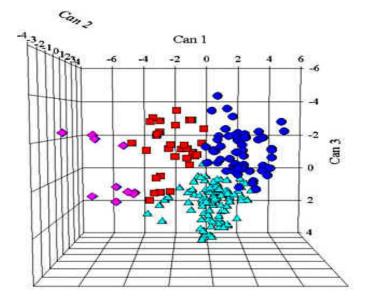
# **Cluster Analysis**



Fran Mentch and Jennie Ford Cleveland State University COM 631

## I. Model

#### Variable 1: Scale of Political Discussion Network Standardized (frequency, diversity, size)

Q24. I generally discuss political candidates and issues with neighbors at election time. Q25. I generally discuss political candidates and issues with family and friends at election time.

Q80. How many days in the past week did you engage in political discussion with friends and family, never, once, a couple times, almost every day, or several times a day? (4-several times a day; 3-almost every day; 2-a couple times; 1-once; 0-never; 9-missing information/don't know)

Q81. How often do you discuss politics with people whose political views are different from yours--almost never, seldom, sometimes, or frequently? (1-almost never; 2-seldom; 3-sometimes; 4-frequently; 9-missing information/don't know)

Q82. About how many people do you discuss politics with on a regular basis, none, one, two or three, five to ten, or more than that? (4-more than that; 3-five to ten; 2-two or three; 1-one; 0-none; 9-missing information/don't know)

(PolDiscNetwork=ZQ24+ZQ25+ZQ80+ZQ81+ZQ82; a=.71)

#### Variable 2: Scale of Political Involvement/Activity Standardized

Q83. attended meetings of your town or city council

Q84. attended a political meeting or rally.

Q85. worn a button or put a sticker on your car.

Q86. voted in the 2004 presidential election

Q87. participated in a march or rally

Q88. helped circulate or signed a petition

Q89. solicited political funds.

Q90. contributed money to a party or candidate. (PolActivity1=Q83+Q84+Q85+Q86+Q87+Q88+Q89+Q90; a=.74)

#### Variable 3: Scale of Political Activity 2 Standardized

Q91. Contacted a public official about some issue. Q92. Emailed, written a letter, or called media about some public issue. (PolActivity2= PolActivity1+Q91+Q92; a=.79)

#### Variable 4: Scale of Perceived Political Efficacy Standardized

Q31: Public officials don't care much what people like me think. Q32: Other than voting, people like me have little influence over local government actions.

Q33: People like me don't have any say about what the government does. (PolEfficacy=ZQ31+ZQ32+ZQ33; a=.75)

#### Variable 5: Scale of Perceived Political Knowledge Standardized

Q79: How knowledgeable would you say you are about politics and current events on a 0 to 10 scale where 10 is very knowledgeable and 0 is not at all knowledgeable?

#### Variable 6: Scale of Cosmopolitaness Standardized Q97: I enjoy learning about other peoples and cultures.

Q98: I think of myself as a citizen of the world.

Variable 7: ZQ4 How would you rate the overall quality of life available in the community where you live

Variable 8: ZQ5 How would you rate the overall quality of life available in the neighborhood where you live

## Cluster 1: Politically Fueled, living the good life





Cluster 2: Not getting politically involved, where I live is ok



Cluster 3: Eh, I'm ok with politics but I'm not happy where I live and I can't change politics

# All 8 variables were standardized.

# II. Running SPSS

# Analyze > Classify > Hierarchical Cluster

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Select the standardized internal variables (ZPerceived Political knowledge, ZPolitical Efficacy, ZPolitical Discussion Network, ZQOL Community, ZQOL Neighborhood, ZCosmopolitanness, ZPolitical Activity 1, ZPolitical Activity 2)

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Click "Statistics" box and select "Range of Solutions", select 3-6 (This number is based on your assumptions, another option may be 4-12)

Also, make sure "Agglomeration Schedule" is checked.

Continue.

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Select "Plots" tab, and choose either "Dendrogram" or something under "Icicle".

Neither is required for five stats; however, SPSS will make you select one to continue.

# Continue.

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Click "Method" tab and select "Ward's Method" from drop down menu.

# Select "Squared Euclidean Distance"

# Continue.

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Select "Save" tab, set range of solutions for a minimum of "3" and maximum of "6" clusters. (4-12)

## Continue

# OK

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This marks the end of the use of the actual Cluster procedure in SPSS. It has produced an Agglomerative Schedule and a Cluster Membership table, and has created and saved at the end of the dataset a number of nominal variables (in this case, a 3-cluster variable, a 4-cluster variable, a 5-cluster variable, and a 6-cluster variable). Further Frequencies and ANOVA analyses will help decide which cluster solution to select.

# Analyze > Descriptive Statistics > Frequencies

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Select the cluster variables "Ward Method" 3-6 which can be found at the bottom of the list, since they have just been created, to run your frequencies on.

(Note: When you are running your own analyses you may want to change the "Label" on the cluster-created nominal variables from all "Ward Method" to something more meaningful.)

