**SR 958-32: Research Design and Methodology III**

**(Spring, Subterm A)**

**3. Instructor-Assigned Essay or Project**

**Assignment #3**

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**Omega Graduate School**

**February 27, 2025**

**Professor**

**Sean Taladay EdD**

**Assignment #3 – Essay**

Answer the following questions in an essay format, with 1-2 fully developed paragraphs for each

question. Include citations/references from your Developmental Reading log.

1. Review the OGS PhD/DPhil Prospectus Tutorial. You will develop your prospectus in a

later course.

2. Describe data collection and analysis procedures for the following research designs.

Include data cleaning/preparation, descriptive statistics, and assumptions testing. Focus

on the steps required to collect and prepare the data for statistical testing rather than the

procedures.

3. Describe the three principles of the Belmont Report and why they are important for

protecting human participants in social science research. Develop prospective drafts of the

following three documents:

4. Review the OGS IRB and Informed Consent templates. Create a prospective Informed

Consent Agreement and Site Permission Request letter for your dissertation using the

templates.

5. Develop an outline for your dissertation Literature Review (Chapter 2). Which

theoretical/conceptual frameworks might best inform your research problem and

purpose? Who are the seminal authors in the field? What topics might you need to discuss?

Explore and establish a foundation for your original research. Your outline should be 3-5

pages long and note specific literature sources. Include a references page. Include a title page, well-developed introduction and conclusion paragraphs, a references page, and in-text APA-formatted citations to support your responses.

**1. Review the OGS PhD/DPhil Prospectus Tutorial. You will develop your prospectus in a**

**later course.**

**Introduction**

The study and process of reviewing SR 958-32 in the OGS PhD Core 5 program will present a broad range of integrated syllabi which is designed to provide combined academic and professional learning concepts and strategies in the study research program. SR 958 is a multi-core course that teaches doctoral students scientific research design and methodology, leading to interdisciplinary social research undertaking and a dissertation. SR 958 is a companion course to COM 968 Statistics for Social Research in Qualitative and Quantitative Data Analysis and the SR 852 Dissertation Foundations (OGS.Edu, 2025). The combined learning principles and their contextualization (Tomaszewski, 2020) constitute the basis for thorough study research meant to advance socio-community development, imbibing the criteria for ethical research and upholding human rights as its civic responsibility. These academic values establish the bedrock foundation for multidimensional services to academia, the public, and the community. Other areas of interest to cover are the evaluation of the sampling and recruitment techniques (convenience, purposive, snowball), the delineation of the process of data collection, and analysis using the right software (PSSR, etc.). Some emphasis will be placed on the outline for conducting a dissertation research study. Some of the major course's essential elements include: I) the Ethical Research Criteria (mentioned earlier). ii) Sampling Techniques and data analysis course outline. iii) Research design, alignment and key constructs, data collection, and sponsor selection and collection protocols. iv) The Population–audience worldview, the validated instruments comparative demographic surveys, and descriptive data. v) Qualitative and Quantitative data analysis and spreadsheet for data collection and results. The hybrid format of learning, a mix of virtual and independent studies (asynchronous) will be evaluated to determine how they can enable students to study and pursue their professional dreams and meet their busy working schedules.

