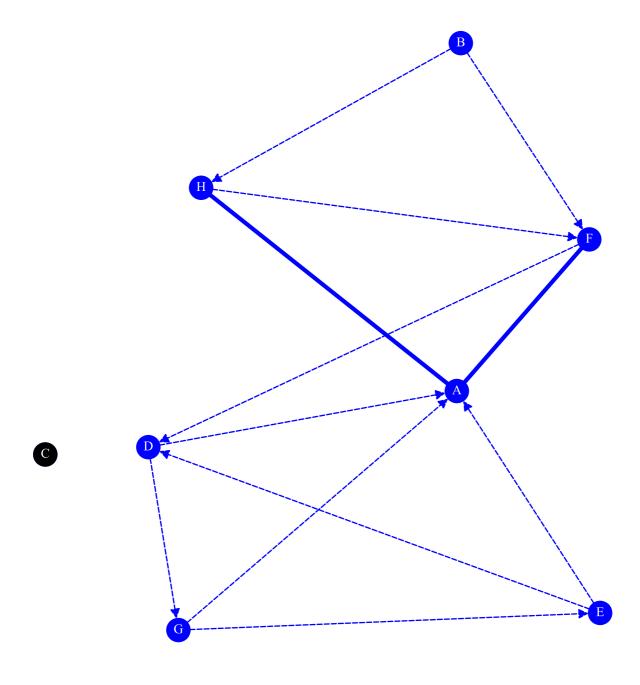


GROUP 1 - DEMO SNA NETWORK GRAPH

A. Who would you like in your ideal work group?

NN 8, NE 14, ND 25%, NC 38%, NT 57%, NR 29%



NN Nodes NE Edges ND Density NC Centralization NT Transitivity NR Reciprocity



GROUP 1 - DEMO SNA RAW SCORES

#### A. Who would you like in your ideal work group?

ID	CHOICES	IC	PR	ВТ	CL	HU	ND
A	F, H	0.71	0.30	0.17	0.73	0.07	
В	F, H	0.00	0.02	0.00	0.00	0.07	←
C	-	0.00	0.02	0.00	0.00	0.00	$\rightleftharpoons$
D	A, G	0.29	0.14	0.21	0.51	0.15	
E	A, D	0.14	0.06	0.02	0.29	0.19	
F	A, D	0.43	0.22	0.23	0.57	0.19	
G	A, E	0.14	0.08	0.12	0.37	0.15	
Н	A, F	0.29	0.16	0.01	0.51	0.18	

 $\textbf{IC} \text{ In-Degree } \textbf{PR} \text{ PageRank } \textbf{BT} \text{ Betweenness } \textbf{CL} \text{ Closenness } \textbf{HU} \text{ Hub } \textbf{ND} \text{ No In-Degree } (\leftarrow) \text{ No Out-Degree } (\rightarrow) \text{ No In or Out-Degree } (\rightleftarrows)$ 



GROUP 1 - DEMO SNA RANK SCORES

#### A. Who would you like in your ideal work group?

ID	CHOICES	IC	PR	ВТ	CL	HU	ND
A	F, H	1	1	3	1	4	
В	F, H	5	7	7	6	4	←
C	-	5	7	7	6	5	$\rightleftharpoons$
D	A, G	3	4	2	3	3	
E	A, D	4	6	5	5	1	
F	A, D	2	2	1	2	1	
G	A, E	4	5	4	4	3	
Н	A, F	3	3	6	3	2	

IC In-Degree PR PageRank BT Betweenness CL Closenness HU Hub ND No In-Degree  $(\leftarrow)$  No Out-Degree  $(\rightarrow)$  No In or Out-Degree  $(\rightleftarrows)$  Very low Low High Very high



### **GROUP 1 - DEMO**

### SNA NODES ORDERED BY RANKS

### A. Who would you like in your ideal work group?

RANK	IC	RANK	PR	RANK	ВТ	RANK	CL	RANK	HU
1	A	1	A	1	F	1	A	1	E
2	F	2	F	2	D	2	F	1	F
3	D	3	Н	3	A	3	D	2	Н
3	Н	4	D	4	G	3	Н	3	D
4	E	5	G	5	E	4	G	3	G
4	G	6	E	6	Н	5	E	4	A
5	В	7	В	7	В	6	В	4	В
5	C	7	С	7	С	6	С	5	С

IC In-Degree PR PageRank BT Betweenness CL Closenness HU Hub



**GROUP 1 - DEMO** 

SNA EDGES GROUPED BY TYPE

A. Who would you like in your ideal work group?

Non reciprocal edges

 $X \to Y$  in network  $A \cdot not Y \to X$  in network A

 $(B \cdot F)(B \cdot H)(D \cdot A)(D \cdot G)(E \cdot A)(E \cdot D)(F \cdot D)(G \cdot A)(G \cdot E)(H \cdot F)$ 

