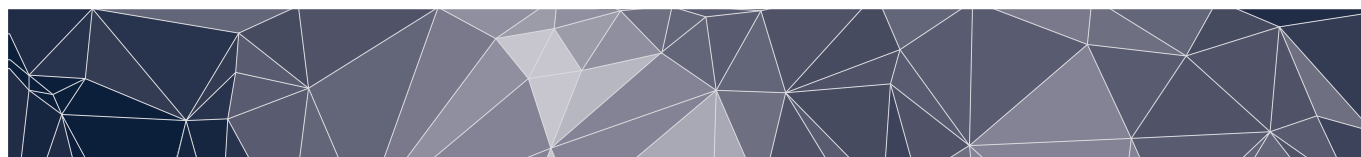
Variables	Pooled sample	Own cryptocurrency	Do not own cryptocurrency
Age	53.2279 (17.1581)	42.4916 (14.4533)	54.4790 (17.0116)
Male	0.5392 (0.4985)	0.7095 (0.4542)	0.5194 (0.4997)
Married (Ref. = Unmarried)	0.6182 (0.4859)	0.6089 (0.4883)	0.6193 (0.4856)
Educational attainment			
High school or lower (Ref.)	0.2781 (0.4481)	0.1296 (0.3361)	0.2954 (0.4563)
Some college	0.2756 (0.4468)	0.2939 (0.4558)	0.2734 (0.4458)
Bachelor	0.2513 (0.4338)	0.3520 (0.4778)	0.2396 (0.4269)
Master or higher	0.1950 (0.3962)	0.2246 (0.4175)	0.1915 (0.3935)
Household size	2.5506 (1.3281)	2.8749 (1.4685)	2.5128 (1.3057)
Economics			
Household income			
Less than \$24,999 (Ref.)	0.1157 (0.3199)	0.0536 (0.2254)	0.1229 (0.3284)
\$25,000 to \$49,999	0.1662 (0.3723)	0.1061 (0.3082)	0.1732 (0.3784)
\$50,000 to \$74,999	0.1658 (0.3720)	0.1363 (0.3433)	0.1693 (0.3750)
\$75,000 to \$99,999	0.1297 (0.3360)	0.1341 (0.3409)	0.1292 (0.3354)
\$100,000 to \$149,999	0.1945 (0.3959)	0.2335 (0.4233)	0.1900 (0.3923)
\$150,000 or more	0.2281 (0.4196)	0.3363 (0.4727)	0.2155 (0.4112)
Financial status (compared to 12 months ago)			
Much worse off (Ref.)	0.0381 (0.1915)	0.0279 (0.1649)	0.0393 (0.1944)
Somewhat worse off	0.1579 (0.3647)	0.1553 (0.3624)	0.1582 (0.3650)
About the same	0.5508 (0.4974)	0.4771 (0.4998)	0.5594 (0.4965)
Somewhat better off	0.2006 (0.4005)	0.2436 (0.4295)	0.1956 (0.3967)
Much better off	0.0526 (0.2232)	0.0961 (0.2949)	0.0475 (0.2128)
Financial condition (compared to 2 years ago)			
Much worse off (Ref.)	0.0641 (0.2450)	0.0525 (0.2232)	0.0655 (0.2474)
Somewhat worse off	0.1698 (0.3755)	0.1665 (0.3727)	0.1702 (0.3758)

(Continued)

Table 2. Continued

Variables	Pooled sample	Own cryptocurrency	Do not own cryptocurrency
About the same	0.4113 (0.4921)	0.3073 (0.4616)	0.4234 (0.4941)
Somewhat better off	0.2512 (0.4337)	0.2972 (0.4573)	0.2458 (0.4306)
Much better off	0.1036 (0.3047)	0.1765 (0.3815)	0.0951 (0.2933)
Home ownership (Ref. = do not own)	0.7172 (0.4504)	0.6603 (0.4739)	0.7238 (0.4471)
Emergency access (Ref. = do not have)	0.6539 (0.4758)	0.7095 (0.4542)	0.6474 (0.4778)
Total savings and investment			
Under \$50,000 (Ref.)	0.4295 (0.4950)	0.4212 (0.4940)	0.4305 (0.4952)
\$50,000 to \$99,999	0.1163 (0.3206)	0.1318 (0.3385)	0.1145 (0.3184)
\$100,000 to \$249,999	0.1392 (0.3462)	0.1575 (0.3645)	0.1371 (0.3440)
\$250,000 to \$499,999	0.1058 (0.3076)	0.1073 (0.3096)	0.1056 (0.3073)
\$500,000 to \$999,999	0.0903 (0.2866)	0.0816 (0.2739)	0.0913 (0.2880)
\$1,000,000 or more	0.1190 (0.3237)	0.1006 (0.3009)	0.1211 (0.3263)
Stock ownership (Ref. = do not own)	0.4156 (0.4929)	0.7441 (0.4366)	0.3773 (0.4848)
Others			
Financial literacy (Range from 0 to 3)	2.2507 (0.9477)	2.5106 (0.7697)	2.2204 (0.9618)
Risk tolerance (Range from 0 to 10)	4.3560 (2.6723)	6.0089 (2.2958)	4.1634 (2.6466)
Physical health			
Poor and Fair	0.1493 (0.3564)	0.1017 (0.3024)	0.1548 (0.3618)
Good	0.3712 (0.4832)	0.3453 (0.4757)	0.3742 (0.4840)
Very good	0.3829 (0.4861)	0.4223 (0.4942)	0.3783 (0.4850)
Excellent	0.0967 (0.2955)	0.1307 (0.3373)	0.0927 (0.2900)
Employment status (Ref. = not working)	0.6080 (0.4882)	0.8268 (0.3786)	0.5826 (0.4932)
Retirement status (Ref. = not retired)	0.3523 (0.4777)	0.1397 (0.3468)	0.3771 (0.4847)
Sample size	8,575	895	7,680