# OK.

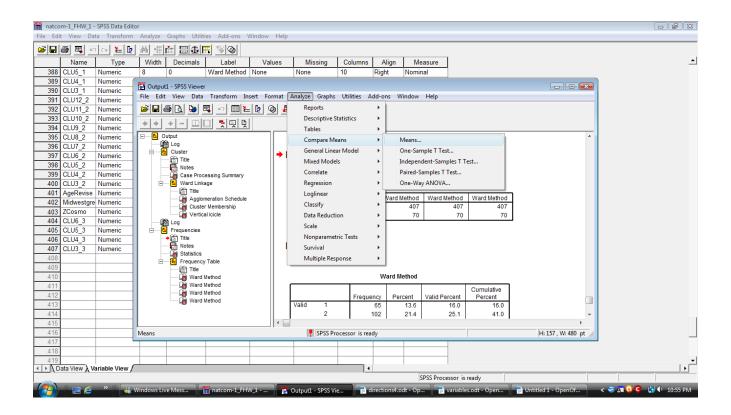
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8 CL	_U5_1	Numeric	8	0	Ward Method	None		None	10	Right	Nominal				
9 CL	_U4_1	Numeric	8	0	Ward Method	None		None	10	Right	Nominal	_			
0 CL	_U3_1	Numeric	8	0	Ward Method	None		None	10	Right	Nominal				
		Numeric	8	0	Ward Method	None		None	10	Right	Nominal				
	_U11_2	Numeric	8	0	Ward Method	None		None	10	Right	Nominal				
		Numeric	8	0	Ward Method	None		None	10	Right	Nominal				
		Numeric	8	0	Ward Method			None	10	Right	Nominal				
	_U8_2	Numeric	8	0	Ward Method			None	10	Right	Nominal				
	_U7_2	Numeric	8	0		None	💷 Frequ	iencies				×			
	_U6_2	Numeric	8	0	Ward Method	None			14-	ariable(s):					
	_U5_2	Numeric	8	0		None		d Method 🛛 🔺	_	Ward Metho		ОК			
	_U4_2	Numeric	8	0		None		d Method		Ward Metho		Paste			
	_U3_2	Numeric	8	0		None		d Method d Method		Ward Metho		Reset			
	-	Numeric	8	2	AgeRevised	None		Revised [AgeR		Ward Metho	bd -	Heset			
	idwestgre		1	0		{1, m		9:Gender [Midv				Cancel			
		Numeric	11	5	Zscore: COM			ore: COMPUTI				Help			
		Numeric	8	0		None	·				-				
	_U5_3	Numeric	8	0	Ward Method				1						
	_U4_3	Numeric	8	0			Displa	ay frequency tables							
	_U3_3	Numeric	8	0	Ward Method	None									
8									Statistics	Charts	Format				
)						_						_			
)												_			
1												_			
2												_			
3												_			
4												_			
5												_			
6												_			
7										-		_			
9												_			
	Viow Ma	riable View /							•						
Dala	view V va	mable view /								1		cessor is r			 

Run Means with ANOVA test to compare means among the clusters.

Analyze > Compare Means > Means

For Dependent List, input all variables, both internal and external.

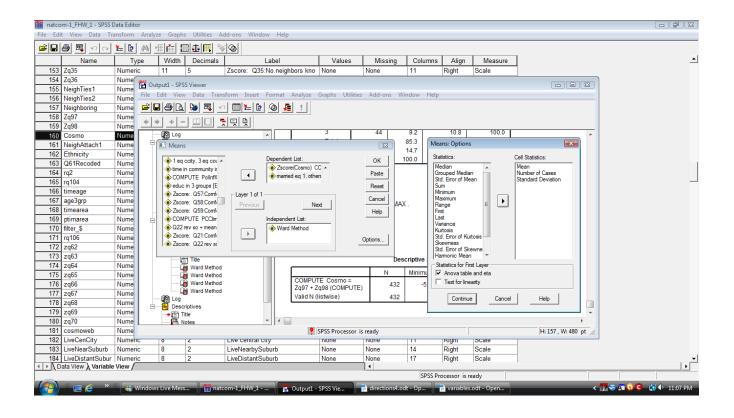
For "Independent List", select the Ward Method ?? (whichever nominal clustercreated variable you wish to examine)



# Click "Options" tab and check "ANOVA table and eta"

# Continue

OK



III. SPSS Output CLUSTER Zq5 Zq4 ZScpolknow Zpolact1 ZPolDiscNet ZPolEfficacy ZPolActivity2 ZCosmo /METHOD WARD /MEASURE=SEUCLID /PRINT SCHEDULE CLUSTER(3,6) /PLOT DENDROGRAM VICICLE /SAVE CLUSTER(3,6).

## Cluster

	Notes	
Output Created		21-APR-2013 15:59:42
Comments		
	Data	E:\FranHW
	Data	atcom2-2.sav
	Active Dataset	DataSet1
loout	File Label	CP05
Input	Filter	<none></none>
	Weight	<none></none>
	Split File	<none></none>
	N of Rows in Working Data File	477
	Definition of Missing	User-defined missing values
	Definition of Missing	are treated as missing.
Missing Value Handling		Statistics are based on cases
	Cases Used	with no missing values for any
		variable used.

12

			CLUSTER Zq5	Zq4
			ZScpolknow Zpol	lact1
			ZPolDiscNet ZPo	olEfficacy
			ZPolActivity2 ZCo	osmo
			/METHOD WAR	RD
Syntax			/MEASURE=SE	UCLID
			/PRINT SCHED	ULE
			CLUSTER(3,6)	
			/PLOT DENDRO	OGRAM
			VICICLE	
			/SAVE CLUSTE	R(3,6).
Resources	Processor Time			00:00:02.65
Resources	Elapsed Time			00:00:01.99
		CLU6_2	Ward Method	
Variables Created or Madified	Cluster Membership	CLU5_2	Ward Method	
Variables Created or Modified	Cluster wembership	CLU4_2	Ward Method	
		CLU3_2	Ward Method	

