

COM 631, Spring 2011

MULTIPLE REGRESSION EXAMPLE: FORCED-ENTRY HIERARCHICAL MODEL

Dorigen Bettes

3/7/11

Block 1 – Demographics

Recode Marital Status to Dummy (1=Married, 0=All others)

Ethnicity Recode to Dummy (1=White, 0=Non White)

Q107: Household Income

Block 2 – Neighborhood Ties

Q2: Time Lived There

Q34: No. of Neighbor homes visited

Q35: No. Neighbors Know

Q36: % of Friends Living in Same Community

Block 3 – Neighborhood Attachment

Q26: Feel Lost if Moved from Neighborhood

Q27: Feel Part of Community

Q28: Feel Strong Identity with Community

Q29: Enjoy Living in Neighborhood

Dependent Variable:

Q4: Community Quality of Life



Screen Shots

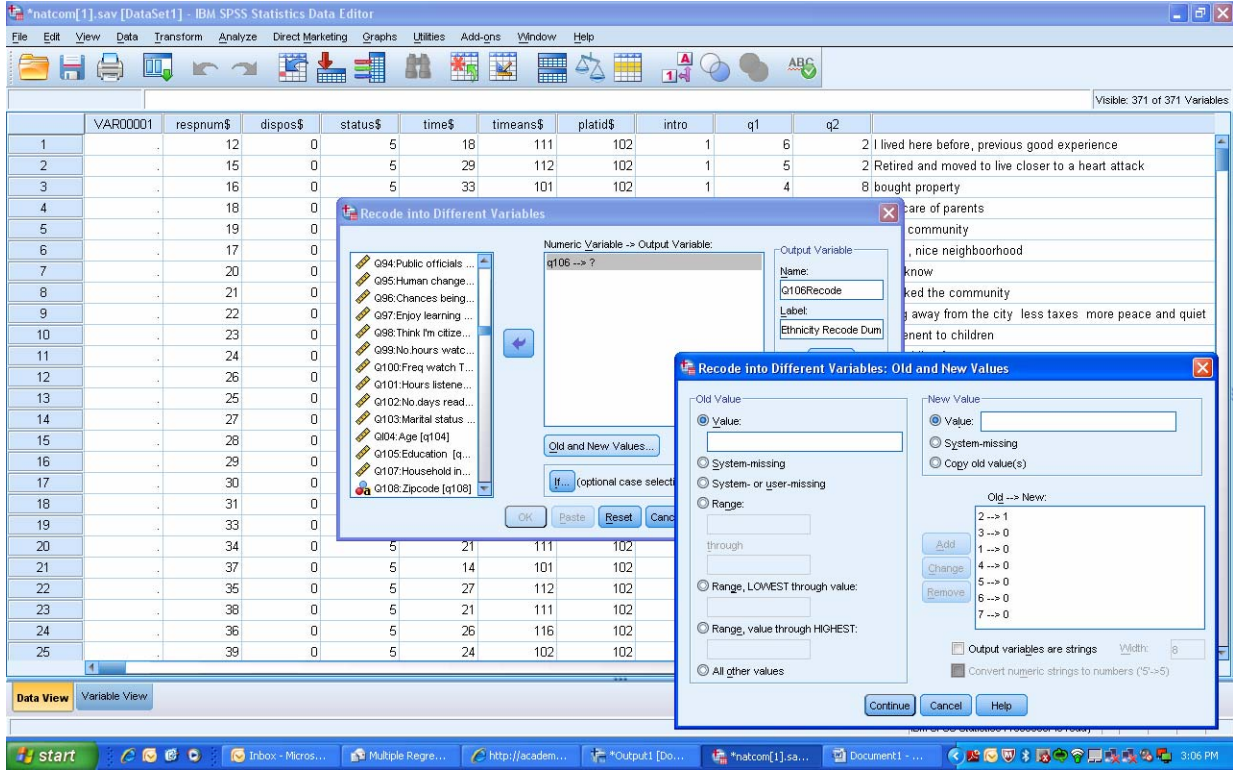
The screenshot displays the IBM SPSS Statistics Data Editor interface. The main window shows a data view with columns for variables: VAR00001, resprnm\$, dispos\$, status\$, time\$, timeans\$, platiid\$, intro, q1, and q2. The data rows show values for these variables, with some cells containing text descriptions of responses.

Two dialog boxes are open over the data view:

- Recode into Different Variables:** This dialog box is used to create a new variable from an existing one. The 'Numeric Variable -> Output Variable:' section shows 'q103 -> Q103Recode'. The 'Output Variable:' section shows 'Name: Q103Recode' and 'Label: Marital Status to Dummy'. The 'Old and New Values...' button is visible.
- Recode into Different Variables: Old and New Values:** This dialog box is used to define the mapping between old and new values. The 'Old Value' section has 'Value' selected. The 'New Value' section has 'Value' selected. The 'Old -> New:' list shows the following mappings:
 - 1 -> 1
 - 2 -> 0
 - 3 -> 0
 - 4 -> 0
 - 5 -> 0

The task is to recode the Marital Status variable into a dummy variable where Married = 1 and All others = 0.

