

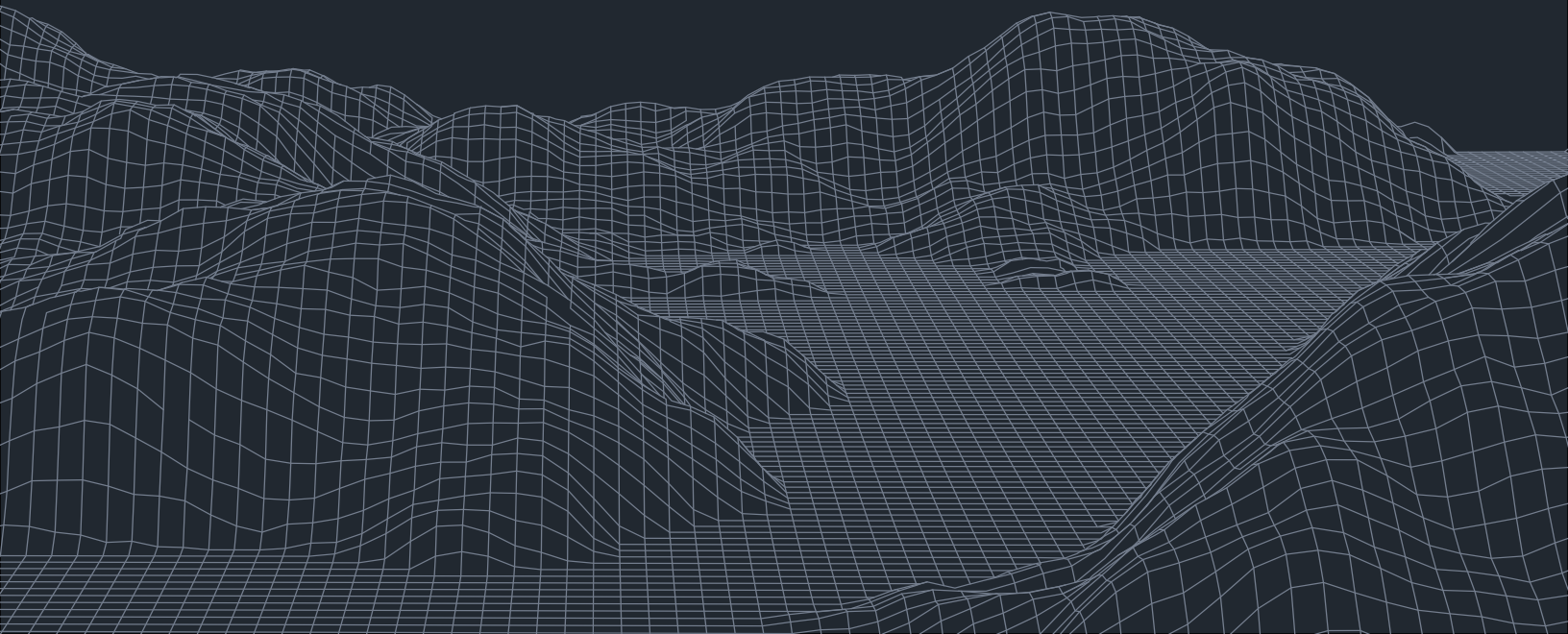


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Crypto Intelligence Alert

Binance Market Surveillance



Inca Digital recently completed an investigation into Binance and the Binance ecosystem.

The below cross market surveillance analysis covers January through October 2023 and finds that across both high-cap and low-cap tokens, Binance markets are generally very healthy, showing minimal signs of anomalous trading activities.

Distribution tail exponents, skewness, kurtosis, trade-size clustering analysis, and other statistical analyses reveal that Binance's high-cap markets fall within acceptable ranges, suggesting minimal market manipulation. While Student's test for clustering values for low-cap tokens on Binance are lower than those for high-cap tokens, they still remain higher than what is observed on most other cryptocurrency exchanges. This implies that Binance hosts a relatively large proportion of real traders, even within the low-cap token market.