Notes: Data compiled from the 2021 SHED.



and investments level was associated with crypto ownership. The odds ratio for respondents who owned stock was 4.99, indicating that investors who owned stock were 4.99 times more likely to own crypto compared to those who did not own stock. Additionally, higher financial literacy scores and higher risk tolerance levels were associated with crypto ownership.

When comparing the results across the groups, each group has similarities and differences. The similarities noted were that crypto investors tended to be younger, more likely to own stock, and had higher risk tolerance. Dissimilarities were also found. For instance, Whites had higher total savings and investments, which was associated with increased odds of crypto ownership. However, Blacks, Hispanics, and Asian/others respondents did not show the same associations as Whites. Only Whites and Hispanics had a similar trend for household size with the pooled sample.

Table 3. Logistic regression of crypto ownership across groups

Variables	Pooled sample (Odds/S.E.)	White (Odds/S.E.)	Black (Odds/S.E.)	Hispanic (Odds/S.E.)	Asian/others (Odds/S.E.)
Demographics					
Race (Ref.=White)					
Black	1.5480*** (0.2110)	-	-	-	-
Hispanic	1.0457 (0.1332)	-	-	-	-
Asian/others	1.2030 (0.1635)	-	-	-	-
Age	0.9549*** (0.0037)	0.9546*** (0.0045)	0.9532*** (0.0120)	0.9534*** (0.0126)	0.9385*** (0.0135)
Male	1.5663*** (0.1381)	1.4989*** (0.1627)	1.8722* (0.5249)	1.8843* (0.5231)	1.5013 (0.4543)
Married (Ref. = Unmarried)	1.0716 (0.1082)	1.0640 (0.1343)	0.7354 (0.2298)	1.6473 (0.5155)	1.3855 (0.5170)
Educational attainment (Ref.= high school or lower)					
Some college	1.5099*** (0.1953)	1.3913* (0.2196)	1.3829 (0.5402)	1.9051 (0.6915)	4.9853* (3.6494)
Bachelor	1.0937 (0.1512)	1.0195 (0.1701)	1.0480 (0.4619)	1.6453 (0.6614)	2.1844 (1.5865)
Master or higher	0.9658 (0.1457)	0.8274 (0.1524)	0.7387 (0.3552)	1.6419 (0.7488)	3.4763 (2.5567)
Household size	1.0966** (0.0335)	1.1061** (0.0422)	0.9851 (0.1029)	1.3222*** (0.1119)	0.9341 (0.1029)
Economics					
Household income (Ref.=Less than \$24,999)					
\$25,000 to \$49,999	1.1518 (0.2336)	1.1376 (0.2987)	1.8694 (0.9344)	0.4312 (0.2386)	3.6756 (3.5201)
\$50,000 to \$74,999	1.0954 (0.2216)	1.0756 (0.2831)	1.2903 (0.6847)	0.6381 (0.3384)	2.0130 (1.8757)
\$75,000 to \$99,999	1.2829 (0.2688)	1.1022 (0.3015)	2.0704 (1.1694)	0.9016 (0.4779)	3.9548 (3.7530)
\$100,000 to \$149,999	1.3956 (0.2883)	1.4622 (0.3843)	2.6580 (1.5935)	0.4616 (0.2620)	1.9170 (1.7993)
\$150,000 or more	1.7896** (0.3850)	1.5783 (0.4315)	2.5850 (1.6846)	2.0964 (1.1857)	2.9617 (2.8481)

(Continued)

