

## Qualitative Comparative Analysis - a research approach for studying causal complexity

Brief introductory course for students and researchers at Eawag

*Nadja Kunz and Manuel Fischer, Environmental Social Sciences*

**Date:** Tuesday, 14th April, 2015

**Time:** 9:00 – 12:30

**Location:** FC-D24

### **Brief description of the course content:**

Many water resource management challenges are characterised by high levels of complexity, whereby numerous factors influence system performance and outcomes. Furthermore, many of these factors act in combination with one another. For example, freshwater scarcity has been found to be caused by a complex combination of factors including demand/supply changes, governance systems at different levels, and infrastructure and technology related factors. Similarly, the extent to which wastewater is recycled by urban water utilities is influenced by many competing economic, political, regulatory and technological pressures.

Analysing phenomena influenced by such complex causal pathways represents a significant challenge when using many traditional research approaches. Especially the systematic comparison between 5-50 cases (ecosystems, watersheds, utilities, countries) is a methodological challenge. In this 3-hour introductory workshop, we will introduce Qualitative Comparative Analysis (QCA) and fuzzy-set QCA (fsQCA) as a viable research approach. QCA is a case-comparative approach that lies between qualitative and quantitative research approaches, can be utilised even when the number of cases is quite limited, and is designed to handle multiple and often complex causal pathways.

However, like any methodological approach, QCA has its own set of pros and cons. Since QCA is a rather recent approach, many of these pros and cons are still under investigation. Besides a systematic introduction to QCA, this workshop will also invite a discussion about the benefits of QCA in comparison with other techniques such as regression.

The goal of the workshop is to give researchers and students a general introduction to QCA, to provide a critical discussion of pros and cons, and to introduce basic software tools.

### **The workshop will be structured as follows:**

9:00 – 10:00 – Introduction to QCA (Manuel Fischer)

10:15 – 11:15 – Lessons from applying QCA and discussion of pros and cons (Nadja Kunz)

11:30 – 12:30 – Software introduction to the R package QCA\* (Manuel Fischer and Nadja Kunz)

*\* For those wishing to attend the software introduction, please bring a personal laptop computer and install the R Package QCA in advance (all free of charge, and available for most operating systems such as MacOS and Windows). Some knowledge about R is preferable, but not a requirement.*

**Questions?** There's no need to RSVP, but if you have questions feel free to contact Nadja Kunz at [nadja.kunz@eawag.ch](mailto:nadja.kunz@eawag.ch)