

AN EXPERIENCE ON LEADERSHIP IDENTIFICATION IN SOCIAL COGNOCRACY NETWORK

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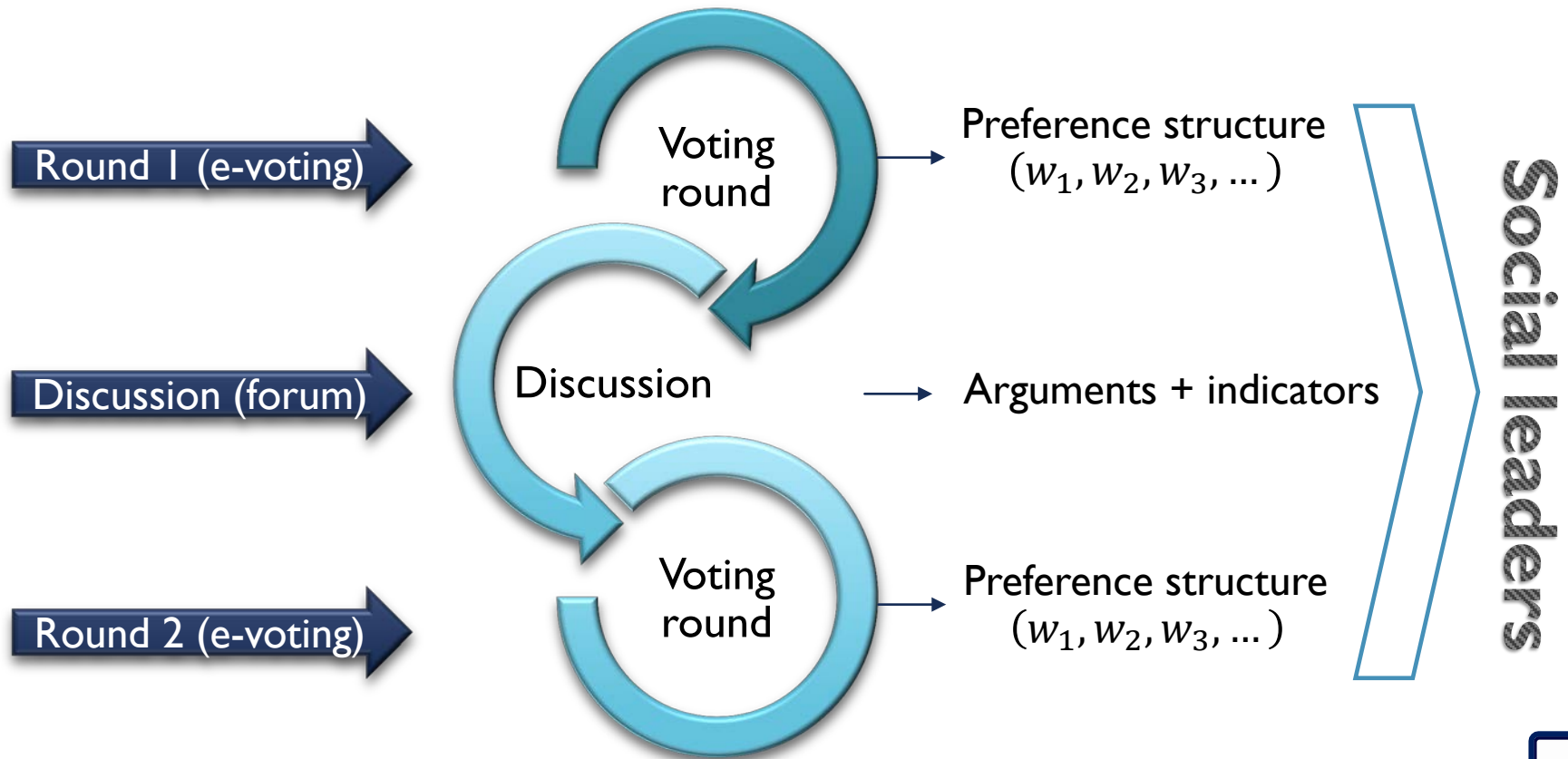
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E-COGNOCRACY



SOCIAL COGNOCRACY NETWORK

Kunena » 1 Beneficios (B) » 1.2 Sociales (BS)

← REPLY TOPIC SUBSCRIBE FAVORITE

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TOPIC: poblacion rustica mayor necesidad que urbana
 Relevancia del Tema: 6 Importancia para Autor: 8 Importancia para Usuario: 3

