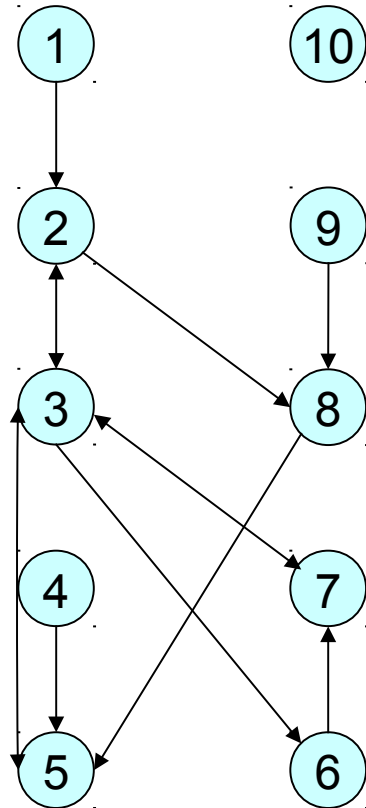


Sociomatrices

Ana Pola

IES Avempace

Un grupo de 10 personas mantienen entre sí las relaciones siguientes:

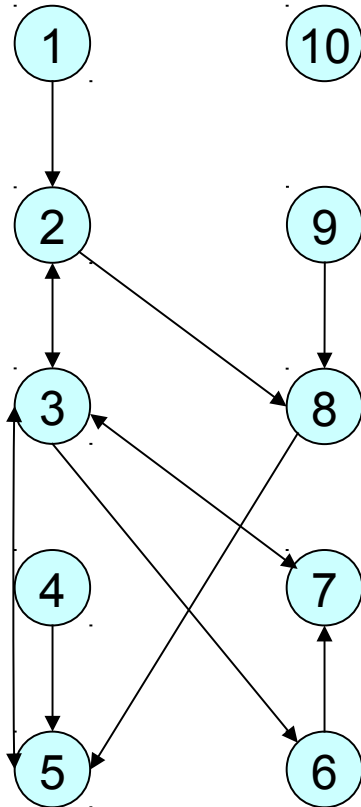


Matriz A

| | | Preferencias recibidas | | | | | | | | | | Total |
|---------------------------|----|------------------------|---|---|---|---|---|---|---|---|----|-------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| Preferencias manifestadas | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |
| | 3 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 4 |
| | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 8 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | | 0 | 2 | 3 | 0 | 3 | 1 | 2 | 2 | 0 | 0 | |

3 es el individuo que ofrece más amistad y, junto con el **5**, es también el que más preferencias recibe.

El grupo social en que se mueve una persona abarca también a los amigos de sus amigos:



Matriz A^2

| | | Preferencias recibidas | | | | | | | | | | Total |
|---------------------------|----|------------------------|---|---|---|---|---|---|---|---|----|-------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| Preferencias manifestadas | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |
| | 2 | 0 | 1 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 5 |
| | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 5 |
| | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 5 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 4 |
| | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 7 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 4 |
| | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 9 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | | 0 | 3 | 7 | 0 | 5 | 3 | 4 | 2 | 0 | 0 | |

El individuo **4** muestra preferencia por el **5** y éste la muestra por el **3**. Por tanto, hay una **conexión indirecta entre el 4 y el 3**: $a_{43} = 1$.

¿Qué significado tienen los elementos de la diagonal principal de la matriz?

La matriz A^3 muestra nuevas implicaciones sociológicas. Se ve claramente el papel de liderazgo que ejerce el individuo 3.

Sumando las tres matrices se obtiene una nueva matriz, $A + A^2 + A^3$:

Matriz A^3

| | | Preferencias recibidas | | | | | | | | | | Total |
|---------------------------|----|------------------------|---|----|---|---|---|----|---|---|----|-------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| Preferencias manifestadas | 1 | 0 | 1 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 5 |
| | 2 | 0 | 0 | 4 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 6 |
| | 3 | 0 | 3 | 1 | 0 | 4 | 3 | 3 | 0 | 0 | 0 | 14 |
| | 4 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 4 |
| | 5 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 5 |
| | 6 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 4 |
| | 7 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 5 |
| | 8 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 4 |
| | 9 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | | 0 | 7 | 12 | 0 | 9 | 7 | 10 | 3 | 0 | 0 | |

