Original Research Article

Whales, Wealth, and Market Power: How High-Net-Worth Individuals Influence Cryptocurrency Markets

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ABSTRACT

Cryptocurrency is often described as a decentralized and accessible financial system, but the concentration of wealth among large holders raises questions about how decentralized cryptocurrency markets actually are. This study examines how high-net-worth individuals (HNWIs), particularly cryptocurrency "whales," influence cryptocurrency markets and how their influence extends beyond their direct transactions. Using a literature review and secondary data analysis, this research examines ownership concentration, market spillover effects, and behavioral responses to whale activity using academic research, blockchain analytics, institutional reports, and case-based evidence. The findings show that a small number of large holders control a disproportionate share of cryptocurrency assets, allowing their transactions to affect market volatility and generate spillover effects across other assets. However, the findings also suggest that whale influence is amplified by the behavior of smaller investors. Investors may interpret whale transactions and announcements as signals of future market movements, leading them to imitate these actions and further amplify price changes. The Tesla Bitcoin case provides an example of how a major institutional announcement can influence market behavior beyond the direct financial transaction. Overall, the findings support the hypothesis that whale influence comes not only from concentrated ownership and trading power, but also from the behavioral responses of other market participants. This suggests that cryptocurrency may be decentralized technologically while remaining concentrated in terms of wealth, influence, and market power.

Keywords: High-Net-Worth Individuals; Cryptocurrency; Crypto Whales; Decentralization; Bitcoin; Financial Markets

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INTRODUCTION

Context

Wealth extends beyond numerical value, encompassing influence over financial systems and market behavior. High-net-worth individuals (HNWIs) wield substantial economic leverage within global capital systems. They participate and exert substantial influence over cryptocurrency markets and other emerging assets. HNWIs are classified as those possessing at least $1 million in investable assets [1]. Within cryptocurrency markets, HNWIs who hold substantial amounts of cryptocurrency may be referred to as 'whales', although the two terms are not necessarily interchangeable.

Although they represent a small portion of the population, HNWIs hold an expanding share of global wealth, potentially giving them greater influence over financial markets.

Market Expansion

Emerging assets are rapidly evolving forms of investment that aren't monitored by governing systems. This paper mainly focuses on a well known emerging asset: cryptocurrency (crypto). Crypto is a digital form of money whose value can rise or drop abruptly. Additionally, it uses blockchain cryptography to secure transactions.

Other forms of emerging assets (not frequently discussed in this paper) include (1) NFTs (non-fungible token), classified as emerging assets. They are unique digital assets that represent ownership of an irreproducible item in forms of art, music, videos, gaming items, virtual real estate, and more. (2) Pre-IPO (initial-public-offering) tokens, or ICO (initial-coin-offering), are digital tokens that represent early stage shares or economic rights to a company before it goes public, giving investors a potential future value through blockchain based tokens. (3) Carbon credits are tradable instruments that convey a claim to avoided greenhouse gas (GHG) emissions or enhanced GHG removals.

Crypto, specifically Bitcoin which was the first decentralized cryptocurrency, was created in 2009 by an anonymous developer [2]. 8 years after its creation, in 2017, Bitcoin entered the 5-figure mark, giving it significant value. The value of Bitcoin reached the $20,000 mark in December of 2017 [3] before dropping dramatically for a few years. In 2021, it reached a peak of $60,000, before hitting rock bottom a year later. Since 2023 the market has continued to grow. Throughout almost

all of 2025, Bitcoin was worth over $100,000 [3]. In 2026, Bitcoin's price reached a peak of $97,000 in January and a low of $57,000 in July [3]. Concurrently, the global crypto market capitalization consolidated at $2.28 trillion, representing a 33.25% decline from 2025 [4].

Emerging assets are democratizing the world. Ten years after the inception of Bitcoin, cryptocurrencies finally started entering the global mainstream. For example, a third of Nigeria's population owns some type of cryptocurrency [5]. High rates of cryptocurrency adoption have also been recorded in developing countries like Vietnam, Turkey, and South Africa [5]. As of 2025, a third of the world's population is named "unbanked", meaning people who don't have access to a bank or financial organization [6]. Crypto may provide *unbanked* adults access to protected digital markets. At the rate digital cryptocurrencies are gaining transactions, especially in developing countries, this trend suggests that our financial system may shift to become more democratized and accessible to everyone.

