# Exploring Blockchain Platform Adoption and Distribution: Trends, Insights, and Multi-Chain Strategies

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**Abstract - The swift development of blockchain technology has transformed a number of industries, including gaming, supply chain management, healthcare, and finance. Given the widespread use of blockchain platforms like as Ethereum, Polygon, and Avalanche, it is now essential to comprehend platform adoption and distribution patterns. The purpose of this study is to identify prominent platforms, evaluate platform coverage, and assess developing trends by analysing a dataset that contains platform-specific data. The study highlights platform-specific benefits, investigates the elements affecting multi-chain strategies, and reveals insights about blockchain adoption using a combination of descriptive analysis and visualisations. The results help us gain a thorough grasp of blockchain ecosystems and direct further research in this area.**

**Keywords: Block chain technology, Platform adoption, Block chain ecosystem**

## I. INTRODUCTION

Since its launch with Bitcoin in 2008, blockchain technology has upended established structures by providing decentralised, transparent, and safe transaction capabilities. As the technology developed, the emergence of smart contract platforms such as Ethereum created the groundwork for decentralised finance (DeFi) and decentralised apps (DApps), which promoted innovation in a number of sectors. A fragmented yet dynamic ecosystem is created today as multiple blockchain platforms vie to address constraints like scalability, interoperability, and transaction costs.

An in-depth examination of platform distribution and acceptance trends is required due to the increasing diversity of blockchain platforms. Because of its strong ecosystem, Ethereum continues to lead adoption; however, platforms that solve Ethereum's scalability problems, such as Polygon, Binance Smart Chain, Avalanche, and Solana, are gaining ground.

## II. RELATED STUDY

The public transaction log of bitcoin is the blockchain, which was created in 2008 by an individual (or group of individuals) going by the name Satoshi Nakamoto. A variety of industries, including finance and services, are anticipated to be disrupted by its decentralisation, transparency, and information that is difficult to change or tamper with. The PBOC (PBOC) hosted a digital currency symposium in Beijing in January 2016 to talk about the viability of utilising blockchain technology to issue virtual digital currencies[1].Through the unlocking of various properties including Atomicity, Consistency, Isolation, and Durability (ACID), transaction consistency, rich queries, real-time analysis, and low latency, we describe how database technology has impacted the development of blockchain technology. We hypothesise a "Decentralisation, Consistency, and Scalability (DCS)-satisfiability conjecture" and provide specific methods for obtaining the relaxed DCS conditions using a relaxation technique similar to that which was used to prove the Consistency, Availability, Partition tolerance (CAP)-theorem. Additionally, we give a summary of the various DBMSs, highlighting their implementation, architecture, storage management, and query processing[2].This survey article's authors discuss a number of blockchain-related topics, such as its taxonomies and the circumstances in which a given blockchain type should be used. The authors also concentrate on the way the continuing transactions in the bitcoin network operate and the structure of the blockchain. Furthermore, many types of consensus protocols, smart contracts, forks, and consensus-generating methods are specified by the authors. A thorough taxonomy of blockchain technology is also covered, along with its characteristics and practical uses. Furthermore, the current major blockchain systems pertaining to cryptocurrencies, hyperledger, and multichain are also covered. Defensive strategies and upcoming trends are also discussed, along with current and emerging blockchain vulnerabilities linked to recent assaults on Bitcoin and Ethereum[3].Explained how several cryptocurrencies, including bitcoin, Ethereum, XRP, LTC, USDT, BCH, LIBRA, XMR, EOS, BSV, and many more, work[4].To represent the disparate needs of the two use cases, the suggested architectures were illustrated using Ethereum, a public blockchain platform, and Hyperledger Fabric, a private, permissioned, and open source blockchain platform. The procedures, advantages, and difficulties of using both public and private blockchain technologies in the construction industry are also demonstrated by this pilot project. Researchers and practitioners can learn more about the use of blockchain technology, particularly in the construction industry, from this study[5].The third and fourth generations of blockchain protocols are being developed and shaped by the most recent state-of-the-art protocols. A number of "Ethereum-killer" candidates are attempting to address significant issues and provide amazing features and capabilities through their own unique architectural designs and remarkable innovations. This book enables readers to rapidly grasp the historical development and advances of Blockchain while imagining the upcoming developments of Web3 and the Internet of Value (Internet 2.0)[6].

The usefulness of each class among the top 10 platforms in the most well-known blockchain application areas is examined, as is the distribution of the assessed algorithms in terms of the suggested classification and various application domains [7].