Table 3. Continued

Variables	Pooled sample (Odds/S.E.)	White (Odds/S.E.)	Black (Odds/S.E.)	Hispanic (Odds/S.E.)	Asian/others (Odds/S.E.)
Financial status (compared to 12 months ago) (Ref.=Much worse off)					
Somewhat worse off	0.9316 (0.2663)	0.9693 (0.3448)	0.5947 (0.5645)	2.4464 (2.0109)	0.4417 (0.6058)
About the same	0.7682 (0.2319)	0.8200 (0.3135)	0.4528 (0.4215)	1.3249 (1.1759)	0.6939 (0.9284)
Somewhat better off	0.7385 (0.2331)	0.8648 (0.3458)	0.3994 (0.3848)	0.6637 (0.6049)	1.2223 (1.7099)
Much better off	0.7945 (0.2792)	0.8085 (0.3655)	0.4198 (0.4422)	1.2042 (1.1744)	1.1616 (1.7131)
Financial condition (compared to 2 years ago) (Ref.=Much worse off)					
Somewhat worse off	1.1468 (0.2599)	1.0589 (0.2921)	2.1352 (1.9063)	0.3755 (0.2500)	11.6440 (14.8159)
About the same	0.8847 (0.2175)	0.8289 (0.2529)	1.9102 (1.6865)	0.2699 (0.1985)	4.2548 (5.4197)
Somewhat better off	1.0006 (0.2521)	0.8977 (0.2819)	2.0351 (1.8373)	0.7407 (0.5347)	1.7576 (2.3111)
Much better off	1.2255 (0.3398)	1.1422 (0.4018)	2.9781 (2.8073)	0.5645 (0.4431)	4.3659 (5.7069)
Home ownership (Ref. = do not own)	0.7528** (0.0787)	0.7990 (0.1053)	0.6808 (0.2188)	0.4481** (0.1371)	0.9180 (0.3367)
Emergency access (Ref. = do not have)	1.0206 (0.1016)	0.9468 (0.1185)	1.4195 (0.4152)	0.7934 (0.2311)	2.4207* (0.8587)
Total savings and investment (Ref.=Under \$50,000)					
\$50,000 to \$99,999	0.8234 (0.1104)	0.7395 (0.1227)	0.8416 (0.3481)	0.8711 (0.3616)	1.5269 (0.6876)
\$100,000 to \$249,999	0.6083*** (0.0802)	0.5327*** (0.0870)	1.4129 (0.5813)	0.5752 (0.2281)	0.9467 (0.4222)
\$250,000 to \$499,999	0.5820*** (0.0890)	0.5592*** (0.1012)	0.4790 (0.2891)	0.6665 (0.3444)	0.6653 (0.3561)
\$500,000 to \$999,999	0.5279*** (0.0906)	0.5158*** (0.1046)	0.1963* (0.1627)	0.5338 (0.3060)	0.9662 (0.5591)
\$1,000,000 or more	0.4337*** (0.0744)	0.4047*** (0.0834)	0.8186 (0.6197)	0.3564 (0.2207)	0.6047 (0.3182)
Stock ownership (Ref. = do not own)	4.9921*** (0.4850)	5.0531*** (0.6042)	6.1590*** (1.8636)	7.7546*** (2.3266)	3.3253*** (1.1146)
Others					
Financial literacy (Range from 0 to 3)	1.1778** (0.0638)	1.2109** (0.0866)	1.2114 (0.1825)	1.0064 (0.1468)	1.0031 (0.1788)
Risk tolerance (Range from 0 to 10)	1.2205*** (0.0228)	1.2437*** (0.0296)	1.2009*** (0.0622)	1.2440*** (0.0688)	1.2395*** (0.0812)
Physical health (Ref.=Poor and Fair)					
Good	1.0072 (0.1409)	0.9668 (0.1734)	0.4173* (0.1473)	2.1227 (0.9617)	2.5237 (1.4092)
Very good	1.0045 (0.1411)	0.9262 (0.1662)	0.3461** (0.1341)	2.4962* (1.1411)	3.2407* (1.7969)
Excellent	0.8491 (0.1457)	0.8143 (0.1765)	0.1457*** (0.0821)	1.6439 (0.8948)	3.0149 (1.8742)

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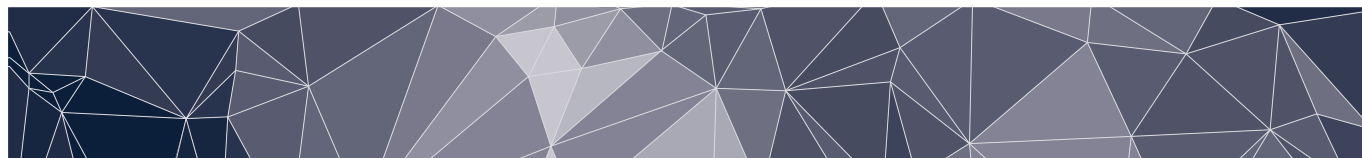


Table 3. Continued

Variables	Pooled sample (Odds/S.E.)	White (Odds/S.E.)	Black (Odds/S.E.)	Hispanic (Odds/S.E.)	Asian/others (Odds/S.E.)
Employment status (Ref. = not working)	1.3140* (0.1656)	1.3071 (0.2080)	1.1680 (0.4428)	1.4115 (0.4922)	1.0983 (0.5056)
Retirement status (Ref. = not retired)	1.3073 (0.2068)	1.1688 (0.2296)	1.9126 (0.8944)	2.0137 (0.9205)	1.0748 (0.6911)
Intercept	0.0572*** (0.0213)	0.0642*** (0.0295)	0.1491 (0.1739)	0.0258*** (0.0291)	0.0029** (0.0056)
Sample size	8,575	6,199	814	933	629
R-square	0.2277	0.2315	0.2595	0.3123	0.2795

Notes: Data compiled from the 2021 SHED.