[DataSet1] E:\FranHW\natcom2-2.sav

## Case Processing Summary<sup>a,b</sup>

		Cas	ses					
Va	lid	Miss	sing	Total				
N	Percent	N	Percent	N	Percent			
397	83.2	80	16.8	477	100.0			

a. Squared Euclidean Distance used

b. Ward Linkage

## Ward Linkage

#### Agglomeration Schedule

#### NOTE: Pages have been deleted from this agglomeration schedule output.

Stage	Cluster C	ombined	Coefficients	Stage Cluster	First Appears	Next Stage
	Cluster 1	Cluster 2		Cluster 1	Cluster 2	
1	72	312	.074	0	0	171
2	225	366	.156	0	0	33
3	222	325	.254	0	0	210
4	254	376	.355	0	0	168
5	28	87	.488	0	0	185
6	48	52	.621	0	0	88
7	63	309	.760	0	0	128
8	83	384	.905	0	0	95
9	123	259	1.054	0	0	122
10	11	251	1.219	0	0	220
11	311	345	1.388	0	0	110
12	264	308	1.569	0	0	32
13	15	354	1.782	0	0	109
14	58	322	1.995	0	0	236
15	193	212	2.212	0	0	233
16	20	410	2.430	0	0	81
17	261	355	2.651	0	0	201
18	127	287	2.890	0	0	142
19	262	288	3.140	0	0	148
20	382	449	3.405	0	0	226
21	280	379	3.679	0	0	72
22	404	425	3.954	0	0	278
23	361	455	4.234	0	0	339
24	84	211	4.521	0	0	225
25	272	450	4.813	0	0	160
26	64	188	5.108	0	0	187
27	92	368	5.405	0	0	189
28	197	473	5.703	0	0	49
29	190	267	6.013	0	0	148
30	205	293	6.326	0	0	152
31	55	252	6.648	0	0	155

Stage	Cluster C	ombined	Coefficients	ficients Stage Cluster First Appears		
	Cluster 1	Cluster 2		Cluster 1	Cluster 2	
32	22	264	6.971	0	12	242
33	225	353	7.297	2	0	41
34	44	320	7.623	0	0	174
35	227	291	7.949	0	0	127
36	279	386	8.282	0	0	107
37	95	117	8.617	0	0	53
38	57	400	8.953	0	0	197
39	107	464	9.290	0	0	196
40	207	319	9.640	0	0	214
41	23	225	9.990	0	33	139
42	296	356	10.341	0	0	191
43	286	438	10.692	0	0	137
44	164	377	11.044	0	0	163
45	45	380	11.405	0	0	223
46	314	443	11.768	0	0	273
47	76	347	12.151	0	0	117
48	192	393	12.537	0	0	250
49	197	297	12.936	28	0	228
50	103	469	13.338	0	0	159
51	101	253	13.740	0	0	183
52	112	476	14.144	0	0	172
53	95	451	14.549	37	0	265
54	315	435	14.960	0	0	237
55	13	426	15.374	0	0	251
56	96	420	15.788	0	0	128
57	133	414	16.206	0	0	120
58	131	153	16.626	0	0	194
59	396	453	17.047	0	0	222
60	292	446	17.471	0	0	104
61	346	406	17.909	0	0	238
62	182	284	18.347	0	0	142

**Agglomeration Schedule** 

Stage	Cluster C	ombined	Coefficients	Stage Cluster	Stage Cluster First Appears	
	Cluster 1	Cluster 2		Cluster 1	Cluster 2	
63	40	427	18.793	0	0	157
64	234	441	19.245	0	0	93
65	33	213	19.699	0	0	173
66	301	374	20.153	0	0	234
67	185	202	20.613	0	0	147
68	66	248	21.075	0	0	294
69	14	194	21.536	0	0	176
70	199	229	22.003	0	0	135
71	180	423	22.480	0	0	251
72	208	280	22.957	0	21	124
73	269	373	23.434	0	0	190
74	99	218	23.914	0	0	107
75	61	148	24.394	0	0	250
76	81	168	24.878	0	0	264
77	46	100	25.364	0	0	207
78	411	463	25.857	0	0	224
79	277	444	26.355	0	0	151
80	150	191	26.855	0	0	219
81	1	20	27.363	0	16	195
82	114	176	27.872	0	0	276
83	170	310	28.385	0	0	213
84	224	250	28.898	0	0	164
85	85	333	29.412	0	0	136
86	119	419	29.927	0	0	319
87	54	173	30.457	0	0	194
88	48	388	30.988	6	0	238
89	97	147	31.529	0	0	293
90	36	132	32.090	0	0	161
91	60	306	32.660	0	0	115
92	122	383	33.232	0	0	230
93	234	447	33.806	64	0	216

Stage	Cluster C	ombined	Coefficients	Stage Cluster	First Appears	Next Stage
	Cluster 1	Cluster 2		Cluster 1	Cluster 2	
349	14	326	610.313	293	239	365
350	5	158	618.554	312	295	376
351	13	190	626.797	296	273	371
352	18	22	635.434	319	242	369
353	79	203	644.295	315	237	363
354	43	200	653.246	336	291	364
355	32	37	662.724	289	301	383
356	258	461	672.925	320	0	364
357	114	121	684.007	276	260	368
358	15	30	695.417	327	269	387
359	47	85	706.861	341	308	368
360	6	46	718.410	330	322	380
361	228	422	730.787	306	0	375
362	12	44	743.172	303	311	372
363	7	45	755.832	280	347	366
364	3	79	769.566	314	352	374
365	43	258	783.381	353	355	386
366	14	25	797.757	348	316	373
367	4	7	812.854	323	362	384
368	23	107	829.345	318	331	381
369	47	114	846.071	358	356	383
370	18	118	862.872	351	325	379
371	33	35	880.290	277	329	390
372	13	27	898.155	350	340	385
	9	12	916.783	337	361	380

Stage	Cluster C	ombined	Coefficients	Stage Cluster	First Appears	Next Stage
	Cluster 1	Cluster 2		Cluster 1	Cluster 2	
373	14	28	938.708	365	333	385
374	3	73	961.497	363	335	384
375	101	228	984.486	338	360	382
376	5	8	1008.349	349	344	379
377	167	361	1034.320	342	339	392
378	1	48	1062.092	332	345	381
379	5	18	1096.524	376	369	394
380	6	9	1132.121	359	372	389
381	1	23	1168.003	378	367	387
382	101	175	1204.768	375	343	386
383	32	47	1241.869	354	368	391
384	3	4	1279.232	374	366	388
385	13	14	1320.021	371	373	389
386	43	101	1363.025	364	382	391
387	1	15	1407.838	381	357	390
388	3	31	1457.509	384	346	393
389	6	13	1515.383	380	385	393
390	1	33	1580.520	387	370	394
391	32	43	1662.554	383	386	392
392	32	167	1781.751	391	377	395
393	3	6	1935.210	388	389	395
394	1	5	2103.751	390	379	396
395	3	32	2395.462	393	392	396
396	1	3	2945.333	394	395	0

