

ΑΝΑΛΥΣΗ ΚΑΤΗΓΟΡΙΚΩΝ ΔΕΔΟΜΕΝΩΝ ΜΕ SPSS

ΑΝΑΠΛ. ΚΑΘ. ΣΤΕΛΙΟΣ ΖΗΜΕΡΑΣ
ΤΜΗΜΑ ΣΤΑΤΙΣΤΙΚΗΣ ΚΑΙ ΑΝΑΛΟΓΙΣΤΙΚΩΝ –
ΧΡΗΜΑΤΟΟΙΚΟΝΟΜΙΚΩΝ ΜΑΘΗΜΑΤΙΚΩΝ
ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΙΓΑΙΟΥ

2021

id	depress1	fost2	confid2	depress2	fost3	confid3	depress3	exam	mah_1	DepT1gp2	DepT2Gp2	DepT3gp2
1	4								,56998	0	0	
2	10								1,65940	0	0	
3	9								3,54047	0	0	
4	3								2,45421	0	0	
5	12								,94430	0	1	
6	11								1,62571	0	0	
7	6								4,17447	0	0	
8	5								1,02611	1	1	
9	8								1,70531	0	0	
10	13								3,08732	1	1	
11	14								2,91402	0	0	
12	1								,34700	0	0	
13	15								1,58862	1	1	
14	7								1,50766	0	0	
15	2								10,24018	1	1	
16	27								1,17765	1	0	
17	25								1,05647	0	0	
18	19								3,87489	1	1	
19	18								2,71016	0	0	
20	23								3,54886	0	0	
21	21								,50072	0	0	
22	26	2	1	2	2	2	2	2	1,47391	0	0	
23	29	2	1	1	1	1	1	1	9,12958	0	0	
24	17	2	1	1	1	1	1	1	6,20658	0	0	
25	20	2	2	2	2	2	2	2	1,71910	1	1	
26	28	2	2	2	2	2	2	2	1,50155	0	0	
27	22	2	2	2	2	2	2	2	1,92404	1	0	
28	24	2	2	2	2	2	2	2	7,55764	1	1	
29	16	2	2	2	2	2	2	2	1,18849	1	0	
30	30	2	2	2	2	2	2	2	6,04559	0	0	

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 - Quality Control
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Data View Variable View

CAPS LOCK: ΑΠΕΝΕΡΓΟΠΟΙΗΣΗ

	id	sex	age	group	fost1	confid1	depress1	fost2	confid2	depress2	fost3	confid3	depress3	exam	mah_1	DepT1gp2	DepT2Gp2	DepT3gp2
1	4	1	23	2	50	15	44	48	16	44	45	14	40	52	,56998	0	0	
2	10	1	21	2	47	14	42	45	15	42	44	18	40	55	1,65940	0	0	
3	9	1	25	1	44	12	40	39	18	40	36	19	38	58	3,54047	0	0	
4	3	1	30	1	47	11	43	42	16	43	41	20	43	60	2,45421	0	0	
5	12	1	45	2	46	16	44	45	16	45	43	20	43	58	,94430	0	1	
6	11	1	22	1	39	13								62	1,62571	0	0	
7	6	1	22	2	32	21								59	4,17447	0	0	
8	5	1	26	1	44	17								70	1,02611	1	1	
9	8	1	23	2	40	22								60	1,70531	0	0	
10	13	1	21	1	47	20								70	3,08732	1	1	
11	14	1	23	2	38	28								72	2,91402	0	0	
12	1	1	19	1	32	20								82	,34700	0	0	
13	15	1	23	1	39	21								79	1,58862	1	1	
14	7	1	19	1	36	24								80	1,50766	0	0	
15	2	1	21	2	37	29								90	10,24018	1	1	
16	27	2	20	1	41	16								56	1,17765	1	0	
17	25	2	24	1	38	14								53	1,05647	0	0	
18	19	2	27	1	42	15								59	3,87489	1	1	
19	18	2	23	2	44	13								64	2,71016	0	0	
20	23	2	22	1	32	22								63	3,54886	0	0	
21	21	2	46	1	39	21								64	,50072	0	0	
22	26	2	19	2	42	13								63	1,47391	0	0	
23	29	2	22	1	37	28								67	9,12958	0	0	
24	17	2	37	1	41	29								71	6,20658	0	0	
25	20	2	32	2	43	17								73	1,71910	1	1	
26	28	2	30	2	46	20								80	1,50155	0	0	
27	22	2	25	2	30	24								83	1,92404	1	0	
28	24	2	21	2	33	12	50	29	20	48	25	30	50	85	7,55764	1	1	
29	16	2	45	2	40	22	45	30	35	40	25	32	42	78	1,18849	1	0	
30	30	2	21	2	39	21	34	36	30	30	30	32	32	84	6,04559	0	0	