▀ poblacion rustica mayor necesidad que urbana 1 month, 1 week ago #65

Person region → Paul Gascoigne
 Reputación: 6
 Autoconfianza: 8
 Confianza: 8

debido a que las personas que viven en la provincia de Zaragoza tienen mayores costes de desplazamiento que las que viven en Zaragoza ciudad

Report to moderator REPLY

Relevancia Comentario: 6 Importancia para Autor: 8 Importancia para Usuario: 8

▀ Re: poblacion rustica mayor necesidad que urbana 1 month, 1 week ago #83

Comment region → gobernado electrónicamente
 Reputación: 3
 Autoconfianza: NC
 Confianza: 0

Hay que buscar soluciones para dar cobertura a toda la población que vive en pueblos cercanos o en ciudades dormitorio en Zaragoza. Es indignante que sólo dispongan, en su gran mayoría, de un autobús con muchas restricciones en cuanto franja horaria se refiere

Report to moderator REPLY

Relevancia Comentario: 4 Importancia para Autor: 0 Importancia para Usuario: 7

Three participation levels

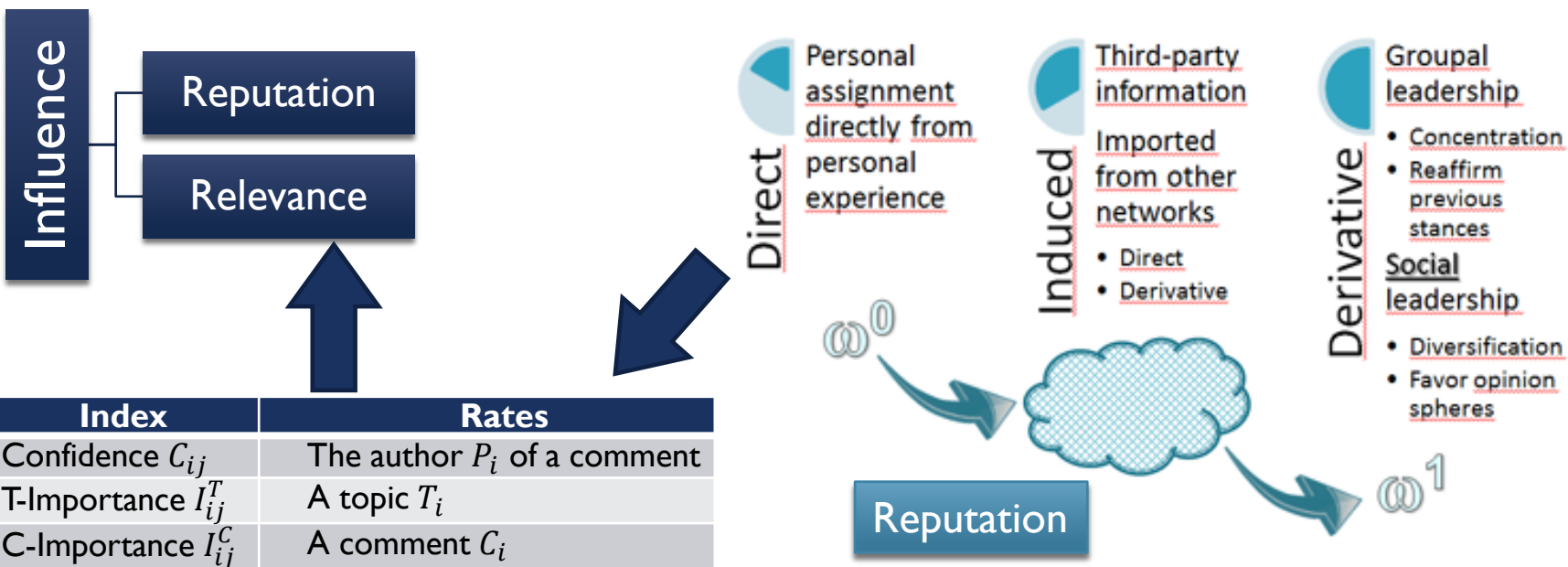
Information

Content creation

Decision making



REPUTATION, RELEVANCE, INFLUENCE



Index	Rates
Confidence C_{ij}	The author P_i of a comment
T-Importance I_{ij}^T	A topic T_i
C-Importance I_{ij}^C	A comment C_i

