

38:533:542 HR Data Based Decision Making

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Office Hours: I love to meet one-on-one with my students! Please reach out to me to schedule a time in person or by zoom. I am generally willing to meet between the hours of 7:00am and 11:59pm most days. When you email me please provide a few time chunks that work in your schedule and whether you prefer zoom or in-person. We can coordinate a time that matches both of our schedules. I look forward to visiting with you!

COURSE DESCRIPTION

HR Data-Based Decision Making is designed to help you become proficient in statistical concepts and techniques that are critical for the modern HR function in organizations. In preparing this course I sought advice from HR leaders in global corporations and received enthusiastic endorsement for the critical nature of this course for future HR professionals. One VP of HR for a \$6B revenue global corporation said the following:

“[[I]t is so important that they get this comfort level at least. One reason is that internal ‘clients’, the people we support in HR, all use this language of analysis and data. HR can find themselves woefully inadequate to the task of even speaking the same language [if] they are without it. Want to be party-planners or revise employee handbooks endlessly for a career? Stay unfamiliar/afraid of the language of analysis and data. Want to be a true business partner - you have to speak that language of business ... i.e., you must have some level of understanding beyond ‘knowing enough to be dangerous.’ Also, the HR function is heading more in this direction, at least as a departmental capability (an HR reporting/analysis group), if not a core talent/capability for every HR person. While that might mean that there could be someone else doing analysis, you still need to know enough about what you’re looking at to use it effectively.”

This course will help you understand HR data and use it for effective decision-making in organizations.

LEARNING OBJECTIVES

This course addresses many of the core [SMLR learning objectives](#). In particular, each of the main learning activities maps to one or more of the SMLR learning objectives:

By the end of the course, you will be able to:

1. Navigate simple and complex data sets
2. Propose relevant research questions and hypotheses
3. Identify appropriate data and statistical tests for many HR problems and decisions
4. Analyze data with modern technology tools
5. Interpret the meaning of basic statistical tests
6. Create professional illustrations of statistical results (e.g. charts, tables and figures)

7. Effectively communicate your results and findings (in writing)
8. Critically evaluate and interpret quantitative information

COURSE FORMAT

We will largely follow the “flipped classroom” model of instruction for this course. There are many excellent online learning materials available (for free) that teach you the core ideas more effectively and more flexibly than traditional classroom-style lectures. We will use these learning materials for your out-of-class learning. When you come to class, we will mostly focus on workshops and exercises that give you opportunities to apply the concepts you are learning to the HR context. In other words, generic stats learning outside of class, HR focused stats, and “hands-on” learning inside the classroom.

This class will give you basic statistical skills and help you apply them to HR data to generate useful insights that may improve HR decision-making.

There is no textbook for this class. Instead, we will use free (and high-quality) online resources to help you: (1) gain basic stats skills and (2) learn how to use modern AI tools to execute any needed analysis. You will do this learning on your own time before our class sessions. I expect you to complete the work to become proficient in the assigned skills BEFORE you come to class that day. This is different from “watch these videos and do these practice problems.” Instead, the idea is to do whatever work you need to do on the learning platform to ensure you are proficient before you come to class. For some students and some class sessions, you will find that you are already proficient and your pre-work is minimal. For other students and other class sessions, you may need to invest several hours of work with videos, exercises, and learning activities on the learning platform before you are proficient enough to be ready for our class session.

During class sessions, we will apply the skills you have learned through exercises and activities. This class is very specifically designed with a “flip-the-classroom” model because many students come into the class with different basic stats skill levels, so this levels the playing field before our scheduled class sessions. Preparing for class is not about how much time you put in, or making sure that everyone does the same amount of work; it is about making sure that everyone has the same skills proficiency

For basic stats skills, we will rely on Khan Academy. If you have not already done so, create an account on Khan Academy.

COURSE MATERIALS

There are no materials to purchase for this course. You will need your own user account for Khan Academy (which is free). See Canvas for more detailed instructions. You will need access to Google Gemini, which has a paid version that is free for Rutgers students using your netID and login.

TECHNOLOGY POLICY

You may use AI for some learning activities, but not for others. Each assignment will specify appropriate AI use.

To teach you how to use advanced technology to do this important analysis work, I first need to be sure you understand the intuition behind what the technology is doing for you. Accordingly, I have designed this class to be tech-heavy outside the classroom but tech-light inside.

When class starts, all phones, laptops, tablets, etc. must be off the tables and put away out of sight. Our in-class learning experiences will be primarily experiential. All teaching content will be available on Canvas, so you should not need to take extensive in-class notes.

In rare circumstances, a student may need to retain access to a phone for critical communication. If such a situation arises, please alert me before class so that we can coordinate for that day.

Some of our in-class exercises will require the use of a web browser and/or other computer tools. I will be very clear about those situations and give you time to take out and get your laptops ready.

GRADING

Grades will be assigned according to the traditional cut-offs used at Rutgers:

90-100% = A

85-89.9% = B+

80-84.9% = B

75-79.9% = C+ (this is the minimum for passing)

70-74.9% = C

< 70% = F

ASSIGNMENTS

The primary assessments in the course are as follows:

Graded Category	Percentage	Description
Individual Projects	45%	Complete three individual projects during the semester, grade is the average score across the three projects.
Khan Academy Skills	35%	Demonstrate skills proficiency on stats skills through Khan Academy assessments
Class Engagement	20%	Engage in class sessions and class activities
TOTAL	100%	

Individual Projects

Throughout the semester, you will complete three individual projects. Each project will require you to conduct analyses, answer questions, create tables/figures, and provide a written deliverable. I will provide you with a real-world dataset to complete each project. Although I will provide coaching as you complete your project, you should plan to spend significant time outside of class working on each project. Each project is worth 15 points, so your total score is 45 points.

