

# Eelisa Water Study

Measuring and Improving **Awareness**  
and **Collaboration** among EELISA  
Community members using  
**Social Network Analysis**



powered by Griffin  
<https://www.griffin.galaxyadvisors.com/>

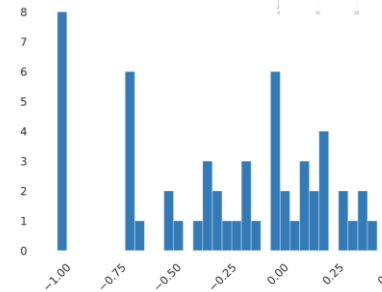
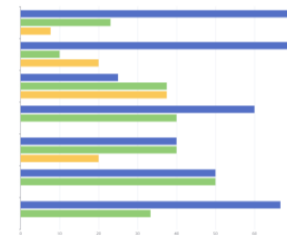
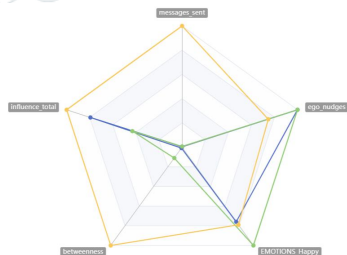


POLITÉCNICA



# What do you think you know about your community?

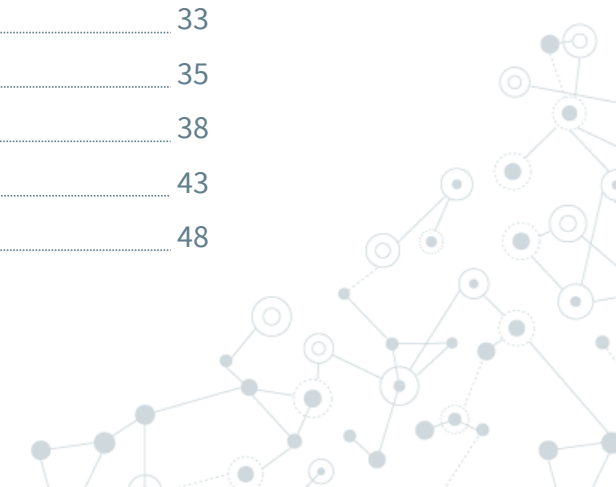
## How many **variables** could be **measured**?





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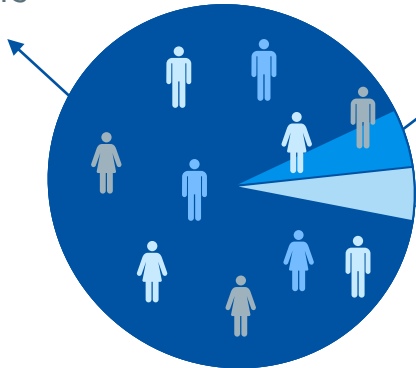


# Introduction

# Scope of email analysis

## Initial approach

53 researchers



2 people from  
support staff

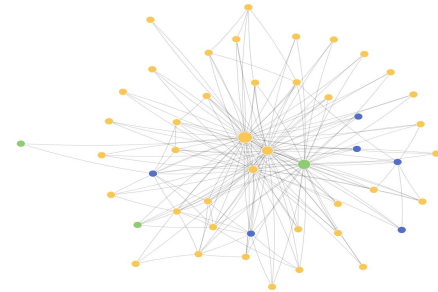
2 community emails:

- eelisawaterchange.community@upm.es
- EELISACommunitiesUPM...@upm...com

## Data collected

55 nodes

1850 edges



# Data handling process

## 1. Extraction



## 2. Cleaning



## 3. Processing



**Griffin**

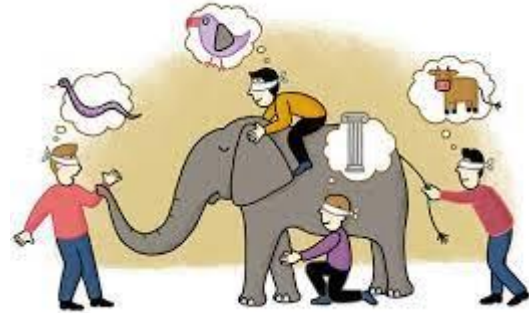
<https://www.griffin.galaxyadvisors.com/>

# Initial concepts

Data rigor



Insight - oversight



Benefits of communication skills



No pain – No gain





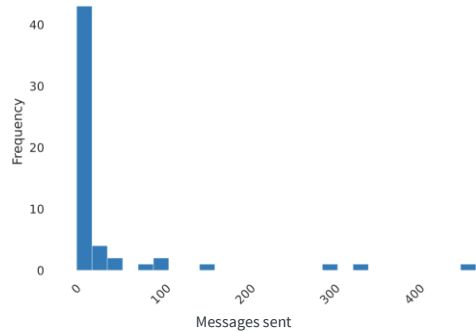
# Insights



1

More than **50%** of the community is mainly **inactive**

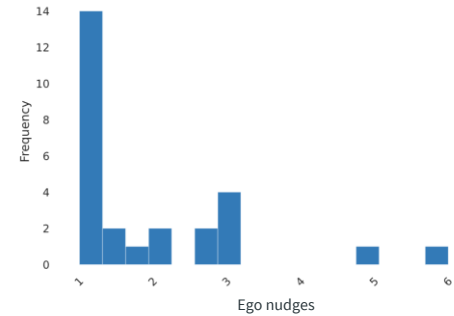
Messages sent



8 people: 0 messages  
27 people: <5 messages  
40 people: <10 messages



Ego nudges

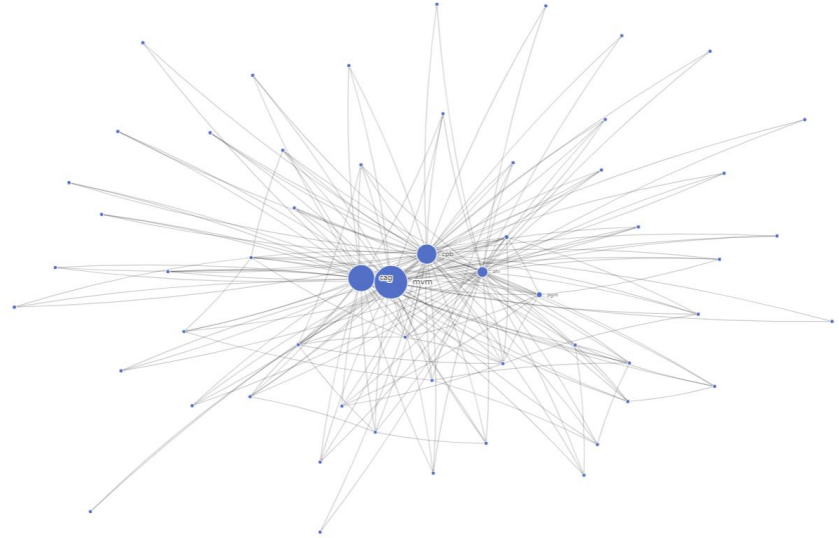


Average number of follow-ups that the sender needs to send to receive a response from the receiver

**Missing 29**

2

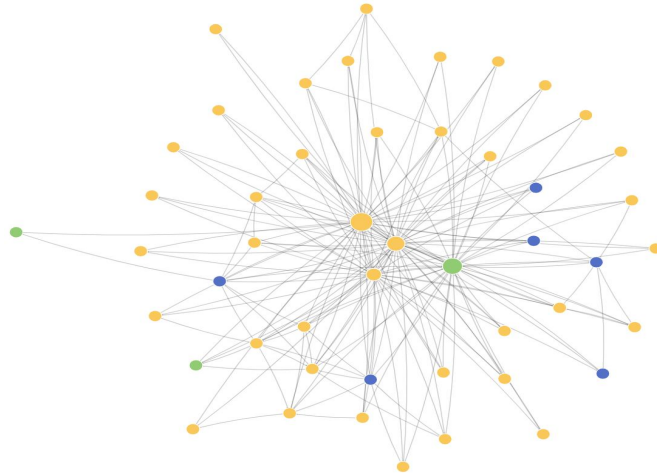
Community is driven by a very **small core**!



