

Chapter 8: Regression

Labcoat Leni's Real Research

I want to be loved (on Facebook)

Problem



Ong, E. Y. L., et al. (2011). *Personality and Individual Differences*, 50(2), 180–185.

Social media websites such as Facebook seem to have taken over the world. These websites offer an unusual opportunity to carefully manage your self-presentation to others (i.e., you can try to appear to be cool when in fact you write statistics books, appear attractive when you have huge pustules all over your face, fashionable when you wear 1980s heavy metal band T-shirts, and so on). Ong et al. (2011) conducted an interesting study that examined the relationship between narcissism and behaviour on Facebook in 275 adolescents. They measured the **Age**, **Gender** and **Grade** (at school), as well as extroversion and narcissism. They also measured how often (per week) these people updated their Facebook status (**FB_Status**), and also how they rated their own profile picture on each of four dimensions: coolness, glamour, fashionableness and attractiveness. These ratings were summed as an indicator of how positively they perceived the profile picture they had selected for their page (**FB_Profile_TOT**). They hypothesized that narcissism would predict, above and beyond the other variables, the frequency of status updates, and how positive a profile picture the person chose. To test this, they conducted two hierarchical regressions: one with **FB_Status** as the outcome and one with **FB_Profile_TOT** as the outcome. In both models they entered **Age**, **Gender** and **Grade** in the first block, then added extroversion (**NEO_FFI**) in a second block, and finally narcissism (**NPQC_R**) in a third block. The data from this study are in the file **Ong et al. (2011).sav**. Labcoat Leni wants you to replicate their two hierarchical regressions and create a table of the results for each.

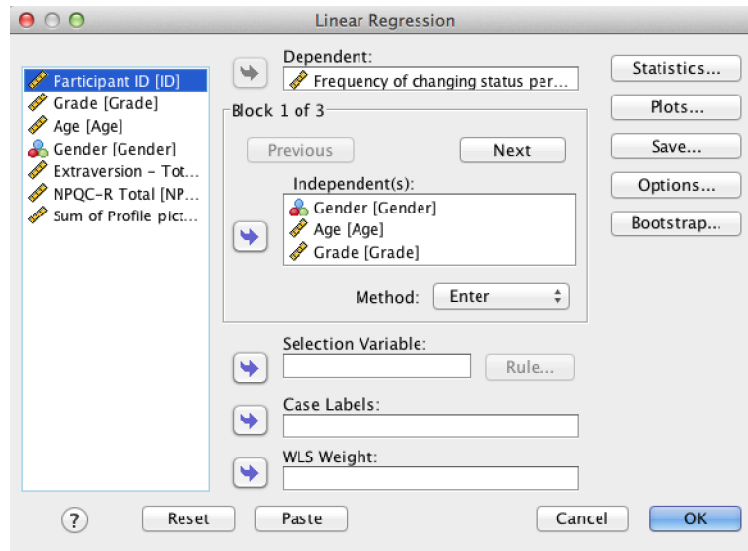
Solution

Frequency of Changing Status Per Week (**FB_Status**)

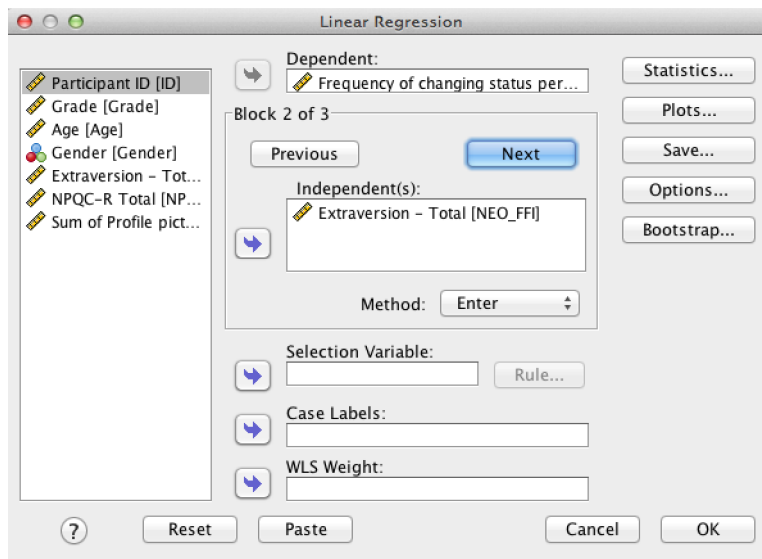
The first regression we'll do is whether narcissism predicts, above and beyond the other variables, the frequency of status updates. To do this, first put the outcome variable **Frequency of changing status per week** in the *Dependent* box, then define the three blocks as follows (I ran this regression on a Mac, so the screenshots will look a little different from the rest of the book, but they are basically the same):

In the first block put **Age**, **Gender** and **Grade**:

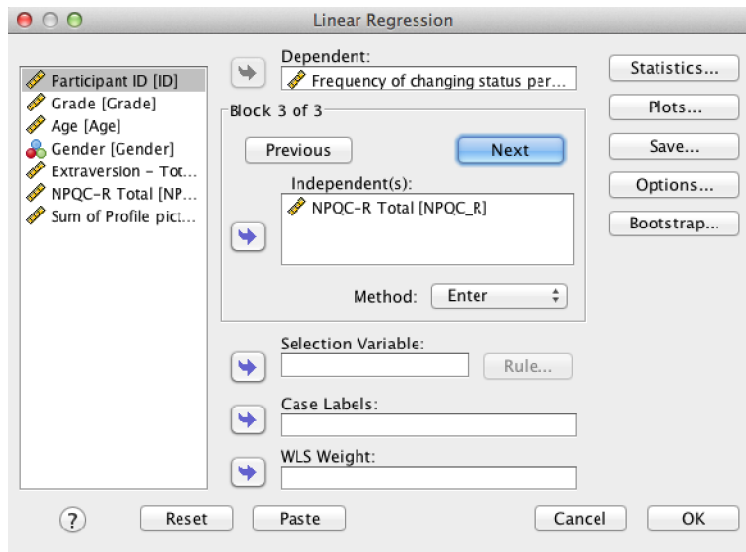
DISCOVERING STATISTICS USING SPSS



In the second block, put extraversion (**NEO_FF1**):



And in the third block put narcissism (**NPQC_R**):



The main output is as follows:

Model Summary^d

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.200 ^a	.040	.028	2.45090	.040	3.426	3	247	.018
2	.236 ^b	.056	.040	2.43550	.016	4.133	1	246	.043
3	.299 ^c	.090	.071	2.39648	.034	9.078	1	245	.003

- a. Predictors: (Constant), Grade, Gender, Age
- b. Predictors: (Constant), Grade, Gender, Age, Extraversion - Total
- c. Predictors: (Constant), Grade, Gender, Age, Extraversion - Total, NPQC-R Total
- d. Dependent Variable: Frequency of changing status per week

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	3.383	3.674		.921	.358	-3.852	10.619
	Gender	-.775	.327	-.153	-2.370	.019	-1.420	-.131
	Age	-.033	.309	-.014	-.107	.915	-.642	.576
	Grade	-.444	.388	-.149	-1.145	.253	-1.208	.320
2	(Constant)	.830	3.861		.215	.830	-6.775	8.434
	Gender	-.691	.328	-.136	-2.110	.036	-1.337	-.046
	Age	-.006	.308	-.002	-.019	.985	-.612	.600
	Grade	-.486	.386	-.163	-1.259	.209	-1.246	.274
	Extraversion - Total	.052	.025	.127	2.033	.043	.002	.101
3	(Constant)	.650	3.799		.171	.864	-6.833	8.134
	Gender	-.943	.333	-.186	-2.831	.005	-1.599	-.287
	Age	-.010	.303	-.004	-.033	.974	-.606	.586
	Grade	-.522	.380	-.175	-1.375	.170	-1.271	.226
	Extraversion - Total	.011	.028	.028	.394	.694	-.045	.067
	NPQC-R Total	.066	.022	.212	3.013	.003	.023	.110

a. Dependent Variable: Frequency of changing status per week

Excluded Variables^a

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	Extraversion - Total	.127 ^b	2.033	.043	.129	.977
	NPQC-R Total	.225 ^b	3.638	.000	.226	.970
2	NPQC-R Total	.212 ^c	3.013	.003	.189	.752

a. Dependent Variable: Frequency of changing status per week

b. Predictors in the Model: (Constant), Grade, Gender, Age

c. Predictors in the Model: (Constant), Grade, Gender, Age, Extraversion - Total

You could report these results as follows:

Predictor and Step	β	R^2	ΔR^2	ΔF
Frequency of Facebook Status updates				
Step 1				
Gender	-.15*	.04	.04	3.43*
Age	-.01			
Grade	-.15			
Step 2				
Gender	-.14*	.06	.02	4.13*
Age	-.00			
Grade	-.16			
NEO-FFI (Extraversion)	.13*			
Step 3				

Gender	-.19**	.09	.03	9.08**
Age	-.00			
Grade	-.18			
NEO-FFI (Extraversion)	.03			
NPQC-R	.21**			

Note: NPQC-R = Total score of the Narcissistic Personality Questionnaire for Children Revised. NEO-FFI (Extraversion) = Extraversion subscale score of the NEO Five-Factor Inventory. * $p < .05$. ** $p < .01$.

If you want to report the confidence intervals it is a good idea to report the bootstrapped confidence intervals because they are robust (see Chapter 5). If you look at the bootstrapped confidence intervals for this regression (table below), you will see that they don't change the results as reported in Ong et al. (2011). The main benefit of the bootstrap confidence intervals and significance values is that they do not rely on assumptions of normality or homoscedasticity, so they give us an accurate estimate of the true population value of b for each predictor.