Binance upholds high standards of market integrity, with effective surveillance measures in place. Investors and traders in the cryptocurrency space should be reassured by these findings, highlighting Binance as a stable and reliable platform for cryptocurrency trading.

This Crypto Intelligence Alert is part of Inca Digital's effort to foster transparent markets in crypto. For more information on Binance, including Inca Digital's complete cross market surveillance and market data analysis on Binance, data on Binance leadership and subsidiary companies, and external scams using the Binance name, please contact us at info@inca.digital.

Cross Market Surveillance Analysis

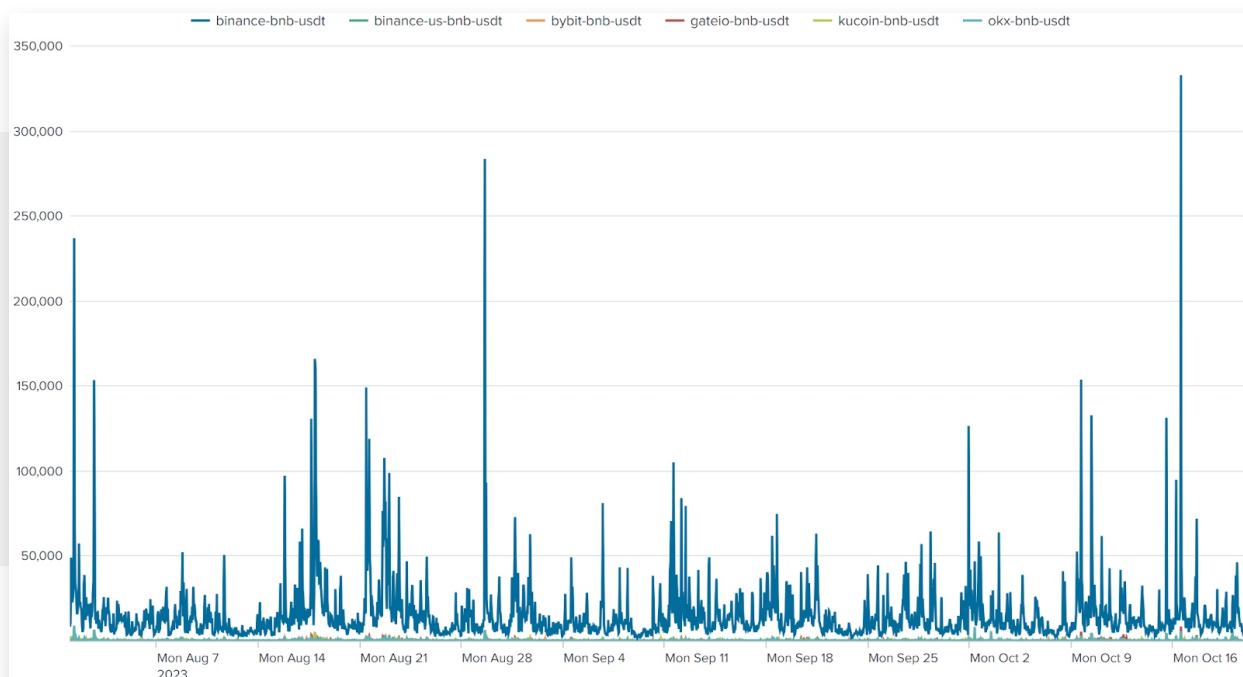
Inca has divided our cross-market analysis between high-cap and low-cap tokens. This separation is crucial due to the inherent differences in market dynamics between the two.

Generally speaking, high-cap tokens, which are characterized by greater liquidity and established status, are less susceptible to manipulation and more stable with genuine trading patterns. In contrast, low-cap tokens have lower liquidity and heightened susceptibility to manipulation. They generally tend to show more signs of inflated volumes and wash trading. This separation allows for a more nuanced understanding of the distinct trading behaviors, investor participation, and potential market integrity concerns.