*sized by betweenness*

3

70% of the community are mostly **happy** individuals, this group send **3x** more messages than the others

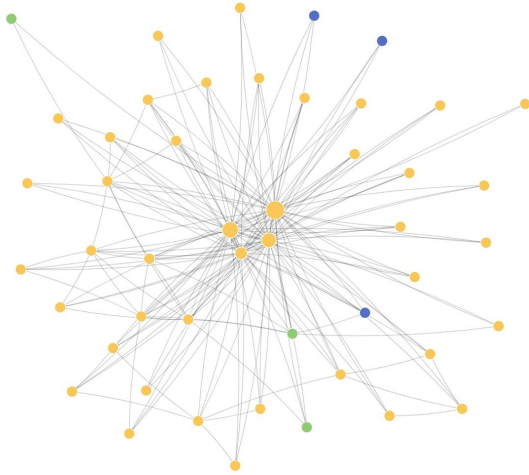


Happy

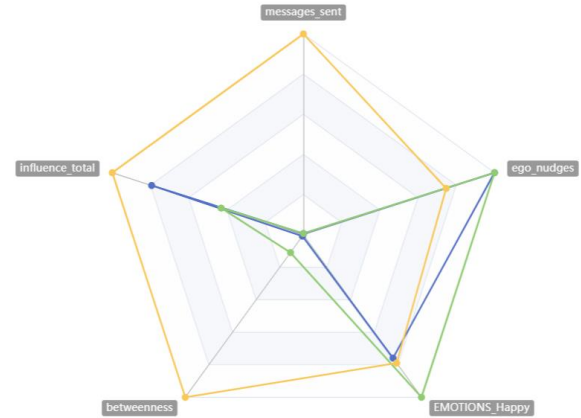


4

88% of those analyzed are **treehuggers**, only they send messages and have betweenness



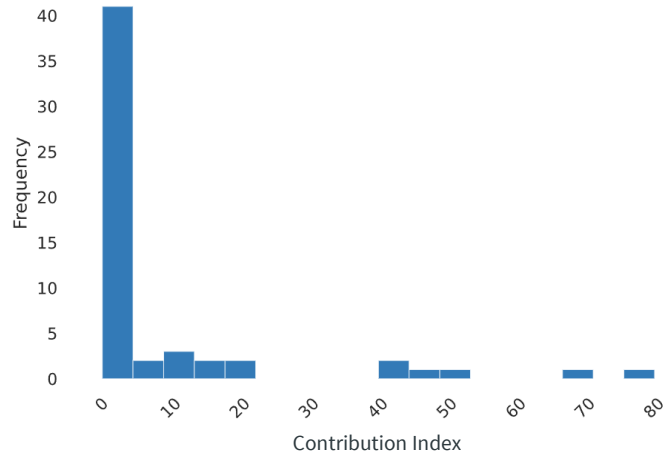
Treehugger



5

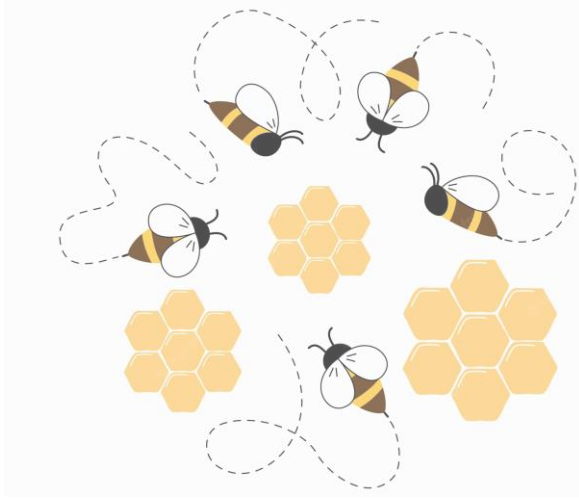
75% of the community is too **static**

### Contribution Index Oscillation

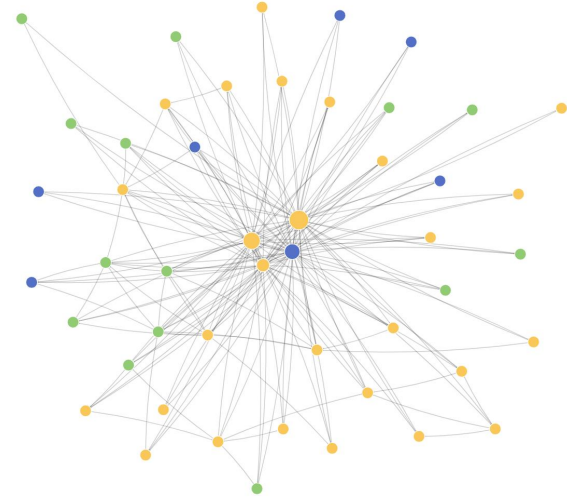


6

Only **27** individuals have been classified as **bees**,  
bees are the only ones that can create **Groupflow**

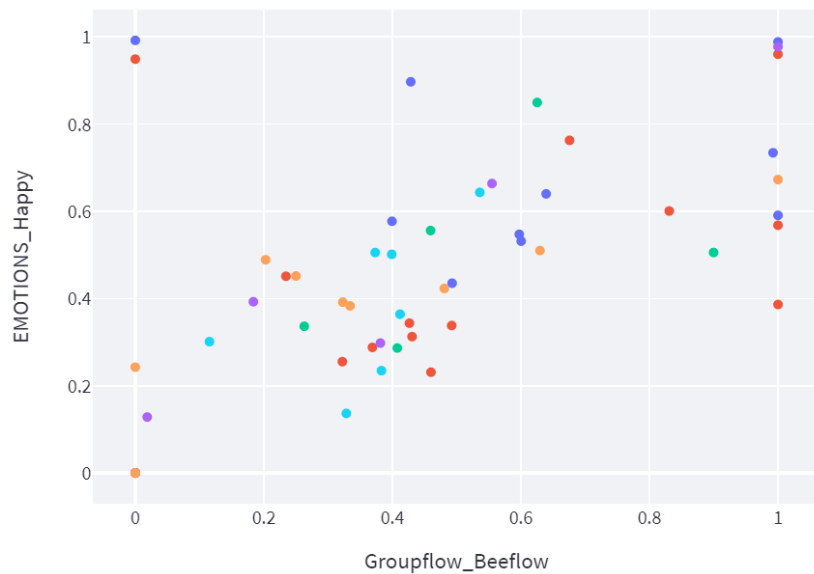


Beeflow



7

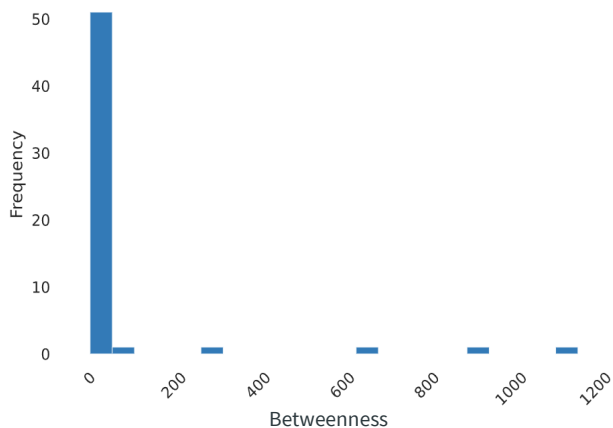
The more **bee** you are, the **happier**!



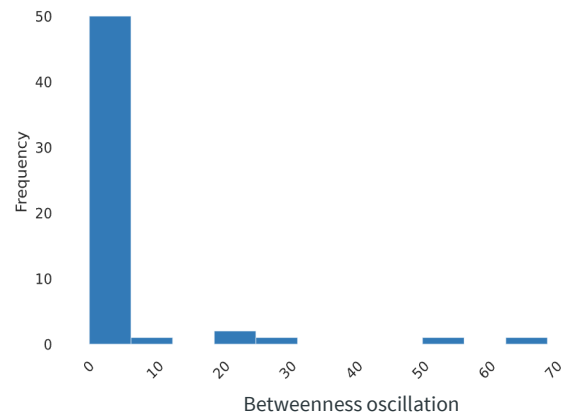
8

The community is **overcentralized**,  
and central nodes remain **unchanged**

Betweenness



Betweenness oscillation





A decorative network diagram in the top-left corner, featuring a complex web of interconnected nodes and lines. The nodes are represented by circles of varying sizes, some with concentric circles, and the lines are thin and grey. The diagram is partially cut off by the left edge of the frame.

# Advice to enhance **Collaboration**

A decorative network diagram in the bottom-right corner, similar to the one in the top-left. It shows a cluster of interconnected nodes and lines, with some nodes having concentric circles. The diagram is also partially cut off by the right edge of the frame.