Electronic wallets have such little recognition, many don't even realize that they are replacing traditional transactions and storing money digitally. According to CoinLaw [7], 50% of the global population uses digital wallets; e-wallets. By 2026, it's expected that 60% of the global population will be using e-wallets [7]. This suggests a potential trend toward increased accessibility of financial transactions through digital wallets. By replacing traditional, physical, ways of transactions, resulting in shifting managing finances to be more secure, and accessible anywhere, anytime, and by anyone.

Research Problem

Cryptocurrencies are often acclaimed as a democratizing financial system. However, HNWIs and crypto whales' actions continue to have significant influence on the market. In the Bitcoin ecosystem, investors holding at least 1,000 BTC (valuing over $100,000 throughout almost all of 2025, then dropping to $69,000 in February 2026, rising to $80,000 in May, and dropping to $64,000 in June) are referred to as "whales" in the crypto world. Whales are seen as influential figures in the crypto world and are closely watched by the crypto community as their trading decisions can spark dramatic shifts in the crypto market. For example, if a whale decides to sell a massive amount of crypto, it may contribute to panic amongst small investors, resulting in a price drop. On the other hand, if a whale decides to buy crypto in large quantities, prices may surge as demand increases.

Research Question

According to Ali and Duggal [8], people with a net worth of 1M+ hold a respectable $\sim$47.5% of the world's total wealth. The National Bureau of Economic Research clarifies that 90% [9] of Bitcoin's transaction volume is *spurious* activity like internal ledger shuffling and change outputs, rather than economically meaningful transfers driven by whales. HNWI often dominate emerging assets through their access to strong connections, alumni, and the capability to engage in greater risk. They make use of channels like private equity, venture capital, hedge funds, and real estate. Even though they seem to have an evident effect on emerging assets, it might be difficult to track their activity and determine their exact position unless their wallet addresses become publicly known.

This research asks: How are HNWIs ("whales") unobtrusively dominating cryptocurrency markets?

The hypothesis of this study proposes that although HNWIs, whales, possess substantial ownership and trading power within cryptocurrency markets, a significant portion of their market influence arises from how other investors respond to their actions rather than from the transactions themselves.

LITERATURE REVIEW

HNWIs and Alternative Asset Markets

According to Julukhadze [10], HNWIs often diversify their portfolios by investing their money in multiple sectors: stocks, private equity, art, hedge funds, real estate, as well as alternative assets like NFTs and cryptocurrency. HNWIs top the list of qualified hedge fund investors, as hedge funds are typically limited to investors with specific wealth and income. HNWIs like to invest in hedge funds as a way to *diversify their portfolio* and potentially receive higher returns, looking to avoid inflation even in the market's downturns.

This suggests that HNWIs extend their influence beyond market participation into governance-related structures within crypto ecosystems. Indeed, empirical data published by Harvard Business School confirms that the top 10% of capital holders control over three-quarters of all protocol voting power [11], enabling concentrated wealth to dictate technical roadmaps.

Crypto and Financial Inclusion

Traditional finance is the regulated, established financial system we interact with every day; it includes regulated institutions like banks, savings accounts, investment firms, and more.

Traditional finance is exclusionary. For parts of the world, it's impossible. That's where decentralized finance (DeFi) comes in, built on blockchain technology, DeFi promises a permissionless platform where only internet connection is needed to lend, borrow, or exchange assets [12]. Many claim that DeFi is often described as *democratizing the world*. Peer to peer investing (P2P Investing) is a form of investing money in projects, companies, real estate, and assets through platforms like FundRise, SeedInvest, RealtyMogul. People of all net worths use P2P investing for a potential equity or profit shares, similar to other investing concepts [13]. As P2P techniques are bypassing traditional financial institutions, according to Forbes, more broadly, fintech investing and other financial methods are democratizing access to financial systems, empowering small businesses and promoting financial inclusion [14].

According to Figure 1 [15], today, less than 1% of the adult population occupies the $1M+ wealth range. Despite their small number, this group collectively controls ∼47.5% of the world's total wealth.