Recode Marital Status into dummy variable where Married = 1 and All others = 0



Recode Ethnicity into dummy variable where White = 1 and All others = 0

The screenshot shows the IBM SPSS Statistics Data Editor interface. A data table is visible in the background with columns: VAR00001, resprum\$, dispos\$, status\$, time\$, timeans\$, platid\$, intro, q1, q2, and a text column. The 'Linear Regression' dialog box is open, showing the following configuration:

- Dependent:** Q4: Community QOL [q4]
- Block 1 of 1 Independent(s):**
 - g107: Household income [g107]
 - Marital Status to Dummy [G103R...]
 - Ethnicity Recode Dummy [G106...]
- Method:** Enter
- Selection Variable:** (empty)
- Case Labels:** (empty)
- WLS Weight:** (empty)

The dialog box also includes buttons for 'Statistics...', 'Plots...', 'Save...', 'Options...', and 'Bootstrap...'. The data table shows rows 1 through 25, with the text column containing various responses related to community quality of life.

Analyze → Regression → Linear

Input Dependent Variable and First Block of Independent Variables

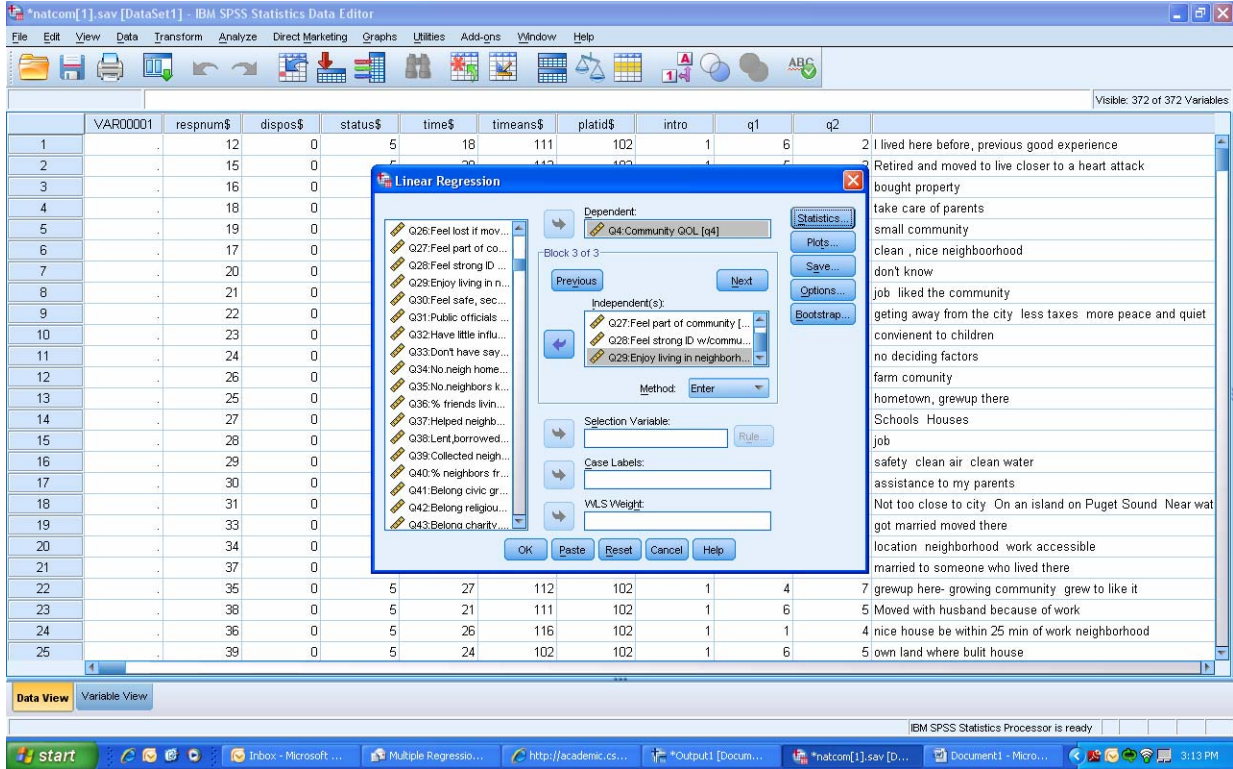
Click Next to add additional blocks

The screenshot displays the IBM SPSS Statistics Data Editor interface. A 'Linear Regression' dialog box is open, showing the configuration for a second block of independent variables. The dependent variable is 'Q4: Community QOL [q4]'. The independent variables for this block are 'Q34: No neigh homes visited ...', 'Q35: No neighbors know [q35]', and 'Q36: % friends living in same...'. The 'Method' is set to 'Enter'. The background shows a data table with columns for various variables and a list of neighborhood characteristics.

