

This research analysis was conducted with the Optimism Foundation as part of the [Foundation Grant](#).

TL;DR

This analysis examines the on-chain behaviors of Badgeholders within the Superchain ecosystem, which includes OP Mainnet, Base, Zora, and Mode. It contrasts these findings with those of Non-Badgeholders across both Superchain and Non-Superchain chains, such as Ethereum and Arbitrum. The study shows that Badgeholders, despite having significant account age, exhibit lower overall activity levels compared to Non-Badgeholders. Notably, Badgeholders demonstrate a strong preference for Ethereum transactions and tend to focus their activities on a limited number of decentralized exchange (DEX) platforms. Additionally, more than half of the Badgeholders maintain connections with Farcaster, indicating a high level of social engagement. These insights will assist the Optimism Collective in developing effective strategies to increase Badgeholder participation and integration within the broader Superchain ecosystem.

Introduction

The primary goal of this mission is to establish a comprehensive baseline understanding of the current Badgeholder demographic within the Superchain ecosystem. By examining the on-chain activities of Badgeholders in comparison to Non-Badgeholders, this study aims to identify key behavioral patterns and differences. The analysis focuses on four main dimensions: activity duration, cross-chain engagement, application usage, and the prevalence of Farcaster connections. The insights gained from this analysis will support the Optimism Collective in its objective of expanding the Citizenry, enabling them to make informed, data-driven decisions about community engagement strategies and resource allocation to promote growth and sustainability.

Methods

Data for this analysis was carefully collected from two primary sources:

- EAS Attestation for Badgeholders([EAS Attestations](#)): This [dataset](#) includes 132 RPGF Badgeholder addresses, and among these, a separate [dataset](#) consists of 102 addresses that have ENS labels linked to them. This information is essential for examining activities specific to Badgeholders, such as transaction behavior and engagement patterns across various applications.
- [Dune Dashboard](#): This analytical platform was utilized to gather extensive transaction data and additional insights regarding Non-Badgeholders. The focus included a range of activity categories, including token transfers, decentralized exchanges (DEXs), NFT trades, and perpetual trading, providing a comprehensive view of user engagement within the Superchain ecosystem.

To ensure a balanced comparison, Non-Badgeholders were categorized into two distinct groups based on specific criteria:

- Group 1 (132 addresses): [This group](#) consists of a comparative sample that matches the number of Badgeholders. All members meet rigorous criteria, including a minimum of 300 transactions on the Optimism network and at least 8 transactions within any single month, ensuring that the comparison is made with an equivalent level of activity.
- Group 2 (1,320 addresses): [This larger dataset](#) is used for additional comparative analysis, adhering to similar transactional criteria to provide insights into broader sample size and a deeper understanding of user behavior.

For detailed data collection methods, please refer to the (Research Work):-[Behind the scenes](#) documentation.

Results:

Activity Duration

Badgeholders have an average account age of 461 days, while Non-Badgeholders in Group 1 average 467 days and those in Group 2 average 469 days. This indicates that Badgeholders are relatively newer but have engagement levels similar to those of Non-Badgeholders.

In tracking monthly activity, Badgeholders peaked at 84 active users in April 2024, compared to 122 in Group 1 and 115 in Group 2. Activity levels increased notably from April 2022, followed by stabilization through late 2022.

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](<https://europe1.discourse-cdn.com/bc41dd/original/2X/2/286390984a62c375ec2ee4ecc3501d2358c89052.png>)

Source - [Average Account Age of Badgeholders and Non-Badgeholders](#)

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](https://europe1.discourse-cdn.com/bc41dd/original/2X/1/14eced1229f82f631d46bb77d2cf420f9b55c446.png)

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

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

The analysis of account age versus transaction activity revealed no significant correlation; both newer and older accounts exhibited diverse transaction volumes.

In terms of user engagement, 94.69% of Badgeholders and 100% of Non-Badgeholders remained active for over two years. As of June 27, 2024, there are 87 active Badgeholders compared to 121 in Group 1 and 1,186 in Group 2, highlighting varying engagement levels within the ecosystem.

Cross-Chain Activity Overview

Badgeholders average 410 transactions on Superchain chains and 597 transactions on Non-Superchain networks, while Non-Badgeholders in Group 1 average 997 transactions on Superchain, and Group 2 significantly leads with 8,368 transactions. This indicates that larger Non-Badgeholder groups are more active within Superchain.

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

Interestingly, Non-Badgeholders consistently outperform Badgeholders on Superchain networks, particularly on OP Mainnet, while Badgeholders exhibit the highest activity on Ethereum, where 52.4% of their transactions occur.

Overall, Badgeholders tend to favor Non-Superchain networks, but Non-Badgeholders, especially from larger groups, demonstrate higher transaction volumes on Superchain, indicating effective user engagement.