High-Cap Tokens

Binance consistently maintains the highest trading volume and the largest number of trades for high-cap tokens among all crypto trading venues.

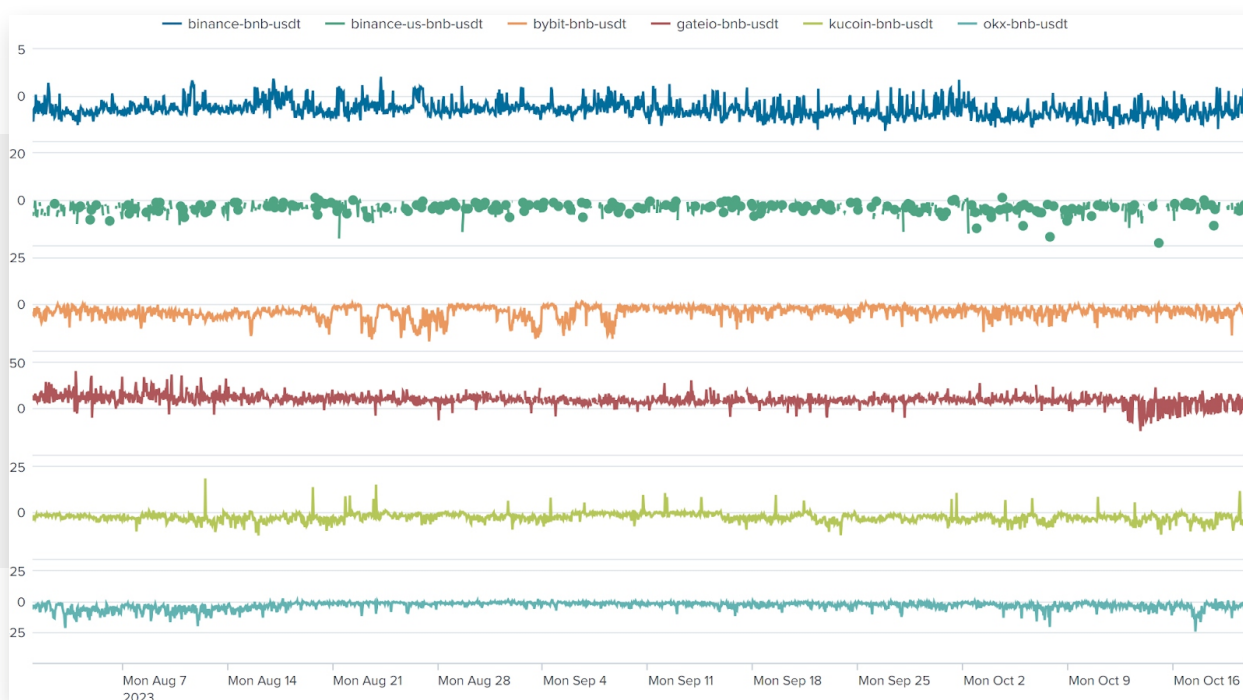
The BNB token serves as the native token of Binance Smart Chain and was introduced by Binance, finding extensive utility within the Binance ecosystem. While Binance maintains the highest trading volume for most tokens, this is especially noticeable for the BNB token. On average, Binance sees a trading volume of 15,041 BNB per hour, significantly surpassing its closest competitor, KuCoin, which records only 357 BNB on average. Gate.io and OKX closely follow in this ranking, with average volumes of 353 and 349 BNB per hour, respectively. The highest trading volume within a single hour on Binance occurred on October 16, reaching a total value of 332,550 BNB tokens, equivalent to \$71,625,415 USD.



Trade Volume for BNB-USDT among different exchanges

The *Student's test for trade-size clustering* capitalizes on the observation that authentic traders often engage in round trading volumes. The metric operates by comparing the frequency of round volume trades to non-round volume trades. When the value of the metric is greater, it signifies a higher ratio of round-sized trades to non-round-sized trades. Binance consistently displays relatively high values in the Student's test for the trade size clustering in large-cap token markets, indicating a strong presence of genuine traders.