Reciprocal edges

 $X \rightarrow Y$  in network  $A \cdot Y \rightarrow X$  in network A

 $(A \cdot F)(A \cdot H)$ 

Half symmetrical edges

 $X \to Y$  in network  $A \cdot X \to Y$  in network B

No edge of this type

Reversed half symmetrical edges

 $X \to Y$  in network  $A \cdot Y \to X$  in network B

 $\left( \mathbf{D} \cdot \mathbf{A} \right)$ 

**Full symmetrical edges** 

 $X \to Y, Y \to X$  in network  $A \cdot X \to Y, Y \to X$  in network B

No edge of this type



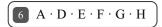
GROUP 1 - DEMO SNA SUBGRAPHS

### A. Who would you like in your ideal work group?

# ------

#### **Strongly Connected Components**

Maximal subgraphs where all vertices are mutually reachable.



### **Weakly Connected Components**

Maximal subgraphs where any vertices are connected by undirected paths.



#### Cliques

Subgraphs that become fully connected when directional edges are ignored.

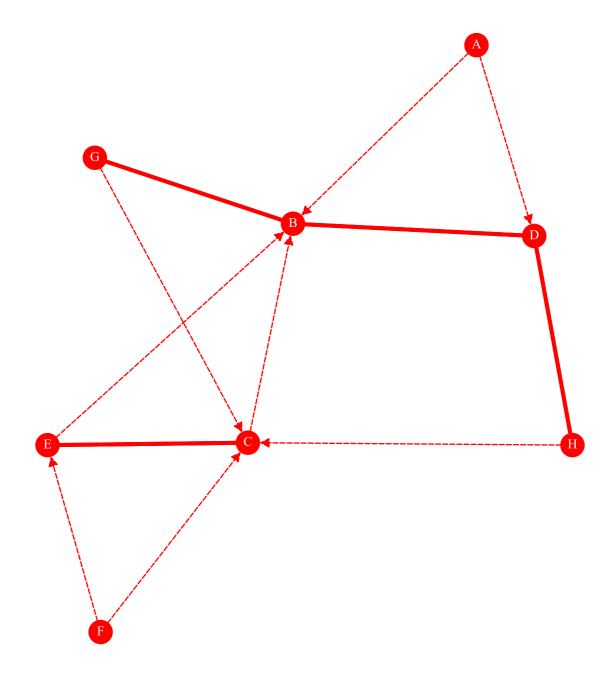




GROUP 1 - DEMO SNA NETWORK GRAPH

#### B. Who would you not want in your ideal work group?

NN 8, NE 16, ND 29%, NC 38%, NT 44%, NR 50%



NN Nodes NE Edges ND Density NC Centralization NT Transitivity NR Reciprocity



GROUP 1 - DEMO SNA RAW SCORES

#### B. Who would you not want in your ideal work group?

ID	CHOICES	IC	PR	ВТ	CL	HU	ND
A	B, D	0.00	0.02	0.00	0.00	0.14	<del></del>
В	D, G	0.71	0.28	0.36	0.78	0.05	
C	B, E	0.57	0.17	0.19	0.64	0.13	
D	B, H	0.43	0.19	0.19	0.58	0.11	
E	B, C	0.29	0.10	0.05	0.44	0.17	
F	C, E	0.00	0.02	0.00	0.00	0.11	←
G	B, C	0.14	0.14	0.07	0.47	0.17	
Н	C, D	0.14	0.10	0.07	0.39	0.12	

IC In-Degree PR PageRank BT Betweenness CL Closenness HU Hub ND No In-Degree (←) No Out-Degree (→) No In or Out-Degree (⇄)



GROUP 1 - DEMO SNA RANK SCORES

#### B. Who would you not want in your ideal work group?

ID	CHOICES	IC	PR	ВТ	CL	HU	ND
A	B, D	6	7	5	7	2	<del></del>
В	D, G	1	1	1	1	7	
C	B, E	2	3	2	2	3	
D	B, H	3	2	2	3	5	
E	B, C	4	5	4	5	1	
F	C, E	6	7	5	7	6	←
G	B, C	5	4	3	4	1	
Н	C, D	5	6	3	6	4	

IC In-Degree PR PageRank BT Betweenness CL Closenness HU Hub ND No In-Degree  $(\leftarrow)$  No Out-Degree  $(\rightarrow)$  No In or Out-Degree  $(\rightleftarrows)$  Very low Low High Very high



### **GROUP 1 - DEMO**

### SNA NODES ORDERED BY RANKS

#### B. Who would you not want in your ideal work group?

RANK	IC	RANK	PR	RANK	ВТ	RANK	CL	RANK	HU
1	В	1	B	1	B	1	В	1	E
2	С	2	D	2	C	2	C	1	G
3	D	3	С	2	D	3	D	2	A
4	E	4	G	3	G	4	G	3	C
5	G	5	E	3	Н	5	E	4	Н
5	Н	6	Н	4	E	6	Н	5	D
6	A	7	A	5	A	7	A	6	F
6	F	7	F	5	F	7	F	7	В