Crosstabs

Row(s):
sex

Column(s):
type of class [group]

Layer 1 of 1

Display clustered bar charts

Suppress tables

Buttons: OK, Paste, Reset, Cancel, Help



1: id 4 Visible: 18 of 18 Variables

	id	sex	age	group	fost1	confid1	depress1	fost2	confid2	depress2	fost3	confid3	depress3	exam	mah_1	DepT1gp2	DepT2Gp2	DepT3gp2
1	4	1	23	2	50	15	44	48	16	44	45	14	40	52	,56998	0	0	
2	10	1	21	2	47	14	42	45	15	42	44	18	40	55	1,65940	0	0	
3	9	1	25	1	44	12	40	39	18	40	36	19	38	58	3,54047	0	0	
4	3	1	30	1	47	11	43	42	16	43	41	20	43	60	2,45421	0	0	
5	12	1	45	2	46	16	44	45	16	45	43	20	43	58	,94430	0	0	1
6	11	1	22	1	39	13								62	1,62571	0	0	
7	6	1	22	2	32	21												
8	5	1	26	1	44	17												
9	8	1	23	2	40	22												
10	13	1	21	1	47	20												
11	14	1	23	2	38	28												
12	1	1	19	1	32	20												
13	15	1	23	1	39	21												
14	7	1	19	1	36	24												
15	2	1	21	2	37	29												
16	27	2	20	1	41	16												
17	25	2	24	1	38	14												
18	19	2	27	1	42	15												
19	18	2	23	2	44	13												
20	23	2	22	1	32	22												
21	21	2	46	1	39	21												
22	26	2	19	2	42	13												
23	29	2	22	1	37	28												
24	17	2	37	1	41	29												
25	20	2	32	2	43	17												
26	28	2	30	2	46	20												
27	22	2	25	2	30	24												
28	24	2	21	2	33	12	50	29	20	48	25	30	50	85	7,55764	1	1	
29	16	2	45	2	40	22	45	30	35	40	25	32	42	78	1,18849	1	0	
30	30	2	21	2	39	21	34	36	30	30	30	32	32	84	6,04559	0	0	

Crosstabs

Row(s): sex

Column(s): type of class [group]

Layer 1 of 1

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Display clustered bar charts
 Suppress tables

OK Paste Reset Cancel Help

Crosstabs: Statistics

Chi-square Correlations

Nominal:
 Contingency coefficient
 Phi and Cramer's V
 Lambda
 Uncertainty coefficient