*Significant at the 5% level **Significant at the 1% level ***Significant at the 0.1% level.

Sensitivity Analysis

Due to differences in crypto ownership across racial/ethnic groups, a decomposition technique was applied to the analysis. The decomposition results are shown in Table 4. If Black respondents had the same characteristics as Whites, Blacks were more likely to own crypto than Whites. Age (117%), financial literacy (54%), and household income (52%) contributed most to explaining the differences in crypto ownership, between Whites and Blacks. Given the negative contribution, these characteristics reduce the difference when deciding to own crypto. For example, Blacks were younger than Whites on average, and younger age was associated with a higher likelihood of crypto ownership. However, total investment and savings (-54%), risk tolerance (-39%), and stock ownership (-34%) widen the difference when deciding to own crypto. Given the positive association, in other words, differences in investment and savings made the gap between Whites and Blacks in crypto ownership larger. Age, stock ownership, and risk tolerance were also the key factors explaining the crypto differences between Whites and Hispanics and Asians/others. Interestingly, age was not a dominant factor when comparing Whites and Hispanics, and stock ownership and risk tolerance contributed even more. Similar results were found when comparing Whites and Asian/others.

Discussion

This study examined the racial and ethnic disparities of crypto ownership using the 2021 SHED dataset. Both logistic regression and decomposition techniques were employed and found that stock ownership was associated positively with crypto ownership for the pooled sample, which supports the first hypothesis (H1). In line with Zhao and Zhang (2021), investment experience was dominant in holding risky assets, such as crypto. Empirical results supported the second hypothesis (H2), consistent with previous literature (Kim et al., 2022; Syarkani & Tristanto, 2022). Financial literacy could be treated as a cognitive ability and was found to have a significant effect when making financial decisions (Pearson & Korankye, 2023; Zhao & Zhang, 2021). The third hypothesis (H3) was also validated by this study. Given the high volatility of crypto, risk-averse investors tended to avoid the investment (Abdeldayem & Aldulaimi, 2020; Pearson et al., 2021). Holding all else consistent, high-risk tolerance respondents tended to invest in crypto. Regarding the fourth hypothesis (H4), this study found that Black investors were more likely to invest in crypto than White investors, but not for Hispanics and Asian/others.

Table 4. Decomposition estimation across groups

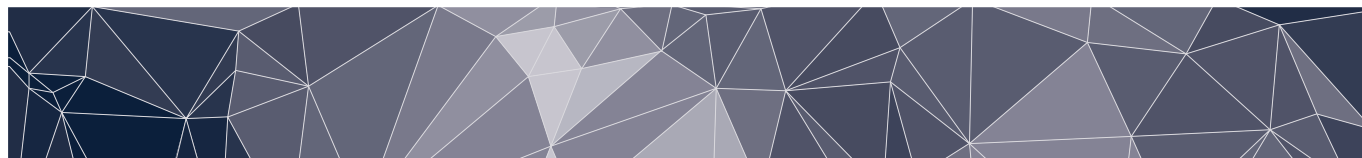
Component	White vs. Black		White vs. Hispanic		White vs. Asian/others	
	Contribution to difference	% of explained difference	Contribution to difference	% of explained difference	Contribution to difference	% of explained difference
Demographic						
Age	-0.0133***	117.08%	0.0042**	20.99%	0.0057***	14.39%
Male	-0.0021***	18.31%	0.0012**	5.84%	0.0014**	3.66%
Marital status	0.00004	-0.31%	-0.0002	-0.91%	0.0005	1.16%
Education	0.0004	-3.76%	0.0014	6.91%	-0.0048*	-12.13%
Household size	-0.0022*	19.22%	0.0023**	11.75%	0.0004	1.08%
Economics						
Household Income	-0.0059**	52.07%	-0.0029**	-14.77%	0.0042*	10.63%
Financial status (compared 1 year ago)	-0.0011	9.41%	-0.0002	-0.81%	-0.0005	-1.40%
Financial condition (compared 2 years ago)	0.0011	-9.88%	0.0006	2.88%	0.0006	1.56%
Home ownership	0.0017	-15.25%	0.0022*	11.27%	-0.0007	-1.67%
Emergency access	-0.00003	0.29%	-0.0003	-1.29%	0.0002	0.48%
Total investment and savings	0.0061***	-53.66%	0.0009	4.37%	-0.0105***	-26.70%
Stock ownership	0.0039*	-34.15%	0.0077***	39.11%	0.0309***	78.65%
Others						
Financial literacy	-0.0061***	54.00%	-0.0028	-14.40%	0.0011*	2.79%
Risk tolerance	0.0044***	-38.89%	0.0055***	27.93%	0.0114***	28.92%
Physical health	0.0020	-18.03%	-0.0002	-1.05%	-0.0003	-0.72%
Employment status	0.0003	-2.90%	0.0004	2.02%	0.0015	3.77%
Retirement status	-0.0004	3.88%	-0.0007	-3.62%	-0.0013	-3.26%
Total difference	0.0220		0.0219		0.0535	
Explained difference	-0.0114		0.0198		0.0393	
Unexplained difference	0.0333		0.0021		0.0141	
Percent of explained difference to total difference		-52%		90%		74%

Notes: Data compiled from the 2021 SHED.

