# **Cluster Analysis**

# Presented by: Amelia Caldwell & Catherine Ciha

Cleveland State University COM 731 Spring 2014

Table of Contents:	
I. Model	p. 1-4
II. Running SPSS	p. 5-20
III. SPSS Output	p. 21-33
IV. Tabling Results	p. 34
V. Write-up	p. 35 -37

VI. Appendix Decision Tools

# I. Model

## Data Set: National Community Study 2006 conducted by CATI

I. Internal Variables/Clustering Variables (11 total):

**Q61 through Q71** All questions have the following measurement categories (5-0, 9 where 5 is several and 0 is never on scale and 9 indicates missing data):

- 5- Several times a day;
- 4- About once a day;
- 3- Several times a week;
- 2- About once a week;
- 1- Less often than that;
- 0- Have never gone on Internet;
- 9- Missing data

### **Frequency of Internet use overall**

Q61. Today, people use the internet and other communication technologies to keep up with their communities and for a host of other reasons.

Have you ever gone on the Internet? If said yes, remaining questions follow. 0=never gone Internet

If yes, how often do you go on the Internet at home or at work?

### Website content/specific use

Q62. How often do you visit websites representing larger community or metro area where you live?

- Q63. How about a website representing your immediate neighborhood or community?
- Q64. Media websites such as one of the TV networks, a newspaper site or radio site?
- Q65. Websites of businesses or companies?
- Q66. Entertainment websites such as those for movies, games, hobbies, etc.?
- Q67. Websites of public or non-profit organizations?
- Q68. Websites in other countries, outside the United States?
- Q69. Sports websites?
- Q70. Websites in other languages?

### Email use

Q71. How often do you use email?

II. <u>External Variables/Profiling Variables</u> (9 total):

## Q1. First, which of the following best describes where you live?

1- in a central city neighborhood of a metropolitan area;

- 2- in a near-by suburb or a metro area;
- 3- in a more distant suburb of a metro area;
- 4- in a fair-sized city outside a metro area;
- 5-in a small town outside a metro area, or;
- 6- in the country;

7-other

## Q2. How long have you lived there?

- 1- less than a year;
- 2- from 1 to 5 years;
- 3-6 to 10 years;
- 4-11 to 20 years;
- 5-21 to 30 years;
- 6-31 to 40 years;
- 7-41 to 50 years;
- 8- more than 50 years;
- 9- missing information

### Q97. I enjoy learning about other peoples and cultures

0-0 Completely disagree 1-1 2-2 3-3 4-4 5- Neutral 6-6 7-7 8-8 9-9 10-10 Completely agree 99- Missing data/Don't know

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

0-0 Completely disagree 1-1 2-2 3-3 4-4 5- Neutral 6-6 7-7 8-8 9-9 10-10 Completely agree

99- Missing data/Don't know

Recoded Q.97 and Q.98 compute variable "Cosmopolitaness" Cosmo= ZQ97 + Zq98

### Q103. Marital status

1-married; 2-divorced; 3-widowed; 4-separated; 5-never been married; 9-missing information

Recoded as nominal variable Q.103Dummy "Marriedness" where 1=1 and 0=all others

### Q104. Age

1- 18-20; 2- 21-30; 3- 31-40; 4- 41-50; 5- 51-60; 6- 61-70; 7-71 or older; 9-Declines to answer

## Q105. How much formal education have you completed?

completed grade school (8 years or less);
 2-some high school;
 3-high school graduate;
 4-some college;
 5-college graduate;
 6-advanced college degree;
 9-Missing information

Recoded as nominal variable Q.105Dummy "Post High school Education" where 1=4-6 & 0=1-3

## Q106. What is your ethnic or racial background?

1-Black/African American;
 2-White/Caucasian;
 3-Hispanic;
 4-Asian;
 5-American Indian;
 6-Mixed;
 7-Other;
 9-Missing information/Refused)

Recoded as nominal variable Q.106 Dummy "Whiteness" where 1=2 (white) and 0= all others

## Q107. Annual household income

1- \$10,000 or less; 2- \$10,001 to \$20,000; 3- \$20,001 to \$30,000; 4- \$30,001 to \$40,000; 5- \$40,001 to \$50,000; 6- \$50,001 to \$75,000; 7- \$75,001 to \$100,000; 8- \$100,001 to \$150,000; 9- more than \$150,000; 99-missing information/don't know/refused)

Recoded into nominal variable Q107Dummy "Above Median Income" where median income+ = 1, below median = 0. 1 = responses include 6,7,8,9 and 0 = responses 1,2,3,4,5

Q107 source http://www.census.gov/prod/2007pubs/acs-08.pdf \$48,451

### Q109. And, just for the record, are you male or female?

1-male;

2-female

Recoded as nominal variable Q.109Dummy "Femaleness" where 1=2 (female) and 0=1 (male)

# II. Running SPSS

# Analyze $\rightarrow$ Classify $\rightarrow$ Hierarchical Cluster

🙀 Community Civic Project Class 041014 Dataschwith clusters post dr n.sav [DataSet1] - IBM SPSS Statistics Data Editor

<u>File</u> Edit	<u>V</u> iew <u>D</u> ata	Transform	Analyze	<u>G</u> raphs <u>U</u> tilities	Ad	d- <u>o</u> ns <u>W</u> ind	low <u>H</u> elp					131		
2			Re <u>p</u> D <u>e</u> s	orts criptive Statistics	р р	**			\$2 Ⅲ			ARG	10 (C	
	Name	Туре	Com	pare Means	*	Label	Values		Missing	Columns	Align	Measure	Role	
1	VAR00001	Numeric	<u>G</u> en	eral Linear Model			None	Nor	ie	8	≡ Right	I Scale	S Input	
2	respnum\$	Numeric	Gen	eralized Linear Moo	dels		None	Nor	ie	8	■ Right	Scale 🔗	S Input	
3	dispos\$	Numeric	Mixe	d Models	۴		None	Nor	ie	8	/ ■ Right	Scale 🔗	🔪 Input	
4	status\$	Numeric	Corr	elate			None	Nor	ie	8	/ ■ Right	Scale Scale	S Input	
5	time\$	Numeric	Reg	ression	÷.		None	Nor	ie	8	■ Right	🔗 Scale	🔪 Input	
6	timeans\$	Numeric	Log	ineer			None	Nor	ie	8	■ Right	🛷 Scale	💊 Input	
7	platid\$	Numeric	Clas	cifu		(71)-9	Mana	Mor	P	8	■ Right	I Scale	💊 Input	
8	intro	Numeric	Dim	ancien Deduction		WoSt	ep Cluster		e	8	■ Right	I Scale	💊 Input	
9	q1	Numeric	<u>D</u> III	ension Reduction	1	K-Mea	ns Cluster			8	· ■ Right	Scale Scale	💊 Input	
10	q2	Numeric	scal	e		Hierar	chical Cluster	>		8	· ■ Right	I Scale	S Input	
11	q3	String	Non	parametric l'ests	1	Discrir	minant		9	255	≣ Left	\delta Nominal	🔪 Input	
12	q4	Numeric	Fore	casting	1	Neare:	st Neighbor		99	8	🗏 Right	🔗 Scale	💊 Input	
13	q5	Numeric	Surv	ival		ignoonno	NOTIC	10	99	8	■ Right	I Scale	S Input	
14	q6	Numeric	Multi	iple Response	•	lue family	None	11 -	99	8	/ ■ Right	I Scale	🔪 Input	
15	q7	Numeric	Qua	lity Control		lue work	None	11 -	99	8	/ ■ Right	Scale 🖉	💊 Input	
16	q8	Numeric	ROC	Curve		lue friends	None	11 -	99	8	■ Right	Scale 🔗	🖒 Input	
17	q9	Numeric	2	0	Q9:V	alue neigh	None	11 -	99	8	· ■ Right	I Scale	💊 Input	
18	q10	Numeric	2	0	Q10:V	alue religion	None	11 -	99	8	書 Right	Scale 🔗	🕥 Input	
19	q11	Numeric	2	0	Q11:\	Value ethn	None	11 -	99	8	≣ Right	Scale 🔗	S Input	
20	q12	Numeric	2	0	Q12:1	Value bein	None	11 -	- 99	8	■ Right	🔗 Scale	S Input	
21	q13	Numeric	2	0	QI3:V	alue hobb	None	11 -	99	8	· 言 Right	I Scale	🔪 Input	
22	q14	Numeric	2	0	Q14:1	Value orga	None	11 -	99	8	■ Right	I Scale	💊 Input	
23	q15	Numeric	2	0	Q15:\	Value pers	None	11 -	99	8	≣ Right	🛷 Scale	💊 Input	
24	q16	Numeric	2	0	Q16:0	Often talk	None	11 -	99	8	■ Right	Scale Scale	S Input	
25	q17	Numeric	2	0	Q17:	Falk w/nei	None	11 -	99	8	I Right	In Scale	S Input	
26	q18	Numeric	2	0	Q18:0	Greet pas	None	11 -	99	8	/≡ Right	🛷 Scale	🔪 Input	
27	q19	Numeric	2	0	Q19:H	Hear neigh	None	11 -	99	8	/ ■ Right	Scale 🔗	🔪 Input	
28	q20	Numeric	2	0	Q20:1	Hear neigh	None	11 -	99	8	■ Right	Scale 🔗	S Input	
29	q21	Numeric	2	0	Q21:0	Comfort vo	None	11 -	99	8	🔳 Right	Scale Scale	S Input	
30	q22	Numeric	2	0	Q22:	⊃eople afr…	None	11 -	99	8	/≡ Right	I Scale	💊 Input	
31	q23	Numeric	2	0	Q23:F	Public offic	None	11 -	99	8	· ■ Right	🔗 Scale	S Input	
32	q24	Numeric	2	0	Q24:1	Falk pol w/	None	11 -	99	8	/ ■ Right	🛷 Scale	🔪 Input	
33	q25	Numeric	2	0	Q25:	Falk pol w/	None	11 -	99	8	/ ■ Right	🔗 Scale	💊 Input	
34	<b>q</b> 26	Numeric	2	0	Q26:1	Feel lost if	None	11 -	99	8	/ ■ Right	Scale Scale	🔪 Input	
35	q27	Numeric	2	0	Q27:F	Feel part o	None	11 -	99	8	· 言 Right	Scale Scale	🔪 Input	
36	q28	Numeric	2	0	Q28:	Feel stron	None	11 -	99	8	■ Right	Scale Scale	🔪 Input	
	4													
Data View	Variable View													

Hierarchical Cluster...

IBM SPSS Statistics Processor is ready

# →Select your Internal **Variables** for analysis (Q. 61, 62, 63,64,65,66,67,68,69, 70, 71)





# →Click "Statistics" Box

Q55:What like least about place live [q55]         Image: Proximity matrix         Cluster Membership         Image: None         Image: Solution         Number of clusters:         Image: Solutions         Minimum number of clusters:         Maximum number of clusters:	Image: System         Image: System <td< th=""><th>Statisti Plots Metho Save</th></td<>	Statisti Plots Metho Save
	Cluster	
	Cispiay	

→Make sure that the "Agglomeration Schedule" box is checked.

→Then, under Cluster Membership, check the circle "**Range of Solutions**".

→Indicate your minimum number of clusters and the maximum number of clusters. (3 to 6 or 4 to 7 is common)



Then click "Continue".

# → Click "**Plots**" Box

Hierarchical Cluster Analysi    Hierarchical Cluster Analysi  Dendrogram  Icicle  All clusters  Specified range of clusters  Start cluster:  By: 1	Variables(s): California Contraction of the second
© <u>N</u> one	Cluster
Orientation	© Cases © Variables
● <u>V</u> ertical	Display
© <u>H</u> orizontal	Cluster

→ Note that you must select either the "Dendrogram" box or something under "Icicle". We ran Icicle, All Clusters. SPSS forces you to proceed, though you are not required to report for five stats assignment.

lcicle		
All clusters	>	
Specified rar	nge of c	lusters
Start cluster;	1	
Stop cluster:		
<u>By</u>	1	
© <u>N</u> one		
Orientation		
Vertical		
O Horizontal		

Then click "Continue".

