Statistics Reflection

When I began the course, Statistics for the Social Sciences,I was unaware of what to expect other than a continuation of the research that was produced last Fall semester. Throughout the course of this semester, the parent data that was collected from the previous semester was applied with a different approach. Compared to last semester, myself along with my fellow classmates took a statistical approach by examining the data through a series of analyses. The series of analyses included: measures of central tendency, measures of variability, z-scores and probability, t-Test, Analysis of Variance, Chi-Squared test, Pearson’s Correlation, along with Regression. In each individual chapter, I computed the data using the IBM Statistical Package for Social Science Statistics, learned in Sociology 345. From there, I learned another online system, R-Studio. The third approach I learned in this course was completing the mathematical problems by hand. When completing the problems by hand, I found it difficult for a few sections of the course. However, I was able to apply the knowledge learned in my Statistics 171 course I took my freshman year here at Longwood University.

Throughout the course, I was able to recognize and perform the critical course objectives. First and foremost, I was able to explain the basic concepts of social statistics. Attempting to grasp this information, I not only used the textbook as a source, I also applied the information learned in the book to the analyses that I was completing throughout the semester. When analyzing the data, I examined the variables that differ from one respondent to another such as age and social class. The data that was received was analyzed at all angles to understand the correlation of the take-home activities and increased parental involvement with their child. In completion of the course, I was able to learn how to summarize numeric data by computing descriptive statistics and creating tables and graphs, in American Psychological Association (APA) format to interpret the findings. Through my new learned skills, I learned how to compute measures of central tendency by figuring out the mean, median and mode in all three methods previously stated. I learned measures of variability where I calculated the variance, standard deviation, and percentile ranges. In each procedure, I completed the hand calculation method using a calculator as well as using a computer method which consisted of both SPPS and R-Studio.

In the later half of the semester, I was forced to apply myself to a higher degree as I learned how to compute and analyze various inferential statistics using both hand and computer calculation methods. This consisted first of completing a T-test where I learned three formulas, one of which explained how to calculate the difference between the means in an independent sample. The second formula presented how to find the difference between the means where there is an adjustment of unequal variances. The third formula consisted of finding the difference between the means in a dependent sample. Next, I learned how to complete an analysis of variance to find if there was a significant difference between the means. That led to using a ten-step process to figure out whether or not to reject or retain the null hypothesis. I learned how to complete a nonparametric test of significance by completing a Chi-Squared test. Throughout this analysis, I learned how to create a summary table and analyzed the frequencies of certain variables of the parent data. In chapter ten, Pearson’s Correlation, I learned to figure out whether or not “r” was significant or not at the .05 or .01 level. The last analysis that was learned was Regression. In R-studio, we focused on the correlation and relationship in greater detail between a set of continuous variables.

The fourth objective I learned from this course was being able to test hypotheses using the probability theory. As a researcher, I tested a series of hypotheses over the course of both semesters. A statistical test that I learned in order to understand this was known as z-scores and probability. First and foremost, I learned that probability is the relative likelihood of occurrence of any given outcome along with learning the importance of the p-value. In this particular section of the course, I not only learned the characteristics of a normal curve, but also how to calculate the probability between certain areas under the curve. The last objective I was able to learn in this course was being able to explain the differences between various statistical techniques along with identifying the proper technique for given research questions and data. By applying myself in each chapter, I was able to fully understand the correct formulas to use in order to receive the best results possible.

The information that I was able to learn from this course matters in a larger context for a few reasons. First, statistics is used in everyday life in many different situations. Statistics allows statisticians to learn and examine data while simultaneously communicating that data to other researchers, but more importantly the public. Whether it be academically, socially, or even athletically, statistics is used to interpret decisions made by research. In the society we live in now, conditions change on a daily basis. In order to understand and predict future human behavior, researchers use statistics.

In the case of the parent data, the information collected matters in a larger context for a specific reason; to understand parental involvement within households. The data received means more at a higher level as it proved that with the gracious help of creating take-home activities, majority of the respondents mentioned that it increased parental involvement with their child/children. The attitude and perception I had towards statistics has significantly changed for the good over the course of the semester. From the basic understanding of statistics to the series of analyses completed, I am pleased on what transpired as it made me a better statistician, as I was able to see the positive and meaningful results that were received from the Head Start program.

With the skills and resources that I have learned throughout the semester, I will now be able to apply those techniques to other areas of my life. This includes the future classes that I will be enrolled in at Longwood University. The skills that I have been able to gather over the course of this semester will better prepare me in life not only at a statistical approach in my academics, but also by having a greater understanding of different research conducted. After working with the parental involvement data for the past two semesters, I have found that it is important to stay involved in the community. In the end, I feel good knowing that committed a good deed in attempting to help local families. For the years to come, I want to give back to the community in variety of ways, one of which will be with the Farmville Fire Department. Upon graduation, I am hoping to become a Firefighter/Emergency Medical Technician for the county in which I live. Not only am I hoping to make it career, but also to have the ability to make a difference in society and to help those that are in need.

The experiences that I have had this semester is something that I never will forget and always will look back on. With what I have learned, I can use similar actions in the community where I live and work. Aside from public service as a career, I can inform the public on the benefits of activities and other programs based on the research and descriptive statistics. Upon completion of this course, I will continue to support social and economic policy changes for intervention programs similar to Head Start. As a result of completing the research and statistical analyses through both semesters, I now have the ability to provide statistical results that show that these activities did help the families at Head Start. For the past nine months, I been grateful to have been part of these two courses as it has given me the ability to make a change in the Farmville community and is something that I will always remember and take way once I leave Longwood University.