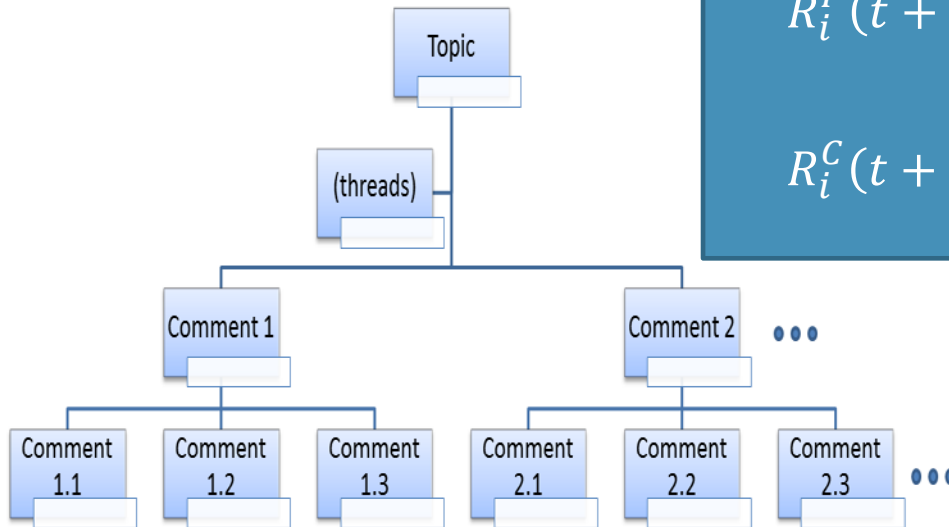
USER P_j ACTION	INDEX
Rate himself	Self-trust C_{jj}
Rate a topic T_i posted by himself	Importance I_{ij}^T
Rate a comment C_i posted by himself	Importance I_{ij}^C
Rate the author P_i of a comment	Confidence C_{ij}
Rate a topic T_i	Importance I_{ij}^T
Rate a comment C_i	Importance I_{ij}^C

REPUTATION, RELEVANCE, INFLUENCE

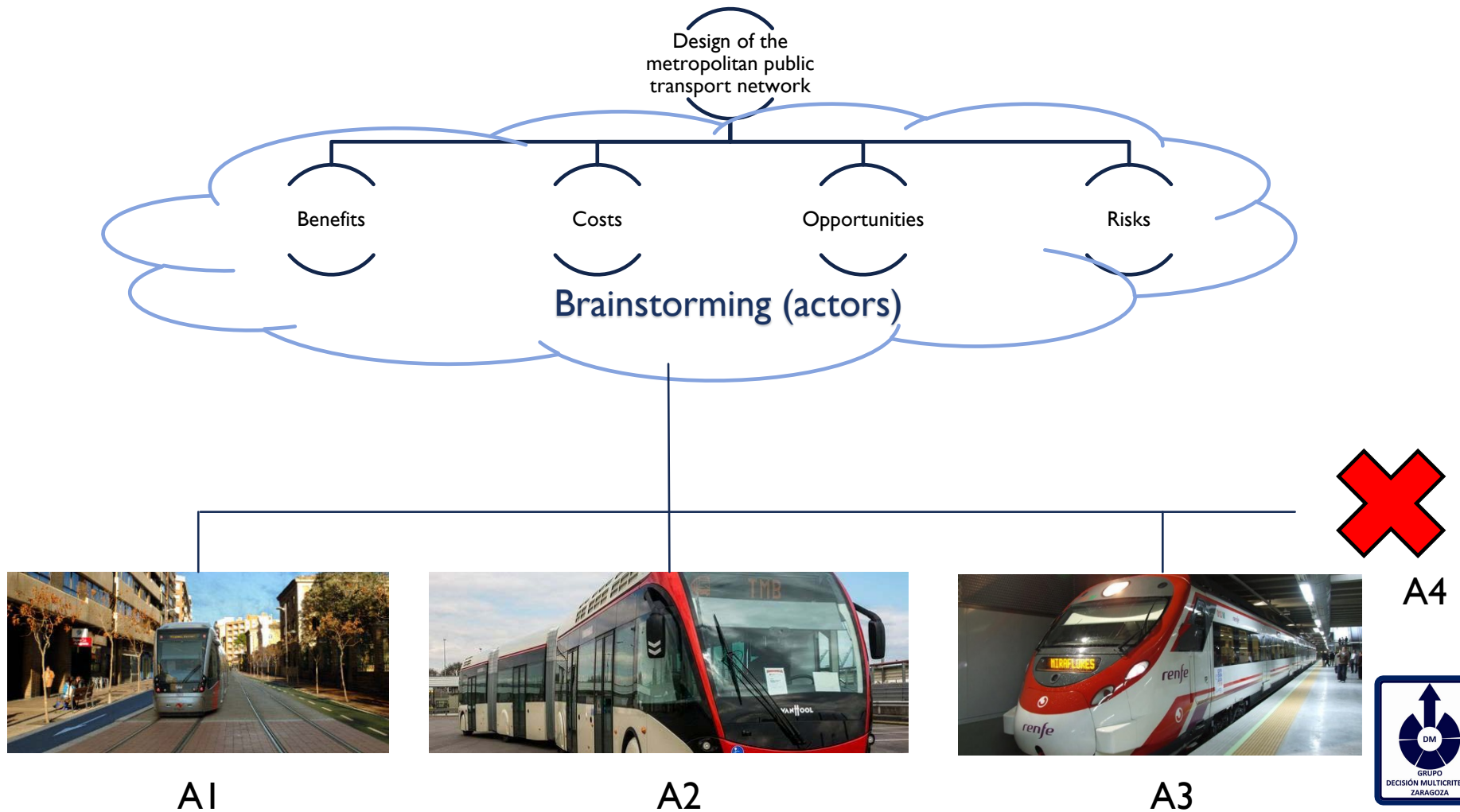
Reputation	Relevance
$R_i^P = \frac{\sum_{j=1}^n R_j^P C_{ij}}{\sum_{j=1}^n R_j^P}$	$R_i^C = \left(1 + \frac{n_c}{N}\right) \frac{\sum_{j=1}^n R_j^P I_{ij}^C}{\sum_{j=1}^n R_j^P}$

