The Impact of Policy Interventions on a Pre-Industrial Population System in the Austrian Alps

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The project

*Historical Sustainability Research: Institutional Logics and Natural Dynamics in Co-evolutionary Development*

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Overview

- Demographic time series from Grossarl
  - Illegitimate births
  - Marriages

- Research questions

- Methods

- Results
Demographic time series

Annual time series (1700–1900) for Grossarl (Alpine Village Austria):

- fraction of illegitimate births,
- number of marriages.

*Source:* Parish Registers
Research questions

**Goals**: Analyse, model and assess political interventions into the social organisation of reproduction.

- Which factors influence demographic behaviour?
- How can breaks in demographic time series be explained?
- Is there empirical evidence in the data for effectiveness of historical population policy interventions?
- Is the concept of “Social disciplining” useful in an anthropological approach?
Methods

Methodological challenges:

❖ Resolve tension between
  ❖ evaluation of complexity, model realism,
  ❖ need for model simplification.

❖ Compress qualitative historical information for model building.
Methods

Derive intervention variables from qualitative historical information concerning *politics*, *morals* and *nuptiality*.

Political interventions:

- archbishopric (until 1803),
- multiple changes (1803–1816),
- administrated by Upper Austria (1816–1850),
- crownland within Habsburg Austria (since 1850).
Moral regulations ("Sittenverordnungen"): 
1736, 1753, 1771, 1803.

Marriage restrictions ("politischer Ehekonsens"): 
1803, 1810, 1816, 1883.
Methods

Statistical regression model:

- changing mean is described by piecewise constant function (fitted by OLS),
- intervention analysis,
- use moving sums of the residuals as a diagnostic test to check for further breaks.
Two models are compared: the mean of the time series explained by

- political interventions only

- additionally by moral regulations and marriage restrictions
Results

Illegitimate Births in Grossarl

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fraction of illegitimate births

0.0 0.1 0.2 0.3 0.4

1700 1750 1800 1850 1900

Time
Results

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OLS-based MOSUM test

Time

empirical fluctuation process

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Marriages in Grossarl

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