



Just the basics: Learning about the essential steps to do some simple things in SPSS

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Learning objectives

1. Be able to conduct a few screening tests on a dataset to detect data entry errors or abnormalities, and correct these errors
2. Be able to recode variables and calculate scores
3. Be able to run descriptive statistics for variables and understand the output from such tests
4. Understand the split file function
5. Be able to interrupt output from a *t*-test, ANOVA, and linear regression

The dataset

- Study measured primary care confidence and secondary care access
 - Primary care confidence survey has 3 subscales, higher scores=higher confidence
 - Primary care confidence expectancy (5 items, 0-100)
 - Primary care confidence outcome expectancy (5 items, 1-6)
 - Primary care confidence outcome value (5 items, 1-6)
 - Unnecessary secondary care access survey (9 items), higher scores=higher unnecessary access to secondary care
- Age, gender, country of birth and top two conditions for which a primary care provider was seen in the last 2 years, reason for confidence (or not being confident), number of primary care visits in last 2 years
- n=341
- Intervention was delivered to change unnecessary secondary care access

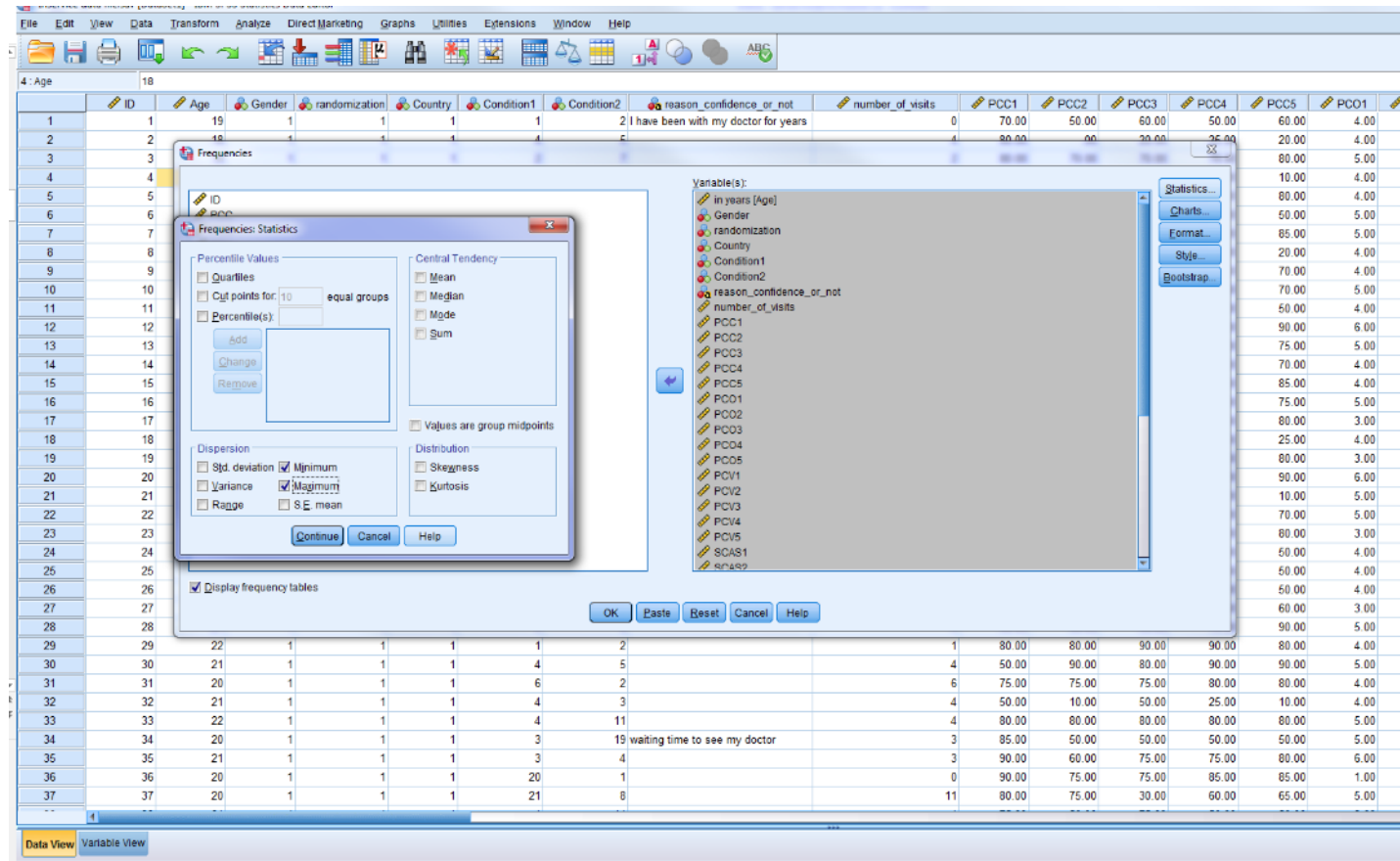
A few screening tests

- ✓ Clean up string data
 - Spell check
- ✓ Check possible range of values
- ✓ Check missing data
 - Systematic or random?
 - Visual inspection



The clicks: Range and missing values

Analyze -> Descriptive Statistics -> Frequencies (or Descriptives)
(Statistics... Minimum, Maximum)



The Output: Checking range and missing values

File Edit View Data Transform Insert Format Analyze Direct Marketing Graphs Utilities Extensions Window

Title
Notes
Statistics
Frequency Table
Title
in years
Gender
randomization
Country
Condition1
Condition2
reason_confidence_or_not
number_of_visits
PCC1
PCC2
PCC3
PCC4
PCC5
PCO1
PCO2
PCO3
PCO4
PCO5
PCV1
PCV2
PCV3
PCV4
PCV5
SCAS1
SCAS2
SCAS3
SCAS4
SCAS5
SCAS6
SCAS7
SCAS8
SCAS9
SCA1_pos
SCA2_pos
SCA3_pos
SCA4_pos
SCA5_pos
SCA6_pos
SCA7_pos
SCA8_pos
SCA9_pos
SCA1_post
SCA2_post
SCA3_post
SCA4_post