NOTE: Pages have been deleted from the Cluster Membership output.
---

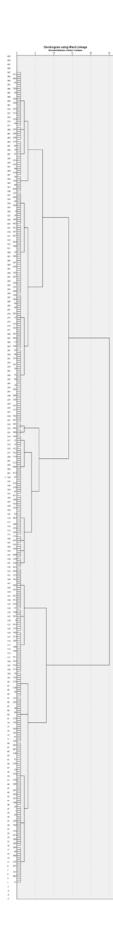
Cluster Membership							
Case	6 Clusters	5 Clusters	4 Clusters	3 Clusters			
1	1	1	1	1			
3	2	2	2	2			
4	2	2	2	2			
5	3	3	3	1			
6	4	4	2	2			
7	2	2	2	2			
8	3	3	3	1			
9	4	4	2	2			
10	2	2	2	2			

-	-			
11	2	2	2	2
12	4	4	2	2
13	4	4	2	2
14	4	4	2	2
15	1	1	1	1
16	1	1	1	1
18	3	3	3	1
20	1	1	1	1
22	3	3	3	1
23	1	1	1	1
24	4	4	2	2
25	4	4	2	2
26	4	4	2	2
27	4	4	2	2
28	4	4	2	2
29	4	4	2	2
30	1	1	1	1
31	2	2	2	2
32	5	5	4	3
33	1	1	1	1
34	4	4	2	2
35	1	1	1	1
36	4	4	2	2

Case	6 Clusters	5 Clusters	4 Clusters	3 Clusters
37	5	5	4	3
40	3	3	3	1
42	2	2	2	2
43	5	5	4	3
44	4	4	2	2
45	2	2	2	2
46	4	4	2	2
47	5	5	4	3
48	1	1	1	1
49	2	2	2	2
50	4	4	2	2
51	3	3	3	1
52	1	1	1	1
53	1	1	1	1
54	3	3	3	1
55	1	1	1	1
57	1	1	1	1
58	4	4	2	2
59	2	2	2	2
60	4	4	2	2
61	1	1	1	1
62	4	4	2	2

NOTE: The icicle charts and dendrograms display more properly in the SPSS output.

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FREQUENCIES VARIABLES=CLU6\_2 CLU5\_2 CLU4\_2 CLU3\_2
/ORDER=ANALYSIS.

## Frequencies

Notes					
Output Created		21-APR-2013 16:03:00			
Comments					
	Data	E:\FranHW			
	Dala	atcom2-2.sav			
	Active Dataset	DataSet1			
	File Label	CP05			
Input	Filter	<none></none>			
	Weight	<none></none>			
	Split File	<none></none>			
	N of Rows in Working Data	477			
	File	477			
	Definition of Missing	User-defined missing values			
Missing Value Handling	Deminion of Missing	are treated as missing.			
wissing value handling	Cases Used	Statistics are based on all			
	04363 0364	cases with valid data.			
		FREQUENCIES			
Syntax		VARIABLES=CLU6_2			
Syntax		CLU5_2 CLU4_2 CLU3_2			
		/ORDER=ANALYSIS.			
Pagauraga	Processor Time	00:00:00.02			
Resources	Elapsed Time	00:00:00.02			

[DataSet1] E:\FranHW\natcom2-2.sav

_	Statistics							
		Ward Method	Ward Method	Ward Method	Ward Method			
		CL6	CL5	CL4	CL3			
N	Valid	397	397	397	397			
IN	Missing	80	80	80	80			

## Frequency Table

Ward Method CL6							
		Frequency	Percent	Valid Percent	Cumulative Percent		
	1	103	21.6	25.9	25.9		
	2	59	12.4	14.9	40.8		
	3	51	10.7	12.8	53.7		
Valid	4	113	23.7	28.5	82.1		
	5	65	13.6	16.4	98.5		
	6	6	1.3	1.5	100.0		
	Total	397	83.2	100.0			
Missing	System	80	16.8				
Total		477	100.0				

Ward Method CL6

Ward Method CL5

		Frequency	Percent	Valid Percent	Cumulative Percent
	1	103	21.6	25.9	25.9
	2	59	12.4	14.9	40.8
	3	51	10.7	12.8	53.7
Valid	4	113	23.7	28.5	82.1
	5	71	14.9	17.9	100.0
	Total	397	83.2	100.0	
Missing	System	80	16.8		
Total		477	100.0		

Wald Method CL4							
		Frequency	Percent	Valid Percent	Cumulative		
					Percent		
	1	103	21.6	25.9	25.9		
	2	172	36.1	43.3	69.3		
Valid	3	51	10.7	12.8	82.1		
	4	71	14.9	17.9	100.0		
	Total	397	83.2	100.0			
Missing	System	80	16.8				
Total		477	100.0				

Ward Method CL4

Ward Method CL3

		Frequency	Percent	Valid Percent	Cumulative
					Percent
	1	154	32.3	38.8	38.8
Valid	2	172	36.1	43.3	82.1
valiu	3	71	14.9	17.9	100.0
	Total	397	83.2	100.0	
Missing	System	80	16.8		
Total		477	100.0		

RECODE Midwestgreat (1=0) (2=1) INTO MidwestGL1. VARIABLE LABELS MidwestGL1 'MidwestGL1'. EXECUTE. DATASET ACTIVATE DataSet1. SAVE OUTFILE='E:\FranHW\natcom2-2.sav' /COMPRESSED. RECODE age3grp (1 thru 2=0) (3 thru 4=1) INTO age2grpfinal. VARIABLE LABELS age2grpfinal 'age2grpfinal'. EXECUTE. MEANS TABLES=MidwestGL1 femaleness whiteness incomerecode educatrecode marriedness ZScpolknow Zpolact1 ZPolDiscNet ZPolEfficacy ZPolActivity2 ZCosmo Zq4 Zq5 age2grpfinal BY CLU3\_2 /STATISTICS ANOVA.