*Significant at the 5% level **Significant at the 1% level ***Significant at the 0.1% level.

Furthermore, consistent with previous research (Bouri et al., 2017; Corbet et al., 2018), crypto investors tended to be male and younger.

The heightened crypto participation observed among Black households relative to White households must be considered in light of historical and structural contexts. Racial wealth disparities may have left many Black families with fewer financial assets and opportunities for traditional wealth-building. Past research has documented Black investors are generally more conservative, favoring safer assets and exhibiting lower stock market participation compared to Whites (Addo et al., 2024; Lin et al., 2023). This conservatism has been linked to both cultural preferences and structural factors, such as lower inheritances and income, which limit risk capability (Weller & Hanks, 2018; Gutter et al., 1999). Paradoxically, our findings suggest



that the crypto market may be altering this pattern. Crypto's low entry barriers and decentralised nature appear to offer an alternative avenue for wealth accumulation that bypasses traditional financial gatekeepers. Black respondents' higher likelihood of owning crypto could reflect a pursuit of new investment frontiers in response to historical exclusion from traditional financial systems. Indeed, minorities have historically faced discrimination and mistrust in banking and stock markets (Bone, 2023; Perzynski et al., 2023), which can spur interest in peer-to-peer and fintech innovations.

Crypto's perceived fairness and autonomy in the form of transactions validated on public ledgers without institutional intermediaries may particularly appeal to those skeptical of traditional institutions. Social exclusion could explain why many minority investors rely on alternative information networks, rather than formal financial networks and trained financial advisors. These channels have popularised crypto as an inclusive and democratised opportunity, potentially accelerating awareness and adoption in minority communities. Consequently, social and structural forces, including long-standing wealth gaps and financial experiences, help explain why historically underserved groups have gravitated toward crypto as a path for economic advancement.

While structural context provides a backdrop, behavioural economics and cognitive factors offer insight into how different groups approach crypto. One key element is risk tolerance. Crypto assets are highly volatile, so willingness to accept risk is a crucial predictor of participation. This study finds that across all races, more risk-tolerant individuals are more likely to hold crypto, whereas risk-averse individuals avoid it. Risk tolerance itself can be shaped by economic circumstances and cultural norms. Historically, Black households have been characterised as more risk-averse in investments, a pattern attributed to lower risk capacity and limited exposure to high-risk assets (Hong et al., 2001; Gutter & Fontes, 2006). Our results suggest a potential shift in this dynamic within the crypto domain. It is plausible that, when faced with systemic wealth inequality, some minority investors exhibit a higher effective risk tolerance for crypto, seeing it as a rare opportunity for high returns to bridge the wealth gap. This aligns with behavioural economics perspectives, as individuals with fewer resources may take larger financial gambles when conventional paths yield meagre relative gains.

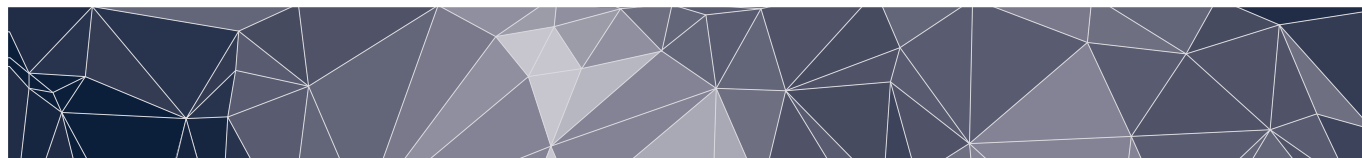
Another factor is financial literacy and investment experience. Prior studies have shown that financial knowledge and investing experience enhance one's ability to understand and evaluate complex assets, such as crypto (Zhao & Zhang, 2021; Nurbarani & Soepriyanto, 2022). Our pooled analysis revealed that higher financial literacy and prior stock market participation were both correlated with greater crypto ownership. From a cognitive standpoint, financially literate individuals may feel more self-efficacy in navigating crypto investments, consistent with social cognitive theory's emphasis on personal mastery (Bandura, 1989). Those with stock investment experience are familiar with market volatility and thus better equipped to venture into risky assets. However, this study also recognises a behavioural paradox, as crypto's popularity has risen among individuals with relatively low financial literacy, possibly due to overconfidence and persuasive narratives. Some research finds that overconfident investors, who may overestimate their knowledge, are especially prone to invest in crypto (Kim & Hanna, 2021; Pearson & Korankye, 2023; Syarkani & Tristanto, 2022). In communities where objective financial education has lagged, bold media messaging and anecdotal success stories might fuel optimism bias, enticing



new investors despite limited understanding (Simon, 2000). Additionally, many first-time crypto buyers rely on heuristics and peer influence rather than rational analysis. For example, the fear of missing out resulting from social platforms can drive crypto adoption in the absence of complete information. These behavioural tendencies are not uniform across groups, as they intersect with social context. Minority investors, having experienced fewer opportunities in regulated markets, may place outsized weight on optimistic narratives of crypto as a wealth equaliser, whereas others with more traditional investment access might approach crypto cautiously.