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](https://europe1.discourse-cdn.com/bc41dd/original/2X/3/33ae238f74651872c21b4df91001265466effc18.png)

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

Transaction activity trends reveal significant growth for Non-Badgeholders, particularly in the larger group, reflecting increasing engagement, while Badgeholders also show upward trends, highlighting evolving dynamics of user participation in the blockchain landscape.

Activity Levels:

The transaction activity analysis on Superchain networks indicates that Badgeholders have an average transaction count of 413.42 in the top percentiles, reflecting solid engagement. In contrast, specific Non-Badgeholder groups show even higher activity, with Group 1 averaging 1,001.86 transactions and Group 2 averaging 8,394.85 transactions. This highlights that while Badgeholders are engaged, certain Non-Badgeholder segments are exceptionally active, revealing varying levels of participation within the Superchain ecosystem.

Application Usage:

The analysis of transaction patterns across Superchain chains reveals distinct engagement levels between Badgeholders and Non-Badgeholders. Badgeholders demonstrate a strong preference for token-transfer activities, accounting for 86% of their transactions, followed by 9.3% in DEX transactions, with minimal activity in NFTs, social interactions, and DAO governance. In contrast, Non-Badgeholders in Group 1 also show a preference for token transfers at 85%, but they are more active in DEX transactions (12.3%). Non-Badgeholders in Group 2 emphasize token transfers even more (95.8%) while showing limited engagement in other categories, particularly NFTs and DAO governance. Overall, token-transfer activities dominate all user segments, highlighting a significant preference for decentralized exchange transactions across the Superchain ecosystem.

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

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](https://europe1.discourse-cdn.com/bc41dd/original/2X/e/e07cc10496212f00b82461f0a6423f9d5cecb52.png)

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

Our analysis of Farcaster data for Badgeholders reveals intriguing user behavior patterns. Among the 132 Badgeholders, only three have custody addresses that directly match their Badgeholder addresses on Farcaster, indicating minimal direct matches. However, 70 Badgeholders (53%) appear on the verified list, suggesting that many users initially join Farcaster with alternative addresses and later add their Badgeholder addresses as verified. This behavior may reflect a strategic approach to managing digital identities or maintaining privacy.

Farcaster Verification

A significant portion of Badgeholders, approximately 70 individuals, have successfully linked their Ethereum addresses to a Farcaster account. This high verification rate indicates a notable level of engagement and trust between Badgeholders and the Farcaster platform. Furthermore, transactions involving verified Badgeholders account for 61% of total transactions, compared to 39% from non-verified Badgeholders. This difference suggests that Farcaster verification is associated with higher engagement levels within the Superchain ecosystem.

When examining the correlation between the number of Ethereum addresses linked to a Farcaster account and transaction volume, we find that Badgeholders with 3 to 4 connected addresses typically conduct over 1,000 transactions. Interestingly, some Badgeholders with a single connected address have reached up to 1,825 transactions, indicating that factors beyond network size, such as individual engagement levels and specific use cases, influence transaction activity.

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

Smart Contract Deployment

Our research into smart contract deployment among Badgeholders reveals a significant difference. Only 0.8% of Badgeholders have deployed smart contracts on Superchain chains, with the overwhelming majority (99.2%) not participating in this advanced blockchain activity. Notably, no Badgeholders on the Optimism chain have deployed smart contracts, highlighting a significant gap in the utilization of these capabilities within the community.

Temporal Differences

When comparing the activity levels of Badgeholders from earlier rounds (RPGF Round 2) to those from later rounds (RPGF Round 3), we observe notable differences in transaction activity across various Superchain chains. Additionally, category engagement analysis shows that current Badgeholders are more active in the NFT sector on platforms like OpenSea, which

has seen a substantial increase in engagement from 1 to 12.9 normalized counts. Conversely, engagement on Quix has decreased from 3.9 to 0.7. In the DEX category, there is a clear shift toward projects like Velodrome and Balancer, with Velodrome experiencing a significant rise in engagement from 4.7 to 24.2 normalized counts.

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

Conclusion

This analysis of Badgeholders within the Superchain ecosystem reveals several important behavioral patterns. While Badgeholders have similar levels of experience to Non-Badgeholders, they tend to focus more on Ethereum for their transactions and prefer specific applications like Uniswap, Velodrome, and OpenSea. Although they engage more in token-transfer activities, their participation in areas such as DEX trading and smart contract deployment remains limited compared to Non-Badgeholders. The high level of Farcaster integration indicates strong social engagement within this group, yet there are opportunities for increased technical participation. These insights provide valuable guidance for the Optimism Collective in enhancing Badgeholder involvement and growing the Citizenry within the Superchain ecosystem.

Resources

Report Link: [Report](#)

Dune Dashboard Link: [Dune Dashboard](#)

EAS Attestation Link: [EAS Attestations](#)

Research Work: [Behind the scenes](#)