

Completing this assignment requires knowledge of Excel (or any similar statistical package) accessible in Clark University Computer rooms. If you need instruction in Excel, contact the TA or myself for assistance.

Part One: Scatterplot and Correlation (Project)

- a) From the dataset that you selected in Assignment 1, select an Endogenous Variable - a variable that you want to explain. Then select one Exogenous Variable, the variable that you believe best explains the Endogenous Variable. Write a summary of why you think that there is a relationship.
- b) Create a histogram of the Endogenous Variable. Briefly describe the properties of the data.
- c) Using the two variables selected in a), create a graph (as a scatter plot. Note: in a scatterplot the Endogenous variable will be on the Y-axis and the exogenous variable will be on the X-axis).
- d) Then determine the correlation between the two variables (the measure of linear association), do this “the long way” as discussed in class (note: you can use the equation for the correlation coefficient is “=correl(“**replace with cell references**”)” to double check if your calculations are correct). If the correlation is very low, look at the Scatterplot to see if you have a nonlinear relationship and/or outliers. If it is a nonlinear relationship, create a new variable of the natural log of the endogenous variable (=ln(“**replace with cell references**”) in excel) and create a new scatterplot (email me or Belkis both of the scatterplots if neither appear linear). Then repeat all of the steps in this section once more. In either case, explain the correlation coefficient that you obtain (begin by explaining what the correlation coefficient is supposed to tell you, then explain the value that you got – i.e. whether or not it lived up to your expectations and why or why not.)

Part Two: What to hand in

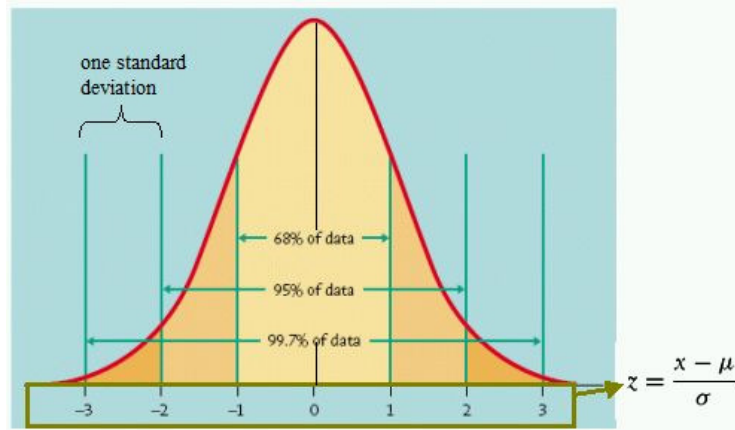
A print out of your graphs, the calculation of the correlation coefficient, and an essay discussing the issues raised in part a) and how the results in part c) and d) confirm or denied your hypothesis in part a).

Part Three: Questions from the text

Question 7, pp. 95, Question 10, pp.95, Question 1, pp. 134, Question 12, pp 139, Question 10, pp. 156, Question 2, pp. 176, Question 3, pp. 176, Question 4, pp. 176.

Note: No answers will be accepted for grading without complete and detailed workings.

50% of the grade for this assignment is based on Part Three.



