

Abstract: Decentralized Autonomous Organizations (DAOs) have emerged as a novel way to coordinate a group of (pseudonymous) entities towards a shared vision e.g., promoting sustainability), utilizing self-executing smart contracts on blockchains to support decentralized governance and decision-making. In just a few years, over 4,000 DAOs have been launched in various domains, such as investment, education, health, and research. Despite such rapid growth and diversity, it is unclear how these DAOs actually work in practice and to what extent they are effective in achieving their goals. Given this, we aim to unpack how (well) DAOs work in practice. We conducted an in-depth analysis of a diverse set of 10 DAOs of various categories and smart contracts, leveraging on-chain (e.g., voting results) and off-chain data (e.g., community discussions) as well as our interviews with DAO organizers/members. Specifically, we defined metrics to characterize key aspects of DAOs, such as the degrees of decentralization and autonomy. We observed CompoundDAO, AssangeDAO, Bankless, and Krausehouse having poor decentralization in voting, while decentralization has improved over time for one-person-one-vote DAOs (e.g., Proof of Humanity). Moreover, the degree of autonomy varies among DAOs, with some (e.g., Compound and Krausehouse) relying more on third parties than others. Lastly, we offer a set of design implications for future DAO systems based on our findings.

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Unpacking How Decentralized Autonomous Organizations (DAOs) Work in Practice

Decentralized Autonomous Organizations (DAOs) have emerged as a novel way to coordinate a group of (pseudonymous) entities towards a shared vision (e.g., promoting sustainability), utilizing self-executing smart contracts on blockchains to support...

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[Hypothesis annotations.](#)