**2. Describe data collection and analysis procedures for the following research designs.**

**Include data cleaning/preparation, descriptive statistics, and** **assumptions testing. Focus**

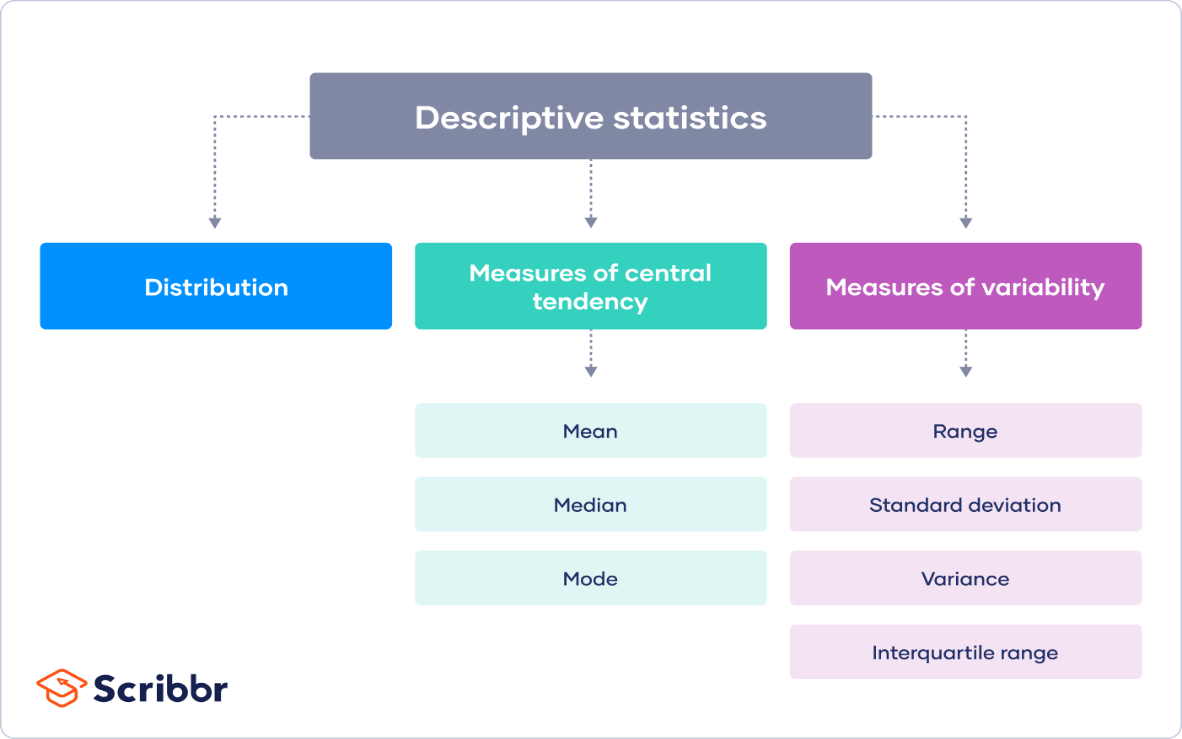
**on the steps required to collect and prepare the data for statistical testing rather than the**

**procedures.**

**Data cleaning** is the process of identifying and correcting errors and inconsistencies in data sets so that they can be used for analysis. It is a crucial step in data preprocessing and is essential for ensuring the quality and reliability of the data used for analysis or machine learning applications. Data cleaning provides a clearer picture of what is happening within the business, delivers trustworthy analytics, and creates efficient processes. Data cleaning is an important part of data management that can have a significant impact on data accuracy, usability, and analysis. Through data cleaning techniques such as data validation, data verification, data scrubbing, and data normalization, businesses can ensure the accuracy and integrity of their data (Kowieski, 2022). Key data cleaning tasks include: i) Removing major errors, duplicates, and outliers—all of which are inevitable problems when aggregating data from numerous sources. ii) Bringing structure to the data—like general ‘housekeeping,’ i.e., fixing typos or layout issues, which will help you map and manipulate your data more easily. iii) Filling in major gaps—tidying up the gaps (Hillier, 2023).

**Data collection and analysis procedures for descriptive statistics:** Descriptive statistics summarize and organize characteristics of a data set. A data set is a collection of responses or observations from a sample or an entire population. In quantitative research, after collecting data, the first step of statistical analysis is to describe characteristics of the responses, such as the average of one variable (e.g., age) or the relation between two variables (e.g., age and creativity). The next step is inferential statistics, which helps you decide whether your data confirms or refutes your hypothesis and whether it is generalizable to a larger population. There are 3 main types of descriptive statistics. The distribution concerns the frequency of each value. The central tendency concerns the averages of the values. The variability or dispersion concerns how spread out the values are (Bhandari, 2023).

**Illustration of Major Types of Descriptive Statistics**

**Figure 2.1**

* **The Descriptive Statistics in Figure 2.1** are culled from Scribbr / Bhandari, 2023). The visualization in a chart format is an added description.

Qualtrics (2025) adds that there are things you can do with descriptive statistics including **i) measuring the data trends** to build a clear picture and understanding, including things like preferences, business challenges, income, and so on. With descriptive statistics, you can quickly summarize the data and extract the precise data points you need to understand the trends in product purchase behavior. ii) **Compare events, populations, or phenomena,** which ishow different demographics respond to certain variables. For example, you might want to run a customer study to see how buyers in different job functions respond to new product features or price changes. iii) **Validate existing conditions:** When you have a belief or hypothesis but need to prove it, you can use descriptive techniques to ascertain underlying patterns or assumptions. iv) **Form new hypotheses:** With the data presented and surmised in a way that everyone can understand (and infer connections from), you can delve deeper into specific data points to uncover deeper and more meaningful insights — or run more comprehensive research. Qualtrics Publications.

