



BadgeHolder Onchain Analysis

**Analyzing Activity and Engagement Patterns of BadgeHolders and
Non-BadgeHolders**

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Background

The Foundation Mission Request aims to enhance the understanding of Badgeholders within the Optimism ecosystem. By analyzing the onchain activity of Badgeholders and comparing it with non-Badgeholders, this research intends to provide insights into the behavior and engagement of these two groups. The primary goal is to gather baseline data to support the expansion of the Citizenry, ensuring informed decisions can be made regarding the future of Citizenship within the ecosystem.

Objectives

The primary objective of this research is to gain a detailed understanding of the on-chain activities of Badgeholders compared to non-Badgeholders across various blockchain ecosystems, including Superchain chains (Optimism, Base, Zora, Mode) and non-Superchain chains (Arbitrum, Ethereum). The specific objectives include:

1. Account Activity Analysis:

- Compare the average age of Badgeholder accounts with non-Badgeholder accounts.
- Investigate any correlation between account age and the number of transactions performed on Superchain chains.

2. Engagement Trends:

- Analyze the changes in the number of active Badgeholders and non-Badgeholders on Superchain chains over time.
- Determine the proportion of Badgeholders and non-Badgeholders who have been active for more than 6 months, 1 year, and 2 years.

3. Cross-Chain Activity:

- Compare the average number of transactions performed by Badgeholders and non-Badgeholders on Superchain chains versus other chains.
- Assess the distribution of transaction counts across different chains for both groups.
- Examine the changes in transaction counts over time on Superchain and other chains.

4. Activity Distribution:

- Evaluate Badgeholder activity across categories such as Social, NFTs, DeFi, and DAO Governance.
- Compare this activity with that of non-Badgeholders within the same categories.


5. Application Usage:

- Identify the top applications used by Badgeholders on Superchain chains, focusing on DEXs and NFT platforms.
- Analyze changes in the usage of different applications by Badgeholders over time.

6. Farcaster Verification:

- Determine the percentage of Badgeholders who have connected their Ethereum address to a Farcaster account.
- Compare the activity levels of Badgeholders with and without Farcaster verification on Superchain chains.
- Explore the correlation between the number of addresses connected to a Farcaster account and the activity level of Badgeholders.

7. Temporal Differences:

- Investigate the activity levels of Badgeholders from earlier rounds compared to later rounds.
 - Identify significant differences in category engagement between Badgeholders from different rounds.
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Scope

This research encompasses a detailed comparative analysis of on-chain activities of Badgeholders and non-Badgeholders across various blockchain ecosystems, specifically focusing on Superchain chains (Optimism, Base, Zora, Mode) and non-Superchain chains (Arbitrum, Ethereum). The scope includes the following aspects:

1. Data Sources:

- Collection of Badgeholder data through EAS attestation.
- Acquisition of comprehensive transaction and account data from the Dune dashboard for both Badgeholders and non-Badgeholders.

2. Analytical Metrics:

- Comparison of average account ages and transaction frequencies between Badgeholders and non-Badgeholders.
- Analysis of the number of active users and their activity levels over time.

3. Category Engagement:

- Assessment of user engagement across different categories, such as Social, NFTs, DeFi, and DAO governance.
- Evaluation of the distribution of transaction counts within these categories for both user groups.

4. Cross-Chain Activity:

- Examination of transaction patterns and average transaction counts on both Superchain and non-Superchain chains.
- Comparison of the proportion of transactions performed by each user group across different chains.

5. Temporal Trends:

- Analysis of changes in the number of transactions and active users over time.
- Identification of trends and patterns in user engagement from early to recent periods.

6. Application Usage:

- Identification and comparison of the top applications used by Badgeholders and non-Badgeholders on Superchain chains.
- Analysis of the evolution of application usage over time among Badgeholders.

7. Farcaster Verification:

- Investigation into the extent of Badgeholders connecting their Ethereum addresses to Farcaster accounts.
- Comparison of activity levels between Badgeholders with and without Farcaster verification.

8. Temporal Differences in Badgeholder Activity:

- Comparison of activity levels and category engagement between Badgeholders from earlier and later rounds.

This study provides a comprehensive view of Badgeholder and non-Badgeholder behaviors, highlighting key differences and trends that inform the understanding of user dynamics within the blockchain ecosystem.

Research Methodology

Data Collection

Data collection for this study utilized two primary sources: EAS attestation for BadgeHolder data and the Dune Dashboard for transaction-related and non-Badgeholders data (active users). The dataset includes comprehensive records such as Transactions Data, Dex Trades Data, NFT Trades Data, Perpetual Trades Data, Smart Contract Deployment Data, Farcaster Cast and Reaction Data, and LensHub Activity of BadgeHolder and non-BadgeHolder activities across various chains including Superchain chains(Optimism, Base, Zora, Mode) and non-Superchain chains(Arbitrum, Ethereum). This approach ensures a broad and detailed exploration of on-chain behaviors and engagement metrics among different user groups.

Data Analysis

The analysis phase employed the Dune Dashboard, offering robust capabilities for processing and visualizing complex blockchain data. Initially, data underwent rigorous preprocessing to standardize formats and resolve inconsistencies, ensuring the integrity of subsequent analyses. Descriptive statistics were then computed to profile transaction frequencies, account ages, and active user demographics, laying a foundation for comparative assessments. Comparative analysis focused on delineating distinctive patterns between Badgeholders and non-Badgeholders across multiple dimensions, including transaction volumes, category-specific engagements (Social, NFTs, DeFi, DAO governance), and chain-specific activities. Temporal analyses tracked longitudinal trends to capture evolving user behaviors over time, enriching insights into user adoption and engagement dynamics within decentralized networks. Visualizations, ranging from bar charts to line graphs, effectively synthesized findings and facilitated intuitive interpretations of complex data relationships, fostering a comprehensive understanding of blockchain user behaviors and ecosystem dynamics.

Data Collection

Our analysis encompassed data from BadgeHolders and comparable groups of active non-BadgeHolder users across various blockchain networks. The non-BadgeHolder groups in this study specifically represent active users on the networks examined, ensuring a meaningful comparison with BadgeHolders. Here's an overview of our data collection process:

BadgeHolder Data: We extracted the current BadgeHolder dataset from the Retroactive Public Goods Funding (RPGF) Round 3 using Ethereum Attestation Service (EAS) [attestations](#). This process yielded a comprehensive sample of 132 verified BadgeHolders, forming the core subject group for our analysis.

Source: [132 BadgeHolders Data](#)

1. BadgeHolder's ENS Address:

- We conducted a query to assess the prevalence of Ethereum Name Service (ENS) adoption among BadgeHolders. The results revealed that 102 out of 132 BadgeHolder addresses (77.3%) have associated ENS names.
- **Source:** [BadgeHolder ENS Addresses](#)

Non-BadgeHolder Data: To ensure a meaningful comparison, we identified two groups of active non-BadgeHolder addresses on the Optimism network:

1. Group 1: 132 addresses (matching BadgeHolder sample size)
2. Group 2: 1,320 addresses (10x BadgeHolder sample size)

1. Non-BadgeHolder Group Selection:

- Based on analysis of BadgeHolder activity, we established the following criteria for non-BadgeHolder addresses:
 - ❖ Minimum 300 transactions on Optimism
 - ❖ At least 8 transactions in a single month
 - ❖ Minimum 15 DEX token transfers/swaps on Optimism
 - ❖ Account age of at least 15 months on Optimism
 - ❖ Interaction with at least 1 application category (e.g., DEXs, perpetuals, NFT marketplaces)

- These criteria ensure that the selected non-BadgeHolder addresses represent active users with significant engagement on the Optimism network, allowing for a robust comparative analysis with BadgeHolders across various activity metrics.
- **Source:** [Group 1 \(132 non-BadgeHolder Data\)](#)
[Group 2 \(1320 non-BadgeHolder Data\)](#)

Transactions Data: We collected and analyzed transaction data across multiple blockchain networks, including Superchain networks (Optimism, Base, Zora, and Mode) and other major networks (Ethereum and Arbitrum). This comprehensive approach allows for a holistic view of user activity across diverse blockchain ecosystems.

1. BadgeHolder Transactions:

- These queries were designed to capture transaction data for BadgeHolders on superchain chains and other chains.
- **Source:** [BadgeHolder transactions on superchain chains](#)
[BadgeHolder transactions on other chains](#)

2. Non-BadgeHolder Transactions (Group 1 - 132 addresses):

- These queries were designed to capture transaction data for non-BadgeHolder addresses on superchain chains and other chains.
- **Source:** [Non-BadgeHolder \(Group 1\) transactions on superchain chains](#)
[Non-BadgeHolder \(Group 1\) transactions on other chains](#)

3. Non-BadgeHolder Transactions (Group 2 - 1320 addresses):

- These queries were designed to capture transaction data for broader selection of non-BadgeHolder addresses on superchain chains and other chains.
- **Source:** [Non-BadgeHolder \(Group 2\) transactions on superchain chains](#)
[Non-BadgeHolder \(Group 2\) transactions on other chains](#)

Decentralized Exchange (DEX) Activity: We compiled and analyzed data on decentralized exchange trades across Superchain networks (Optimism, Base, Zora, and Mode) and other major blockchain networks (Ethereum and Arbitrum).

1. BadgeHolder DEX Trades:

- These queries were designed to capture DEX trades data for BadgeHolders on superchain chains and other chains.
- **Source:** [BadgeHolder DEX trades on superchain chains](#)
[BadgeHolder DEX trades on other chains](#)

2. Non-BadgeHolder DEX Trades (Group 1 - 132 addresses):

- These queries were designed to capture DEX trades data for non-BadgeHolder addresses on superchain chains and other chains.
- **Source:** [Non-BadgeHolder \(Group 1\) DEX trades on superchain chains](#)
[Non-BadgeHolder \(Group 1\) DEX trades on other chains](#)

3. Non-BadgeHolder DEX Trades (Group 2 - 1320 addresses):

- These queries were designed to capture DEX trades data for broader selection of non-BadgeHolder addresses on superchain chains and other chains.
- **Source:** [Non-BadgeHolder \(Group 2\) DEX trades on superchain chains](#)
[Non-BadgeHolder \(Group 2\) DEX trades on other chains](#)

Non-Fungible Token (NFT) Transactions: Our analysis encompassed NFT trading activity across Superchain networks and other prominent blockchain ecosystems, providing insights into digital asset engagement patterns.

1. BadgeHolder NFT Trades:

- These queries were designed to capture NFT trades data for BadgeHolders on Superchain chains and other chains.
- **Source:** [BadgeHolder NFT trades on superchain chains](#)
[BadgeHolder NFT trades on other chains](#)

2. Non-BadgeHolder NFT Trades (Group 1 - 132 addresses):

- These queries were designed to capture NFT trades data for selected non-BadgeHolder addresses on Superchain chains and other chains.
- **Source:** [Non-BadgeHolder \(Group 1\) NFT trades on superchain chains](#)
[Non-BadgeHolder \(Group 1\) NFT trades on other chains](#)

3. Non-BadgeHolder NFT Trades (Group 2 - 1320 addresses):

- These queries were designed to capture NFT trades data for broader selection of non-BadgeHolder addresses on Superchain chains and other chains.
- **Source:** [Non-BadgeHolder \(Group 2\) NFT trades on superchain chains](#)
[Non-BadgeHolder \(Group 2\) NFT trades on other chains](#)

Perpetual Trading Analysis: We collected and examined data on perpetual trades executed on both Superchain networks and other significant blockchain platforms to assess derivatives market participation.