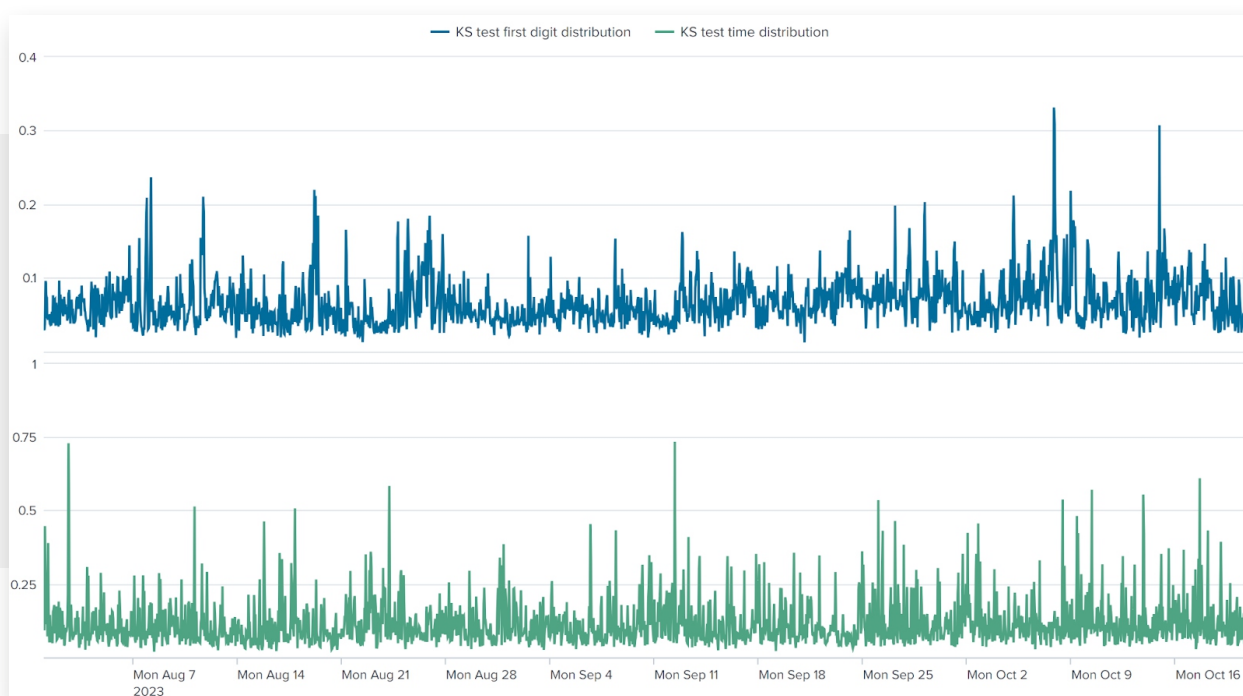
BNB follows suit, with an average value of -1.5 on Binance, surpassing other exchanges except for Gate.io, which records an average value as high as 9.1. Moreover, the Student's test for round trade sizes on Binance exhibits relatively minor fluctuations, indicating a steadier demand from genuine traders compared to other exchanges.



Trade size clustering test with 100x rounding for BNB-USDT among different exchanges

The *Kolmogorov-Smirnov (KS) Test* is a complex but highly useful metric for comparing real-life data to an ideal, "normal," distribution. The results from this test on Binance markets showed low values fluctuating within a narrow range. Binance consistently demonstrates the lowest KS test values among various exchanges, suggesting a stronger presence of genuine traders.

For the BNB token, the KS test for the first digit distribution yields an average value of 0.06, suggesting that trade sizes align closely with anticipated values expected from real users. Regarding the KS test for time distribution, the average value stands at 0.11, marked by notable fluctuations and occasional sharp peaks that frequently surpass a value of 0.5. Such behavior is entirely consistent with the expected actions of genuine market participants.



