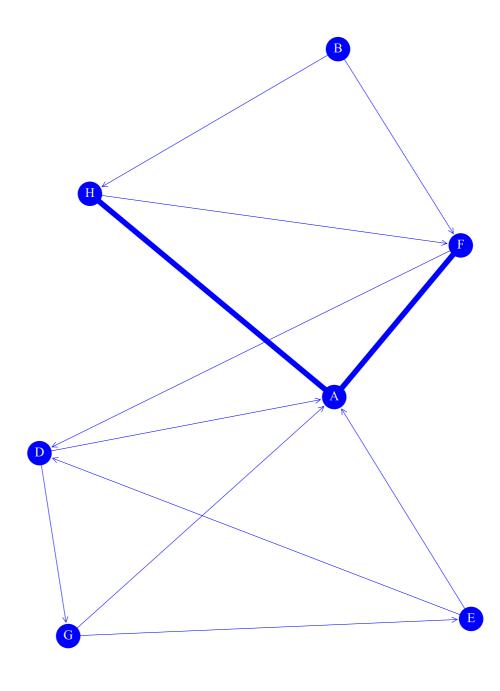


DEMO | GROUP 1 SNA NETWORK GRAPH

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

NN 8, NE 14, NR 2, ND 25%, NC 38%, NT 57%, NR 29%



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

**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.



DEMO | GROUP 1 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	

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



DEMO | GROUP 1 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



# **DEMO | GROUP 1**

# 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	С	7	С	7	C	6	С	5	C

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



DEMO | GROUP 1

**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

 $\left(\mathbf{B}\cdot\mathbf{F}\right)$ 

 $B \cdot H \cap A$ 

) ( D · G

 $E\cdot A$ 

 $\mathbf{E} \cdot \mathbf{D}$ 

 $\mathbf{F} \cdot \mathbf{D}$ 

] [ G · 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



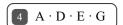
DEMO | GROUP 1 SNA SUBGRAPHS

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

# ------

#### Cliques

Each node can reach every other node: a) without intermediaries; b) ignoring the direction of connections



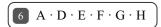






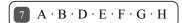
#### **Strongly Connected Groups**

Each node can reach every other node: a) with or without intermediaries; b) following the direction of connections



#### **Weakly Connected Groups**

Each node can reach every other node: a) with or without intermediaries; b) ignoring the direction of connections

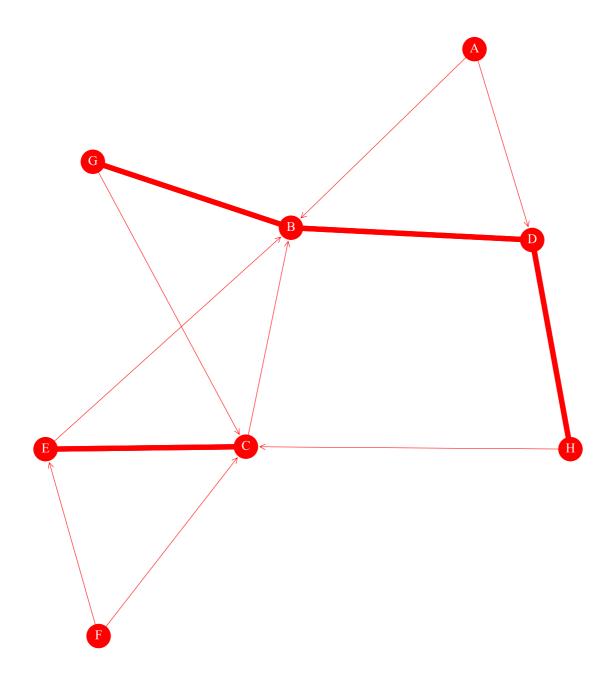




DEMO | GROUP 1 SNA NETWORK GRAPH

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

NN 8, NE 16, NR 4, ND 29%, NC 38%, NT 44%, NR 50%



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

**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.



DEMO | GROUP 1 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	

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



DEMO | GROUP 1 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	<b>←</b>
В	D, G	1	1	1	1	7	
C	В, Е	2	3	2	2	3	
D	В, Н	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  $\blacksquare$  Very high