Bitcoin uses Proof of Work (PoW), which is energy-intensive. Proof of Stake (PoS): Ethereum 2.0, Solana, and other platforms use this as an alternative to Pow. Platforms such as Tron and EOS use Delegated Proof of Stake (DPoS).Evidence of Authority (PoA) and further methods [8].

According to the assessment, it would take five to ten years for blockchain technology to become widely and easily embraced. Nearly five years later, the majority of blockchain initiatives—particularly those pertaining to corporate settings—are still in their infancy and have not yet achieved widespread adoption or a generally recognised standard. The primary ideas of blockchain, its underlying technology, smart contracts, and decentralised applications (DApps) will be attempted to be covered in this book chapter [9].I look at how consumers perceive various common token properties, including lockup periods, yield source, yield type, token inflation, and staking yields, in six research. While they can be significant in joint evaluation (when participants see numerous tokens listed simultaneously), altering these tokenomic levers often has little to no effect

on token attractiveness in separate evaluation (when participants see only one token at a time). Crucially, though, a token's historical price performance is more important than any of these characteristics [10].Six of these 38 occurrences are examined in greater detail in this paper. Incidents having the most common root cause are chosen for selection. The report tries to address what may have been done to lessen the attack and describes what happened and why in the evaluation of the episodes. A strategy for lowering cyber security concerns when utilising blockchain technologies is recommended in the paper's conclusion [11].

