



THE UNIVERSITY of NORTH CAROLINA
GREENSBORO
Bryan School of Business and Economics

BUS750: Doctoral Research Methods IV (Regression Models)

Fall 2023

Synchronous sessions from 2000 to 2130 (Eastern Time) on
Aug 16, 30; Sep 13, 27; Oct 11, 25; Nov 8

INSTRUCTOR INFORMATION

Name: Arran Caza

Email: ajcaza@uncg.edu

OFFICE HOURS

- I will have Zoom office hours from 2000 to 2130 (Eastern Time) on the Wednesdays and Thursdays listed below.
 - Wednesdays: Sep 6; Oct 4, 18; Nov 1, 15, 29
 - Thursdays: Sep 7; Oct 5, 19; Nov 2, 16
- I'm sharing my office hours between two classes (BUS720 and BUS750).
 - I am leaving them shared to maximize my availability, and thus your convenience. I'll respond to folks on first-come first-served basis.
 - In theory, I'd be giving answers to small groups and thus countering both pluralistic ignorance and imposter syndrome, while creating a potential opportunity for the two cohorts to interact. Plus, switching back and forth from OT to regression could allow for serendipitous inspiration.
 - However, based on previous years, I suspect few students will use my office hours, so crowding and wait times are unlikely to be an issue.
- If you want to meet but cannot attend these sessions, send me an email and we will find an alternate time to talk.
- The Zoom link for office hours is available in Canvas. (It is *different* from the synchronous meeting link.)

COMMUNICATION

- Email is typically the best way to reach me.
 - It is also the way I will most frequently communicate with you.
- I usually check my email once each business day (Monday through Friday).
- You should typically receive a response from me within two business days.
- When emailing me, please use your UNCG email address.

CATALOG COURSE DESCRIPTION

Techniques of estimating multivariate relationships. Discusses multiple regression and problems associated with single equation modeling, moderation and mediation analysis, structural equation modeling, and hierarchical linear modeling.

COURSE DESCRIPTION

This course assumes you are already familiar with the content of BUS701 (Doctoral Research Methods I: Quantitative Research Methods) and introductory statistics. We will build on and extend that previous quantitative training. You will be introduced to the more complex models mentioned in the catalog description above. Please note that each of those models can be -- and frequently is -- the basis of a semester-long course by itself. As a result, we will not be able to address all the details. Our focus will be on giving you a firm conceptual understanding of the foundations of each topic, so that you can learn more about these topics on your own.

TEACHING METHODS

The course will be in asynchronous format. The work in this course involves watching lecture videos, doing readings, and completing assignments. However, there will be biweekly synchronous sessions on the dates listed. These sessions will consist primarily of discussions in which I respond to your questions and concerns. If you are familiar with the phrase "flipped classroom," that's the model here. Synchronous attendance is optional -- session recordings will be available on Canvas -- but I strongly encourage all students to attend so that they can ask questions and help to focus the discussion on areas of greatest value to them.

REQUIRED TEXTS/READINGS/REFERENCES

Required readings will consist of textbook chapters and assigned articles. The specific readings for each unit are in a separate document on Canvas (see "BUS750-ReadingList.pdf").

Required textbook

Advanced Statistics in Research: Reading, Understanding, and Writing Up Data Analysis Results

By: Larry Hatcher

Publisher: Shadow Finch Media

ISBN: 9780985867003

Copyright year: 2013

I will also refer to two others. Note that both are available as PDFs through the library, so you don't need to spend anything on these unless you want a physical copy.

- Beaujean, A. A. (2014). *Latent Variable Modeling Using R: A Step-by-Step Guide*. Routledge. <https://doi.org/10.4324/9781315869780>
- Finch, W. H., & French, B. F. (2015). *Latent Variable Modeling with R*. Routledge. <https://doi.org/10.4324/9781315869797>
 - Note: This article mentions code typos in the Finch & French test
 - Oberski, D. L. (2016). A Review of Latent Variable Modeling with R. *Journal of Educational and Behavioral Statistics*, 41(2), 226–233. <https://doi.org/10.3102/1076998615621305>

Assigned articles that are available from the library are not on Canvas. You should seek them out yourself, for three reasons: (a) accessing the articles directly will allow you to get them in the format that best suits your learning needs (e.g., EPUB vs PDF, screen reader enabled, etc.); (b) getting them yourself will allow you to integrate the articles into your reference manager of choice; and (c) when you get the articles, you will incidentally be exposed to other articles on related topics, any of which may provide a lead that advances your personal research.

I will teach the course using R, which is a software platform for all kinds of analysis and graphical presentation. R is freely available for all types of computers (<https://www.r-project.org/>). Many people find that the R environment is less than ideal to interact with in terms of simplicity and aesthetics. Therefore, they often choose to use another program as an interface between themselves and R (in technical terms, this is an IDE --

integrated development environment). In this course, I will use the RStudio IDE (<https://rstudio.com/>), because it is open source, cross-platform, and freely available. You are free to interact with R in any way you prefer.

