```
1.

GET DATA
  /TYPE=XLS
  /FILE='C:\Users\azabinski1\Documents\occupation.xls'
  /SHEET=name 'occupation'
  /CELLRANGE=full
  /READNAMES=on
  /ASSUMEDSTRWIDTH=32767.
EXECUTE.
DATASET NAME DataSet1 WINDOW=FRONT.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT income
  /METHOD=ENTER education.
```

Regression

Notes

Output Created		13-FEB-2017 13:05:52
Comments		
Input	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	98
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 /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT income /METHOD=ENTER education.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.02
	Memory Required	2528 bytes
	Additional Memory Required for Residual Plots	0 bytes

```
[DataSet1]
```

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	education[b]	.	Enter

a. Dependent Variable: income

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.574[a]	.330	.323	3479.923

a. Predictors: (Constant), education

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	571532362.154	1	571532362.154	47.196	.000[b]
	Residual	1162546799.846	96	12109862.498		
	Total	1734079162.000	97			

a. Dependent Variable: income

b. Predictors: (Constant), education

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2593.418	1431.377		-1.812	.073
	education	883.019	128.534	.574	6.870	.000

a. Dependent Variable: income

Estimate of Slope: The slope (standardized regression coefficient) of 0.574 means that for each increase of 1 Standard Deviation of X (Education), we predict the average of Y(Income) to increase by a Standard Deviation of 0.574

Estimate of Intercept: Theoretically, If independent variable (Education)= 0, then the dependent variable (weight) is equal to -2593.418

2.

```
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT income
  /METHOD=ENTER education Prestige PctWomen.
```

Regression

Notes

Output Created		13-FEB-2017 13:12:21
Comments		
Input	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	98
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 /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT income /METHOD=ENTER education Prestige PctWomen.
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.00
	Memory Required	3504 bytes
	Additional Memory Required for Residual Plots	0 bytes

```
[DataSet1]
```

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method

1	PctWomen, education, Prestige[b]	.	Enter

a. Dependent Variable: income

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.797[a]	.636	.624	2591.572

a. Predictors: (Constant), PctWomen, education, Prestige

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1102751992.389	3	367583997.463	54.731	.000[b]
	Residual	631327169.611	94	6716246.485		
	Total	1734079162.000	97			

a. Dependent Variable: income

b. Predictors: (Constant), PctWomen, education, Prestige

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	58.092	1119.578		.052	.959
	education	162.467	202.184	.106	.804	.424
	Prestige	140.645	32.648	.569	4.308	.000
	PctWomen	-52.767	8.895	-.392	-5.932	.000

a. Dependent Variable: income

```
DESCRIPTIVES VARIABLES=education Prestige PctWomen
  /STATISTICS=MEAN STDDEV MIN MAX.
```

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
education	98	6.38	15.97	10.7951	2.74894
Prestige	98	17.3	87.2	47.328	17.0949
PctWomen	98	.00	97.51	28.9857	31.38202
Valid N (listwise)	98				

Estimate of Slope: The slope (standardized regression coefficient) of 0.106 means that for each increase of 1 Standard Deviation of X (Education), we predict the average of Y(Income) to increase by a Standard Deviation of 0.106

Estimate of Slope: The slope (standardized regression coefficient) of 0.569 means that for each increase of 1 Standard Deviation of X (Prestige), we predict the average of Y(Income) to increase by a Standard Deviation of 0.569

Estimate of Slope: The slope (standardized regression coefficient) of -0.392 means that for each increase of 1 Standard Deviation of X (Percent Women), we predict the average of Y(Income) to decrease by a Standard Deviation of 0.392

Estimate of Intercept: Theoretically, If independent variables (Education, Prestige and Percent Women)= 0, then the dependent variable (weight) is equal to 58.092

The slope (standardized regression coefficient) for the estimated Education coefficient for the simple regression model was 0.574, whereas the one for multiple regression was 0.106. This means that when we add other independent variables, the predictive power of education drops. This implies that there are other independent variables apart from Education like Prestige and Percent Women that also predict Income.