PCC1					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	2	.6	.6	.6
	2.00	1	.3	.3	.9
	8.00	1	.3	.3	1.2
	10.00	1	.3	.3	1.5
	15.00	1	.3	.3	1.8
	20.00	4	1.2	1.2	2.9
	25.00	1	.3	.3	3.2
	30.00	2	.6	.6	3.8
	40.00	6	1.8	1.8	5.6
	45.00	1	.3	.3	5.9
	50.00	28	8.2	8.2	14.1
	60.00	14	4.1	4.1	18.2
	65.00	3	.9	.9	19.1
	67.00	1	.3	.3	19.4
	70.00	34	10.0	10.0	29.3
	75.00	38	11.1	11.1	40.5
	80.00	75	22.0	22.0	62.5
	85.00	28	8.2	8.2	70.7
	86.00	1	.3	.3	71.0
	90.00	59	17.3	17.3	88.3
	95.00	9	2.6	2.6	90.9
	99.00	2	.6	.6	91.5
	100.00	28	8.2	8.2	99.7
	110.00	1	.3	.3	100.0
Total		341	100.0	100.0	

*Output2 [Document2] - IBM SPSS Statistics Viewer

File Edit View Data Transform Insert Format Analyze Direct Marketing Graphs Utilities Extensions Window

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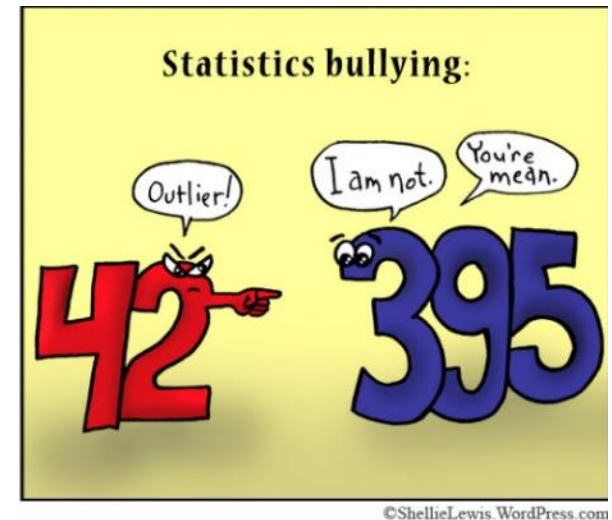
number_of_visits					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	17	5.0	5.0	5.0
	1	33	9.7	9.7	14.7
	2	65	19.1	19.2	33.9
	3	31	9.1	9.1	43.1
	4	96	28.2	28.3	71.4
	5	2	.6	.6	72.0
	6	62	18.2	18.3	90.3
	7	4	1.2	1.2	91.4
	8	12	3.5	3.5	95.0
	9	1	.3	.3	95.3
	10	3	.9	.9	96.2
	11	3	.9	.9	97.1
	12	8	2.3	2.4	99.4
	25	1	.3	.3	99.7
	75	1	.3	.3	100.0
Total		339	99.4	100.0	
Missing	System	2	.6		
Total		341	100.0		

PCC1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	2	.6	.6	.6
	2.00	1	.3	.3	.9
	8.00	1	.3	.3	1.2
	10.00	1	.3	.3	1.5
	15.00	1	.3	.3	1.8