1. BadgeHolder Perpetual Trades:

- These queries were designed to capture perpetual trades data for BadgeHolders on Superchain chains and other chains.
- **Source:** [BadgeHolder perpetual trades on superchain chains](#)
[BadgeHolder perpetual trades on other chains](#)

2. Non-BadgeHolder Perpetual Trades (Group 1 - 132 addresses):

- These queries were designed to capture perpetual trades data for selected non-BadgeHolder addresses on superchain chains and other chains.
- **Source:** [Non-BadgeHolder \(Group 1\) perpetual trades on superchain chains](#)
[Non-BadgeHolder \(Group 1\) perpetual trades on other chains](#)

3. Non-BadgeHolder Perpetual Trades (Group 2 - 1320 addresses):

- These queries were designed to capture perpetual trades data for broader selection of non-BadgeHolder addresses on superchain chains and other chains.
- **Source:** [Non-BadgeHolder \(Group 2\) perpetual trades on superchain chains](#)
[Non-BadgeHolder \(Group 2\) perpetual trades on other chains](#)

Smart Contract Deployment Evaluation: Our research included an assessment of smart contract deployments across Superchain networks and other major blockchain ecosystems, offering insights into development activity and innovation.

1. BadgeHolder Smart Contract Deployments:

- These queries were designed to capture smart contract deployment data for BadgeHolders on superchain chains and other chains.
- **Source:** [BadgeHolder smart contract deployments on superchain chains](#)
[BadgeHolder smart contract deployments on other chains](#)

2. Non-BadgeHolder Smart Contract Deployments (Group 1 - 132 addresses):

- These queries were designed to capture smart contract deployment data for selected non-BadgeHolder addresses on superchain chains and other chains.
- **Source:** [Non-BadgeHolder \(Group 1\) smart contract deployments on superchain chains](#)
[Non-BadgeHolder \(Group 1\) smart contract deployments on other chains](#)

3. Non-BadgeHolder Smart Contract Deployments (Group 2 - 1320 addresses):

- These queries were designed to capture smart contract deployment data for broader selection of non-BadgeHolder addresses on superchain chains and other chains.
- **Source:** [Non-BadgeHolder \(Group 2\) smart contract deployments on superchain chains](#)
[Non-BadgeHolder \(Group 2\) smart contract deployments on other chains](#)

Farcaster Social Engagement: We gathered and analyzed data on Farcaster cast creations and reactions to evaluate social engagement patterns within this decentralized social media platform.

1. BadgeHolder Farcaster Data:

- These queries were designed to capture Farcaster cast and reaction data for BadgeHolders.
- **Source:** [Farcaster Badgeholder custody addresses](#)
[BadgeHolder Farcaster cast](#)
[BadgeHolder Farcaster reaction](#)

2. Non-BadgeHolder Farcaster Data (Group 1 - 132 addresses):

- These queries were designed to capture Farcaster cast and reaction data for selected non-BadgeHolder addresses.
- **Source:** [Non-BadgeHolder \(Group 1\) Farcaster cast](#)
[Non-BadgeHolder \(Group 1\) Farcaster reaction](#)

3. Non-BadgeHolder Farcaster Data (Group 2 - 1320 addresses):

- These queries were designed to capture Farcaster cast and reaction data for broader selection of non-BadgeHolder addresses.
- **Source:** [Non-BadgeHolder \(Group 2\) Farcaster cast](#)
[Non-BadgeHolder \(Group 2\) Farcaster reaction](#)

LensHub Interaction Analysis: Our study included an examination of LensHub activity, focusing on content creation (casts/posts) and user interactions (comments) to assess engagement in this decentralized social graph protocol.

1. BadgeHolder LensHub Data:

- These queries were designed to capture LensHub activity data (casts/posts and comments) for BadgeHolders.
- **Source:** [BadgeHolder LensHub cast](#)
[BadgeHolder LensHub comment](#)

2. Non-BadgeHolder LensHub Data (Group 1 - 132 addresses):

- These queries were designed to capture LensHub activity data (casts/posts and comments) for selected non-BadgeHolder addresses.
- **Source:** [Non-BadgeHolder \(Group 1\) LensHub cast](#)
[Non-BadgeHolder \(Group 1\) LensHub reaction](#)

3. Non-BadgeHolder LensHub Data (Group 2 - 1320 addresses):

- These queries were designed to capture LensHub activity data (casts/posts and comments) for broader selection of non-BadgeHolder addresses.
- **Source:** [Non-BadgeHolder \(Group 2\) LensHub cast](#)
[Non-BadgeHolder \(Group 2\) LensHub reaction](#)

Data Analysis

Activity Duration: Compare how long Badgeholders have been active on Superchain chains versus non-Badgeholders.

1.1 Average age of BadgeHolder accounts on Superchain chains compared to non-Badgeholders

Query Description: To understand the longevity and maturity of BadgeHolder accounts, we executed a query to calculate the average account age for BadgeHolders and compared it with two groups of non-BadgeHolders (Group1 and Group2). This analysis was performed across various Superchain transaction tables, including Optimism, Zora, Base, and Mode.

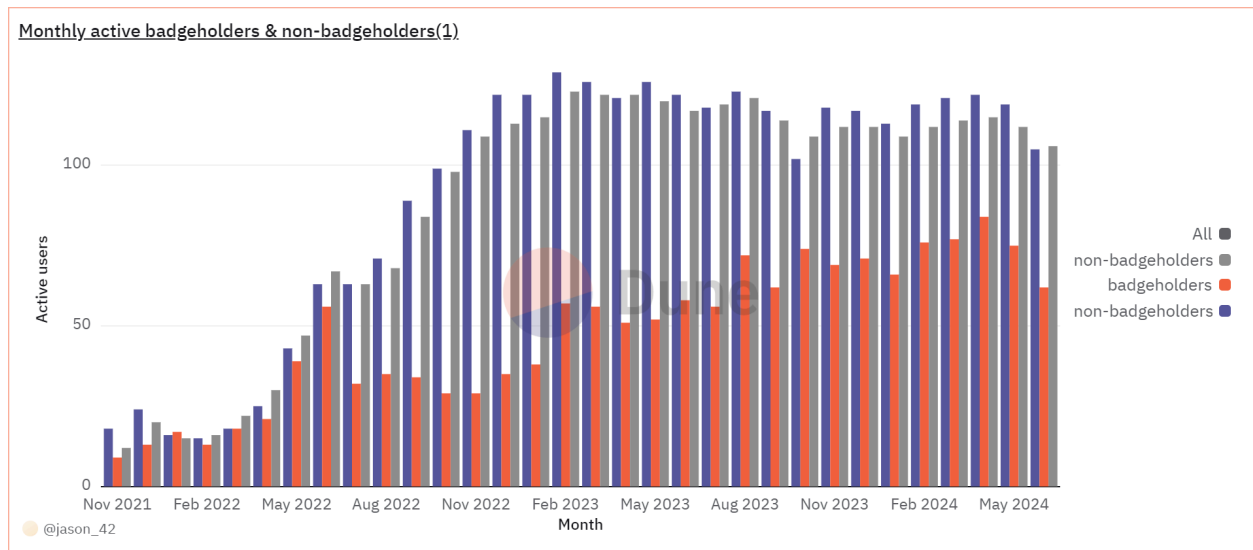


Source Link:- [Average age of Badgeholder and Non-Badgeholder Accounts](#)

Result Insights: The visualization, represented as a bar chart, provides a comparative view of the average account ages for BadgeHolders and non-BadgeHolders on Superchain chains. The data reveals that BadgeHolders have an average account age of 461 days. Non-BadgeHolders in Group 1, consisting of 132 addresses, exhibit a slightly higher average account age of 467 days. Similarly, non-BadgeHolders in Group 2, consisting of 1320 addresses, have the highest average account age at 469 days. These findings suggest that while BadgeHolders are relatively newer compared to non-BadgeHolders, the difference in account age is minimal, indicating similar levels of experience and engagement across these user groups on Superchain chains.

1.2 Changes over time in the number of active Badgeholders and non-Badgeholders on Superchain chains

Query Description: To examine trends in user activity over time, we executed a query that tracks the monthly count of active BadgeHolders and non-BadgeHolders across Superchain chains. This analysis allows for a detailed comparison of activity patterns between BadgeHolders and non-BadgeHolders over an extended period.

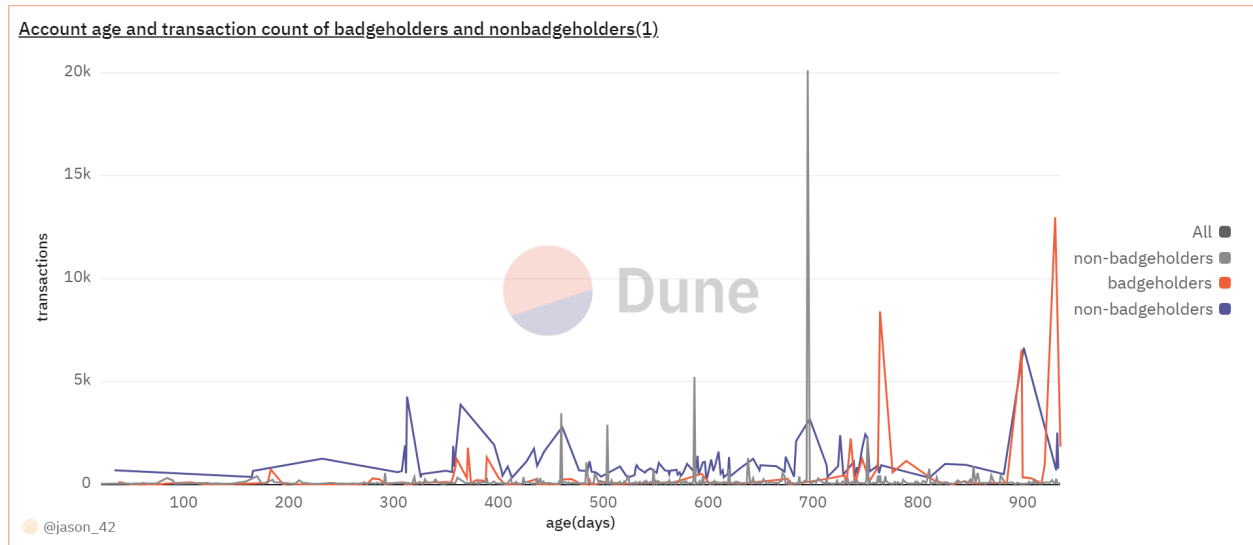


Source Link:- [Monthly Active Badgeholders & non-Badgeholders](#)

Result Insights: The bar chart produced from this query illustrates the trends in activity levels for BadgeHolders and non-BadgeHolders on Superchain chains over time. The data reveals a notable increase in the number of active users starting from April 2022, followed by a stabilization of activity levels from late 2022 onwards, with minor fluctuations. In April 2024, BadgeHolders reached their peak activity, with approximately 84 active users. During the same month, Group 1 recorded 122 active users, while Group 2 had 115 active users. This trend indicates a consistent level of engagement among both BadgeHolders and non-BadgeHolders on Superchain chains, highlighting a period of growth followed by sustained activity.

1.3 Determine whether there is any correlation between account age and the number of transactions performed on Superchain chains for Badgeholders and non-Badgeholders

Query Description: Our analysis explored the relationship between account age and transaction activity for BadgeHolders and non-BadgeHolders across Superchain chains. We examined transaction data from various Superchain tables, including Optimism, Zora, Base, and Mode. The query aimed to uncover patterns in user behavior and determine if account longevity correlates with transaction frequency.



Source Link:- [Account age and transaction count of badgeholders & non-badgeholders](#)

Result Insights: The line chart visualization reveals a surprising lack of strong correlation between account age and transaction frequency for both BadgeHolders and non-BadgeHolders on Superchain chains. Contrary to expectations, both newer and older accounts demonstrate a wide range of transaction volumes, indicating that account age is not a determinative factor in transaction frequency. This non-linear relationship suggests that other factors beyond account age significantly influence transaction activity. These findings highlight the dynamic nature of the Superchain ecosystem, where user behavior is likely influenced by mix factors.

1.4 Proportion of Badgeholders and non-Badgeholders active on Superchain chains for more than 6 months, 1 year, and 2 years

Query Description: This query focused on determining the proportion of BadgeHolders and non-BadgeHolders actively engaged on Superchain chains for more than 6 months, 1 year, and 2 years. This analysis provides insights into the sustainability and long-term engagement of users within the ecosystem.

