Course Information
Course Name: Quantitative Methods
Course Number: DPLS 722
Credits: 3
Day of the Week/Time: Friday Evening 6-10 pm
Dates: 1/19, 2/2, 2/16, 3/2, 3/23, 4/6, 4/20, 4/27
Location: TBA
Instructor: Chris Francovich, Ed.D
Email: francovich@gonzaga.edu
Phone: 313-3592
Office Hours: By Appointment

Description & Format

Catalog Description
Quantitative data analyses require the use of statistics (descriptive and inferential) to summarize data collected, to make comparisons of data sets, and to generalize results obtained from samples back to the populations from which the sample were drawn. Knowledge about statistics and statistical analysis can help a researcher interpret data for the purpose of providing meaningful insights about the problem being investigated. Prerequisite: DPLS 720. (3 credits)

Course Overview
This course will explore the landscape of statistics, statistical thinking, and the analysis of phenomena using statistical method(s). We will begin the course with a very brief theoretical, conceptual, and discursive look at post-positivist epistemology and quantitative methodology. This beginning part of the conversation will also contrast quantitative methodology with qualitative methodology and explore the ‘scientific method’ and the development and use of research hypotheses. You will note that there is a considerable amount of reading for the first few classes. I recommend that you get an early start and begin to study these chapters well before the first meeting.

The emphasis in this course will be on statistics and selected methods of using statistics to make inferences and judgments about phenomena. Resources will be available on Blackboard. Class time, group work, and instructor led conversation will focus on the meaning and understanding of key concepts with the expectation that students will work on practice sets and reading on their own. Specific practice or application of those concepts (methods) will be carried out in group and individual projects.

The focus on this course is on understanding.

The mathematical and logical foundations of statistical concepts will be explored in a concrete and elementary way. It is hoped that this basic understanding will support the ability of students to make sense of statistics in both theoretical and practical terms.
The purpose of this course is to prepare doctoral students and candidates for the task of creating good solid research based on a quantitative methodology and becoming informed consumers of quantitative research.

**A note on the question of intelligence, capacity, skill & reading the texts:** Math and statistics remain a difficult topic for many in our society to understand, become comfortable with, and regularly use as part of their critical thinking. I think that this is going to fundamentally change as the information revolution continues to ‘outsource’ or ‘off-load’ many of the cognitive elements of what we have historically understood as intelligence and mental or cognitive capacity. The particular types of intelligence associated with short term memory, symbolic pattern recognition, and speed of processing information are all being consistently augmented by technology. Certainly, the postmodern and poststructural critique of power, oppression, and control is related to this conversation. The short version of my thinking around this indicates that in general the information revolution is freeing humanity up to express in a legitimate and dignified way the full range of human intelligence and creativity and at the same time share more widely the positive aspects of propositional and logical thought.

Math and statistics are rigorous, detailed, and deep domains of thought. Some people are absolutely brilliant, gifted, and fit for this type of mathematical and complex logical thought. Most of us can, with hard work, diligent practice, and discipline master the rudiments of the field and become competent statisticians or mathematicians. Some of us, however, (and in my view because of inadequate teaching) continue to struggle with basic mathematical and statistical concepts and never develop the skill or confidence to make sense of the field or ask intelligent questions about it. We ‘freeze up’.

It is also the case (again, in my view) that some of the people that totally freeze up in math or work diligently to understand it flourish in other domains. Many other domains. It is a fact that so called ‘scientific thinking’ (led by math and physics but followed by the natural sciences) has the most legitimacy in the academy. This legitimacy is tied historically to gendered (male) interests, economic interests, power, and technical innovation. It is highly abstract even in its corporeal manifestation (e.g., an i-pad). But this is only part of the picture of human consciousness and intelligence\(^1\). The intent of this course is, in part, to help students join the conversation around mathematical deductive thinking without “freezing” up and/or rejecting the study or appreciation of statistics because of intrapersonal conditioning around not understanding basic mathematical and statistical concepts related to asking and answering research questions.

GH Mead wrote and spoke about reflective human consciousness in general as being ‘scientific thinking’ and that the goal of democratic society was to foster and facilitate this skill in every person. I firmly believe that leadership studies requires us to engage in this ‘scientific thinking’ without destroying our compromising other aspects of cultural and embodied ways of knowing. I also believe that cultural experience and discourse are, in general, increasingly calling human beings to understand larger and more general frames of reference and domains of knowledge. What this means for this course and for using statistics in research in leadership studies is that we

---

\(^1\) See the literature on intelligence in general and multiple intelligence in particular. There is a highly contested debate in academia about this subject and it is a fascinating look into paradigmatic assumptions. Gardner’s classic book is a good place to start: Gardner, H. (2011). Frames of mind. (3rd edition). Basic Books. NY
are able to understand more and more and to consider the application of very complex ideas and concepts in ways that were very difficult for most people just a few years ago.

But this competence requires a rethinking of how we approach the task of ‘coming to know’ something. It is my view that spending hours and hours to study, practice, and memorize abstract and highly complicated chains of algorithmic reasoning with no clear context for application is not generally productive. Certainly not in the context of the DPLS. So this course will not be done in quite that manner. It will be a highly interactive and collaborative discussion of core concepts and ideas and their relationship to the literature in leadership studies and the social sciences. However, we will do problems and practice selected techniques. Those will become clear as the course progresses. What is absolutely vital for us, however, is that we read the texts and do the problems.