# **DEMO | GROUP 1**

# 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	В	1	В	1	В	1	E
2	C	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



**DEMO | GROUP 1** 

**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

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

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

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

**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



DEMO | GROUP 1 SNA SUBGRAPHS

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

#### Cliques

Each node can reach every other node: a) without intermediaries; b) ignoring the direction of connections



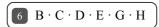
 $B \cdot C \cdot G$ 

 $\left[\begin{array}{c} \mathbf{B} \cdot \mathbf{C} \cdot \mathbf{E} \end{array}\right]$ 

 $A \cdot B \cdot D$ 

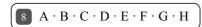
#### **Strongly Connected Groups**

Each node can reach every other node: a) with or without intermediaries; b) following the direction of connections



#### **Weakly Connected Groups**

Each node can reach every other node: a) with or without intermediaries; b) ignoring the direction of connections





DEMO | GROUP 1 SOCIOGRAM

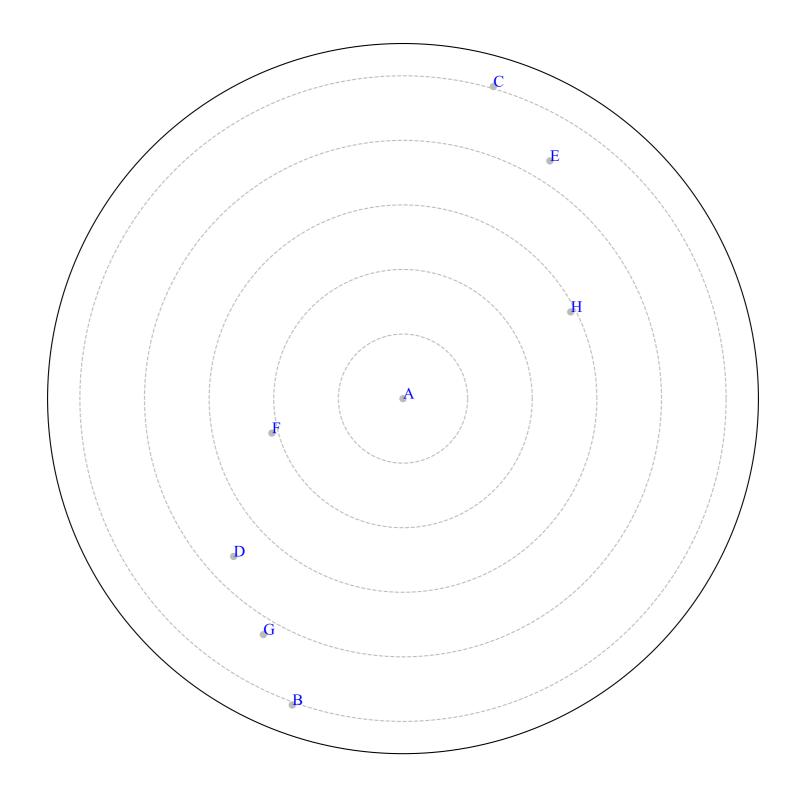
ID	RP	RR	GP	GR	MP	MR	BL	OR	IM	AI	II	ST
A	5	0	2	2	2	0	5	0	5	5	7	popular
В	0	5	2	2	0	2	-5	0	5	-5	0	rejected
C	0	4	0	2	0	1	-4	-2	4	-6	0	disliked
D	2	3	2	2	0	2	-1	0	5	-1	2	controversial
E	1	2	2	2	0	1	-1	0	3	-1	1	ambivalent
F	3	0	2	2	1	0	3	0	3	3	4	appreciated
G	1	1	2	2	0	1	0	0	2	0	1	marginal
Н	2	1	2	2	1	1	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 AI Affiliation index II Influence index ST Sociometric status Very low Low High Very high



