

Appendix A

Examples of faultline scores for two teams

Team A015 (Faultline=0.70)

Member	Task meaningfulness (Separation)	Professional level (Disparity)	Cultural background (Variety)
1	5	Professor	Caucasian
2	5	Masters	Caucasian
3	4.667	Masters	Caucasian
4	4.333	Post doc	Asian

Team E031 (Faultline=0.44)

Member	Task meaningfulness (Separation)	Professional level (Disparity)	Cultural background (Variety)
1	5	Professor	Caucasian
2	5	Post doc	Asian
3	4.667	Doctoral student	European
4	5	Doctoral student	Latino

Faultline Calculation Demonstration (Team A015)
(Formula developed by Thatcher, Jehn, & Zanutto, 2003)

Raw data

Member	Task meaningfulness (TM) (Separation)	Professional level (PL) (Disparity)	Cultural background (CB) (Variety)
1	5	Professor	Caucasian
2	5	Masters	Caucasian
3	4.667	Masters	Caucasian
4	4.333	Post doc	Asian

Raw data with dummy variables

Member	TM	PL1	PL2	PL3	PL4	PL5	PL6	CB1	CB2	CB3	CB4	CB5	CB6	CB7	CB8	CB9	CB10	CB11
1	5	0.000	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	5	0.000	0.000	1.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	4.667	0.000	0.000	1.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	4.333	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000

Rescaling factor	TM	PL1	PL2	PL3	PL4	PL5	PL6	CB1	CB2	CB3	CB4	CB5	CB6	CB7	CB8	CB9	CB10	CB11
1	*	0.707	0.707	0.707	0.707	0.707	0.707	0.707	0.707	0.707	0.707	0.707	0.707	0.707	0.707	0.707	0.707	0.707

*: task meaningfulness is standardized based on the sample mean and standard deviation for all teams.

Member	TM	PL1	PL2	PL3	PL4	PL5	PL6	CB1	CB2	CB3	CB4	CB5	CB6	CB7	CB8	CB9	CB10	CB11
1	0.703	0.000	0.000	0.000	0.000	0.000	0.707	0.000	0.707	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
2	0.703	0.000	0.000	0.707	0.000	0.000	0.000	0.000	0.707	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
3	0.127	0.000	0.000	0.707	0.000	0.000	0.000	0.000	0.707	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
4	-0.448	0.000	0.000	0.000	0.000	0.707	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.707	0.000	0.000	0.000	
Rescaled mean	0.271	0.000	0.000	0.354	0.000	0.177	0.177	0.000	0.530	0.000	0.000	0.000	0.000	0.177	0.000	0.000	0.000	

Total sum of squares (denominator for faultline calculation) is 2.911.

A group with n members can potentially be split into two subgroups in $S = (2^{n-1} - 1)$ ways. The ratio of the sum of squares between the subgroups and the total sum of squares will be computed for each possible split:

Subgroup Characteristic Averages for split #1																					
Split 1(g=1)	Member	ng	TM	PL1	PL2	PL3	PL4	PL5	PL6	CB1	CB2	CB3	CB4	CB5	CB6	CB7	CB8	CB9	CB10	CB11	
Subgroup 1	1	1	0.703	0.000	0.000	0.000	0.000	0.000	0.707	0.000	0.707	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Subgroup 2	2,3,4	3	0.127	0.000	0.000	0.471	0.000	0.236	0.000	0.000	0.471	0.000	0.000	0.000	0.000	0.236	0.000	0.000	0.000	0.000	
Between Group Sum of Squares for Characteristics split #1																					
Subgroup 1	1	1	0.186	0.000	0.000	0.125	0.000	0.031	0.281	0.000	0.031	0.000	0.000	0.000	0.000	0.031	0.000	0.000	0.000	0.000	
Subgroup 2	2,3,4	3	0.062	0.000	0.000	0.042	0.000	0.010	0.094	0.000	0.010	0.000	0.000	0.000	0.000	0.010	0.000	0.000	0.000	0.000	
Summary for split #1																					
Total between group sum of squares								0.915	Faultine for split #1							0.31					

Subgroup Characteristic Averages for split #2																					
Split 2(g=2)	Member	ng	TM	PL1	PL2	PL3	PL4	PL5	PL6	CB1	CB2	CB3	CB4	CB5	CB6	CB7	CB8	CB9	CB10	CB11	
Subgroup 1	2	1	0.703	0.000	0.000	0.707	0.000	0.000	0.000	0.000	0.707	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Subgroup 2	1,3,4	3	0.127	0.000	0.000	0.236	0.000	0.236	0.236	0.000	0.471	0.000	0.000	0.000	0.000	0.236	0.000	0.000	0.000	0.000	
Between Group Sum of Squares for Characteristics split #2																					
Subgroup 1	2	1	0.186	0.000	0.000	0.125	0.000	0.031	0.031	0.000	0.031	0.000	0.000	0.000	0.000	0.031	0.000	0.000	0.000	0.000	
Subgroup 2	1,3,4	3	0.062	0.000	0.000	0.042	0.000	0.010	0.010	0.000	0.010	0.000	0.000	0.000	0.000	0.010	0.000	0.000	0.000	0.000	
Summary for split #2																					
Total between group sum of squares								0.582	Faultine for split #2							0.20					