Matriz $A + A^2 + A^3$

| | | Preferencias recibidas | | | | | | | | | | Total |
|---------------------------|----|------------------------|----|----|---|----|----|----|---|---|----|-------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| Preferencias manifestadas | 1 | 0 | 2 | 1 | 0 | 2 | 1 | 1 | 1 | 0 | 0 | 8 |
| | 2 | 0 | 1 | 5 | 0 | 2 | 1 | 2 | 2 | 0 | 0 | 13 |
| | 3 | 0 | 4 | 4 | 0 | 5 | 4 | 5 | 1 | 0 | 0 | 23 |
| | 4 | 0 | 1 | 1 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 6 |
| | 5 | 0 | 1 | 4 | 0 | 1 | 1 | 2 | 1 | 0 | 0 | 10 |
| | 6 | 0 | 1 | 1 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 6 |
| | 7 | 0 | 1 | 4 | 0 | 1 | 1 | 2 | 1 | 0 | 0 | 10 |
| | 8 | 0 | 1 | 1 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 6 |
| | 9 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 3 |
| | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | | 0 | 12 | 22 | 0 | 17 | 11 | 16 | 7 | 0 | 0 | |

Conclusiones

- 3 es el líder del grupo. Tiene necesidad de establecer lazos recíprocos.
- 3, 6 y 7 se influyen indirectamente, manifestando cierta tendencia a formar un subgrupo dentro del grupo.
- 5 y 7 son individuos poco integrados: reciben muchas preferencias pero no muestran tantas hacia los demás.
- 1 está aislado con tendencia a integrarse.
- 10 está totalmente aislado.

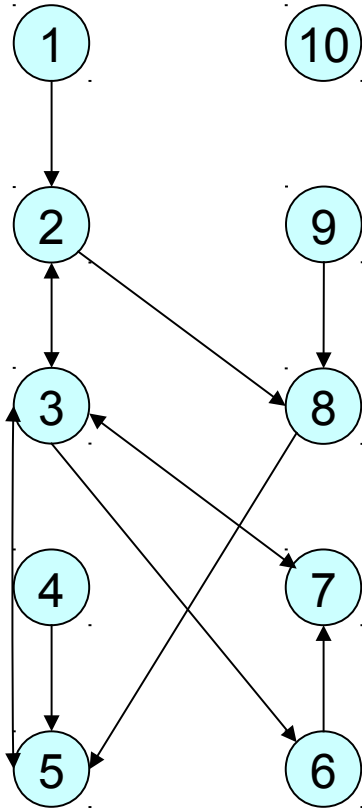
Matriz A

Matriz A²

Matriz A³

Matriz A + A² + A³

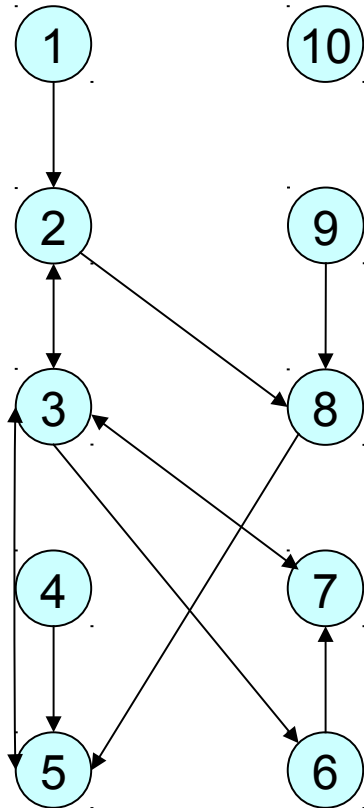
Matriz A



| | | Preferencias recibidas | | | | | | | | | | Total |
|---------------------------|----|------------------------|---|---|---|---|---|---|---|---|----|-------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| Preferencias manifestadas | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |
| | 3 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 4 |
| | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 8 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | | 0 | 2 | 3 | 0 | 3 | 1 | 2 | 2 | 0 | 0 | |