1

## Establish **more ties** with people in the community

*Stronger connections  
to the right people  
help you get  
things done*



*Being a broker in  
the network allows  
you to control the  
flow of info*



Embrace **creativity** and **openness** to change

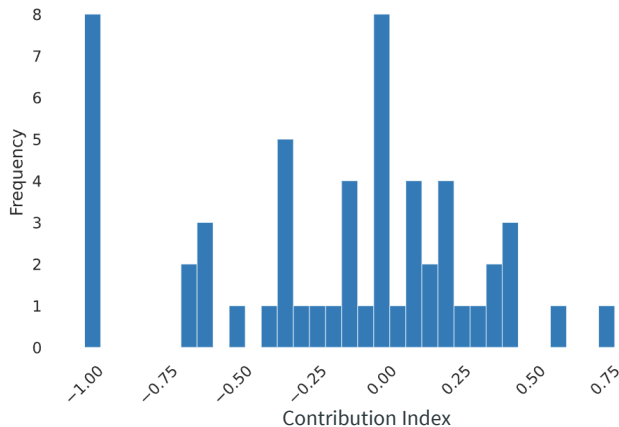


*The ability for a person to change network position indicates willingness to allow the best qualified people to lead depending on the context, showing high creativity, good collaboration and communication*



3

Try to achieve a **balanced contribution**



*Balanced  
sending/receiving  
ratio indicates better  
**collaboration***



4

The **faster** you respond, the more  
your **enthusiasm** will be felt

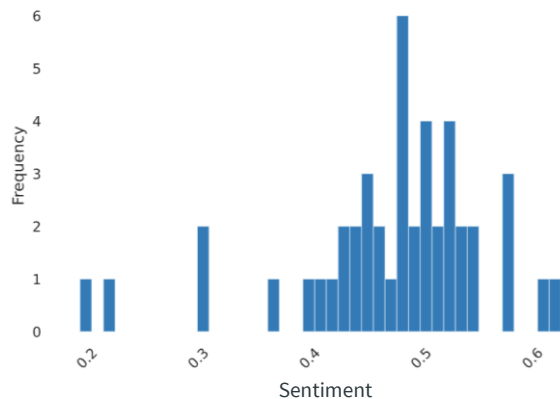


*Many messages  
received until  
replying indicates  
a lack of passion*

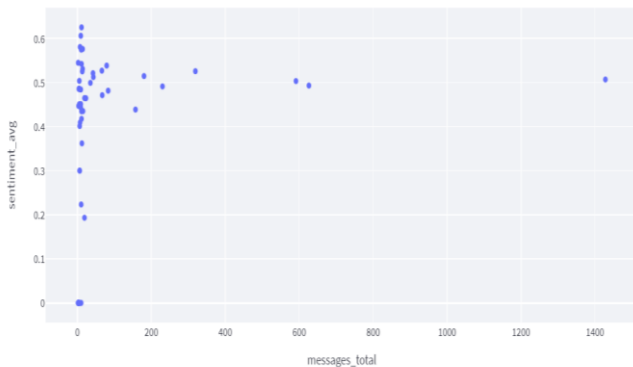


5

## Elevate your **Sentiment** without compromising **Honest Language**

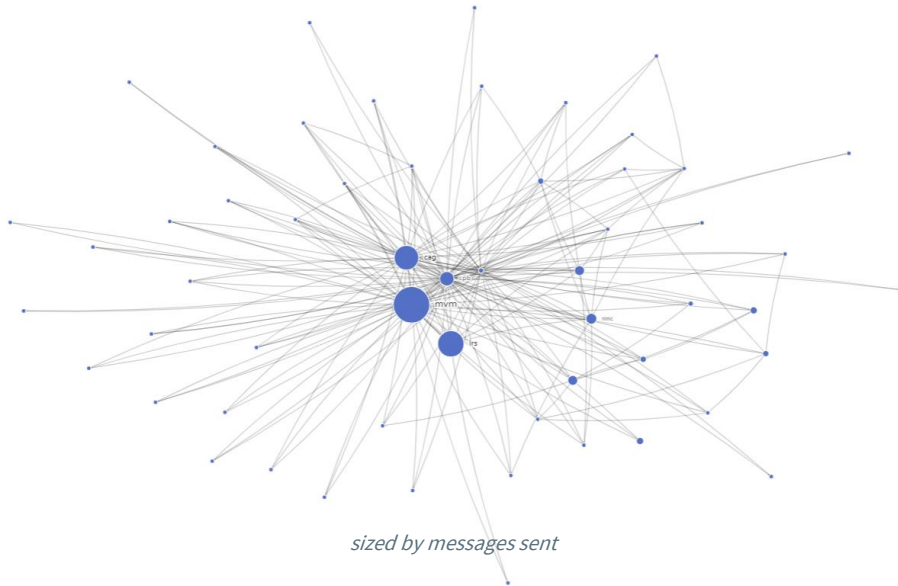


*The higher the sentiment,  
the more positive you are  
about the prospect of  
the community*



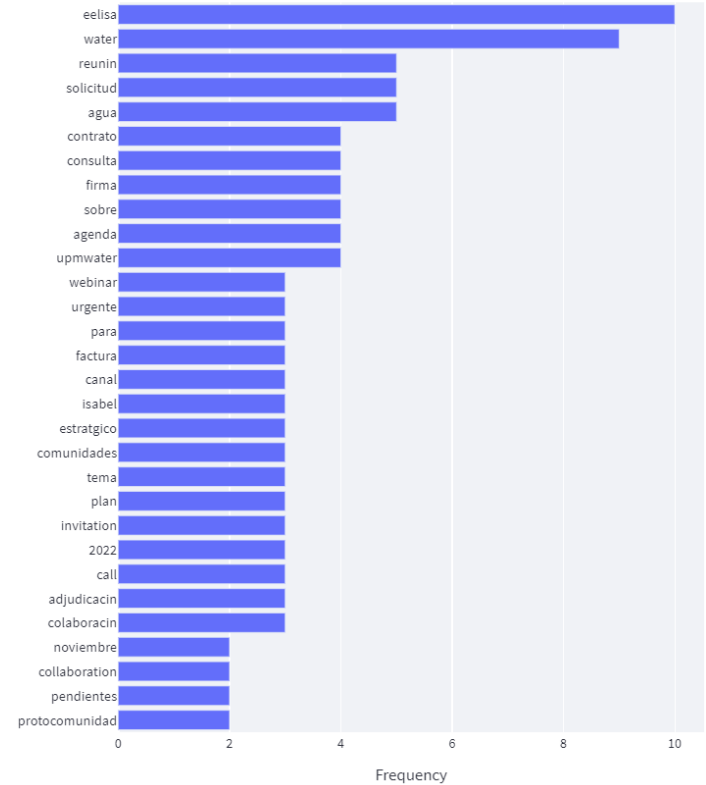
6

Encourage a more **pro-active** communication style,  
not only the passive information consumption



7

Bring in **fresh ideas**, right now focus is on too much repetitive administrative work

