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Com 531
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CANONICAL CORRELATION

The Jeffres National Community Project Data set was used.

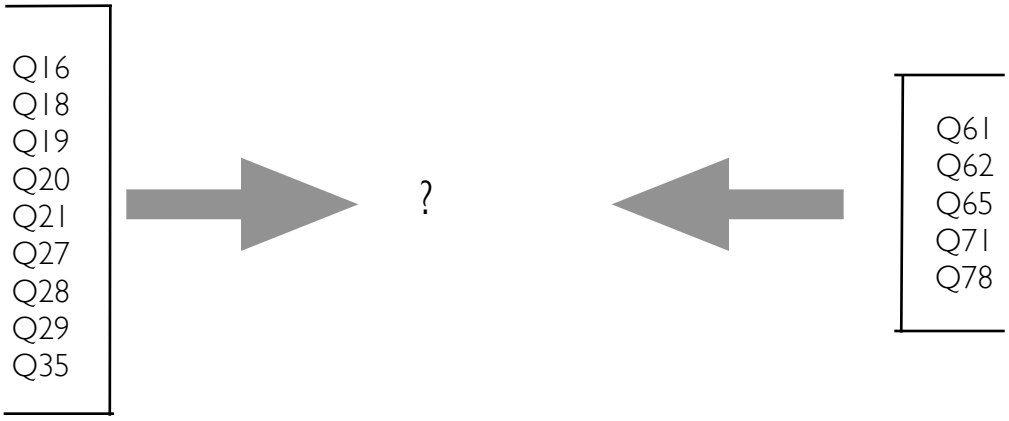
Set 1	**Set 2**
Physical Community Interaction	Online Community Behaviors
Q16 I often talk with neighbors on the street or while I am in my yard.	Q61 Have you ever gone on the internet?
Q18 Outside my house or walking down the street, I often greet people passing by even if they are not neighbors that I recognize.	Q62 How often do you use: websites representing the larger community or metro area where you live?
Q19 I often hear about community problems by word-of-mouth in my neighborhood.	Q65 How often do you use: websites of businesses or companies?
Q20 I learn about community activities and problems form the community newspaper.	Q71 How often do you use email?
Q21 I'd feel comfortable voicing a complaint in my community.	Q78 Do you use or have any of the following: a blog or personal website?
Q27 I feel I'm part of a community in which I live.	
Q28 I feel a strong identification with my community.	
Q29 I enjoy living in my neighborhood.	
Q35 How many of your closets neighbors do you know by name or well enough to say hello when you see them on the street?	

Note: Set 1 used a 10 point scale O=completely disagree, 5= Neutral, 10=completely agree

Set 2 used a 5 point scale: 5= several times a day, 4= about once a day, 3= several times a week, 2=about once a week, 1=less than that, 0= I have never gone on the internet.

Q 78 is a dummy variable with 0= no and 1=yes.