Ordinal:
 Gamma
 Somers' d
 Kendall's tau-b
 Kendall's tau-c

Nominal by Interval:
 Eta
 Kappa
 Risk
 McNemar

Cochran's and Mantel-Haenszel statistics

Test common odds ratio equals: 1

Continue Cancel Help

Data View Variable View

PASW Statistics Processor is ready



1: id 4

Visible: 18 of 18 Variables

	id	sex	age	group	fost1	confid1	depress1	fost2	confid2	depress2	fost3	confid3	depress3	exam	mah_1	DepT1gp2	DepT2Gp2	DepT3gp2
1	4	1	23	2	50	15	44	48	16	44	45	14	40	52	,56998	0	0	0
2	10	1	21	2	47	14	42	45	15	42	44	18	40	55	1,65940	0	0	0
3	9	1	25	1	44	12	40	39	18	40	36	19	38	58	3,54047	0	0	0
4	3	1	30	1	47	11	43	42	16	43	41	20	43	60	2,45421	0	0	0
5	12	1	45	2	46	16	44	45	16	45	43	20	43	58	,94430	0	0	1
6	11	1	22	1	39	13												
7	6	1	22	2	32	21												
8	5	1	26	1	44	17												
9	8	1	23	2	40	22												
10	13	1	21	1	47	20												
11	14	1	23	2	38	28												
12	1	1	19	1	32	20												
13	15	1	23	1	39	21												
14	7	1	19	1	36	24												
15	2	1	21	2	37	29												
16	27	2	20	1	41	16												
17	25	2	24	1	38	14												
18	19	2	27	1	42	15												
19	18	2	23	2	44	13												
20	23	2	22	1	32	22												
21	21	2	46	1	39	21												
22	26	2	19	2	42	13												
23	29	2	22	1	37	28												
24	17	2	37	1	41	29												
25	20	2	32	2	43	17												
26	28	2	30	2	46	20												
27	22	2	25	2	30	24												
28	24	2	21	2	33	12	50	29	20	48	25	30	50	85	7,55764	1	1	1
29	16	2	45	2	40	22	45	30	35	40	25	32	42	78	1,18849	1	0	0
30	30	2	21	2	39	21	34	36	30	30	30	32	32	84	6,04559	0	0	0

Crosstabs

Row(s): sex

Column(s): type of class [group]

Layer 1 of 1

Previous Next

Display clustered bar charts
 Suppress tables

OK Paste Reset Cancel Help

Crosstabs: Cell Display

Counts

Observed
 Expected

Percentages

Row
 Column
 Total

Residuals

Unstandardized
 Standardized
 Adjusted standardized

Noninteger Weights

Round cell counts Round case weights
 Truncate cell counts Truncate case weights
 No adjustments

Continue Cancel Help

sex * type of class Crosstabulation

			type of class		Total
			maths skills	confidence building	
sex	male	Count	8	7	15
		% within sex	53,3%	46,7%	100,0%
		% within type of class	53,3%	46,7%	50,0%
		% of Total	26,7%	23,3%	50,0%
	female	Count	7	8	15
		% within sex	46,7%	53,3%	100,0%
		% within type of class	46,7%	53,3%	50,0%
		% of Total	23,3%	26,7%	50,0%
Total	Count	15	15	30	
	% within sex	50,0%	50,0%	100,0%	
	% within type of class	100,0%	100,0%	100,0%	
	% of Total	50,0%	50,0%	100,0%	

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,133 ^a	1	,715	1,000	,500
Continuity Correction ^b	,000	1	1,000		
Likelihood Ratio	,133	1	,715		
Fisher's Exact Test					
Linear-by-Linear Association	,129	1	,720		
N of Valid Cases	30				

a. 0 cells (,0%) have expected count less than 5. The minimum expected count is 7,50.