# → Click "**Method**" Box

<ul> <li>Q56:What ideal community would Io</li> <li>Q57:Comfort talking w/stranger on st</li> <li>Q58:Comfort talk personal matters w</li> <li>Q59:Comfort talk personal matters</li> <li>Q72:Have cable or satellite TV [q72]</li> <li>Q73:Have text messaging [q73]</li> <li>Q74:Have satellite radio [q74]</li> <li>Q75:Have Tivo, DVR [q75]</li> <li>Q76:Have cell phone w/picture-takin</li> <li>Q77:Have high definition TV [q77]</li> <li>Q78:Have blog, personal website [q7</li> <li>Q79:Perceived pol. knowledge [q79]</li> <li>Q80:Freq talk pol w/friends, family in</li> <li>Q81:Freq talk pol w/people holding d</li> <li>Q82:No.people talk pol regularly [q82]</li> <li>Q84:Attended city council meetings [</li> <li>Q84:Attended pol meeting, rally [g84]</li> </ul>	Variables(s).
---	---------------

# → From "Cluster Method" drop down arrow → Select "Ward's Method"

-	Between-groups linkage	<u> </u>
Measure	Between-groups linkage Within-groups linkage	
Interval:	Nearest neighbor	
	Furthest neighbor	
	Centroid clustering	
Counts:	Median clustering	
O Binary:	Squared Euclidean distance	w
Transform Val	Present 1 Absent ues	Transform Measure
<u>S</u> tandardize:	None 🔻	Absolute values
	By variable	Change sign
	and the second	Decode to 0.1 renge

# → Under "Measure", select "Interval" circle.

# → From drop down arrow select "Squared Euclidean Distance"

Measure					
Interval:	Squared Euclidean distance	(T			
	Euclidean distance				
	Squared Euclidean distance				
O Counts:	Cosine				
O Disses	Pearson correlation				
© <u>B</u> inary.	Chebychev				
	Block				
	Minkowski				
Transform Va	Customized				
Standardize:	None	Absolute values			
	By variable	Change sign			
	By case:	Rescale to 0-1 range			

Then click "Continue".

# → Click "Save" Box



→ Under "Cluster Membership" select the circle "Range of Solutions". Type 3 into "Minimum number of clusters" box and type 6 into "Maximum number of clusters" box.



# $\rightarrow$ Click "**OK**" Box



Note: This point marks the end of the actual Cluster procedure in SPSS as indicated by our Syntax below. The Hierarchical Cluster Analysis procedure has produced an **Agglomerative Schedule** and a **Cluster Membership Table** in SPSS output. This procedure has also created and saved at the end of the dataset new nominal variables. In our specific example a 3-cluster variable, a 4-cluster variable, a 5-cluster variable, and a 6-cluster variable.

```
GET
FILE='E:\Spring 2014\COM 731\Cluster Analysis\SPSS\Community Civic Project Class
041014 Dataset with clusters post dr n.sav'.
DATASET NAME DataSet1 WINDOW=FRONT.
CLUSTER q61 q62 q63 q64 q65 q66 q67 q68 q69 q70 q71
/METHOD WARD
/MEASURE=SEUCLID
/PRINT SCHEDULE CLUSTER(3,6)
/PLOT VICICLE
/SAVE CLUSTER(3,6).
```

ta *Co	mmun	ity Civic	Project	Class 041014	Dataset wi	th clusters	post dr n.s	av [DataSe	t1] - IBM SPS	S Statistics Data Editor	
File	Edit	View	Data	Transform	Analyze	<u>G</u> raphs	Utilities	Add- <u>o</u> ns	Window	Help	
					3	<b>E</b>				i 🖪 🐴 🗐 🚮 🎱 🌖	ABS
				Name		Т	ype	Width	Decimals	Label	
37	5	CLU6_	_1			Nume	ric 8	3	0	Ward Method 6 Cluster	
37	6	CLU5	1			Nume	ric 8	}	0	Ward Method 5 Cluster	
37	7	CLU4	1			Nume	ric 8	}	0	Ward Method 4 Cluster	
37	8	CLU3	1			Nume	ric 8	3	0	Ward Method 3 Cluster	
-		and the second se									

Further Frequencies and ANOVA analysis procedures will help decide which cluster solution to ultimately select.

## Now we examine the cluster groupings.

## Analyze $\rightarrow$ Descriptive Statistics $\rightarrow$ Frequencies

ile <u>E</u> dit	View Data Transform	Analyze Graphs Utili	ties Ad	Id-ons Window	Help		
🗐 🔚		Reports	*		L - A - A - A - A - A - A - A - A - A -	ARS	
	Name	Compare Means		Frequencie	Label	Values	Mi
343	tp_library	General Linear Mod	al b	Descriptive:	s aces: libraries	None	None
344	tp_school	Conoralized Linear	Indaleb	A Explore	aces: schools,colleges	None	None
345	tp_hair	Nived Medels	vio de la	Crosstabs.	aces: hair,beauty salons	None	None
346	tp neighbor outside	MIXed Models		Ratio	aces: outside, streets, neighbors, yards	None	None
347	tp neighbor home	Correlate		P-P Plots	aces: neighborhood inside, homes,apts,p	None	None
348	tp neighbor party	Regression	•	- O-O Plots	aces: neigh. parties, block parties, cooke	None	None
349	tp city	L <u>o</u> glinear				None	None
350	to many	Classify		0	ThirdPlaces: many places	None	None
351	to media	Dimension Reduction	n 🕨	0	ThirdPlaces: media web netsletters phone paper	None	None
352	to misc	Scale	*	Q	ThirdPlaces other misc	None	None
353	CoffeeBarRest	Nonparametric Test	s 🕨	2	COMPUTE CoffeeBarRest = tp coffee + tn har	None	None
354	NeighOlParties	Forecasting	*	2	COMPLITE NeighOlParties = to neighbor outsi	None	None
355	OrgandCenters	Survival		2	COMPLITE OrgandCenters = th club org + th	None	None
356	70100	Multiple Response		5	Zscore O100 Frag watch TV news	Nana	None
357	70102	Quality Control		5	Zecore: Q102:No dave read paper last week	None	None
350	News Madia			2	COMPLITE NewsNedia = 7a100 + 7a102 (COM	Nana	None
350	Evonec	Numorio	8	2	COMPUTE Express = 7a21 + 7a58 + 7a59 (CO	None	None
360	ComfortTalk	Numeric	8	2	COMPUTE ConfortTalk = a58 + a59 (COMPUTE)	None	None
364	SPalDMatanda	Numeric	0	2	COMPUTE SPEDNetwork = 2024 + 2026 + 208	Nene	None
201	TDDastauranteCafee	Numeric	0	2	COMPUTE TRRactowenteCofee = Cofe L to co	Nega	None
302	EstDein LT-II.	Numeric	0	2	COMPUTE FetDrinkTelle to cafe + tp_fe	Nere	None
202	CatUnikiak	Numeric	0	2	COMPUTE Eatomiktaik - tp_collee + tp_bar +	None	None
304	Org IPACIMITY	Numeric	0	2	COMPUTE OrgTPActivity = tp_church + tp_ciu	None	None
305		Numeric	0	2	COMPUTE OutsideActivityTP = tp_park + tp_n	None	Norie
366	CommercialVenuesTP	Numeric	8	2	COMPOTE CommercialVenuesTP = tp_coffee +	None	None
367	EatUrinklaik2	Numeric	8	2	EastDrinkTalk2 recoded	None	None
368	Org1PActivity2	Numeric	8	2	Org PActivity2 recoded	None	None
369	OutsideActivityTP2	Numeric	8	2	OutsideActivityTP2 recoded	None	None
370	CommercialVenuesTP2	Numeric	8	2	CommercialVenuesTP2 recoded	None	None
371	FAC1_1	Numeric	11	5	REGR factor score 1 for analysis 1	None	None
372	FAC2_1	Numeric	11	5	REGR factor score 2 for analysis 1	None	None
373	FAC3_1	Numeric	11	5	REGR factor score 3 for analysis 1	None	None
374	FAC4_1	Numeric	11	5	REGR factor score 4 for analysis 1	None	None
375	CLU6_1	Numeric	8	0	Ward Method 6 Cluster	None	None
376	CLU5_1	Numeric	8	0	Ward Method 5 Cluster	None	None
377	CLU4_1	Numeric	8	0	Ward Method 4 Cluster	None	None
378	CLU3_1	Numeric	8	0	Ward Method 3 Cluster	None	None

 $\rightarrow$ Select the **cluster variables**. This are the newly created variables that will be at bottom of SPSS list.

"Ward Method [Clus6\_1]" (Note we changed name in label to **Ward Method 6 Cluster** so easier to identify distinctions in SPSS output charts)

"Ward Method [Clus5\_1]" (Note we changed name in label to **Ward Method 5 Cluster** so easier to identify distinctions in SPSS output charts)

"Ward Method [Clus4\_1]" (Note we changed name in label to **Ward Method 4 Cluster** so easier to identify distinctions in SPSS output charts)

"Ward Method [Clus3\_1]" (Note we changed name in label to **Ward Method 3 Cluster** so easier to identify distinctions in SPSS output charts)



REGR factor score 11 REGR factor score 21 REGR factor score 21 REGR factor score 31 REGR factor score 41 Marriedness [Q103Du PostHighSchoolEduca Whiteness [Q106Dum Hedian Income Above Femaleness [Q109Du Ward Method Ward Method Ward Method Ward Method Ward Method	for analysis 1 [FAC for analysis 1 [FAC for analysis 1 [FAC for analysis 1 [FAC mmy] ation [Q105Dummy] [Q107RecodeMedi mmy] [Q107RecodeMedi [CLU6_2] [CLU5_2] [CLU5_2] [CLU3_2]	~	S Ward Method 6 Cluster [CLU6_1] Ward Method 5 Cluster [CLU5_1] Ward Method 4 Cluster [CLU4_1] Ward Method 3 Cluster [CLU3_1]	<u>C</u> harts <u>F</u> ormat.
--	---	---	--	-----------------------------------

# $\rightarrow$ Click "**OK**" Box

REGR factor score       2 for analysis 1 [FAC         REGR factor score       3 for analysis 1 [FAC         REGR factor score       4 for analysis 1 [FAC         REGR factor score       4 for analysis 1 [FAC         Marriedness [Q103Dummy]       PostHighSchoolEducation [Q105Dummy]         Whiteness [Q106Dummy]       Whiteness [Q106Dummy]         Median Income Above [Q107RecodeMedi       Femaleness [Q109Dummy]         Ward Method       [CLU6_2]         Ward Method       [CLU5_2]         Ward Method       [CLU4_2]         Ward Method       [CLU3_2]	Ward Method 5 Cluster [CLU5_1] Ward Method 4 Cluster [CLU4_1] Ward Method 3 Cluster [CLU3_1]	<u>C</u> harts <u>F</u> ormat
--	--	----------------------------------