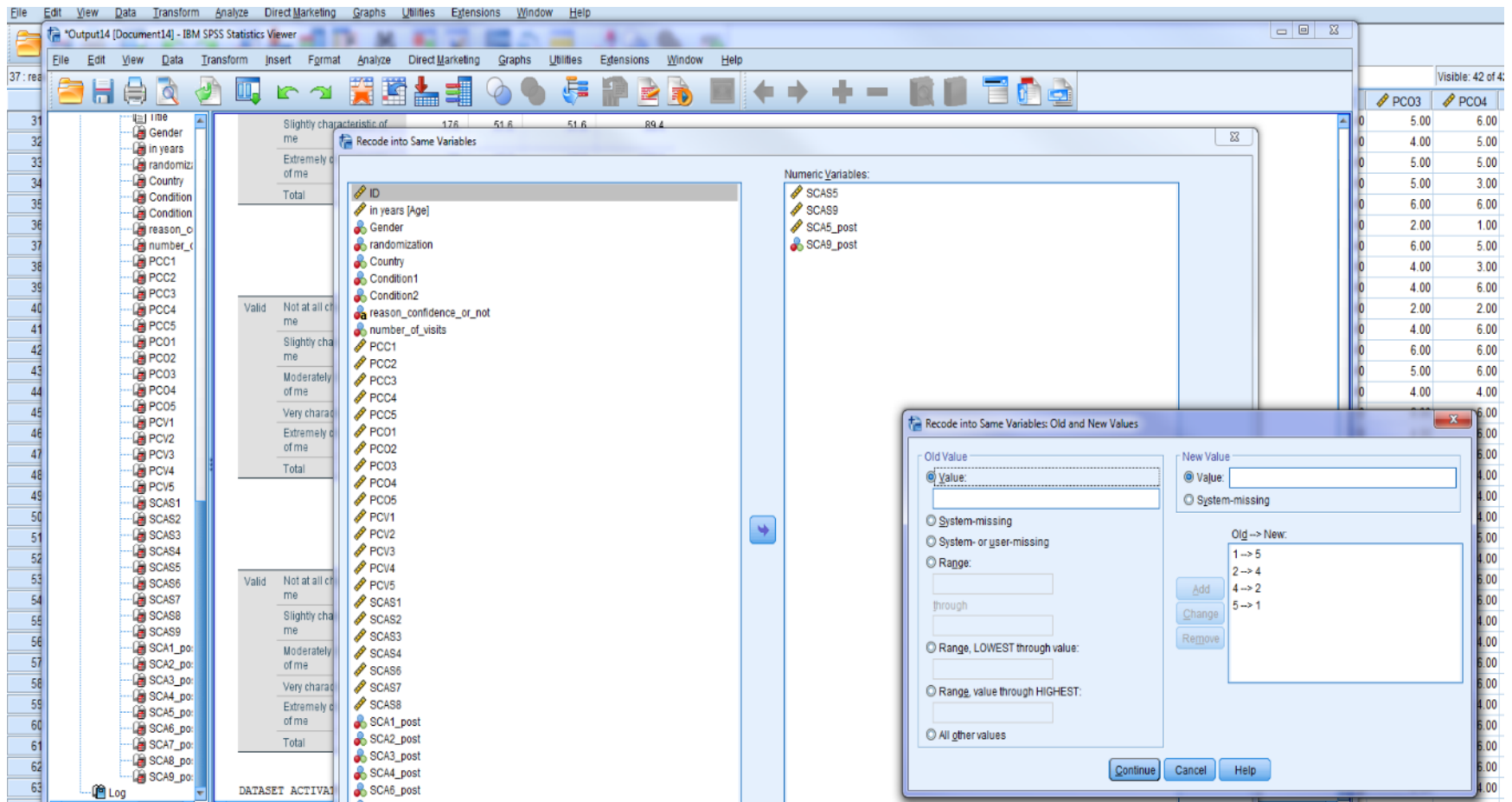
Recode variables and calculate scores

- Recode and calculate scores
 - Reverse worded items?
 - Items 5,9
 - Scores/subscales
 - Check for univariate outliers
 - z-score ± 3.29
- Check internal consistency for scales
 - How closely related items are as a group
 - $\alpha \geq .70$ ($>.90$ too much?)



The clicks: Recode variables

Transform -> Recode into Same Variables (Old and New Values...)



The clicks: Calculate scores/subscales

Transform -> Compute Variable (*mean* is under “Statistical” Function group)

The screenshot shows the SPSS 'Compute Variable' dialog box. The 'Target Variable' is 'PCC'. The 'Numeric Expression' is 'MEAN(PCC1,PCC2,PCC3,PCC4,PCC5)'. The 'Function group' is 'Statistical'. The 'Functions and Special Variables' list includes 'Mean'. The 'Data View' tab is selected at the bottom.

Target Variable: PCC

Numeric Expression: MEAN(PCC1,PCC2,PCC3,PCC4,PCC5)

Function group: Statistical

Functions and Special Variables: Mean

MEAN(numexpr,numexpr[...]). Numeric. Returns the arithmetic mean of its arguments that have valid, nonmissing values. This function requires two or more arguments, which must be numeric. You can specify a minimum number of valid arguments for this function to be evaluated.

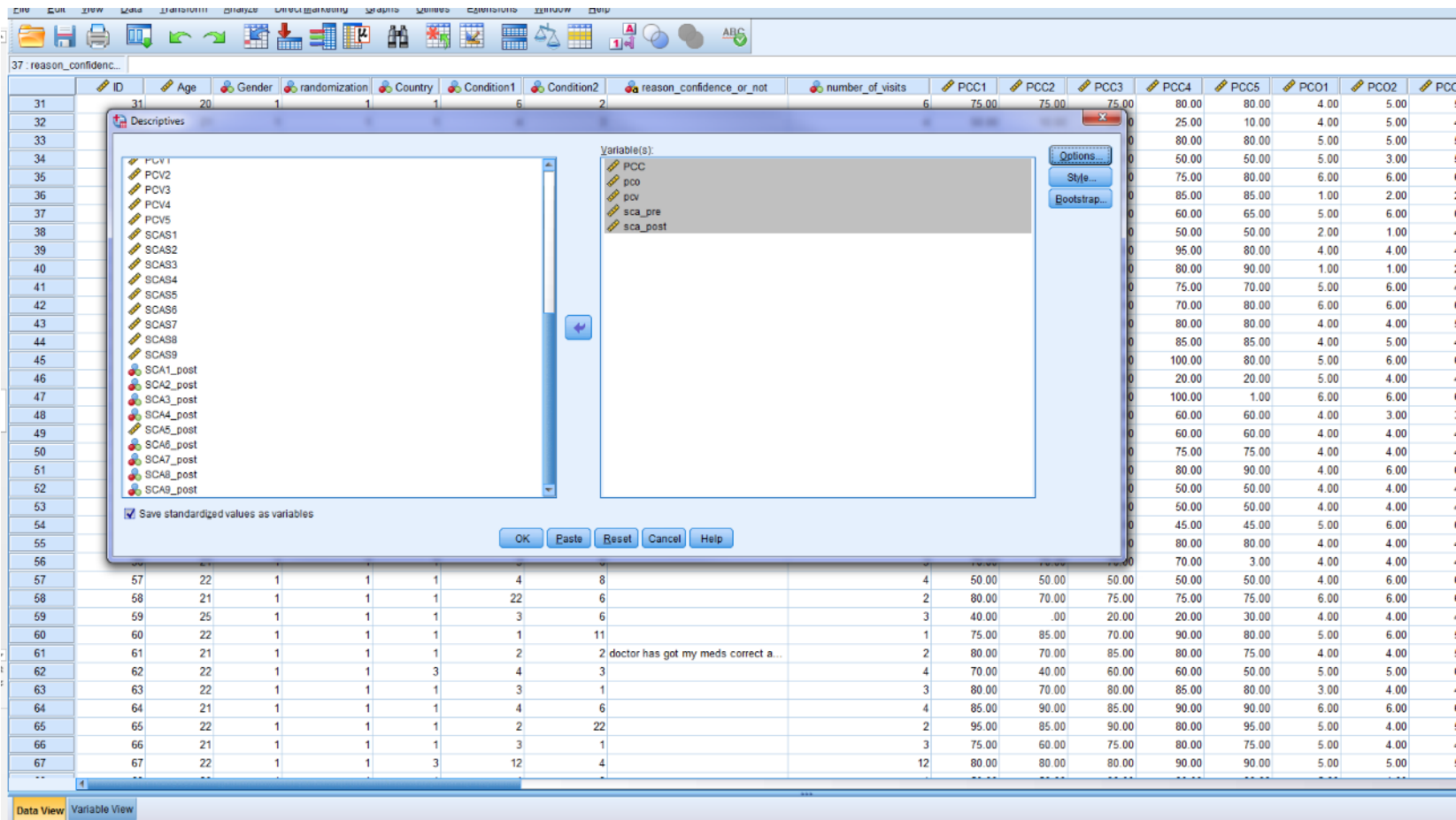
(optional case selection condition)

OK Paste Reset Cancel Help

The clicks: Univariate outliers

Analyze -> Descriptives, select box “Save standardized values as variables”

Analyze -> Frequencies for z-scores



The Output: Scores and z-scores



SPSS Statistics Data Editor window showing the output of a Z-score calculation for the variable ZAge. The data is displayed in a table with 37 rows and 15 columns. The first column is labeled '1: ZAge' and the second column is labeled '-1.14263388651693'. The table contains numerical data for each row, representing scores and z-scores for various variables.