Our decomposition analysis illuminates how the above factors manifest differently for each racial comparison. Not all predictors contribute equally to the crypto participation gap between White and minority households. In the White–Black comparison, differences in age, financial literacy, and income were the most influential in explaining the disparity. Black respondents in our sample were younger on average than Whites, which increases Black crypto participation, as younger age strongly predicts adoption. At the same time, White respondents had higher average financial literacy and household incomes, factors associated with greater investment propensity. In other words, if Black households had the same financial knowledge and income levels as White households, the crypto ownership finding might have had a larger magnitude. This finding suggests that structural educational and wealth inequalities dampen, but do not erase, Black enthusiasm for crypto. Notably, stock market experience did not significantly explain the White–Black crypto gap. One interpretation is that many Black crypto investors entered directly into digital assets without passing through the traditional stock-investing pathways. Historically, far fewer Black households own stocks compared to White households (Mills & Nower, 2019), so crypto participation among Black Americans may occur via non-traditional channels, rather than as a natural extension of stock portfolio diversification. By contrast, in the White–Hispanic and White–Asian comparisons, stock ownership and risk tolerance emerged as the primary explanatory factors. White respondents were more likely to have experience with stock investments and, on average, exhibited different risk profiles than Hispanic and Asian/other respondents. These differences accounted for a substantial portion of the crypto ownership gap in those groups. Specifically, the analysis showed that lower rates of stock investing experience among Hispanics and Asian/other groups contributed to their lower likelihood of crypto investment relative to Whites.

It appears that, for these groups, familiarity with financial markets is a crucial gateway to crypto participation, as a lack of exposure to stocks may leave some Hispanic or Asian individuals less inclined or prepared to venture into cryptocurrencies. Additionally, group differences in risk tolerance widened the White–Hispanic and White–Asian gaps. This suggests that Hispanic and Asian investors who engage with crypto tend to be relatively risk-tolerant, while those who are risk-averse tend not to participate in crypto, leading to lower overall participation compared to White investors. Interestingly, age was not a dominant factor in the White–Hispanic disparity, perhaps because the age distributions and their effects on crypto uptake did not differ as starkly as the Black comparison. Instead, the key story for Hispanics is one of investment experience and attitude, as communities with less entrenched participation in stock markets may see crypto as too uncharted or risky. However, we caution that this category is broad and heterogeneous, as cultural attitudes toward technology and risk can vary widely among subgroups. The finding that



stock experience and risk tolerance drive the White–Asian gap likely reflects the high financial market engagement of White investors relative to some Asian-American subpopulations, but more nuanced research is needed to unpack subgroup differences.

These results demonstrate that there is no single universal driver of racial crypto disparities. Instead, each gap arises from a distinct mix of demographic, socioeconomic, and behavioural factors. The White–Black gap is most attributable to age advantages, counteracted by financial literacy and income disadvantages for Black households, whereas the White–Hispanic and White–Asian gaps largely hinge on differences in prior investment experience and risk preferences. This nuanced understanding underscores that interventions to close these gaps must be tailored to the specific barriers relevant to each community. Given Black and Hispanic investors tend to gravitate more to crypto than the stock market (Elu & Williams, 2022), a lack of investment diversification could impede investment performance and exacerbate the growing wealth gap (Korankye et al., 2023; Platanakis et al., 2018). Simply emphasising the high volatility of cryptos does not articulate the need for investment diversification. Given that risk tolerance and risk capacity can change over time, it is also necessary to reassess the impact of changing preferences on risk allocation.

One limitation of this study is that the dataset's time span is limited to the year 2021. It would be worthwhile to evaluate the racial/ethnic disparities using longitudinal datasets. Additionally, future research should investigate the frequency of crypto transactions, given the variety of investment horizons.

Implications

The findings of this study have significant implications for financial educators, policymakers, and practitioners seeking to bridge the racial gap in crypto ownership and enhance the financial well-being of diverse communities. First, the observed higher likelihood of Black individuals participating in crypto markets compared to Whites highlights a shifting investment landscape, suggesting perceived historical barriers to financial markets are eroding. This suggests crypto may be an alternative gateway to wealth-building opportunities for traditionally marginalised populations. On the other hand, barriers to traditional investment opportunities, such as high minimum account balances, a lack of employer-sponsored plans, or mistrust in institutions, may prompt underrepresented groups to consider alternative assets like crypto. To create a more balanced investment environment, policymakers may consider supporting financial institutions in developing inclusive investment products with low barriers to entry, minimal or no minimum balances, and automated educational tools.