## III. METHODOLOGY

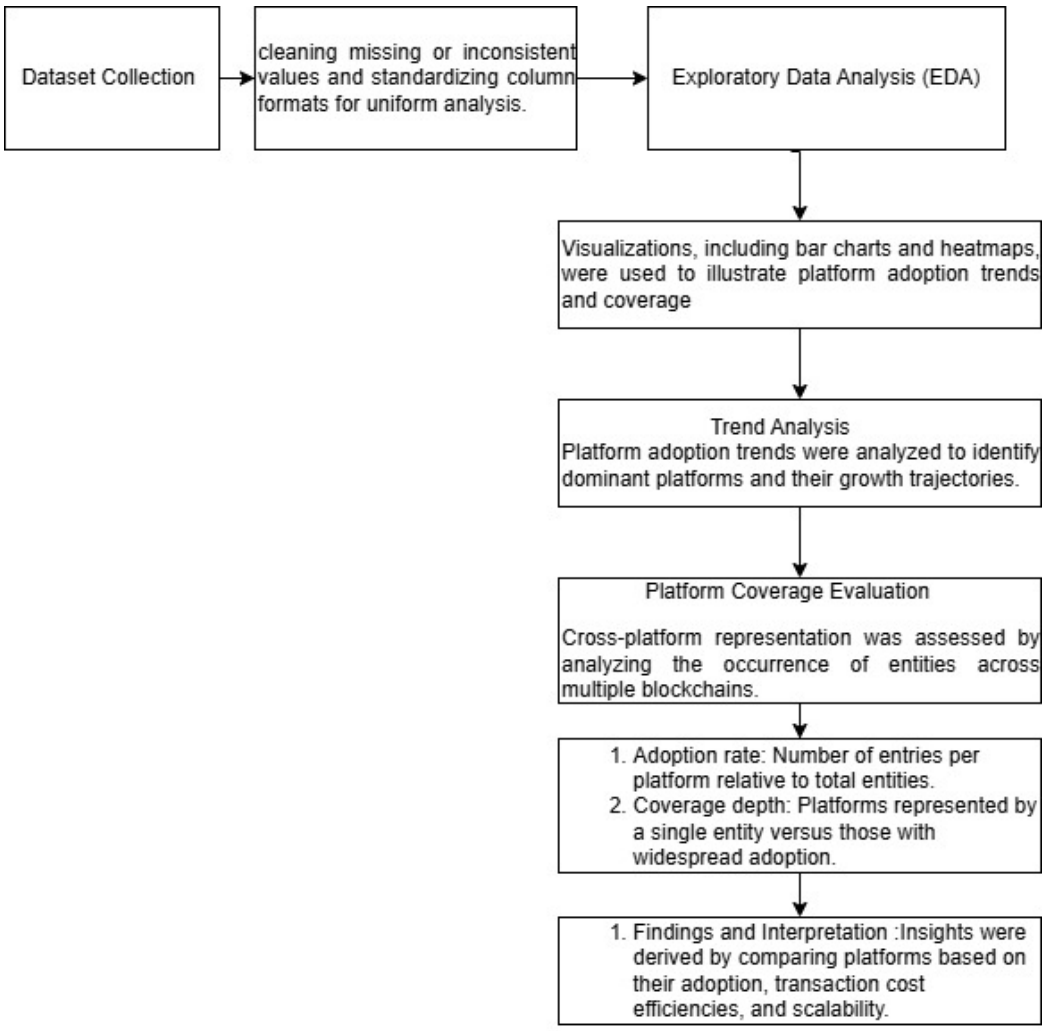


Figure 1: The proposed methodology

## IV. DATASET

More than 2200 crypto currency tokens and coins are included in the dataset, together with details about their ID, symbol, and supporting blockchain platforms (such as Ethereum, Binance, and Cardano). It comes from CoinGecko and can be used for free. Insights on blockchain adoption and

token distribution across platforms are made possible by this dataset, which aids in examining the connections between tokens and the networks that underpin them.

| Feature | Description |
|---|---|
| Total Rows | 9,943 |
| Total Columns | 137 |
| Key Columns | id, symbol, name, platform-specific columns (e.g., platforms/ethereum, etc.) |
| Data Types | Mixed data types (object, float64) |
| Missing Data | Several columns with many missing values |
| Unique Identifiers | 9,943 unique values in the 'id' column |
| Frequent Data | Repetitive entries in the 'symbol' column (e.g., "gold" appears 7 times) |
| Sparse Data | Sparse data in platform-specific columns (e.g., platforms/harmony-shard-0) |