## Means

	Notes	
Output Created		21-APR-2013 18:31:18
Comments		
	Data	E:\FranHW
	Data	atcom2-2.sav
	Active Dataset	DataSet1
	File Label	CP05
Input	Filter	<none></none>
	Weight	<none></none>
	Split File	<none></none>
	N of Rows in Working Data	477
	File	477
		For each dependent variable
		in a table, user-defined
	Definition of Missing	missing values for the
	Definition of Missing	dependent and all grouping
		variables are treated as
Missing Value Handling		missing.
		Cases used for each table
		have no missing values in any
	Cases Used	independent variable, and not
		all dependent variables have
		missing values.
		MEANS
		TABLES=MidwestGL1
		femaleness whiteness
		incomerecode educatrecode
Syntax		marriedness ZScpolknow
Syntax		Zpolact1 ZPolDiscNet
		ZPolEfficacy ZPolActivity2
		ZCosmo Zq4 Zq5
		age2grpfinal BY CLU3_2
		/STATISTICS ANOVA.
Dessuress	Processor Time	00:00:00.03
Resources	Elapsed Time	00:00:00

		Cases					
	Inclu	ded	Excluded		Total		
	N	Percent	Ν	Percent	N	Percent	
MidwestGL1 * Ward Method CL3	395	82.8%	82	17.2%	477	100.0%	
Gender * Ward Method CL3	395	82.8%	82	17.2%	477	100.0%	
Ethnicity * Ward Method CL3	391	82.0%	86	18.0%	477	100.0%	
Income * Ward Method CL3	330	69.2%	147	30.8%	477	100.0%	
Education * Ward Method	392	82.2%	85	17.8%	477	100.0%	
CL3							
Married * Ward Method CL3	393	82.4%	84	17.6%	477	100.0%	
Zscore(q79) Q79:Perceived							
pol. knowledge * Ward	397	83.2%	80	16.8%	477	100.0%	
Method CL3							
Zscore(PolActivity1)							
COMPUTE PolActivity1 =							
q83 + q84 + q85 + q86 + q87	397	83.2%	80	16.8%	477	100.0%	
+ q88 + q89 + q90	007	00.2 /0	00	10.070		100.070	
(COMPUTE) * Ward Method							
CL3							
Zscore: COMPUTE							
PolDiscNet = Zq24 + Zq25 +							
Zq80 + Zq81 + Zq82	397	83.2%	80	16.8%	477	100.0%	
(COMPUTE) * Ward Method							
CL3							
Zscore: COMPUTE							
PolEfficacy = Zq31 + Zq32 +							
Zq33 (COMPUTE) * Ward	397	83.2%	80	16.8%	477	100.0%	
Method CL3							
Zscore: COMPUTE							
PolActivity2 = PolActivity1 +							
q91 + q92 (COMPUTE) *	397	83.2%	80	16.8%	477	100.0%	
Ward Method CL3							

## Case Processing Summary

		Cases					
	Inclu	ded	Excluded		Total		
	N	Percent	Ν	Percent	Ν	Percent	
Zscore: COMPUTE Cosmo							
= Zq97 + Zq98 (COMPUTE)	397	83.2%	80	16.8%	477	100.0%	
* Ward Method CL3							
Zscore: Q4:Community QOL	397	83.2%	80	16.8%	477	100.0%	
* Ward Method CL3	597	05.278	00	10.078	477	100.078	
Zscore: Q5:Neighborfhood	397	83.2%	80	16.8%	477	100.0%	
QOL * Ward Method CL3	557	00.2 /0	00	10.070	-11	100.070	
age2grpfinal * Ward Method	394	82.6%	83	17.4%	477	100.0%	
CL3	004	02.070	00	70 ד. 11	- 11	100.070	

Case	Processing	Summary	
------	------------	---------	--

	Report							
Ward M	ethod CL3	MidwestGL1	Gender	Ethnicity	Income	Education	Married	
	Mean	.47	.47	.82	1.88	2.18	.68	
1	Ν	154	154	152	128	152	152	
	Std. Deviation	.501	.501	.383	.838	.603	.469	
	Mean	.60	.60	.76	1.43	1.67	.53	
2	Ν	172	172	169	140	169	171	
	Std. Deviation	.492	.492	.426	.613	.634	.500	
	Mean	.51	.51	.63	1.32	1.62	.50	
3	Ν	69	69	70	62	71	70	
	Std. Deviation	.504	.504	.487	.621	.663	.504	
	Mean	.53	.53	.76	1.58	1.86	.58	
Total	Ν	395	395	391	330	392	393	
	Std. Deviation	.499	.499	.426	.748	.677	.494	

#### Report

		Порон		
Ward Method CL3	Zscore(q79)	Zscore(PolActivity1	Zscore:	Zscore:
	Q79:Perceived pol.	) COMPUTE	COMPUTE	COMPUTE
	knowledge	PolActivity1 = q83 +	PolDiscNet = Zq24	PolEfficacy = Zq31
		q84 + q85 + q86 +	+ Zq25 + Zq80 +	+ Zq32 + Zq33
		q87 + q88 + q89 +	Zq81 + Zq82	(COMPUTE)
		q90 (COMPUTE)	(COMPUTE)	

	Mean	.6540057	.5534744	.6876086	6867245
1	Ν	154	154	154	154
	Std. Deviation	.55525947	.91550075	.69147141	.76554936
	Mean	5282721	5698196	6724879	.3815252
2	Ν	172	172	172	172
	Std. Deviation	.97809859	.61247327	.80543481	.78985161
	Mean	.0654380	.1351640	.2174096	.5176179
3	Ν	71	71	71	71
	Std. Deviation	.86335560	.99636558	.83316356	1.03660303
	Mean	.0365244	0080032	.0142567	0085198
Total	Ν	397	397	397	397
	Std. Deviation	.97517749	.96159648	.98799644	.99013174