IC In-Degree PR PageRank BT Betweenness CL Closenness HU Hub



**GROUP 1 - DEMO** 

SNA EDGES GROUPED BY TYPE

# B. Who would you not want in your ideal work group?

Non reciprocal edges

 $X \rightarrow Y$  in network  $B \cdot not Y \rightarrow X$  in network B

### Reciprocal edges

 $X \to Y$  in network  $B : Y \to X$  in network B

 $(B \cdot D) (B \cdot G) (C \cdot E) (D \cdot H)$ 

### Half symmetrical edges

 $X \to Y$  in network  $B \, \cdot \, X \to Y$  in network A

No edge of this type

## Reversed half symmetrical edges

 $X \to Y$  in network  $B \cdot Y \to X$  in network A

 $(A \cdot D)$ 

### **Full symmetrical edges**

 $X \to Y, Y \to X$  in network  $B \cdot X \to Y, Y \to X$  in network A

No edge of this type



GROUP 1 - DEMO SNA SUBGRAPHS

### B. Who would you not want in your ideal work group?

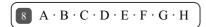
#### **Strongly Connected Components**

Maximal subgraphs where all vertices are mutually reachable.



### **Weakly Connected Components**

Maximal subgraphs where any vertices are connected by undirected paths.



#### Cliques

Subgraphs that become fully connected when directional edges are ignored.





GROUP 1 - DEMO SOCIOGRAM

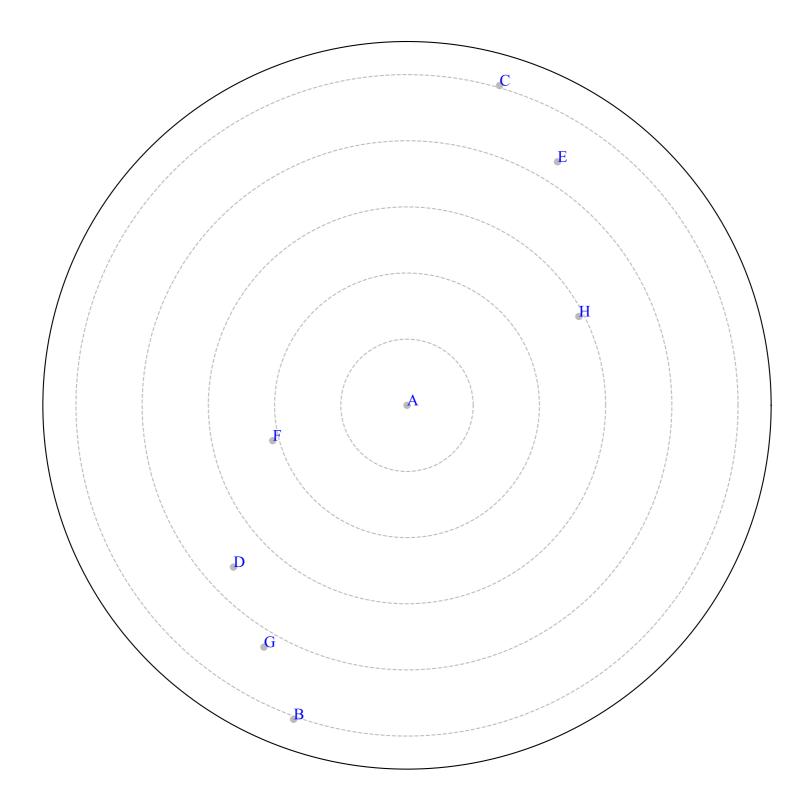
ID	RP	RR	GP	GR	MP	MR	BL	OR	IM	AC	IC	ST
A	5	0	2	2	2	0	5	0	5	5	7	popular
В	0	5	2	2	0	2	-5	0	5	-5	0	rejected
C	0	4	0	2	0	1	-4	-2	4	-6	0	disliked
D	2	3	2	2	0	2	-1	0	5	-1	2	controversial
E	1	2	2	2	0	1	-1	0	3	-1	1	ambivalent
F	3	0	2	2	1	0	3	0	3	3	4	-
G	1	1	2	2	0	1	0	0	2	0	1	marginal
Н	2	1	2	2	1	1	1	0	3	1	3	ambivalent

RP Received preferences RR Received rejections GP Given preferences GR Given rejections MP Mutual preferences MR Mutual rejections BL Balance OR Orientation IM Impact AC Affiliation coefficient IC Influence coefficient ST Sociometric status Very low Low High Very high