On Figure 2 [16], The Whale Address Count dashboard's orange line shows the count of "whale" addresses (>1k BTC), while the purple line indicates the 30-day changes in this count. Together, they provide quick insights into whale accumulation and distribution, helping decipher Bitcoin market trends [16].

[Figure 1: Global wealth distribution pyramid showing less than 1% of adults control ∼47.5% of total wealth [15].]

[Figure 2: Bitcoin whale address count dashboard from Glassnode [16].]

Whales control a significant portion of the crypto market. While the blockchain system operates under pseudonymity, masking users' identities, this anonymity obscures a reality of power concentration. A striking example is the 2013 Bitcoin bubble, where an empirical study published in the Journal of Monetary Economics uncovered that two pseudonymous bot accounts, 'Marcus' and 'Willy', on the now-defunct Mt.Gox exchange effectively manipulated Bitcoin's price from $150 to over $1,000 [17]. Although the system appeared decentralized and had thousands of users, the actual control of the market was concentrated in very few hands, exposing the illusion of decentralization in pseudonymous networks.

[Figure 3: Bitcoin wealth distribution table showing 6,952 addresses (≥$10M) control 58.21% of wealth [18].]

Informational Opacity

In the crypto world, users transfer from tens to millions of dollars without ever showing an ID. This accessibility can be linked to illegal financial activities. That's where Anti-Money Laundering (AML) comes in. AML is an international web of regulations aimed at uncovering money that has been disguised as legitimate income. Know your customer (KYC) is a part of AML, KYC is a process used by financial services to obtain identity, suitability, and risk involved with new customers. Crypto businesses are required to implement the KYC procedure by keeping detailed records of their customers identity, transactions, and any investigations related to suspicious activity. Therefore, there are risks associated with non-compliance AML regulations that have the potential to expose crypto businesses to regulatory, operational, reputational, and financial risk [19].

Decentralized Autonomous Organizations (DAOs) present challenges to AML regulations due to their decentralized and pseudonymous nature. Key regulatory gaps include difficulty to identify accountable parties, adapting to evolving regulations, and establishing jurisdiction over entities [20].

Governance Centralization in DAOs

Centrality in DAO voting, which is the concentration of power in DAO voting, can undermine the decentralized narrative of these organizations. One of the primary reasons for centralization is lower voter participation, concentrated token ownership, governance complexity, and the burden of informed decision-making which can lead to governance centralization in the hands of very few active participants [21]. Recall concentrated token ownership, according to Shah [22], the influence of a member's vote is directly proportional to number of tokens they hold: as more tokens equate to greater voting power. Since voting power increases as tokens increase, whales may exert disproportionate influence on voting outcome. As a result, votes may be unfair and in favor of those with the greatest resources, whales or HNWIs, limiting the participation and equity, potentially confirming the centralized narrative of the DAO.

CONCEPTUAL FRAMEWORK

Gatekeeping in Early-Stage Financing

HNWIs often participate in pre Initial-Coin-Offerings (ICO) deals [23], as these deals give its participants the opportunity to buy ICO-tokens at a significantly lower price before they become available to the general public. A claim by many is that any of the best crypto projects offer pre-sales to raise initial funding. By participating in these early rounds, participants gain access to high potential projects before they hit mainstream crypto exchange. These valuable deals may appear to be gatekept by HNWIs, partly because they know it's valuable and want to take advantage of it, but mostly because these ICO rounds are typically limited to "accredited investors". What qualifies someone as an accredited investor includes individuals with ≥$1 million in net worth [24], excluding their primary residence, which aligns with early stage projects that typically require minimum contribution of $50k to $100k or more.

According to Cremadas [25], investing in DeFi early stage funding enables *small investors* to enter the market and transform a more inclusive field by leveraging blockchain technology. DeFi is about peer-to-peer lending and opens up opportunities for small business owners to access capital [25].

Pseudonymity and Accountability Evasion

Pseudonymity, which is the practice of a false or anonymous name, may heavily impact social dynamics and power structures online. In some communities, pseudonymity can help individuals participate more proportionally and challenge dominant narratives. Though in other communities, pseudonymity can reinforce existing power dynamics, allowing individuals to hide behind anonymous names and avoid accountability [26]. While 86% of internet users take active steps to minimize their digital footprints and mask identities for privacy reasons [27], bad actors may potentially exploit this practice for their advantage. For these individuals, pseudonymity acts as a mechanism to execute financial fraud through shell companies, DAOs, crypto platforms, family offices, and trusts without ever facing legal or financial accountability for their actions [28].