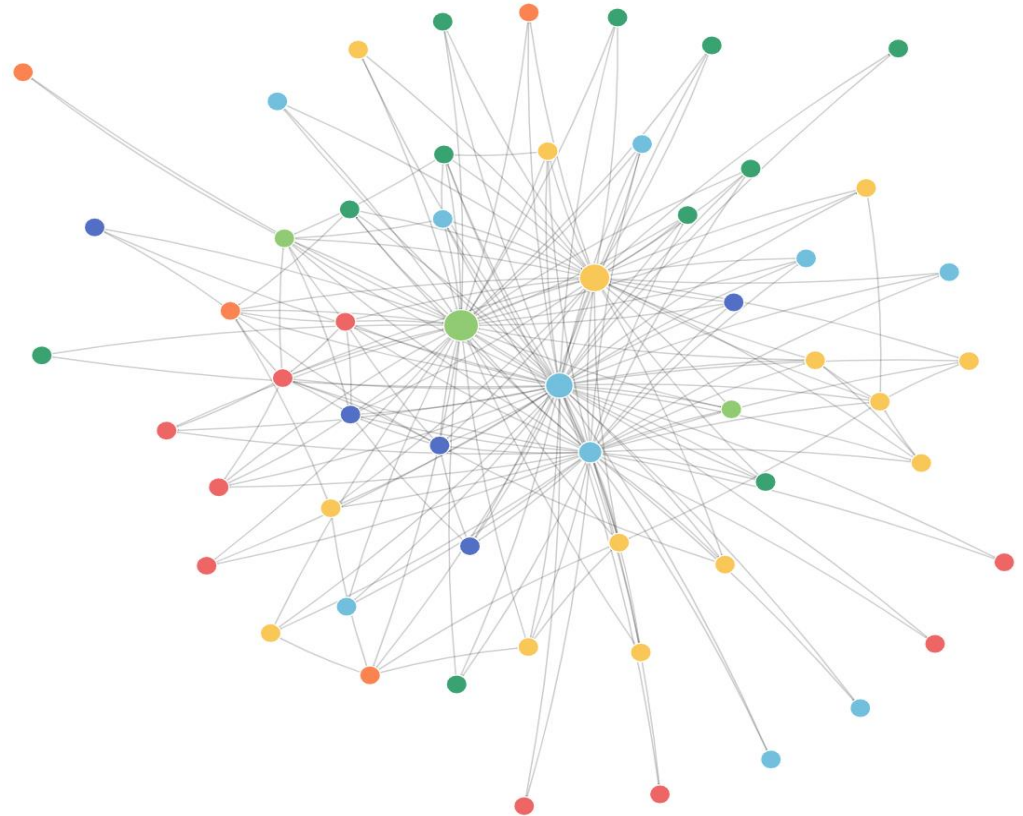




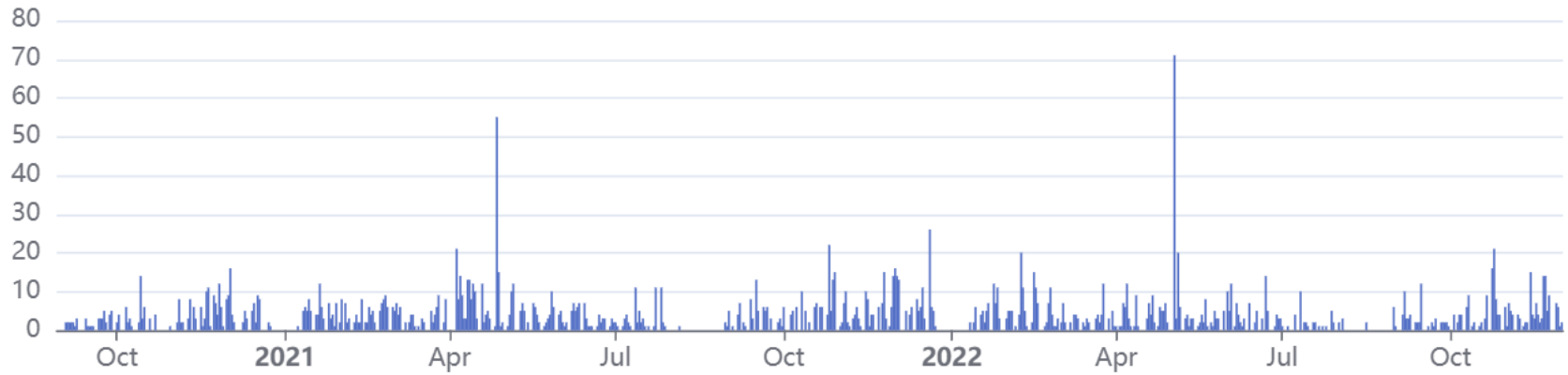


# Community Metrics

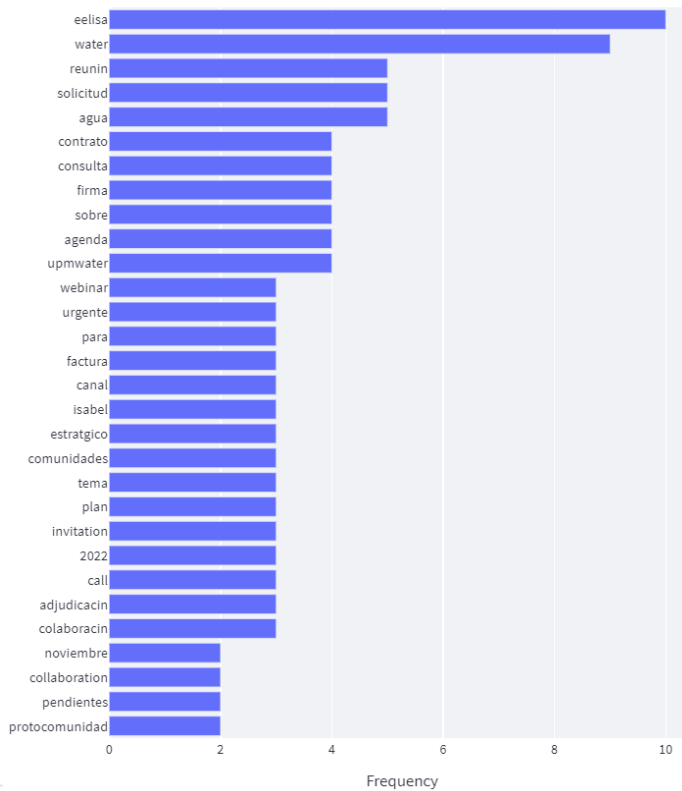
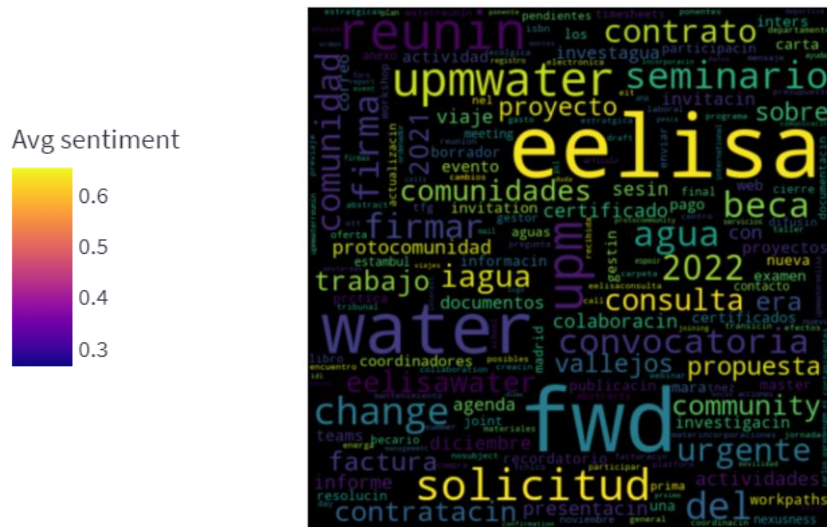
# Eelisa Water Network



## Number of edges over time



# Word Cloud



A decorative network diagram in the top-left corner, featuring a complex web of interconnected nodes and lines. The nodes are represented by circles of varying sizes, some with concentric rings, and the lines are thin and grey. The diagram is partially cut off by the top and left edges of the slide.

# Contribution Index

Balance of communication in terms of  
sent and received messages

(P. A. Gloor, 2017, p. 52)

A decorative network diagram in the bottom-right corner, similar to the one in the top-left. It shows a cluster of nodes and connecting lines, with some nodes having concentric circles. The diagram is partially cut off by the bottom and right edges of the slide.

# Contribution Index

## Quantile statistics

Minimum	-1
5-th percentile	-1
Q1	-0.4175
median	-0.02
Q3	0.16
95-th percentile	0.43
Maximum	0.78
Range	1.78
Interquartile range (IQR)	0.5775

## Descriptive statistics

Standard deviation	0.4626102887
Coefficient of variation (CV)	-2.875269275
Kurtosis	-0.5056654211
Mean	-0.1608928571
Median Absolute Deviation (MAD)	0.3
Skewness	-0.47992342
Sum	-9.01
Variance	0.2140082792
Monotonicity	Not monotonic



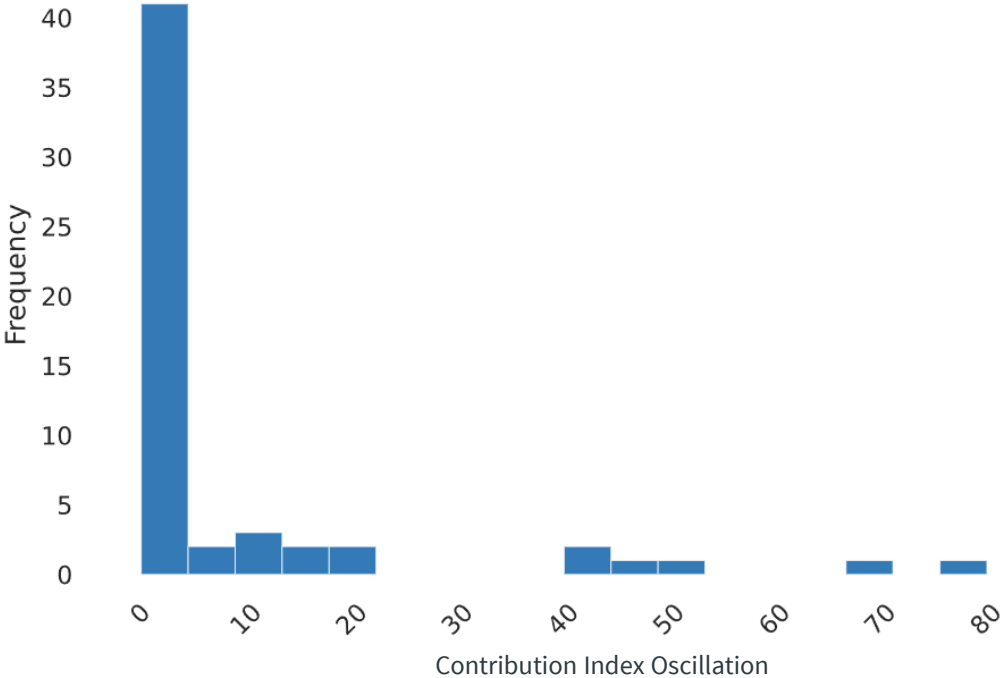
# Contribution Index Oscillation

Quantile statistics

Minimum	0
5-th percentile	0
Q1	0
median	1
Q3	5.25
95-th percentile	47.25
Maximum	80
Range	80
Interquartile range (IQR)	5.25

Descriptive statistics

Standard deviation	17.66101253
Coefficient of variation (CV)	2.047653627
Kurtosis	6.836651234
Mean	8.625
Median Absolute Deviation (MAD)	1
Skewness	2.674313496
Sum	483
Variance	311.9113636
Monotonicity	Not monotonic



A decorative network diagram in the top-left corner of the slide. It features a complex web of interconnected nodes and edges. The nodes are represented by small circles, some of which are solid dark grey, while others are hollow with a light grey outline. The edges are thin, light grey lines connecting the nodes in a non-linear, branching pattern. The overall shape of the network is roughly triangular, pointing towards the top-left corner.