<i>z</i>	<i>0</i>	<i>0.01</i>	<i>0.02</i>	<i>0.03</i>	<i>0.04</i>	<i>0.05</i>	<i>0.06</i>	<i>0.07</i>	<i>0.08</i>	<i>0.09</i>
<i>0</i>	0	0.008	0.016	0.024	0.032	0.0398	0.0478	0.0558	0.0638	0.0718
<i>0.1</i>	0.0796	0.0876	0.0956	0.1034	0.1114	0.1192	0.1272	0.135	0.1428	0.1506
<i>0.2</i>	0.1586	0.1664	0.1742	0.182	0.1896	0.1974	0.2052	0.2128	0.2206	0.2282
<i>0.3</i>	0.2358	0.2434	0.251	0.2586	0.2662	0.2736	0.2812	0.2886	0.296	0.3034
<i>0.4</i>	0.3108	0.3182	0.3256	0.3328	0.34	0.3472	0.3544	0.3616	0.3688	0.3758
<i>0.5</i>	0.383	0.39	0.397	0.4038	0.4108	0.4176	0.4246	0.4314	0.438	0.4448
<i>0.6</i>	0.4514	0.4582	0.4648	0.4714	0.4778	0.4844	0.4908	0.4972	0.5034	0.5098
<i>0.7</i>	0.516	0.5222	0.5284	0.5346	0.5408	0.5468	0.5528	0.5588	0.5646	0.5704
<i>0.8</i>	0.5762	0.582	0.5878	0.5934	0.599	0.6046	0.6102	0.6156	0.6212	0.6266
<i>0.9</i>	0.6318	0.6372	0.6424	0.6476	0.6528	0.6578	0.663	0.668	0.673	0.6778
<i>1</i>	0.6826	0.6876	0.6922	0.697	0.7016	0.7062	0.7108	0.7154	0.7198	0.7242
<i>1.1</i>	0.7286	0.733	0.7372	0.7416	0.7458	0.7498	0.754	0.758	0.762	0.766
<i>1.2</i>	0.7698	0.7738	0.7776	0.7814	0.785	0.7888	0.7924	0.796	0.7994	0.803
<i>1.3</i>	0.8064	0.8098	0.8132	0.8164	0.8198	0.823	0.8262	0.8294	0.8324	0.8354
<i>1.4</i>	0.8384	0.8414	0.8444	0.8472	0.8502	0.853	0.8558	0.8584	0.8612	0.8638
<i>1.5</i>	0.8664	0.869	0.8714	0.874	0.8764	0.8788	0.8812	0.8836	0.8858	0.8882
<i>1.6</i>	0.8904	0.8926	0.8948	0.8968	0.899	0.901	0.903	0.905	0.907	0.909
<i>1.7</i>	0.9108	0.9128	0.9146	0.9164	0.9182	0.9198	0.9216	0.9232	0.925	0.9266
<i>1.8</i>	0.9282	0.9298	0.9312	0.9328	0.9342	0.9356	0.9372	0.9386	0.9398	0.9412
<i>1.9</i>	0.9426	0.9438	0.9452	0.9464	0.9476	0.9488	0.95	0.9512	0.9522	0.9534
<i>2</i>	0.9544	0.9556	0.9566	0.9576	0.9586	0.9596	0.9606	0.9616	0.9624	0.9634
<i>2.1</i>	0.9642	0.9652	0.966	0.9668	0.9676	0.9684	0.9692	0.97	0.9708	0.9714
<i>2.2</i>	0.9722	0.9728	0.9736	0.9742	0.975	0.9756	0.9762	0.9768	0.9774	0.978
<i>2.3</i>	0.9786	0.9792	0.9796	0.9802	0.9808	0.9812	0.9818	0.9822	0.9826	0.9832
<i>2.4</i>	0.9836	0.984	0.9844	0.985	0.9854	0.9858	0.9862	0.9864	0.9868	0.9872
<i>2.5</i>	0.9876	0.988	0.9882	0.9886	0.989	0.9892	0.9896	0.9898	0.9902	0.9904
<i>2.6</i>	0.9906	0.991	0.9912	0.9914	0.9918	0.992	0.9922	0.9924	0.9926	0.9928
<i>2.7</i>	0.993	0.9932	0.9934	0.9936	0.9938	0.994	0.9942	0.9944	0.9946	0.9948
<i>2.8</i>	0.9948	0.995	0.9952	0.9954	0.9954	0.9956	0.9958	0.9958	0.996	0.9962
<i>2.9</i>	0.9962	0.9964	0.9964	0.9966	0.9968	0.9968	0.997	0.997	0.9972	0.9972
<i>3</i>	0.9974	0.9974	0.9974	0.9976	0.9976	0.9978	0.9978	0.9978	0.998	0.998