Moreover, you are not required to use R in your assignments. If you prefer to use another software application you may (e.g., SAS, Stata), however there are four things to keep in mind if you choose to not use R: (1) you need to be sure that your chosen software can perform all of the required analyses (e.g., SPSS cannot do structural equation modeling); (2) it is your responsibility to make your output and reports comparable to those produced by R (e.g., I'm not very familiar with SAS, so you'd need to make sure I can understand what you produce); (3) I am unlikely to be able to help you with the technical details of conducting analysis in any software other than R; and (4) I am going to use R, so all examples will be in R.

STUDENT LEARNING OUTCOMES (SLOs)

Upon successful completion of this course, students will be able to

1. Demonstrate the ability to solve problems using regression models and multivariate techniques.
2. Demonstrate knowledge of the use of regression models in empirical research in organizations.
3. Apply the statistical knowledge to analyze individual, firm and country-level data using statistical software.
4. Evaluate the regression models and multivariate techniques used in empirical research in business and management.

ASSIGNMENTS FOR ACHIEVING LEARNING OUTCOMES

There will be a total of seven (7) deliverables, each of which supports all four of the course SLOs. Separate documents, available on Canvas, will provide detailed instructions.

Assignments (60%): There will be six (6) homework assignments. (Actually seven, but the first one doesn't involve any statistics and isn't graded, so there are only six that matter for evaluation, each worth 10% of the final grade.) Each graded assignment will have two parts -- conducting and interpreting analysis that I assign; and progressing your final paper. The assignments are due on or before Aug 15, Sep 3, Sep 17, Oct 1, Oct 15, Oct 29, and Nov 12.

Final paper (40%): The final paper is due on or before Dec 3. **It will be a complete paper, not a proposal.** You're going to need data, analysis, and results.

ASSIGNMENT SUBMISSION AND FORMAT

- Specific details are given on Canvas for each assignment type.
- Be sure to follow all assignment-specific instructions.
- Submit all written assignments electronically through Canvas before the associated deadline.
- No late submissions will be accepted.
- Please submit your work in either Word (DOC, DOCX) or rich text format (RTF) only.
 - I don't approve of management journals only accepting submissions in a proprietary file format, but I don't have the power to change their behavior, and my responsibility is to prepare you to be successful academic researchers, not to grind my own political axes, so please get used to the format you will need to use in professional practice.
 - PDF submissions will NOT be accepted.
- The program has instituted a policy of requiring plagiarism checks for all assignments. Your submitted work will be processed by TurnItIn.

POLICY ON LATE WORK & EXTRA CREDIT

All assignments are due at 11:59PM on the stated date. Late submissions are not accepted. Extra credit will not be available.

EVALUATION AND GRADING

Final scores will be based on the weights given above and converted to letter grades as indicated below.

Letter Grade	% points accumulated
A	94 – 100
A-	90 - 93.99
B+	86 - 89.99
B	82 - 85.99
B-	78 - 81.99
C	70 - 77.99
F	<70

I will give each deliverable that you submit a letter score, using the criteria below.

- A = Exceptional work. Relative to the assignment instructions, this work had all four of the following qualities
 - It did everything required by the instructions
 - It had no more than minor errors or problems
 - It was done in a clear fashion that was easy to understand
 - It was done in a convincing fashion
- A- = Very strong work. Relative to the assignment instructions, this work did everything required by the instructions, had only minor errors, and had at least one of the following two qualities
 - It was done in clear fashion that was easy to understand
 - It was done in a convincing fashion
- B+ = Strong work. Relative to the assignment instructions, this work did everything required by the instructions and had only minor errors
- B = Good work. Relative to the assignment instructions, this work did everything required by the instructions, but contained meaningful errors
- B- = Needs improvement. This assignment did not do everything required by the instructions or it contained fundamental errors
- C = Unsatisfactory work. This assignment did not do everything required by the instructions and it contained fundamental errors
- F = No valid submission. Either the work was not submitted appropriately on time, or it failed to address the majority of the assignment's requirements and contained fundamental errors

TOPIC OUTLINE & CALENDAR

It is my intention to follow the calendar as outlined below. However, if the need arises, we may have to adjust it. In all such cases, I will notify all students about the changes.