b. Computed only for a 2x2 table

Symmetric Measures

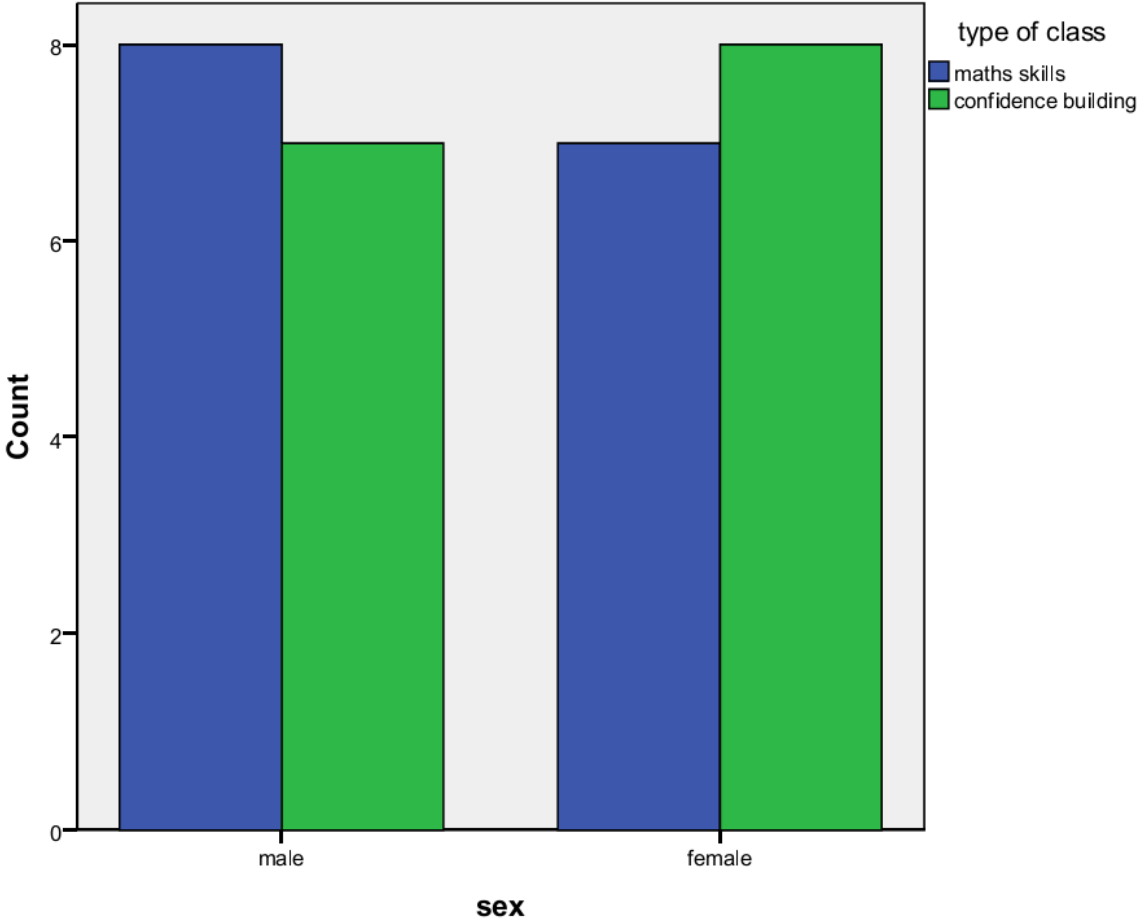
		Value	Asymp. Std. Error ^a
Nominal by Nominal	Phi	,067	,182
	Cramer's V	,067	
	Contingency Coefficient	,067	
Measure of Agreement	Kappa	,067	
N of Valid Cases		30	

a. Not assuming the null hypothesis.

Symmetric Measures

		Approx. T ^b	Approx. Sig.
Nominal by Nominal	Phi		,715
	Cramer's V		,715
	Contingency Coefficient		,715
Measure of Agreement	Kappa	,365	,715
N of Valid Cases			

Bar Chart





1: id 4 Visible: 18 of 18 Variables

	id	sex	fost1	confid1	depress1	fost2	confid2	depress2	fost3	confid3	depress3	exam	mah_1	DepT1gp2	DepT2Gp2	DepT3gp2
1	4		50	15	44	48	16	44	45	14	40	52	,56998	0	0	
2	10		47	14	42	45	15	42	44	18	40	55	1,65940	0	0	
3	9		44	12	40	39	18	40	36	19	38	58	3,54047	0	0	
4	3		47	11	43	42	16	43	41	20	43	60	2,45421	0	0	
5	12		46	16	44	45	16	45	43	20	43	58	,94430	0	1	
6	11		3	40	20	42	39	22	38	62	1,62571	0	0	0	0	
7	6		7	33	22	36	32	23	35	59	4,17447	0	0	0	0	
8	5		6	37	20	47	32	26	42	70	1,02611	1	1	1	1	
9	8		7	40	23	37	40	26	35	60	1,70531	0	0	0	0	
10	13		0	45	25	48	46	27	46	70	3,08732	1	1	1	1	
11	14		9	37	27	36	32	29	34	72	2,91402	0	0	0	0	
12	1		4	28	25	43	23	30	40	82	,34700	0	0	0	0	
13	15		7	35	26	47	35	30	47	79	1,58862	1	1	1	1	
14	7		8	32	28	35	30	32	35	80	1,50766	0	0	0	0	
15	2		0	36	30	47	34	34	45	90	10,24018	1	1	1	1	
16	27		5	40	14	44	38	18	40	56	1,17765	1	0	0	0	
17	25		2	37	14	40	35	19	39	53	1,05647	0	0	0	0	
18	19		42	15	49	41	13	49	40	20	44	59	3,87489	1	1	1
19	18		44	13	39	39	20	30	34	22	30	64	2,71016	0	0	0
20	23		32	22	39	31	18	38	32	22	36	63	3,54886	0	0	0
21	21	2	39	21	44	40	19	44	38	23	44	64	,50072	0	0	0
22	26	2	42	13	43	38	20	39	36	23	37	63	1,47391	0	0	0
23	29	2	37	28	33	38	22	33	36	26	32	67	9,12958	0	0	0
24	17	2	41	29	39	40	22	40	40	27	40	71	6,20658	0	0	0
25	20	2	43	17	47	36	26	45	34	28	42	73	1,71910	1	1	1
26	28	2	46	20	38	40	28	30	37	29	29	80	1,50155	0	0	0
27	22	2	30	24	45	28	28	40	25	30	38	83	1,92404	1	0	0
28	24	2	33	12	50	29	20	48	25	30	50	85	7,55764	1	1	1
29	16	2	40	22	45	30	35	40	25	32	42	78	1,18849	1	0	0
30	30	2	39	21	34	36	30	30	30	32	32	84	6,04559	0	0	0