	VAR00001	resprum\$	dispos\$	status\$	time\$	timeans\$	plaid\$	intro	q1	q2	
1		12	0	5	18	111	102	1	6	2	I lived here before, previous good experience
2		15	0								Retired and moved to live closer to a heart attack
3		16	0								bought property
4		18	0								take care of parents
5		19	0								small community
6		17	0								clean , nice neighborhood
7		20	0								don't know
8		21	0								job liked the community
9		22	0								getting away from the city less taxes more peace and quiet
10		23	0								convenient to children
11		24	0								no deciding factors
12		26	0								farm comunity
13		25	0								hometown, grewp there
14		27	0								Schools Houses
15		28	0								job
16		29	0								safety clean air clean water
17		30	0								assistance to my parents
18		31	0								Not too close to city On an island on Puget Sound Near wat
19		33	0								got married moved there
20		34	0								location neighborhood work accessible
21		37	0								married to someone who lived there
22		35	0	5	27	112	102	1	4	7	grewp here- growing community grew to like it
23		38	0	5	21	111	102	1	6	5	Moved with husband because of work
24		36	0	5	26	116	102	1	1	4	nice house be within 25 min of work neighborhood
25		39	0	5	24	102	102	1	6	5	own land where built house

Input Second Block of Independent Variables

Click Next to Add Additional Blocks



Add Third Block (more blocks can be added, but for this example only three were used)

Click Statistics button in the linear regression window

The screenshot shows the IBM SPSS Statistics Data Editor interface. The main window displays a data table with columns: VAR00001, respnum\$, dispos\$, status\$, time\$, timeans\$, platid\$, intro, q1, q2. The data rows show values for these variables. Two dialog boxes are open over the data table:

- Linear Regression**:
 - Dependent: Q4: Community QOL [q4]
 - Independent(s): Q27: Feel part of community [q27], Q28: Feel strong ID w/commu..., Q29: Enjoy living in neighborh...
 - Method: Enter
- Linear Regression: Statistics**:
 - Regression Coefficients: Model fit, R squared change
 - Estimates: Estimates
 - Confidence intervals: Confidence intervals (Level(%): 95)
 - Descriptives: Descriptives
 - Part and partial correlations: Part and partial correlations
 - Covariance matrix: Covariance matrix
 - Collinearity diagnostics: Collinearity diagnostics
 - Residuals: Durbin-Watson, Casewise diagnostics, Outliers outside: 3 standard deviations, All cases

The task instructions are: Select desired statistics: estimates, model fit, R square change, descriptives, collinearity diagnostics. Click continue. To run, click OK in the Linear Regression window.

Select desired statistics: estimates, model fit, R square change, descriptives, collinearity diagnostics

Click continue

To run, click OK in the Linear Regression window

GET

FILE='C:\Documents and Settings\E145250\Local Settings\Temporary Internet Files\Content.IE5\H5L0ID30\natcom[1].sav'.

File opened C:\Documents and Settings\E145250\Local Settings\Temporary Internet Files\Content.IE5\H5L0ID30\natcom[1].sav

DATASET NAME DataSet1 WINDOW=FRONT.

RECODE q103 (1=1) (2=0) (3=0) (4=0) (5=0) INTO Q103Recode.

VARIABLE LABELS Q103Recode 'Recode Marital Status to Dummy'.

EXECUTE.

RECODE q106 (2=1) (3=0) (1=0) (4=0) (5=0) (6=0) (7=0) INTO Q106Recode.

VARIABLE LABELS Q106Recode 'Ethnicity Recode Dummy'.

EXECUTE.

REGRESSION

/DESCRIPTIVES MEAN STDDEV CORR SIG N

/MISSING LISTWISE

/STATISTICS COEFF OUTS R ANOVA COLLIN TOL CHANGE

/CRITERIA=PIN(.05) POUT(.10)

/NOORIGIN

/DEPENDENT q4

/METHOD=ENTER Q103Recode Q106Recode q107

/METHOD=ENTER q2 q34 q35 q36

/METHOD=ENTER q26 q27 q28 q29.

Regression

Notes

Output Created		02-Mar-2011 16:11:52
Comments		
Input	Data	C:\Documents and Settings\E145250\Local Settings\Temporary Internet Files\Content.IE5\H5L0ID30\natcom[1].sav
	Active Dataset	DataSet1
	File Label	CP05
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data	482
	File	
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.