Illiquidity as a Mechanism of Market Control

Illiquidity is the state in which assets cannot be easily or quickly converted into cash without substantial loss in value. Illiquid assets are hard to sell because there is low trading activity or lack of interest, as they often tend to have lower trading value, and higher price volatility [29], possibly making it attractive for new investors to enter these markets. Illiquidity may discourage smaller investors, thereby preserving the dominance of larger investors. According to *The Undervalued Power Of Illiquidity*, illiquid investments perform better than liquid investments during turbulent times when investors are desperate for increased liquidity [30]. Long term investments in illiquidity also have lower impact from taxes and friction costs.

In *The Undervalued Power Of Illiquidity*, a hedge fund owner quoted in this article "I could raise $50 billion in a heartbeat if we could consistently achieve 12% annual returns. But I'd have to be illiquid to do that... That's the power of illiquidity." [30]. This demonstrates how illiquidity favors those with capital and time. Additionally, illiquidity limits transparency and valuation accuracy, making it difficult to measure true market sentiment or project value, which concentrates dominance and reduces market accessibility for smaller investors.

DATA AND METHODOLOGY

Research Design

This research uses a qualitative literature review and secondary data analysis approach. The aim of this study is to closely examine the relationship between HNWI participation, wealth concentration, and market dynamics in cryptocurrency markets.

This research integrates findings from academic papers, blockchain analytics and institutional reports to develop a multi-dimensional understanding of ownership distribution, market behavior and market governance outcomes.

A qualitative approach is suitable as it enables interpretation of structural patterns in secondary data without requiring primary data collection.

Data was collected and reviewed over the course of this study, spanning from July 2025 to August 2026.

Sources Used

This study applies multiple secondary data sources to support its argument. Sources used include blockchain analytics platforms, academic papers, institutional reports and case-based evidence. Blockchain data was obtained from platforms such as Etherscan and Glassnode to analyze wallet distribution and ownership concentration.

Sources were selected based on their relevance to cryptocurrency wealth concentration, HNWI market participation, market behavior and governance. Academic sources were prioritized when they provided empirical findings or established theoretical frameworks, while institutional and blockchain analytics sources were used to provide market and on-chain evidence. Sources were excluded when they lacked verifiable data or direct relevance to the research question and research objectives.

Peer-reviewed academic research provided theoretical grounding for cryptocurrency inequality, decentralized governance and financial inclusion.

In addition, institutional reports from organizations like the Bank for International Settlements (BIS), World Economic Forum and World Bank were used to contextualize broader financial and regulatory trends.

Finally, selected industry reports and case studies, including analyses of regulatory frameworks, exchange failures and institutional adoption of cryptocurrencies, were used to support interpretation of the findings.

Analytical Framework

This analysis examines wallet concentration, large-holder transactions or balances, market liquidity, trading activity, volatility, price movements, case studies, and documented behavioral responses to significant investments or transactions made by HNWIs, whales, and well-known influential figures and institutions.

This study is structured around multiple analytical dimensions, primarily three, used to evaluate the effects of wealth concentration in cryptocurrency markets and decentralized ecosystems.

Firstly, ownership concentration examines the distribution of crypto assets across multiple blockchain addresses. The primarily examined group is large holders: whales. This paper focuses on the dominance of whales and its implications for market and governance power.

Secondly, market spillovers analyze how ownership concentration is associated with broader market dynamics, including liquidity, volatility, price movements, and the interaction between institutional and retail investors.

Thirdly, behavioral responses explore how investors and the overall market respond to transactions and investments made by HNWIs, whales, and well-known influential figures and institutions.

Together, these dimensions create a structured framework for assessing how HNWIs are associated with ownership concentration, market dynamics, and behavioral responses in cryptocurrency markets.

Evidence Evaluation

Evidence was evaluated by comparing findings across academic studies, blockchain data, institutional reports, and documented market cases. When multiple separate sources indicated similar patterns, these findings were given greater weight. Case-specific evidence was not generalized to the broader cryptocurrency market without supporting evidence from other sources. Relationships between large holder activity and market outcomes are interpreted as associations rather than causa-

tions unless underlying sources provide sufficient evidence for a relationship.