# Betweenness

Measure of the extent to which each  
actor acts as an information hub

(P. A. Gloor, 2017, p. 52)

A decorative network diagram in the bottom-right corner of the slide. It is a smaller, less dense version of the network diagram in the top-left. It also consists of interconnected nodes (solid dark grey circles and hollow light grey circles) connected by thin, light grey lines. The network structure is similar, with a central node or two acting as a hub, branching outwards.



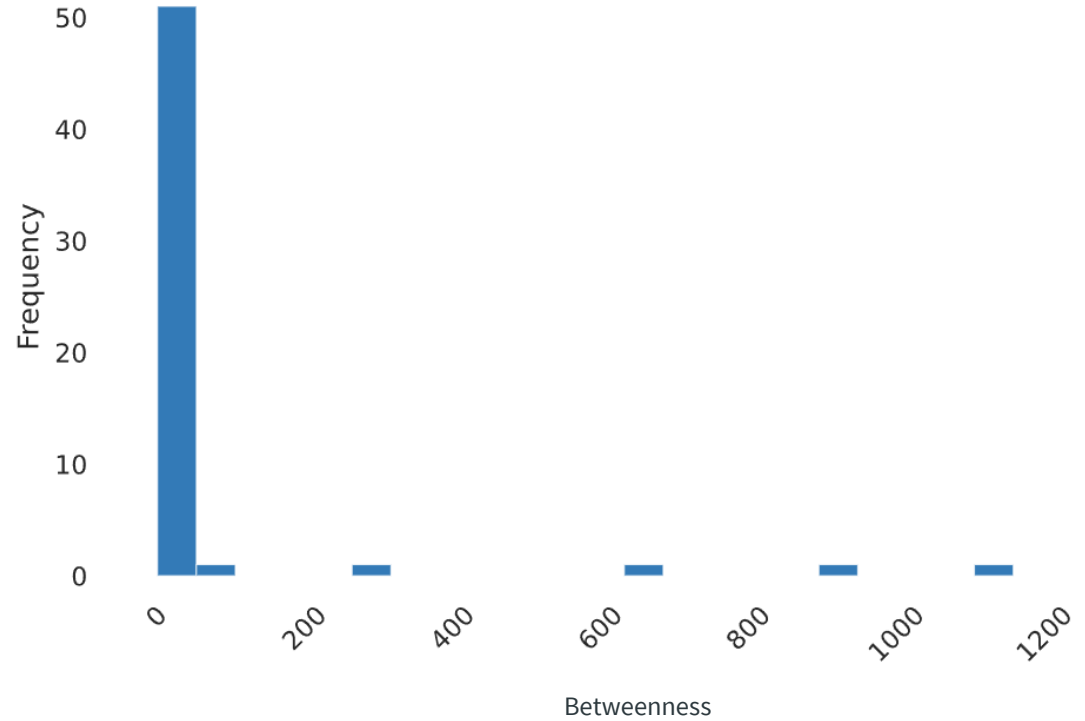
# Betweenness

## Quantile statistics

Minimum	0
5-th percentile	0
Q1	0
median	0
Q3	4.81468254
95-th percentile	357.3957341
Maximum	1156.658333
Range	1156.658333
Interquartile range (IQR)	4.81468254

## Descriptive statistics

Standard deviation	210.7360063
Coefficient of variation (CV)	3.704085484
Kurtosis	18.15383632
Mean	56.89285714
Median Absolute Deviation (MAD)	0
Skewness	4.26301838
Sum	3186
Variance	44409.66435
Monotonicity	Not monotonic



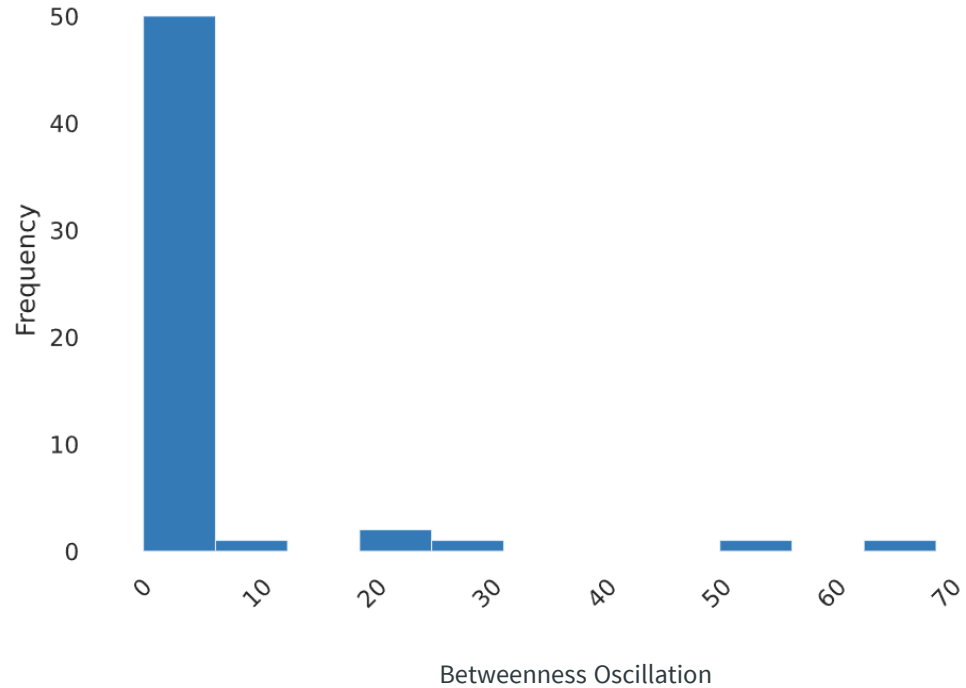
# Betweenness Oscillation

## Quantile statistics

Minimum	0
5-th percentile	0
Q1	0
median	0
Q3	1
95-th percentile	24.5
Maximum	69
Range	69
Interquartile range (IQR)	1

## Descriptive statistics

Standard deviation	12.73643919
Coefficient of variation (CV)	3.155931833
Kurtosis	16.64542533
Mean	4.035714286
Median Absolute Deviation (MAD)	0
Skewness	4.006014546
Sum	226
Variance	162.2168831
Monotonicity	Not monotonic



A decorative network diagram in the top-left corner, featuring a complex web of interconnected nodes and lines. The nodes are represented by small circles, some of which are solid dark gray, while others are hollow with a light gray outline. The lines connecting them are thin and light gray, creating a dense, organic structure that tapers off towards the right.

# Emotions

A decorative network diagram in the bottom-right corner, mirroring the style of the top-left one. It consists of a cluster of nodes (solid and hollow circles) connected by thin, light gray lines, forming a complex, interconnected web that tapers off towards the left.