# Run Means (with ANOVA tests) to compare means among the clusters.

# Analyze $\rightarrow$ Compare Means $\rightarrow$ Means

ta *Communit	ty Civic Project Class 041014	Dataset with	clusters post dr r	n.sav [Da	ataSet1] - IBM SPS	S Statistics Data Editor			
<u>F</u> ile <u>E</u> dit	<u>View D</u> ata <u>T</u> ransform	Analyze 0	aphs <u>U</u> tilities	a Add	-ons <u>W</u> indow	Help		W.	
		Re <u>p</u> or Descri	ts ptive Statistics	•	1	i 🔤 🐴 🛄		ABS	
	Name	Comp	are Means	*	Means		abel		Values
343	tp_library	Gener	al Linear Model		Means	. T Taat		None	
344	tp_school	Gener	alized Linear Mo	delst	One-Sample	e i test	olleges	None	
345	tp_hair	Mixed	Models		Magenden Independen	t-Samples T Test	y salons	None	
346	tp_neighbor_outside	Corrol	ata		🔣 Paired-Sam	ples T Test	reets,neighbors,yards	None	
347	tp_neighbor_home	Deare			🔣 <u>O</u> ne-Way AN	JOVA	ood inside, homes,apts,p	None	
348	tp_neighbor_party	Regre	ssion		0	ThirdPlaces: neigh. par	ties,block parties, cooko	None	
349	tp_city	Logim	ear	10	0	ThirdPlaces: city area		None	
350	tp_many	Classi	Dy .	10	0	ThirdPlaces: many place	ces	None	
351	tp_media	Dimen	Dimension Reduction		0	ThirdPlaces: media,we	b,netsletters,phone,paper	None	
352	tp_misc	Scale 🕨 🕨		0	ThirdPlaces: other, mis	C.	None		
353	CoffeeBarRest	Nonpa	rametric Tests	•	2	COMPUTE CoffeeBar	Rest = tp_coffee + tp_bar	None	
354	NeighOlParties	Foreca	isting		2	COMPUTE NeighOIPa	arties = tp_neighbor_outsi	None	
355	OrgandCenters	Surviva	al	•	2	COMPUTE OrgandCer	nters = tp_club_org + tp	None	
356	Zq100	Multipl	e Response	•	5	Zscore: Q100:Freq wa	tch TV news	None	
357	Zq102	<u>Q</u> uality	Control		5	Zscore: Q102:No.days	read paper last week	None	
358	NewsMedia	ROC C	Curve		2	COMPUTE NewsMedi	a = Zq100 + Zq102 (COM	None	
359	Express		Numeric	8	2	COMPUTE Express -	Zq21 + Zq58 + Zq59 (CO	None	
360	ComfortTalk		Numeric	8	2	COMPUTE ComfortTa	lk = q58 + q59 (COMPUTE)	None	
361	SPolDNetwork		Numeric	8	2	COMPUTE SPolDNet	work = Zq24 + Zq25 + Zq8	. None	
362	TPRestaurantsCafes		Numeric	8	2	COMPUTE TPRestaur	rantsCafes = Cafe + tp_re	None	
363	EatDrinkTalk		Numeric	8	2	COMPUTE EatDrinkTa	alk = tp_coffee + tp_bar +	None	
364	OrgTPActivity		Numeric	8	2	COMPUTE OrgTPAct	vity = tp_church + tp_clu	None	
365	OutsideActivityTP		Numeric	8	2	COMPUTE OutsideActivityTP = tp_park + tp_n		None	
366	CommercialVenuesTP		Numeric	8	2	COMPUTE CommercialVenuesTP = tp_coffee +.		None	
367	EatDrinkTalk2		Numeric	8	2	EastDrinkTalk2 recode	d	None	
368	OrgTPActivity2		Numeric	8	2	OrgTPActivity2 recoded	ł	None	
369	OutsideActivityTP2		Numeric	8	2	OutsideActivityTP2 rec	oded	None	
370	CommercialVenuesTP2		Numeric	8	2	CommercialVenuesTP2	2 recoded	None	
371	FAC1_1		Numeric	11	5	REGR factor score 1	for analysis 1	None	
372	FAC2_1		Numeric	11	5	REGR factor score 2	for analysis 1	None	
373	FAC3_1		Numeric	11	5	REGR factor score 3	for analysis 1	None	
374	FAC4_1		Numeric	11	5	REGR factor score 4	for analysis 1	None	
375	CLU6_1		Numeric	8	0	Ward Method 6 Cluster	r	None	
376	CLU5_1		Numeric	8	0	Ward Method 5 Cluster	F	None	
377	CLU4_1		Numeric	8	0	Ward Method 4 Cluster	P	None	
378	CLU3_1		Numeric	8	0	Ward Method 3 Cluster	<b>1</b> %	None	
	M		C. Martine						

Data View Variable View

# →Select the 11 total **Internal Variables** and enter into the "**Dependent List**"

Q.61-71 for our example.



→Also select the 9 total **External Variables** and enter into the "**Dependent List**."

Q1, Q2, Q104

ComputeCosmo (scale composed of standardized Q97 and Q98)

And the following dummied variables:

Marriedness, PostHighSchoolEducation, Whiteness, MedianIncome Above, Femaleness.

## 20 Total variables were entered in our "Dependent List"

<ul> <li>EastDrinkTalk2 recode</li> <li>OrgTPActivity2 recoded</li> <li>OrgTPActivity2 recoded</li> <li>OutsideActivityTP2 recoded</li> <li>OutsideActivityTP2 recoded</li> <li>CommercialVenuesTP</li> <li>REGR factor score 1 f</li> <li>REGR factor score 2 f</li> <li>REGR factor score 3 f</li> <li>REGR factor score 4 f</li> <li>Ward Method 6 Cluster</li> <li>Ward Method 5 Cluster</li> <li>Ward Method 3 Cluster</li> <li>Whiteness [Q103Durg</li> <li>PostHighSchoolEduca</li> <li>Whiteness [Q109Durg</li> <li>Ward Method</li> </ul>	d [EatDrinkTalk2] [OrgTPActivity2] ded [OutsideActivityTP2] 2 recoded [CommercialVenuesT or analysis 1 [FAC1_1] or analysis 1 [FAC2_1] or analysis 1 [FAC3_1] or analysis 1 [FAC4_1] [CLU6_1] [CLU5_1] [CLU4_1] [CLU4_1] [CLU3_1] nmy] tion [Q105Dummy] my] [Q107RecodeMedianIncome2007] nmy] [CLU5_2] [CLU5_2] [CLU5_2] [CLU4_2] [CLU3_2] [CLU3_2]	Cependent List:      Och:Freq go on Internet at home, work [q61]     Och:Freq visit metro, community website [q62]     Och:Freq visit metia websites [q64]     Och:Freq visit entertainment websites [q65]     Och:Freq visit entertainment websites [q66]     Och:Freq visit public,non-profit websites [q67]      Layer 1 of 1      Previous      Independent List:	<u>Options</u>
--	--	---	----------------

# → Select "Ward Method 4 Cluster" and enter into "Independent List"

Means .	Anna Anna	3 8141	
<ul> <li>Zscore: Q100:Freq watch TV r</li> <li>Zscore: Q102:No.days read p</li> <li>COMPUTE NewsMedia = Zq1</li> <li>COMPUTE Express = Zq21 +</li> <li>COMPUTE Express = Zq21 +</li> <li>COMPUTE SpolDNetwork = Z</li> <li>COMPUTE OrgTPActivity = tp_</li> <li>COMPUTE OrgTPActivity = tp_</li> <li>COMPUTE OutsideActivityTP =</li> <li>COMPUTE CommercialVenue</li> <li>EastDrinkTalk2 recoded [EatD</li> <li>OrgTPActivity recoded [OrgTP</li> <li>OutsideActivityTP recoded [O</li> <li>CommercialVenuesTP2 recoded</li> <li>REGR factor score 1 for analy</li> <li>REGR factor score 3 for analy</li> <li>REGR factor score 4 for analy</li> <li>Ward Method 6 Cluster [CLU6]</li> <li>Ward Method 5 Cluster [CLU4]</li> <li>Ward Method 3 Cluster [CLU3]</li> </ul>	news [Zq100] aper last wee 00 + Zq102 ( Zq58 + Zq59 ( 3 + q59 (COM Zq24 + Zq25 + ifes = Cafe + t coffee + tp_b church + tp_cl = tp_park + tp esTP = tp_coff prinkTalk2] PActivity2] utsideActivityT ded [Commerc ysis 1 [FAC2_1] ysis 1 [FAC3_1] ysis 1 [FAC4_1] _1] _1] _1] _2 OK	Dependent List: Consol Con	(Deptions)

## →Click "**Options**" Box



## → Check "ANOVA table and eta"

Statistics:	Cell Statistics:	Dependent List:	Options
Median Grouped Median Std. Error of Mean Sum Minimum Maximum Range First Last Variance Kurtosis Std. Error of Kurtosis Std. Error of Kurtosis Skewness Std. Error of Skewness Harmonic Mean	Mean Number of Cases Standard Deviation	Image: Construction of the second	
Anova table and eta	ncel Help	aste Reset Cancel Help	

## →Then click "Continue"

# $\rightarrow$ Click "OK" to compare means



Note: You can re-run by changing out the "Independent List" to "Ward Method 6", "Ward Method 5" and "Ward Method 3" to see ANOVA means comparison based upon various cluster numbers.

ta Means	COMPUTE Collection rig, collecting, par News	X
<ul> <li>COMPUTE NewsMedia = Zq100 + Zq102 (COMPUTE) [</li> <li>COMPUTE Express = Zq21 + Zq58 + Zq59 (COMPUTE)</li> <li>COMPUTE ComfortTalk = q58 + q59 (COMPUTE) [Com</li> <li>COMPUTE SPOIDNetwork = Zq24 + Zq25 + Zq81 + Zq8</li> <li>COMPUTE SPOIDNetwork = Zq24 + Zq25 + Zq81 + Zq8</li> <li>COMPUTE TPRestaurantsCafes = Cafe + tp_restauran</li> <li>COMPUTE BatDrinkTalk = tp_coffee + tp_bar + tp_restau</li> <li>COMPUTE OrgTPActivity = tp_church + tp_club_org + tp</li> <li>COMPUTE OutsideActivityTP = tp_park + tp_neighbor_o</li> <li>COMPUTE CommercialVenuesTP = tp_coffee + tp_bar</li> <li>CommercialVenuesTP2 recoded [CommercialVenuesT</li> <li>REGR factor score 1 for analysis 1 [FAC1_1]</li> <li>REGR factor score 2 for analysis 1 [FAC2_1]</li> <li>REGR factor score 3 for analysis 1 [FAC3_1]</li> <li>REGR factor score 4 for analysis 1 [FAC4_1]</li> <li>Ward Method 4 Cluster [CLU4_1]</li> <li>Ward Method 3 Cluster [CLU4_1]</li> <li>Ward Method 3 Cluster [CLU4_1]</li> <li>Ward Method 3 Cluster [CLU4_1]</li> </ul>	Dependent List	Options

# III. Running SPSS

## **Cluster Analysis Output**

# NOTE: Original SPSS Output is 60 pages. Version included in this packet has been reformatted and redacted for presentation clarity.

GET FILE='E:\Spring 2014\COM 731\Cluster Analysis\Community Civic Project Class Unchanged Data from website 040314.sav'. DATASET NAME DataSet1 WINDOW=FRONT. CLUSTER q61 q62 q63 q64 q65 q66 q67 q68 q69 q70 q71 /METHOD WARD /MEASURE=SEUCLID /PRINT SCHEDULE CLUSTER(3,6)

/PLOT DENDROGRAM VICICLE /SAVE CLUSTER(3,6). RECODE q103 (1=1) (ELSE=0) INTO Q103Dummy. VARIABLE LABELS Q103Dummy 'Marriedness'. EXECUTE. RECODE q105 (4 thru 6=1) (1 thru 3=0) INTO Q105Dummy. VARIABLE LABELS Q105Dummy 'PostHighSchoolEducation'.

VARIABLE LABELS Q109Dummy 'Femaleness'.

EXECUTE.

EXECUTE.

SAVE OUTFILE='E:\Spring 2014\COM 731\Cluster Analysis\SPSS\Community Civic Project Class 041014 '+ 'Dataset with clusters post dr n.sav' /COMPRESSED. RECODE q106 (2=1) (ELSE=0) INTO Q106Dummy. VARIABLE LABELS Q106Dummy 'Whiteness'. EXECUTE. DATASET ACTIVATE DataSet1. SAVE OUTFILE='E:\Spring 2014\COM 731\Cluster Analysis\SPSS\Community Civic Project Class 041014 '+ 'Dataset with clusters post dr n.sav' /COMPRESSED. RECODE q107 (1 thru 5=0) (6 thru 9=1) INTO Q107RecodeMedianIncome2007. VARIABLE LABELS Q107RecodeMedianIncome2007 'Median Income Above'. EXECUTE. DATASET ACTIVATE DataSet1. SAVE OUTFILE='E:\Spring 2014\COM 731\Cluster Analysis\SPSS\Community Civic Project Class 041014 '+ 'Dataset with clusters post dr n.sav' /COMPRESSED. RECODE q109 (2=1) (ELSE=0) INTO Q109Dummy.