Subgroup Characteristic Averages for split #3																				
Split 3(g=3)	Member	ng	TM	PL1	PL2	PL3	PL4	PL5	PL6	CB1	CB2	CB3	CB4	CB5	CB6	CB7	CB8	CB9	CB10	CB11
Subgroup 1	3	1	0.127	0.000	0.000	0.707	0.000	0.000	0.000	0.000	0.707	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Subgroup 2	1,2,4	3	0.319	0.000	0.000	0.236	0.000	0.236	0.236	0.000	0.471	0.000	0.000	0.000	0.000	0.236	0.000	0.000	0.000	0.000
Between Group Sum of Squares for Characteristics split #3																				
Subgroup 1	3	1	0.021	0.000	0.000	0.125	0.000	0.031	0.031	0.000	0.031	0.000	0.000	0.000	0.000	0.031	0.000	0.000	0.000	0.000
Subgroup 2	1,2,4	3	0.007	0.000	0.000	0.042	0.000	0.010	0.010	0.000	0.010	0.000	0.000	0.000	0.000	0.010	0.000	0.000	0.000	0.000
Summary for split #3																				
Total between group sum of squares								0.361						Faultine for split #3				0.12		

Subgroup Characteristic Averages for split #4																				
Split 4(g=4)	Member	ng	TM	PL1	PL2	PL3	PL4	PL5	PL6	CB1	CB2	CB3	CB4	CB5	CB6	CB7	CB8	CB9	CB10	CB11
Subgroup 1	4	1	-0.448	0.000	0.000	0.000	0.000	0.707	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.707	0.000	0.000	0.000	0.000
Subgroup 2	1,2,3	3	0.511	0.000	0.000	0.471	0.000	0.000	0.236	0.000	0.707	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Between Group Sum of Squares for Characteristics split #4																				
Subgroup 1	4	1	0.518	0.000	0.000	0.125	0.000	0.281	0.031	0.000	0.281	0.000	0.000	0.000	0.000	0.281	0.000	0.000	0.000	0.000
Subgroup 2	1,2,3	3	0.173	0.000	0.000	0.042	0.000	0.094	0.010	0.000	0.094	0.000	0.000	0.000	0.000	0.094	0.000	0.000	0.000	0.000
Summary for split #4																				
Total between group sum of squares								2.023						Faultine for split #4				0.70		

Subgroup Characteristic Averages for split #5																					
Split 5(g=5)	Member	ng	TM	PL1	PL2	PL3	PL4	PL5	PL6	CB1	CB2	CB3	CB4	CB5	CB6	CB7	CB8	CB9	CB10	CB11	
Subgroup 1	1, 2	2	0.703	0.000	0.000	0.354	0.000	0.000	0.354	0.000	0.707	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Subgroup 2	3,4	2	-0.160	0.000	0.000	0.354	0.000	0.354	0.000	0.000	0.354	0.000	0.000	0.000	0.000	0.354	0.000	0.000	0.000	0.000	
Between Group Sum of Squares for Characteristics split #5																					
Subgroup 1	1, 2	2	0.373	0.000	0.000	0.000	0.000	0.063	0.063	0.000	0.063	0.000	0.000	0.000	0.000	0.063	0.000	0.000	0.000	0.000	
Subgroup 2	3,4	2	0.373	0.000	0.000	0.000	0.000	0.063	0.063	0.000	0.063	0.000	0.000	0.000	0.000	0.063	0.000	0.000	0.000	0.000	
Summary for split #5																					
Total between group sum of squares								1.245											Faultine for split #5	0.43	

Subgroup Characteristic Averages for split #6																					
Split 6(g=6)	Member	ng	TM	PL1	PL2	PL3	PL4	PL5	PL6	CB1	CB2	CB3	CB4	CB5	CB6	CB7	CB8	CB9	CB10	CB11	
Subgroup 1	1,3	2	0.415	0.000	0.000	0.354	0.000	0.000	0.354	0.000	0.707	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Subgroup 2	2,4	2	0.127	0.000	0.000	0.354	0.000	0.354	0.000	0.000	0.354	0.000	0.000	0.000	0.000	0.354	0.000	0.000	0.000	0.000	
Between Group Sum of Squares for Characteristics split #6																					
Subgroup 1	1,3	2	0.041	0.000	0.000	0.000	0.000	0.063	0.063	0.000	0.063	0.000	0.000	0.000	0.000	0.063	0.000	0.000	0.000	0.000	
Subgroup 2	2,4	2	0.041	0.000	0.000	0.000	0.000	0.063	0.063	0.000	0.063	0.000	0.000	0.000	0.000	0.063	0.000	0.000	0.000	0.000	
Summary for split #6																					
Total between group sum of squares								0.583												Faultine for split #6	0.20

Subgroup Characteristic Averages for split #7																				
Split 7(g=7)	Member	ng	TM	PL1	PL2	PL3	PL4	PL5	PL6	CB1	CB2	CB3	CB4	CB5	CB6	CB7	CB8	CB9	CB10	CB11
Subgroup 1	1,4	2	0.127	0.000	0.000	0.000	0.000	0.354	0.354	0.000	0.354	0.000	0.000	0.000	0.000	0.354	0.000	0.000	0.000	0.000
Subgroup 2	2,3	2	0.415	0.000	0.000	0.707	0.000	0.000	0.000	0.000	0.707	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Between Group Sum of Squares for Characteristics split #7																				
Subgroup 1	1,4	2	0.041	0.000	0.000	0.250	0.000	0.063	0.063	0.000	0.063	0.000	0.000	0.000	0.000	0.063	0.000	0.000	0.000	0.000
Subgroup 2	2,3	2	0.041	0.000	0.000	0.250	0.000	0.063	0.063	0.000	0.063	0.000	0.000	0.000	0.000	0.063	0.000	0.000	0.000	0.000
Summary for split #7																				
Total between group sum of squares								1.083						Faultine for split #7				0.37		

Hence, the faultline score for this team is the highest faultline score based on the strongest group split (split # 4) which is 0.70.