

## Causal Modeling in Social Stratification Research

### Syllabus

#### Professor:

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#### Office Hours

By appointment. Please contact me through e-mail to set up an online meeting

#### Course Information

Fall 2021  
Time and place:  
Wednesdays, 16:00-20:00, online (Zoom)

#### Course Website

Moodle: <https://tufis.ro/classes/>  
You will receive invitations to register for the course on Moodle.

### Course Description

This is a 2-in-1 course designed to teach you advanced statistical methods and to familiarize you with concepts, theories, and research in social stratification and mobility. The two topics go well together since, on one hand, in order to learn statistical methods, applied examples are essential and, on the other hand, the literature in the social stratification field heavily relies on the use of fairly complex statistical methods.

First, we will focus on discussing the logic behind causal modeling techniques and on becoming familiar with the basic concepts and theories in social stratification and mobility research. Second, we will engage in practical applications of quantitative data analysis in the study of social stratification and mobility processes. For this part, we will work through examples of data analyses using social stratification variables.

### Course Routine

We will discuss various data analysis methods or techniques and we will work together on some simple exercises using those methods and techniques. The exercises are designed to be a gateway into a social stratification topic, concept, or theory. During the semester, you will receive **3 assignments** that will require you to construct and interpret an example of your own, similar to the example we discussed during class (a regression model, a confirmatory factor analysis model, and a structural equation model).

We will mainly use these two software packages: **SPSS** (for data manipulation, data recodes, and descriptive statistics) and **AMOS** (for the estimation of structural equation models).

The database for in-class examples and for your homework assignments is **ISSP** – International Social Survey Programme (<http://www.issp.org/>), the **2009 Module on Social Inequality**. I will ask you to choose one of the countries included in the survey and stick to analyzing the data for that particular country in your assignments.

### Course Policies

I will have my camera on during our synchronous meetings. I strongly encourage you to do the same, mainly because this makes it feel more like a normal class and because of the added benefits that non-verbal cues can bring in an online classroom setting. Zoom, our platform for synchronous meetings includes various options for virtual backgrounds to provide some degree of privacy. Check them out, customize them to your preferences and use them, if you would like. If on particular occasions you are feeling unwell or your internet connection is weak, it is okay to turn off the camera.

You are strongly encouraged to ask questions during class if anything in the lecture is unclear or you want to further discuss a point. I am available for office hours meetings if you have issues or concerns about the class and questions you need to discuss. Due to complex schedules both on my part and on yours, my office hours are by appointment. Please e-mail me if you want to set up a meeting. I expect to be available for office hours meetings during Friday afternoons.

## Prerequisites

The course requires previous knowledge of data collection and sample design procedures in quantitative research, and a good understanding of inferential statistics. I will make some optional readings available on the class website for those who feel they might need to get (re)acquainted with these topics. You should decide on your own if you need to read these or not.

## Grading – Causal Modeling

Grading will be based on your 3 assignments and an exam at the end of the semester. For your final grade, the assignments count for 70% of your grade and the exam for 30%.

### *Assignments (70%):*

During the latter part of the semester, after we get familiar with a few basic concepts and methods of data analysis, you will start working on your assignments. The first two assignments will ask you to estimate and interpret a simple statistical model, similar to an example presented by me during class. The final assignment, at the end of the semester, will ask you to put together a more complex model in which you will have the opportunity to showcase all the skills you acquired during the semester (proposing a theoretical model based on a literature review, model estimation, model interpretation).

The database for your assignments will be the ISSP 2009, the same database we'll use during most of the class examples. If you prefer to work on more recent data, the ISSP 2019, Social Inequality module has also recently become available and you may use it, but it covers a reduced number of countries. As mentioned above, please choose a country among those included in the survey and stick with it for all your assignments.

Each assignment will be graded based on: (a) the technical specification of the model, (b) the presentation of the variables, hypotheses and model, and (3) the interpretation and discussion of model results.

### *Exam (30%):*

The exam will consist in an online written test with a series of questions regarding theoretical and practical aspects discussed during the lectures and labs or in your required readings. The materials you need to cover for the exam are: the required readings, the course handouts that will be available on the course website, and your in-class notes. You are required to complete the exam in order to receive a final grade and the credits for this course. The exam is an open-book, open-internet and timed examination, with free response questions. For a satisfactory result, the exam format requires you to revise your course materials and notes prior to the examination date.

## Grading – Social Stratification and Mobility

Grading will be based on the literature review part you develop for your final Causal Modeling assignment.

### *Lit Review:*

This should include an **extensive** and **critical review of the academic literature** on a topic of your choice (related to social stratification), that you can study using the available ISSP variables. You should use the literature review to justify the choices you make when you construct your causal model.

It should be clear from your proposal that you have engaged in the readings you are citing and that you are developing your own position, argument, or framework based on one or more of the theories you are discussing. **It is extremely important that you strictly adhere to the academic integrity standards for all the work you submit for this course.**

## Makeup Exams

If, for any reason, you were unable to fulfill the requirements for grading during the semester (i.e. assignments, deadlines), or you want to improve your grade, you can take a makeup exam (please consult the academic calendar to see when these exams may be scheduled). There will be a makeup exam for your Causal Modeling grade and a separate makeup exam for your Social Stratification and Mobility grade. Both are online timed examinations, with free response questions. I strongly discourage you from choosing this option because the exam scores are usually much lower than the grade you would get by following along with the coursework, assignments, papers, a.s.o. during the semester.

