

Keynote III



European
DAO Workshop



European DAO
Workshop (DAWO24)

Power & Participation in DAOs

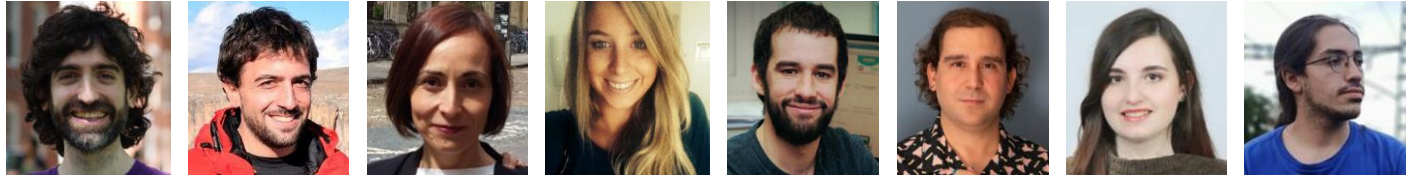
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Power and participation in DAOs

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About us



- I am Associate Professor of the Universidad Complutense de Madrid
- The research team stems from the ERC starting grant P2P models
 - Funded by the EU and led by Samer Hassan
- We are interested in DAOs as governance tools that led to sustainable and fair organizations



DAOs usual features



Members



Tokens



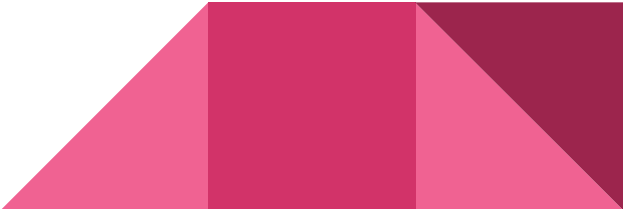
Funds



Proposals



Votes



What is known about the DAOsphere?

Thousands of DAOs manage over \$25B collectively

Existing literature focuses on single cases or small subsets

There is a lack of large-scale studies on DAOs

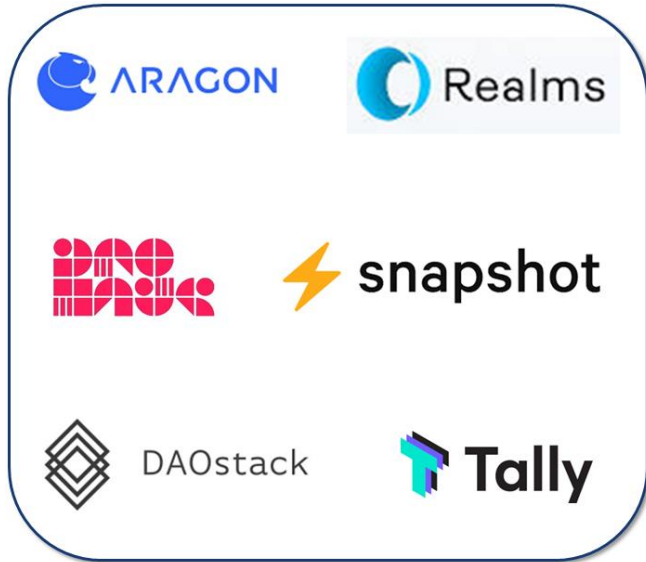
Aims

- Create a DAO census

- Characterize power concentration and participation



DAO census (August 2023)



6 DAO
platforms
10.5K deployments
5M voters
21.6M votes

zenodo <https://zenodo.org/records/10794916>

Size (in number of voters)

DAO size (# voters)	Aragon	DAOHaus	DAOstack	Realms	Snapshot	Tally	Total
[2, 10]	388	312	22	304	3,760	531	5,317
(10, 100]	69	74	9	48	3,156	51	3,407
(100, 1K]	3	4	2	7	1,494	18	1,528
(1K, 10K]	0	1	0	2	239	4	246
(10K, 100K]	0	0	0	0	35	4	39
(100K, 1M]	0	0	0	0	3	0	3
(1M, 10M]	0	0	0	0	1	0	1
Total	460	391	33	361	8,688	608	10,541

Size

The majority of DAOs are small (<10members ~50%) or moderate (<100 ~33%)

Some DAOs are significantly larger

This duality is similar to that in wiki-based and open-source communities

Extremely successful projects are sustained by huge-communities



Voting activity

DAO size (# voters)	# Proposals		Proposals a voter participates in (*)		Voter turnout across proposals (*)	
	Mean	Median	Mean	Median	Mean	Median
[2, 10]	7.46	2	65.90%	65%	36.93%	33.33%
(10, 100]	15.96	5	45.43%	38.66%	16.64%	7.69%
(100, 1K]	25.10	7	39.10%	27.23%	9.42%	2.56%
(1K, 10K]	199.17	18.5	21.14%	13.17%	1.72%	0%
(10K, 100K]	52	20	23.98%	17.26%	9.46%	3.80%
(100K, 1M]	934.33	58	37.65%	12.81%	0.45%	0.05%
(1M, 10M]	2	2	54.14%	54.14%	54.14%	54.14%

For metrics with (*), we first compute the mean value for each DAO, and then we compute the summary statistic for the DAOs within each size category

Voting activity

Participation decreases as DAO size increases

Voter turnout is extremely low in large DAOs

Still some DAOs exhibit high activity levels

Passive members are also common in peer production communities

Participation demands a high cost (expertise, reputation, time, money,...)