Kolmogorov-Smirnov Tests for BNB-USDT on Binance

Low-Cap Tokens

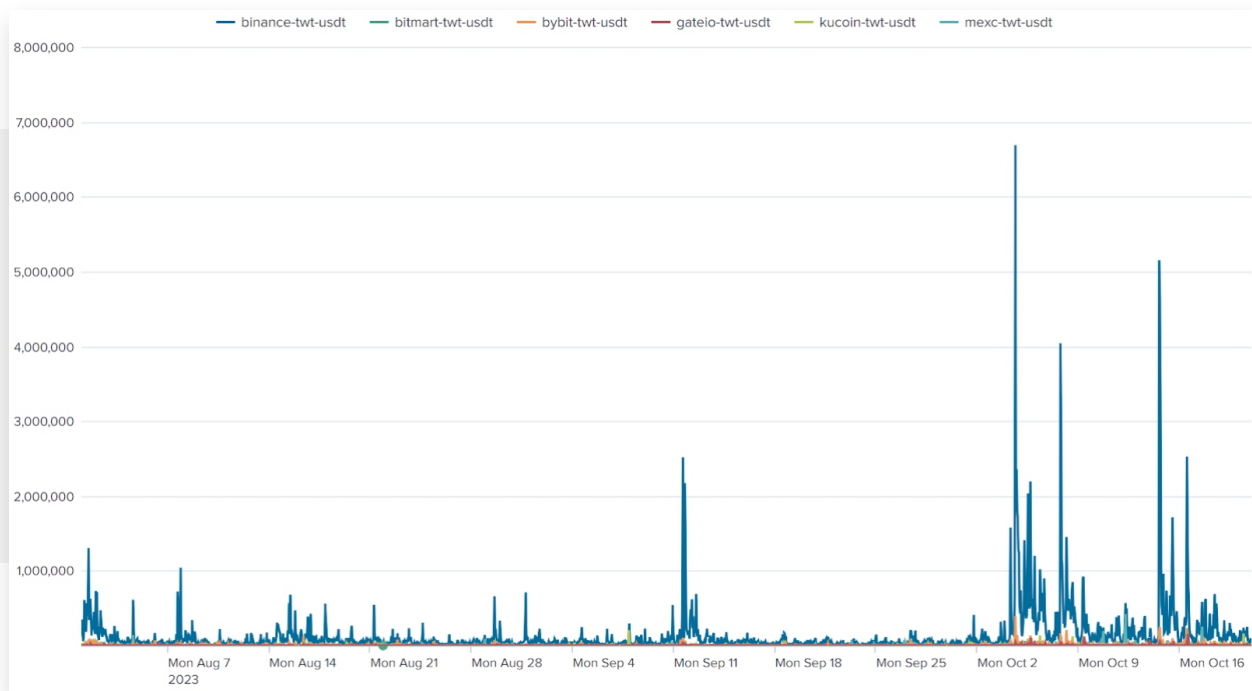
Binance consistently exhibits the largest trading volume among exchanges for low-cap tokens.

TWT is a low-cap token established by the creators of Trust Wallet, a mobile cryptocurrency wallet platform inaugurated in 2017 and acquired by Binance in 2019. TWT tokens provide users with various advantages within the Trust Wallet ecosystem, including discounts on in-app cryptocurrency purchases and decentralized exchange (DEX) services.

Similar to BNB, trading volumes of TWT on Binance notably surpass those on other cryptocurrency exchanges. The average hourly volume for TWT on Binance reaches 131,558 TWT, significantly outpacing its closest competitor Bybit, which records only 8,277 TWT volume per hour on average. Following Bybit are MEXC and KuCoin, with average hourly volumes of 5,873 and 5,368 TWT, respectively.

A substantial increase in TWT trading volume is evident around October 4, 2023, coinciding with a rise in the token's price. This surge in interest may be attributed to the Trust Wallet Extension update (v1.9.1) that occurred on October 3, 2023.