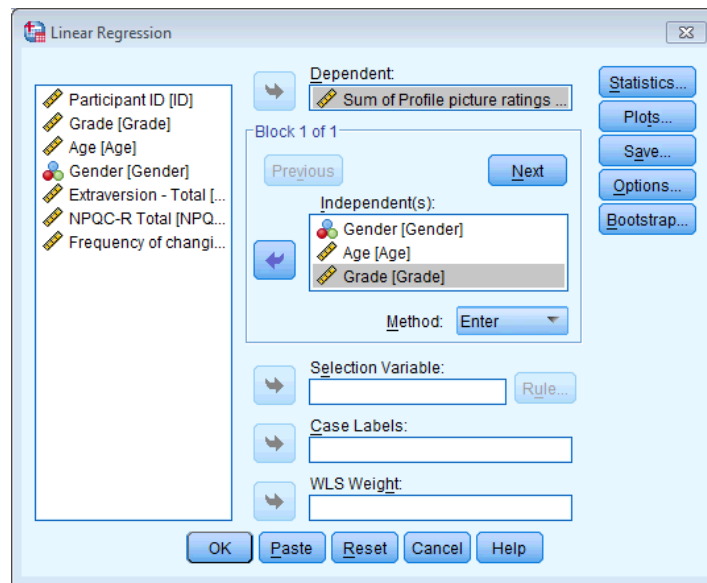
Bootstrap for Coefficients

Model	B	Bootstrap ^a				
		Bias	Std. Error	Sig. (2-tailed)	BCa 95% Confidence Interval	
					Lower	Upper
1 (Constant)	3.383	-.176	1.993	.084	-.330	6.652
Gender	-.775	-.010	.320	.023	-1.418	-.183
Age	-.033	.016	.172	.826	-.398	.372
Grade	-.444	-.022	.282	.107	-.978	.031
2 (Constant)	.830	-.226	2.480	.710	-4.463	5.008
Gender	-.691	-.009	.307	.027	-1.290	-.115
Age	-.006	.018	.177	.968	-.360	.428
Grade	-.486	-.022	.281	.079	-1.031	.011
Extraversion - Total	.052	.000	.029	.076	-.007	.113
3 (Constant)	.650	-.127	2.418	.775	-4.422	5.198
Gender	-.943	-.009	.312	.004	-1.571	-.321
Age	-.010	.010	.173	.944	-.362	.357
Grade	-.522	-.012	.274	.054	-1.057	-.034
Extraversion - Total	.011	.000	.029	.716	-.049	.072
NPQC-R Total	.066	3.575E-005	.020	.002	.025	.107

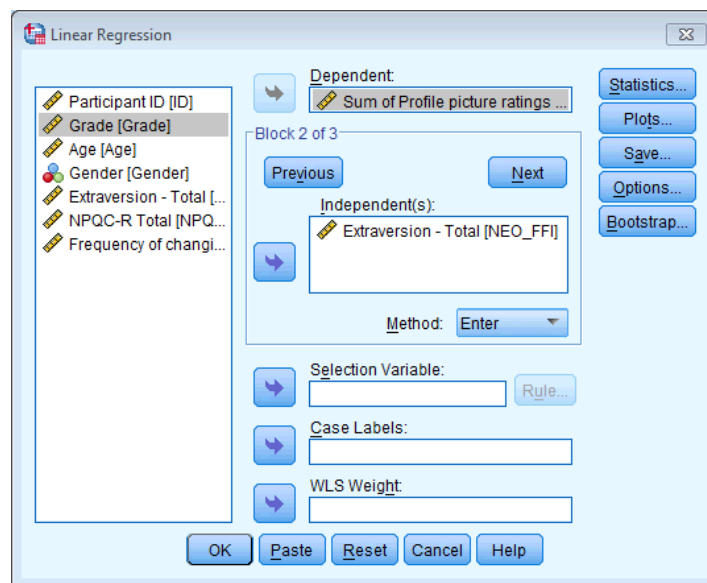
a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

So basically, Ong et al.'s prediction was supported in that after controlling for age, grade and gender, narcissism significantly predicted the frequency of Facebook status updates over and above extroversion. The positive standardized beta value (.21) indicates a positive relationship between frequency of Facebook updates and narcissism, in that more narcissistic adolescents updated their Facebook status more frequently than their less narcissistic peers did. Compare these results to the results reported in Ong et al. (2011). The Table 2 from their paper is reproduced at the end of this task below.

OK, now let's do the second regression to investigate whether narcissism predicts, above and beyond the other variables, the Facebook profile picture ratings. Put the outcome variable **Sum of Profile picture ratings** in the Dependent box, then define the three blocks as follows. In the first block put **Age, Gender** and **Grade**:

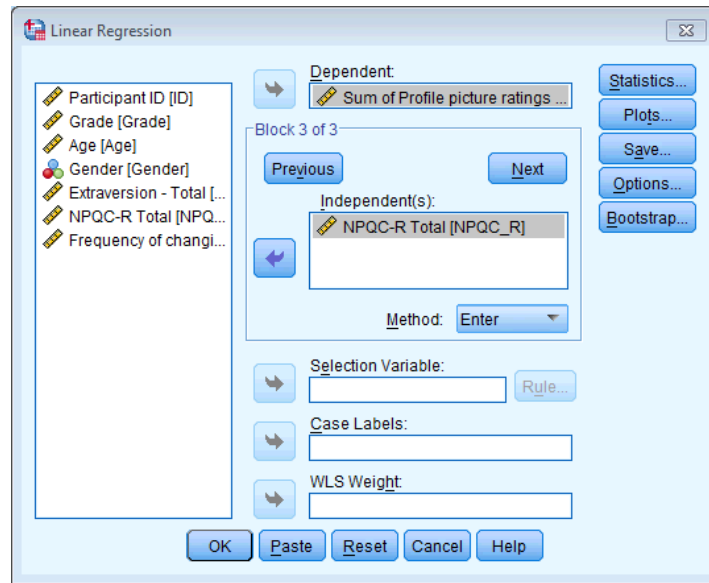


In the second block, put extraversion (**NEO_FF1**):