**Reading Math/Statistics**

It is my view that reading is no simple skill. Reading competence is relative to the genre being read. I read some things fluently and immersively. Other genres are fundamentally challenging to me. The only way that I can learn to read foreign genres is through reading and talking about the reading with others. But I have to read. This is nowhere more crucial than in math/statistics. You must read the texts painstakingly! You must make reading notes and question each paragraph, diagram, and list of numbers/equations. You must talk about your understanding and provoke yourself and others to great clarity and depth of meaning. When you do the problems expect that your will have to go back over the text and the examples to continually compare and check your understanding with the text. We will talk about this and about my suggestions for reading at our first meeting.

**Objectives**

The goals & objectives of this course are to:

- Understand and apply appropriate post-positivist and mixed methods research methodologies.
- Relate, understand, and apply post-positivist methodology to research questions relevant to leadership studies.
- Demonstrate a solid understanding of basic statistics through reading, talking, and writing about core statistical concepts.
- Formulate research questions and corresponding statistical hypotheses that can enhance understanding of a given phenomenon.
- Create and present meaningful leadership related quantitative research ideas to peers through poster presentations.
- Create or use existing databases to seek answers to research questions or to test hypotheses.
- Select appropriate statistical techniques (methods) for a given question or hypothesis statement.

---

2 Post positivism is understood here to reflect the recognition by researchers with a commitment to scientific naturalism that language and consciousness are nonetheless implicated in the interpretation and realization of the structure of reality.
• Apply statistical procedures to test hypotheses using appropriate statistical application(s).
• Correctly interpret statistical application output.
• Communicate findings verbally, visually, and in written format.

**Reading Materials**

**Required Texts**


Other readings and web resources will be required and posted on Blackboard or handed out in class.

**Assignments and Grading:**

**Assignments & Tasks**
• TBA

**Assessment**
Assessment of your work in this course is based on a combination of objective evidence (your completed work) and my subjective interpretation of your progress in engaging in both a critical discourse around quantitative methods and a coherent explication of relevant concepts. Much of our time in class will be spent in conversation or collaborative work.

**Grading:**
The grading emphasizes your individual learning achievement in this course.

Complete all assignments correctly, participate in class actively: = A
Complete all assignments, participate in class passively = A-
Complete all assignments, minimal class participation = B
Gonzaga Mission Statement
Gonzaga University is an exemplary learning community that educates students for lives of leadership and service for the common good. In keeping with its Catholic, Jesuit, and humanistic heritage and identity, Gonzaga models and expects excellence in academic and professional pursuits and intentionally develops the whole person -- intellectually, spiritually, physically, and emotionally.

Through engagement with knowledge, wisdom, and questions informed by classical and contemporary perspectives, Gonzaga cultivates in its students the capacities and dispositions for reflective and critical thought, lifelong learning, spiritual growth, ethical discernment, creativity, and innovation.

The Gonzaga experience fosters a mature commitment to dignity of the human person, social justice, diversity, intercultural competence, global engagement, solidarity with the poor and vulnerable, and care for the planet. Grateful to God, the Gonzaga community carries out this mission with responsible stewardship of our physical, financial, and human resources.

Statement on Intercultural and Diversity Awareness:
This course will be conducted such that all perspectives, beliefs, world views, etc. will be welcomed, respected, and encouraged. As a doctoral level class, engaging with and learning from a multitude of perspectives is a necessity. It is also my firm belief that openness to others is a fundamental value and both an ethical and moral imperative. Please consult the Gonzaga SP 2017 DPLS PG7 Website at: http://www.gonzaga.edu/About/fed-state-regulatory-compliance.asp for a more complete expression of the University’s position and commitment to these values. It is my intention to conduct this course in such a manner that a clear respect for diversity is maintained throughout the course content, activities, and with materials used. This includes respect for treatment of materials related to gender, sexual orientation, disability, age, socioeconomic status, ethnicity (race, nation, or culture), race (physical characteristics transmitted by genes; body of people united by common history or nationality), culture (beliefs, customs, arts, and institutions of a society), and other differences.

Student Academic Success:
Gonzaga University will make reasonable accommodations for persons with documented disabilities. Students should notify Disability Resources, Education, & Access Management located at Foley 209, extension 4134 and their instructors of any special needs. Instructors should be notified the first day of classes.

Academic Honesty:
As a doctoral student, DPLS expects the highest level of academic performance. As such, appropriate citation and “truth-telling” is not just a requirement, but also an expectation. For details on Gonzaga University’s Code of Academic Honesty policy, please see: https://www.gonzaga.edu/campus-resources/Offices-and-Services-A-Z/Academic-VicePresident/AcademicHonestyPolicy2002.pdf
Title IX Statement:
Gonzaga University recognizes the inherent dignity of all individuals and promotes respect for all people. Sexual misconduct will NOT be tolerated at Gonzaga. If you have been the victim of sexual misconduct, we encourage you to report this matter promptly. As a faculty member, I am interested in promoting a safe and healthy environment, and should I learn of any sexual misconduct I must report the matter to the Title IX Coordinator. Should you want to report to a confidential source you may contact the following:

- Gonzaga Health Center | 509.313.4052 | 704 E Sharp Avenue
- Gonzaga Counseling Center | 509.313.4054 | 324 E Sharp Avenue
- Any priest serving as a sacramental confessor or any ordained religious leader serving in the sacred confidence role. | 509.313.4242
- University Lutheran Community Services and SAFeT | 509.624.RAPE*