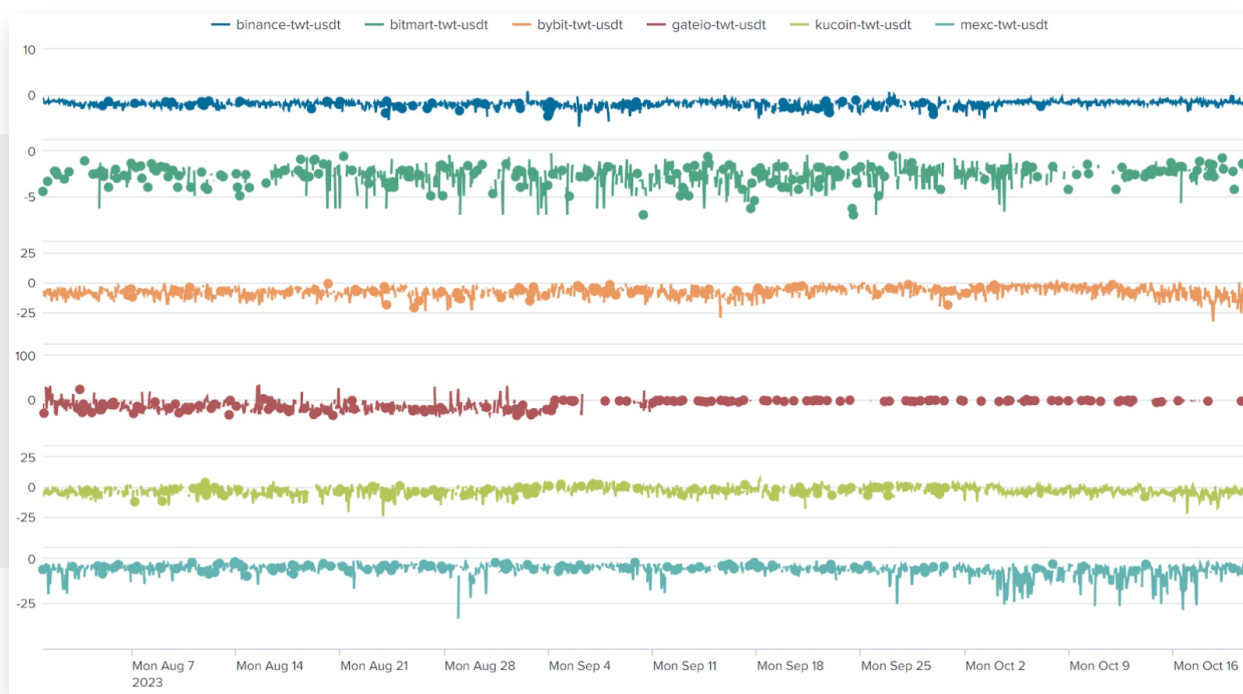


Trade volume for TWT-USDT among various exchanges

While Student's test for clustering values for low-cap tokens on Binance are lower than those for high-cap tokens, they still remain higher than what is observed on other cryptocurrency trading venues. This implies that Binance hosts a relatively large proportion of real traders, even within the low-cap token market.

The average value of the Student's test for trade-size clustering concerning TWT token stands at -2.11, representing the highest result among various trading venues. The closest competitor, Bitmart, follows with an average value of -2.76, while KuCoin and MEXC rank lower with average values of -3.4 and -6.3, respectively.

One notable aspect of the Student's test for TWT token is its stability during the period of increased volume, devoid of any troughs below the value of -5 observed before October 4. This consistent behavior suggests that the surge in volume and subsequent price growth are organic in nature.