And in the third block put narcissism (**NPQC_R**):

DISCOVERING STATISTICS USING SPSS



The main output is as follows:

Model Summary^d

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.177 ^a	.031	.016	3.574	.031	2.047	3	189	.109
2	.395 ^b	.156	.138	3.346	.124	27.648	1	188	.000
3	.493 ^c	.243	.223	3.177	.087	21.562	1	187	.000

a. Predictors: (Constant), Grade, Gender, Age

b. Predictors: (Constant), Grade, Gender, Age, Extraversion - Total

c. Predictors: (Constant), Grade, Gender, Age, Extraversion - Total, NPQC-R Total

d. Dependent Variable: Sum of Profile picture ratings

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	8.782	5.689		1.544	.124	-2.439	20.003
	Gender	1.290	.550	.170	2.348	.020	.206	2.375
	Age	.150	.475	.043	.317	.752	-.787	1.088
	Grade	.099	.603	.023	.163	.870	-1.091	1.289
2	(Constant)	-3.461	5.812		-.596	.552	-14.927	8.004
	Gender	1.475	.516	.194	2.860	.005	.458	2.493
	Age	.365	.447	.106	.818	.415	-.516	1.246
	Grade	-.245	.569	-.056	-.430	.668	-1.366	.877
	Extraversion - Total	.224	.043	.356	5.258	.000	.140	.307
3	(Constant)	-3.169	5.519		-.574	.566	-14.056	7.718
	Gender	.582	.526	.076	1.106	.270	-.456	1.620
	Age	.337	.424	.097	.794	.428	-.500	1.174
	Grade	-.258	.540	-.059	-.478	.633	-1.323	.807
	Extraversion - Total	.104	.048	.166	2.176	.031	.010	.199
	NPQC-R Total	.173	.037	.366	4.643	.000	.099	.246

a. Dependent Variable: Sum of Profile picture ratings

Excluded Variables^a

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	Extraversion - Total	.356 ^b	5.258	.000	.358	.980
	NPQC-R Total	.458 ^b	6.824	.000	.446	.918
2	NPQC-R Total	.366 ^c	4.643	.000	.322	.653

a. Dependent Variable: Sum of Profile picture ratings

b. Predictors in the Model: (Constant), Grade, Gender, Age

c. Predictors in the Model: (Constant), Grade, Gender, Age, Extraversion - Total

If you wanted to report the confidence intervals, it is a good idea to report the bootstrapped confidence intervals because they are robust (see Chapter 5). If you look at my output below, you can see that bootstrapping the confidence intervals in this example doesn't change the results as reported in Ong et al. (2011).

Bootstrap for Coefficients

Model	B	Bootstrap ^a				
		Bias	Std. Error	Sig. (2-tailed)	BCa 95% Confidence Interval	
					Lower	Upper
1 (Constant)	8.782	-.932	6.564	.155	-5.025	18.392
Gender	1.290	-.021	.592	.037	.218	2.336
Age	.150	.081	.542	.767	-.766	1.559
Grade	.099	-.095	.618	.865	-1.053	1.044
2 (Constant)	-3.461	-1.179	7.883	.652	-19.048	7.992
Gender	1.475	-.018	.551	.007	.473	2.447
Age	.365	.091	.594	.527	-.690	1.810
Grade	-.245	-.105	.658	.711	-1.429	.706
Extraversion - Total	.224	.003	.042	.001	.141	.325
3 (Constant)	-3.169	-.923	6.674	.622	-16.335	6.456
Gender	.582	-.012	.609	.335	-.554	1.706
Age	.337	.071	.504	.493	-.521	1.542
Grade	-.258	-.085	.578	.662	-1.262	.610
Extraversion - Total	.104	.005	.047	.031	.014	.211
NPQC-R Total	.173	-.003	.036	.001	.105	.231

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

You could report these results as follows:

Predictor and Step	β	R^2	ΔR^2	ΔF
Facebook profile picture ratings				
Step 1				
Gender	.17*	.03	.03	2.05
Age	.04			
Grade	.02			
Step 2				
Gender	.19**			
Age	.11			
Grade	-.06			
NEO-FFI (Extraversion)	.36**	.16	.12	27.65**
Step 3				
Gender	.08			
Age	.10			
Grade	-.06			
NEO-FFI (Extraversion)	.17*	.24	.09	21.56**
NPQC-R	.37**			

Note: NPQC-R = Total score of the Narcissistic Personality Questionnaire for Children Revised. NEO-FFI (Extraversion) = Extraversion subscale score of the NEO Five-Factor Inventory. * $p < .05$. ** $p < .01$.