$$R_i^P(t+1) = \frac{\sum_{j=1}^n R_j^P(t) C_{ij}(t)}{\sum_{j=1}^n R_j^P(t)}$$

$$R_i^C(t+1) = \left(1 + \frac{n_c}{N}\right) \frac{\sum_{j=1}^n R_j^P(t) I_{ij}^C(t)}{\sum_{j=1}^n R_j^P(t)}$$



CASE STUDY



RESULTS

Round 1

Round 2

	A1	A2	A3	A4	A1	A2	A3	A4
U0001G	0,205	0,241	0,201	0,353				
U0002C	0,199	0,313	0,329	0,159	0,195	0,413	0,246	0,146
U0003I	0,190	0,486	0,192	0,132	0,297	0,484	0,109	0,109
					0,059	0,165	0,451	0,325
U00010F	0,232	0,236	0,131	0,400	0,216	0,262	0,101	0,421
U00013D	0,102	0,445	0,078	0,374				
U00015F	0,131	0,204	0,507	0,158	0,183	0,160	0,497	0,160
			
U00018D	0,395	0,228	0,103	0,275	0,172	0,214	0,119	0,494
U00019J	0,376	0,243	0,153	0,229	0,471	0,274	0,117	0,138
U00040A	0,513	0,229	0,141	0,118				
U00041G	0,392	0,276	0,087	0,246	0,294	0,299	0,114	0,293
U00042C	0,111	0,450	0,191	0,249	0,168	0,286	0,415	0,131
U00047C	0,115	0,183	0,092	0,610	0,131	0,131	0,066	0,673
U00057H	0,249	0,178	0,422	0,151	0,083	0,229	0,045	0,644
					0,198	0,157	0,182	0,463
U00060A	0,177	0,230	0,359	0,233				
Group	0,2467	0,2580	0,1932	0,3021	0,2571	0,2465	0,1858	0,3106