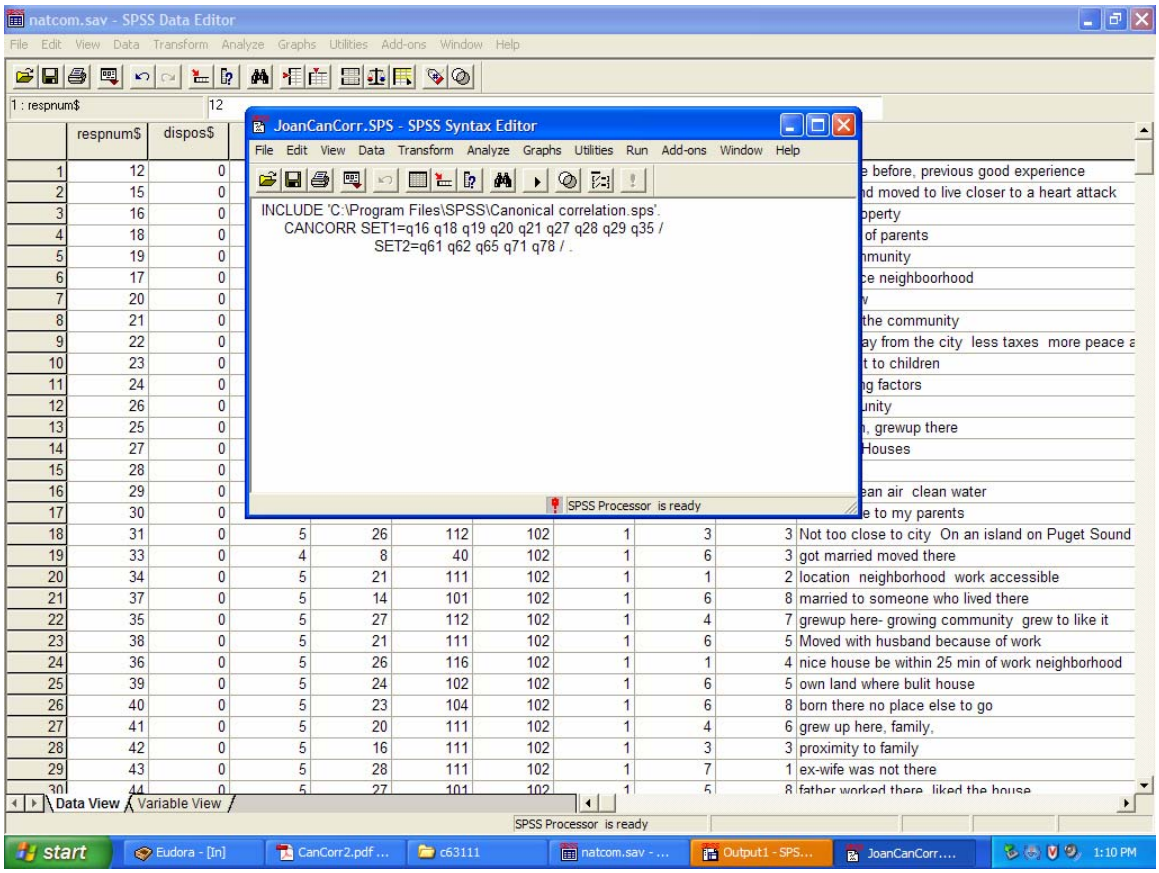
Data Set Up



Canonical Correlation can be completed only using SYNTAX:

Click **File → New → Syntax**

and enter in the syntax as specified in Dr. Neuendorf's Canonical Correlation handout:



Click **Run → All**

```
INCLUDE 'C:\Program Files\SPSS\Canonical correlation.sps'.
  15  preserve.
  16  set printback=off.
 421  RESTORE.
 422
 424  * End of INCLUDE nesting level 01.
     CANCORR SET1=q16 q18 q19 q20 q21 q27 q28 q29 q35 /
                          SET2=q61 q62 q65 q71 q78 / .
NOTE: ALL OUTPUT INCLUDING ERROR MESSAGES HAVE BEEN TEMPORARILY
SUPPRESSED. IF YOU EXPERIENCE UNUSUAL BEHAVIOR THEN RERUN THIS
MACRO WITH AN ADDITIONAL ARGUMENT /DEBUG='Y'.
BEFORE DOING THIS YOU SHOULD RESTORE YOUR DATA FILE.
THIS WILL FACILITATE FURTHER DIAGNOSTICS OF ANY PROBLEMS
```

Canonical Correlation output using:

Matrix

Run MATRIX procedure:

Correlations for Set-1

	q16	q18	q19	q20	q21	q27	q28	q29	q35
q16	1.0000	.4880	.4038	.3247	.1992	.4387	.3502	.3692	.4907
q18	.4880	1.0000	.3961	.3882	.1961	.3459	.3847	.3388	.3640
q19	.4038	.3961	1.0000	.2815	.1895	.3268	.3684	.2928	.3307
q20	.3247	.3882	.2815	1.0000	.2365	.3732	.3946	.3388	.2929
q21	.1992	.1961	.1895	.2365	1.0000	.3742	.2764	.3431	.1927
q27	.4387	.3459	.3268	.3732	.3742	1.0000	.7441	.6424	.4069
q28	.3502	.3847	.3684	.3946	.2764	.7441	1.0000	.6270	.3926
q29	.3692	.3388	.2928	.3388	.3431	.6424	.6270	1.0000	.3149
q35	.4907	.3640	.3307	.2929	.1927	.4069	.3926	.3149	1.0000

Correlations for Set-2

	q61	q62	q65	q71	q78
q61	1.0000	.3819	.5747	.7432	.1516
q62	.3819	1.0000	.3112	.4026	.1360
q65	.5747	.3112	1.0000	.4906	.1364
q71	.7432	.4026	.4906	1.0000	.1447
q78	.1516	.1360	.1364	.1447	1.0000