For Hispanic and Asian/other populations, stock ownership and risk tolerance emerged as primary drivers of the disparity. This suggests these groups may benefit from interventions designed to build confidence and competence in navigating higher-risk investment environments. Programmes that demystify traditional investment vehicles while integrating crypto education could encourage a more balanced investment approach. Furthermore, this study underscores the importance of considering demographic and economic heterogeneity in designing inclusive financial literacy campaigns. Culturally tailored programmes can leverage social cognitive



principles by boosting investors' confidence through relatable success stories and hands-on learning. Tailored messaging that reflects the specific financial behaviours and knowledge gaps of different backgrounds will likely be more effective than one-size-fits-all solutions. For instance, while age and gender consistently influenced crypto ownership across groups, the weight of financial experience and literacy varied, indicating that outreach efforts must adapt accordingly.

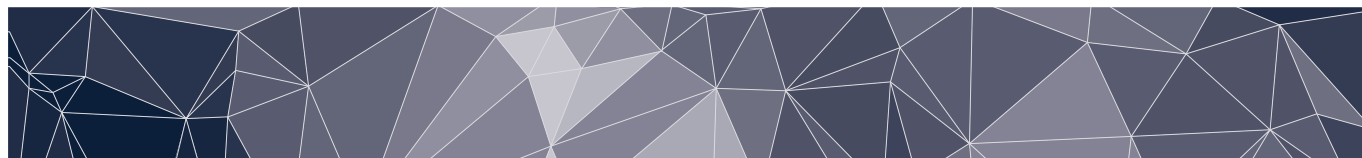
From a policy standpoint, the decomposition analysis revealed that, despite higher participation among Black investors, disparities in financial literacy, stock ownership, total savings, and risk tolerance contribute to persistent gaps in crypto investment outcomes. These insights indicate a clear need for targeted financial education that focuses on the mechanics of crypto, foundational investment principles, and financial planning. Policymakers may consider prioritising the expansion of financial literacy programmes, with a focus on educating individuals about digital assets. These programmes could integrate crypto, blockchain, and digital wallet education into public school curricula, workforce development initiatives, and community-based adult education. These programmes could also be offered in multiple languages and through various delivery platforms to increase reach and accessibility, and be culturally tailored to reflect the lived experiences, risk profiles, and financial priorities of diverse communities.

Conclusion

The results from this study suggested that Blacks were more active in crypto markets compared to Whites. Additionally, age and gender were found to be significant contributors to the differences observed in crypto ownership. However, there are also some differences in investment behaviour, specific to each group, that merit further comparison. For example, household income is the key factor that influences crypto ownership, between Whites and Blacks, but not between Whites and Hispanics. Stock ownership also explained differences between Whites and Hispanics and Whites and Asians/Others, but not between Whites and Blacks. Adopting different investment strategies for each group is necessary.

This research supports a more nuanced and inclusive approach to financial education and investment guidance. By aligning strategies with the specific drivers of crypto participation within each racial group, stakeholders can better support informed financial decision-making and promote long-term financial health across diverse communities. Financial practitioners might consider the implications of our study's findings to encourage consumers to take advantage of the benefits of the crypto markets. For example, as the total investment amount, savings, and stock ownership might narrow the gaps between Whites and Blacks, financial practitioners might assist their Black clients in increasing investment and savings, encourage Black clients to consider a reasonable amount of stock investment, and monitor their risk tolerance. Policymakers should consider our findings in relation to systemic concerns about financial literacy.

For the purposes of this academic paper, generative AI was employed for editing and improving clarity. Generative AI was also utilised for the creation of Table 5 to enhance the presentation of the data, with the original analysis generated from STATA and subsequently validated by humans. It was not utilised for content creation, the development of original ideas, or empirical testing.



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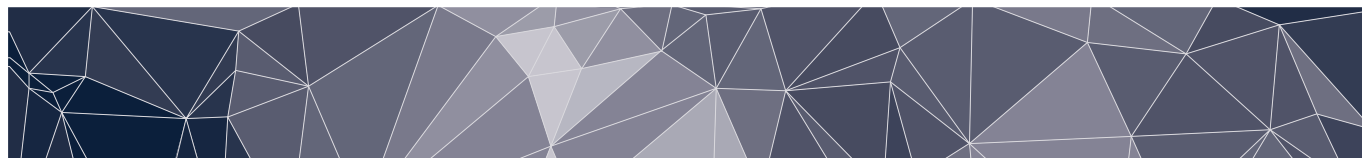
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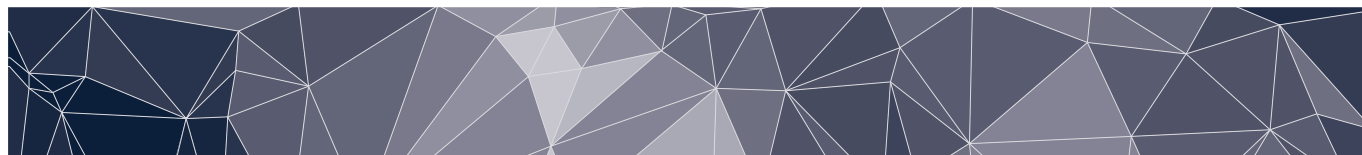
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Appendix