Table 1: Data set description

## Results

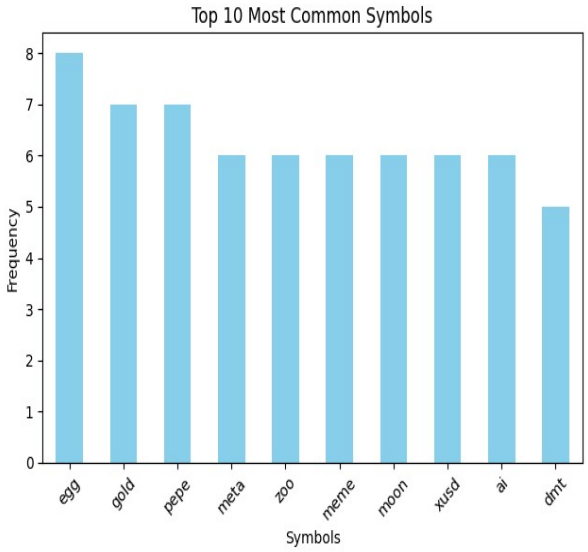


Figure 2:Top 10 most common symbol

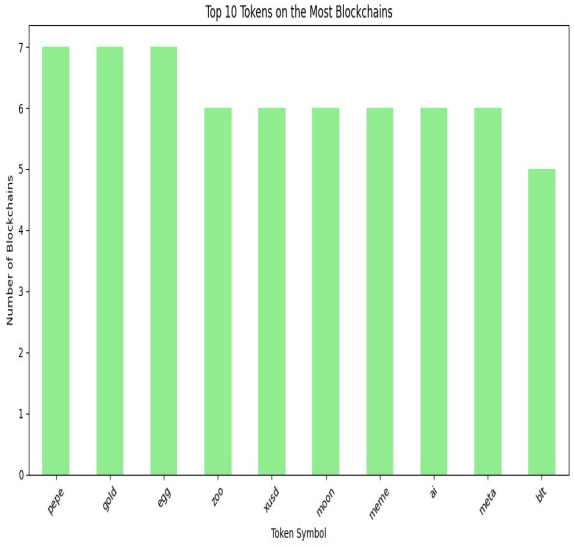


Figure 3: Top 10 tokens of most block chain

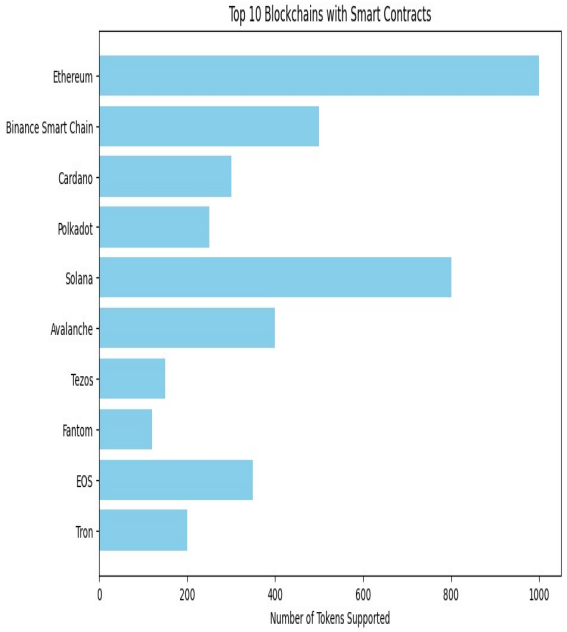


Figure 4 :Top 10 block chain with smart contracts

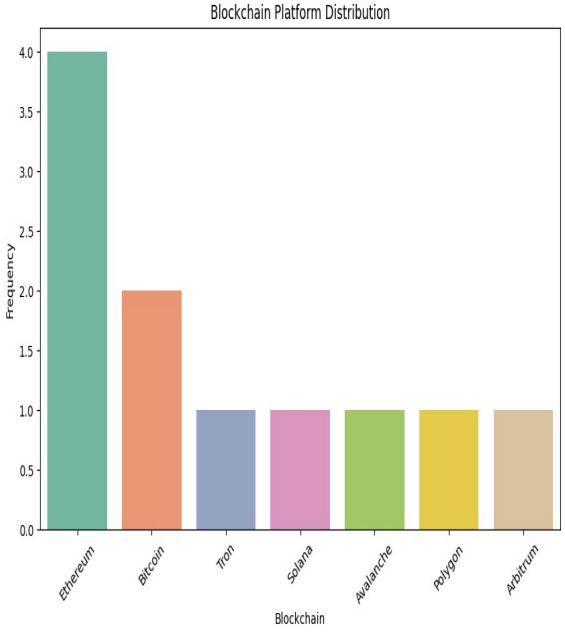


Figure 5 :Blockchain platform distribution

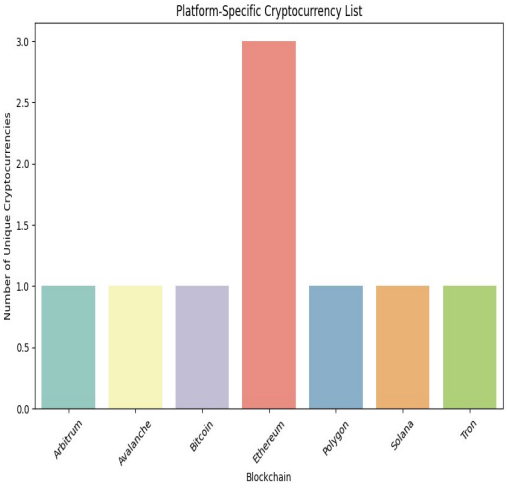


Figure 6 :Platfrm specific crypto currency list

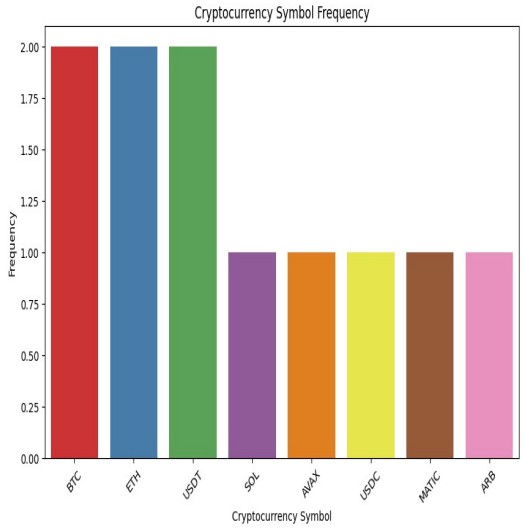


Figure 7 : Crypto currency symbol frequency

## V. CONCLUSION

Important information about how bitcoin tokens are distributed across different blockchain networks is provided by the dataset. We can learn more about blockchain adoption trends and the interdependencies of various ecosystems by examining the platforms that each coin is supported on. This study advances a more thorough comprehension of how smart contracts function on various platforms.

## VI. FUTURE WORK

Future research might examine more in-depth connections between platform support and token popularity, examine patterns in the development of cross-chain interactions, and assess how these connections affect the scalability and security of blockchains. Furthermore, more thorough investigation into tokens used on obscure networks can yield fresh insights.

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