- Reports
- Descriptive Statistics
- Tables
- Compare Means
- General Linear Model
- Generalized Linear Models
- Mixed Models
- Correlate
- Regression**
 - Linear...
 - Curve Estimation...
 - Partial Least Squares...
 - Binary Logistic...**
 - Multinomial Logistic...
 - Ordinal...
 - Probit...
 - Nonlinear...
 - Weight Estimation...
 - 2-Stage Least Squares...
 - Optimal Scaling (CATREG)...
- Loglinear
- Neural Networks
- Classify
- Dimension Reduction
- Scale
- Nonparametric Tests
- Forecasting
- Survival
- Multiple Response
- Missing Value Analysis...
- Multiple Imputation
- Complex Samples
- Quality Control
- ROC Curve...

Data View Variable View



	id	sex	age	group	fost1	confid1	depress1	fost2	confid2	depress2	fost3	confid3	depress3	exam	mah_1	DepT1gp2	DepT2Gp2	DepT3gp2
1	4	1	23	2	50	15	44	48	16	44	45	14	40	52	,56998	0	0	0
2	10	1	21	2	47	14	42	45	15	42	44	18	40	55	1,65940	0	0	0
3	9	1	25	1	44	12	40								3,54047	0	0	0
4	3	1	30	1	47	11	43								2,45421	0	0	0
5	12	1	45	2	46	16	44								,94430	0	1	0
6	11	1	22	1	39	13	43								1,62571	0	0	0
7	6	1	22	2	32	21	37								4,17447	0	0	0
8	5	1	26	1	44	17	46								1,02611	1	1	0
9	8	1	23	2	40	22	37								1,70531	0	0	0
10	13	1	21	1	47	20	50								3,08732	1	1	0
11	14	1	23	2	38	28	39								2,91402	0	0	0
12	1	1	19	1	32	20	44								,34700	0	0	0
13	15	1	23	1	39	21	47								1,58862	1	1	0
14	7	1	19	1	36	24	38								1,50766	0	0	0
15	2	1	21	2	37	29	50								10,24018	1	1	0
16	27	2	20	1	41	16	45								1,17765	1	0	0
17	25	2	24	1	38	14	42								1,05647	0	0	0
18	19	2	27	1	42	15	49								3,87489	1	1	0
19	18	2	23	2	44	13	39								2,71016	0	0	0
20	23	2	22	1	32	22	39								3,54886	0	0	0
21	21	2	46	1	39	21	44								,50072	0	0	0
22	26	2	19	2	42	13	43								1,47391	0	0	0
23	29	2	22	1	37	28	33								9,12958	0	0	0
24	17	2	37	1	41	29	39	40	22	40	40	27	40	71	6,20658	0	0	0
25	20	2	32	2	43	17	47	36	26	45	34	28	42	73	1,71910	1	1	0
26	28	2	30	2	46	20	38	40	28	30	37	29	29	80	1,50155	0	0	0
27	22	2	25	2	30	24	45	28	28	40	25	30	38	83	1,92404	1	0	0
28	24	2	21	2	33	12	50	29	20	48	25	30	50	85	7,55764	1	1	0
29	16	2	45	2	40	22	45	30	35	40	25	32	42	78	1,18849	1	0	0
30	30	2	21	2	39	21	34	36	30	30	30	32	32	84	6,04559	0	0	0