## Cluster

[DataSet1] E:\Spring 2014\COM 731\Cluster Analysis\SPSS\Community Civic Project Class 041014 Dataset with clusters post dr n.sav

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

Cases							
Va	lid	Mis	sing	Total			
Ν	Percent	Ν	Percent	Ν	Percent		
296	62.1	181	37.9	477	100.0		

a. Squared Euclidean Distance used

b. Ward Linkage

## Ward Linkage

Aggion	heration Sched	aule (NOTE: T	otal of 9 pages ou	ipul created in SP	'55, only lirst & las	st included here)
	Cluster C	ombined		Stage Cluster	First Appears	
Stage	Cluster 1	Cluster 2	Coefficients	Cluster 1	Cluster 2	Next Stage
1	129	476	000	0	0	72
2	400	454	000	ů 0	0	12
2	111	/11	000.	0	0	71
3	111	411	.000	0	0	/1
4	27	400	.000	0	2	10
5	97	399	.000	0	0	28
6	269	394	.000	0	0	19
/	262	382	.000	0	0	20
8	285	375	.000	0	0	120
9	362	364	.000	0	0	10
10	27	362	.000	4	9	12
11	360	361	.000	0	0	12
12	27	360	.000	10	11	18
13	300	358	.000	0	0	18
14	36	320	.000	0	0	107
15	301	319	.000	0	0	17
16	225	312	000	n N	n N	22
17	223	301	000	0	15	106
18	23	200	.000	12	12	22
10	27 1Q6	300 240	.000	12	15	23 24
17 20	75	207	.000	0	0 7	24
20	70	202	.000	0	7	99 00
21	213	220	.000	0	14	23
22	200	220	.000	0	10	73
23	27	213	.000	18	21	20
24	186	204	.000	19	0	155
25	147	164	.000	0	0	26
26	27	147	.000	23	25	29
27	92	113	.000	0	0	29
28	6	97	.000	0	5	31
29	27	92	.000	26	27	41
30	88	89	.000	0	0	31
31	6	88	.000	28	30	33
32	78	86	.000	0	0	33
33	6	78	.000	31	32	35
34	76	77	.000	0	0	35
35	6	76	.000	33	34	37
36	70	71	.000	0	0	37
37	6	70	.000	35	36	40
38	66	69	.000	0	0	40
39	60	68	.000	0	0	41
40	6	66	.000	37	38	43
41	27	60	.000	29	.39	44
42	58	59	.000	0	0	43
43	6	58	000	40	42	46
44	5 27	56	.000	40 //1	۲ <u>۲</u> ۱	122
45	27 46	<u>⊿</u> 8	.000	۱ <del>۲</del> ۱	0	46
16	40	40	.000	\2 U	0 /5	40 /Q
ло Л7	л И1	40	.000	43 43	40 A	40 /Q
18	41	42 /1	.000	0 ۸۲	0 7 A T	40 50
40	0	4 I 01	.000	40	4/	50
47 50	30	31	.000	0	10	50
00 E1	0	30	.000	48	49	52
51 52	25	26	.000	0		52
52 52	6	25	.000	50	51	53
53	6	/	.000	52	0	293
54	127	463	.500	0	0	76
55	242	433	1.000	0	0	133
56	342	404	1.500	0	0	74

Agglomeration Schedule (NOTE: Total of 9 pages output created in SPSS, only first & last included here)

237	157	330	692.879	127	141	270
238	162	468	706.379	0	0	271
239	359	439	719.879	0	0	277
240	137	192	733.379	0	212	263
241	4	38	/4/.862	215	199	251
242	5	285	762.562	1//	120	281
243	54 52	153	777.520	205	206	213
244	52 20	308	792.520	159	96 220	266
240	20	219	000.017 824 080	200 102	220	200
240 247	9 1/2	307	8/1 /80	192 10/	201	202
248	142	223	858 230	200	197	207
249	122	220	875.158	231	228	270
250	83	403	892.492	216	0	264
251	4	112	910.125	241	193	285
252	124	159	927.925	189	219	268
253	36	65	945.792	135	224	268
254	135	471	964.363	210	137	278
255	154	355	983.566	179	208	270
256	227	325	1002.899	0	172	272
257	183	234	1022.566	207	234	279
258	195	419	1042.232	151	0	2/1
259	99	133	1062.694	233	232	275
200 261	3Z 10	104	1083.294	222	229	213
201	10	07 37	1104.011	209	203	203
262	18	137	1127.003	240	210	200
263	51	83	1175.631	166	250	201
265	11	47	1202.238	221	204	274
266	12	52	1229.238	230	244	279
267	14	139	1256.735	217	198	282
268	36	124	1284.243	253	252	280
269	142	388	1313.143	247	211	287
270	154	157	1345.107	255	237	275
2/1	162	195	13/9./41	238	258	272
272	162	227	1415.857	2/1	256	283
2/3	3Z 11	54 100	1455.517	260 245	243	282
274 275	00	122 154	1490.720	200 250	249 270	200
275	63	160	1578 915	237	270	204
270	51	359	1628.331	250	239	283
278	63	135	1678.403	276	254	291
279	12	183	1732.036	266	257	285
280	20	36	1793.615	245	268	287
281	5	18	1856.386	242	263	284
282	14	32	1923.354	267	273	288
283	51	162	1994.104	277	272	290
284	5	99	2066.722	281	275	292
285	4	12	2144.789	251	2/9	289
286	11	/ 142	2224.372	2/4	223	293
∠07 288	20	14Z 17	∠310.008 0100 070	28U 242	209 วงว	290 200
200	У Л	14 0	2422.273 2572 502	202 วิธุร	202 วุ <u>o</u> o	209 204
290	4 20	<del>7</del> 51	2373.300	205	200	2,74 201
291	20	63	2992.914	290	278	292
292	5	20	3255.964	284	291	294
293	6	11	3592.550	53	286	295
294	4	5	3961.880	289	292	295
295	4	6	5896.797	294	293	0

Case	6 Clusters	5 Clusters	4 Clusters	3 Clusters
4	1	1	1	1
5	2	2	2	2
6	3	3	3	3
/	3	3	3	3
9 10	1	1	1	1
10 11	1	1	1	1
12	4	4	1	1
14	1	1	1	1
15	2	2	2	2
16	1	1	1	1
17	4	4	4	3
18	2	2	2	2
20	5	5	2	2
23		1		1
24 25	1	 		1
20 26	3 2	3 2	3	<u>১</u> ২
27	4	4	4	3
30	3	3	3	3
31	3	3	3	3
32	1	1	1	1
33	1	1	1	1
34	4	4	4	3
36	5	5	2	2
3/ 20			1	
30 30	1	1	1	1
41	3	3	3	3
42	3	3	3	3
44	4	4	4	3
46	3	3	3	3
47	4	4	4	3
48 40	3	3	3	3
49 51	ו 5	ו 5	1	1
52	1	1	1	1
53	1	1	1	1
54	1	1	1	1
56	4	4	4	3
58	3	3	3	3
59	3	3	3	3
60 41	4	4	4	3 1
63	1	ו ה	1	1
65 65	5	5	2	2
66	3	3	3	3
67	2	2	2	2
68	4	4	4	3
69	3	3	3	3
70	3	3	3	3
/1	3	3	3	3
12 74	4	4	4	3
74 75	1	1	1	1
76	3	3	2	ר ז
77	3	3	3	3
78	3	3	3	3

## Cluster Membership (NOTE: Total of 8 pages of output created in SPSS, only first included here)



(NOTE: Vertical Icicle Chart does not print legibly due to its size. View Icicle chart directly in SPSS output)

FREQUENCIES VARIABLES=CLU6\_1 CLU5\_1 CLU4\_1 CLU3\_1
/ORDER=ANALYSIS.

## Frequencies

[DataSet1] E:\Spring 2014\COM 731\Cluster Analysis\SPSS\Community Civic Project Class 041014 Dataset with clusters post dr n.sav

Statistics								
		Ward Method 6	Ward Method 5	Ward Method 4	Ward Method 3			
		Cluster	Cluster	Cluster	Cluster			
N	Valid	296	296	296	296			
	Missing	181	181	181	181			

## Frequency Tables

	Ward Method 6 Cluster								
					Cumulative				
		Frequency	Percent	Valid Percent	Percent				
Valid	1	94	19.7	31.8	31.8				
	2	52	10.9	17.6	49.3				
	3	24	5.0	8.1	57.4				
	4	60	12.6	20.3	77.7				
	5	45	9.4	15.2	92.9				
	6	21	4.4	7.1	100.0				
	Total	296	62.1	100.0					
Missing	System	181	37.9						
Total		477	100.0						

## Ward Method 5 Cluster

					Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	1	94	19.7	31.8	31.8
	2	52	10.9	17.6	49.3
	3	24	5.0	8.1	57.4
	4	60	12.6	20.3	77.7
	5	66	13.8	22.3	100.0
	Total	296	62.1	100.0	
Missing	System	181	37.9		
Total		477	100.0		

### Ward Method 4 Cluster

		<b>F</b>	Durant		Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	1	94	19.7	31.8	31.8
	2	118	24.7	39.9	71.6
	3	24	5.0	8.1	79.7
	4	60	12.6	20.3	100.0
	Total	296	62.1	100.0	
Missing	System	181	37.9		
Total		477	100.0		

Ward Method 3 Cluster

					Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	1	94	19.7	31.8	31.8
	2	118	24.7	39.9	71.6
	3	84	17.6	28.4	100.0
	Total	296	62.1	100.0	
Missing	System	181	37.9		
Total		477	100.0		

(NOTE: We ran means counts ANOVA for CLU6\_1, CLU5\_1, CLU4\_1, and CLU3\_1 but are only showing the SPSS Output for CLU4\_1 for this class presentation handout as we ultimately went with a 4 Cluster Group.)

## Means Using 4 Cluster Groups

[DataSet1] E:\Spring 2014\COM 731\Cluster Analysis\SPSS\Community Civic Project Class 041014 Dataset with clusters post dr n.sav

	Case Trocessing Summary						
		Lasts					
	lí N		EXCI	Excluded		lai	
	N	Percent	N	Percent	N	Percent	
Q61:Freq go on Internet at home, work * Ward Method 4 Cluster	296	62.1%	181	37.9%	477	100.0%	
Q62:Freq visit metro, community website * Ward Method 4 Cluster	296	62.1%	181	37.9%	477	100.0%	
Q63:Freq visit neigh website * Ward Method 4 Cluster	296	62.1%	181	37.9%	477	100.0%	
Q64:Freq visit media websites *	296	62.1%	181	37.9%	477	100.0%	
Q65:Freq visit business websites * Ward Method 4 Cluster	296	62.1%	181	37.9%	477	100.0%	
Q66:Freq visit entertainment websites * Ward Method 4 Cluster	296	62.1%	181	37.9%	477	100.0%	
Q67:Freq visit public,non-profit websites * Ward Method 4 Cluster	296	62.1%	181	37.9%	477	100.0%	
Q68:Freq visit websites outside U.S. * Ward Method 4 Cluster	296	62.1%	181	37.9%	477	100.0%	
Q69:Freq visit sports websites * Ward Method 4 Cluster	296	62.1%	181	37.9%	477	100.0%	
Q70:Freq visit websites in other	296	62.1%	181	37.9%	477	100.0%	
Q71:Freq used email * Ward Method 4 Cluster	296	62.1%	181	37.9%	477	100.0%	
Q1:Where live * Ward Method 4	290	60.8%	187	39.2%	477	100.0%	
Q2:Time lived there * Ward Method	296	62.1%	181	37.9%	477	100.0%	
COMPUTE Cosmo = Zq97 + Zq98 (COMPUTE) * Ward Method 4	287	60.2%	190	39.8%	477	100.0%	
Marriedness * Ward Method 4	296	62.1%	181	37.9%	477	100.0%	
QI04:Age * Ward Method 4 Cluster	285	59.7%	192	40.3%	477	100.0%	
Method 4 Cluster	285	59.7%	192	40.3%	4//	100.0%	
Whiteness * Ward Method 4 Cluster Median Income Above * Ward	296 243	62.1% 50.9%	181 234	37.9% 49.1%	477 477	100.0% 100.0%	
Method 4 Cluster Femaleness * Ward Method 4 Cluster	296	62.1%	181	37.9%	477	100.0%	

Case Processing Summary

Report						
Ward Method 4 Cluster		Q61:Freq go on Internet at home, work	Q62:Freq visit metro, community website	Q63:Freq visit neigh website		
1	Mean	4.33	1.34	1.31		
	Ν	94	94	94		
	Std. Deviation	.897	.727	.790		
2	Mean	4.57	2.20	1.59		
	Ν	118	118	118		
	Std. Deviation	.710	1.369	1.104		
3	Mean	.00	.00	.00		
	Ν	24	24	24		
	Std. Deviation	.000	.000	.000		
4	Mean	2.17	1.17	1.18		
	Ν	60	60	60		
	Std. Deviation	1.330	.557	.701		
Total	Mean	3.64	1.54	1.29		
	Ν	296	296	296		
	Std. Deviation	1.680	1.175	.976		

	Report						
Ward Method 4 Cluster		Q64:Freq visit media websites	Q65:Freq visit business websites	Q66:Freq visit entertainment websites			
1	Mean	1.83	2.20	1.95			
	Ν	94	94	94			
	Std. Deviation	1.151	1.316	1.425			
2	Mean	3.35	3.49	2.66			
	Ν	118	118	118			
	Std. Deviation	1.284	1.382	1.469			
3	Mean	.00	.00	.00			
	Ν	24	24	24			
	Std. Deviation	.000	.000	.000			
4	Mean	1.37	1.27	1.32			
	Ν	60	60	60			
	Std. Deviation	.736	.482	.537			
Total	Mean	2.19	2.35	1.95			
	Ν	296	296	296			
	Std. Deviation	1.512	1.602	1.465			