	Report						
Ward Method CL3		Zscore: COMPUTE PolActivity2 =	Zscore: COMPUTE Cosmo = Zq97 + Zq98	Zscore: Q4:Community QOL	Zscore: Q5:Neighborfhood QOL		
		PolActivity1 + q91 + q92 (COMPUTE)	(COMPUTE)				
	Mean	.5659477	.3022887	.3016817	.3891111		
1	Ν	154	154	154	154		
	Std. Deviation	.89922709	.89050038	.63713526	.54617014		
	Mean	5753555	0603848	.2364692	.2458731		
2	Ν	172	172	172	172		
	Std. Deviation	.62013990	.91743073	.67909107	.70720204		
	Mean	.1396602	2142416	9972617	-1.1989991		
3	Ν	71	71	71	71		
	Std. Deviation	1.01370763	1.09415064	1.26753145	1.06655874		
	Mean	0047590	.0527837	.0411237	.0430336		
Total	Ν	397	397	397	397		
	Std. Deviation	.96537391	.96125519	.93609802	.93452390		

Report			
Ward Method CL	-3	age2grpfinal	
	Mean	.54	
1	Ν	153	
	Std. Deviation	.500	
	Mean	.48	
2	Ν	170	
	Std. Deviation	.501	
	Mean	.37	
3	Ν	71	
	Std. Deviation	.485	
	Mean	.48	
Total	Ν	394	
	Std. Deviation	.500	

Report

ANOVA Table

			Sum of Squares	df	Mean Square
	Between Groups	(Combined)	1.326	2	.663
MidwestGL1 * Ward Method	Within Groups		96.962	392	.247
CL3	Total		98.289	394	
	Between Groups	(Combined)	1.326	2	.663
Gender * Ward Method CL3	Within Groups		96.962	392	.247
	Total		98.289	394	
	Between Groups	(Combined)	1.800	2	.900
Ethnicity * Ward Method CL3	Within Groups		69.079	388	.178
	Total		70.880	390	
	Between Groups	(Combined)	19.048	2	9.524
Income * Ward Method CL3	Within Groups		165.076	327	.505
	Total		184.124	329	
Education * Ward Method CL3	Between Groups	(Combined)	26.265	2	13.132
	Within Groups		153.018	389	.393
	Total		179.283	391	
Married * Ward Method CL3	Between Groups	(Combined)	2.285	2	1.143

1					
	Within Groups		93.277	390	.239
	Total		95.562	392	
Zscore(q79) Q79:Perceived	Between Groups	(Combined)	113.644	2	56.822
pol. knowledge * Ward	Within Groups		262.940	394	.667
Method CL3	Total		376.585	396	
Zscore(PolActivity1)	Between Groups	(Combined)	104.295	2	52.147
COMPUTE PolActivity1 =	Within Groups		261.874	394	.665
q83 + q84 + q85 + q86 + q87					
+ q88 + q89 + q90 (COMPUTE) * Ward Method	Total		366.168	396	
CL3					
Zscore: COMPUTE	Between Groups	(Combined)	153.873	2	76.936
PolDiscNet = Zq24 + Zq25 +	Within Groups		232.678	394	.591
Zq80 + Zq81 + Zq82					
(COMPUTE) * Ward Method	Total		386.550	396	
CL3					
Zscore: COMPUTE	Between Groups	(Combined)	116.656	2	58.328
PolEfficacy = Zq31 + Zq32 +					
Zq33 (COMPUTE) * Ward	Within Groups		271.567	394	.689
Method CL3					

#### **ANOVA Table**

			F	Sig.
	Between Groups	(Combined)	2.681	.070
MidwestGL1 * Ward Method CL3	Within Groups			
	Total			
	Between Groups	(Combined)	2.681	.070
Gender * Ward Method CL3	Within Groups			
	Total			
	Between Groups	(Combined)	5.056	.007
Ethnicity * Ward Method CL3	Within Groups			
	Total			
	Between Groups	(Combined)	18.866	.000
Income * Ward Method CL3	Within Groups			
	Total			
	Between Groups	(Combined)	33.385	.000
Education * Ward Method CL3	Within Groups			
	Total			
Married * Ward Method CL3	Between Groups	(Combined)	4.778	.009
	Within Groups			

Zscore(q79) Q79:Perceived pol. knowledge * Ward Method CL3	Total Between Groups Within Groups Total	(Combined)	85.144	.000
Zscore(PolActivity1) COMPUTE PolActivity1 = q83 + q84 + q85 + q86	Between Groups Within Groups	(Combined)	78.458	.000
+ q87 + q88 + q89 + q90 (COMPUTE) * Ward Method CL3	Total			
Zscore: COMPUTE PolDiscNet = Zq24 + Zq25 + Zq80 + Zq81 + Zq82	Between Groups Within Groups	(Combined)	130.279	.000
(COMPUTE) * Ward Method CL3 Zscore: COMPUTE PolEfficacy =	Total Between Groups	(Combined)	84.624	.000
Zq31 + Zq32 + Zq33 (COMPUTE) * Ward Method CL3	Within Groups			