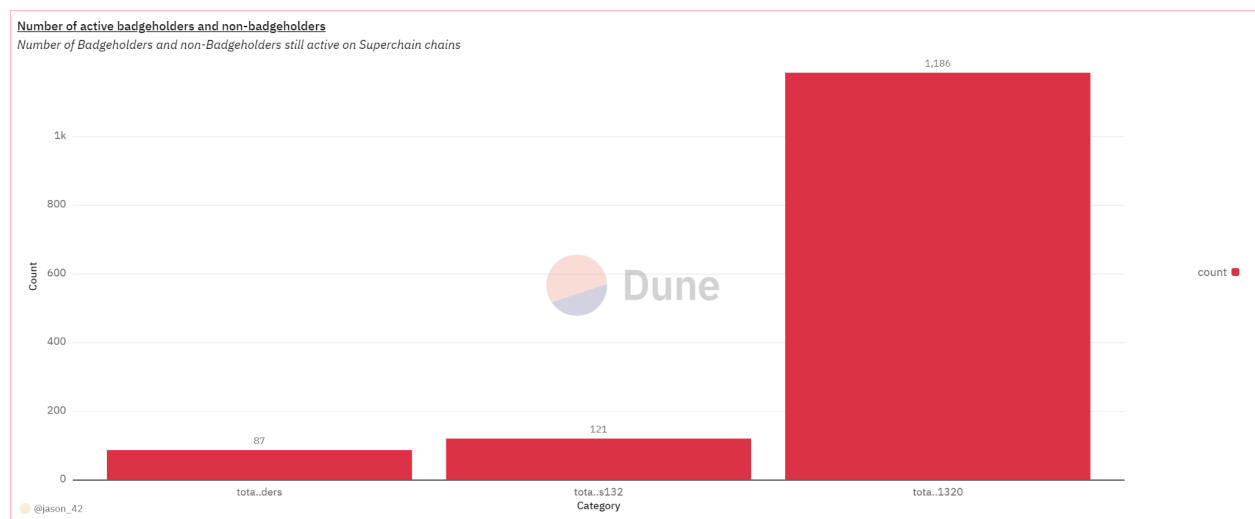
Query results Percentage of active badgeholders, non badgeholders(1)	
user	count_in_percentage
total_active_non-badgeholders1320_over_1_year	100
total_active_non-badgeholders1320_over_2_years	100
total_active_non-badgeholders1320_over_6months	100
total_active_badgeholders_over_2_years	94.6969696969697
total_active_badgeholders_over_1_year	94.6969696969697
total_active_non-badgeholders132_over_6months	100
total_active_non-badgeholders132_over_2_years	100
total_active_badgeholders_over_6months	94.6969696969697
total_active_non-badgeholders132_over_1_year	100
9 rows Search...	
@jason_42	

Source Link:- [Percentage of active badgeholders & non-badgeholders](#)

Result Insights: The table summarizes the proportion of BadgeHolders and non-BadgeHolders who have maintained activity levels exceeding 6 months, 1 year, and 2 years on Superchain chains. It indicates that 94.69% of BadgeHolders have been active for over 2 years. Similarly, 100% of non-BadgeHolders in both Group 1 and Group 2 have maintained continuous activity over these durations. This finding underscores the high level of sustained engagement among both BadgeHolders and non-BadgeHolders within the Superchain ecosystem, reflecting a robust and committed user base across all analyzed categories.

1.5 Number of Badgeholders and non-Badgeholders still active on Superchain chains

Query Description: To assess current user engagement, we executed a query to determine the number of active BadgeHolders and non-BadgeHolders (Group1 and Group2) on Superchain chains. Our query aimed to provide an up-to-date count of active BadgeHolders and non-BadgeHolders actively engaged on Superchain chains as of the latest data snapshot. This analysis offers insights into the current user base and ongoing participation within the ecosystem.



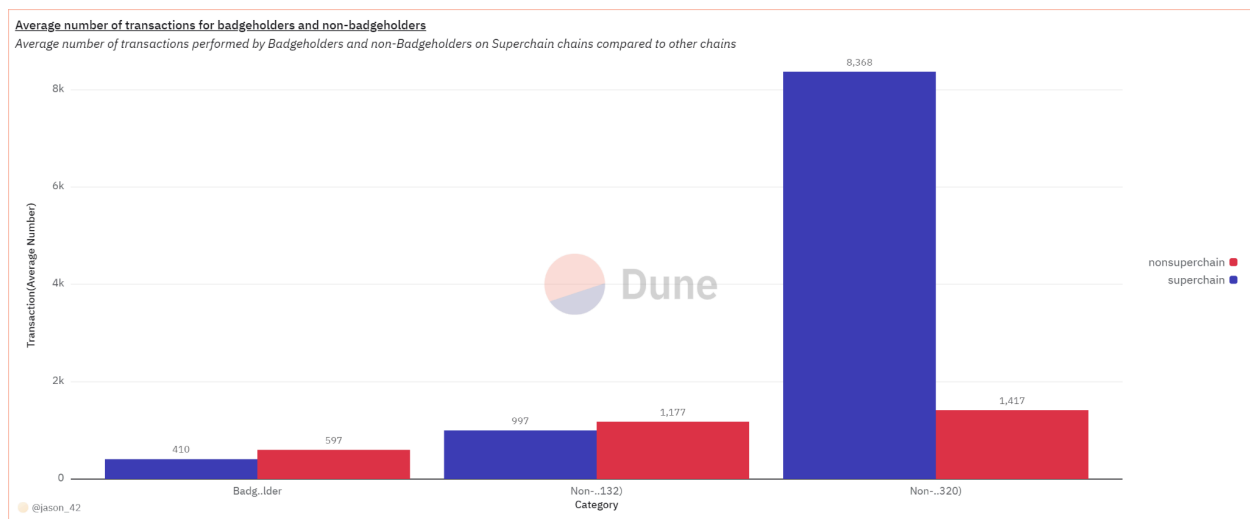
Source Link:-[Number of Active Badgeholders & Non-Badgeholders](#)

Result Insights: Based on the latest data collected as of 27 June 2024, the active user counts on Superchain chains illustrate distinct engagement levels across different user categories. Among BadgeHolders, there are currently 87 active users, while Group 1 of non-BadgeHolders (132 addresses) shows 121 active users, and Group 2 (1320 addresses) registers 1186 active users. These figures provide a snapshot of the ongoing participation within the Superchain ecosystem, highlighting varied levels of engagement between BadgeHolders and non-BadgeHolders. This data underscores the ecosystem's dynamic nature and the diverse patterns of user activity observed over time.

Cross-Chain Activity: Analyze Badgeholders' activity on Superchain chains relative to other chains and compare with non-Badgeholders.

2.1 Average number of transactions performed by Badgeholders and non-Badgeholders on Superchain chains compared to other chains

Query Description: This analysis compares transaction activity across different blockchain ecosystems. We calculated average transaction counts for badgeholders and two non-badgeholder groups (Group1 and Group2) on both Superchain (Optimism, Base, Zora and Mode) and non-Superchain networks (Ethereum and Arbitrum).

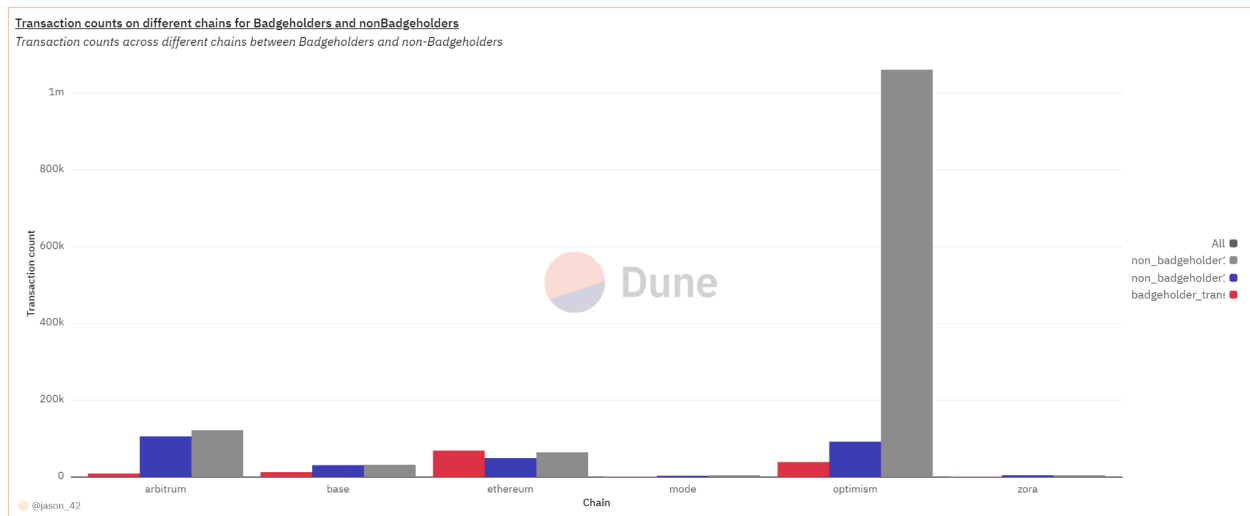


Source Link:- [Average Number of Transactions for badgeholders & Non-Badgeholders](#)

Result Insights: The bar chart visualization provides a clear comparison of transaction volumes between badgeholders and non-badgeholders across Superchain and non-Superchain networks. Badgeholders show an average of 410 transactions on Superchain and 597 on non-Superchain networks, indicating higher activity outside the Superchain ecosystem. Non-badgeholder Group 1 (132 addresses) demonstrates increased activity with 997 transactions on Superchain and 1177 on non-Superchain networks. Notably, non-badgeholder Group 2 (1320 addresses) exhibits significantly higher engagement, averaging 8368 transactions on Superchain and 1417 on non-Superchain networks. This stark difference suggests that larger non-badgeholder groups may be more actively involved in Superchain transactions. The data reveals varied usage patterns across user groups and blockchain types, with non-badgeholders generally showing higher transaction volumes compared to badgeholders, particularly on Superchain networks.

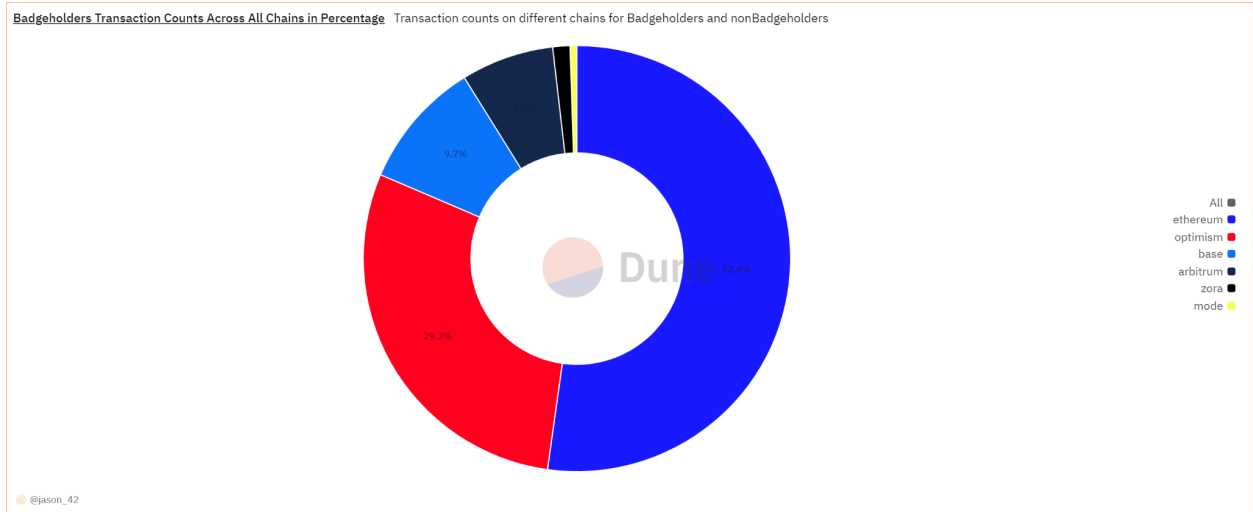
2.2 Distribution of transaction counts across different chains between Badgeholders and non-Badgeholders

Query Description: This analysis examines the distribution of transaction activity across various blockchain networks for badgeholders and two groups of non-badgeholders (Group1 and Group2). We calculated the average number of transactions for each group on Superchain and other chains, normalizing the total transactions by group size to ensure a fair comparison. This approach allows for a comprehensive view of user engagement patterns across different blockchain environments.



