**Course Learning Journal**

**Assignment #4: Practical Statistics**

**COM 968-32: Statistics for Social Research II**

**(Fall 2024, Sub-term A)**

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**Course Learning Journal**

1. Introduction –Summarize the course's intent, emphasizing its crucial role in the graduate program and its relevance in the curricular sequence. This course is not just a part of the program but a cornerstone that shapes our understanding and application of statistics in our respective fields.

2. Personal Growth - Describe your personal growth–how the course stretched or challenged you– and your progress in mastery of course content and skills during the week and through subsequent readings – what new insights or skills you gained.

3. Reflective Entry - Add a reflective entry that describes the contextualization (or adaptation and relevant application) of new learning in your professional field. What questions or concerns have surfaced about your professional field because of your study?

4. Conclusion—Evaluate the course's effectiveness in meeting your professional, religious, and educational goals.

**Course Learning Journal**

**1) Introduction**–Summarize the intent of the course, how it fits into the graduate program, and the relevance of its position in the curricular sequence.

The course learning journal CLJ signifies the learning journey in Statistics for Social Research II COM 968-32 (SSR for short) while working in each course. The CLJ integrates the essential elements of the course within the professional field of interest. The objective of the course journal is to produce a degree of acculturation, integrating new ideas into the existing knowledge of each course (OGS.edu, 2024). Statistics for Social Research are integral to the PhD Core 4 program. It has four assignment testing modules: Assignment 1, the Discussion and interactive questions for the students and the professor; Assignment 2, the Developmental Reading Log, which is student-research-led; Assignment 3, the Instructor Assignments in Practical Statistics; and Assignment 4, the Course Learning Journal. The four courses span about eight to twelve weeks in Fall Semester 2024.

Statistics for Social Research II (SSR II) is a strategic placement within the doctoral curriculum that ensures students have the advanced statistical skills and tools (Duan et al., 2024; Eka et al., 2024) necessary to conduct rigorous social research. SSR II empowers students to analyze data effectively, draw meaningful conclusions, and contribute to the broader social science by exploring complex statistical concepts and their practical applications. The student can reproduce his understanding of fundamental statistical concepts (Hadfield, et al., 2022), integrate them with his professional interests, and demonstrate the ability to apply them to real-world research problems. As a social scientist who increasingly relies on quantitative methods to investigate complex social phenomena, a solid grounding in statistical analysis is essential. This course focuses on various statistical techniques, including t-tests, parametric and non-parametric tests, and data visualization methods such as histograms and box-whisker plots. These tools are invaluable for researchers seeking to understand group dynamic variables and their differences,

test hypotheses and explore the relationships between variables.

**2. Personal Growth** - Describe your personal growth–how the course stretched or challenged you– and your progress in mastery of course content and skills during the week and through subsequent readings – what new insights or skills you gained.

The Statistics for Social Research course was a transformative experience. It has significantly expanded your knowledge and challenged your critical thinking. The mathematical concepts, particularly complex equations, initially presented a sharp learning curve. However, you have made substantial progress in mastering these challenges through consistent practice, guided instruction, and collaborative discussions.

One of the most touching aspects of the course was the hands-on experience with statistical software like SPSS. By conducting various statistical tests (Okoye, 2024), such as linear regression, Mann-Whitney U, and Chi-squared analysis, I gained a deep understanding of their underlying principles and practical applications. The ability to analyze real-world datasets and interpret the results has significantly enhanced my problem-solving skills. Furthermore, the course has broadened my perspective on statistical research.

By exploring and mastering diverse research methodologies and statistical techniques (Shatz, 2024), which are challenging, I have developed a strong foundation in parametric and non-parametric methods. The in-depth study of t-tests, z-tests, and simple linear regression has given me the tools to analyze complex data and draw meaningful conclusions. Perhaps most importantly, this course has fostered a sense of intellectual curiosity and a lifelong passion for learning. The opportunity to engage with challenging material and collaborate with peers has been genuinely inspiring. I am excited to apply the knowledge and skills gained from this course to future academic and professional endeavors.

**3) Reflective Entry-** Add a reflective entry that describes the contextualization (or adaptation and relevant application) of new learning in your professional field. What questions or concerns have surfaced about your professional field because of your study?

The insights gained from Statistics for Social Research, SSR, directly affect my professional practice as a sociological practitioner. For instance, qualitative and quantitative analysis and their key concepts (Litt, 2024; Kelter, 2024) can be applied in nonprofit and for-profit organizations to improve productivity and performance standards. The practical application of these concepts in real-world scenarios has enhanced my understanding and boosted my confidence in my professional abilities. The course has also equipped me with the skills to use statistical software (Auger & Normand, 2024), like R-Programming, Tableau, IBM SPSS, SAS Viya, and Scilab, to enhance my efficiency and effectiveness in data analysis.

However, the course has also raised some pertinent questions about the future. Statistical trends and the complexities in a series of statistical reports show that statistical field trips continue to evolve (Yashaswi, 2024; Waples, 2024), and it is crucial to consider their potential impact on data entry and specific statistical surveys. This forward-thinking approach to considering the course's future implications is a testament to the strategic mindset the course has instilled in me.

**4) Conclusion**—Evaluate the course's effectiveness in meeting your professional, religious, and educational goals.

The Statistics for Social Research course has ignited a passion for data-driven inquiry.

One of the most significant takeaways from this course is the importance of data quality (Fernandez, 2014; Ashton, 2013; Duan et al.,2024) and the limitations of statistical models. While the allure of perfect accuracy is undeniable, recognizing the inherent variability in real-world data is crucial. A vivid example of this was our analysis of the measures of central tendency (mean, mode, and median) and dispersion (range, variance, and standard deviation). Linear regression, a powerful statistical technique, has been instrumental in understanding relationships between variables. However, it is imperative to consider the underlying assumptions and interpret results cautiously. For instance, when analyzing the relationship between dependent and independent variables (Grieve, 2024; Hatcher, 2013), it is required to assess the linearity assumption and address potential multicollinearity issues. Moreover, the course has highlighted the significance of non-parametric tests, such as the Mann-Whitney U test, in analyzing data that may not meet the assumptions of parametric tests. Exploring statistical software like R and SPSS has broadened my skill set, enabling me to conduct complex statistical analyses and visualize data effectively. For example, insightful R visualizations, such as box and scatter plots, were created to uncover patterns and trends in dynamic and intersecting dependent and independent variables in scattered plots or linear formats.

Studies show that modern religious institutions of learning embrace statistical computations. They are fashioned along medium or corporate ventures, especially in the nonprofit sectors. Well-established nonprofit Christian organizations routinely utilize statistical

surveys (Okoye, 2024; Pirani, 2024) to inform their demographics regarding donors, sponsors, and Church attendance and sermon preferences.

The knowledge and skills gained from this course will undoubtedly benefit my future educational endeavors. I am excited to apply these statistical techniques to real-world problems, such as Climate Change and Socioeconomic issues, and to contribute to the data-driven decision-making process. By staying updated on statistical methods and software advancements, the student will be more active at the forefront of data analysis and interpretation.

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