- Project #1: Descriptive Statistics. You will analyze descriptive statistics (e.g., mean, standard deviation, frequencies) for variables, create appropriate tables and figures (e.g., histograms), and provide a 1-page (single-spaced) write-up (MAXIMUM) of your findings and interpretations.
- Project #2: Inferential Statistics. You will use the data to evaluate reliability information (e.g., alpha), and conduct inferential tests (e.g., t-test, ANOVA). You will also create appropriate tables and figures to illustrate the findings. Finally, you'll provide a 1-page (single-spaced) write-up (MAXIMUM) of your findings and interpretations.
- Project #3: Correlation and Regression. You will use the data to conduct correlation and regression analyses to answer questions about validity, reliability, and other research questions. You will also create appropriate tables and figures to illustrate the findings. Finally, you will provide a 1-page (single-spaced) write-up (MAXIMUM) of your findings and interpretations

You may use Google Gemini (or other AI tools, if you like) to help you complete these projects (or even do the entire project for you).

There are two parts to your evaluation of each project:

1. Written Report (worth 6 points) – the written project that you submit through Canvas.
2. Line Leader Briefing (worth 9 points) – a recorded 10-minute Line Leader Briefing of your written project where I, the TA, and/or a technology tool will act like a line leader asking you to explain your report. Questions may focus on what you did, why you did it, and what you interpret from your work. A deeply skeptical line leader might even ask you to recreate some or all of your analysis in real time to demonstrate the reliability of the results.

Khan Academy Skills

You will complete a portfolio of modules in Khan Academy and take a set of unit quizzes to demonstrate your mastery of the content before coming to class. You can take these unit quizzes as many times as you like before the deadline, and you can simply submit your best score. The goal here is to reward you for learning the content, not to test whether you can recall and apply it in a high-stress testing situation.

Since you can take these unit quizzes as many times as you like, your focus is on learning the material and demonstrating your learning on the modules. Using AI to help you on these

quizzes is directly contrary to the purpose and structure of these quizzes; therefore, AI is not permitted for the Khan Academy quizzes and unit tests.

Class Engagement

Our class sessions will be learning laboratories, not lectures. You will need to be ready to engage in hands-on learning experiences that will help you deepen your understanding of statistics and its application. At the end of the semester, I will subjectively evaluate your contributions and engagement with our in-class learning experiences. If you do the prep work and show up ready to learn, you will be scored well. If you have patchy attendance, show up unprepared and/or disengage from our learning experiences, you will score lower.

SMLR AND RUTGERS POLICIES

This course also follows the standard guidelines and policies of the School of Management and Labor Relations and Rutgers University.

ILLNESS AND RELIGIOUS OBSERVANCE POLICIES

It is important for all of us to do our part to reduce the spread of illness, so please stay home when you are sick and may be contagious. Additionally, you may need to miss class sessions due to religious observance or unplanned personal emergencies.

All students can miss one class day with no questions asked. Additional absences may negatively affect individual contribution assessments for the semester. Please let me know if you need to miss multiple class sessions for illness, personal emergencies and/or religious observances. We can work together for a fair and reasonable solution.

Instructor Illness Plans

There may also be circumstances beyond your instructor's control that require alternative class arrangements. Your instructor will notify you as soon as possible if this is the case and may provide alternative arrangements (e.g. Zoom) for the class session during the assigned class time.

OVERVIEW OF COURSE CONTENT AND SCHEDULE

Week	Date	Content/Topic
0	-	Week 0: Pre-Requisites Introduction to Microsoft Excel Preparation for Basic Stats
1	9/3	Week 1: Course Introduction and Stats Introduction Overview of the class and how we will work together Introduction to core stats concepts and terms, descriptive statistics, central tendency Stats knowledge and skills and the HR Professional

Week	Date	Content/Topic
2	9/10	Week 2: Illustrating and Writing about Data How to describe data using illustrations and words Practice basic stats and illustrations with Excel
3	9/17	Week 3: Central Tendency and Variability Understanding of and how to calculate mean, median and mode Understanding different forms of data variability Using Excel for basic stats
4	9/24	Week 4: Project 1 Coaching and General Catch Up Trouble Shooting Project 1 Open Questions – bring questions and make sure you are all caught up!
5	10/1	Week 5: Correlation (working with two or more variables) What is a correlation Working with and describing data through correlations Visualizing relationships between two variables
6	10/8	Week 6: Reliability and Validity What is reliability and validity and how are they different? How to provide evidence of reliability and validity? Working with data to demonstrate reliability and validity
7	10/15	Week 7: Hypothesis Testing and Probability (T-tests) What are inferential statistics? What is a null (vs. a research hypothesis)?
8	10/22	Week 8: Independent Samples T-test What are similarities and differences in types of T-tests? What research questions can we answer with T-tests? ANOVA
9	10/29	Week 9: Project 2 Coaching and Catch Up Trouble Shooting Project 2 Open Questions – bring questions and make sure you are all caught up!
10	11/5	Week 10: Simple Regression What is the difference between correlation and regression? What research questions are answered with simple regression?
11	11/12	Week 11: Multiple Regression Part I What is the difference between simple and multiple regression? How to interpret slopes and intercepts in the model?
12	11/19	Week 12: Multiple Regression Part II What is the difference between simple and multiple regression? How to interpret slopes and intercepts in the model?
13	12/3	Week 13 (ZOOM): Project 3 Coaching and Catch Up Trouble Shooting Project 3 Open Questions – bring questions and make sure you are all caught up!

Week	Date	Content/Topic
14	12/10	Week 14: Wrapping up DBD Final Questions Lessons Learned