Variable Identification

Variable Name	Identity	Details
Dependent variable		
Cryptocurrency ownership	Dummy	Bought or held as an investment - In the past year, have you done the following with cryptocurrency, such as Bitcoin or Ethereum? (Yes/No)
Independent variable		
Demographics		
Race	Categorical	White (Ref.), Black, Hispanic, Asian, and Other
Age	Continuous	Range from 18-94
Gender	Dummy	Male/Female (Ref.)
Marital status	Dummy	Married/Unmarried (Ref.) The unmarried group includes widowed, divorced, separated, and never married)
Educational attainment	Categorical	Lower than high school (Ref.), high school, some college, bachelor, master or higher
Household size	Continuous	Range from 1-10
Economics		
Household income	Categorical	Less than \$10,000 (Ref.), \$10,000 to \$24,000, \$25,000 to \$49,999, \$50,000 to \$74,999, \$75,000 to \$99,999, \$100,000 to \$149,999, and \$150,000 or more.
Financial status	Categorical	Compared to 12 months ago, would you say that you (and your family) are better off, the same, or worse off financially? Responses include: much worse off (Ref.), somewhat worse off, about the same, somewhat better off, and much better off.
Financial condition	Categorical	Compared to two years ago (2019), would you say that you (and your family) are better off, the same, or worse off financially? Responses include: much worse off (Ref.), somewhat worse off, about the same, somewhat better off, and much better off.
Home ownership	Dummy	Own home=1, Pay rent=0
Emergency access	Dummy	Have you set aside emergency or rainy day funds that would cover your expenses for 3 months in case of sickness, job loss, economic downturn, or other emergencies? (Yes/No)
Total savings and investment	Categorical	under \$50,000 (Ref.), \$50,000 to \$99,999, \$100,000 to \$249,999, \$250,000 to \$499,999, \$500,000 to \$999,999, and \$1,000,000 or more.
Stock ownership	Dummy	Do you own any individual stock in publicly traded companies directly (i.e., not through a mutual fund or exchange traded fund (ETF))? Please also include any in stock held in a 401(k) or other pension plan. (Yes/No)
Others		
Financial literacy	Continuous	The sum of the 'Big Three' (stock, inflation, and interest). Range from 0-3
Risk tolerance	Continuous	On a scale from zero to ten, where zero is not at all willing to take risks and ten is very willing to take risks, what number would you be on the scale?
Physical health	Categorical	Poor (Ref.), fair, good, very good, and excellent.
Employment status	Dummy	Employed/Not employed (Ref.)
Retirement status	Dummy	Retired/Not retired (Ref.)

Table 5. Correlation matrix of variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Cryptocurrency Adoption	—																		
2. Race (Minority = 1)	.0486	—																	
3. Age	-.2136	-.1606	—																
4. Male	.1166	-.0161	.0136	—															
5. Married	-.0065	-.0727	.2207	.1158	—														
6. Education	.0970	.0040	-.0718	.1013	.1241	—													
7. Household Size	.0834	.1241	-.2900	.0009	.2242	.0071	—												
8. Household Income	.1177	-.0431	.0124	.1696	.3641	.5033	.1356	—											
9. Financial Satisfaction	.0617	.0265	-.0850	.0478	.0554	.1652	-.0044	.2089	—										
10. Financial Confidence	.0723	.0208	-.1260	.0401	.0348	.1635	-.0082	.1965	.7565	—									
11. Home Ownership	-.0431	-.1456	.3423	.0777	.4222	.1510	.0039	.3558	.0626	.0312	—								
12. Emergency Fund	.0399	-.0783	.1816	.0947	.1967	.2710	-.0993	.3596	.2130	.2017	.2834	—							
13. Total Investments	-.0133	-.1184	.3420	.1462	.2882	.3605	-.0919	.5556	.1444	.1028	.3709	.4284	—						
14. Stock Ownership	.2276	-.0418	.1157	.1434	.1611	.2821	-.0512	.3700	.1255	.1049	.2369	.2972	.4200	—					
15. Financial Literacy	.0936	-.1144	.1065	.2088	.1580	.3445	-.0379	.3559	.0566	.0428	.2033	.2528	.3352	.2753	—				
16. Risk Tolerance	.2112	-.0115	-.0712	.2364	.1299	.3055	.0319	.3897	.2013	.1832	.1625	.2522	.3332	.3568	.2575	—			
17. Self-Assessed Health	.0617	-.0535	-.0884	.0534	.1051	.2297	.0444	.2602	.1695	.1589	.1295	.2037	.2079	.1402	.1233	.2140	—		
18. Employment Status	.1530	.0625	-.4590	.1166	-.0124	.2086	.1382	.2431	.1199	.1396	-.0125	.0260	-.0655	.0606	.0672	.2068	.1561	—	
19. Retirement Status	-.1520	-.1197	.7001	-.0270	.1032	-.0986	-.2583	-.1185	-.0679	-.0882	.1807	.1245	.2227	.0720	.0269	-.1253	-.1049	-.6711	—