COURSE MANUAL

NCA ONLINE SUMMER COURSE 2021

Necessary Condition Analysis:

Theory and Practice

Course manual for the online course
on Necessary Condition Analysis (NCA)
(Version 2021-03-03)

Lecturer: Jan Dul

Contents

Learning goals of the course

After successful completion of this online course you will be able to:

1. Understand the logic of necessary conditions.
2. Understand why necessary conditions are important for (social) science.
3. Understand why necessary condition are important for practice.
4. Identify and formulate necessary conditions in (your own) theory.
5. Identify and test necessary conditions in (your own) data sets.
6. Write an extended abstract in which you use necessity logic and apply NCA.

Participants

The course is designed for PhD candidates and junior faculty who are aiming for publications in top journals. Other researchers interested in this emerging approach—including senior faculty—are also welcome to take this course. We expect that each participant has at least some experience with regression analysis to understand the differences between NCA and regression, and to appreciate how NCA complements regression. Researchers with a background in Qualitative Comparative Analysis (QCA) can also benefit from the course to appreciate how NCA complements QCA. No special methodological or substantive knowledge is required for this course. Examples will be drawn from different research fields.

Material and platform used

We will use the following textbook in this course: *Dul, J. (2020) Conducting Necessary Condition Analysis. Mastering Business Research Methods series, London: Sage Publications. Sage Publications.* Each participant is supposed to have access to this book.

Each participant is expected to work on a computer with a Windows (Microsoft) or iOS (Apple) operating system. For the exercises with the NCA software (in R) the participant must have installed the **programming software R** on their computer (help will be provided) but the exercises can be done without prior programming knowledge or experience with R or otherwise. More information about the software can be found on the NCA website. **Zoom** will be used for online sessions. Participants will be granted access to ERIM's learning management platform **CANVAS**, where all additional supporting documents, assignments and meeting links can be found.

Credits

The workload of the course is 1 ECTS (28 hours). You will receive formal proof of the completion of the course if you have made properly all assignments and participated actively during online discussion sessions.

Dates and Location

The main course week starts June 21 and ends June 25. Every day of this week there are voluntary or mandatory meetings. Before and during this week the participants are expected

to make assignments. All meetings are online. There are no meetings on campus. The three mandatory online meetings last 1½ hours and are planned on June 21, 22, and 24, each starting at 10am or 17pm (Central European Summer Time = CEST Time) depending upon your group. During the application for this course, you can indicate your preferred mandatory meeting time.

Online meetings

There are three types of online meetings:

- Mandatory online *discussion* meetings. These group meetings include lectures, plenary group discussions and breakout sessions. They are meant to discuss the assignments.
- Voluntary online *Q&A* meetings. These sessions are meant to support participants to make their assignment (see below).
- A voluntary individual meeting after the course week to receive personal feedback on the final assignment.

Assignments

Each participant needs to make four assignments (Assignments 1-4) throughout this intense summer course. The first assignment contains "recommended" and "required" parts and must be finalized before the start of the online course week. For example, it is highly recommended to read the textbook (8-10 hours) before the course starts, in particular if you are not available full time during the course week.

You must submit your assignments in Word format (with your name and assignment number in the file name) on CANVAS no later than the deadlines that apply to your group.

Assignment 1: Preparations before the course week

1. **Required**: Install the R and NCA software according to Textbook Appendix 2 until 'Import your dataset in R. Make sure that the software works by typing `library (NCA)` at the prompt. This should give a general message about the NCA package and no error messages.
2. **Required**: Ensure that you are familiar with Zoom.
3. Recommended: Read the course book Dul (2020) (8-10 hours)
4. Recommended: Start Part 2 of Assignment 2: Identify 10 statements in everyday conversations between people (at home, at work, in the media, etc.) that are (implicit) necessary condition statements (you can already submit them on CANVAS)

For this assignment, please **submit** 1-3 discussion questions related to this assignment.

Assignment 2: Necessary condition hypothesis and dataset

1. Read Textbook Chapters 1 to 3 and Appendix 1.
2. Identify 10 statements in everyday conversations between people (at home, at work, in the media, etc.) that are (implicit) necessary condition statements.
3. Identify 5 relevant necessary condition statements ('X is necessary for Y'; similar as in Textbook Box 2.2, pp. 24-25) by performing a full text search in major journals of your research field.
4. Formulate for your specific research topic *your own* necessary condition hypothesis ('X is necessary for Y') that you can defend and will analyze in the next assignment (see 5.), see Textbook pp. 27-36. It is possible to have more than one hypothesis (e.g., several X's for one Y). Draw the conceptual model similar to Textbook figures 3.2 or 3.3 (p. 32 and 33) and embed your hypothesis in theory (see Appendix 1, pp. 115-118).
5. Select a dataset that contains scores of X and Y. Choose one of the following options:
    - Your own dataset (that has scores of X and Y).
    - An existing dataset from elsewhere (that has scores of X and Y).