	SCA9_post	PCC	PCO	PCV	SCABaseline	SCApost	ZAge	Znumber_of_visits	ZPC	ZPCO	ZPCV	ZSCABaseline	ZSCApost	VS1	VS2
1	.00	2.00	58.00	5.00	3.40	3.56	-1.14263	-.87951	-.71419	.19590	-.99525	.77013	-.80022		
2	.00	1.00	29.00	4.40	5.00	4.11	-1.72690	-.03608	-2.36466	-.52240	.66077	1.53199	-.03264		
3	.00	4.00	74.00	5.20	3.40	2.56	-1.14263	-.45779	.19641	.43533	-.99525	-.60122	-.03264		
4	.00	1.00	19.00	5.20	3.40	4.33	-1.72690	-.03608	-2.93378	.43533	-.99525	1.83673	1.50252		
5	.00	4.00	68.00	4.80	3.80	2.56	2.11	.60986	-.03608	-.14507	-.04353	-.58125	-.60122	-.54436	
6	.00	4.00	60.00	5.60	3.80	2.78	2.33	-.45779	-.60037	.91420	-.58125	-.29648	-.03264		
7	.00	4.00	82.00	5.40	5.20	1.89	2.33	2.36236	-.66865	.65171	.67477	-.151546	-.03264		
8	.00	2.00	32.00	4.00	1.00	3.00	1.67	.60986	-.66865	-2.19392	-1.00127	-3.47928	-1.56779		
9	.00	4.00	76.00	5.20	4.60	2.56	2.33	-.55847	-.87951	.31023	.43533	.24676	-.60122	-.03264	
10	.00	2.00	65.00	4.60	4.80	4.33	3.00	-.55847	-.03608	-.31581	-.28297	.45377	1.83673	1.50252	
11	.00	2.00	58.00	4.20	4.20	3.00	1.89	-.55847	-.03608	-.71419	-.76183	-.16724	.00827	-1.05608	
12	.00	3.00	88.00	5.40	3.60	2.22	2.22	.60986	-.03608	.99318	.67477	-.78825	-1.05834	-.28850	
13	.00	2.00	74.00	5.20	4.80	2.78	2.11	.02570	-.03608	.19641	.43533	.45377	-.29648	-.54436	
14	.00	4.00	68.00	4.40	3.60	2.78	2.11	.02570	1.22908	-.14507	-.52240	-.78825	-.29648	-.54436	
15	.00	4.00	85.00	4.00	4.00	2.33	2.11	3.53069	-.03608	.82244	-1.00127	-.37424	-.90597	-.54436	
16	.00	3.00	74.00	5.80	4.80	3.44	2.11	.02570	-.66865	.19641	1.15364	.45377	.61776	-.54436	
17	.00	3.00	76.40	4.40	2.80	2.44	2.00	1.19403	-.03608	.33300	-.52240	-1.61626	-.75359	-.80022	
18	.00	3.00	40.00	4.00	3.00	2.56	2.11	.02570	-.173862	-1.00127	-1.40925	-.60122	-.54436		
19	.00	5.00	76.00	3.80	3.80	3.11	2.44	.60986	-.45779	.31023	-1.24070	-.58125	.16064	.22322	
20	.00	5.00	90.00	6.00	5.60	2.22	2.22	.60986	-.24694	1.10701	1.39307	1.28177	-1.05834	-.28850	
21	.00	2.00	24.00	5.00	4.40	4.11	3.00	1.77819	.38564	-2.64922	.19590	.03976	1.53199	1.50252	
22	.00	1.00	63.40	5.40	5.60	3.56	2.22	.02570	-.03608	-.40687	.67477	1.28177	.77013	-.28850	
23	.00	4.00	76.00	5.00	4.20	2.33	2.11	.02570	-.03608	.31023	.19590	-.16724	-.90597	-.54436	
24	.00	1.00	56.00	4.00	3.80	3.78	2.00	.02570	1.65080	-.82802	-1.00127	-.58125	1.07487	-.80022	
25	.00	3.00	55.00	4.00	5.00	3.22	1.89	.02570	-.03608	-.88493	-1.00127	.66077	.31301	-1.05608	
26	.00	2.00	55.00	5.60	5.20	4.33	3.89	.02570	-.03608	-.88493	.91420	.86777	1.83673	3.54939	
27	.00	3.00	54.00	3.20	4.00	2.67	2.22	-.55847	-.03608	-.94184	-1.95900	-.37424	-.44885	-.28850	
28	.00	3.00	78.00	5.60	5.20	2.33	2.11	.02570	-.03608	.42406	.91420	.86777	-.90597	-.54436	
29	.00	4.00	84.00	4.00	4.00	2.22	2.67	.60986	-.66865	.76553	-1.00127	-.37424	-1.05834	.73494	
30	.00	4.00	80.00	5.80	5.80	2.11	2.33	.02570	-.03608	.53788	1.15364	1.48878	-1.21071	-.03264	
31	.00	2.00	77.00	5.20	4.60	3.33	2.44	-.55847	.38564	.36714	.43533	.24676	.46538	.22322	
32	.00	1.00	29.00	4.60	3.60	4.33	2.33	.02570	-.03608	-2.36466	-.28297	-.78825	1.83673	-.03264	
33	.00	5.00	80.00	5.00	4.00	2.11	1.89	.60986	-.03608	.53788	.19590	-.37424	-1.21071	-1.05608	
34	.00	2.00	57.00	3.80	2.40	2.89	2.00	-.55847	-.24694	-.77111	-1.24070	-2.03026	-.14411	-.80022	
35	.00	4.00	76.00	6.00	5.40	2.44	2.44	.02570	-.24694	.31023	1.39307	1.07477	-.75359	.22322	
36	.00	2.00	82.00	1.40	1.60	2.56	2.33	-.55847	-.87951	.65171	-4.11391	-2.85827	-.60122	-.03264	
37	.00	5.00	62.00	5.60	4.20	2.78	2.78	-.55847	1.43994	-.48654	.91420	-.16724	-.29648	.99080	