Visibility of ongoing results and disparity in voting weight affects



Activity lifespan

Lifespan in days

Abandonment rate



DAO size (# voters)	Days b/w the first and last proposal		DAOs w/o proposals in the last 6 months
	Mean	Median	
[2, 10]	57	0	2,972 (55.90%)
(10, 100]	122	29	1,759 (51.63%)
(100, 1K]	219	127	828 (54.19%)
(1K, 10K]	405	414	70 (28.46%)
(10K, 100K]	380	353	4 (10.26%)
(100K, 1M]	400	447	1 (33.33%)
(1M, 10M]	44	44	0 (0.0%)

We rely on medians as distributions are highly skewed

Activity lifespan

DAOs are akin to startups ~ high failure rates

DAOs grapple with the blockchain limitations and problems

Hype and testing contribute to high abandonment rates

Failure is typical in decentralized online projects (FLOSS and wikis)

Decentralized online projects are extremely frail

Abandonment partially explain low activity (i.e. voting) rates



Voting power distribution

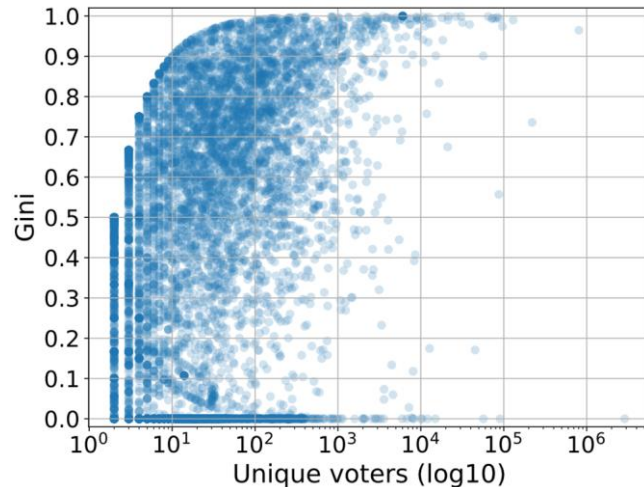
DAO size (# voters)	Gini of the DAO's voting power		Voters with > 50% of DAO's voting power		# whales to control the DAO
	Mean	Median	Mean	Median	
[2, 10]	0.199	0.0	58.69%	57.14%	~2- 6
(10, 100]	0.447	0.530	25.50%	17.65%	~2 - 17
(100, 1K]	0.570	0.680	14.94%	6.72%	~7-70
(1K, 10K]	0.743	0.895	8.76%	1.33%	~13-133
(10K, 100K]	0.756	0.975	10.66%	0.11%	~11-110
(100K, 1M]	0.897	0.965	0.47%	0.04%	~40-400
(1M, 10M]	0.0	0.0	50%	50%	

Power inequality and DAO size

Is power inequality a consequence of size?

As DAOs grow, power concentration allows them to be operative ~ oligarchies

Similar to what happens in wikis and FLOSS projects ~ iron law



Power inequality and DAO size

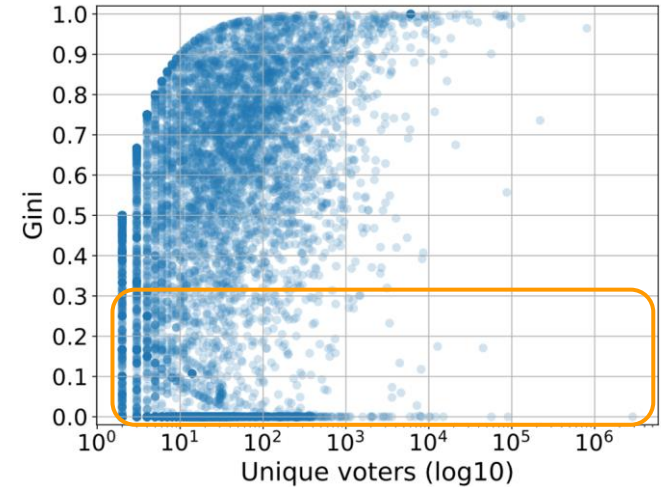
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Still many DAOs of different sizes are egalitarian

Examples of truly decentralized governance



Open questions

*Wikipedia only works in practice,
in theory it's a total disaster*

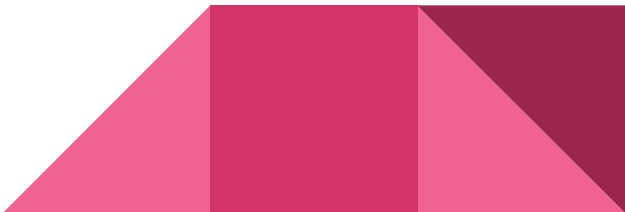
DAOs are able to run projects or businesses in a decentralized manner

Research is needed to understand how they work and the obstacles they face

How strategic vision emerges in a decentralized manner?

How they cope with low participation rates? Is it an obstacle?

How differ unequal and Egalitarian DAOs?



A call for multidisciplinary approach

DAOs as novel organizational structures brings a range of challenges

CS is not sufficient to tackle them

A multidisciplinary and experimental approach is needed

By doing so, DAOs may unlock their full potential

As a sustainable way for decentralized and open project governance

Empowering users to self-organize in diverse projects

Reaching beyond their current techie and DeFi niche





Thank you!