**St. John’s University-Center for Educational Leadership and Accountability**

**Edu 7211-Educational Research and Data Analysis II**

**Dr. Nicholas Bernice-Professor**

Assignment #1—Chapter 1-4, including data sets chapter 2 set 1, chapter 3 set 2, and chapter 4 set 1 with self entry.

Three questions to be answered for each of the 12 text assignments: 1. What are the definition of the topics? or how can they be described? 2. When do you use them? And 3. What do they demonstrate? It is desirable to include an example should one be offered to clarify the terminology or concept in the text assignments.

***ASSIGNMENT LETTER A***

**CHAPTER 1.** **STATISTICS OR SADISTICS? IT’S UP TO YOU**

**INTRODUCTORY CONCEPTS (P 5-18)**

DESCRIPTIVE STATISTICS—1. Are used to organize and describe the characteristics of a collection of data. It is called a data set or simply data. 2. Descriptive statistics are utilized to compare and contrast variables to one another, finding the average, mean and mode. 3. Descriptive statistics are used to compute or summarize characteristics of variables in a large collection of a population.

INFERENTIAL STATISTICS—1. Inferential statistics are tools that are used to infer the results based on a sample or a subset to a population. 2. Inferential statistics is useful when a researcher has to find a smaller group to act as representatives of the larger population to explain their findings. 3. Inferential statistics demonstrates the general findings of a large population by extrapolating information from the subset.

 **CHAPTER 2**. **MEANS TO AN END**

**COMPUTING AND UNDERSTANDING AVERAGES**

AVERAGE—1. The most representative score in a set of scores. 2.

MEASURES OF CENTRAL TENDENCY—1.It is another name for average, and it provides the mean, median and mode of a distribution of scores. 2. Measures of central tendency are useful to provide more information such as finding an average, or the midpoint of a total population or a value that is used most frequently. 3. It provides different types of information about a distribution of scores.

MEAN—1. Most common type or typical average score computed. 2. A mean is desirable when someone needs to find the average number or score in a total number of scores. The mean is the most often used measure of central tendency. 3. It is the sum of all the values in a group, divided by the number of values of that group.

MEDIAN –1. The median is a different kind of average defined as the midpoint of a set of scores. 2. It is frequently more appropriate to find the median than the mean because it is not sensitive to extreme scores and it will not distort the average score. 3. The median demonstrates the middle point of a set of values.

Mode—1. The mode is the value of a set of scores that occurs most frequently. 2. It is best to use the mode when you want to find a measure of central tendency for qualitative, categorical or nominal data. 3. The mode demonstrates values that are categorical in nature.

**Assignment A. Part 2**. Page 30 SPSS: Chapter 2—Data set 1.

**Frequencies**

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**Answer:** Based upon the chart which was pasted from the SPSS file the  **the mean was 84.70, the median was 87.00, and the mode was 87.** I was able to compute these numbers by pressing analyze—frequencies—then statistics with mean, median, mode—then frequencies then—arrow—then answer.

ASSIGNMENT LETTER B

Chapter 3. Vive La Difference; Understanding Variability

Variability (p 35-47)

RANGE—1. The gross measure of variability. 2. The range is used to subtract one number (the lowest value) from another value (the highest). 3. The range is used to get a very general estimate of how wide scores are from one another.

STANDARD OF DEVIATION—1. The standard deviation is the average deviation from the mean or the average distance from the mean. 2. The standard deviation is utilized to help us compare scores from different distributions, even when both the mean and the standard deviations from each are different. 3. The standard deviation demonstrates how much each score in a set of scores, on the average, varies from the mean.

VARIANCE—1. The square of the standard deviation and another measure of a distribution’s spread. 2. It is desirous as an important concept and as a practical measure of variability. 3. It demonstrates the average difference between the distribution of the scores that has been squared form the mean.

**Assignment B Part 2**  page 44 chapter 3 data set 1.

Chapter 4. A Picture Really Is Worth A Thousand Words

Frequency Distributions (p 48-65)

Histogram –1. A visual or graphical representation of a frequency distribution where the frequencies are represented by bars. 2. A histogram is appropriate to explain data visually. 3. A histogram demonstrates various frequencies of scores in four different ways: thru average value, variability, skewness, and kurtosis. The average value and variability have thus far been defined. Skewness is a measure of the lack of symmetry or visually different frequency distributions; i.e. positive, no skewness, or negative skewness of a distribution. A Kurtosis has to do with how flat or peaked a distribution may be, citing terms of platykurtic and leptokurtic as to is relative degrees of kurtosis in various frequency distributions.

Charts – 1. 2. Column charts are appropriate in comparing the frequencies of different categories with one another; Bar charts or bar graphs utilize the same format but categories are organized vertically on the y-axis and values are shown on the x-axis; line charts or graphs are used to show a trend in the data at equal intervals; and pie graphs are utilized to demonstrate the proportion of an item that makes up a series of data points.

SPSS page 65: chapter 4: data set 1 and self entry.