The Output: z-scores

14.93492



Zscore(number_of_visits)				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid				
- .87951	17	5.0	5.0	5.0
- .66865	33	9.7	9.7	14.7
- .45779	65	19.1	19.2	33.9
- .24694	31	9.1	9.1	43.1
- .03608	96	28.2	28.3	71.4
.17478	2	.6	.6	72.0
.38564	62	18.2	18.3	90.3
.59650	4	1.2	1.2	91.4
.80736	12	3.5	3.5	95.0
1.01822	1	.3	.3	95.3
1.22908	3	.9	.9	96.2
1.43994	3	.9	.9	97.1
1.65080	8	2.3	2.4	99.4
4.39196	1	.3	.3	99.7
14.93492	1	.3	.3	100.0
Total	339	99.4	100.0	
Missing	System	.6		
Total	341	100.0		

Zscore(PCC)				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid				
-4.01512	1	.3	.3	.3
-3.44600	1	.3	.3	.6
-2.93378	1	.3	.3	.9
-2.81996	1	.3	.3	1.2
-2.76305	1	.3	.3	1.5
-2.64922	4	1.2	1.2	2.6

The clicks: Check internal consistency

Analyze -> Scale -> Reliability analyses

The screenshot shows the SPSS software interface. The 'Analyze' menu is open, and the path 'Scale' -> 'Reliability Analysis...' is highlighted. The background displays a data table with variables PCV5, PCV1, and a series of SCAS variables (SCAS1 to SCAS9) and their post-scaled versions (SCA1_post, SCA2_post).

	PCV5	PCV1	SCAS1	SCAS2	SCAS3	SCAS4	SCAS5	SCAS6	SCAS7	SCAS8	SCAS9	SCA1_post	SCA2_post
4	6.00	4.00	5.00	4.00	5.00	4.00	4.00	4.00	5.00	3.00	5.00	5.00	
5	5.00	3.00	5.00	2.00	3.00	1.00	2.00	3.00	3.00	4.00	2.00	1.00	
6	5.00	5.00	4.00	2.00	2.00	2.00	4.00	3.00	2.00	5.00	2.00	1.00	
7	5.00	4.00	6.00	2.00	2.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	
8	4.00	1.00	3.00	2.00	3.00	3.00	4.00	3.00	2.00	3.00	4.00	1.00	
9	6.00	5.00	5.00	2.00	2.00	2.00	2.00	4.00	3.00	3.00	2.00	1.00	
10	4.00	4.00	6.00	5.00	4.00	4.00	4.00	5.00	4.00	5.00	4.00	5.00	
11	4.00	5.00	4.00	2.00	3.00	1.00	4.00	2.00	3.00	5.00	4.00	2.00	
12	5.00	4.00	4.00	2.00	2.00	2.00	2.00	1.00	3.00	3.00	3.00	2.00	
13	5.00	5.00	5.00	2.00	2.00	3.00	2.00	4.00	2.00	3.00	4.00	2.00	
14	5.00	4.00	4.00	3.00	3.00	3.00	3.00	4.00	2.00	3.00	2.00	1.00	
15	4.00	4.00	4.00	2.00	3.00	1.00	3.00	3.00	3.00	3.00	2.00	2.00	
16	6.00	6.00	4.00	1.00	4.00	3.00	4.00	4.00	4.00	3.00	3.00	1.00	
17	5.00	1.00	2.00	1.00	2.00	2.00	3.00	2.00	3.00	3.00	3.00	1.00	
18	4.00	5.00	3.00	2.00	2.00	1.00	4.00	1.00	2.00	5.00	3.00	1.00	
19	4.00	3.00	4.00	3.00	3.00	2.00	3.00	4.00	3.00	5.00	1.00	2.00	
20	6.00	5.00	6.00	3.00	3.00	1.00	2.00	2.00	3.00	3.00	1.00	2.00	
21	5.00	5.00	4.00	5.00	5.00	5.00	5.00	3.00	1.00	4.00	4.00	5.00	
22	5.00	6.00	3.00	4.00	3.00	3.00	2.00	3.00	5.00	4.00	5.00	1.00	
23	6.00	3.00	4.00	3.00	2.00	2.00	2.00	1.00	3.00	3.00	2.00	1.00	
24	4.00	2.00	4.00	3.00	4.00	3.00	4.00	3.00	5.00	3.00	5.00	2.00	
25	4.00	5.00	3.00	3.00	3.00	3.00	3.00	3.00	4.00	4.00	3.00	1.00	
26	6.00	6.00	5.00	5.00	5.00	4.00	2.00	5.00	4.00	5.00	4.00	5.00	
27	4.00	4.00	4.00	3.00	2.00	2.00	1.00	2.00	3.00	4.00	4.00	3.00	1.00
28	6.00	5.00	6.00	4.00	5.00	6.00	2.00	3.00	2.00	2.00	3.00	2.00	2.00
29	4.00	4.00	4.00	3.00	4.00	5.00	2.00	2.00	2.00	2.00	4.00	2.00	2.00
30	6.00	6.00	6.00	5.00	6.00	6.00	2.00	3.00	2.00	2.00	3.00	2.00	2.00
31	6.00	4.00	6.00	4.00	4.00	5.00	2.00	3.00	3.00	2.00	5.00	4.00	2.00
32	5.00	3.00	4.00	3.00	4.00	4.00	4.00	5.00	4.00	4.00	5.00	2.00	
33	5.00	4.00	4.00	4.00	4.00	4.00	3.00	3.00	3.00	2.00	1.00	1.00	
34	3.00	2.00	2.00	4.00	2.00	2.00	3.00	3.00	2.00	1.00	4.00	5.00	4.00
35	6.00	4.00	5.00	6.00	6.00	6.00	2.00	2.00	2.00	4.00	2.00	2.00	2.00
36	1.00	2.00	2.00	2.00	1.00	1.00	2.00	2.00	3.00	2.00	4.00	4.00	2.00
37	6.00	4.00	5.00	3.00	4.00	5.00	3.00	2.00	3.00	2.00	4.00	1.00	1.00
38	4.00	1.00	6.00	6.00	4.00	6.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
39	4.00	5.00	4.00	4.00	4.00	6.00	3.00	2.00	3.00	3.00	3.00	3.00	1.00
40	2.00	4.00	2.00	2.00	2.00	2.00	2.00	2.00	1.00	2.00	3.00	2.00	2.00