Source Link:- [Transaction Counts on Different chains](#)

Result Insights: The visualizations provide compelling insights into the transaction behavior of badgeholders and non-badgeholders across different blockchain networks. The bar chart reveals that on Superchain networks, particularly Optimism, non-badgeholders from both groups consistently outperform badgeholders in terms of transaction volume. This suggests a higher level of engagement or different usage patterns among non-badgeholders on these networks. Interestingly, the trend reverses on Ethereum, where badgeholders show the highest transaction count, indicating a strong preference for or activity on this particular blockchain.

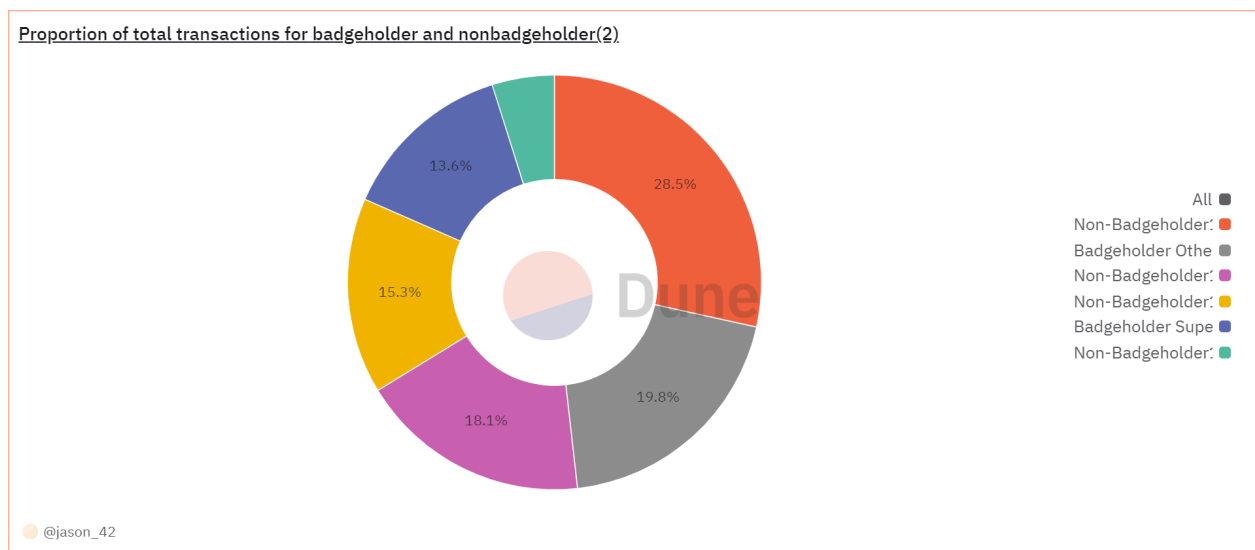


Source Link:- [Transaction Counts on Different chains](#)

Result Insights: The pie chart focusing on badgeholder transactions across all chains further illuminates their behavior. Ethereum dominates with 52.4% of badgeholder transactions, followed by Optimism at 29.3% and Base at 9.7%. This distribution highlights the varying levels of badgeholder engagement across different chains, with a clear preference for Ethereum. The significant activity on Optimism and Base also underscores the growing importance of these Superchain networks within the badgeholder community.

2.3 Proportion of total transactions performed by Badgeholders and non-Badgeholders on Superchain chains compared to other chains

Query Description: This analysis examines the distribution of transaction activity between Superchain and other blockchain networks for badgeholders and non-badgeholders. We calculated the total number of transactions for each group across different chain types, then determined the proportion of these transactions occurring on Superchain versus other chains. This approach provides a comprehensive view of how different user groups allocate their transaction activity across varying blockchain environments.

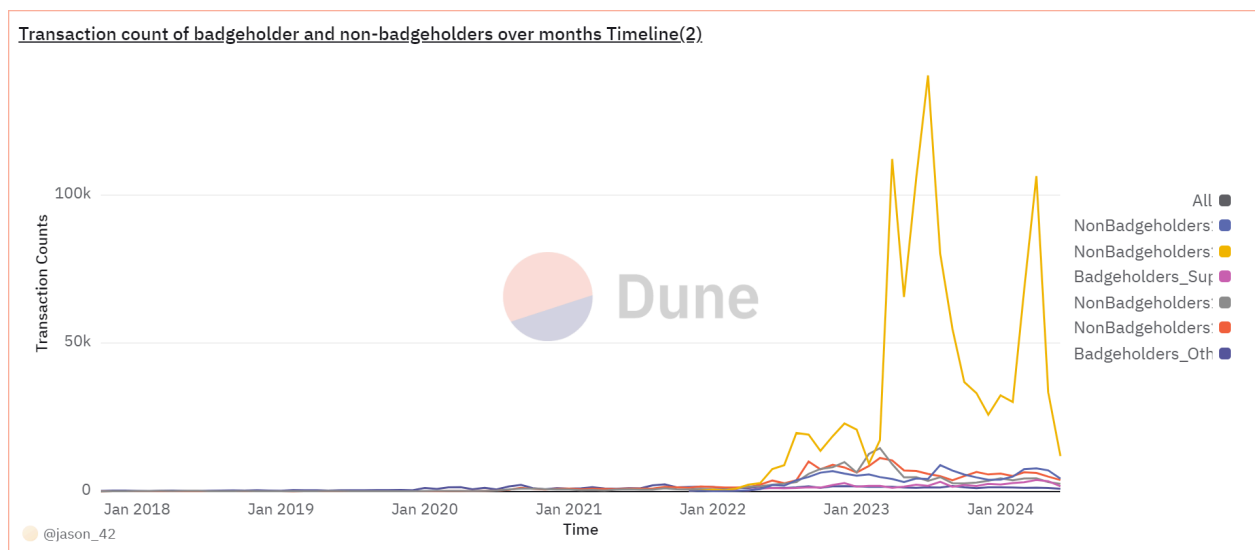


Source Link:- [Proportion of total transactions for Badgeholder & Non-Badgeholder](#)

Result Insights: The pie chart visualization offers a clear and insightful representation of transaction distribution patterns among badgeholders and non-badgeholders across Superchain and other chains. Notably, the data reveals a striking contrast in blockchain preferences between these user groups. Badgeholders demonstrate a higher propensity for activity on non-Superchain networks, suggesting a broader engagement with the wider blockchain ecosystem. In contrast, non-badgeholders, particularly those from the larger group of 1320 addresses, show a significantly higher transaction volume on Superchain networks. This pronounced difference in behavior indicates that Superchain networks have successfully attracted and retained active non-badgeholder users, potentially due to unique features or incentives. The findings highlight the diverse usage patterns across user segments and underscore the growing importance of Superchain within the broader blockchain landscape, especially among non-badgeholder users.

2.4 Number of transactions performed by Badgeholders and non-Badgeholders on Superchain chains and other chains over time

Query Description: This analysis tracks the evolution of transaction activity over time, segmented by user type (badgeholders and non-badgeholders) and chain type (Superchain and other chains). We aggregated monthly transaction counts from multiple datasets, providing a comprehensive view of transaction trends across different user segments and blockchain environments. This approach allows for a nuanced understanding of how various user groups engage with different blockchain ecosystems over time.



Source link:- [Monthly transaction count of Badgeholders & Non-Badgeholders](#)

Result Insights: The line chart visualization reveals compelling trends in transaction activity across user groups and chain types over time. A notable finding is the significant increase in transaction volume for non-badgeholders, particularly the larger group of 1320 addresses, on both Superchain and other chains. This surge in activity suggests growing engagement from non-badgeholders across the blockchain landscape. Badgeholders also show an upward trend in transaction counts, albeit at a more moderate pace compared to non-badgeholders. The steeper growth curve for non-badgeholders indicates their increasing participation and potentially faster adoption of blockchain technologies. These trends highlight the evolving dynamics of user engagement in the blockchain space, with non-badgeholders emerging as increasingly active participants.

Activity Levels: Determine the percentiles of activity for Badgeholders compared to other active Superchain chain users.

3.1 Transaction Count Percentiles of Badgeholders and Non-Badgeholders on Superchain Chains

Query Description: This analysis examines transaction activity across Zora, Optimism, Base, and Mode networks, comparing badgeholders and non-badgeholders. We calculated transaction count percentiles (10th, 25th, 50th, 75th, 90th, and 100th) for all active addresses, as well as average transaction counts for specific non-badgeholder groups. This approach provides a detailed view of engagement levels across different user segments within the Superchain ecosystem.

Query results

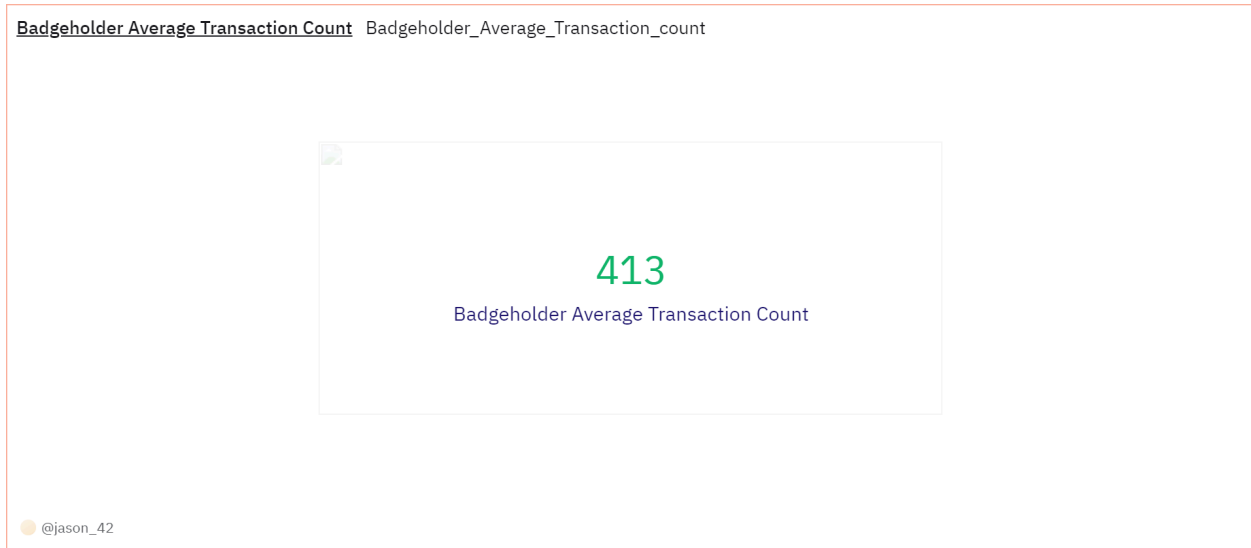
All active addresses Transaction count percentile

percentile	transaction count
10%	1
25%	2
50%	3
75%	9
90%	33
100%	58902116

6 rows

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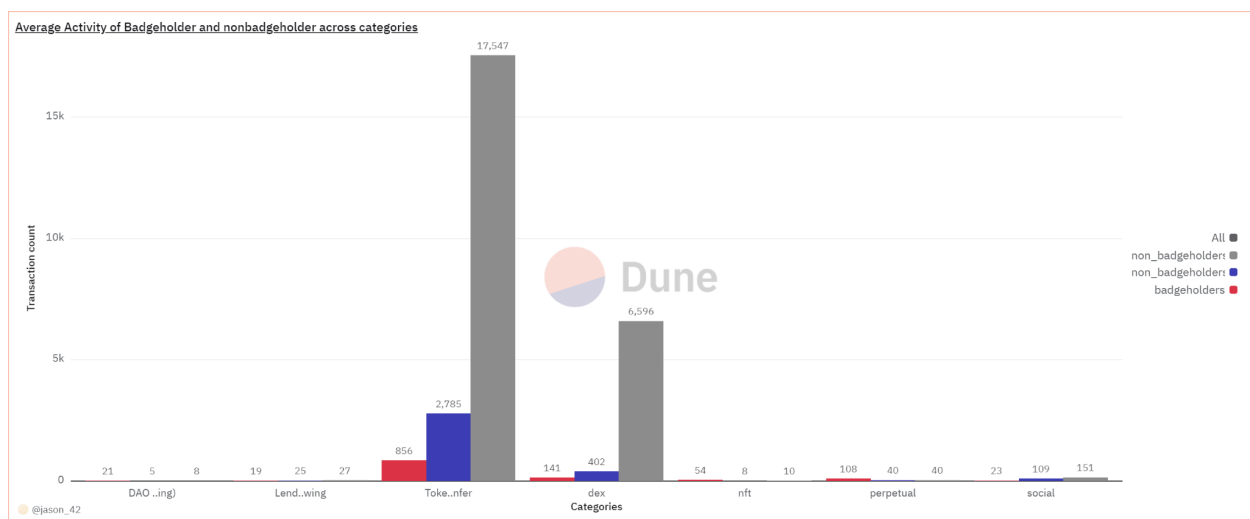
Source Link:- [All active addresses Transaction count percentile](#)
[Badgeholder Average Transaction count](#)
[Non-Badgeholder\(132\) Average Transaction count](#)
[Non-Badgeholder\(1320\) Average Transaction count](#)

