Accessibility, Spatial Organisation and Demography in Switzerland through 1850 to 2000: First Results

Martin Tschopp, Philipp Fröhlich, Peter Keller and Kay W. Axhausen

IVT
ETH
Zürich

November 2003
Introduction

Project: “Development of the Transit Transport System and its Impact on Spatial Development in Switzerland”

within COST 340 ”Towards a European Intermodal Transport Network: Lessons from History”
Goal

General statements about the population its development and its spatial distribution in Switzerland

Following questions are of interest:

- When did the population grow?
- How did the population grow?
- Where did the population grow?
- The role of accessibility
Population development in Switzerland
Lorenz curves based on municipal population size

- 1850: Gini = 0.5072
- 1970: Gini = 0.7044
- 1990: Gini = 0.6856
- 2000: Gini = 0.6690

Municipalities in %
Population in %
Development of the Gini index of the municipalities
Longitudinal axis Mittelland
Accessibility

Accessibility is defined as (Geurs and Ritsema van Eck, 2001):

…the extent to which the land-use transport system enables [groups of] individuals or goods to reach activities or destinations by means of a [combination of] transport mode[s].
Potential Accessibility

\[ AccPop_i = \sum_{j=1}^{j=2903} A_j \times \exp(-\beta \times c_{ij}) \]

- \(AccPop_i\) accessibility to people living in municipality, \(i\)
- \(A_j\) the number of residents of municipality, \(j\)
- \(c_{ij}\) travel time by private vehicle between the municipality \(i\) and municipality, \(j\)
- \(\beta\) exponent
Absolute Accessibility for the Year 1950
Absolute Accessibility for the Year 2000
Accessibility and population development (1950 - 2000)

In (absolute development of accessibility)

In (relative population development)

Kanton
- Others
- Neuenburg
- Graubünden
- Zürich
Accessibility and population regression lines (all Kantone)
Accessiblitiy and population: Kantone

Kantone with a high elasticity (red):

ZH, LU, ZG, SO, BS+BL, AR+AI, SG, AG, TG, VD, GE

Kantone with a lower elasticity (orange):

BE, UR+NW+OW, SZ, GL, FR, SH, GR, TI, VS, NE, JU
Accessiblitiy and population: Kantone
Conclusion

- Tripling of population - but unequal patterns of growth

- The process of concentration was followed by a period of deconcentration from 1970 onwards

- Only the agglomerations and the regions of the Mittelland show this deconcentration. Alpine regions were not affected by those benefits

- The process of deconcentration lead to a spread out and a growing together of the different agglomerations in the Mittelland
Literature