These results show that after controlling for age, grade and gender, narcissism significantly predicted the Facebook profile picture ratings over and above extroversion. The positive beta value (.37) indicates a positive relationship between profile picture ratings and narcissism, in that more narcissistic adolescents rated their Facebook profile pictures more positively than their less narcissistic peers did. Compare these results to the results reported in Table 2 of Ong et al. (2011) below.

Table 2

Summary of hierarchical multiple regression analyses for extraversion and narcissism predicting Facebook profile picture ratings, frequency of Facebook status updates, number of Facebook friends and number of Facebook photos.

Predictor and step	β	R^2	ΔR^2	ΔF
Facebook profile picture ratings				
Step 1				
Gender	.17*	.03	.03	2.05
Age	.04			
Grade	.02			
Step 2				
Gender	.19**			
Age	.02			
Grade	-.06			
NEO-FFI (Extraversion)	.36**	.16	.12	27.65**
Step 3				
Gender	.08			
Age	.10			
Grade	-.06			
NEO-FFI (Extraversion)	.17*	.24	.09	21.56**
NPQC-R	.37**			
Frequency of Facebook status updates				
Step 1				
Gender	-.15*	.04	.04	3.43*
Age	-.01			
Grade	-.15			
Step 2				
Gender	-.14*	.06	.02	4.13*
Age	-.00			
Grade	-.16			
NEO-FFI (Extraversion)	.13*			
Step 3				
Gender	-.19**	.09	.03	9.08**
Age	-.00			
Grade	-.18			
NEO-FFI (Extraversion)	.03			
NPQC-R	.21**			

Table 2 from Ong et al. (2011)

Why do you like your lecturers?

Problem

Chamorro-Premuzic, T., et al. (2008). *Personality and Individual Differences*, 44, 965–976.

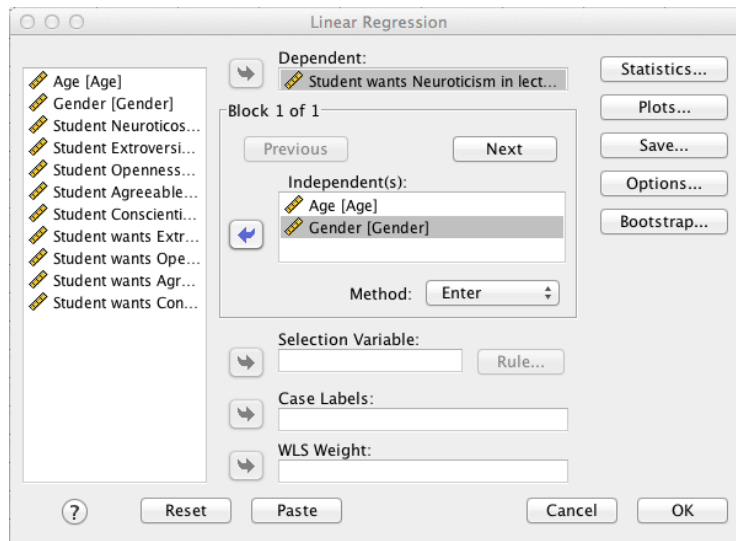
In the previous chapter we encountered a study by Chamorro-Premuzic et al. in which they measured students' personality characteristics and asked them to rate how much they wanted these same characteristics in their lecturers. In that chapter we correlated these scores; however, we could go a step further and see whether students' personality characteristics predict the characteristics that they would like to see in their lecturers.

The data from this study are in the file **Chamorro-Premuzic.sav**. Labcoat Leni wants you to carry out five multiple regression analyses: the outcome variables in each of the five analyses are the ratings of how much students want to see neuroticism, extroversion, openness to experience, agreeableness and conscientiousness. For each of these outcomes, force age and gender into the analysis in the first step of the hierarchy, then in the second block force in the five student personality traits (neuroticism, extroversion, openness to experience, agreeableness and conscientiousness). For each analysis create a table of the results.

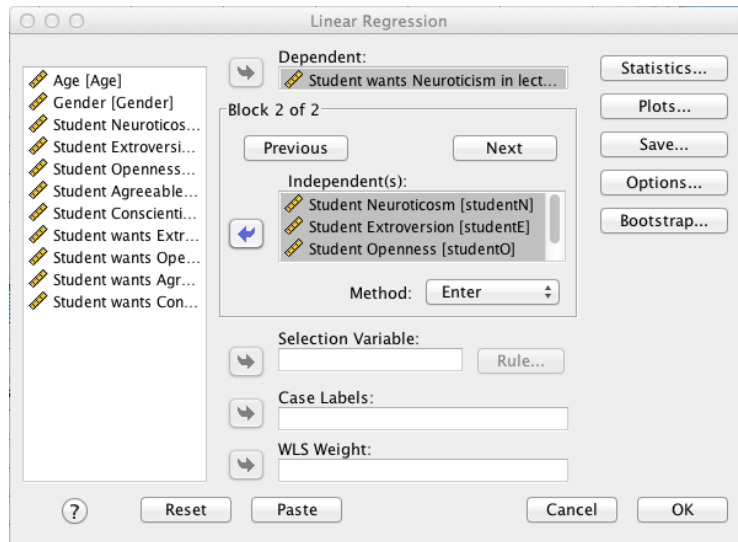
Solution

Lecturer Neuroticism

The first regression we'll do is whether students want lecturers to be neurotic. Define the two blocks as follows. In the first block put Age and Gender (I ran this analysis on a Mac, so the screenshots will look a little different from the rest of the book, but they are basically the same):



In the second, put all of the student personality variables (five variables in all):



Set the options as in the book chapter.