    Describe the dataset in terms of the research strategy, the case selection/sampling, and the measurements (X and Y) used to obtain the data (see Textbook pp. 36-42).

Submit the assignment before the assignment deadline:
- The results of part 2 (10 necessity statements in everyday life)
- The results of part 3 (5 necessary condition statements)
- The results of part 4 (your own necessary condition hypothesis/hypotheses and conceptual model)
- The results of part 5 (dataset)
- 1-3 discussion questions related to this assignment

Assignment 3: Data analysis with NCA

1. Read Textbook Chapter 4.
2. Test your necessary condition hypothesis with the NCA software. Specify:
    a. Contingency table or scatter plot
    b. Ceiling line
    c. NCA parameters
    d. Statistical test
    e. Bottleneck table
    f. Conclusion about the hypothesis

Submit the assignment before the assignment deadline:
- The results of part 2 (test results)
- 1-3 discussion questions related to this assignment

Final assignment: Writing the extended abstract

1. Read Textbook Chapters 5 and 6 and Appendix 3.
2. Write an extended abstract (1500-2500 words) of your study, according to Textbook box A.3.1 (pp.125-126).

Submit the assignment before the assignment deadline:

- The results of part 2 (extended abstract)

Planning

Date Group 1 (Rotterdam time CEST = UTC +2)	Date Group 2 (Rotterdam time = CEST UTC +2)	Assignment	Textbook Reading
		Assignment 1: Preparations	
Sun June 20 **10:00** (mandatory)	Sun June 20 **10:00** (mandatory)	Deadline for Assignment 1	
Mon June 21 **10:00-11:30** (mandatory)	Mon June 21 **17:00-18:30** (mandatory)	Online Discussion about Assignment 1. Advice for Assignment 2	Recommended: entire book (8-10 hours)
		Assignment 2: Necessary condition hypothesis and dataset	
Mon June 21 **15:00-16:00** (voluntary)	Mon June 21 **23:00-24:00** (voluntary)	Online Q&A about Assignment 2	Chapter 1-3 Appendix 1
Mon June 21 **19:00** (mandatory)	Tues June 22 **03:00** (mandatory)	Deadline for Assignment 2	
Tues June 22 **10:00-11:30** (mandatory)	Tues June 22 **17:00-18:30** (mandatory)	Online Discussion about Assignment 2 Advice for Assignment 3	
		Assignment 3: Data analysis with NCA	
Wed June 23 **15:00-16:00** (voluntary)	Wed June 23 **23:00-24:00** (voluntary)	Online Q&A about Assignment 3	Chapter 4
Wed June 23 **19:00** (mandatory)	Thu June 24 **03:00** (mandatory)	Deadline for Assignment 3	
Thu June 24 **10:00-11:30** (mandatory)	Thu June 24 **17:00-18:30** (mandatory)	Online Discussion about Assignment 3 Advice Assignment 4	
		Assignment 4: Writing the "extended abstract"	
Fri June 25 **15:00-16:00** (voluntary)	Fri June 25 **23:00-24:00** (voluntary)	Online Q&A about Assignment 4	Chapter 5 Chapter 6 Appendix 3
Sun June 27 **19:00** (mandatory)	Mon June 28 **03:00** (mandatory)	Deadline for Assignment 4 (extended abstracts)	
Wed June 30 **23:00**	Wed June 30 **23:00**	Individual grade (pass/fail) and written feedback about Assignment 4	

½ hour Thu – Fr (July 1-2) (voluntary)	½ hour Thu – Fr (July 1-2) (voluntary)	Individual verbal feedback about Assignment 4	

Technical details of the course

The course is offered by Erasmus Research Institute of Management (ERIM), which is a collaboration between the Erasmus School of Economics, and the Rotterdam School of Management. It is part of the Erasmus Doctoral Programme in Business and Management.

Level: Skill

Code: BERMSS024

ECTS: 1

Examination: Pass/fail evaluation by lecturer based on the quality of the final assignment, quality of the preparations and active participation during online discussion sessions.

Language: English

Costs: 250€ (standard rate for a 1 ECTS course)

Application: The maximum number of participants is 12 per group. Please apply as soon as possible here. Admission work on a first come, first serve basis. You will be notified about your admission within 7 days after you applied. The final admission is conditional to the payment of the course fee, which must be received no later than 21 May.