		Report		
Ward Method 4 Cluster		Q67:Freq visit public,non-profit websites	Q68:Freq visit websites outside U.S.	Q69:Freq visit sports websites
1	Mean	1.69	1.21	1.34
	Ν	94	94	94
	Std. Deviation	1.164	.717	.648
2	Mean	2.03	1.57	2.36
	Ν	118	118	118
	Std. Deviation	1.326	1.136	1.522
3	Mean	.00	.00	.00
	Ν	24	24	24
	Std. Deviation	.000	.000	.000
4	Mean	1.10	1.05	1.07
	Ν	60	60	60
	Std. Deviation	.303	.287	.312
Total	Mean	1.57	1.22	1.58
	Ν	296	296	296
	Std. Deviation	1.216	.930	1.260

Report					
Ward Method 4 Cluster		Q70:Freq visit websites in other languages	Q71:Freq used email	Q1:Where live	
1	Mean	1.11	4.65	3.67	
	Ν	94	94	91	
	Std. Deviation	.518	.599	1.764	
2	Mean	1.35	4.04	3.15	
	Ν	118	118	116	
	Std. Deviation	.990	1.386	1.731	
3	Mean	.00	.00	3.63	
	Ν	24	24	24	
	Std. Deviation	.000	.000	2.060	
4	Mean	1.03	1.57	3.68	
	Ν	60	60	59	
	Std. Deviation	.181	.831	1.889	
Total	Mean	1.10	3.41	3.46	
	Ν	296	296	290	
	Std. Deviation	.777	1.816	1.811	

		Report			
Ward Method 4 Cluster		Q2:Time lived there	COMPUTE Cosmo = Zq97 + Zq98	Marriedness	QI04:Age
1	Mean	3.81	.2830	.6596	4.22
	Ν	94	93	94	92
	Std. Deviation	1.821	1.38035	.47639	1.511
2	Mean	3.70	.1990	.5593	4.11
	Ν	118	113	118	113
	Std. Deviation	1.635	1.48692	.49859	1.365
3	Mean	4.92	5742	.3333	5.65
	Ν	24	23	24	23
	Std. Deviation	2.448	2.04787	.48154	1.722
4	Mean	3.73	5777	.5500	4.04
	Ν	60	58	60	57
	Std. Deviation	2.066	1.81856	.50169	1.792
Total	Mean	3.84	.0073	.5709	4.25
	Ν	296	287	296	285
	Std. Deviation	1.879	1.61130	.49578	1.583

Report								
Ward Method 4 Clust	er	PostHighSchool Education	Whiteness	Median Income Above	Femaleness			
1	Mean	.7826	.8191	.5696	.5532			
	Ν	92	94	79	94			
	Std. Deviation	.41473	.38696	.49829	.49983			
2	Mean	.8584	.7203	.5347	.4068			
	Ν	113	118	101	118			
	Std. Deviation	.35019	.45075	.50129	.49333			
3	Mean	.3913	.7917	.0667	.5417			
	Ν	23	24	15	24			
	Std. Deviation	.49901	.41485	.25820	.50898			
4	Mean	.5614	.6167	.3333	.5167			
	Ν	57	60	48	60			
	Std. Deviation	.50063	.49030	.47639	.50394			
Total	Mean	.7368	.7365	.4774	.4865			
	Ν	285	296	243	296			
	Std. Deviation	.44112	.44128	.50052	.50066			

ANOVA Table								
			Sum of Squares	df	Mean Square	F	Sig.	
Q61:Freq go on Internet at	Between Groups	(Combined)	594.527	3	198.176	243.071	.000	
home, work * Ward Method 4	Within Groups		238.068	292	.815			
Cluster	Total		832.595	295				
Q62:Freq visit metro,	Between Groups	(Combined)	120.955	3	40.318	41.084	.000	
community website * Ward	Within Groups		286.558	292	.981			
Method 4 Cluster	Total		407.514	295				
Q63:Freq visit neigh website *	Between Groups	(Combined)	51.502	3	17.167	21.842	.000	
Ward Method 4 Cluster	Within Groups		229.511	292	.786			
	Total		281.014	295				
Q64:Freq visit media websites *	Between Groups	(Combined)	326.059	3	108.686	91.206	.000	
Ward Method 4 Cluster	Within Groups		347.964	292	1.192			
	Total	(2) 11 1)	674.024	295	110 501	07.454		
Q65:Freq visit business	Between Groups	(Combined)	358.774	3	119.591	87.656	.000	
Websiles Ward Melhou 4	Within Groups		398.384	292	1.364			
	lotal	(Combined)	/5/.159	295	50 224	27 172	000	
Q66:Freq VISIT entertainment	Between Groups	(Comiamo))	1/4.9//	ა ეიე	58.320 1 540	31.113	.000	
Cluster			400.100 400.100	292	1.007			
O/7.Frequieit public pen profit	10[a]	(Combined)	033.133	295	22.044	20 422	000	
Q67:Freq VISIT public, non-prome	Between Groups	(Comiamo))	99.193 227.210	ა ეიე	33.U04 1 1 E E	28.022	.000	
Cluster	Within Groups		337.310 426 510	292	1.155			
	10idi Datwaan Crouns	(Combined)	430.3 IU 51 721	290	17 244	24 727	000	
Q68:Freq VISIL Websites outside	Between Groups	(Comuneu)	31./31 202 EE2	ა ეიე	17.244	24.131	.000	
U.S. Ward Method 4 Cluster	Within Groups		203.552	292	.077			
2/2 E	I otal	(2hinod)	200.204 150.140	על∠ 2	E0 721	44.005	000	
Q69:Freq VISIT Sports websites	Between Groups	(Compineu)	152.105	ა ეიე	00.7∠1 1.000	40.ԾԾິນ	.000	
Ward Method 4 Cluster	Within Groups		313.071	272	Ι.υσ2			
270 Free delt woheiter in other		(a-mbinad)	408.004 24.525	272 2	10 170	OF 100	000	
Q/U:Freq VISILWebsites in other	Between Groups	(Comuneu)	30.030 141.624	ა ეიე	12.170	25.107	.000	
languages waru werrou + Cluster	Within Groups		141.024	272	.400			
Ciusici		(Combined)	1/0.107 474.415	270	224 905	210 500	000	
Q/T:Freq Used email waru Mothed & Cluster	Between Groups	(Comuneu)	0/4.410	ა იიე	224.000 1.024	219.007	.000	
	Within Groups		298.930 072.251	292	1.024			
01.Where live * Word Method 4	10idi Dotwoon Crouns	(Combined)	9/3.301	290	6 202	1 027	12/	
Cluster	Within Croups	(Compined)	10.077	286	0.273 2.270	1.737	.124	
Clusion	Willin Groups		927.123	200	J.247			
02. Time lived there * Ward	Potwoon Crouns	(Combined)	30 700	207	10.266	2 966	032	
Method 4 Cluster	Within Groups	(Compined)	1010 739	292	3 461	2.700	.052	
Method + Oldstei	Millin Oroups Tatal		10/01/537	205	J.TU I			
COMDITE COSMO = 7097 +	Rotwoon Grouns	(Combined)	38.845	275	12 948	5 207	002	
7n98 (COMPLITE) * Ward	Within Groups	Combinedy	703 691	283	2 487	5.201	.002	
Method 4 Cluster	Total		742 535	200	2.707			
Marriedness * Ward Method 4	Retween Groups	(Combined)	2.136	3	.712	2,954	033	
Cluster	Within Groups	(oomonou)	70.374	292	.241	2.70.	.000	
	Total		72.510	295	.2			
OI04-Age * Ward Method 4	Retween Groups	(Combined)	50,285	3	16,762	7,120	000	
Cluster	Within Groups	(oomonou)	661 525	281	2.354	1.120	.000	
	Total		711.811	284				
PostHighSchoolEducation *	Retween Groups	(Combined)	6.363	3	2.121	12.188	.000	
Ward Method 4 Cluster	Within Groups	(00000000000)	48.900	281	.174			
	Total		55.263	284				
Whiteness * Ward Method 4	Retween Groups	(Combined)	1.608	3	.536	2.802	.040	
Cluster	Within Groups	(00112112),	55.838	292	.191		•••••	
	Total		57.446	295				
Median Income Above * Ward	Retween Groups	(Combined)	4.530	3	1.510	6.433	.000	
Method 4 Cluster	Within Groups	(,	56.096	239	.235			
	Total		60.626	242				
Femaleness * Ward Method 4	Between Groups	(Combined)	1.296	3	.432	1.736	.160	
Cluster	Within Groups	( ,	72.650	292	.249			
	Total		73 946	295				
	rotai		13.740	275		1		

#### Measures of Association

	Eta	Eta Squared
Q61:Freq go on Internet at	.845	.714
home, work * Ward Method 4		
Cluster		
Q62:Freq visit metro,	.545	.297
community website * Ward		
Method 4 Cluster		
063 Freq visit neigh website *	428	183
Ward Method 4 Cluster	. 120	.100
064. Freq visit media websites *	696	181
Ward Method 4 Cluster	.070	-UF.
O65·Ereq visit husiness	688	171
wobsites * Ward Method 4	.000	.474
Cluster		
Official visit entertainment	F 24	276
Q00:FIEQ VISIL EITERIAITITIETIL	.520	.270
Websites Waru Wethou 4		
	477	207
Q67:Freq Visit public, non-profit	.477	.227
websites ~ Ward Method 4		
Cluster		
Q68:Freq visit websites outside	.450	.203
U.S. * Ward Method 4 Cluster		
Q69:Freq visit sports websites *	.570	.325
Ward Method 4 Cluster		
Q70:Freq visit websites in other	.453	.205
languages * Ward Method 4		
Cluster		
Q71:Freq used email * Ward	.832	.693
Method 4 Cluster		
Q1:Where live * Ward Method 4	.141	.020
Cluster		
Q2:Time lived there * Ward	.172	.030
Method 4 Cluster		
COMPUTE Cosmo = $Za97 +$	.229	.052
7g98 (COMPUTE) * Ward		
Method 4 Cluster		
Marriedness * Ward Method 4	172	029
Cluster	.172	.027
OI04.Age * Ward Method 4	266	071
Cluster	.200	.071
PostHighSchoolEducation *	330	115
Ward Method & Cluster	.557	.113
Walu Welliou 4 Cluster	147	0.20
Chiefor	.107	.028
VIUSIEI Madian Incomo Abavio * Marel	070	075
Nethed 4 Chiefer	.273	.075
	100	010
remaieness " ward Method 4	.132	.018
Cluster		

# **IV.** Tabling Results

## Table 1. Agglomeration Coefficient Analysis

Number of	<b>Coefficient Previous Step</b>	<b>Coefficient This Step</b>	Change	% Change in
Clusters				Heterogeneity
after				
combining				
7	2780.192	2573.508	206.684	8.031 %
6	2992.914	2780.192	212.722	7.651 %
5	3255.964	2992.914	263.026	8.788 %
<mark>4</mark>	3592.550	3255.964	336.586	10.338 %
3	3961.880	3592.550	369.330	10.280 %
2	5896.797	3961.880	1934.917	48.838 %
1		5896.797		

## Table 2. Cluster Profiling

Cluster Name	Utilitarian	Websurfer	NonUser	LowUser	Total		
(4 Cluster)	User					F	Sig
Variable	1(94)	2(118)	3(24)	4(60)	296		
Internal Variables							
Q61 Frequency of Internet use	4.33	4.57	0	2.17	3.64	243.07	<.001
Q62 Visit community sites	1.34	2.20	0	1.17	1.54	41.08	<.001
Q63 Visit neighborhood sites	1.31	1.59	0	1.18	1.29	21.84	<.001
Q64 Visit media sites	1.83	3.35	0	1.37	2.19	91.21	<.001
Q65 Visit business sites	2.20	3.49	0	1.27	2.35	87.66	<.001
Q66 Visit entertainment sites	1.95	2.66	0	1.32	1.95	37.17	<.001
Q67 Visit non-profit sites	1.69	2.03	0	1.10	1.57	28.62	<.001
Q68 Visit foreign sites	1.21	1.57	0	1.05	1.22	24.74	<.001
Q69 Visit sports sites	1.34	2.36	0	1.07	1.58	46.89	<.001
Q70 Visit sites non-English	1.11	1.35	0	1.03	1.10	25.11	<.001
Q71 Frequency of email use	4.65	4.04	0	1.57	3.41	219.59	<.001
External Variables							
Q1 Where live	3.67	3.15	3.63	3.68	3.46	1.94	.124
Q2 Time lived there	3.81	3.70	4.92	3.73	3.84	2.97	.032
Q104Age	4.22	4.11	5.65	4.04	4.25	7.12	<.001
Cosmopolitan	.2830	.1990	5742	5777	.0073	5.20	.002
Married	.6596	.5593	.3330	.5500	.5709	2.95	.033
Post High School Ed.	.7826	.8584	.3913	.5614	.7368	12.29	<.001
Whiteness	.8191	.7203	.7917	.6167	.7365	2.80	.040
Median Income+	.5696	.5347	.0667	.3333	.4774	6.43	<.001
Femaleness	.5532	.4068	.5417	.5167	.4865	1.74	.160

# V. Write-up

The class' National Community Survey (2005-2006) known as "Community/Civic Project" data set conducted by Dr. Jeffres was chosen for cluster analysis. This original data set contained 397 cases. Eleven internal variables were selected on the basis of Internet Use frequency questions from the survey. All internal variables (questions Q61 through Q71) used the same measurement system, with scores on a scale ranging 0 to 5, where 0 indicates one has never gone on the Internet and 5 indicates use several times a day. Thus, none of the internal variables were standardized prior to running the cluster analysis.