Result Insights: The analysis of all active addresses shows a highly skewed distribution of transaction activity. The transaction counts at various percentiles indicate that while most addresses have very few transactions, there are a few outliers with extremely high transaction counts, significantly influencing the 100th percentile. Specifically, at the 10% percentile, addresses have 1 transaction; at the 25% percentile, 2 transactions; at the 50% percentile, 3 transactions; at the 75% percentile, 9 transactions; at the 90% percentile, 33 transactions; and at the 100% percentile, a staggering 58,902,116 transactions. The average transaction count for badgeholders is 413.42 (90% to 100%), indicating a relatively high level of engagement and suggesting that badgeholders are more actively participating in transactions compared to the general population. Among non-badgeholders, specific groups exhibit even higher average transaction counts: Group 1 (132 Addresses) has an average transaction count of 1001.86 (90% to 100%), showing strong engagement within this specific non-badgeholder group, while Group 2 (1320 Addresses) has an average transaction count of 8394.85 (90% to 100%), reflecting an even more intense level of transaction activity, surpassing both badgeholders and the non-badgeholders in Group 1. This comparative analysis reveals that non-badgeholders in groups 1 and 2 exhibit higher average transaction counts compared to badgeholders, indicating that certain non-badgeholder segments are exceptionally active. Additionally, the overall transaction activity among all addresses is highly skewed, with the majority having low transaction counts and a few having extraordinarily high counts. While badgeholders are generally more engaged than the average active address, specific non-badgeholder groups show even higher levels of activity, suggesting targeted areas of high engagement within the non-badgeholder population.

Activity Distribution: Assess BadgeHolder activity across categories such as Social, NFTs, DeFi, DAO governance, and others, and compare with non-Badgeholders.

4.1 Average number of transactions performed by Badgeholders and non-Badgeholders in each activity category on Superchain chains

Query Description: This analysis examines the transaction patterns of badgeholders and two groups of non-badgeholders (Group1 and Group2) across various activity categories on Superchain chains. We calculated the average number of transactions for each group in categories including social interactions, NFT-related activities, DeFi operations, DAO governance participation, and other miscellaneous transactions. This comprehensive approach provides insights into how different user segments engage with various aspects of the Superchain ecosystem.



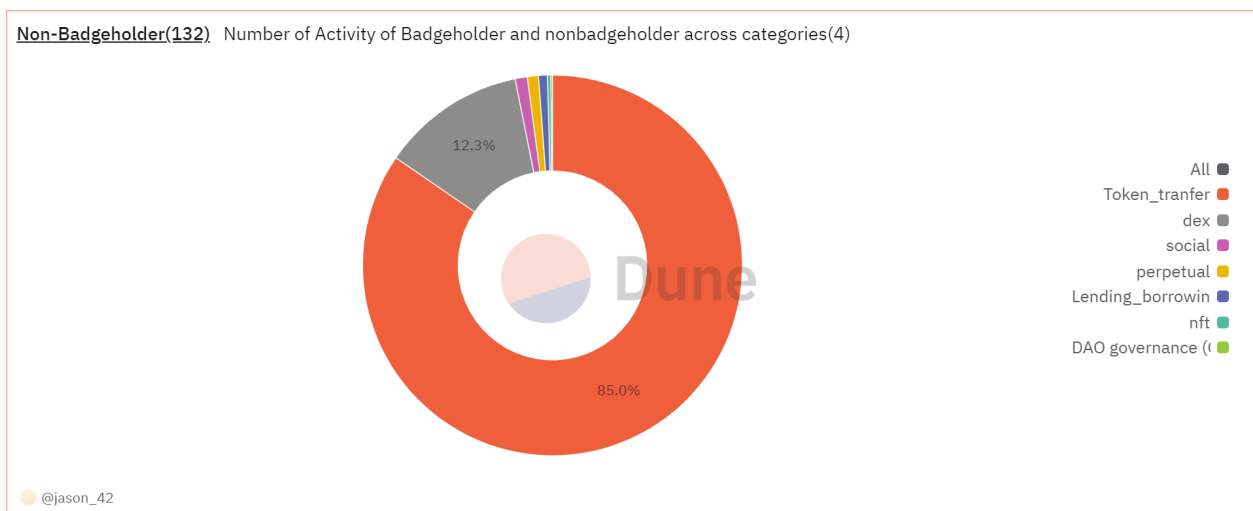
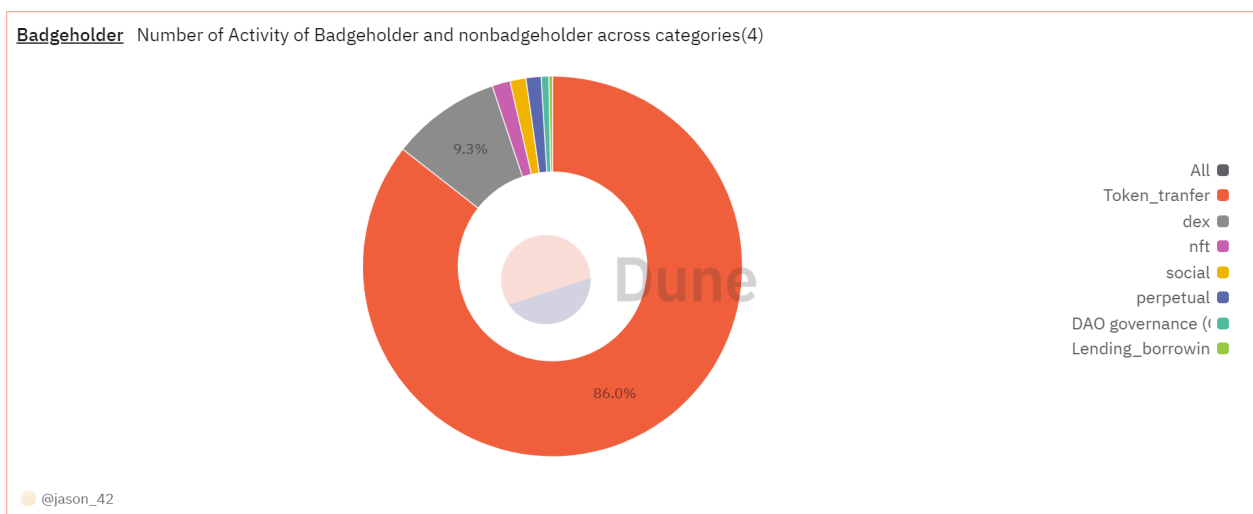
Source Link:- [Average activity count of Badgeholder & Non-Badgeholder across categories](#)

Result Insights: A bar chart is used for a graphical representation to visually illustrate the findings derived from the query. It effectively compares the average number of transactions between badgeholders and non-badgeholders across distinct categories: social, NFT (Non-Fungible Tokens), DEX (Decentralized Exchanges), perpetual, Token-transfer, Lending-borrowing and DAO governance(On-chain voting). It is clear from the visualization that badgeholders are engaged more in Token-Transfer activities on Superchain chains compared to social, NFT (Non-Fungible Tokens), DEX (Decentralized Exchanges), perpetual, Lending-borrowing and DAO governance(On-chain voting) activities. Non-badgeholders (1320) show significantly higher transaction activity in DEX and Token-Transfer activities compared to both badgeholders and non-badgeholders (132), indicating a strong preference for decentralized exchange transactions and Token-Transfer among this group.

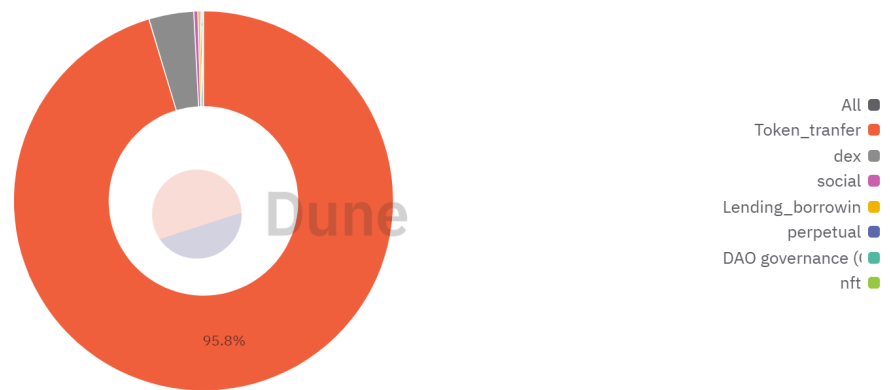
Additionally, in the NFT, Perpetual and DAO governance(On-chain voting) category, badgeholders have more average activity compared to non-badgeholders. While non-badgeholders have more activities on Social and Lending-borrowing categories compared to badgeholders.

4.2 Proportion of total transactions performed by Badgeholders and non-Badgeholders on Superchain chains falls into each activity category

Query Description: This analysis examines the distribution of transactions across various activity categories for badgeholders and two groups of non-badgeholders on Superchain chains. We calculated the proportion of total transactions falling into categories including social interactions, NFT activities, decentralized exchange (DEX) operations, perpetual trading, DAO governance (on-chain voting), lending-borrowing, and token transfers. This comprehensive approach provides a detailed view of how different user segments allocate their transactional activity across various aspects of the Superchain ecosystem.



Non-badgeholder(1320) Number of Activity of Badgeholder and nonbadgeholder across categories(4)



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Source Link:- [Total transaction count of Badgeholders and non-badgeholders across categories](#)

Result Insights: Three pie charts illustrate the distribution of transactions among badgeholders and non-badgeholders across different activity categories like social, NFTs, DEX, Perpetual, DAO governance(On-chain voting), Lending-borrowing and Token-Transfer on Superchain chains.

The first pie chart shows the badgeholder activity distribution across these categories: 86% in Token-Transfer, 9.3% in DEX, 1.5% in NFT, 1.3% in social, 1.2% in perpetual, 0.5% in DAO governance(On-chain voting) and 0.2% in Lending-borrowing.

The second pie chart which is for non-badgeholders(Group 1) shows the activity distribution across these categories: 85% in Token-Transfer, 12.3% in DEX, 0.2% in NFT, 0.9% in social, 0.85% in perpetual, 0.05% in DAO governance(On-chain voting) and 0.7% in Lending-borrowing.