Logistic Regression

Dependent: sex

Block 1 of 1

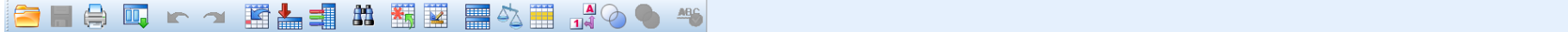
Covariates: age, group

Method: Enter

Selection Variable: [] Rule...

Buttons: OK, Paste, Reset, Cancel, Help

Buttons on right: Categorical..., Save..., Options..., Bootstrap...



1: id 4 Visible: 18 of 18 Variables

	id	sex	age	group	fost1	confid1	depress1	fost2	confid2	depress2	fost3	confid3	depress3	exam	mah_1	DepT1gp2	DepT2Gp2	DepT3gp2
1	4	1	23	2	50	15	44	48	16	44	45	14	40	52	,56998	0	0	
2	10	1	21	2	47	14	42	45	15	42	44	18	40	55	1,65940	0	0	
3	9														3,54047	0	0	
4	3														2,45421	0	0	
5	12														,94430	0	1	
6	11														1,62571	0	0	
7	6														4,17447	0	0	
8	5														1,02611	1	1	
9	8														1,70531	0	0	
10	13														3,08732	1	1	
11	14														2,91402	0	0	
12	1														,34700	0	0	
13	15														1,58862	1	1	
14	7														1,50766	0	0	
15	2														10,24018	1	1	
16	27														1,17765	1	0	
17	25														1,05647	0	0	
18	19														3,87489	1	1	
19	18														2,71016	0	0	
20	23	2	22	1	32	22	39								3,54886	0	0	
21	21	2	46	1	39	21	44								,50072	0	0	
22	26	2	19	2	42	13	43								1,47391	0	0	
23	29	2	22	1	37	28	33								9,12958	0	0	
24	17	2	37	1	41	29	39	40	22	40	40	27	40	71	6,20658	0	0	
25	20	2	32	2	43	17	47	36	26	45	34	28	42	73	1,71910	1	1	
26	28	2	30	2	46	20	38	40	28	30	37	29	29	80	1,50155	0	0	
27	22	2	25	2	30	24	45	28	28	40	25	30	38	83	1,92404	1	0	
28	24	2	21	2	33	12	50	29	20	48	25	30	50	85	7,55764	1	1	
29	16	2	45	2	40	22	45	30	35	40	25	32	42	78	1,18849	1	0	
30	30	2	21	2	39	21	34	36	30	30	30	32	32	84	6,04559	0	0	

Logistic Regression: Options

Statistics and Plots

- Classification plots
- Hosmer-Lemeshow goodness-of-fit
- Casewise listing of residuals
- Outliers outside 2 std. dev.
- All cases
- At each step At last step

Correlations of estimates

- Correlations of estimates
- Iteration history

CI for exp(B): 95 %

Probability for Stepwise

Entry: 0,05 Removal: 0,10

Classification cutoff: 0,5

Maximum Iterations: 20

Include constant in model

Continue Cancel Help

Logistic Regression

Dependent: sex

Block 1 of 1

Covariates: age, group

Method: Enter

Selection Variable: Rule...

OK Paste Reset Cancel Help

Data View Variable View

Classification Table^a

Observed			Predicted		
			sex		Percentage Correct
			male	female	
Step 1	sex	male	13	2	86,7
		female	9	6	40,0
		Overall Percentage			63,3

a. The cut value is ,500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a	age	,064	,055	1,346	1	,246	1,066
	group	,239	,751	,101	1	,751	1,269
	Constant	-1,990	1,813	1,204	1	,272	,137

a. Variable(s) entered on step 1: age, group.

Variables in the Equation

		95% C.I. for EXP(B)	
		Lower	Upper
Step 1 ^a	age	,957	1,186
	group	,292	5,527
	Constant		

a. Variable(s) entered on step 1: age, group.