**Assumptions testing:** Before running the t-test, you would want to assess the appropriate assumptions. Most of the t-tests have the same basic assumptions, but there are some slight differences based on the type of t-test being conducted. In the Test-Specific Assumptions: **i)** Independent groups (Independent Samples T-tests) are required. - a categorical independent variable with exactly two levels (i.e., yes/no, male/female); - participants only belong to one group or level of the IV. **ii)** Paired or related groups (Dependent Samples T-test): - a categorical independent variable with exactly two levels (i.e., pre-test/post-test), - the same participants provide scores for both groups and levels of the IV. iii) Homogeneity of Variances (Independent and Dependent Samples T-tests) and there are: - the variances of the two groups approximately the same, - use Levene's Test by checking the appropriate box in SPSS test (Resources.nu.edu, 2025).

**3. Describe the three principles of the Belmont Report and why they are important for protecting human participants in social science research. Develop prospective drafts of the following three documents:**

University of Wisconsin.edu (2025) states that, in 1978, the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research published a report, on Ethical Principles and Guidelines for the Protection of Human Subjects of Research. The Belmont Report identifies three fundamental ethical principles for all human subject research: respect for persons, beneficence, and justice. They include: **i) Respect for Subjects:**  for persons incorporates at least two ethical convictions: first, individuals should be treated as autonomous agents, and second, persons with diminished autonomy are entitled to protection, honoring their privacy and maintaining their confidentiality. **ii) Beneficence:** Persons are treated ethically, making efforts to secure their well-being, do no harm, maximize benefits, and minimize possible harms. **ii) Justice:** The principle of justice means that subjects are selected fairly and that the risks and benefits of research are distributed equitably. To avoid systematic selection or compromised position, or because of racial, sexual, economic, or cultural biases in society. Investigators should base inclusion and exclusion criteria on those factors that most effectively and soundly address the research problem.

**4. Review the OGS IRB and Informed Consent templates. Creating a prospective Informed**

**Consent Agreement and Site Permission Request letter for your dissertation using the**

**templates.**

**CONSENT FORM**

**SOCIAL SCIENCE RESEARCH STUDY**

Researchers: Dr. Peter Airewele, Doctoral Candidate and Lead Researcher, Executive Director, GHOC, Inc, 661-364-4868, Sharon Charles, Director of Finance, GHOC, Inc, Princely Desmond, Director, GHOC, Inc, CA., contact for subjects, 423-775-6596; Dr. Josh Reichard, Dr. Curtis McClaine, Dr. David Ward, Dr. Sean Taladay, Richard Gamble, faculty advisors.

**Researchers’ statement**

We are asking you to be in a research study. The purpose of this consent form is to give you the information you will need to help you decide whether to be in the research or not. Please read the form carefully. You may ask questions about the purpose of the research, what we would ask you to do, the possible risks and benefits, your rights as a volunteer, and anything else about the study or about this form that is not clear. When we have answered all your questions, you can decide if you want to be in the research or not. This process is called “informed consent.” We will give you a copy of this form for your records.

**PURPOSE OF THE STUDY**

The purpose of this study is to research “The Strategic Role of Statistical Software in Research.

Study Programs: To Advance Professional Application in The Social Services.” Participation in this study will help to increase the use of statistical software like PSSR, SAS, MATLAB, Stat, JMP, Minitab, etc., not actively used to optimum scale in the academia and the social services industries, and to demonstrate how and why they are highly required for time and cost-effectiveness across the board. Study results will be used to better inform further research that can positively contribute to outcomes that improve and accelerate aspects of social services, behavioral health, and people’s well-being across a wide range of demographics in the United States.

**STUDY PROCEDURES**

The study consists of completing a demographic questionnaire and answering three brief survey question sets consisting of a total of 12 items. The surveys measure feelings (well-being) about your financial stress (five questions), how you have been feeling about things over the past two weeks (four questions), and your feelings about your overall future (three questions).

The demographic questionnaire is completed after you sign this consent form agreeing to take part in the study. Upon receipt of the signed consent form, you will be sent a link to a survey that will allow you to confirm your agreement to take part in the study. The well-being survey questions are completed using an online survey. A link to the online survey is provided via email. A demographic survey consisting of 16 items is completed first, followed by the 12-item well-being survey question. Links to the survey and reminders are sent between 30 and 45 days.