By this date . . .	Arran will . . .	You will . . .
Tue Aug 1	Orientation <ul style="list-style-type: none"> • Publish Canvas site • Post syllabus • Post Assignment 1 	
Tue Aug 15		<ul style="list-style-type: none"> • Review the syllabus • Do readings • Complete Assignment 1
Wed Aug 16	Attend synchronous Zoom session #1	
Mon Aug 21		<ul style="list-style-type: none"> • Do readings
Tue Aug 22	Basics statistics <ul style="list-style-type: none"> • Post lecture video • Post code video • Post Assignment 2 	<ul style="list-style-type: none"> • Watch videos • Work on Assignment 2
Wed Aug 30	Attend synchronous Zoom session #2	
Sun Sep 3		<ul style="list-style-type: none"> • Submit Assignment 2
Mon Sep 4		<ul style="list-style-type: none"> • Do readings
Tue Sep 5	Regression <ul style="list-style-type: none"> • Post lecture video • Post code video • Post Assignment 3 	<ul style="list-style-type: none"> • Watch videos • Work on Assignment 3
Wed Sep 13	Attend synchronous Zoom session #3	
Sun Sep 17		<ul style="list-style-type: none"> • Submit Assignment 3
Mon Sep 18		<ul style="list-style-type: none"> • Do readings
Tue Sep 19	More regression <ul style="list-style-type: none"> • Post lecture video • Post code video • Post Assignment 4 	<ul style="list-style-type: none"> • Watch videos • Work on Assignment 4
Wed Sep 27	Attend synchronous Zoom session #4	
Sun Oct 1		<ul style="list-style-type: none"> • Submit Assignment 4
Mon Oct 2		<ul style="list-style-type: none"> • Do readings
Tue Oct 3	Mediation & moderation <ul style="list-style-type: none"> • Post lecture video • Post code video • Post Assignment 5 	<ul style="list-style-type: none"> • Watch videos • Work on Assignment 5
Wed Oct 11	Attend synchronous Zoom session #5	
Sun Oct 15		<ul style="list-style-type: none"> • Submit Assignment 5
Mon Oct 16		<ul style="list-style-type: none"> • Do readings
Tue Oct 17	Multilevel models <ul style="list-style-type: none"> • Post lecture video • Post code video • Post Assignment 6 	<ul style="list-style-type: none"> • Watch videos • Work on Assignment 6
Wed Oct 25	Attend synchronous Zoom session #6	

By this date . . .	Arran will . . .	You will . . .
Sun Oct 29		<ul style="list-style-type: none"> • Submit Assignment 6
Mon Oct 30		<ul style="list-style-type: none"> • Do readings
Tue Oct 31	Structural equation models <ul style="list-style-type: none"> • Post lecture video • Post code video • Post Assignment 7 	<ul style="list-style-type: none"> • Watch videos • Work on Assignment 7
Wed Nov 8	Attend synchronous Zoom session #7	
Sun Nov 12		<ul style="list-style-type: none"> • Submit Assignment 7
Mon Nov 13		<ul style="list-style-type: none"> • Do readings
Tue Nov 14	Temporal models <ul style="list-style-type: none"> • Post lecture video 	<ul style="list-style-type: none"> • Watch video • Email questions on the readings & video
Sun Dec 3		<ul style="list-style-type: none"> • Submit final paper

ACADEMIC INTEGRITY POLICY

Students must comply with the Academic Integrity Policy on all work submitted for the course. Refer to the following URL: <https://osrr.uncg.edu/academic-integrity/>.

ACCOMMODATIONS

UNCG seeks to comply fully with the Americans with Disabilities Act (ADA). Students requesting accommodations based on a disability must register with the Office of Accessibility Resources and Services (OARS) in 215 Elliott University Center, 334-5440, oars.uncg.edu.

Students may request accommodations for religious holidays under applicable laws. See <https://catalog.uncg.edu/academic-regulations-policies/university-policies/> for more information.

Students should remind the instructor in advance when accommodation affects course activities, to ensure that the instructor has updated systems accordingly.

ATTENDANCE POLICY

The course is delivered in online, asynchronous format. Attending synchronous sessions is optional.

FINAL EXAMINATION

There will not be a final exam.

HEALTH AND WELLNESS

Your health impacts your learning. Throughout your time in college, you may experience a range of health issues that can cause barriers to your learning. These might include physical ailments, illnesses, strained relationships, anxiety, elevated levels of stress, alcohol/drug problems, feeling down, or loss of motivation. Student Health Services and The Counseling Center can help with these or other issues you may be experiencing. You can learn about the free, confidential mental health services available on campus by calling 336-334-5874, visiting the website (<https://shs.uncg.edu/>) or visiting the Anna M. Gove Student Health Center at 107 Gray Drive. Help is always available.

LEARNING ENVIRONMENT

I want to create a productive and inclusive learning environment of mutual respect. If you experience or witness any instances of inappropriate behavior you can contact me directly and seek out the following resources:

- UNCG Counseling Center (non-reporting agency/confidential) 336.334.5874
- Murphie Chappell, Title IX Coordinator (reporting agent) 336.256.0362 or mechappe@uncg.edu
- University Police (reporting agent) 336.334.4444

For more information on UNCG's policies regarding harassment, visit the UNCG Sexual Harassment Policy (https://policy.uncg.edu/university_policies/title-ix-policy/).

Likewise, if you are personally dealing with challenges or concerns that are barriers to your success, Student Health Services and The Counseling Center can help. You can learn about the free, confidential mental health services available on campus by calling 336-334-5874, visiting the website for Student Health Services (<https://shs.uncg.edu/>), or visiting the Anna M. Gove Student Health Center at 107 Gray Drive.

TECHNICAL SUPPORT

Students with technical issues with the course and email should contact 6-TECH for support either by email, phone, or chat (<https://uncg.service-now.com/support/>). Please also let me know about the issue and if there will be any delays in resolving it.

END OF SYLLABUS