# Eelisa Water Network

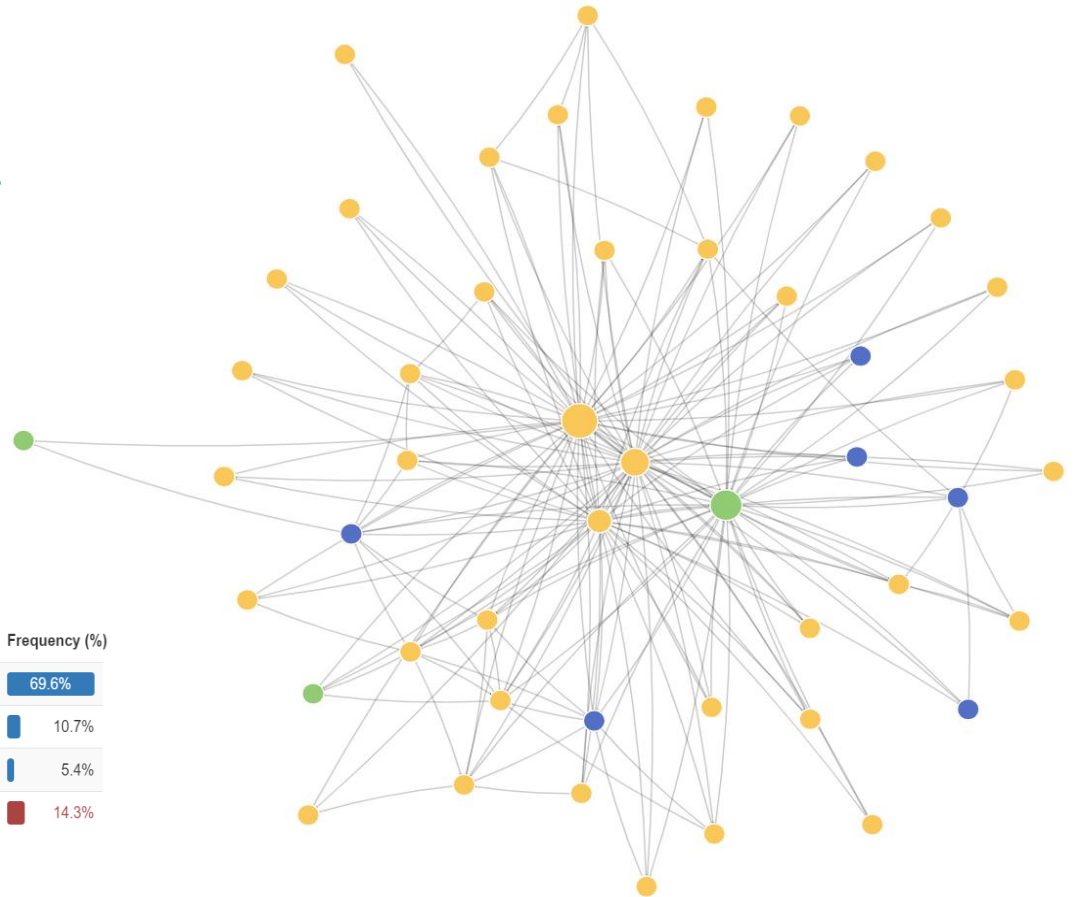
By Emotions

Happy

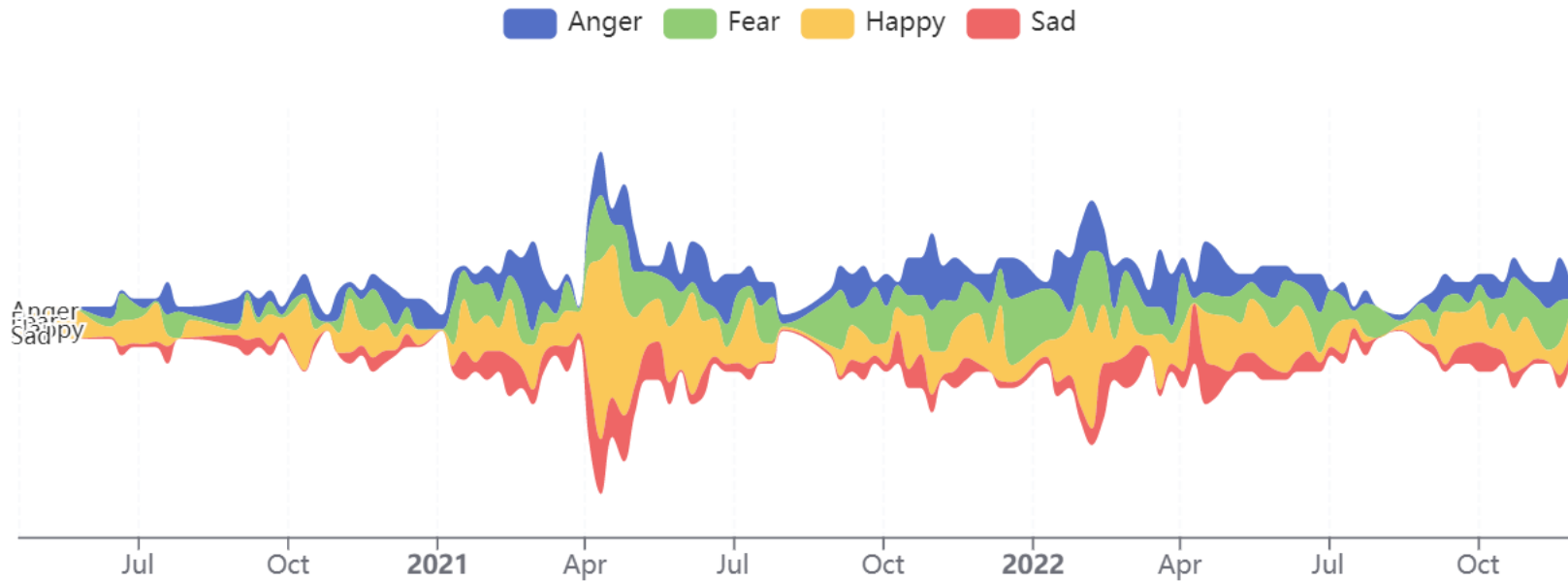
Fear

Anger

Value	Count	Frequency (%)
Happy	39	69.6%
Anger	6	10.7%
Fear	3	5.4%
(Missing)	8	14.3%



## Emotions over time



A decorative network diagram in the top-left corner, featuring a complex web of interconnected nodes and lines. The nodes are represented by circles of varying sizes, some with concentric circles, and the lines are thin and grey. The diagram is partially cut off by the top and left edges of the slide.

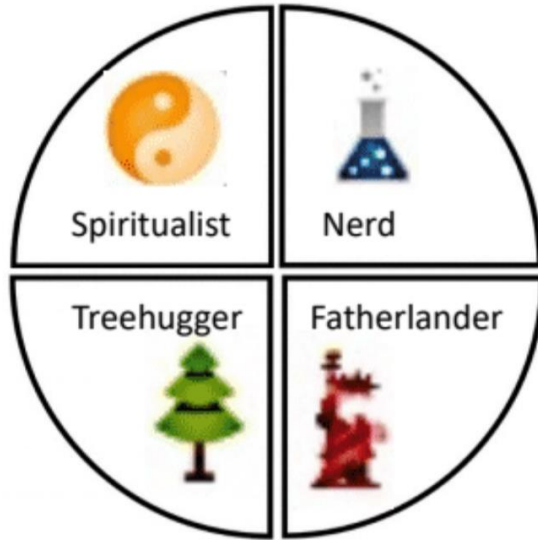
# Alternative Realities

Four categories useful for understanding the  
general characteristics of an individual

(P. A. Gloor, Happimetrics)

A decorative network diagram in the bottom-right corner, similar to the one in the top-left. It shows a complex web of interconnected nodes and lines, with nodes represented by circles of varying sizes and lines as thin grey connections. The diagram is partially cut off by the bottom and right edges of the slide.

## Alternative Realities explanation




(Figures from Happimetrics)