The main output (I haven't reproduced it all, but you can find it in the file **Charmorro-Premuzic.spv**), is as follows:

Model Summary^a

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.167 ^a	.028	.023	8.77393	.028	5.300	2	370	.005	
2	.253 ^a	.064	.046	8.66878	.036	2.806	5	365	.017	1.963

a. Predictors: (Constant), Gender, Age

b. Predictors: (Constant), Gender, Age, Student Extroversion, Student Openness, Student Agreeableness, Student Neuroticism, Student Conscientiousness

c. Dependent Variable: Student wants Neuroticism in lecturers

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	816.040	2	408.020	5.300	.005 ^a
	Residual	28483.290	370	76.982		
	Total	29299.330	372			
2	Regression	1870.379	7	267.197	3.556	.001 ^a
	Residual	27428.951	365	75.148		
	Total	29299.330	372			

a. Predictors: (Constant), Gender, Age

b. Predictors: (Constant), Gender, Age, Student Extroversion, Student Openness, Student Agreeableness, Student Neuroticism, Student Conscientiousness

c. Dependent Variable: Student wants Neuroticism in lecturers

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Correlations			Collinearity Statistics		
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF	
1	(Constant)	-28.220	2.586		-10.913	.000	-33.305	-23.135						
	Age	.278	.129	.110	2.151	.032	.024	.533	.115	.111	.110	.999	1.001	
	Gender	2.419	1.023	.121	2.364	.019	4.430	.125	.122	.121	.999	1.001		
2	(Constant)	-16.774	5.296		-3.167	.002	-27.189	-6.359						
	Age	.301	.128	.119	2.353	.019	.049	.553	.115	.122	.119	.995	1.005	
	Gender	1.903	1.085	.095	1.754	.080	-.230	4.037	.125	.091	.089	.867	1.153	
	Student Neuroticism	-.060	.059	-.059	-1.022	.307	-.176	.056	-.015	-.053	-.052	.762	1.313	
	Student Extroversion	-.107	.075	-.078	-1.428	.154	-.256	.041	-.091	-.075	-.072	.853	1.172	
	Student Openness	-.174	.073	-.123	-2.391	.017	-.318	-.031	-.099	-.124	-.121	.974	1.027	
	Student Agreeableness	.087	.072	.073	1.218	.224	-.054	.228	-.018	.064	.062	.719	1.391	
	Student Conscientiousness	-.203	.082	-.157	-2.482	.013	-.363	-.042	-.124	-.129	-.126	.845	1.550	

a. Dependent Variable: Student wants Neuroticism in lecturers

Excluded Variables^a

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
1	Student Neuroticism	.017 ^a	.319	.750	.017	.942	1.062	.941
	Student Extroversion	-.069 ^a	-1.715	.087	-.089	.999	1.001	.998
	Student Openness	-.116 ^a	-2.262	.024	-.117	.988	1.012	.987
	Student Agreeableness	-.007 ^a	-.137	.891	-.007	.988	1.012	.987
	Student Conscientiousness	-.110 ^a	-2.109	.036	-.109	.961	1.040	.961

a. Predictors in the Model: (Constant), Gender, Age

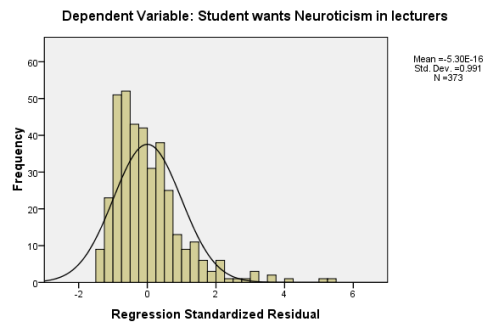
b. Dependent Variable: Student wants Neuroticism in lecturers

Caseswise Diagnostics^a

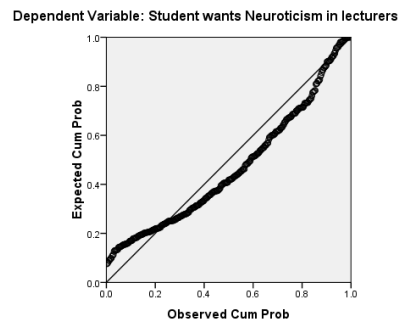
Case Number	Std. Residual	Student wants Neuroticism in lecturers	Predicted Value	Residual
14	-3.084	.00	-26.7384	26.73836
34	3.019	.00	-26.1746	26.17456
149	2.316	-3.00	-23.0767	20.07671
203	2.803	5.00	-19.2951	24.29508
247	2.037	-4.00	-21.6626	17.66256
277	4.208	22.00	-14.4774	36.47737
282	3.143	10.00	-17.2458	27.24581
286	2.115	4.00	-14.3368	18.33676
400	2.217	2.00	-17.2208	19.22084
403	2.049	-6.00	-23.7646	17.76463
407	2.672	.00	-23.1646	23.16463
411	2.095	1.00	-17.1585	18.15846
414	3.600	8.00	-23.2076	31.20758
419	5.074	25.00	-18.9847	43.98489
422	5.367	25.00	-21.5246	46.52460
425	3.683	13.00	-18.9311	31.93106
427	2.089	.00	-18.1093	18.10933