## Important!

Meet the deadlines! Late assignments will not be accepted unless a good reason (e.g. illness) exists, in which case please contact me as soon as possible to discuss a strategy to catch up and to agree on new deadlines.

## Academic Integrity Policy

You are expected to submit your own original work and comply with the rules of academic integrity and conduct. In the context of this course, this basically means: be honest, don't cheat, and don't pass off someone else's work as your own. You are expected to clearly cite and indicate your sources for citations, ideas, concepts and paraphrases and your work should be more than a mosaic of ideas that others before you have already published. As a young researcher, you should see your work as contributing to an ongoing discussion in the academic field, therefore you need to be able to distinguish between your voice and others' voices in your writing.

If you are unsure what constitutes a violation of the rules of academic integrity you should consult the resources available at: <https://english.la.psu.edu/undergraduate/plagiarism-policy/>. **You will not receive a passing grade for this course if you turn in plagiarized work.**

## Topics

1. Course introduction (*We will talk about the course, course requirements, course online platforms, evaluations, academic honesty, your questions and requests, if any, and we'll get to know each other a bit*).
2. Correlations and Simple Linear Regression
3. Multiple Linear Regression
4. Applied Linear Regression
5. Structural Equation Models (SEM) with Observed Variables
6. Exploratory Factor Analysis
7. Confirmatory Factor Analysis
8. SEM with Latent Variables
9. Comparisons in the Multi-Group Multi-Model Framework
10. Measurement Invariance
11. Handling Missing Data in the SEM Framework. FIML and, time permitting, multiple imputation
12. SEM with Dichotomous and Ordinal Outcomes and Other Advanced Topics in SEM (time permitting ...)

## Bibliography (All readings will be available on Moodle)

### Required Readings:

- Arbuckle, J. L. (2014). IBM SPSS® Amos 23 User's Guide. Amos Development Corporation, Crawfordville, FL. (Excerpts: Tutorial and Chapters related to the examples we discuss).
- Field, A. P. (2009). Chapter 7, pp. 197-224. Discovering statistics using SPSS : (and sex and drugs and rock 'n' roll) (3rd ed.). Los Angeles ; London: Sage.
- Maruyama, G. (1998). Basics of structural equation modeling. Thousand Oaks, Calif.: Sage Publications, Chapter 2 (pp.15-25), Chapter 10 (pp. 234-254).
- Pohlmann, J. T. (2004). Use and Interpretation of Factor Analysis in "The Journal of Educational Research": 1992 - 2002. *The Journal of Educational Research*, 98(1), 14-22.
- Tușiș, P. A. (2011). Structură, stratificare și mobilitate socială. In L. Vlăsceanu (Ed.), Sociologie (pp. 294-336). Iași: Polirom.
- Tușiș, P.A. (2020). The Language of Causal Models. A Guide for Graduate Students in the Social Sciences on Causal Diagrams and Structural Equation Modeling. Unpublished manuscript.
- Jonsson, J. O., Grusky, D. B., Carlo, M. d., & Pollak, R. (2011). It's Decent Bet That Our Children Will Be Professors Too. In D. B. Grusky & S. Szelenyi (Eds.), The Inequality Reader (2nd edition) (pp. 499-516). Boulder, Colorado: Westview Press.

### Useful Readings (not required)

- Byrne, B. M. (2001). Structural equation modeling with AMOS : basic concepts, applications, and programming. Mahwah, N.J., Lawrence Erlbaum Associates.
- Maruyama, G. (1998). Basics of structural equation modeling. Thousand Oaks, Calif., Sage Publications. Chapters 1-9.
- Schumacker, R. E. and R. G. Lomax (2004). A beginner's guide to structural equation modeling. Mahwah, N.J., Lawrence Erlbaum Associates.
- Selected chapters from: D. B. Grusky (Ed., 2001 ed.), Social Stratification: Class, Race, and Gender in Sociological Perspective. Boulder, CO: Westview Press.

Optional Readings (not required)

Alwin, D. F. and R. M. Hauser (1975). "The Decomposition of Effects in Path Analysis." *American Sociological Review*: 37-47.

Field, A. P. (2009). Chapter 7, Chapter 15. *Discovering statistics using SPSS : (and sex and drugs and rock 'n' roll) (3rd ed.)*. Los Angeles; London: Sage.

Maruyama, G. (1998). Basics of structural equation modeling. Thousand Oaks, Calif.: Sage Publications, Chapter 3 (pp.29-59).

Schumacker, R. E. & Lomax, R. G. (2004), Chapter 8 (pp.167-194), A beginner's guide to structural equation modeling (2nd ed.). Mahwah, N.J.: Lawrence Erlbaum Associates.

Treiman, D. J. (2009). Chapter 5, Chapter 6, Chapter 11, Quantitative data analysis : doing social research to test ideas (1st ed.). San Francisco, CA: Jossey-Bass.