The Output: Internal consistency

$\alpha = .905$

The screenshot displays the IBM SPSS Statistics Data Editor and Viewer. The Data Editor window shows a list of variables on the left, including SCA1_pos through SCA9_pos. The Viewer window shows the output of a Reliability analysis. The output includes a table of item statistics, a Reliability section with the command `/MODEL=ALPHA.`, a Case Processing Summary table, and a Reliability Statistics table showing a Cronbach's Alpha of .905 for 5 items.

Item	Mean	Std. Deviation	Item to Total Correlation	Squared Multiple Correlation
SCA1_pos	2.78181	.3	.3	.97.7
SCA2_pos	3.29353	.3	.3	.97.9
SCA3_pos	3.54939	.3	.3	.98.2
SCA4_pos	3.80525	.3	.3	.98.5
SCA5_pos	4.06111	.9	.9	.99.4
SCA6_pos	4.31697	.3	.3	.99.7
SCA7_pos	4.57283	.3	.3	100.0
Total	341	100.0	100.0	

RELIABILITY
/VARIABLES=PCC1 PCC2 PCC3 PCC4 PCC5
/SCALE('PCC') ALL
/MODEL=ALPHA.

Reliability
Scale: PCC

Case Processing Summary

Cases	Valid	N	%
Valid	341	341	100.0
Excluded ^a	0	0	.0
Total	341	341	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.905	5

Descriptive statistics

- Analyses that help to summarize data in meaningful way
 - Central tendency (mean, median, mode)
 - Dispersion or spread (range, variance, standard deviation)

The clicks: Descriptive statistics

Analyze -> Descriptive statistics (Frequencies for categorical data) -> Descriptives

The screenshot displays the IBM SPSS Statistics Data Editor interface. The main window shows a dataset with 61 variables. The 'Descriptives' dialog box is open, showing the 'Descriptives Options' sub-dialog. The 'Mean' checkbox is checked, and the 'Sum' checkbox is unchecked. Under 'Dispersion', the 'Std. deviation' checkbox is checked, and the 'Maximum' checkbox is unchecked. Under 'Distribution', the 'Kurtosis' checkbox is checked, and the 'Skewness' checkbox is unchecked. Under 'Display Order', the 'Variable list' radio button is selected. The 'Continue' button is highlighted. The background shows the 'Data View' of the dataset, with columns for 'ID', 'Age', 'Gender', 'randomization', 'Country', 'Condition1', 'Condition2', 'reason_confidence_or_not', 'number_of_visits', 'PCC1', 'PCC2', 'PCC3', 'PCC4', 'PCC5', 'PCO1', 'PCO2', 'PCO3', 'PCO4', and 'PCO5'. The data is organized into rows, with the first row showing values for 'ID' (1), 'Age' (19), 'Gender' (1), 'randomization' (1), 'Country' (1), 'Condition1' (1), 'Condition2' (1), 'reason_confidence_or_not' (2), 'number_of_visits' (0), 'PCC1' (70.00), 'PCC2' (50.00), 'PCC3' (60.00), 'PCC4' (50.00), 'PCC5' (60.00), 'PCO1' (4.00), 'PCO2' (5.00), 'PCO3' (5.00), 'PCO4' (5.00), and 'PCO5' (6.00).

The output: Descriptive statistics

The screenshot displays the SPSS user interface with several key output windows open. The 'Case Processing Summary' window shows that all 341 cases are valid. The 'Reliability Statistics' window shows a Cronbach's Alpha of .905 for 5 items. The 'Descriptives' window provides a table of means and standard deviations for various variables. A separate window shows the frequency distribution for the 'Country' variable.

Case Processing Summary

Cases	Valid	N	%
	341	100.0	
	Excluded ^a	0	.0
Total	341	100.0	

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.905	5

DESCRIPTIVES VARIABLES=Age number_of_visits PCC PCO PCV SCABase1
/SAVE
/STATISTICS=MEAN STDDEV.

Descriptives

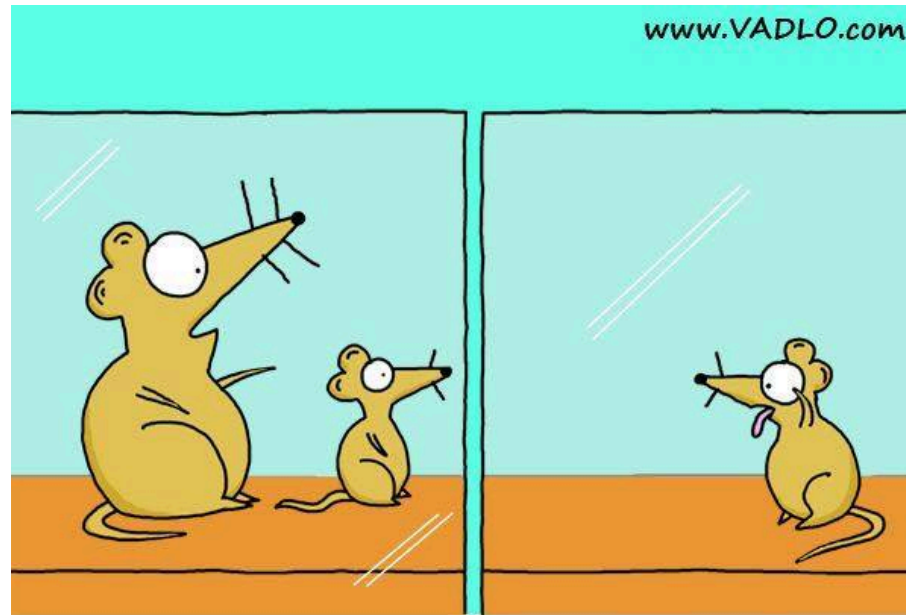
	N	Mean	Std. Deviation
in years	341	20.96	1.712
number_of_visits	339	4.17	4.743
PCC	341	70.5490	17.57082
PCO	341	4.8364	.83530
PCV	341	4.3616	.96617
SCABaseline	341	2.9940	.72921
SCApost	341	2.3475	.43427
Valid N (listwise)	339		