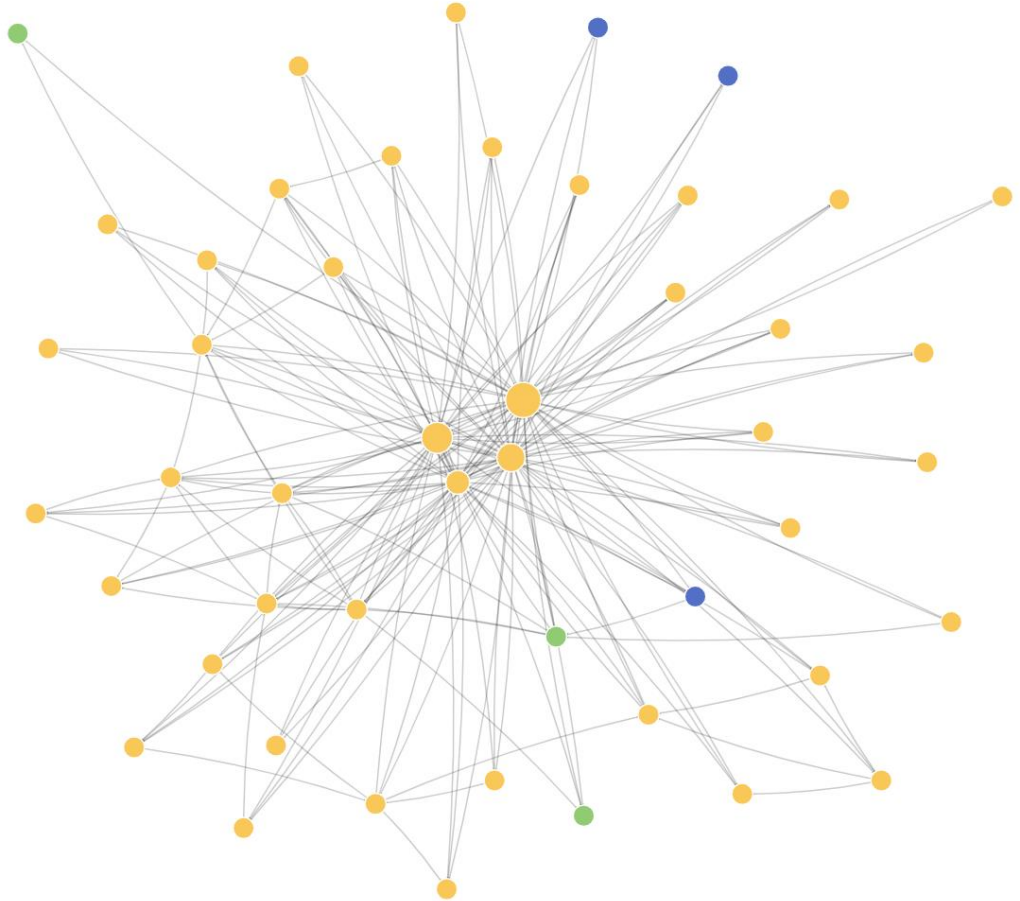
# Eelisa Water Network

By Alternative Realities

 Treehugger

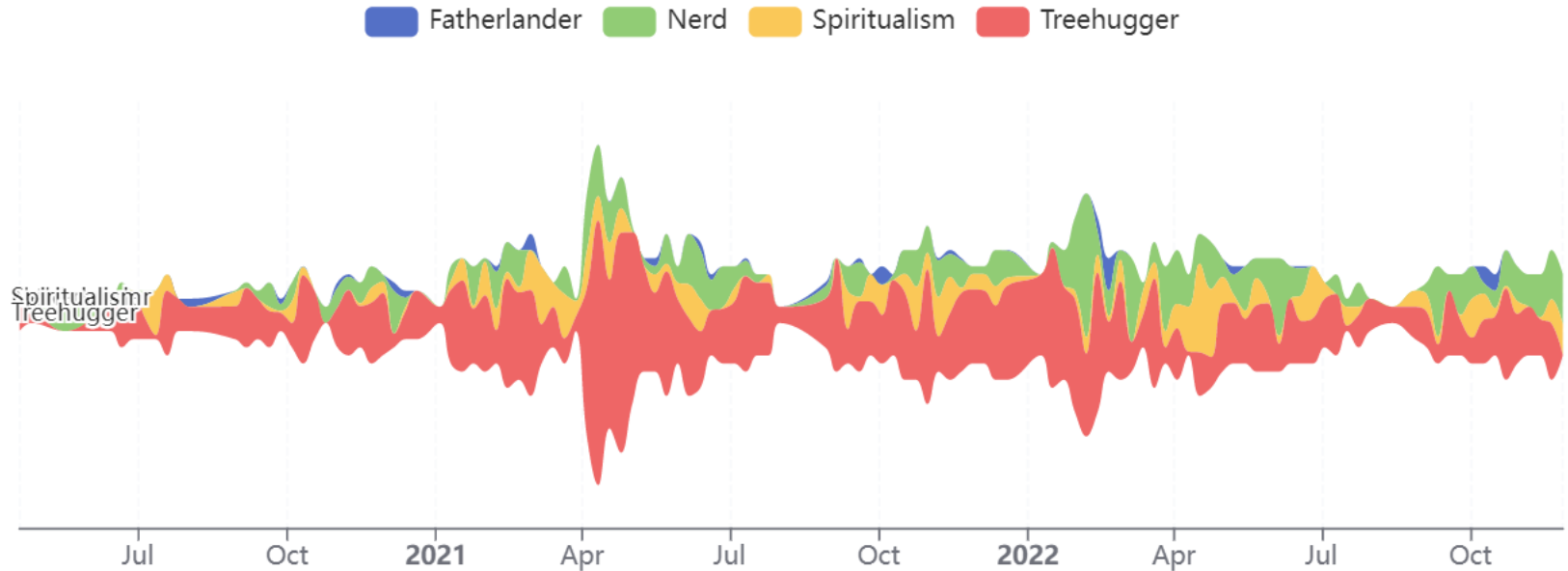
 Nerd

 Spiritualism





## Alternative Realities over time



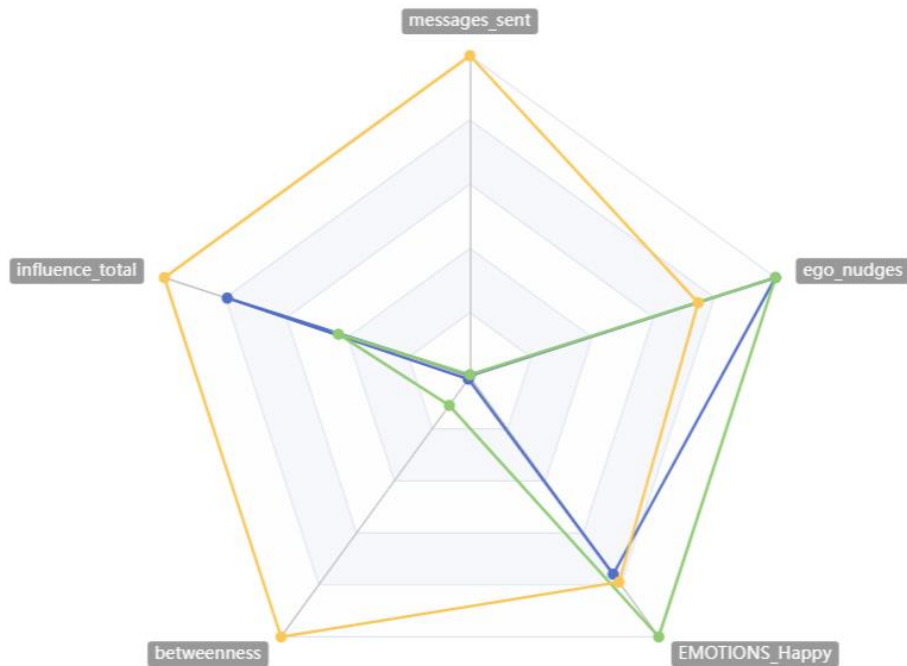
# Alternative Realities Radar

Treehugger

Nerd

Spiritualism

	messages_sent	influence_total	betweenness	EMOTIONS_Hap...	ego_nudges
Nerd	10	0.8784	0.6217	0.4862	0.5000
Spiritualism	13	0.4762	8.2151	0.6408	0.5000
Treehugger	1892	1.1060	75.2259	0.5059	0.3737



A decorative network diagram in the top-left corner, featuring a complex web of interconnected nodes and lines. The nodes are represented by circles of varying sizes, some with concentric circles, and the lines are thin and grey. The diagram is partially cut off by the top and left edges of the frame.

# Groupflow

It enables teams to reach their highest  
productive and creative state

(P. A. Gloor, Happimetrics)

A decorative network diagram in the bottom-right corner, similar to the one in the top-left. It shows a complex web of interconnected nodes and lines, with nodes represented by circles of varying sizes and lines as thin grey connections. The diagram is partially cut off by the bottom and right edges of the frame.

# Groupflow explanation

Antflow



Beeflow



Leechflow




	Bee	Ant	Leech
Values	Self-transcendence self-direction/benevolence	Tradition/authority Conformity/security	Achievement/Power
Personality	Openness	Conscientiousness	(Neuroticism)
Morals	Fairness/care		Unfairness
Risk taking	Social risks	Financial/health risks	Ethical risks


(Table from Happimetrics)