Syntax		REGRESSION
		/DESCRIPTIVES MEAN STDDEV
		CORR SIG N
		/MISSING LISTWISE
		/STATISTICS COEFF OUTS R
		ANOVA COLLIN TOL CHANGE
		/CRITERIA=PIN(.05) POUT(.10)
		/NOORIGIN
		/DEPENDENT q4
		/METHOD=ENTER Q103Recode
		Q106Recode q107
		/METHOD=ENTER q2 q34 q35 q36
		/METHOD=ENTER q26 q27 q28 q29.
Resources	Processor Time	00 00:00:00.140
	Elapsed Time	00 00:00:00.156
	Memory Required	16980 bytes
	Additional Memory Required for Residual Plots	0 bytes

[DataSet1] C:\Documents and Settings\E145250\Local Settings\Temporary Internet Files\Content.IE5\H5L0ID30\natcom[1].sav

Descriptive Statistics

	Mean	Std. Deviation	N
Q4:Community QOL	7.58	1.934	342
Recode Marital Status to Dummy	.5614	.49694	342
Ethnicity Recode Dummy	.7485	.43449	342
Q107:Household income	4.69	2.239	342
Q2:Time lived there	3.88	1.928	342
Q34:No.neigh homes visited	4.74	3.281	342
Q35:No.neighbors know	7.06	3.213	342
Q36:% friends living in same community	2.27	1.586	342
Q26:Feel lost if moved from neighborhood	4.85	3.817	342
Q27:Feel part of community	6.89	3.038	342
Q28:Feel strong ID w/community	6.54	3.081	342
Q29:Enjoy living in neighborhood	8.25	2.380	342

Correlations

		Q4:Commu nity QOL	Recode Marital Status to Dummy	Ethnicity Recode Dummy	Q107:House hold income	Q2:Time lived there
Pearson Correlation	Q4:Community QOL	1.000	.126	.224	.232	.152
	Recode Marital Status to Dummy	.126	1.000	.099	.488	.015
	Ethnicity Recode Dummy	.224	.099	1.000	.163	.142
	Q107:Household income	.232	.488	.163	1.000	-.062
	Q2:Time lived there	.152	.015	.142	-.062	1.000
	Q34:No.neigh homes visited	.107	.073	.107	.081	.199
	Q35:No.neighbors know	.131	.151	.094	.148	.225
	Q36:% friends living in same community	.080	.005	-.016	-.076	.230
	Q26:Feel lost if moved from neighborhood	.229	.046	.096	-.105	.271
	Q27:Feel part of community	.418	.072	.169	.036	.248
	Q28:Feel strong ID w/community	.420	.135	.128	.109	.212
	Q29:Enjoy living in neighborhood	.591	.060	.183	.112	.199
Sig. (1- tailed)	Q4:Community QOL	.	.010	.000	.000	.002
	Recode Marital Status to Dummy	.010	.	.034	.000	.389
	Ethnicity Recode Dummy	.000	.034	.	.001	.004
	Q107:Household income	.000	.000	.001	.	.128
	Q2:Time lived there	.002	.389	.004	.128	.
	Q34:No.neigh homes visited	.024	.090	.024	.068	.000
	Q35:No.neighbors know	.008	.003	.041	.003	.000
	Q36:% friends living in same community	.070	.463	.381	.080	.000
	Q26:Feel lost if moved from neighborhood	.000	.199	.038	.026	.000
	Q27:Feel part of community	.000	.093	.001	.255	.000
	Q28:Feel strong ID w/community	.000	.006	.009	.022	.000
	Q29:Enjoy living in neighborhood	.000	.133	.000	.019	.000

N	Q4:Community QOL	342	342	342	342	342
	Recode Marital Status to Dummy	342	342	342	342	342
	Ethnicity Recode Dummy	342	342	342	342	342
	Q107:Household income	342	342	342	342	342
	Q2:Time lived there	342	342	342	342	342
	Q34:No.neigh homes visited	342	342	342	342	342
	Q35:No.neighbors know	342	342	342	342	342
	Q36:% friends living in same community	342	342	342	342	342
	Q26:Feel lost if moved from neighborhood	342	342	342	342	342
	Q27:Feel part of community	342	342	342	342	342
	Q28:Feel strong ID w/community	342	342	342	342	342
	Q29:Enjoy living in neighborhood	342	342	342	342	342