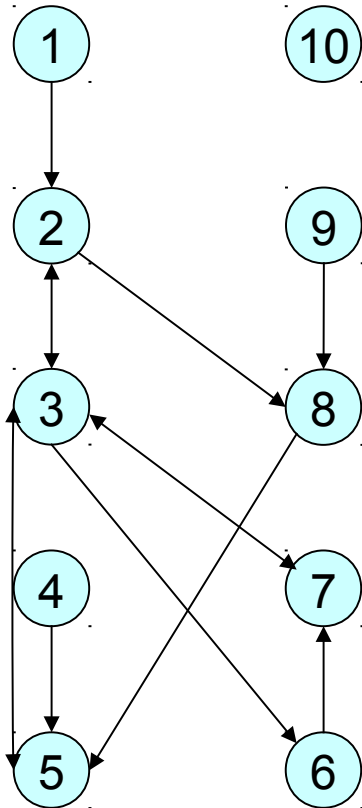
Matriz A^2



| | | Preferencias recibidas | | | | | | | | | | Total |
|---------------------------|----|------------------------|---|---|---|---|---|---|---|---|----|-------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| Preferencias manifestadas | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |
| | 2 | 0 | 1 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 5 |
| | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 5 |
| | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 5 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 4 |
| | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 7 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 4 |
| | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 9 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | | 0 | 3 | 7 | 0 | 5 | 3 | 4 | 2 | 0 | 0 | |



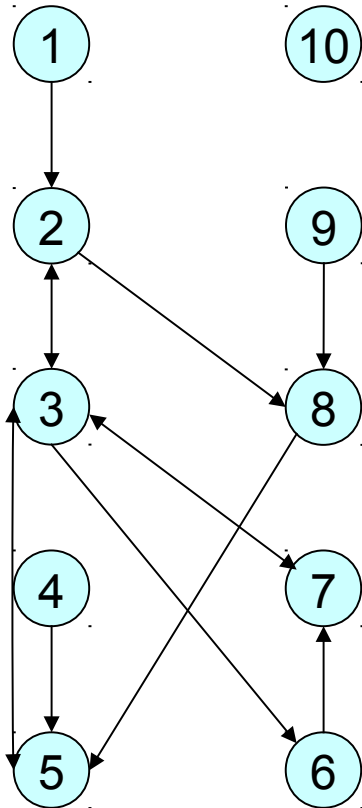
Matriz A³



| | | Preferencias recibidas | | | | | | | | | | Total |
|---------------------------|----|------------------------|----|---|---|---|----|---|---|---|----|-------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| Preferencias manifestadas | 1 | 0 | 1 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 5 |
| | 2 | 0 | 0 | 4 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 6 |
| | 3 | 0 | 3 | 1 | 0 | 4 | 3 | 3 | 0 | 0 | 0 | 14 |
| | 4 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 4 |
| | 5 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 5 |
| | 6 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 4 |
| | 7 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 5 |
| | 8 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 4 |
| | 9 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 7 | 12 | 0 | 9 | 7 | 10 | 3 | 0 | 0 | | |



Matriz $A + A^2 + A^3$



| | | Preferencias recibidas | | | | | | | | | | Total |
|---------------------------|----|------------------------|----|----|---|----|----|----|---|---|----|-------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| Preferencias manifestadas | 1 | 0 | 2 | 1 | 0 | 2 | 1 | 1 | 1 | 0 | 0 | 8 |
| | 2 | 0 | 1 | 5 | 0 | 2 | 1 | 2 | 2 | 0 | 0 | 13 |
| | 3 | 0 | 4 | 4 | 0 | 5 | 4 | 5 | 1 | 0 | 0 | 23 |
| | 4 | 0 | 1 | 1 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 6 |
| | 5 | 0 | 1 | 4 | 0 | 1 | 1 | 2 | 1 | 0 | 0 | 10 |
| | 6 | 0 | 1 | 1 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 6 |
| | 7 | 0 | 1 | 4 | 0 | 1 | 1 | 2 | 1 | 0 | 0 | 10 |
| | 8 | 0 | 1 | 1 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 6 |
| | 9 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 3 |
| | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | | 0 | 12 | 22 | 0 | 17 | 11 | 16 | 7 | 0 | 0 | |