The commitment of time is minimal. The demographic questionnaire takes no more than eight minutes to complete, and the email surveys take no more than three minutes to complete. The total time involved includes the initial questionnaire, the electronic surveys when opting into the study, and again in 30 to 45 days. The total commitment of time is less than about twenty-five minutes. The questionnaire asks for some basic demographic information (age, race, gender, education level) and information about whether the participant is in academia or the professional services industry.

The outlook and time-effective surveys ask how you have been feeling about the complex statistical surveys that are time-consuming compared to the fast-track application of the PSSR

and other software like SAS, MATLAB, Stat, JMP, and Minitab. The survey questions ask about the cost-effectiveness of this statistical software if you may have used any or have an idea about their tremendous capability and application, especially in the social industry, perhaps gauge your level of feelings of being about bogged down projects which can be accelerated and facilitated by the tremendous firepower of research software as added experiences and your outlook for the future. All responses are identified only by a number and associated with you only by a unique number associated with your record. The research data is used for academic purposes, further research, and potential global worldview for future projects which are intended to improve academia and businesses as they must transition to the new world order of fast-track statistical research software.

**ALTERNATIVES TO TAKING PART IN THIS STUDY**

Participation in research study surveys on software is voluntary and does not require compelling participation in this research study.

**BENEFITS OF THE STUDY**

The expected benefits of this study are the improvement and the adoption of statistical software in the academic curriculum and the professional services industry. The research software will usher in accelerated study and demographic study surveys and business reports it will generate on the weather, social, behavioral health, and human services industry. This is designed to create the ability to facilitate and demonstrate data validity and error-free results in statistical research.

**CONFIDENTIALITY OF RESEARCH INFORMATION**

All the information you provide will be confidential. All data is coded by a unique identifier associated with your answer. The researcher has no access to unidentifiable data. The data collection does not elicit information that would require mandatory reporting (e.g., about child abuse, elder abuse, or harm to self or others).

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Printed name of Study Staff obtaining\* Signature\* Date\*

**Subject’s statement**

This study has been explained to me. I volunteer to take part in this research. I have had a chance to ask questions. If I have questions later about the research or if I have been harmed by participating in this study, I can contact one of the researchers listed on the first page of this consent form. If I have questions about my rights as a research subject, I can call the Human Subjects Division at 423-775-6596. I have received an electronic or printed copy of this consent form.

Printed name of subject Signature of Subject Date

When the subject is not able to provide informed consent:

Printed name of representative Signature of representative Date

Relationship of representative to subject

Copies to: Researcher, Subject.

**5.** **Develop an outline for your dissertation Literature Review (Chapter 2). Which theoretical/conceptual frameworks might best inform your research problems and purpose?** Who are the seminal authors in the field? What topics might you need to explore to establish a foundation for your original research? Your outline should be 3-5 pages long and note specific literature sources. Include a references page. Include a title page, well-developed introduction and conclusion paragraphs, a references page, and in-text APA-formatted citations to support your responses.

**To Develop an Outline for your Dissertation Literature Review (Chapter 2):**

The Dissertation Chapter 2 Lit Review Outline (SR 852/SR 812) is culled from

(Ward & Hughes, 2020).

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**Topic:**

**“THE STRATEGIC ROLE OF STATISTICAL SOFTWARE**

**IN RESEARCH STUDY PROGRAMS:**

**TO ADVANCE PROFESSIONAL APPLICATION IN THE SOCIAL SERVICES.”**

1. DISSERTATION CHAPTER 2: LITERATURE REVIEW OUTLINE

**Introduction**

Given the rise in complex academic and professional research studies and the uphill tasks of generating data analytics, validity, and outcomes in socio-human services. The application of statistical data software is fast advancing, but not at the pace expected in academia. Too much emphasis is placed on the vast amount of traditional statistical principles, formulae, and paperwork, which may not be time and cost-effective. As quantitative research grows, the application of statistical software (SS) becomes a more crucial part of data analysis. Researchers are experiencing a transition from manual analysis with paper to more efficient digital/electronic analysis with statistical software (SS). It identifies the prerequisites for producing world-class studies by using modern SS solutions. SS has contributed immensely to improving not only demography studies and social investigation but also other professionals’ research (Abatan & Olayemi, 2014).

**The primary Libraries and databases where literature was collected:**

The primary library and databases used are the Keane Library, Bakersfield, CA; Google Chrome; Omega Graduate School’s General Help; Google Scholar; peer-reviewed journals online; study research books; and seminal authored books.