a. Dependent Variable: Student wants Neuroticism in lecturers

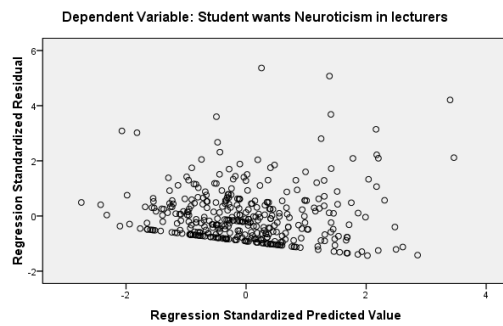
Histogram



Normal P-P Plot of Regression Standardized Residual



Scatterplot



You could report these results as follows:

	<i>B</i>	<i>SE B</i>	<i>β</i>
Step 1			
Constant	-28.22	2.59	
Age	0.28	0.13	.11*
Gender	2.42	1.02	.12*
Step 2			
Constant	-16.77	5.30	
Age	0.30	0.13	.12*
Gender	1.90	1.08	.10
Neuroticism	-0.06	0.06	-.06
Extroversion	-0.12	0.08	-.08

Openness	-0.17	0.07	-.12*
Agreeableness	0.09	0.07	.07
Conscientiousness	-0.20	0.08	-.16*

Note: $R^2 = .03$ for step 1; $\Delta R^2 = .04$ for step 2 ($p < .05$). * $p < .05$.

So basically, age, openness and conscientiousness were significant predictors of wanting a neurotic lecturer (note that for openness and conscientiousness the relationship is negative, i.e. the more a student scored on these characteristics, the *less* they wanted a neurotic lecturer).

Lecturer Extroversion

The second variable we want to predict is lecturer extroversion. I won't run through the analysis and output, but you can find it in the file **Charmorro-Premuzic.spv**.

You could report these results as follows:

	<i>B</i>	<i>SE B</i>	β
Step 1			
Constant	12.13	2.43	
Age	.03	.12	.01
Gender	.93	.94	.06
Step 2			
Constant	3.62	4.93	
Age	.02	.12	.01
Gender	1.31	1.00	.08
Neuroticism	.00	.06	.01
Extroversion	.15	.07	.14*
Openness	.04	.07	.03
Agreeableness	.00	.07	.00
Conscientiousness	.10	.08	.10

Note. $R^2 = .00$ for step 1; $\Delta R^2 = .03$ for step 2 ($ps > .05$). * $p < .05$.

So basically, student extroversion was the only significant predictor of wanting an extrovert lecturer; the model overall did not explain a significant amount of the variance in wanting an extroverted lecturer.

Lecturer Openness to Experience

The third variable we want to predict is lecturer openness to experience. As before, the SPSS output can be found in the file **Charmorro-Premuzic.spv**.

You could report these results as follows:

	<i>B</i>	<i>SE B</i>	β
Step 1			
Constant	9.41	2.37	
Age	-.04	.12	-.02
Gender	.23	.92	.01
Step 2			
Constant	-5.16	4.75	
Age	-.05	.12	-.02
Gender	.09	.96	.01
Neuroticism	.01	.05	.01
Extroversion	.07	.07	.05
Openness	.26	.07	.20***
Agreeableness	.14	.06	.12*
Conscientiousness	-.03	.07	-.03

Note: $R^2 = .00$ for step 1 (*ns*); $\Delta R^2 = .06$ for step 2 ($p < .001$). * $p < .05$, *** $p < .001$.

So basically, student openness to experience was the most significant predictor of wanting a lecturer who is open to experience, but student agreeableness predicted this also.

Lecturer Agreeableness

The fourth variable we want to predict is lecturer agreeableness. As before, the SPSS output can be found in the file **Charmorro-Premuzic.spv**.

You could report these results as follows:

	<i>B</i>	<i>SE B</i>	β
Step 1			
Constant	18.30	2.77	
Age	-.47	.14	-.17
Gender	-.83	1.07	-.04
Step 2			
Constant	8.76	5.51	
Age	-.47	.14	-.17**
Gender	.78	1.11	.04
Neuroticism	.14	.06	.13*
Extroversion	.05	.08	.03
Openness	-.22	.08	-.14**
Agreeableness	.14	.07	.11
Conscientiousness	.14	.09	.10

Note: $R^2 = .03$ for step 1 ($p < .01$); $\Delta R^2 = .06$ for step 2 ($p < .001$). * $p < .05$, ** $p < .01$.