Correlations

		Q34:No.neigh h homes visited	Q35:No.neig hbors know	Q36:% friends living in same community	Q26:Feel lost if moved from neighborhoo d	Q27:Feel part of community
Pearson	Q4:Community QOL	.107	.131	.080	.229	.418
Correlation	Recode Marital Status to Dummy	.073	.151	.005	.046	.072
	Ethnicity Recode Dummy	.107	.094	-.016	.096	.169
	Q107:Household income	.081	.148	-.076	-.105	.036
	Q2:Time lived there	.199	.225	.230	.271	.248
	Q34:No.neigh homes visited	1.000	.646	.312	.199	.370
	Q35:No.neighbors know	.646	1.000	.313	.205	.367
	Q36:% friends living in same community	.312	.313	1.000	.263	.284
	Q26:Feel lost if moved from neighborhood	.199	.205	.263	1.000	.476
	Q27:Feel part of community	.370	.367	.284	.476	1.000
	Q28:Feel strong ID w/community	.307	.354	.266	.420	.717
	Q29:Enjoy living in neighborhood	.261	.284	.257	.436	.622
Sig. (1-tailed)	Q4:Community QOL	.024	.008	.070	.000	.000
	Recode Marital Status to Dummy	.090	.003	.463	.199	.093
	Ethnicity Recode Dummy	.024	.041	.381	.038	.001
	Q107:Household income	.068	.003	.080	.026	.255
	Q2:Time lived there	.000	.000	.000	.000	.000
	Q34:No.neigh homes visited	.	.000	.000	.000	.000
	Q35:No.neighbors know	.000	.	.000	.000	.000

	Q36:% friends living in same community	.000	.000	.	.000	.000
	Q26:Feel lost if moved from neighborhood	.000	.000	.000	.	.000
	Q27:Feel part of community	.000	.000	.000	.000	.
	Q28:Feel strong ID w/community	.000	.000	.000	.000	.000
	Q29:Enjoy living in neighborhood	.000	.000	.000	.000	.000
N	Q4:Community QOL	342	342	342	342	342
	Recode Marital Status to Dummy	342	342	342	342	342
	Ethnicity Recode Dummy	342	342	342	342	342
	Q107:Household income	342	342	342	342	342
	Q2:Time lived there	342	342	342	342	342
	Q34:No.neigh homes visited	342	342	342	342	342
	Q35:No.neighbors know	342	342	342	342	342
	Q36:% friends living in same community	342	342	342	342	342
	Q26:Feel lost if moved from neighborhood	342	342	342	342	342
	Q27:Feel part of community	342	342	342	342	342
	Q28:Feel strong ID w/community	342	342	342	342	342
	Q29:Enjoy living in neighborhood	342	342	342	342	342

Correlations

		Q28:Feel strong ID w/community	Q29:Enjoy living in neighborhood
Pearson Correlation	Q4:Community QOL	.420	.591
	Recode Marital Status to Dummy	.135	.060

	Ethnicity Recode Dummy	.128	.183
	Q107:Household income	.109	.112
	Q2:Time lived there	.212	.199
	Q34:No.neigh homes visited	.307	.261
	Q35:No.neighbors know	.354	.284
	Q36:% friends living in same community	.266	.257
	Q26:Feel lost if moved from neighborhood	.420	.436
	Q27:Feel part of community	.717	.622
	Q28:Feel strong ID w/community	1.000	.583
	Q29:Enjoy living in neighborhood	.583	1.000
Sig. (1-tailed)	Q4:Community QOL	.000	.000
	Recode Marital Status to Dummy	.006	.133
	Ethnicity Recode Dummy	.009	.000
	Q107:Household income	.022	.019
	Q2:Time lived there	.000	.000
	Q34:No.neigh homes visited	.000	.000
	Q35:No.neighbors know	.000	.000
	Q36:% friends living in same community	.000	.000
	Q26:Feel lost if moved from neighborhood	.000	.000
	Q27:Feel part of community	.000	.000
	Q28:Feel strong ID w/community	.	.000
	Q29:Enjoy living in neighborhood	.000	.
N	Q4:Community QOL	342	342
	Recode Marital Status to Dummy	342	342
	Ethnicity Recode Dummy	342	342
	Q107:Household income	342	342
	Q2:Time lived there	342	342
	Q34:No.neigh homes visited	342	342
	Q35:No.neighbors know	342	342

Q36:% friends living in same community	342	342
Q26:Feel lost if moved from neighborhood	342	342
Q27:Feel part of community	342	342
Q28:Feel strong ID w/community	342	342
Q29:Enjoy living in neighborhood	342	342

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	Q107:Household income, Ethnicity Recode Dummy, Recode Marital Status to Dummy	.	Enter
2	Q36:% friends living in same community, Q2:Time lived there, Q34:No.neigh homes visited, Q35:No.neighbors know	.	Enter
3	Q26:Feel lost if moved from neighborhood, Q29:Enjoy living in neighborhood, Q28:Feel strong ID w/community, Q27:Feel part of community	.	Enter

a. All requested variables entered.

b. Dependent Variable: Q4:Community QOL

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.299 ^a	.090	.081	1.853
2	.339 ^b	.115	.096	1.838
3	.639 ^c	.408	.389	1.512