$$A_4 \gg A_2 \gg A_1 \gg A_3$$

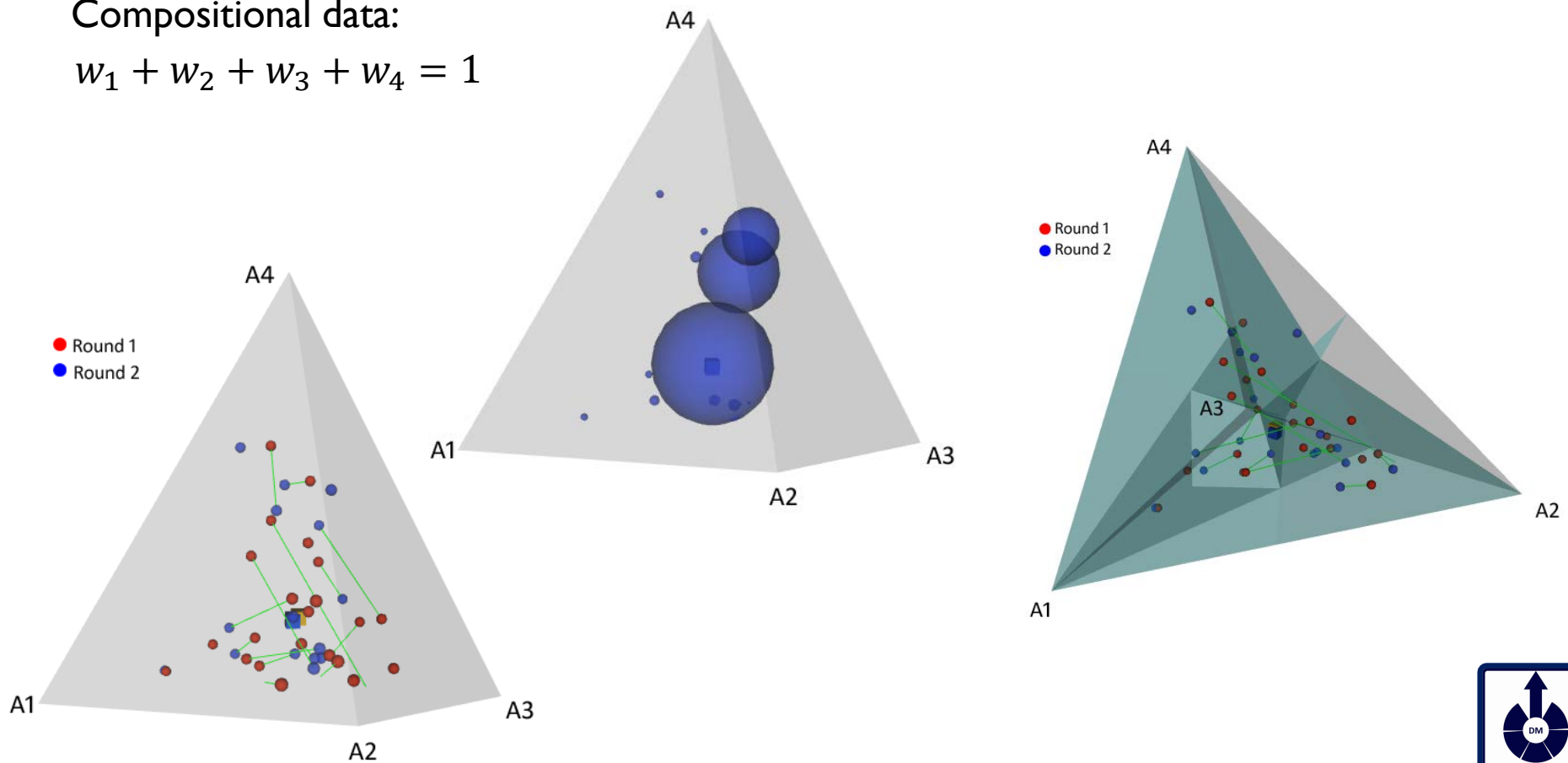
$$A_4 \gg A_1 \gg A_2 \gg A_3$$



RESULTS

Compositional data:

$$w_1 + w_2 + w_3 + w_4 = 1$$

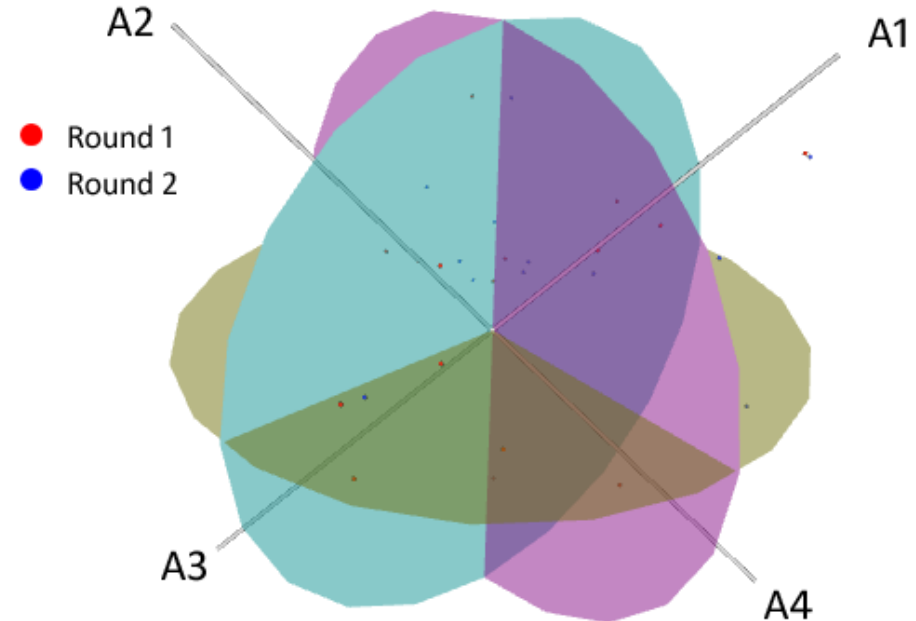


RESULTS

Isometric log-ratio transform:

$$ilr: S^D \rightarrow \mathbb{R}^3$$

	Zone1	Zone2	Pref1	Pref2	Change	Rep.
U00002C	A1_A3_A4	A4	*	*	x	0,618984
U00003I	A4	A1_A4	*	**	x	0,307854
U00010F	A2_A3	A2_A3	*	**	*	0
U00015F	A1_A2_A3_A4	A1_A2_A3_A4	**	*	*	0,670401
U00018D	A1_A2_A3_A4	A2_A3	*	**	x	0
U00019J	A1_A2_A4	A1_A2_A4	*	**	*	0
U00025A	A1_A3_A4	A1_A2_A3	**	*	x	0
U00026G	A1_A2_A4	A2_A3	*	**	x	0
U00027C	A2_A3	A1_A2_A3	**	**	x	5
U00031B	A2_A3	A2_A3	**	**		0,245184
U00034J	A1_A2_A4	A1_A2_A4	**	**		0,738462
U00039J	A2_A3	A1_A4	*	*	x	0,738462
U00041G	A1_A2_A3_A4	A1_A2_A3_A4	**	*	*	0
U00042C	A2_A3_A4	A1_A3_A4	**	*	x	8
U00047C	A2_A3	A2_A3	**	**		0,423417
U00057H	A1_A2_A4	A2_A3	*	**	x	0



RESULTS

	65	66	67	68	69
U00001G			AI		
U00002C					
U00003I	A3	A4			
U00006G					
U00010F			AI		
U00013D					
U00015F	A3	AI_A2_A3			
U00018D	AI_A2_A4				
U00019J					A2_A3
U00024E					A2_A3_A4
U00025A	A3				A4
U00026G		A2	AI		A4
U00027C					
U00028I					
U00031B					
U00032H		A3			A4
U00034J	AI_A2	A2	AI		
U00039J			A2_A3_A4	A4	
U00040A	A3				AI
U00041G				A4	AI
U00042C		A4			

Comment	Relevance
66	3,30389456
169	1,237968
189	1,237968
68	0,98626504
202	0,59706122
65	0,51296418
182	0,41133872
183	0,3664123
139	0,30780923
99	0,28500555
111	0,22739318
67	0,20801658
349	0,17160454
95	0,12436487
221	0,08781688
141	0,05723172

Author	Reputation
U00002C	0,618984
U00003I	0,307854
U00010F	0
U00015F	0,670401
U00018D	0
U00019J	0
U00025A	0
U00026G	0
U00027C	5
U00031B	0,245184
U00034J	0,738462
U00039J	0,738462
U00041G	0
U00042C	8
U00047C	0,423417
U00057H	0

CONCLUSIONS AND FUTURE RESEARCH

- Few observations following the full process
- From the visual analysis some relevant facts stand out:
 - 24 zones define the different positions of the voters with respect to the four alternatives
 - although the results of the two rounds offer few significant differences, only an inversion in the preferences of the alternatives chosen in second and third places, it seems clear that the participants with greater reputation persuaded to take their opinion (influenced) voters who, in the first round, had favored other alternatives
 - analyzing specifically the behavior of these voters, it can be observed that the change in their opinion is in line with the opinions expressed by the four best valued voters
 - the importance of the comments in which these opinions have been exposed is also high

CONCLUSIONS AND FUTURE RESEARCH

- SCN facilitates the measurement of the confidence of the network users and the importance they give to the topics and comments in the forum
- Reputation of users and relevance of both topics and comments can be measured.
- The quantitative valuations of the posts allow calculating the influence of the different participants and their comments.
- An interactive 3D visualization tool is used to explore the results.
- Visual analytics techniques allow the identification of social leaders.
- Those tools, complemented with *data mining* techniques, will allow to refine the current reputation and relevance measurements.