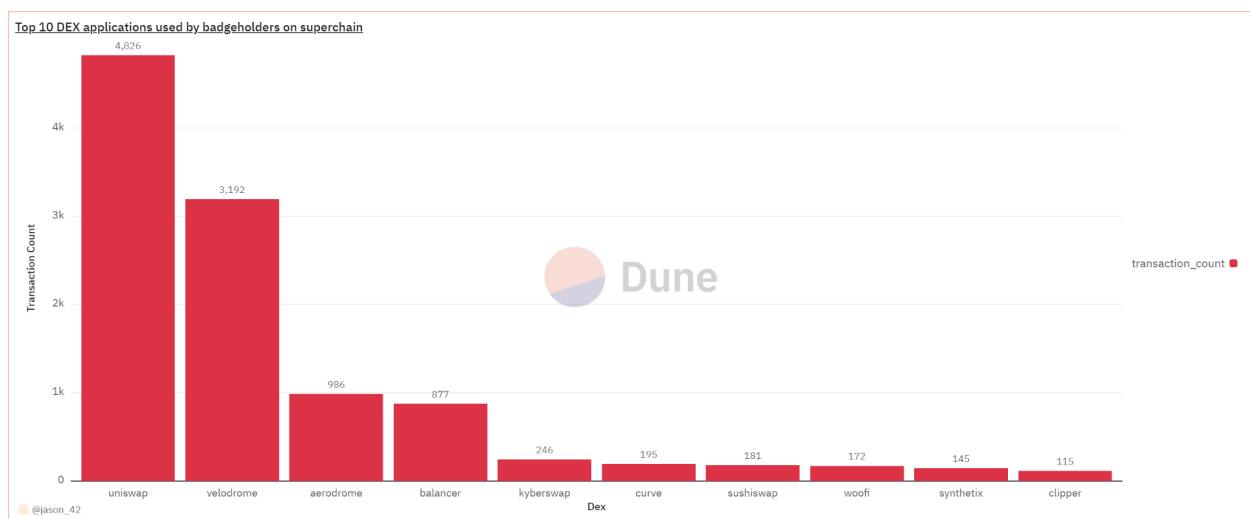
The third pie chart which is for non-badgeholders(Group 2) shows the activity distribution across these categories: 95.8% in Token-Transfer, 3.76% in DEX, 0.004% in NFT, 0.27% in social, 0.015% in perpetual, 0.01% in Cand 0.13% in Lending-borrowing.

Token-transfer represents the major portion of activity compared to other categories, indicating a strong preference for decentralized exchange transactions among the groups. For badgeholders, lending-borrowing constitutes the least in the activity distribution, whereas for non-badgeholders (Group 1 and Group 2), DAO governance (on-chain voting) and NFT have the least proportions.

Application Usage: Identify the applications used by Badgeholders, such as DEXs and social apps, and compare with non-Badgeholders.

5.1 Top 10 applications used by Badgeholders on Superchain chains based on transaction counts

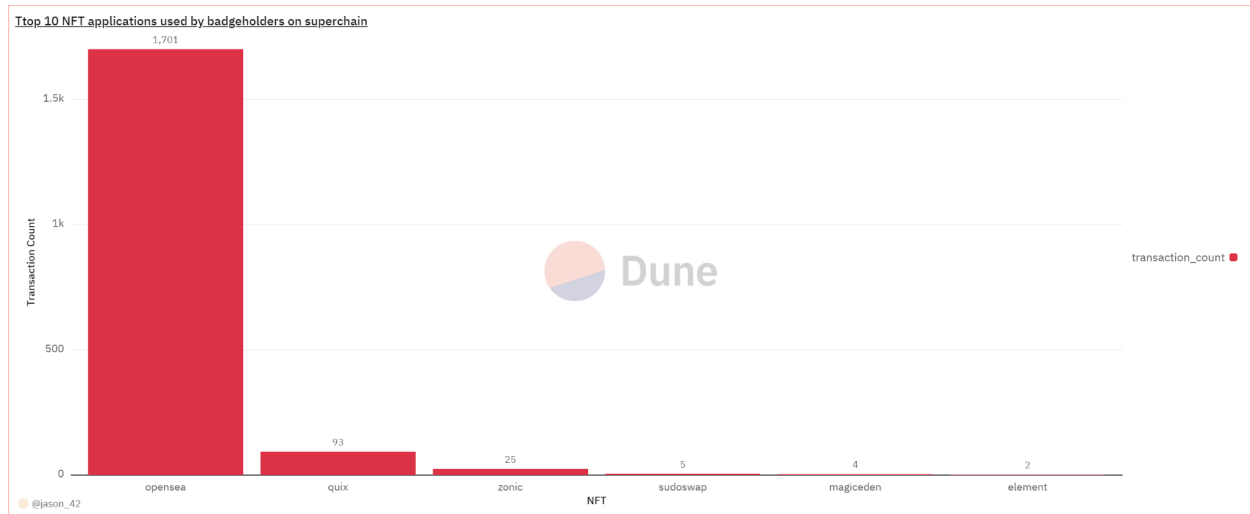
5.1.1 Query Description: This analysis identifies the most popular decentralized exchange (DEX) applications among badgeholders on Superchain chains. We queried transaction data to determine the top 10 DEX platforms based on the number of transactions performed by badgeholders. This approach provides insights into badgeholders' preferences and engagement levels with various DEX applications within the Superchain ecosystem.



Source Link:- [Top 10 DEX Applications used by badgeholders](#)

Result Insights: The bar chart visualization reveals clear preferences among badgeholders for certain DEX platforms on Superchain chains. Uniswap emerges as the dominant platform with 4,826 transactions, followed closely by Velodrome with 3,192 transactions. This significant lead indicates strong user adoption and engagement with these two platforms. Other DEXs also show notable activity levels: Aerodrome, Balancer, and Kyberswap demonstrate substantial transaction volumes, albeit lower than the top two. Platforms such as Curve, Sushiswap, and Woofi, while having fewer transactions, still maintain a presence in badgeholders' activities. The inclusion of Synthetix and Clipper in the top 10 suggests a diverse ecosystem of DEX usage among badgeholders. This distribution of transaction activity across various platforms indicates that while badgeholders have clear favorites, they also engage with a range of DEX options, potentially leveraging different features or liquidity pools offered by each platform.

5.1.2 Query Description: This analysis identifies the most popular NFT applications among badgeholders on Superchain chains. We queried transaction data to determine the top 10 NFT platforms based on the number of transactions performed by badgeholders. This approach provides insights into badgeholders' preferences and engagement levels with various NFT applications within the Superchain ecosystem.

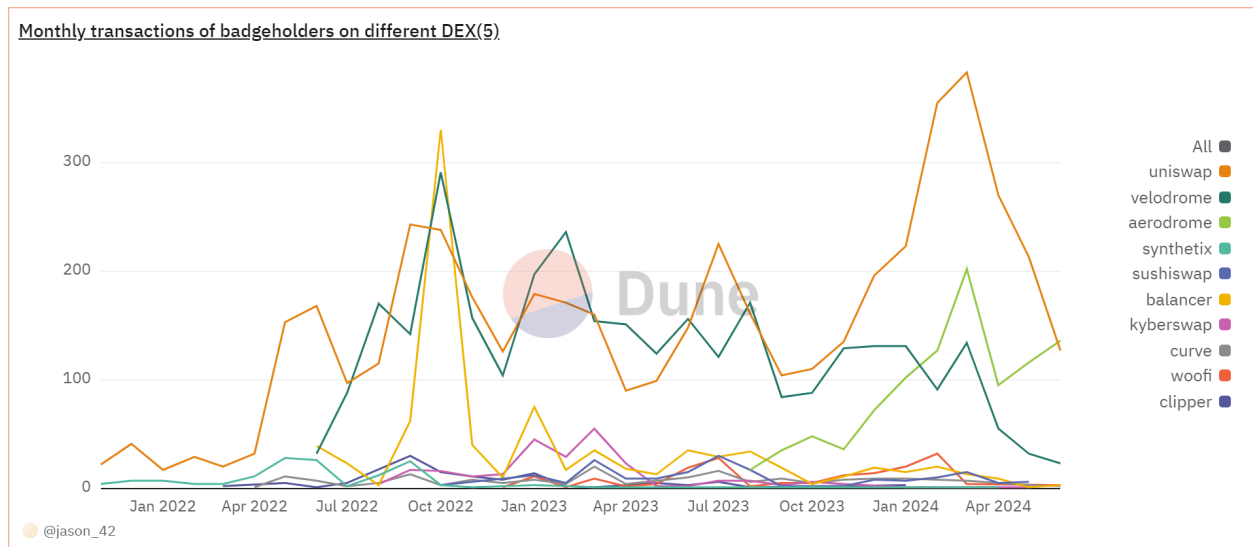


Source Link:- [Top 10 NFT Applications used by badgeholders](#)

Result Insights: The bar chart visualization reveals a clear hierarchy in NFT platform usage among badgeholders on Superchain chains. OpenSea emerges as the dominant platform with approximately 1,701 transactions, significantly outpacing all other platforms. This substantial lead indicates strong user adoption and engagement with OpenSea within the badgeholder community. Quix follows as a distant second with 93 transactions, showing moderate engagement. The remaining platforms show notably lower transaction volumes: Zonic (25 transactions), Sudoswap (5 transactions), Magiceden (4 transactions), and Element (2 transactions). This distribution highlights a concentrated preference for OpenSea, while also indicating a long tail of alternative platforms with much lower engagement levels. The stark contrast in transaction volumes suggests that while badgeholders are actively participating in the NFT space, their activities are heavily concentrated on a single platform.

5.2 Changes over time in different applications used by Badgeholders on Superchain chains

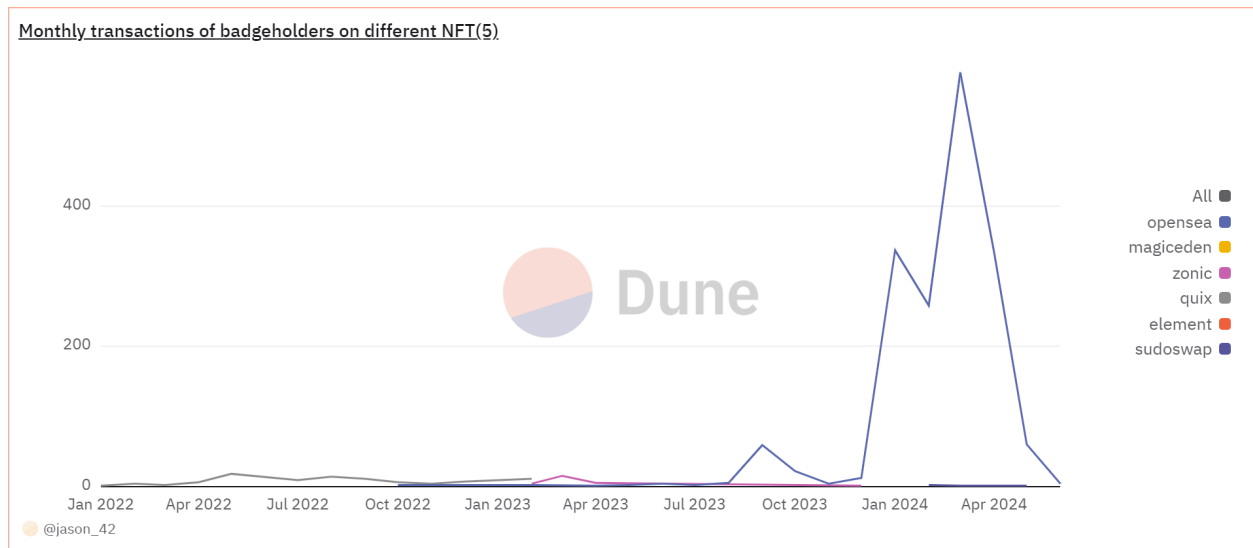
5.2.1 Query Description: This analysis examines the evolving usage patterns of different decentralized exchange (DEX) applications by badgeholders on Superchain chains over time. We aggregated monthly transaction counts for various DEX platforms, focusing on badgeholder activity. This approach allows us to track changes in platform preferences and overall engagement levels, providing insights into the dynamic nature of DEX usage within the Superchain ecosystem.