Model Summary

Model	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
1	.090	11.081	3	338	.000
2	.025	2.376	4	334	.052
3	.294	40.923	4	330	.000

a. Predictors: (Constant), Q107:Household income, Ethnicity Recode Dummy, Recode Marital Status to Dummy

b. Predictors: (Constant), Q107:Household income, Ethnicity Recode Dummy, Recode Marital Status to Dummy, Q36:% friends living in same community, Q2:Time lived there, Q34:No.neigh homes visited, Q35:No.neighbors know

c. Predictors: (Constant), Q107:Household income, Ethnicity Recode Dummy, Recode Marital Status to Dummy, Q36:% friends living in same community, Q2:Time lived there, Q34:No.neigh homes visited, Q35:No.neighbors know, Q26:Feel lost if moved from neighborhood, Q29:Enjoy living in neighborhood, Q28:Feel strong ID w/community, Q27:Feel part of community

ANOVA^d

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	114.188	3	38.063	11.081	.000 ^a
	Residual	1161.020	338	3.435		
	Total	1275.208	341			
2	Regression	146.307	7	20.901	6.184	.000 ^b
	Residual	1128.901	334	3.380		
	Total	1275.208	341			
3	Regression	520.616	11	47.329	20.698	.000 ^c
	Residual	754.592	330	2.287		
	Total	1275.208	341			

a. Predictors: (Constant), Q107:Household income, Ethnicity Recode Dummy, Recode Marital Status to Dummy

b. Predictors: (Constant), Q107:Household income, Ethnicity Recode Dummy, Recode Marital Status to Dummy, Q36:% friends living in same community, Q2:Time lived there, Q34:No.neigh homes visited, Q35:No.neighbors know

c. Predictors: (Constant), Q107:Household income, Ethnicity Recode Dummy, Recode Marital Status to Dummy, Q36:% friends living in same community, Q2:Time lived there, Q34:No.neigh homes visited, Q35:No.neighbors know, Q26:Feel lost if moved from neighborhood, Q29:Enjoy living in neighborhood, Q28:Feel strong ID w/community, Q27:Feel part of community

d. Dependent Variable: Q4:Community QOL

Coefficients^a

Model		Unstandardized Coefficients	
		B	Std. Error
1	(Constant)	6.130	.272
	Recode Marital Status to Dummy	.045	.231
	Ethnicity Recode Dummy	.848	.234
	Q107:Household income	.169	.052
2	(Constant)	5.376	.370
	Recode Marital Status to Dummy	-.008	.231
	Ethnicity Recode Dummy	.753	.236
	Q107:Household income	.183	.052
	Q2:Time lived there	.118	.055
	Q34:No.neigh homes visited	.005	.040
	Q35:No.neighbors know	.021	.042
	Q36:% friends living in same community	.071	.068
3	(Constant)	2.974	.364
	Recode Marital Status to Dummy	.029	.191
	Ethnicity Recode Dummy	.387	.197
	Q107:Household income	.132	.044
	Q2:Time lived there	.056	.046
	Q34:No.neigh homes visited	-.031	.034
	Q35:No.neighbors know	-.036	.035
	Q36:% friends living in same community	-.062	.058
	Q26:Feel lost if moved from neighborhood	-.020	.026
	Q27:Feel part of community	.046	.043
	Q28:Feel strong ID w/community	.064	.040
	Q29:Enjoy living in neighborhood	.409	.047

Coefficients^a

Model		Standardized	t	Sig.	Collinearity Statistics	
		Coefficients			Tolerance	VIF
	Beta					
1	(Constant)		22.529	.000		
	Recode Marital Status to Dummy	.012	.196	.845	.762	1.313
	Ethnicity Recode Dummy	.190	3.619	.000	.973	1.028
	Q107:Household income	.196	3.264	.001	.749	1.336
2	(Constant)		14.515	.000		
	Recode Marital Status to Dummy	-.002	-.033	.974	.754	1.327
	Ethnicity Recode Dummy	.169	3.191	.002	.942	1.061
	Q107:Household income	.212	3.507	.001	.726	1.377
	Q2:Time lived there	.118	2.164	.031	.893	1.120
	Q34:No.neigh homes visited	.008	.116	.908	.565	1.771
	Q35:No.neighbors know	.034	.492	.623	.546	1.832
	Q36:% friends living in same community	.058	1.042	.298	.843	1.186
3	(Constant)		8.160	.000		
	Recode Marital Status to Dummy	.007	.152	.879	.741	1.350
	Ethnicity Recode Dummy	.087	1.970	.050	.918	1.089
	Q107:Household income	.153	3.012	.003	.692	1.445
	Q2:Time lived there	.055	1.215	.225	.860	1.163
	Q34:No.neigh homes visited	-.053	-.934	.351	.551	1.815
	Q35:No.neighbors know	-.060	-1.041	.299	.531	1.883
	Q36:% friends living in same community	-.051	-1.076	.282	.805	1.242
	Q26:Feel lost if moved from neighborhood	-.039	-.761	.447	.684	1.461
	Q27:Feel part of community	.072	1.059	.291	.385	2.597
	Q28:Feel strong ID w/community	.102	1.601	.110	.438	2.281
	Q29:Enjoy living in neighborhood	.503	8.702	.000	.537	1.862