**• Preview sections or topics covered by the chapter in order:**

• Transition to Body of Literature Review

[Body of Literature Review]

(In each major section, I, II, III, preview, explain, summarize, and transition)

[Body, Part 1]

**I. Historical/Conceptual Background of Research Topic/Issue**

Abatan, S. M., & Olayemi, M. (2014). Recently, a cross-sectional survey of 5 lecturers each were selected from 8 departments in the two faculties on a campus and were given a questionnaire based on their availability and interest. A total sample size of forty (40) academic staff was selected, but thirty (30) eventually responded, which comprises fifteen less experienced staff with (0-5yrs) and 15 more experienced staff with (6yrs and above) as well as 10 non-respondents. The small sample size was because there were few lecturers in some departments at the time of this study. Data was analyzed using the SPSS package. A univariate and bivariate analysis was done and the findings of the study revealed that the impact of statistical software on research results gives Mean (M)=4.80 and Standard Deviation (SD)=0.41, on a (1-5) Likert scales with 80% Strongly Agree that SS has positive impact on their research result. Respondents’ category and running analysis without SS show mean (M)=2.27 and Standard deviation (SD)=1.37 on a (1-5) Likert scale with 66% admitting that they cannot run analysis without SS. Some SSS are more suitable for some kind of analysis than others; for instance, while SPSS, STATA, SAS MATLAB, and R are 100% suitable for ANOVA, EViews, SAS, STATA, R, and MATLAB are 100% suitable for time series analysis. Furthermore, STATA, SAS, EViews, MATLAB, and R are 100% suitable for various kinds of regression analysis, among others. In FUOYE, while SPSS has 92.9% knowledge and usage, others have usage and knowledge as follows: STATA (57.1%), SAS (15.4%), Minitab (0%), Ms-Excel (76.9%), MATLAB (28.6%), R (0%), Epi-info (16.7%), and PSPP (8.3%). The paper concludes by requesting academic staff to improve their SS workshop training and further recommends the integration of SS application into the academic curriculum just like other compulsory courses. Abstract. Introduction.

**B. Explain**

Types of organizational patterns for Historical/Conceptual Background (use patterns that

emerges from the logic of the literature):

• Chronological Series of Advances

• Ancient/Modern

• School of thought/Debates

• Cause-Effect

• Problem/Solution

• Effective/Ineffective

**C. Summarize and Transition to Current Societal Concern**

SR 852/SR 812 Dissertation Chapter 2 Lit Review Outline 6/9/20

**2. (NOTE ABOUT SOURCES**: Cited sources in the second half should be published

works of social research: articles, dissertations, and reports. They should focus on recent

studies within the last 5 years. Older research should only be used if it is a seminal study

or one that your project is directly influenced by or is challenged by your research.

Please see GRC for the Literature Review Requirements Rubric.)

**[Body, Part 2]**

**II. Current Societal Concern that has been/can be Socially Researched**

**A. Introduce and preview.**

**B. Explain**

How the Issue has been socially researched (noting gaps pointing to further research

need).

Explain the Conceptual framework relevant to your project’s approach to research

Explain how the Instruments you will use enable your research issue to be measured.

(Address their origin, use, & validity and reliability)

Please note that content that addresses validated instruments may be included in

the first, second, or both parts. Works cited must include articles by or reference to

the original authors of chosen instrument(s) and scholarly articles that describe

research using the chosen instrument(s) that include but are not limited to the

researcher’s general subject area.

Summary and Transition to Current Research

[Body, Part 3]

**III. Current Research Relevant to Key Ideas/Phenomena**

(Organized by what your Instrument/s measure)

Introduction and preview.

Explain

Constructs/Key Ideas of Research Question and/or Main Hypotheses (Identify

Gaps/Establish Need– Describe how your project will contribute to the field.

a. Current Literature for Construct A

b. Current Literature for Construct B

c. Current Literature for Construct C, etc.

Summarize and Transition to Conclusion

**IV. Conclusion**

Review/Summarize/Assert the need for your research

Transition to your Chapter 3 design

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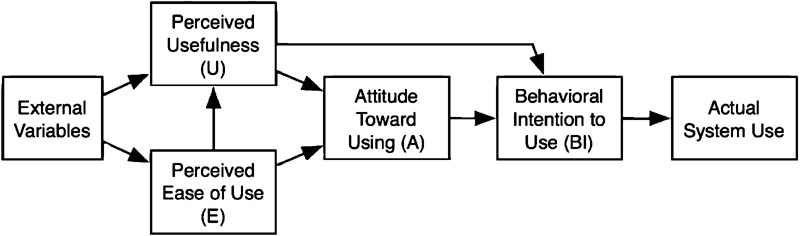
**Which theoretical/conceptual frameworks might best inform your research problems and purpose?**