Correlations Between Set-1 and Set-2

	q61	q62	q65	q71	q78
q16	-.0097	-.0136	.0265	.0588	-.0487
q18	.1676	.1303	.0686	.2008	-.0717
q19	-.0365	.0096	-.0561	.0235	-.0845
q20	.0441	.0983	-.0337	.0621	-.1875
q21	.1878	.1230	.1786	.1453	-.0886
q27	-.0475	.0298	.0058	-.0007	-.1951
q28	-.1159	.0066	-.0850	-.0557	-.1609
q29	-.0048	-.0469	-.0456	.0011	-.2608
q35	.0753	.1012	.0227	.0899	-.1714

Canonical Correlations

1	.407
2	.310
3	.178
4	.163
5	.128

Test that remaining correlations are zero:

	Wilk's	Chi-SQ	DF	Sig.
1	.699	114.014	45.000	.000
2	.838	56.237	32.000	.005
3	.927	24.133	21.000	.287
4	.957	13.910	12.000	.306
5	.984	5.295	5.000	.381

Standardized Canonical Coefficients for Set-1

	1	2	3	4	5
q16	.553	-.233	-.301	.230	.734
q18	-.551	-.480	.287	-.438	.438
q19	.148	.218	.141	-.211	.236
q20	-.307	.379	.353	-.160	-.224
q21	-.422	-.526	-.137	.450	-.208
q27	-.104	.075	.160	.991	.217
q28	.667	.236	.655	-.013	-.179
q29	-.366	.641	-1.069	-.463	.058
q35	-.533	.192	.193	.010	-.274

Raw Canonical Coefficients for Set-1

	1	2	3	4	5
q16	.176	-.074	-.096	.073	.234
q18	-.186	-.162	.097	-.148	.148
q19	.046	.068	.044	-.066	.073
q20	-.090	.111	.103	-.047	-.065
q21	-.123	-.154	-.040	.132	-.061
q27	-.034	.025	.053	.328	.072
q28	.222	.078	.218	-.004	-.060
q29	-.149	.262	-.436	-.189	.024
q35	-.163	.059	.059	.003	-.084

Standardized Canonical Coefficients for Set-2

	1	2	3	4	5
q61	-.756	-.278	-.625	-.748	-.997
q62	-.286	.034	.961	.237	-.416
q65	.097	-.409	-.328	1.113	.101
q71	-.052	.002	.354	-.183	1.477
q78	.626	-.714	.166	-.315	-.085

Raw Canonical Coefficients for Set-2

	1	2	3	4	5
q61	-.461	-.169	-.381	-.457	-.608
q62	-.235	.028	.791	.195	-.342
q65	.061	-.256	-.205	.696	.063
q71	-.029	.001	.198	-.103	.826
q78	1.556	-1.775	.414	-.782	-.212

Canonical Loadings for Set-1

	1	2	3	4	5

q16	-.048	.085	-.017	.233	.848
q18	-.522	-.060	.321	-.198	.688
q19	-.085	.303	.251	-.064	.535
q20	-.455	.448	.387	.003	.152
q21	-.547	-.185	-.119	.543	.015
q27	-.231	.488	.133	.677	.399
q28	-.050	.587	.338	.334	.278
q29	-.370	.661	-.394	.144	.340
q35	-.480	.309	.259	.186	.254

Cross Loadings for Set-1

	1	2	3	4	5
q16	-.020	.026	-.003	.038	.109
q18	-.213	-.018	.057	-.032	.088
q19	-.035	.094	.045	-.011	.069
q20	-.185	.139	.069	.000	.019
q21	-.223	-.057	-.021	.089	.002
q27	-.094	.151	.024	.111	.051
q28	-.020	.182	.060	.055	.036
q29	-.151	.205	-.070	.024	.044
q35	-.196	.096	.046	.030	.033

Canonical Loadings for Set-2

	1	2	3	4	5
q61	-.753	-.606	-.158	-.202	-.013
q62	-.480	-.296	.785	.181	-.182
q65	-.366	-.654	-.192	.624	.112
q71	-.590	-.494	.140	-.144	.606
q78	.478	-.807	.209	-.271	-.066

Cross Loadings for Set-2

	1	2	3	4	5
q61	-.307	-.188	-.028	-.033	-.002
q62	-.195	-.092	.140	.030	-.023
q65	-.149	-.202	-.034	.102	.014
q71	-.240	-.153	.025	-.023	.078
q78	.195	-.250	.037	-.044	-.008

Redundancy Analysis:

Proportion of Variance of Set-1 Explained by Its Own Can. Var.