Country

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Canada	291	85.3	85.3	85.3
USA	14	4.1	4.1	89.4
Spain	6	1.8	1.8	91.2
New Zealand	1	.3	.3	91.5
China	2	.6	.6	92.1
Finland	1	.3	.3	92.4
France	11	3.2	3.2	95.6
Germany	3	.9	.9	96.5
UK	1	.3	.3	96.8
Brazil	1	.3	.3	97.1
Russia	2	.6	.6	97.7
Japan	1	.3	.3	97.9
Other	7	2.1	2.1	100.0
Total	341	100.0	100.0	

Understand the split file function

- Grouped data and descriptive statistics



“Don’t play with him, he is **Wild Type**.”

Understand the split file function: The clicks

Date -> Split file...-> Organize output by groups (select grouping variable)

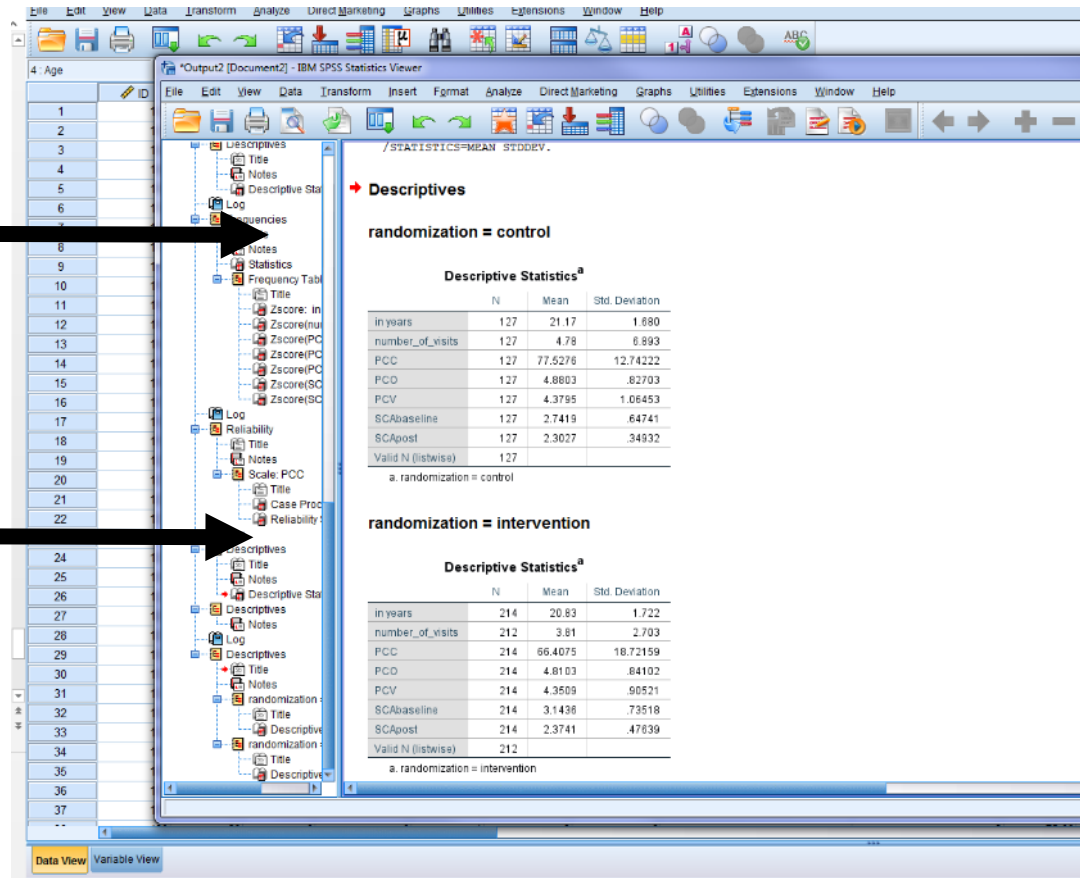
The screenshot displays the SPSS 'Split File' dialog box. The 'Organize output by groups' radio button is selected. Under 'Groups Based on:', the variable 'randomization' is listed. The 'Sort the file by grouping variables' radio button is also selected. The background shows a data table with columns for ID, Age, and various clinical variables like PCC1, PCC2, etc.