GROUP 1 - DEMO SOCIOGRAM

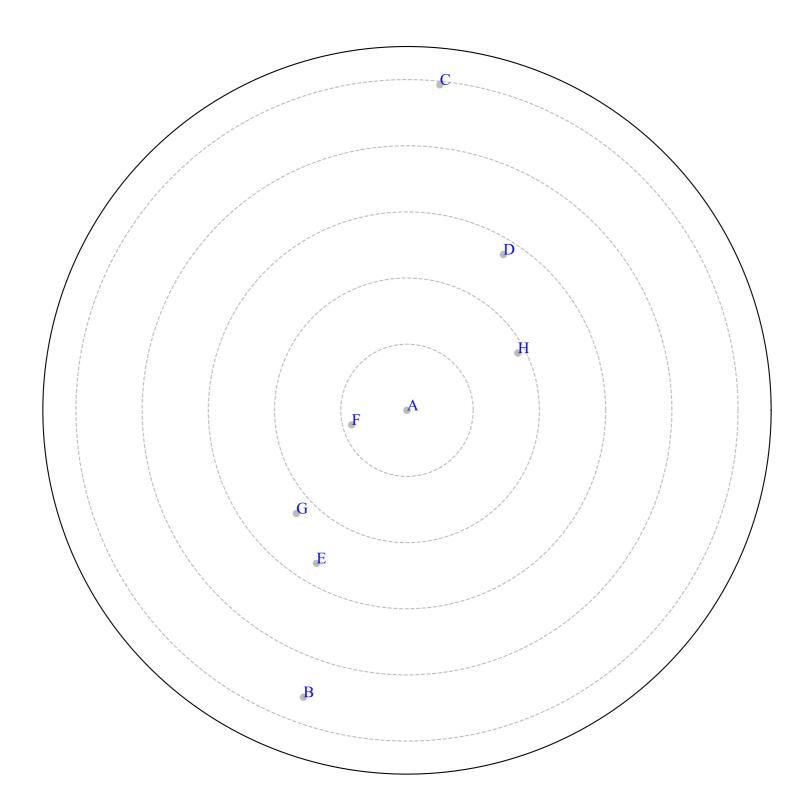
**Influence coefficient** 





GROUP 1 - DEMO SOCIOGRAM

**Affiliation coefficient** 



**Authors**: Dr. Pierpaolo CALANNA, PhD, Dr. Gaetano BUONAIUTO (2021-2025), **License of use**: the layout of this report, the customization of charts, as well as the selection of quantitative indices, are subject to copyright.



### **GROUP 1 - DEMO**

### SOCIOGRAM NODES ORDERED BY RANKS

RANK	RP	RANK	RR	RANK	GP	RANK	GR	RANK	BL	RANK	IM	RANK	AC	RANK	IC
1	A	1	В	1	A	1	A	1	A	1	A	1	A	1	
2	F	2	C	1	В	1	В	2	F	1	В	2	F	2	F
3	D	3	D	1	D	1	C	3	Н	1	D	3	Н	3	Н
3	Н	4	E	1	E	1	D	4	G	2	C	4	G	4	D
4	E	5	G	1	F	1	E	5	D	3	E	5	D	5	E
4	G	5	Н	1	G	1	F	5	E	3	F	5	E	5	G
5	В	6	A	1	Н	1	G	6	С	3	Н	6	В	6	В
5	C	6	F	2	С	1	Н	7	В	4	G	7	С	6	С

RP Received preferences RR Received rejections GP Given preferences GR Given rejections BL Balance IM Impact AC Affiliation coefficient IC Influence coefficient



GROUP 1 - DEMO SOCIOGRAM STATISTICS

Type I cohesion index : 28.57%, , Type II cohesion index : 0.25 Type I conflict index : 50.00%, Type II conflict index : 0.50

ID	Count	Median	IQR	Mean	SD	Min	P25	P50	P75	Max
Received preferences	8	1	1	1.75	1.67	0	0	1	2	5
Received rejections	8	1	2	2.00	1.85	0	0	1	3	5
Given Preferences	8	2	0	1.75	0.71	0	2	2	2	2
Given rejections	8	2	0	2.00	0.00	2	2	2	2	2
Mutual preferences	8	0	1	0.50	0.76	0	0	0	1	2
Mutual rejections	8	1	0	1.00	0.76	0	0	1	1	2
Balance	8	0	3	-0.25	3.33	-5	-1	0	1	5
Orientation	8	0	0	-0.25	0.71	-2	0	0	0	0
Impact	8	3	2	3.75	1.16	2	3	3	5	5
Affiliation coefficient raw	8	0	3	-0.50	3.70	-6	-2	0	1	5
Influence coefficient raw	8	1	2	2.25	2.38	0	0	1	3	7

IQR Interquartile range SD Standard Deviation Min Minimum value P25 25° percentile P50 50° percentile P75 75° percentile Max Maximum value