Analysis of Italian Political Parties with the Self-Organizing Map

Jonathan Gorday

Webster University

Summary

- Italy's Political System

- Data Description

- Self-Organizing Map

- Results

Italy's Political System

- Parliament is divided into two bodies
  - Chamber of Deputies
  - Senate of the Republic

- There are currently two coalitions
  - The Union
  - House of Freedoms

- The population votes on the party they want to represent them, not the candidates.

Data Description

- 12 Parties and 7 Bills were used.

- Values represent the percent of votes in each party that were in favor of each bill.

- Abstains were counted as absent votes.

- All values are between zero and one, inclusive.

Data Used

House of Freedoms

0	0	0	0	0	0	0	LNP
0	0	0	0	1	0	1	AN
0	0	1	0.5	1	1	0	DC-PS
0	0.015	0.018	0	1	1	0.714	FI
0	0	0	0	1	1	0.333	UDC
1	1	1	1	1	1	1	RC-SE
1	1	1	1	1	1	1	RNP
1	1	1	1	1	1	1	UDEUR
1	1	1	1	1	1	1	VERDI
1	1	1	0.994	1	1	1	ULIVO
1	1	1	1	1	0.056	1	IDV
1	1	1	1	1	0	1	COM-IT

The Union

Self-Organizing Map (SOM)

- A means of graphically displaying a set of data.

- Each square in the graph represents a series of seven percents, one for each bill.

- Training occurs by finding the most similar square, then making it and its neighbors more like the training values.

- A distance formula determines how similar each square is to the values entered.

SOM, cont'd

- The closer each square is to another, the more the data the two squares represent are similar.

- Once the training is done, the distance formula is used one last time to place labels on appropriate squares.

$$\sqrt{(p_1 - q_1)^2 + (p_2 - q_2)^2 + \cdots + (p_n - q_n)^2} = \sqrt{\sum_{i=1}^{n}(p_i - q_i)^2}$$

Results

LNP		AN		IDV
UDC		FI		COM-IT
DC-PS		ULIVO		RC-SE RNP UDEUR VERDI

Results, cont'd

- The graph shows that the coalitions are well formed.

- The boundary between the two coalitions seems smaller on the graph than what the numbers portray.

- From the actual numbers, The Union seemed to show a lack of diversity.

Summary

- Italy's Political System

- Data Used

- Self-Organizing Map

- Results

References

- *Camera dei Deputati – Ricerca votazioni.* Retrieved December 6, 2006, from http://banchedati.camera.it/Votazioni/leg15/Default.Asp.

- *Italian Chamber of Deputies.* Retrieved December 6, 2006, from http://en.wikipedia.org/wiki/Italian_Chamber_of_Deputies.

- *Paliament of Italy.* Retrieved December 6, 2006, from http://en.wikipedia.org/wiki/Parliament_of_Italy.

- *Self-Organizing Map.* Retrieved December 6, 2006, from http://en.wikipedia.org/wiki/Self-Organizing_Map.