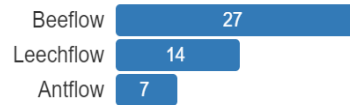
# Eelisa Water Network

By Groupflow

 Beeflow

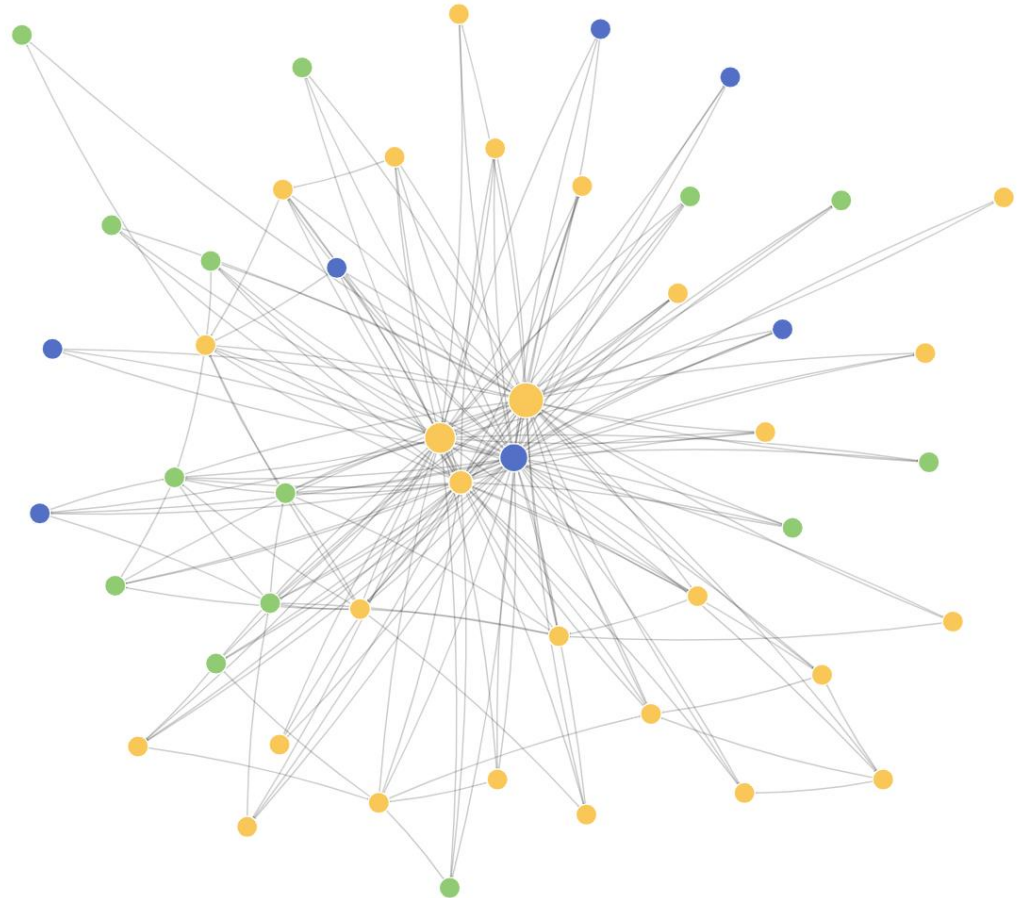
 Antflow

 Leechflow

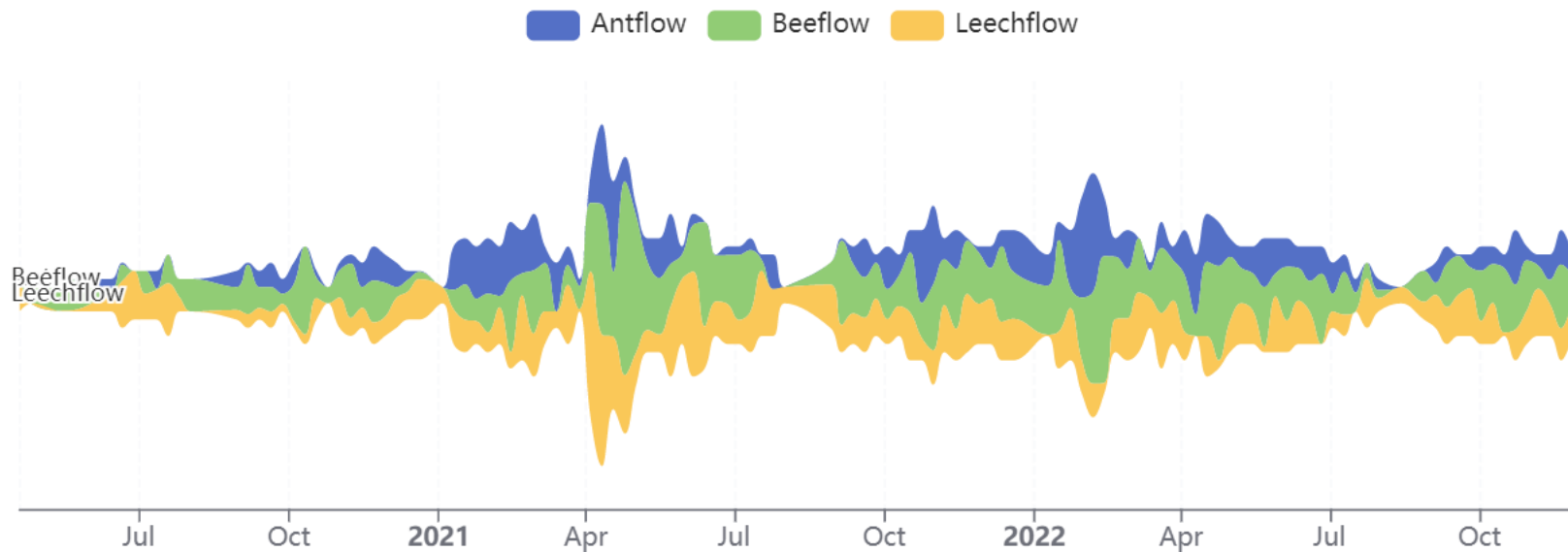


**Missing 8**

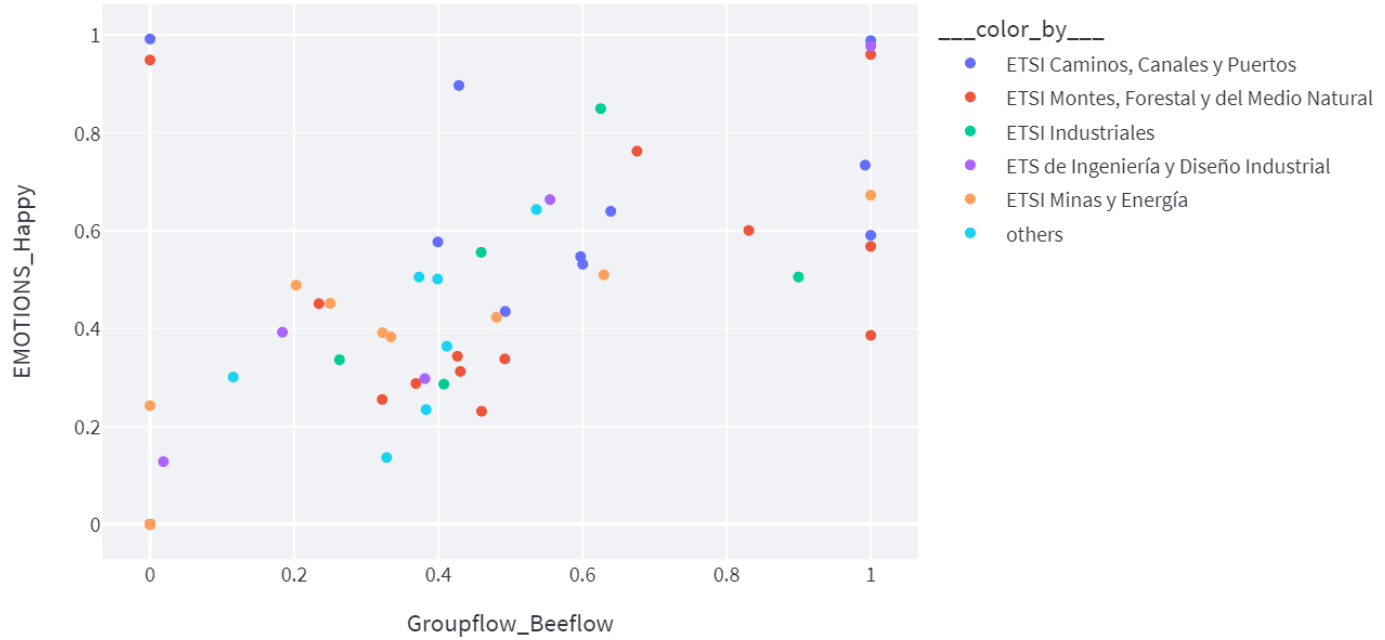
**Missing 14.3%**



## Groupflow over time



# Happiness - Beeflow





# Summary



## Insights

- 1 More than **50%** of the community is **mainly inactive**
- 2 Community is **driven** by a very **small core**
- 3 **70%** of the community are mostly **happy** individuals, this group send **3x** more **messages** than the others
- 4 **88%** of those analyzed are **treehuggers**, only they send messages and have **betweenness**
- 5 **75%** of the community is **too static**
- 6 Only **27** individuals have been classified as **bees**, bees are the only ones that can create **Groupflow**
- 7 The more **bee** you are, the **happier!**
- 8 The community is **overcentralized**, and central nodes remain **unchanged**

## Advice

- 1 Establish **more ties** with people in the community
- 2 Embrace **creativity** and **openness** to change
- 3 Try to achieve a **balanced contribution**
- 4 The **faster** you **respond**, the more your **enthusiasm** will be felt
- 5 Elevate your **Sentiment** without compromising **Honest Language**
- 6 Encourage a more **pro-active** communication style, not only the passive information consumption
- 7 Bring in **fresh ideas**, right now focus is on too much repetitive administrative work

# Thanks for your attention!

I am Álvaro Francisco Gil



ESQ  
water

in an era of change



POLITÉCNICA