DEMO | GROUP 1 SOCIOGRAM

Influence index

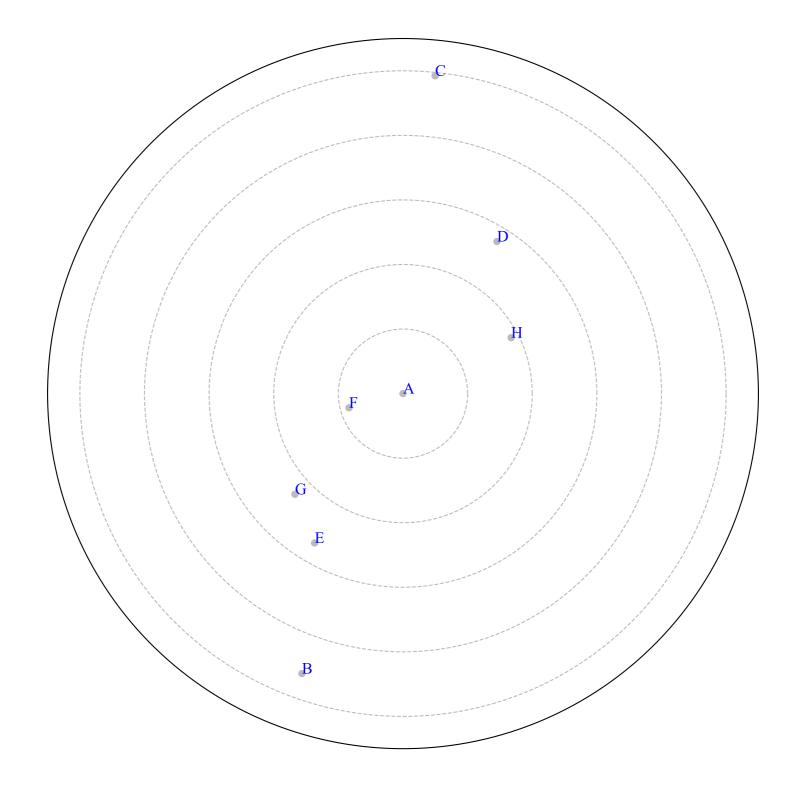




DEMO | GROUP 1 SOCIOGRAM

Affiliation index

\_\_\_\_\_\_





# **DEMO | GROUP 1**

# SOCIOGRAM NODES ORDERED BY RANKS

RANK	RP	RANK	RR	RANK	GP	RANK	GR	RANK	BL	RANK	IM	RANK	AI	RANK	II
1	A	1	В	1	A	1	A	1	A	1	A	1	A	1	A
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	Е	5	G	1	F	1	Е	5	D	3	E	5	D	5	Е
4	G	5	Н	1	G	1	F	5	E	3	F	5	Е	5	G
5	В	6	A	1	Н	1	G	6	C	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 AI Affiliation index II Influence index



DEMO | GROUP 1 SOCIOGRAM STATISTICS

Type I cohesion index: 28.57% Type II cohesion index: 0.25 Type I conflitct index: 50.00% Type II conflitct index: 0.50

ID	Count	Sum	Median	IQR	Mean	SD	Min	P25	P50	P75	Max
Received preferences	8.0	14.0	1	1	1.75	1.67	0	0	1	2	5
Received rejections	8.0	16.0	1	2	2.00	1.85	0	0	1	3	5
Given Preferences	8.0	14.0	2	0	1.75	0.71	0	2	2	2	2
Given rejections	8.0	16.0	2	0	2.00	0.00	2	2	2	2	2
Mutual preferences	8.0	4.0	0	1	0.50	0.76	0	0	0	1	2
Mutual rejections	8.0	8.0	1	0	1.00	0.76	0	0	1	1	2
Balance	8.0	-2.0	0	3	-0.25	3.33	-5	-1	0	1	5
Orientation	8.0	-2.0	0	0	-0.25	0.71	-2	0	0	0	0
Impact	8.0	30.0	3	2	3.75	1.16	2	3	3	5	5
Affiliation index	8.0	-4.0	0	3	-0.50	3.70	-6	-2	0	1	5
Influence index	8.0	18.0	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