Source Link:- [Monthly Transaction count of Badgeholders on different DEX applications](#)

Result Insights: The line chart visualization reveals dynamic trends in DEX application usage by badgeholders on Superchain chains over time. Uniswap and Aerodrome emerge as key players, demonstrating significant but fluctuating transaction volumes across different months. These fluctuations suggest a responsive user base, potentially reacting to platform updates, market conditions, or competitive offerings. Other DEX platforms show varying levels of activity, indicating a diverse ecosystem with shifting user preferences.

5.2.2 Query Description: This analysis examines the evolving usage patterns of different NFT applications by badgeholders on Superchain chains over time. We aggregated monthly transaction counts for various NFT platforms, focusing on badgeholder activity. This approach allows us to track changes in platform preferences and overall engagement levels, providing insights into the dynamic nature of NFT marketplace usage within the Superchain ecosystem.



Source Link:- [Monthly Transaction count of Badgeholders on different NFT applications](#)

Result Insights: The line chart visualization reveals significant trends in NFT application usage by badgeholders on Superchain chains over time. OpenSea emerges as the dominant platform, showing notable fluctuations in transaction volumes across different months. These variations in OpenSea's activity suggest that badgeholders' engagement with NFTs is responsive to various factors, potentially including market conditions, new NFT releases, or platform-specific events. The chart also illustrates the performance of other NFT platforms, though their transaction volumes appear considerably lower compared to OpenSea.

Farcaster Verification: Determine the percentage of Badgeholders who have connected their Ethereum address to a Farcaster account and analyze their activity across all connected applications.

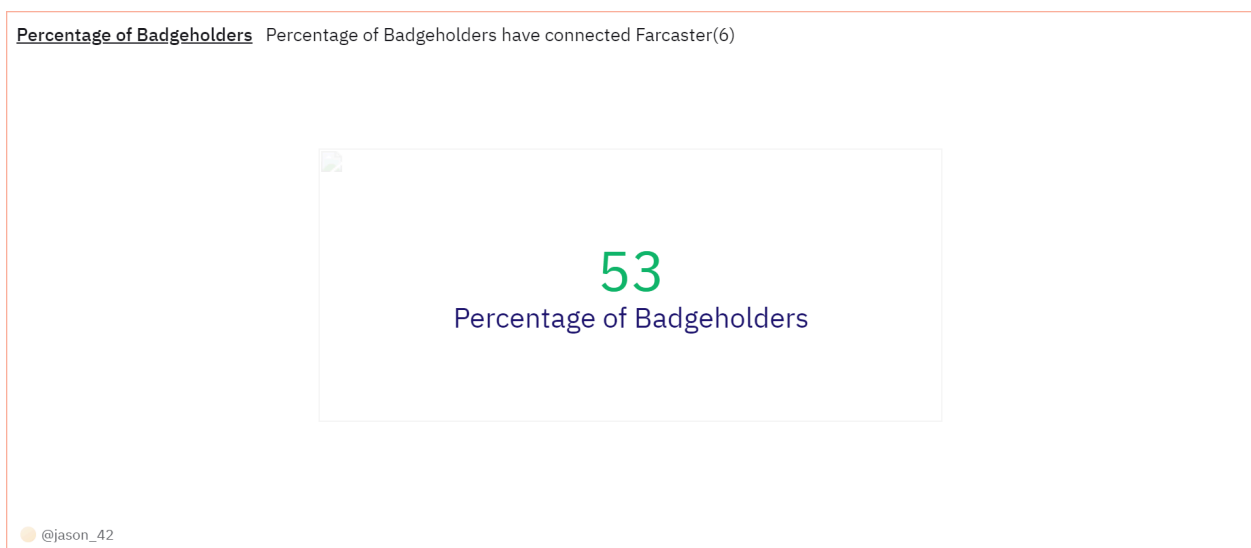
Our analysis of Farcaster badgeholder data has shed light on some intriguing user behaviors:

- **Minimal Direct Matches:** Just 3 out of 132 badgeholders have their custody addresses directly matching their BadgeHolder addresses on Farcaster.
- **High Verification Rate:** 70 out of 132 badgeholders have their addresses present in the verified list.

This suggests a fascinating pattern: Many badgeholders initially join Farcaster using alternative addresses and subsequently add their badgeholder addresses as verified. This behavior might indicate a strategic approach to manage their digital identity or maintain a layer of privacy.

6.1 Percentage of Badgeholders who have connected their Ethereum address to a Farcaster account

Query Description: To assess the integration between Badgeholders and the Farcaster platform, we conducted an analysis to determine the percentage of Badgeholders who have verified their Ethereum addresses within the Farcaster profile dataset. Our query focused on identifying Badgeholders across Superchain chains whose Ethereum addresses are present and verified in the Farcaster ecosystem. This analysis provides insights into the level of cross-platform engagement and verification within the broader Web3 landscape.

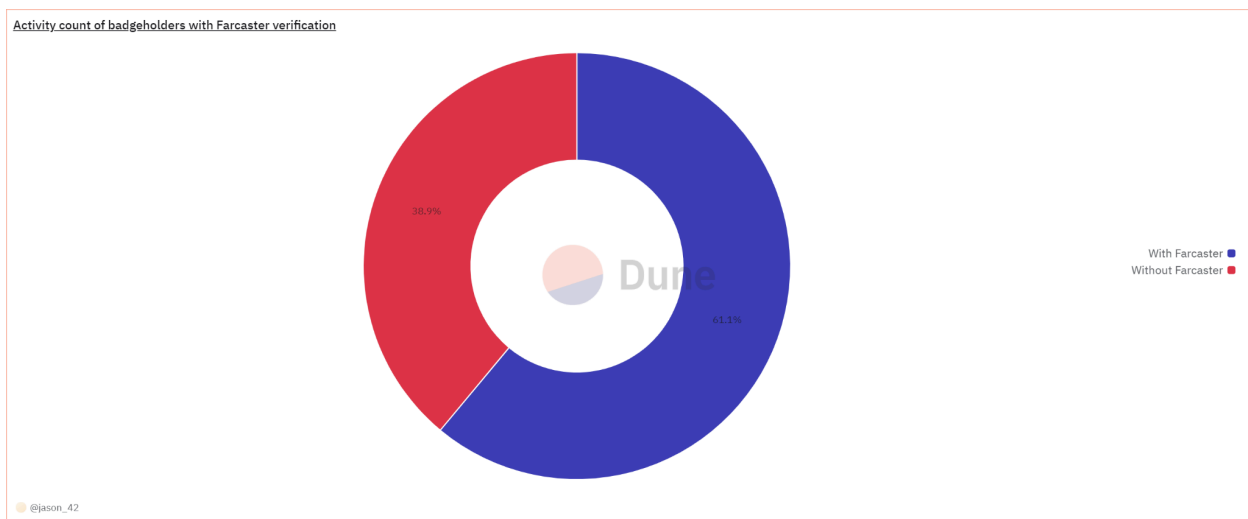


Source Link:- [Percentage of Badgeholders](#)

Result Insights: The analysis revealed a substantial connection between Badgeholders and the Farcaster platform. The results indicate that 53% of Badgeholders, approximately 70 individuals, have successfully linked their Ethereum addresses to a Farcaster account. This high percentage suggests a significant level of engagement and trust between Badgeholders and the Farcaster platform.

6.2 Activity level of Badgeholders with Farcaster verification compared to those without verification on Superchain chains

Query Description: To gain insights into the impact of Farcaster verification on Badgeholder activity within the Superchain ecosystem, we conducted a comprehensive analysis comparing the transaction patterns of verified and unverified Badgeholders. Our query categorized Badgeholders based on their Farcaster verification status and examined their respective activity levels across Superchain chains. This approach allowed us to differentiate between transactions involving Badgeholders with Farcaster verification and those without, providing a clear picture of engagement levels for both groups.



Source Link:- [Activity count of badgeholders with Farcaster verification](#)

Result Insights: The analysis reveals that transactions involving Badgeholders with Farcaster verification account for 61% of total transactions, while those from non-verified Badgeholders comprise the remaining 39%. This notable difference suggests that Farcaster verification is associated with higher levels of engagement and participation within the Superchain ecosystem.

6.3 Correlation between the number of addresses connected to a Farcaster account and the activity level of Badgeholders on Superchain chains

Query Description: Our query focused on examining the correlation between the number of Ethereum addresses a Badgeholder has linked to their Farcaster account and the volume of transactions they perform on Superchain chains. This approach allows us to explore whether a larger network presence on Farcaster corresponds to increased on-chain activity, providing insights into cross-platform engagement patterns.

Query results Transaction count of Farcaster verified account vs number of addresses connected(6)

matched_address	connected_address_count	transaction_count
0x00409fc839a2ec2e6d12305423d37cd011279c09	3	8398
0x9194efdf03174a804f3552f4f7b7a4bb74badb7f	1	6540
0x849151d7d0bf1f34b70d5cad5149d28cc2308bf1	3	2229
0x576f1e53afe5e99b2257258c7e3248d3a1822548	1	1825
0xa3eac0016f6581ac34768c0d4b99ddcd88071c3c	1	1299
0x3b60e31cfc48a9074cd5bbeb26c9eaa77650a43f	5	1260
0x5507dbd48a5a5bace8a6030e878cc4e0af147c33	1	1235
0x5507dbd48a5a5bace8a6030e878cc4e0af147c33	3	1235
0x34aa3f359a9d614239015126635ce7732c18fdf3	1	948

70 rows

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Page 1

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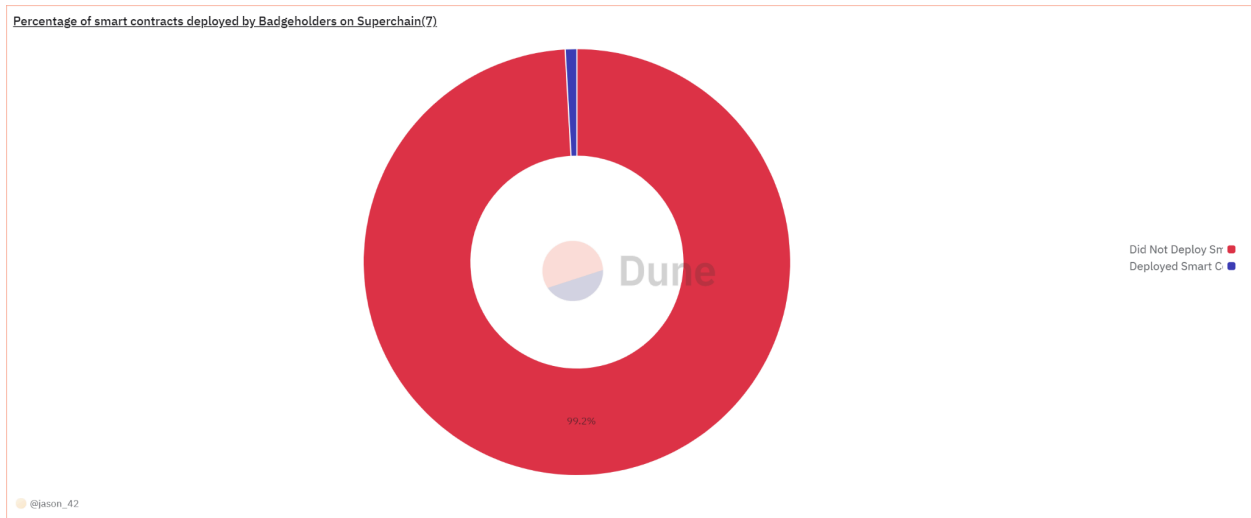
Source Link:- [Transaction count of Farcaster Verified account vs number of addresses connected](#)

Result Insights: The analysis reveals intriguing patterns in the relationship between Farcaster network size and transaction activity on Superchain chains. Badgeholders with approximately 3 to 4 connected Ethereum addresses demonstrate high levels of engagement, typically conducting over 1,000 transactions. Interestingly, the data also shows that Badgeholders with just a single connected address can exhibit substantial transaction volumes, reaching up to approximately 1,825 transactions. These findings suggest a nuanced relationship between network size and activity level. While having multiple connected addresses generally correlates with higher transaction volumes, it's not a strict determinant of activity. The presence of highly active single-address Badgeholders indicates that factors beyond network size, such as individual engagement levels or specific use cases, play significant roles in determining transaction activity.

