

Day 71 Guided Notes

Shortcoming of sequential pairwise comparison

Day 4 Voting Sequential Pairwise, Pareto Condition and Hare System

1. Review: In one or two sentences, describe how you perform each of the following voting methods

a. Majority: More than 50% of 1st place votes

b. Plurality: Most 1st place votes

c. Pairwise Comparison: head to head comparison

d. Borda Count: Assign points values to candidates, obtain borda score winner/loser

2. Sequential Pairwise Voting Head to Head Matchups

a. First candidate vs Second candidate

b. Loser is eliminated

c. Winner face 3rd candidate

d. Repeat until we have a winner

Example: Agenda: D, A, C, B

Number of voters	14	10	9	6	4
1st	B	C	A	A	D
2nd	C	D	D	C	C
3rd	D	B	B	B	B
4th	A	A	C	D	A

B is winner

(D) A	(C)
14 9	9 14
10 6	10 6
4	4

...and then Agenda B, A, D, C

(B) A	(D) C
14 9	14 10
10 6	6 9
4	4 4

C (B)
10 14
6 9
4

A = 15
B = 14
C = 10
D = 4

A = 15
B = 14
C = 14

In this election with two different Agendas..... what can we conclude?

a.

b.

3. Pareto Condition:

Example: Agenda A-B-C-D

Number of voters	1	1	1
1st	A	C	B
2nd	B	A	D
3rd	D	B	C
4th	C	D	A

If you have to candidate x and y, if x is higher than y every time, y should never win, y have an issue with the winner. WHY?

B ranks higher than D every time.

4. Hare System

Where is it still used? Australia
What is needed? Majority votes
Who gets deleted? Least preferred candidates
Who is the winner? Single candidate at the end
Is it possible to have a tie? Yes
We could use this method instead of Plurality

Example:

Number of voters	14	10	9	6	4
1st	B	C	A	A	D
2nd	C	D	D	C	C
3rd	D	B	B	B	B
4th	A	A	C	D	A

Plurality Winner

Hare Winner