	Prop Var
CV1-1	.134
CV1-2	.161
CV1-3	.076
CV1-4	.113
CV1-5	.213

Proportion of Variance of Set-1 Explained by Opposite Can.Var.

	Prop Var
CV2-1	.022
CV2-2	.015
CV2-3	.002
CV2-4	.003
CV2-5	.004

Proportion of Variance of Set-2 Explained by Its Own Can. Var.

	Prop Var
CV2-1	.302
CV2-2	.355
CV2-3	.148
CV2-4	.111
CV2-5	.083

Proportion of Variance of Set-2 Explained by Opposite Can. Var.

	Prop Var
CV1-1	.050
CV1-2	.034
CV1-3	.005
CV1-4	.003
CV1-5	.001

------ END MATRIX -----

The canonical scores have been written to the active file.
Also, a file containing an SPSS Scoring program has been written
To use this file GET a system file with the SAME variables
Which were used in the present analysis. Then use an INCLUDE command
to run the scoring program.
For example :

```
GET FILE anotherfilename
INCLUDE FILE "CC__.INC".
EXECUTE.
```

Canonical Correlation1

SET 1	LOADING
Q16	-0.048
Q18	-0.522*
Q19	-0.085
Q20	-0.455*
Q21	-0.547*
Q27	-0.231
Q28	-0.050
Q29	-0.370*
Q35	-0.480*

Rc=.407
Rc2= .166

CV1-1 =.134 CV2-1 =.302

SET 2	LOADING
Q61	-0.753*
Q62	-0.480*
Q65	-0.366*
Q71	-0.590*
Q78	0.478*

Wilk's Lambda =0.699
Chi Square = 114.014
DF = 45
p<.001

Canonical Correlation 2

SET 1	LOADING
Q16	0.085
Q18	-0.060
Q19	0.303*
Q20	0.448*
Q21	-0.185
Q27	0.488*
Q28	0.587*
Q29	0.661*
Q35	0.309

Rc=.310
Rc2= .0961

CV1-2 =..161 CV2-2 =.355

SET 2	LOADING
Q61	-0.606*
Q62	-0.296
Q65	-0.654*
Q71	-0.494
Q78	-0.807*

Wilk's Lambda =0.838
Chi Square = 56.237
DF = 32
p=.005

Canonical Correlation

A canonical correlation was conducted to explore the relationships between two sets of variables. The first set of variables measures the connectedness to a conventional community. The second variable measures internet usage.

From the analysis two significant canonical correlation functions were found. In the first function, Rc=.407. This means that 16.6% of the variance between the two variates is shared. The Wilks' lambda statistic was found to be significant through a chi-square test with a df= 45 and p<. 001.

Of the 9 variables included in Set 1 five variables have significant loadings in CV1-1. Hair et al's guidelines for factor loadings were used, so loadings greater than .3 are significant given the sample size of over 400. The significant variables are Q18, Q20, Q21, Q29, and Q35. CV1-1 accounts for 13.4% of the variance in Set 1. Of the 5 variables in set 2 all have significant loadings in CV2-1: Q61, Q62., Q65, Q71, and Q78. CV2-1 accounts for 30.2% of the pooled variance in set #2.

In the second function, Rc=.310; this indicates that 9.61% of the variance between the two variates is shared. The Wilks' lambda statistic was found to be significant through a chi square test with df= 32 and p=.005. Of the nine variables included in set #1, five were significant: Q19, Q20, Q27, Q28, and Q29. CV1-2 accounts for 16.1% of the variance of set #1. In set #2 three of the variables were significant: Q61, Q65, and Q71. CV2-2 accounts for 35.5% of the variance for set #2.

In the first canonical correlation all of the loadings in set #1 are negative. In set #2 all of the loadings are also negative except for blogging. This indicates that the less someone engages in the significant physical community interaction behaviors in the first set, the less they are likely to engage in the significant online community behaviors from the second set with the exception of blogging (here, the less respondents engage in the significant online community behaviors in set #1, the more they blog) . In the second canonical function all of the significant loadings in set #1 are positive. In set #2 all of the loadings are negative. This indicates that the more a participant engages in the significant physical community interaction behaviors in set #1 the less they engage in the significant online community behaviors of set #2.

These incongruent findings are confusing, but it is possible that the two canonical correlations represent two distinct patterns of response, reflecting two groups of people who have distinct behavioral patterns.