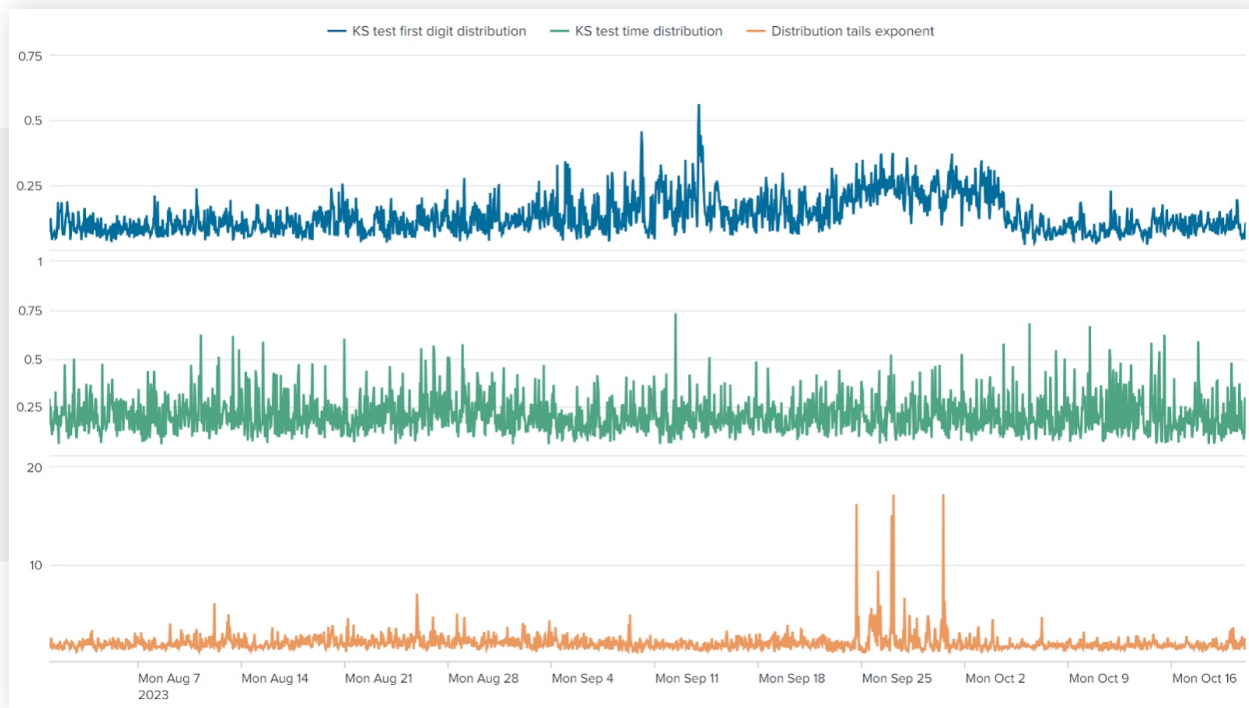


Trade size clustering test with 100x rounding for TWT-USDT among various trading venues

Trade volume distributions in regular financial markets usually have heavy tails. When fitting the distribution's tail to the power law, the calculated exponent does not exceed three in traditional financial markets. Values greater than three might indicate abnormal trading activity, like wash trading and market manipulation practices.

The average value of the Kolmogorov-Smirnov test for the first digit distribution for TWT-USDT on Binance is approximately 0.13. This value does not raise any significant concerns regarding the participation of genuine traders in TWT token trading activity. However, there is a notable increase in this metric's value beginning on September 23 and continuing until October 4, just before the price surge. This pattern suggests potential news frontrunning executed via algorithms. Additionally, the tail's exponent of the trade volume distribution exhibits several prominent peaks during this period, further supporting this theory.

The KS test for time distribution, however, does not reveal any patterns indicative of artificially inflated volume or market manipulations. It fluctuates around an average value of 0.2, with regular peaks exceeding a value of 0.5, which is characteristic of natural behavior observed in financial markets.



Kolmogorov-Smirnov Tests for TWT-USDT on Binance

Actionable Intelligence

Inca's analysis of distribution tail exponents, skewness, kurtosis, and trade-size clustering reveals that Binance's high-cap markets fall within acceptable ranges, suggesting minimal market manipulation.

Across both high-cap and low-cap tokens, Binance markets are generally very healthy, showing minimal signs of anomalous trading activities.

Investors and traders in the cryptocurrency space should be reassured by these findings, highlighting Binance as a stable and reliable platform for cryptocurrency trading.

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