

An introduction to Necessary Condition Analysis (NCA)

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Necessary Condition Analysis (NCA; Dul 2016, 2020, 2021, 2024; Dul et al. 2020) is an emerging method that is well received in the academic community and is now used in many social science fields and beyond. NCA understands cause-effect relations as (almost) deterministic in terms of “necessary but not sufficient” and not as probabilistic in terms of ‘average treatment effect’ as in regression analysis. “Necessary” means that an outcome will not occur without the right level of the condition, independently of the rest of the causal structure (thus the condition is a “bottleneck”, “critical factor”, “constraint” in all cases). In practice, the right level must be put and kept in place to avoid guaranteed failure and waste of efforts, and to allow and facilitate the outcome to exist. NCA is used as a stand-alone method or in combination with regression-based approaches (e.g., multiple regression analysis, structural equation modeling) or Qualitative Comparative Analysis (QCA). By adding a different causal logic and data analysis approach, NCA adds both rigor and relevance to theory and data analysis and provides new possibilities for impactful publications.

More information:

- NCA website: www.erim.nl/nca
- NCA core publications:
 - Dul, J. (2016) Necessary Condition Analysis (NCA): Logic and methodology of “necessary but not sufficient” causality, *Organizational Research Methods*, 19(1), 10-52. <https://doi.org/10.1177/1094428115584005>
 - Dul, J., van der Laan, E., Kuik, R. (2020) A statistical significance test for Necessary Condition Analysis. *Organizational Research Methods* (2020). <https://doi.org/10.1177/1094428118795272>
 - Dul, J. (2020) Conducting Necessary Condition Analysis. Mastering Business Research Methods series, London: Sage Publications. [\[look inside the book\]](#)
 - Dul, J. (2021). *Advances in Necessary Condition Analysis*. Online book: https://bookdown.org/ncabook/advanced_nca2/.
 - Dul, J. (2024). A different causal perspective with Necessary Condition Analysis. *Journal of Business Research*, 177, 114618.: <https://www.sciencedirect.com/science/article/pii/S014829632400122X>

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