Smart Contract Deployment: Find out the percentage of Badgeholders who have deployed smart contracts to Optimism from their Ethereum accounts.

7.1 Percentage of Badgeholders Who Have Deployed Smart Contracts to Superchain from Their Ethereum Accounts

Query Description: To assess the level of advanced engagement among Badgeholders within the Superchain ecosystem, we conducted an analysis focusing on smart contract deployment activity. Our query was designed to calculate the percentage of Badgeholders who have utilized their Ethereum accounts to deploy smart contracts across various Superchain chains, including Optimism, Zora, and Base. This investigation aims to provide insights into the proportion of Badgeholders actively contributing to the ecosystem's development through contract deployment, offering a measure of technical engagement beyond basic transactions.



Query results Percentage of smart contracts deployed by Badgeholders on Superchain(7)

category	percentage
Deployed Smart Contracts	0.8
Did Not Deploy Smart Contracts	99.2

2 rows

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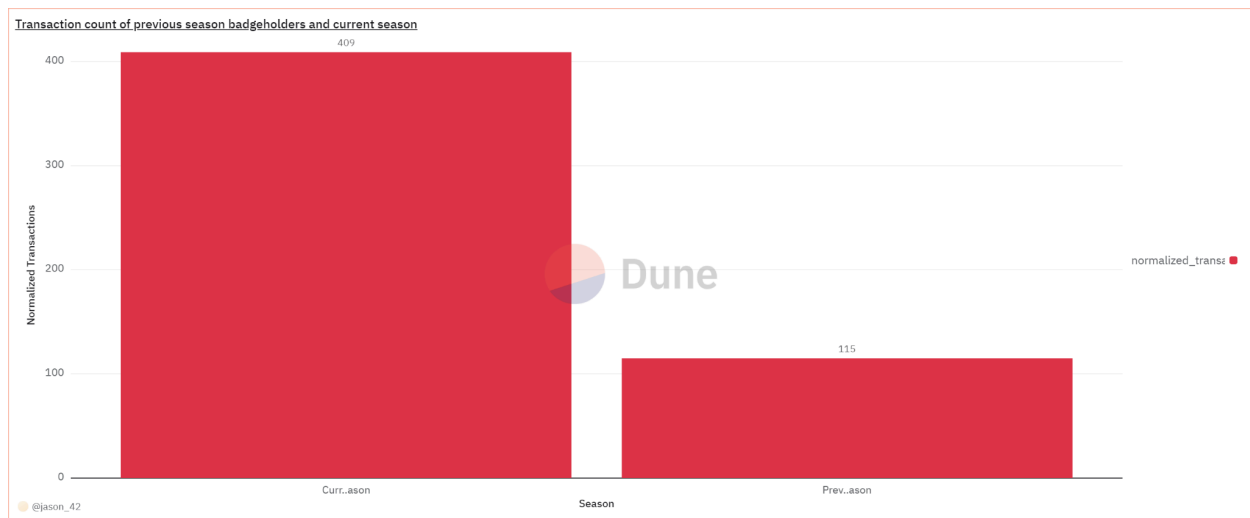
Source Link:- [Percentage of smart contracts deployed by Badgeholders](#)

Result Insights: The analysis reveals a striking disparity in smart contract deployment activity among Badgeholders. A pie chart visualization of the data shows that only 0.8% of Badgeholders have engaged in smart contract deployment on Superchain chains, while the overwhelming majority, 99.2%, have not participated in this advanced blockchain activity. This stark contrast highlights a significant gap in the utilization of smart contract deployment capabilities within the Badgeholder community. Notably, none of the Badgeholders on the Optimism chain have deployed any smart contracts.

Temporal Differences: Investigate meaningful differences between Badgeholders who became Badgeholders in earlier rounds versus later rounds. This could include variations in activity levels, category engagement, or application usage.

8.1 Activity levels of Badgeholders from earlier rounds compared to those from later rounds on Superchain chains

Query Description: To investigate the difference in the transactional activity of badgeholders and non-badgeholders we executed a query that calculates the total number of transactions involving unique badgeholders from earlier and later rounds on Superchain chains. It compares the transaction counts between these two groups across various blockchains (Optimism, Zora, Base, Mode) where badgeholders are either senders or receivers of transactions. The average transaction counts per badgeholder are normalized and displayed in a bar chart for clear comparison.

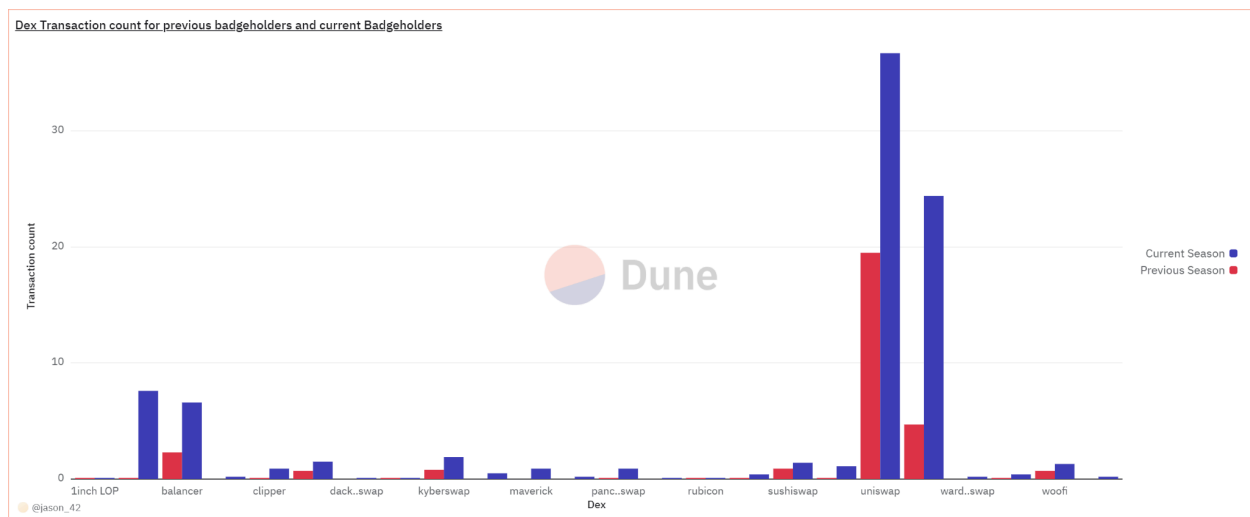
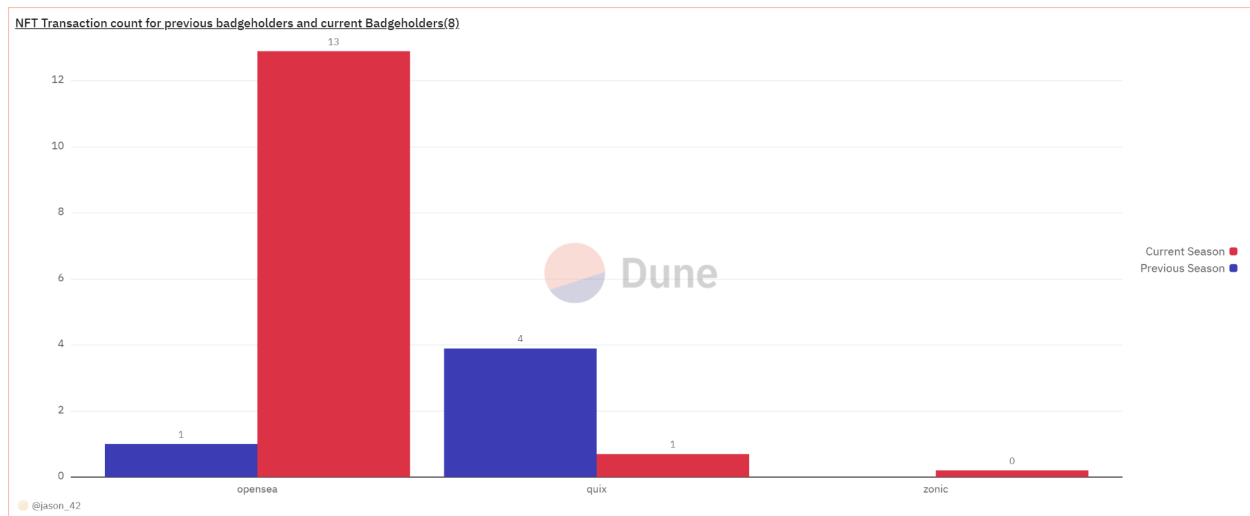


Source Link:- [Transaction count of previous and current season's badgeholders](#)

Result Insights: Our query focused on comparing the activity levels of Badgeholders from RPGF Round 2 (earlier round) with those from RPGF Round 3 (current round). The analysis encompassed transactions across multiple blockchains within the Superchain ecosystem, including Optimism, Zora, Base, and Mode. We calculated the total number of transactions involving unique Badgeholders from each round, where Badgeholders were either senders or receivers. To ensure a fair comparison, we normalized the data to represent average transaction counts per BadgeHolder for each round.

8.2 Significant differences in category engagement between Badgeholders from earlier rounds and later rounds on Superchain chains

Query Description: To unveil the transactional activity of badgeholders across different sectors and compare previous badgeholders with current badgeholders, we executed queries that analyze category engagement in two contexts: NFTs and decentralized exchanges (DEX). For NFTs, the query calculates transaction counts by badgeholders from previous and current rounds on Superchain chains and normalizes these counts per badgeholder to identify activity levels on platforms. Similarly, for DEX platforms, it focuses on trade volumes instead of NFTs, comparing engagement between previous and current rounds.



Source Link:- [Dex Transaction count](#)
[NFT Transaction count](#)

Result Insights: The bar charts show clear differences in engagement patterns between badgeholders from previous and current seasons on Superchain chains. In the NFT category, badgeholders in the current season are notably more active on platforms like Opensea and Quix compared to the previous season. Opensea, for instance, shows a substantial increase in engagement from 1 to 12.9 normalized counts. Similarly, Quix sees a decrease in engagement from 3.9 to 0.7. In contrast, for DEX platforms, there's a shift in engagement towards projects like Velodrome and Balancer in the current season, with Velodrome particularly showing a significant rise from 4.7 to 24.2 normalized counts.




Summary

The analysis revealed several key insights into the on-chain activities of Badgeholders compared to non-Badgeholders:

1. **Activity Duration:** Badgeholders have been active for an average of 461 days on Superchain chains, with non-Badgeholders showing slightly higher average account ages. This minimal difference suggests similar levels of experience and engagement.
2. **Transaction Activity:** Badgeholders demonstrated significant activity on Ethereum and Superchain networks, with a notable preference for Ethereum. Non-Badgeholders, particularly larger groups, exhibited higher transaction volumes on Superchain networks.
3. **Application Usage:** Badgeholders favored specific DEX platforms like Uniswap and Velodrome and showed a strong preference for the NFT platform OpenSea. Non-Badgeholders displayed diverse usage patterns across various DEXs and other applications.
4. **Category Engagement:** Badgeholders engaged more in Token-Transfer activities, while non-Badgeholders were more active in DEX and lending-borrowing categories. Badgeholders also showed significant activity in NFT and DAO governance.
5. **Farcaster Integration:** Approximately 53% of Badgeholders connected their Ethereum addresses to Farcaster, indicating a high level of cross-platform engagement.
6. **Smart Contract Deployment:** Only a small percentage (0.8%) of Badgeholders deployed smart contracts on Superchain chains, highlighting a potential area for increased technical engagement.

These insights provide a comprehensive understanding of the Badgeholder group, supporting the Foundation's goal of confidently expanding the Citizenry and making informed decisions about the future of Citizenship within the Optimism ecosystem.

Resources

Research Work (Behind the scenes):-  Behind_the_scenes

Dune Dashboard Link:- [Dune Dashboard](#)

EAS Attestation Link:- [EAS Attestations](#)