a. Dependent Variable: Q4:Community QOL

Excluded Variables^c

Model		Beta In	t	Sig.	Partial Correlation
1	Q2:Time lived there	.141 ^a	2.694	.007	.145
	Q34:No.neigh homes visited	.071 ^a	1.359	.175	.074
	Q35:No.neighbors know	.086 ^a	1.623	.106	.088
	Q36:% friends living in same community	.099 ^a	1.900	.058	.103
	Q26:Feel lost if moved from neighborhood	.240 ^a	4.668	.000	.246
	Q27:Feel part of community	.391 ^a	8.079	.000	.403
	Q28:Feel strong ID w/community	.386 ^a	7.955	.000	.398
	Q29:Enjoy living in neighborhood	.556 ^a	12.762	.000	.571
2	Q26:Feel lost if moved from neighborhood	.211 ^b	3.852	.000	.207
	Q27:Feel part of community	.412 ^b	7.642	.000	.386
	Q28:Feel strong ID w/community	.394 ^b	7.447	.000	.378
	Q29:Enjoy living in neighborhood	.577 ^b	12.434	.000	.563

Excluded Variables^c

Model		Collinearity Statistics		
		Tolerance	VIF	Minimum Tolerance
1	Q2:Time lived there	.970	1.031	.741
	Q34:No.neigh homes visited	.983	1.017	.748
	Q35:No.neighbors know	.965	1.036	.744
	Q36:% friends living in same community	.992	1.008	.743
	Q26:Feel lost if moved from neighborhood	.964	1.037	.730
	Q27:Feel part of community	.968	1.033	.748
	Q28:Feel strong ID w/community	.967	1.034	.748

	Q29:Enjoy living in neighborhood	.960	1.042	.745
2	Q26:Feel lost if moved from neighborhood	.851	1.174	.544
	Q27:Feel part of community	.779	1.284	.536
	Q28:Feel strong ID w/community	.815	1.227	.532
	Q29:Enjoy living in neighborhood	.842	1.187	.540

- a. Predictors in the Model: (Constant), Q107:Household income, Ethnicity Recode Dummy, Recode Marital Status to Dummy
- b. Predictors in the Model: (Constant), Q107:Household income, Ethnicity Recode Dummy, Recode Marital Status to Dummy, Q36:% friends living in same community, Q2:Time lived there, Q34:No.neigh homes visited, Q35:No.neighbors know
- c. Dependent Variable: Q4:Community QOL

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index
1	1	3.419	1.000
	2	.342	3.164
	3	.156	4.680
	4	.083	6.414
2	1	6.532	1.000
	2	.479	3.692
	3	.298	4.679
	4	.243	5.179
	5	.170	6.207
	6	.147	6.670
	7	.078	9.180
	8	.053	11.054
3	1	9.930	1.000
	2	.526	4.346
	3	.325	5.530
	4	.300	5.750
	5	.233	6.521
	6	.182	7.378
	7	.166	7.727
	8	.124	8.933
	9	.076	11.431
	10	.063	12.570
	11	.045	14.838
	12	.029	18.530

Collinearity Diagnostics^a

Model	Dimension	Variance Proportions				
		(Constant)	Recode Marital Status to Dummy	Ethnicity Recode Dummy	Q107:Household income	Q2:Time lived there
1	1	.01	.02	.02	.01	
	2	.03	.61	.22	.00	
	3	.14	.27	.66	.26	
	4	.82	.09	.11	.73	
2	1	.00	.01	.00	.00	.00
	2	.00	.37	.00	.03	.01
	3	.01	.20	.38	.00	.03

	4	.00	.01	.00	.00	.05
	5	.01	.00	.36	.00	.58
	6	.04	.37	.21	.46	.09
	7	.05	.01	.00	.23	.10
	8	.89	.03	.05	.26	.13
3	1	.00	.00	.00	.00	.00
	2	.00	.32	.01	.04	.00
	3	.00	.01	.02	.00	.00
	4	.01	.28	.31	.01	.01
	5	.00	.00	.00	.00	.04
	6	.01	.09	.34	.06	.04
	7	.00	.00	.23	.00	.70
	8	.02	.21	.05	.40	.04
	9	.04	.01	.00	.20	.07
	10	.24	.07	.04	.24	.06
	11	.07	.00	.00	.05	.00
	12	.62	.00	.00	.00	.02