Age, student openness to experience and student neuroticism significantly predicted wanting a lecturer who is agreeable. Age and openness to experience had negative relationships (the older and more open to experienced you are, the less you want an agreeable lecturer), whereas as student neuroticism increases so does the desire for an agreeable lecturer (not surprisingly, because neurotics will lack confidence and probably feel more able to ask an agreeable lecturer questions).

Lecturer Conscientiousness

The final variable we want to predict is lecturer conscientiousness. As before, the SPSS output can be found in the file **Charmorro-Premuzic.spv**.

You could report these results as follow:

	<i>B</i>	<i>SE B</i>	<i>β</i>
Step 1			
Constant	13.84	2.24	
Age	.16	.11	.07
Gender	-2.33	.87	-.14**
Step 2			
Constant	5.85	4.50	
Age	.14	.11	.06
Gender	-1.65	.91	-.10
Neuroticism	-.01	.05	-.01
Extroversion	-.06	.07	-.05
Openness	-.01	.06	-.01
Agreeableness	.12	.06	.12*
Conscientiousness	.16	.07	.14*

Note: $R^2 = .02$ for step 1 ($p < .05$); $\Delta R^2 = .05$ for step 2 ($p < .01$). * $p < .05$, ** $p < .01$.

Student agreeableness and conscientiousness both predicted wanting a lecturer who is conscientious. Note also that gender predicted this in the first step, but its b became slightly non-significant ($p = .07$) when the student personality variables were forced in as well. However, gender is probably a variable that should be explored further within this context.

Compare your results to Table 4 in the actual article (shown below). I've highlighted the area of the table relating to our analyses (our five analyses are represented by the columns labelled N, E, O, A and C).

Table 4
Regressions of students' gender, age, big five, and learning style as predictors of LPQ ratings

		Preference for lecturers'										
		N		E		O		A		C		
		β	t	β	t	β	t	β	t	β	t	
Students'	1											
		Age	.11	2.13*	.02	.34	-.01	.19	-.17	3.43**	.05	1.08
		Gender	.11	2.30*	.07	1.15	.01	.23	-.03	.62	-.12	2.48*
		F (2365)	5.10**		.75		.04		6.19**		3.55*	
		Adj. R ²	.02		.01		.00		.03		.01	
	R ²	.02		.06		.00		.03		.02		
2		Age	.12	2.36*	.00	.05	-.01	.27	-.18	3.62**	.04	.90
		Gender	.09	1.65	.10	1.58	-.00	.13	.06	1.11	-.08	1.49
		N	-.05	1.00	.03	.48	.00	.08	.16	2.90**	.01	.31
		E	-.08	1.56	.16	2.45*	.06	1.13	.05	.97	-.05	1.01
		O	-.12	2.38*	.03	.56	.21	4.08**	-.14	2.78**	-.01	.23
		A	.07	1.25	.00	.09	.13	2.19*	.11	1.98*	.14	2.34*
		C	-.16	2.54**	.11	1.46	-.05	.84	.10	1.66	.12	2.00*
		F (7360)	3.61**		1.80*		3.44**		6.29**		4.01**	
		Adj. R ²	.05 ^Δ **		.05 ^Δ **		.04 ^Δ **		.09 ^Δ **		.05 ^Δ **	
		R ²	.06		.06		.06		.11		.07	
	3		Age	.09	1.88	.02	.45	.02	.44	.15	3.89**	.05
		Gender	.06	1.15	.08	1.14	.01	.16	.07	1.39	-.11	2.07*
		N	-.07	1.20	-.00	.05	-.01	.26	.11	1.94*	-.02	.35
		E	-.10	1.86	.14	2.16*	.04	.83	.02	.51	-.08	1.48
		O	-.15	2.58**	.12	1.75	.19	3.32**	-.04	.79	.05	.91
		A	-.02	.22	-.06	.52	.15	1.44	.27	2.72**	.02	.26
		C	-.14	2.29*	.13	1.77	-.05	.87	.09	1.50	.14	2.27*
		SM	-.05	.83	.04	.53	.10	1.59	.15	2.50**	.02	.38
		DM	.16	2.34*	-.10	1.32	.04	.62	.04	.61	.02	.39
		AM	-.00	.10	.14	1.36	-.09	1.07	-.21	2.55**	.11	1.26
		SS	.13	2.16*	.07	1.01	-.01	.27	.09	1.51	.12	2.01*
		DS	.05	.82	-.06	.73	.04	.56	-.13	1.91*	-.05	.80
		AS	-.03	.72	-.06	.52	.16	1.44	.35	2.77**	.18	.26
		F (12,354)	3.43**		1.88*		2.40**		5.62**		3.19**	
	Adj. R ²	.07 ^Δ **		.08		.04		.13 ^Δ **		.07		
	R ²	.07		.08		.07		.16		.10		

Note: N = 387; gender coded 0 = female, 1 = male; N = Neuroticism, E = Extraversion, O = Openness, A = Agreeableness, C = Conscientiousness; SM = Surface motive; DM = deep motive; AM = achieving motive; SS = surface strategy; DS = deep strategy; AS = achieving strategy; ** $p < .01$, * $p < .05$; Δ = significant Delta change (increase in variance %); all β coefficients are standardized.

Table 4 from Chamorro-Premuzic et al. (2008)