ID	Age	visits	PCC1	PCC2	PCC3	PCC4	PCC5	PCO1	PCO2	PCO3	PCO4	PC
1	18	0	70.00	50.00	60.00	50.00	60.00	4.00	5.00	5.00	6.00	
2	2	4	80.00	.00	20.00	25.00	20.00	4.00	5.00	5.00	4.00	
3	3	2	80.00	70.00	70.00	70.00	80.00	5.00	5.00	5.00	6.00	
4	4	4	20.00	20.00	35.00	10.00	10.00	4.00	5.00	5.00	6.00	
5	5	4	75.00	65.00	60.00	60.00	80.00	4.00	5.00	4.00	6.00	
6	6	2	75.00	50.00	75.00	50.00	50.00	5.00	6.00	6.00	6.00	
7	7	1	90.00	80.00	75.00	80.00	85.00	5.00	6.00	5.00	6.00	
8	8	1	20.00	20.00	50.00	50.00	20.00	4.00	4.00	4.00	4.00	
9	9	0	80.00	80.00	70.00	80.00	70.00	4.00	5.00	5.00	6.00	
10	10	4	70.00	40.00	70.00	75.00	70.00	5.00	5.00	5.00	4.00	
11	11	4	70.00	70.00	50.00	50.00	50.00	4.00	4.00	4.00	5.00	
12	12	4	80.00	80.00	90.00	100.00	90.00	6.00	6.00	5.00	5.00	
13	13	4	85.00	65.00	75.00	70.00	75.00	5.00	5.00	5.00	6.00	
14	14	10	80.00	70.00	60.00	60.00	70.00	4.00	4.00	4.00	5.00	
15	15	4	90.00	75.00	90.00	85.00	85.00	4.00	4.00	4.00	4.00	
16	16	1	75.00	80.00	70.00	70.00	75.00	5.00	6.00	6.00	6.00	
17	17	4	50.00	75.00	82.00	95.00	80.00	3.00	4.00	4.00	6.00	
18	18	.	50.00	50.00	50.00	25.00	25.00	4.00	4.00	4.00	4.00	
19	19	2	80.00	70.00	70.00	80.00	80.00	3.00	4.00	4.00	4.00	
20	20	3	90.00	90.00	90.00	90.00	90.00	6.00	6.00	6.00	6.00	
21	21	6	50.00	.00	50.00	10.00	10.00	5.00	5.00	5.00	5.00	
22	22	4	90.00	70.00	7.00	80.00	70.00	5.00	6.00	6.00	5.00	
23	23	4	90.00	90.00	70.00	50.00	80.00	3.00	5.00	5.00	6.00	
24	24	12	50.00	50.00	80.00	50.00	50.00	4.00	4.00	4.00	4.00	
25	25	4	75.00	50.00	50.00	50.00	50.00	4.00	4.00	4.00	4.00	
26	26	4	75.00	50.00	50.00	50.00	50.00	4.00	6.00	6.00	6.00	
27	27	4	60.00	40.00	40.00	70.00	60.00	3.00	3.00	5.00	1.00	
28	28	4	90.00	90.00	50.00	70.00	90.00	5.00	6.00	5.00	6.00	
29	29	1	80.00	80.00	90.00	90.00	80.00	4.00	4.00	4.00	4.00	
30	30	4	50.00	90.00	80.00	90.00	90.00	5.00	6.00	6.00	6.00	
31	31	6	75.00	75.00	75.00	80.00	80.00	4.00	5.00	5.00	6.00	
32	32	4	50.00	10.00	50.00	25.00	10.00	4.00	5.00	4.00	5.00	
33	33	4	80.00	80.00	80.00	80.00	80.00	5.00	5.00	5.00	5.00	
34	34	3	85.00	50.00	50.00	50.00	50.00	5.00	3.00	5.00	3.00	
35	35	3	90.00	60.00	75.00	75.00	80.00	6.00	6.00	6.00	6.00	
36	36	0	90.00	75.00	75.00	85.00	85.00	1.00	2.00	2.00	1.00	
37	37	11	80.00	75.00	30.00	60.00	65.00	5.00	6.00	6.00	5.00	

The output: Understand the split file function

Control

Intervention



The clicks: Statistical tests

Are groups different? (Analyze -> compare means)

- t-test
- ANOVA

Prediction one variable from another (Analyze -> Linear regression)

- Linear regression

The Output: Group differences

SPSS Statistics - Randomization Results

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
SCAbaseline	Male	127	2.7419	.64741	.05745
	Female	214	3.1436	.73518	.05026

Is there a group difference on this variable?

Independent Samples Test

Levene's Test for Equality of Variances

		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
SCAbaseline	Equal variances assumed	8.490	.004	-5.095	339	.000	-.40165	.07884	-.55673	-.24658
	Equal variances not assumed			-5.262	291.613	.000	-.40165	.07633	-.55188	-.25143

ONENAY PCC PCO PCV SCAbaseline SCApost BY randomization
/MISSING ANALYSIS.

Oneway

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
PCC	Between Groups	9855.511	1	9855.511	35.126	.000
	Within Groups	95113.962	339	280.572		
	Total	104969.472	340			
PCO	Between Groups	.391	1	.391	.560	.455
	Within Groups	236.838	339	.699		
	Total	237.229	340			
PCV	Between Groups	.065	1	.065	.070	.792
	Within Groups	317.322	339	.936		
	Total	317.387	340			
SCAbaseline	Between Groups	12.858	1	12.858	25.955	.000
	Within Groups	167.935	339	.495		
	Total	180.793	340			
SCApost	Between Groups	.406	1	.406	2.161	.143
	Within Groups	63.714	339	.188		
	Total	64.120	340			

Is there a group difference on this variable?

Double-click to activate

The Output: Regression

*Output2 [Document2] - IBM SPSS Statistics Viewer

File Edit View Data Transform Insert Format Analyze Direct Marketing Graphs Utilities Extensions Window Help

Regression

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	number_of_visits, in years ^b		Enter
2	PCO, PCC, PCV ^b		Enter

a. Dependent Variable: SCApost
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			Sig. F Change
						F Change	df1	df2	
1	.080 ^a	.006	.000	.43506	.006	1.082	2	336	.340
2	.308 ^b	.095	.082	.41704	.089	10.887	3	333	.000

a. Predictors: (Constant), number_of_visits, in years
b. Predictors: (Constant), number_of_visits, in years, PCO, PCC, PCV

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.410	2	.205	1.082	.340 ^b
	Residual	63.598	336	.189		
	Total	64.007	338			
2	Regression	6.090	5	1.218	7.003	.000 ^c
	Residual	57.917	333	.174		
	Total	64.007	338			

a. Dependent Variable: SCApost
b. Predictors: (Constant), number_of_visits, in years
c. Predictors: (Constant), number_of_visits, in years, PCO, PCC, PCV

Amount of variance explained

Amount of variance explained when adjusting for number of predictors

Block one

Block two

Wicked Resources

https://www.ibm.com/support/knowledgecenter/SSLVMB_24.0.0/statistics_spss_tut_project_ddita-gentopic1.html