Collinearity Diagnostics^a

Model	Dimension	Variance Proportions				
		Q34:No.neigh homes visited	Q35:No.neighbo rs know	Q36:% friends living in same community	Q26:Feel lost if moved from neighborhood	Q27:Feel part of community
1	1					
	2					
	3					
	4					
2	1	.00	.00	.00		
	2	.04	.01	.10		
	3	.06	.01	.13		
	4	.32	.03	.45		
	5	.00	.00	.25		
	6	.04	.01	.00		
	7	.43	.69	.03		
	8	.11	.26	.03		
3	1	.00	.00	.00	.00	.00
	2	.01	.00	.05	.06	.00
	3	.19	.03	.07	.31	.00
	4	.00	.00	.11	.11	.00
	5	.21	.02	.58	.07	.00

6	.07	.00	.02	.12	.03
7	.00	.00	.15	.00	.00
8	.00	.01	.00	.29	.06
9	.37	.72	.02	.00	.01
10	.11	.18	.01	.01	.01
11	.05	.03	.00	.01	.79
12	.00	.01	.00	.02	.09

Collinearity Diagnostics^a

Model	Dimension	Variance Proportions	
		Q28:Feel strong ID w/community	Q29:Enjoy living in neighborhood
1	1		
	2		
	3		
	4		
2	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
3	1	.00	.00
	2	.00	.00
	3	.00	.00
	4	.00	.00
	5	.00	.00
	6	.08	.02
	7	.01	.00
	8	.11	.00
	9	.01	.00
	10	.19	.14
	11	.56	.01
	12	.02	.83

a. Dependent Variable: Q4:Community QOL

Table 1
Hierarchical Multiple Regression Predicting Community Quality of Life

Block Name & Number	Variable(s)	<i>r</i>	Final Beta	R ² Change
1: Demographics	Marital Status (dummied to Married)	.126**	.007	.090***
	Ethnicity (dummied to White)	.224***	.087*	
	Q107: Household Income	.232***	.153**	
2: Strength of Neighborhood Ties	Q2: Time lived there	.152**	.055	.025
	Q34: No. neighbor homes visited	.107*	-.053	
	Q35: No. neighbors know	.131**	-.060	
	Q36: % friends living in same community	.080	-.051	
3: Strength of Neighborhood Attachment	Q26: Feel lost if moved from neighborhood	.229***	-.039	.294***
	Q27: Feel part of community	.418***	.072	
	Q28: Feel strong ID w/community	.420***	.102	
	Q29: Enjoy living in neighborhood	.591***	.503***	

Total Model (Equation)

R² = .408

Adjusted R² = .389

F_(11,330) = 20.698***

*- $p < 0.05$

** - $p < 0.01$

*** - $p < .001$

An inspection of final tolerances and of condition indexes revealed no problems with multicollinearity. The lowest tolerance was .385 for Q27: Feel part of the community, well above the .10 threshold recommended by Hair et al. Thus, the set of independent variables does not suffer from extreme multicollinearity, and pass this test for inclusion in a multiple regression.

The multiple regression analysis indicates 40.8% of the variance in the dependent variable, Community Quality of Life is explained by the full set of independent variables, including measures of strength of neighborhood attachment, strength of neighborhood ties, and the demographics of household income, ethnicity and marital status. The adjusted R^2 shows 38.9% of the variance can be explained by these variables when adjusting for number of independent variables and sample size. The total R^2 is statistically significant at the $p < .001$ level meaning we can be 99.9% confident the independent variables' effect is not likely to have occurred by chance, and is true in the population. The third block, strength of neighborhood attachment, was the strongest, while the neighborhood ties accounted for the least amount of variance.

The first block, demographics, included ethnicity (white), income and marital status (married) variables. The analysis indicated an R^2 of .090 meaning these variables accounted for 9% of the total variance in community quality of life (significant at $p < .001$).

The second block dealt with strength of ties in the neighborhood and accounted for 2.5% of the variance after accounting for block 1, but this was not found to be significant.

The majority of explained variance, again, came from the third block that dealt with strength of community attachment. This block accounted for 29.4 % of the variance in community quality of life when controlling for blocks 1 and 2 (significant at $p < .001$).

The correlation table included shows all variables having a positive zero-order correlation with community quality of life and all but one is statistically significant. Feeling part of the community ($r = .418$), feeling a strong identification with the community ($r = .420$) and enjoying living in the neighborhood ($r = .591$) had the highest correlations, while % of friends ($r = .080$) living in the same community was by far the lowest, and was not statistically significant.

When controlling for the impact of all other variables in the final equation, only three independent variables maintained significant unique contributions toward community quality of life. This is indicated by the three significant ($p < .05$) final betas: .087 for Ethnicity (White), .153 for Q107: Household Income, and .503 for Q29: Enjoy living in neighborhood.