ANOVA Table					
			Sum of Squares	df	Mean Square
Zscore: COMPUTE					
PolEfficacy = Zq31 + Zq32 + Zq32 + Zq32 (COMPLITE) * Word	Total		388.223	396	
Zq33 (COMPUTE) * Ward Method CL3					
Zscore: COMPUTE	Between Groups	(Combined)	107.639	2	53.820
PolActivity2 = PolActivity1 +	Within Groups		261.412	394	.663
q91 + q92 (COMPUTE) * Ward Method CL3	Total		369.051	396	
Zscore: COMPUTE Cosmo	Between Groups	(Combined)	16.852	2	8.426
= Zq97 + Zq98 (COMPUTE) *	Within Groups		349.056	394	.886
Ward Method CL3	Total		365.909	396	
Zscore: Q4:Community QOL	Between Groups	(Combined)	93.574	2	46.787
* Ward Method CL3	Within Groups		253.433	394	.643
Ward Method CLS	Total		347.007	396	
Zacara: O5:Naighborfbood	Between Groups	(Combined)	135.049	2	67.525
Zscore: Q5:Neighborfhood QOL * Ward Method CL3	Within Groups		210.792	394	.535
QUE Ward Method CL3	Total		345.841	396	
ageOgrafical * Ward Mathed	Between Groups	(Combined)	1.401	2	.700
age2grpfinal * Ward Method	Within Groups		96.937	391	.248
CL3	Total		98.338	393	

### ANOVA Table

	ANOVA			
			F	Sig.
Zscore: COMPUTE PolEfficacy =				
Zq31 + Zq32 + Zq33 (COMPUTE) *	Total			
Ward Method CL3				
Zscore: COMPUTE PolActivity2 =	Between Groups	(Combined)	81.117	.000
PolActivity1 + q91 + q92	Within Groups			
(COMPUTE) * Ward Method CL3	Total			
Zscore: COMPUTE Cosmo = Zq97	Between Groups	(Combined)	9.511	.000
+ Zq98 (COMPUTE) * Ward Method	Within Groups			
CL3	Total			
Zscore: Q4:Community QOL * Ward	Between Groups	(Combined)	72.738	.000
Method CL3	Within Groups			
Method CL3	Total			
Zscore: Q5:Neighborfhood QOL *	Between Groups	(Combined)	126.213	.000
Ward Method CL3	Within Groups			
	Total			
	Between Groups	(Combined)	2.825	.061
age2grpfinal * Ward Method CL3	Within Groups			
	Total			

#### ANOVA Table

Measures of A	Association	
	Eta	Eta Squared
MidwestGL1 * Ward Method		
CL3	.116	.013
Gender * Ward Method CL3	.116	.013
Ethnicity * Ward Method CL3	.159	.025
Income * Ward Method CL3	.322	.103
Education * Ward Method	202	1.10
CL3	.383	.146
Married * Ward Method CL3	.155	.024
Zscore(q79) Q79:Perceived		
pol. knowledge * Ward	.549	.302
Method CL3		
Zscore(PolActivity1)		
COMPUTE PolActivity1 =		
q83 + q84 + q85 + q86 + q87	.534	.285
+ q88 + q89 + q90	.034	.205
(COMPUTE) * Ward Method		
CL3		
Zscore: COMPUTE		
PolDiscNet = Zq24 + Zq25 +		
Zq80 + Zq81 + Zq82	.631	.398
(COMPUTE) * Ward Method		
CL3		
Zscore: COMPUTE		
PolEfficacy = Zq31 + Zq32 +	.548	.300
Zq33 (COMPUTE) * Ward	.040	.300
Method CL3		
Zscore: COMPUTE		
PolActivity2 = PolActivity1 +	.540	.292
q91 + q92 (COMPUTE) *	.540	.292
Ward Method CL3		
Zscore: COMPUTE Cosmo		
= Zq97 + Zq98 (COMPUTE) *	.215	.046
Ward Method CL3		

**Measures of Association** 

Measures of Association	
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	Eta	Eta Squared
Zscore: Q4:Community QOL * Ward Method CL3	.519	.270
Zscore: Q5:Neighborfhood QOL * Ward Method CL3	.625	.390
age2grpfinal * Ward Method CL3	.119	.014

NOTE: The output below is an addendum. This analysis was done on the original variables for income and age.

## Descriptive

	Ν	Minimum	Maximum	Mean	Std. Deviation
Median household income(Number)	342	19934.00	153632.00	44067.6725	17271.28279
AgeUnder5	342	2	14	6.68	1.551
5-9	342	1.10	12.90	7.2304	1.46562
10-14	342	1.00	11.50	7.3898	1.33013
15-19	342	2.70	16.50	7.0556	1.50470
20-24	342	.70	28.10	6.2310	2.96034
25-34	342	3.50	35.60	13.4471	3.64185
35-44	342	10.00	23.90	15.9863	2.06519
45-54	342	3.3	27.1	13.728	2.3944
55-59	342	.30	9.80	4.9567	1.20227
60-64	342	.10	9.60	4.0427	1.11326
65-74	342	.20	17.90	6.9377	2.46199
75-84	342	.10	18.00	4.7371	2.37157
85 and above	342	.00	6.10	1.6143	1.00762
Valid N (listwise)	342				

## Descriptive Statistics

#### Statistics

Ν	Valid	342			
	Missing	135			
Mean		44067.6725			
Media	n	40318.0000			
Mode		29886.00 <sup>a</sup>			
Std. Deviation		17271.28279			
Variance		298297209.271			
Range		133698.00			
Minimum		19934.00			
Maximum		153632.00			

a. Multiple modes exist. The smallest value is shown

#### Statistics

age recoded to midpt					
N	Valid	433			
IN	Missing	44			
Mean		49.0600			
Media	in	45.0000			
Mode		45.00			
Std. D	eviation	n 15.56189			
Variar	nce	242.172			
Range		52.00			
Minimum		19.00			
Maxim	num	71.00			

age recoded to	midpt
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		Frequency	Percent	Valid Percent	Cumulative			
					Percent			
	19.00	14	2.9	3.2	3.2			
Valid	25.00	49	10.3	11.3	14.5			
	35.00	62	13.0	14.3	28.9			
	45.00	100	21.0	23.1	52.0			

	55.00	84	17.6	19.4	71.4
	65.00	57	11.9	13.2	84.5
	71.00	67	14.0	15.5	100.0
	Total	433	90.8	100.0	
Missing	System	44	9.2		
Total		477	100.0		