RESULTS

Ownership Concentration

According to *Characterizing Wealth Inequality in Cryptocurrencies* [18], Sai, Buckley, and Gear's data demonstrates a high level of wealth concentration within cryptocurrency markets. The study finds that a very small number of investors (in ZCoin, Ethereum Classic and Dogecoin markets) control a disproportionate share of total crypto assets, with approximately 100 whales controlling over 51% of market holdings [18]. This distribution suggests that ownership in cryptocurrency markets is highly centralized despite the system's claims of decentralization.

Additionally, Bitcoin and Ethereum wallet data indicate similar patterns of concentration. Bitcoin wallets holding over 1,000 BTC (whales) represent approximately 0.01% of all wallets, yet control roughly 36% of total Bitcoin supply [31]. Moreover, the top 100 Bitcoin wallets account for roughly 14% of total holdings [32]. According to Santiment [33], in Ethereum, the top 104 wallets control approximately 57% of total ETH supply, though these 104 wallets are predominantly institutional smart contracts and exchange pools rather than individuals [34].

[Figure 4: USDC top 100 token holders pie chart from Etherscan [34].]

According to Figure 4, the top 100 wallets collectively hold 52.52% of the total supply of token USDC [34]. Moreover, the top 8 wallets alone account for roughly 25% of the supply [34]. The single largest holder, user Sky: PSM, controls 4.87% of USDC [34]. This evidence indicates that despite USDC's widespread usage, it exhibits concentrated ownership among a small set of users. Such concentration may raise concerns about centralization, as large holders could possess disproportionate influence over liquidity, stability and control.

Collectively, these findings indicate that a very small fraction of market participants holds an abundance of crypto supply. Thus, whales hold significant control over overall market value.

Market Spillover Effects

Research from Magner and Sanhueza's paper [35] highlights that large transactions by high-net-worth individuals (HNWIs), who are likely whales in the crypto world, are associated with measurable spillover effects across cryptocurrency markets. Whale transactions are associated with contagion effects, where price movements in one asset influence returns in other assets.

The study finds that large whale transfers can be associated with abnormal returns and increased volatility across multiple assets, even when those assets are not directly involved in the original transaction. Claims and data from this study suggests that whale activity extends beyond isolated trades and may influence broader market behavior through associated trading responses.

Behavioral and Sentiment-Based Reactions

According to findings in *From Whales to Waves* [36], whale activity is strongly correlated with increased market volatility and shifts in investor sentiment. Large transactions or whale-related events are associated with observable changes in market behavior, particularly among smaller investors.

The research shows that investor sentiment often reacts directly to whale activity, with smaller market participants adjusting their trading behavior in response to perceived signals from whales or influential investors. This reaction may amplify the initial impact of whale activity, as responses from smaller investors increase overall market volatility. These results suggest that whales influence markets not only through direct transactional movements but also by shaping behavioral responses and sentiment of smaller investors.

Real-World Influence: Tesla x Bitcoin Case Study

The case of Tesla's Bitcoin investment provides a real example of how the actions of influential individuals and institutions influence cryptocurrency markets. In January 2021, Tesla reportedly purchased approximately $1.5 billion worth of Bitcoin. However, this initial purchase did not produce an immediate price impact.

In February 2021, Tesla publicly announced the investment. Following the public announcement, Bitcoin experienced a price increase of approximately 17%, reaching a record high of around $44,200, as illustrated in Figure 5. The magnitude of this price movement suggests that the announcement itself was associated with a greater impact on market behavior than the purchase alone.

This may be associated with why Bitcoin investors reacted strongly to Tesla's purchase. As a result, the price increase may have reflected the investor response and herd behavior rather than the direct effect of the capital inflow.

[Figure 5: Bitcoin price chart showing the spike to $43,604 following Tesla's announcement in February 2021 [37].]

Conclusion of Findings

Overall, the results suggest that cryptocurrency markets exhibit three interconnected forms of dominance by high-net-worth individuals, institutions and whales: (5.1) concentrated ownership of assets, (5.2) the ability of large transactions to generate spillover effects across markets, and (5.3) the capacity to influence investor sentiment and behavior.