A hierarchical agglomerative cluster analysis was performed using SPSS to discover potential groupings of each of the participants. Ultimately a four cluster solution was chosen using Ward's Method with a squared Euclidian distances approach. The choice of four clusters was supported by a visual examination of the changes in the agglomeration coefficients table and graph.

ANOVA analysis was conducted to examine the mean differences among the four clusters with regard to all eleven internal variables. The clusters have been named: Cluster 1: Utilitarian User, Cluster 2: Websurfer, Cluster 3: Nonuser, and Cluster 4: Low User (See Table 2 on page 34).

To further profile these four clusters, ANOVA analysis was conducted to test the significance of the differences among the four clusters against nine external variables that included:

Q1. Where live? Q2. How long have you lived there? Q4. Age? Cosmopolitaness Marital Status Post High School Education Whiteness Above Median Income Femaleness

### Explanation of Recode Decisions

Q1 (Which of the following best describes where you live?) was not recoded or standardized because the response selections progressed from urban to rural, functioning somewhat like a scale we described as "Where Live." Perhaps where subjects lived could be relevant to how they clustered.

Q97 (I enjoy learning about other peoples and cultures) and Q98 (I think of myself as a citizen of the world) were already recoded and standardized into a scale called "Cosmopolitaness" (Cosmo=ZQ97 + Zq98) which we used as it appeared in the data set. It implies level of worldliness and interest in other customs, lifestyles, or communities.

Q103 was recoded as a dummy "Married" with married =1, unmarried = 0. Q105 (How much formal education have you completed?) was recoded into a dummy that categorized responses into college = 1, no college = 0. Any response indicating attendance was included in the college category. Q106 race was recoded as dummy white = 1, nonwhite = 0, "Whiteness." Q109 gender was recoded to dummy 0=all others and 1=female, "Femaleness".

Q107 Income was recoded to dummy median income+ = 1, below median = 0, labeled "Median Income+". According to U.S. Census estimates from 2007, the median income at the time of this survey (2006) was \$48,451. Therefore, to approximate that median as the dividing point for the variable, 1 = responses include 6, 7, 8, 9; and, 0 = 1, 2, 3, 4, 5.<sup>1</sup>

#### Cluster Analysis

Outputs containing three through six clusters were examined, with four clusters selected for complete analysis. See appendices for tables and graphs that informed our decision. Cluster 1 is labeled Utilitarian User because of high means for email use and frequency of Internet use, with some moderate use of business websites. Cluster 2 is labeled Websurfer, with high means for frequency of Internet and email use, and moderate use of multiple websites on diverse topics. Cluster 3 consists of

<sup>&</sup>lt;sup>1</sup> Source http://www.census.gov/prod/2007pubs/acs-08.pdf \$48,451

twenty four subjects who identified themselves as not using the Internet. Cluster 4, Low User recorded low means across internal variables. All internal variables were significant at p=<.001.

ANOVA analysis of the four clusters revealed significance among external variables, except "Where Live" and Femaleness. Time lived in the subject's home, married subjects, "Cosmopolitaness" and Whiteness were significant at p=<.05. Age, college education and median income+ were significant at p=<.001. Nonusers in Cluster 3 appeared to be older, less cosmopolitan, less likely to have attended college and white. They were less likely to earn median income or higher. Low Users in Cluster 4 also scored negatively on Cosmopolitaness (worldliness) but had a higher income and were least likely to be white.

Cluster 1, Utilitarian Users were predominantly white (81.91%), median income+ and tended toward Cosmopolitaness. Websurfers were similar to Cluster 1, but somewhat less white, less worldly, less married, but more educated.