# IV. Tabling Results

Clusters	Agglomeration Last Step Coeff. This step		Change				
2	2945.333	2395.462	549.871				
3	2395.462	2103.751	291.711				
4	2103.751	1935.21	168.541				
5	1935.210	1781.751	153.459				
6	1781.751	1662.554	119.197				

## Table 1. Agglomeration Coefficient Analysis

## Table 2. Cluster Profiling

Cluster Analysis Table				Total	F	Sig.
Cluster Name	Politically Fueled	Unengaged	Stuck			
Variable N	154	172	71	397		
INTERNAL VARIABLES				GRAND MEAN		
Perceived Political Knowledg	0.654	-0.528	0.065	0.037	85.144	p ≤.001
Political Efficacy	-0.687	0.382	0.517	-0.009	84.624	p ≤.001
Political Discussion Network	-0.688	0.672	0.217	0.014	130.279	p ≤.001
Quality of Life Community	0.302	0.236	-0.998	0.041	72.738	p ≤.001
Quality of Life Neighborhood	0.389	0.246	-1.200	0.043	126.213	p ≤.001
Cosmopoliteness	0.302	-0.060	-0.214	0.053	9.511	p ≤.001
Political Activity 1	0.553	-0.570	0.135	-0.008	78.458	p ≤.001
Political Activity 2	0.566	-0.575	0.140	-0.005	81.117	p ≤.001
EXTERNAL VARIABLES						
Marriedness	0.680	0.530	0.500	0.580	4.778	0.009
Age	0.540	0.480	0.370	0.480	2.825	0.061
Gender	0.470	0.600	0.510	0.530	2.681	0.070
Education	2.180	1.670	1.620	1.860	33.385	0.000
Ethnicity	0.820	0.760	0.630	0.760	5.056	0.007
Income	1.880	1.430	1.320	1.580	18.866	0.000
Zip Code	0.470	0.600	0.510	0.530	2.681	0.070

Cluster	PA1	PA2	POL KNOW	POL DIS	POL EFF	QOL 4	QOL 5	COSMO
1	н	н	н	н	L	н	н	н
2	L	L	L	L	м	м	м	м
3	М	м	м	М	н	L	L	L

Table 3. Optional Summary of Internal Variables.

# V. Write-up

The National Community Survey data set by Jeffres was chosen for cluster analysis using 397 cases from which eight (8) internal or independent variables were selected based on association with political activity and related political perceptions. As the individual variables were made up of disparate measures, all scores were standardized. The internal variables included:

- 1. Perceived Political Knowledge (single measure variable)
- 2. Political Efficacy (3-item scale)
- 3. Political Discussion Network (5-item scale)
- 4. Quality of Life Community (single measure variable)
- 5. Quality of Life Neighborhood (single measure variable)
- 6. Cosmopolitanness (2-item scale)
- 7. Political Activity 1 (8-item scale)
- 8. Political Activity 2 (3-item scale)

A hierarchical agglomerative cluster analysis was performed to discover the natural grouping of the participants. A three cluster solution was chosen using Ward's Method (with squared Euclidian distances). The choice of three clusters was supported by examination of changes in the agglomeration coefficients from the agglomeration table. Dendrogram and icicle plots were run to give a visual representation of the data clusters.

ANOVA analysis was conducted to examine the differences among the three clusters with regard to all eight internal variables. As expected, all either were significantly different among the three clusters. The three clusters have been named: "Politically Fueled", "Unengaged" and "Stuck," based on the levels of the internal variables for the three cluster groupings (see Table 3).

To further profile the three clusters, a complementary ANOVA analysis was conducted to test the significance of the differences among the three clusters against seven (7) demographic/external variables that included:

- 1. Marriedness recoded to O=not married; I=married.
- 2. Age recoded as 0=50 and under; 1 = over 50.
- 3. Gender recoded as 0= male; I=female.
- 4. Education recoded as I=grade school; 2= college; 3=advanced degree.
- 5. Ethnicity recoded as 0=not white I=white.
- Income recoded as 1=50000 and below; 2=51000 to 100000; 3=101000 and above.
- 7. Zip Code recoded as O=not Midwest/Great Lakes; I=Midwest/Great Lakes.

Age and Income were recoded for purposes of data reduction and in order to obtain significant differences between the clusters. As 52% of the sample was 50 years old or older, age 50 seemed to be a natural break in the data. An annual household income of \$50,000 or less was reported by 73.4% of the individuals in our sample. According to the US Census, the median household income in 2006 was \$48,451; this gives some support to

the division of the data at the \$50,000 annual income point. Excerpts from frequency tables for both of these variables are attached to the end of the SPSS output.

All external variables were significantly different among the three clusters with the exception of Age, Gender, and Zip Code; these variables were all near significant.

By examining the external profiling variables, we determined that the "Politically Fueled" cluster was slightly more married, older, whiter, more educated, more male, less likely to live in the Midwest-Great Lakes area, with a slightly higher income than the mean. These individuals scored high on political activity, political knowledge, and quality of life in their community and neighborhood and rated high on the "cosmopolitan" scale. They scored low in political efficacy. We found these individuals to be highly politically informed, engaged, empowered and satisfied with their place in the world.

The "Unengaged" cluster consists of individuals that are slightly less married, average in age and whiteness, more female, less educated and have a lower than average income and are more likely to live in the Midwest-Great Lakes area. These individuals scored low in political activity, political knowledge, and political discussion. They are moderate in their sense of political empowerment, and quality of life and place in the world.

The "Stuck" cluster consists of individuals who are less married, younger than the average, more likely male, significantly less educated, less white, have the smallest income of all the clusters and are less likely to live in the Midwest-Great Lakes region. These individuals have a moderate score in political activity, political knowledge, and political discussion. They feel less empowered than the other two groups and score lowest on their perceived quality of life and place in the world. These individuals are not satisfied with their situation, but do not feel empowered to change it.