In the quest to determine the suitability of the statistical data software (SDS or SS), the three theoretical frameworks of interest are: i) The Technology Acceptance Theory Model (TAM), ii) the Diffusion of Innovation Theory (DIN), or iii) Theories of Planned Behavior in the understanding of the influencing factors in the application of the software compared to the traditional manual statistics: **i) The Technology Acceptance Model (TAM)** is seen as the most convenient, and friendly to utilize. The comparative statistical processing values compared to the traditional ones are still being examined and determined.

**ii) The Diffusion of Innovation Theory (DIT)** postulates that innovation characterized by networks of communication and social schemes or systems tends to drive the interest and preference for statistical or data software among the various categories of users, past, present, or future.

**iii) The Theories of Planned Behavior (TPB**) suggest that the individual or group’s intention to execute a task is influenced by their objective preferences, their subjective norms, and their observed conduct. In the theory analysis, the reason for statistical preference by both the researchers and the professionals is acknowledged (Rahimi et al., 2018).

**The basic technology acceptance model. Figure 5.1**



* **Figure 5.1** is culled from:A systematic review of the technology acceptance model in health informatics. *Applied clinical informatics* **(**Rahimi et al., 2018).

According to Resources.nu.edu (2025), with a topic in mind, go to the body of literature and start identifying the key concepts used by other studies. Figure out what has been done by

other researchers and what needs to be done (either find a specific call to action outlined in the literature or make sure your proposed problem has yet to be studied in your specific setting). Use what you find needs to be done to either support a pre-identified problem or craft a general problem for study. Only rely on scholarly sources for this part of your research.

* Begin to pull out variables, concepts, theories, and existing frameworks explained in the relevant literature. If you are building a framework, start thinking about how some of those variables, concepts, theories, and facets of existing frameworks come together to shape your problem. The problem could be a situational condition that requires a scholar-practitioner approach, the result of a practical need, or an opportunity to further an applicational study, project, or research. Remember, if the answer to your specific problem exists, you do not need to conduct the study.
* The actionable research you would like to conduct will help shape what you include in your framework. Sketch the flow of your Applied Doctoral Project from start to finish and decide which variables are truly the best fit for your research.
* Create a graphic representation of your framework (this part is optional, but it often helps readers understand the flow of your research). Even if you do a graphic, first write out how the variables could influence your Applied Doctoral Project and introduce your methodology. Remember to use APA formatting in separating the sections of your framework to create a clear understanding of the framework for your reader.
* As you move through your study, you may need to revise your framework. Note for qualitative/quantitative research: If doing qualitative, make sure your framework does not include arrow lines, which could imply causal or correlational linkages. National University Publications, 2025.

**Conclusion**

The extensive study delved into the OGS PhD/DPhil Prospectus Tutorial, unfolding a broad range of the areas of study in Research Design and Methodologies (Younas & Porr, 2024) and application. Some of the crucial study moments focused on reviewing the OGS IRB and Informed Consent templates to create a prospective Informed Consent Agreement and Site Permission and the Request letter for the proposed dissertation on the Topic: “The Strategic Role of Statistical Software in Research Study Programs: To Advance Professional Application in The Social Services .” The three theoretical frameworks of interest to explore, examine, and access the advancement of statistical data software like the SPSS, STATA, SAS and MATLAB, EZ SPSS Tutorials (2024), are the i) The Technology Acceptance Theory Model (TAM), ii) the Diffusion of Innovation Theory (DIT), or iii) Theories of Planned Behavior (TPB) in the understanding of the influencing factors in the application of the software compared to the traditional manual statistics. The critical roles the traditional statistical research study (Ravid, 2024; Sileyew, 2019) and the complex mathematical computations are quite resourceful. However, times are changing. To meet the hi-tech precision and innovation expectations of the 5-G communication industrialization, complex space, satellite engineering, and other social and clinical health studies, the statistical data software must advance its capability beyond the traditional statistics for time, cost, and technology effectiveness. The statistical data software, even the new sets of specialized high gigabyte and terabyte meters, iPhones, Laptops, and iPads used in complex healthcare surveys, and academic and professional data management (Tomaszewski, et al., 2020) mentioned earlier possess the capacity to rapidly initiate, develop, and generate large digital data and information at some high precision levels. They are as fast as the speed of light and sound.

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