While cryptocurrencies are structurally designed to be decentralized, empirical evidence indicates that a small group of wealthy participants continues to exert disproportionate influence over markets. The evidence examined suggests that market reactions may be amplified by perception and behavioral responses rather than by the actual size of financial transactions. This implies that investor psychology plays a central role in amplifying the market impact of high-profile figures,

reinforcing the influence of whales and institutions within the crypto world.

DISCUSSION

Recollection of Findings

Synthesizing the dynamics of wealth concentration, market spillovers, and sentiment detailed across *5. Results* this section interprets the data presented and what it means.

In summary, these findings show that cryptocurrency markets are less decentralized than commonly assumed; largely because ownership and influence are concentrated among a small number of whales.

Whale Influence and Observation Difficulty

Cryptocurrency ownership is inherently difficult to interpret because blockchain addresses are pseudonymous rather than linked to verified identities. A single investor may control thousands of addresses, while exchanges often aggregate millions of users into one visible wallet. Furthermore, many large transactions occur over-the-counter (OTC), bypassing public order books and reducing the visibility of whale activity. Cross-chain bridges, custodial services, and institutional asset managers further complicate efforts to identify beneficial ownership. Consequently, publicly observable blockchain data may underestimate the true concentration of market power.

Being involved in an OTC crypto trade provides access to private liquidity pools, allowing traders (usually HNWIs) to execute large transactions off the public order book. According to Gutmann et al. [38], OTC crypto trading is ideal for institutional investors who are looking to purchase large amounts of crypto without price impact, crypto hedge funds managing multi-million-dollar transactions, HNWIs looking for privacy and liquidity, and crypto mining companies selling large amounts of digital assets. Unlike traditional crypto deals, OTC desks offer competitive pricing and deep liquidity for high-volume trades.

[Figure 8: Fund custodians league table showing concentration among top 10 custodians [39].]

"Furtive dominance", in this case, refers to the subtle yet strategic ways HNWIs are increasingly consolidating control over markets and wealth. One case in point is custodial aggregation. Family offices are private wealth management advisory firms for ultra-high-net-worth (UHNW) families. They range from single-family offices (SFOs) serving one family, to multiple-family offices (MFOs) serving multiple families. According to Inequality.org, family offices have evolved into substantial pools of anonymous and unregulated private capital. These entities manage $6 trillion, roughly 7% of the world's stock market [40]. Family office structures typically include dynasty trusts, investment management, financial planning, tax and estate planning, complex legal arrangements, and a realm of other services enable UHNW families to shield their identities while consolidating generational wealth.

Zucman [41] estimated that 8% of global financial wealth (mostly held by HNWIs) is held offshore. Zucman [41] suggests that a large share of HNWIs' wealth is held offshore through trusts, shell companies, and jurisdictional shopping. Trusts, an estate planning tool, are a legal entity for wealth preservation practiced by HNWIs. According to Ridgewood Investments, the most prevalent reason HNWIs use trusts is to protect their assets from taxes. *"HNWIs utilize trusts to reduce income taxes and shelter assets from estate and transfer taxes"* [42].

Shell companies are legal business entities that only exist on paper, with no physical presence, no employees, no operations. Though shell companies are used for valid reasons, such as facilitating mergers and acquisitions, protecting assets, and managing investments, they are widely exploited for illegal activities like tax evasion and money laundering due to their ability to obscure ownership and financial transactions [43]. In 2016, Panama Papers revealed that 140+ HNWIs, including politicians and celebrities, use shell companies [44]. It revealed how wealthy individuals and corporations worldwide use shell companies, likely to evade taxes and launder money. Similarly to trusts, shell companies are used by HNWIs to store assets and avoid taxes.

Supporting for the Hypothesis Reflected in the Results

The hypothesis of this study proposed that although HNWIs and whales possess substantial ownership and trading power within cryptocurrency markets, a significant portion of their market influence arises from how other investors respond to their actions rather than from the transactions themselves.

Ultimately, the results are consistent with this premise, indicating that whale influence is not solely a consequence of concentrated wealth but is also driven by behavioral dynamics within cryptocurrency markets. This supports the study's central argument that investor psychology plays a critical role in amplifying the market power of high-net-worth investors.