Cluster Marie (o Cluster)	Utilitarian	WebMarkete	er Nonuser	LowUser	Urban	Impersonal	Total	_	
	User	0 (5.0)	2 (2 1)		Websurfer	User		F	Sig
Variable	1(94)	2(52)	3(24)	4(60)	5(45)	6(21)	296		
Internal Variables	4.00	1.(0	0	0.17	4.44	4.50	274	14/ 1/	001
Q61 Frequency of Internet use	4.33	4.69	0	2.17	4.44	4.52	3.64	146.16	<.001
Q62 Visit community sites	1.34	2.50	0	1.17	2.29	1.29	1.54	31.34	<.001
O64 Visit media sites	1.31	2.27	0	1.10	2.10	3.00	2 10	63.07	<.001
	2.20	<i>J</i> .07	0	1.37	2.71	3.00	2.17	65.67	< 001
O66 Visit entertainment sites	1.20	2 10	0	1.27	3.02	3.30	1.95	27.90	< 001
067 Visit non-profit sites	1.70	2.10	0	1 10	2 24	1.57	1.57	18 53	< 001
O68 Visit foreign sites	1.21	1.19	0	1.05	2.20	1.14	1.22	26.88	<.001
Q69 Visit sports sites	1.34	1.40	0	1.07	3.62	2.00	1.58	81.98	<.001
Q70 Visit sites non-English	1.11	1.06	0	1.03	1.84	1.00	1.10	25.60	<.001
Q71 Frequency of email use	4.65	4.75	0	1.57	4.36	1.62	3.41	330.91	<.001
External Variables									
Q1 Where live	3.67	3.12	3.63	3.68	3.02	3.48	3.46	1.34	.247
Q2 Time lived there	3.81	3.63	4.92	3.73	3.44	4.43	3.84	2.625	.024
Q104Age	4.22	4.20	5.65	4.04	4.02	4.05	4.25	4.31	.001
Cosmopolitan	.2830	.6008	5742	5777	.2343	8110	.0073	5.69	<.001
Married	.6596	.5385	.3333	.5500	.5333	.6667	.5709	2.01	.077
Post High School Ed.	.7826	.8958	.3913	.5614	.8636	.7619	.7368	7.60	<.001
Whiteness	.8191	.6/31	./91/	.6167	.6889	.9048	./365	2.62	.025
Median Income+	.5696	.5610	.0667	.3333	.6000	.3500	.4//4	4.65	<.001
Femaleness	.5532	.5769	.5417	.5167	.2889	.2381	.4865	3.34	.006
Cluster Name	Ut	ilitarian	WebMarketer	Nonuser	LowUser	Websurfer	Total	-	<b>G</b> .
(5 Cluster)		User						H'	Sig
<u> </u>								Ľ	516
Variable		1(94)	2(52)	3(24)	4(60)	5(66)	296	•	51g
Variable Internal Variables		1(94)	2(52)	3(24)	4(60)	5(66)	296	1	
Variable Internal Variables Q61 Frequency of Internet	use	1(94) 4.33	2(52) 4.69	3(24) 0	4(60)	5(66)	296 3.64	183.23	<.001
Variable Internal Variables Q61 Frequency of Internet Q62 Visit community sites	use	1(94)       4.33       1.34	2(52) 4.69 2.50	3(24) 0 0	4(60) 2.17 1.17	5(66) 4.47 1.97	296 3.64 1.54	183.23 33.748	<.001 <.001
Variable Internal Variables Q61 Frequency of Internet Q62 Visit community sites Q63 Visit neighborhood si	use tes	1(94)       4.33       1.34       1.31	2(52) 4.69 2.50 1.29	3(24) 0 0 0	4(60) 2.17 1.17 1.18	5(66) 4.47 1.97 1.83	296 3.64 1.54 1.29	183.23 33.748 19.81	<.001 <.001 <.001
Variable Internal Variables Q61 Frequency of Internet Q62 Visit community sites Q63 Visit neighborhood si Q64 Visit media sites	use tes	1(94)       4.33       1.34       1.31       1.83	2(52) 4.69 2.50 1.29 3.87	3(24) 0 0 0 0	4(60) 2.17 1.17 1.18 1.37	5(66) 4.47 1.97 1.83 2.94	296 3.64 1.54 1.29 2.19	183.23 33.748 19.81 79.05	<.001 <.001 <.001 <.001
Variable Internal Variables Q61 Frequency of Internet Q62 Visit community sites Q63 Visit neighborhood si Q64 Visit media sites Q65 Visit business sites	use tes	1(94)       4.33       1.34       1.31       1.83       2.20	2(52) 4.69 2.50 1.29 3.87 4.13	3(24) 0 0 0 0 0 0	4(60) 2.17 1.17 1.18 1.37 1.27	5(66) 4.47 1.97 1.83 2.94 2.98	296 3.64 1.54 1.29 2.19 2.35	183.23 33.748 19.81 79.05 80.29	<.001 <.001 <.001 <.001 <.001
Variable Internal Variables Q61 Frequency of Internet Q62 Visit community sites Q63 Visit neighborhood si Q64 Visit media sites Q65 Visit business sites Q66 Visit entertainment si	use tes	1(94)       4.33       1.34       1.31       1.83       2.20       1.95	2(52) 4.69 2.50 1.29 3.87 4.13 2.10	3(24) 0 0 0 0 0 0 0	4(60) 2.17 1.17 1.18 1.37 1.27 1.32	5(66) 4.47 1.97 1.83 2.94 2.98 3.11	296 3.64 1.54 1.29 2.19 2.35 1.95	183.23 33.748 19.81 79.05 80.29 34.74	<.001 <.001 <.001 <.001 <.001 <.001
Variable Internal Variables Q61 Frequency of Internet Q62 Visit community sites Q63 Visit neighborhood si Q64 Visit media sites Q65 Visit business sites Q66 Visit entertainment si Q67 Visit non-profit sites	use tes tes	1(94)       4.33       1.34       1.31       1.83       2.20       1.95       1.69	2(52) 4.69 2.50 1.29 3.87 4.13 2.10 2.04	3(24) 0 0 0 0 0 0 0 0 0	4(60) 2.17 1.17 1.18 1.37 1.27 1.32 1.10	5(66) 4.47 1.97 1.83 2.94 2.98 3.11 2.03	296 3.64 1.54 1.29 2.19 2.35 1.95 1.57	183.23 33.748 19.81 79.05 80.29 34.74 21.39	<.001 <.001 <.001 <.001 <.001 <.001 <.001
Variable Internal Variables Q61 Frequency of Internet Q62 Visit community sites Q63 Visit neighborhood si Q64 Visit media sites Q65 Visit business sites Q66 Visit entertainment si Q67 Visit non-profit sites O68 Visit foreign sites	use	1(94)       4.33       1.34       1.31       1.83       2.20       1.95       1.69       1.21	2(52) 4.69 2.50 1.29 3.87 4.13 2.10 2.04 1.19	3(24) 0 0 0 0 0 0 0 0 0 0 0 0	4(60) 2.17 1.17 1.18 1.37 1.27 1.32 1.10 1.05	5(66) 4.47 1.97 1.83 2.94 2.98 3.11 2.03 1.86	296 3.64 1.54 1.29 2.19 2.35 1.95 1.57 1.22	183.23 33.748 19.81 79.05 80.29 34.74 21.39 24.77	<.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001
VariableInternal VariablesQ61 Frequency of InternetQ62 Visit community sitesQ63 Visit neighborhood siQ64 Visit media sitesQ65 Visit business sitesQ66 Visit entertainment siQ67 Visit non-profit sitesQ68 Visit foreign sitesQ69 Visit sports sites	use tes tes	1(94)         4.33         1.34         1.31         1.83         2.20         1.95         1.69         1.21         1.34	2(52) 4.69 2.50 1.29 3.87 4.13 2.10 2.04 1.19 1.40	3(24) 0 0 0 0 0 0 0 0 0 0 0 0 0	4(60) 2.17 1.17 1.18 1.37 1.27 1.32 1.10 1.05 1.07	5(66) 4.47 1.97 1.83 2.94 2.98 3.11 2.03 1.86 3.11	296 3.64 1.54 1.29 2.19 2.35 1.95 1.57 1.22 1.58	183.23 33.748 19.81 79.05 80.29 34.74 21.39 24.77 74.26	<.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001
VariableInternal VariablesQ61 Frequency of InternetQ62 Visit community sitesQ63 Visit neighborhood siQ64 Visit media sitesQ65 Visit business sitesQ66 Visit entertainment siQ67 Visit non-profit sitesQ68 Visit foreign sitesQ69 Visit sports sitesQ70 Visit sites non-Englis	use tes tes	1(94)         4.33         1.34         1.31         1.83         2.20         1.95         1.69         1.21         1.34         1.11	2(52) 4.69 2.50 1.29 3.87 4.13 2.10 2.04 1.19 1.40 1.06	3(24) 0 0 0 0 0 0 0 0 0 0 0 0 0	4(60)     2.17     1.17     1.18     1.37     1.27     1.32     1.10     1.05     1.07     1.03	5(66) 4.47 1.97 1.83 2.94 2.98 3.11 2.03 1.86 3.11 1.58	296 3.64 1.54 1.29 2.19 2.35 1.95 1.57 1.22 1.58 1.10	183.23           33.748           19.81           79.05           80.29           34.74           21.39           24.77           74.26           24.11	<.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001
Variable Internal Variables Q61 Frequency of Internet Q62 Visit community sites Q63 Visit neighborhood si Q64 Visit media sites Q65 Visit business sites Q66 Visit entertainment si Q67 Visit non-profit sites Q68 Visit foreign sites Q68 Visit foreign sites Q69 Visit sports sites Q70 Visit sites non-Englis Q71 Frequency of email us	use	1(94)         4.33         1.34         1.31         1.83         2.20         1.95         1.69         1.21         1.34         1.11         4.65	2(52) 4.69 2.50 1.29 3.87 4.13 2.10 2.04 1.19 1.40 1.06 4.75	3(24) 0 0 0 0 0 0 0 0 0 0 0 0 0	4(60) 2.17 1.17 1.18 1.37 1.27 1.32 1.10 1.05 1.07 1.03 1.57	5(66) 4.47 1.97 1.83 2.94 2.98 3.11 2.03 1.86 3.11 1.58 3.48	296 3.64 1.54 1.29 2.19 2.35 1.95 1.57 1.22 1.58 1.10 3.41	183.23           33.748           19.81           79.05           80.29           34.74           21.39           24.77           74.26           24.11           207.82	<.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001
VariableInternal VariablesQ61 Frequency of InternetQ62 Visit community sitesQ63 Visit neighborhood siQ64 Visit media sitesQ65 Visit business sitesQ66 Visit entertainment siQ67 Visit non-profit sitesQ68 Visit foreign sitesQ69 Visit sports sitesQ70 Visit sites non-EnglisQ71 Frequency of email us	use tes tes h h	1(94)         4.33         1.34         1.31         1.83         2.20         1.95         1.69         1.21         1.34         1.11         4.65	2(52) 4.69 2.50 1.29 3.87 4.13 2.10 2.04 1.19 1.40 1.06 4.75	3(24) 0 0 0 0 0 0 0 0 0 0 0 0 0	4(60) 2.17 1.17 1.18 1.37 1.27 1.32 1.10 1.05 1.07 1.03 1.57	5(66) 4.47 1.97 1.83 2.94 2.98 3.11 2.03 1.86 3.11 1.58 3.48	296 3.64 1.54 1.29 2.19 2.35 1.95 1.57 1.22 1.58 1.10 3.41	183.23           33.748           19.81           79.05           80.29           34.74           21.39           24.77           74.26           24.11           207.82	<.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001
VariableInternal VariablesQ61 Frequency of InternetQ62 Visit community sitesQ63 Visit neighborhood siQ64 Visit media sitesQ65 Visit business sitesQ66 Visit entertainment siQ67 Visit non-profit sitesQ68 Visit foreign sitesQ69 Visit sports sitesQ70 Visit sites non-EnglisQ71 Frequency of email usExternal Variables	use	1(94)         4.33         1.34         1.31         1.83         2.20         1.95         1.69         1.21         1.34         1.11         4.65	2(52) 4.69 2.50 1.29 3.87 4.13 2.10 2.04 1.19 1.40 1.06 4.75	3(24) 0 0 0 0 0 0 0 0 0 0 0 0 0	4(60) 2.17 1.17 1.18 1.37 1.27 1.32 1.10 1.05 1.07 1.03 1.57	5(66) 4.47 1.97 1.83 2.94 2.98 3.11 2.03 1.86 3.11 1.58 3.48	296 3.64 1.54 1.29 2.19 2.35 1.95 1.57 1.22 1.58 1.10 3.41	183.23           33.748           19.81           79.05           80.29           34.74           21.39           24.77           74.26           24.11           207.82	<.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001
VariableInternal VariablesQ61 Frequency of InternetQ62 Visit community sitesQ63 Visit neighborhood siQ64 Visit media sitesQ65 Visit business sitesQ66 Visit entertainment siQ67 Visit non-profit sitesQ68 Visit foreign sitesQ69 Visit sports sitesQ70 Visit sites non-EnglisiQ71 Frequency of email usExternal VariablesQ1 Where live	use tes tes h se	1(94)         4.33         1.34         1.31         1.83         2.20         1.95         1.69         1.21         1.34         1.11         4.65	2(52) 4.69 2.50 1.29 3.87 4.13 2.10 2.04 1.19 1.40 1.06 4.75 3.12	3(24) 0 0 0 0 0 0 0 0 0 0 0 0 0	4(60) 2.17 1.17 1.18 1.37 1.27 1.32 1.10 1.05 1.07 1.03 1.57 3.68	5(66) 4.47 1.97 1.83 2.94 2.98 3.11 2.03 1.86 3.11 1.58 3.48 3.17	296 3.64 1.54 1.29 2.19 2.35 1.95 1.57 1.22 1.58 1.10 3.41 3.46	183.23           33.748           19.81           79.05           80.29           34.74           21.39           24.77           74.26           24.11           207.82	<.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001
VariableInternal VariablesQ61 Frequency of InternetQ62 Visit community sitesQ63 Visit neighborhood siQ64 Visit media sitesQ65 Visit business sitesQ66 Visit entertainment siQ67 Visit non-profit sitesQ68 Visit foreign sitesQ69 Visit sports sitesQ70 Visit sites non-EnglisQ71 Frequency of email usExternal VariablesQ1 Where liveQ2 Time lived there	use tes tes h se	1(94)         4.33         1.34         1.31         1.83         2.20         1.95         1.69         1.21         1.34         1.11         4.65         3.67         3.81	2(52) 4.69 2.50 1.29 3.87 4.13 2.10 2.04 1.19 1.40 1.06 4.75 3.12 3.63	3(24) 0 0 0 0 0 0 0 0 0 0 0 0 0	4(60) 2.17 1.17 1.18 1.37 1.27 1.32 1.10 1.05 1.07 1.03 1.57 3.68 3.73	5(66) 4.47 1.97 1.83 2.94 2.98 3.11 2.03 1.86 3.11 1.58 3.48 3.17 3.76	296 3.64 1.54 1.29 2.19 2.35 1.95 1.57 1.22 1.58 1.10 3.41 3.46 3.84	183.23           33.748           19.81           79.05           80.29           34.74           21.39           24.77           74.26           24.11           207.82           1.45           2.25	<.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001
VariableInternal VariablesQ61 Frequency of InternetQ62 Visit community sitesQ63 Visit neighborhood siQ64 Visit media sitesQ65 Visit business sitesQ66 Visit entertainment siQ67 Visit non-profit sitesQ68 Visit foreign sitesQ69 Visit sports sitesQ70 Visit sites non-EnglisQ71 Frequency of email usExternal VariablesQ1 Where liveQ2 Time lived thereQ104 Age	use tes tes h se i	1(94)         4.33         1.34         1.31         1.83         2.20         1.95         1.69         1.21         1.34         1.11         4.65         3.67         3.81         4.22	2(52) 4.69 2.50 1.29 3.87 4.13 2.10 2.04 1.19 1.40 1.06 4.75 3.12 3.63 4.20	3(24) 0 0 0 0 0 0 0 0 0 0 0 0 0	4(60) 2.17 1.17 1.18 1.37 1.27 1.32 1.10 1.05 1.07 1.03 1.57 3.68 3.73 4.04	5(66) 4.47 1.97 1.83 2.94 2.98 3.11 2.03 1.86 3.11 1.58 3.48 3.17 3.76 4.03	296 3.64 1.54 1.29 2.19 2.35 1.95 1.57 1.22 1.58 1.10 3.41 3.46 3.84 4.25	183.23           33.748           19.81           79.05           80.29           34.74           21.39           24.77           74.26           24.11           207.82           1.45           2.25           5.41	<.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001
VariableInternal VariablesQ61 Frequency of InternetQ62 Visit community sitesQ63 Visit neighborhood siQ64 Visit media sitesQ65 Visit business sitesQ66 Visit entertainment siQ67 Visit non-profit sitesQ68 Visit foreign sitesQ69 Visit sports sitesQ70 Visit sites non-EnglisQ71 Frequency of email usExternal VariablesQ1 Where liveQ2 Time lived thereQ104Age	use use tes tes h 6e 	1(94)         4.33         1.34         1.31         1.83         2.20         1.95         1.69         1.21         1.34         1.11         4.65         3.67         3.81         4.22	2(52) 4.69 2.50 1.29 3.87 4.13 2.10 2.04 1.19 1.40 1.06 4.75 3.12 3.63 4.20	$ \begin{array}{c} 3(24) \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0$	4(60) 2.17 1.17 1.18 1.37 1.27 1.32 1.10 1.05 1.07 1.03 1.57 3.68 3.73 4.04	5(66) 4.47 1.97 1.83 2.94 2.98 3.11 2.03 1.86 3.11 1.58 3.48 3.17 3.76 4.03	296 3.64 1.54 1.29 2.19 2.35 1.95 1.57 1.22 1.58 1.10 3.41 3.46 3.84 4.25	183.23           33.748           19.81           79.05           80.29           34.74           21.39           24.77           74.26           24.11           207.82           1.45           2.25           5.41	<.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001
Variable         Internal Variables         Q61 Frequency of Internet         Q62 Visit community sites         Q63 Visit neighborhood si         Q64 Visit media sites         Q65 Visit business sites         Q66 Visit entertainment si         Q67 Visit non-profit sites         Q68 Visit foreign sites         Q69 Visit sports sites         Q70 Visit sites non-Englisi         Q71 Frequency of email us         External Variables         Q1 Where live         Q2 Time lived there         Q104Age	use	1(94)         4.33         1.34         1.31         1.83         2.20         1.95         1.69         1.21         1.34         1.11         4.65         3.67         3.81         4.22         2830	2(52) 4.69 2.50 1.29 3.87 4.13 2.10 2.04 1.19 1.40 1.06 4.75 3.12 3.63 4.20 6008	3(24) 0 0 0 0 0 0 0 0 0 0 0 0 0	4(60) 2.17 1.17 1.18 1.37 1.27 1.32 1.10 1.05 1.07 1.03 1.57 3.68 3.73 4.04	5(66) 4.47 1.97 1.83 2.94 2.98 3.11 2.03 1.86 3.11 1.58 3.48 3.17 3.76 4.03 - 1087	296 3.64 1.54 1.29 2.19 2.35 1.95 1.57 1.22 1.58 1.10 3.41 3.46 3.84 4.25 0073	183.23           33.748           19.81           79.05           80.29           34.74           21.39           24.77           74.26           24.11           207.82           1.45           2.25           5.41	<.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001
Variable         Internal Variables         Q61 Frequency of Internet         Q62 Visit community sites         Q63 Visit neighborhood si         Q64 Visit media sites         Q65 Visit business sites         Q66 Visit entertainment si         Q67 Visit non-profit sites         Q68 Visit foreign sites         Q69 Visit sports sites         Q70 Visit sites non-Englis         Q71 Frequency of email us         External Variables         Q1 Where live         Q2 Time lived there         Q104Age	use use use	1(94)         4.33         1.34         1.31         1.83         2.20         1.95         1.69         1.21         1.34         1.11         4.65         3.67         3.81         4.22         .2830         6596	2(52) 4.69 2.50 1.29 3.87 4.13 2.10 2.04 1.19 1.40 1.06 4.75 3.12 3.63 4.20 .6008 5385	3(24) 0 0 0 0 0 0 0 0 0 0 0 0 0	4(60) 2.17 1.17 1.18 1.37 1.27 1.32 1.10 1.05 1.07 1.03 1.57 3.68 3.73 4.04 5777 5500	5(66) 4.47 1.97 1.83 2.94 2.98 3.11 2.03 1.86 3.11 1.58 3.48 3.48 3.17 3.76 4.03 1087 5758	296 3.64 1.54 1.29 2.19 2.35 1.95 1.57 1.22 1.58 1.10 3.41 3.46 3.84 4.25 .0073 5709	183.23           33.748           19.81           79.05           80.29           34.74           21.39           24.77           74.26           24.11           207.82           1.45           2.25           5.41           5.40           2.25	<.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001
Variable         Internal Variables         Q61 Frequency of Internet         Q62 Visit community sites         Q63 Visit neighborhood si         Q64 Visit media sites         Q65 Visit business sites         Q66 Visit entertainment si         Q67 Visit non-profit sites         Q68 Visit foreign sites         Q69 Visit sports sites         Q70 Visit sites non-Englisi         Q71 Frequency of email us         External Variables         Q1 Where live         Q2 Time lived there         Q104Age         Cosmopolitan         Married         Post High School Ed	use	1(94)         4.33         1.34         1.31         1.83         2.20         1.95         1.69         1.21         1.34         1.11         4.65         3.67         3.81         4.22         .2830         .6596         7826	2(52) 4.69 2.50 1.29 3.87 4.13 2.10 2.04 1.19 1.40 1.06 4.75 3.12 3.63 4.20 .6008 .5385 8958	3(24) 0 0 0 0 0 0 0 0 0 0 0 0 0	4(60) 2.17 1.17 1.18 1.37 1.27 1.32 1.10 1.05 1.07 1.03 1.57 3.68 3.73 4.04 5777 .5500 5614	5(66) 4.47 1.97 1.83 2.94 2.98 3.11 2.03 1.86 3.11 1.58 3.48 3.17 3.76 4.03 1087 .5758 8308	296 3.64 1.54 1.29 2.19 2.35 1.95 1.57 1.22 1.58 1.10 3.41 3.46 3.84 4.25 .0073 .5709 7368	183.23         33.748         19.81         79.05         80.29         34.74         21.39         24.77         74.26         24.11         207.82         1.45         2.25         5.40         2.25         9.30	<.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001
Variable         Internal Variables         Q61 Frequency of Internet         Q62 Visit community sites         Q63 Visit neighborhood si         Q64 Visit media sites         Q65 Visit business sites         Q66 Visit entertainment si         Q67 Visit non-profit sites         Q68 Visit foreign sites         Q69 Visit sports sites         Q70 Visit sites non-Englis         Q71 Frequency of email us         External Variables         Q1 Where live         Q2 Time lived there         Q104Age         Cosmopolitan         Married         Post High School Ed.         Whiteness	use tes tes h se 	1(94)         4.33         1.34         1.31         1.83         2.20         1.95         1.69         1.21         1.34         1.11         4.65         3.67         3.81         4.22         .2830         .6596         .7826         8191	2(52) 4.69 2.50 1.29 3.87 4.13 2.10 2.04 1.19 1.40 1.06 4.75 3.12 3.63 4.20 .6008 .5385 .8958 6731	3(24) 0 0 0 0 0 0 0 0 0 0 0 0 0	4(60) 2.17 1.17 1.18 1.37 1.27 1.32 1.10 1.05 1.07 1.03 1.57 3.68 3.73 4.04 5777 .5500 .5614 6167	5(66) 4.47 1.97 1.83 2.94 2.98 3.11 2.03 1.86 3.11 1.58 3.48 3.17 3.76 4.03 1087 .5758 .8308 7576	296 3.64 1.54 1.29 2.19 2.35 1.95 1.57 1.22 1.58 1.10 3.41 3.46 3.84 4.25 .0073 .5709 .7368 7365	183.23           33.748           19.81           79.05           80.29           34.74           21.39           24.77           74.26           24.11           207.82           1.45           2.25           5.41           5.40           2.25           9.30           2.37	<.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001
Variable         Internal Variables         Q61 Frequency of Internet         Q62 Visit community sites         Q63 Visit neighborhood si         Q64 Visit media sites         Q65 Visit business sites         Q66 Visit entertainment si         Q67 Visit non-profit sites         Q68 Visit foreign sites         Q69 Visit sports sites         Q70 Visit sites non-Englis         Q71 Frequency of email us         External Variables         Q1 Where live         Q2 Time lived there         Q104Age         Cosmopolitan         Married         Post High School Ed.         Whiteness	use use tes tes h se 	1(94)         4.33         1.34         1.31         1.83         2.20         1.95         1.69         1.21         1.34         1.11         4.65         3.67         3.81         4.22         .2830         .6596         .7826         .8191	2(52) 4.69 2.50 1.29 3.87 4.13 2.10 2.04 1.19 1.40 1.06 4.75 3.12 3.63 4.20 .6008 .5385 .8958 .6731 5610	3(24) 0 0 0 0 0 0 0 0 0 0 0 0 0	4(60) 2.17 1.17 1.18 1.37 1.27 1.32 1.10 1.05 1.07 1.03 1.57 3.68 3.73 4.04 5777 .5500 .5614 .6167 3.322	5(66) 4.47 1.97 1.83 2.94 2.98 3.11 2.03 1.86 3.11 1.58 3.48 3.17 3.76 4.03 1087 .5758 .8308 .7576 5167	296 3.64 1.54 1.29 2.19 2.35 1.95 1.57 1.22 1.58 1.10 3.41 3.46 3.84 4.25 .0073 .5709 .7368 .7365	183.23         33.748         19.81         79.05         80.29         34.74         21.39         24.77         74.26         24.11         207.82         1.45         2.25         5.40         2.25         9.30         2.37         4.85	<.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 .064 <.001 .064 <.001 .052 .001 <.001 .052 .001 <.001 .052 .001 <.001 .052 .001 <.001 .052 .05 .05 .05 .05 .05 .05 .05 .05 .05 .05
Variable         Internal Variables         Q61 Frequency of Internet         Q62 Visit community sites         Q63 Visit neighborhood si         Q64 Visit media sites         Q65 Visit business sites         Q66 Visit entertainment si         Q67 Visit non-profit sites         Q68 Visit foreign sites         Q69 Visit sports sites         Q70 Visit sites non-Englis         Q71 Frequency of email us         External Variables         Q1 Where live         Q2 Time lived there         Q104Age         Cosmopolitan         Married         Post High School Ed.         Whiteness         Median Income+	use use tes tes h se 	1(94)         4.33         1.34         1.31         1.83         2.20         1.95         1.69         1.21         1.34         1.11         4.65         3.67         3.81         4.22         .2830         .6596         .7826         .8191         .5696	2(52) 4.69 2.50 1.29 3.87 4.13 2.10 2.04 1.19 1.40 1.06 4.75 3.12 3.63 4.20 .6008 .5385 .8958 .6731 .5610 .5760	3(24) 0 0 0 0 0 0 0 0 0 0 0 0 0	4(60) 2.17 1.17 1.18 1.37 1.27 1.32 1.10 1.05 1.07 1.03 1.57 3.68 3.73 4.04 5777 .5500 .5614 .6167 .3333 51.7	5(66) 4.47 1.97 1.83 2.94 2.98 3.11 2.03 1.86 3.11 1.58 3.48 3.48 3.48 	296 3.64 1.54 1.29 2.19 2.35 1.95 1.57 1.22 1.58 1.10 3.41 3.46 3.84 4.25 .0073 .5709 .7368 .7365 .4774	183.23           33.748           19.81           79.05           80.29           34.74           21.39           24.77           74.26           24.11           207.82           1.45           2.25           5.41           5.40           2.25           9.30           2.37           4.86	<.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 .064 <.001 .064 <.001 .052 .001 .002