3.

```
EXECUTE.
COMPUTE cntrEDU=education - 10.7951.
EXECUTE.
COMPUTE cntrPRES=Prestige - 47.328.
EXECUTE.
COMPUTE cntrPctWo=PctWomen - 28.9857.
EXECUTE.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT income
  /METHOD=ENTER cntrEDU cntrPRES cntrPctWo.
```

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	cntrPctWo, cntrEDU, cntrPRES[b]	.	Enter

a. Dependent Variable: income

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.797[a]	.636	.624	2591.572

a. Predictors: (Constant), cntrPctWo, cntrEDU, cntrPRES

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1102751992.389	3	367583997.463	54.731	.000[b]
	Residual	631327169.611	94	6716246.485		
	Total	1734079162.000	97			

a. Dependent Variable: income

b. Predictors: (Constant), cntrPctWo, cntrEDU, cntrPRES

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6938.921	261.788		26.506	.000
	cntrEDU	162.467	202.184	.106	.804	.424
	cntrPRES	140.645	32.648	.569	4.308	.000
	cntrPctWo	-52.767	8.895	-.392	-5.932	.000

a. Dependent Variable: income

```
DESCRIPTIVES VARIABLES=education Prestige PctWomen
  /SAVE
  /STATISTICS=MEAN STDDEV MIN MAX.
```

Descriptives

```
[DataSet1]
```

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
education	98	6.38	15.97	10.7951	2.74894
Prestige	98	17.3	87.2	47.328	17.0949
PctWomen	98	.00	97.51	28.9857	31.38202
Valid N (listwise)	98				

4.

```
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT income
  /METHOD=ENTER Zeducation ZPrestige ZPctWomen.
```

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Zscore(PctWomen), Zscore(education), Zscore(Prestige)[b]	.	Enter

a. Dependent Variable: income

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.797[a]	.636	.624	2591.572

a. Predictors: (Constant), Zscore(PctWomen), Zscore(education), Zscore(Prestige)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1102751992.389	3	367583997.463	54.731	.000[b]
	Residual	631327169.611	94	6716246.485		
	Total	1734079162.000	97			

a. Dependent Variable: income

b. Predictors: (Constant), Zscore(PctWomen), Zscore(education), Zscore(Prestige)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6938.857	261.788		26.506	.000
	Zscore(education)	446.611	555.791	.106	.804	.424
	Zscore(Prestige)	2404.318	558.120	.569	4.308	.000
	Zscore(PctWomen)	-1655.923	279.156	-.392	-5.932	.000

a. Dependent Variable: income

5.

```
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
```

```
/DEPENDENT income
/METHOD=ENTER education Prestige PctWomen PctDog.
```

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	PctDog, PctWomen, Prestige, education[b]	.	Enter

a. Dependent Variable: income

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.798[a]	.637	.621	2602.578

a. Predictors: (Constant), PctDog, PctWomen, Prestige, education

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1104151892.708	4	276037973.177	40.753	.000[b]
	Residual	629927269.292	93	6773411.498		
	Total	1734079162.000	97			

a. Dependent Variable: income

b. Predictors: (Constant), PctDog, PctWomen, Prestige, education

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	453.219	1421.105		.319	.751
	education	175.408	205.028	.114	.856	.394
	Prestige	139.249	32.930	.563	4.229	.000
	PctWomen	-53.004	8.948	-.393	-5.923	.000

	PctDog	-838.096	1843.524	-.029	-.455	.650

a. Dependent Variable: income

R-squared explains the percentage of response variable variation that is explained by the linear model. Comparing the R-squared between the two models, we can conclude that the adding an additional predictor variable (Pct Dog), increases the fit of the model, albeit very slightly, with respect to the response variable (r-squared increases from 0.636 to 0.637 on adding the variable of PctDog).

The adjusted R-squared compares the explanatory power of regression models that contain different number of predictors. The adjusted R-squared increases only if the new term improves the model more than would be expected by chance. Comparing the adjusted R-squared between the two models (Adjusted R-squared decreases from 0.624 to 0.621), we can conclude that the addition of the new variable Pct Dog improves the model by less than expected by chance.