Implications

The broader socioeconomic implications of these findings highlight a distinct decoupling between decentralized market access and equitable market power. Cryptocurrencies are often advertised as giving everyone equal access to financial markets. Crypto markets, however, indicate significant limitations. This paper's findings suggest that even in decentralized systems, a cohort of wealthy crypto holders still have disproportionate influence over the market's volatility and participants. Even though crypto markets have decentralized practices of no governing figure and technology, these practices do not equal decentralized influence and power.

One of the biggest implications of these findings is that access to a financial market does not necessarily mean equal power within that market. Almost anyone with internet access can buy cryptocurrency, but not everyone has the same amount of capital, liquidity, connections, or ability to take large risks.

This structural gap creates a clear divide between the ability to participate in the market and the ability to actively influence it.

This also raises questions about the idea that cryptocurrency is completely decentralized. A market can be decentralized in its technology while still being centralized in its wealth and influence. Blockchain technology allows people to participate without a traditional central authority, but the results of this study suggest that wealth concentration can still create a form of power concentration. Therefore, decentralization should not only be measured by whether there is a central authority. It should also be considered in terms of who owns the assets, who has the most liquidity, and whose actions other investors pay attention to.

Limitations

Although this research produced important findings, there are several limitations that should be considered. First, this study relied mainly on secondary data. This means that the research depends on information collected by other researchers, blockchain analytics platforms, and institutions rather than data collected directly by this study. Because of this, the accuracy and methodology of the original sources can affect the findings of this paper.

Another limitation is that it is difficult to identify the actual people behind cryptocurrency wallets. Blockchain addresses are pseudonymous. One person can also control multiple wallets, while one exchange wallet can hold cryptocurrency belonging to thousands of different users. Therefore, the number of wallets holding large amounts of cryptocurrency does not always represent the exact number of wealthy individuals controlling those assets.

OTC transactions create another limitation. Large transactions can happen privately through OTC markets, meaning that not every large transaction can be observed through public blockchain or exchange data used to study whale activity. As a result, the actual level of whale influence may be difficult to measure completely.

There is also the issue of correlation and causation. The evidence in this paper shows relationships between whale activity, market volatility, and investor behavior, but this does not prove that whale activity is always the direct cause of a price movement. Cryptocurrency prices are affected by many factors at the same time, including regulations, news, market conditions, and overall investor sentiment. The Tesla case, for example, shows a strong market reaction after its Bitcoin announcement, but it cannot prove that the announcement was the only reason Bitcoin's price increased.

Finally, cryptocurrency markets change extremely quickly. The number of whales, distribution of assets, regulations, and behavior of investors can all change over time. Therefore, the results of this research may not remain exactly the same as cryptocurrency markets continue to develop.

Future research could improve on these limitations by using larger amounts of blockchain data over longer periods of time. Researchers could also attempt to connect known wallet addresses to verified institutions or individuals when possible. Further research could examine whether whale transactions directly cause changes in price and volatility, rather than only examining the relationship between them.

Conclusion

Overall, the evidence suggests that cryptocurrency markets remain heavily influenced by a small number of wealthy participants. Although blockchain technology increases access to financial markets, ownership concentration and investor reactions allow whales to exert substantial influence. Consequently, decentralization in crypto may be more limited in practice than in theory.

The findings of this paper show that whale influence comes from more than simply owning a large amount of cryptocurrency. Large holders can directly affect markets through their transactions, but their influence becomes even stronger when other investors react to their actions. These reactions may be associated with spillover effects, increase volatility, and may amplify the observed effects of a whale transaction.

This supports the hypothesis that a significant part of whale influence comes from the behavior of other investors. A whale does not necessarily need to control the entire market to influence it. If enough investors watch their actions and respond to them, their influence can spread throughout the market.

Ultimately, cryptocurrency may be decentralized in the way it operates, but that does not mean that power within the market is equally distributed. The technology may allow almost anyone to participate, while wealth, liquidity, and influence remain concentrated among a much smaller group. This difference between decentralized access and concentrated influence is an important part of understanding how cryptocurrency markets actually operate.

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CONFLICTS OF INTEREST

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