Cluster Name	Utilitarian	Websurfer	NonUser	LowUser	Total		
(4 Cluster)	User					F	Sig
Variable	1(94)	2(118)	3(24)	4(60)	296		
Internal Variables							
Q61 Frequency of Internet use	4.33	4.57	0	2.17	3.64	243.07	<.001
Q62 Visit community sites	1.34	2.20	0	1.17	1.54	41.08	<.001
Q63 Visit neighborhood sites	1.31	1.59	0	1.18	1.29	21.84	<.001
Q64 Visit media sites	1.83	3.35	0	1.37	2.19	91.21	<.001
Q65 Visit business sites	2.20	3.49	0	1.27	2.35	87.66	<.001
Q66 Visit entertainment sites	1.95	2.66	0	1.32	1.95	37.17	<.001
Q67 Visit non-profit sites	1.69	2.03	0	1.10	1.57	28.62	<.001
Q68 Visit foreign sites	1.21	1.57	0	1.05	1.22	24.74	<.001
Q69 Visit sports sites	1.34	2.36	0	1.07	1.58	46.89	<.001
Q70 Visit sites non-English	1.11	1.35	0	1.03	1.10	25.11	<.001
Q71 Frequency of email use	4.65	4.04	0	1.57	3.41	219.59	<.001
External Variables							
Q1 Where live	3.67	3.15	3.63	3.68	3.46	1.94	.124
Q2 Time lived there	3.81	3.70	4.92	3.73	3.84	2.97	.032
Q104Age	4.22	4.11	5.65	4.04	4.25	7.12	<.001
Cosmopolitan	.2830	.1990	5742	5777	.0073	5.20	.002
Married	.6596	.5593	.3330	.5500	.5709	2.95	.033
Post High School Education	.7826	.8584	.3913	.5614	.7368	12.29	<.001
Whiteness	.8191	.7203	.7917	.6167	.7365	2.80	.040
Median Income+	.5696	.5347	.0667	.3333	.4774	6.43	<.001
Femaleness	.5532	.4068	.5417	.5167	.4865	1.74	.160

Cluster Name	Utilitarian	Websurfer	LowUser	Total		
(3Cluster)	User				F	Sig
Variable	1(94)	2(118)	3(84)	296		
Internal Variables						
Q61 Frequency of Internet use	4.33	4.57	1.55	3.64	236.42	<.001
Q62 Visit community sites	1.34	2.20	.83	1.54	46.15	<.001
Q63 Visit neighborhood sites	1.31	1.59	.85	1.29	15.89	<.001
Q64 Visit media sites	1.83	3.35	.98	2.19	113.36	<.001
Q65 Visit business sites	2.20	3.49	.90	2.35	113.95	<.001
Q66 Visit entertainment sites	1.95	2.66	.94	1.95	43.62	<.001
Q67 Visit non-profit sites	1.69	2.03	.79	1.57	32.10	<.001
Q68 Visit foreign sites	1.21	1.57	.75	1.22	21.62	<.001
Q69 Visit sports sites	1.34	2.36	.76	1.58	21.62	<.001
Q70 Visit sites non-English	1.11	1.35	.74	1.10	57.95	<.001
Q71 Frequency of email use	4.65	4.04	1.12	3.41	16.70	<.001
External Variables						
Q1 Where live	3.67	3.15	3.66	3.46	2.91	.056
Q2 Time lived there	3.81	3.70	4.07	3.84	.962	.383
Q104Age	4.22	4.11	4.50	4.25	1.488	.228
Cosmopolitan	.2830	.1990	5767	.0073	7.84	<.001
Married	.6596	.5593	.4881	.5709	2.74	.066
Post High School Education	.7826	.8584	.5125	.7368	16.82	<.001
Whiteness	.8191	.7203	.6667	.7365	2.81	.062
Median Income+	.5696	.5347	.2698	.4774	7.84	.001
Femaleness	.5532	.4068	.5238	.4865	2.59	.077