The Historical Gender Gap Index  
A Longitudinal and Spatial Assessment of Sweden, 1870-1990

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Gender Gap Index

2020

Iceland

Norway

Finland

Sweden

Gender Gap Index

Iceland: 0.8770
Norway: 0.8440
Finland: 0.8320
Sweden: 0.8200
Gender Gap Index

What did the gender gap look like in the past? How did it evolve?
The Historical Gender Gap Index

Implications

- Theoretical Background
  - Gender wage/education gap (Galor-Weil, 1996; Lagerlöf, 2003)
  - Changes in gender roles (Diebolt-Perrin, 2013; Doepke-Tertilt, 2019)
  - European Marriage Pattern (De Moor-Van Zanden, 2010; Foreman-Peck, 2011)
  - Culture and norms (Alesina-Giuliano-Nunn, 2013)

- Economic Growth
- Demographic Transition
Empirical Investigation – Gender & Growth

- **Using Contemporaneous Data**

- **Using Historical Data**
  - Lack of information/resources on the various dimensions of gender equality
  - Perrin (2014, 2021) – French counties, 1850s
Objectives

1. Investigate the magnitude of the gender-based inequalities

2. Improve our understanding of gender relations in the past

3. Provide a comprehensive measure of gender equality...

4. ...easily comparable with other variables (economic, demographic, cultural)
Data

- **Coverage of the Index**
  - Sweden
  - 24 counties – *Län*
  - 1870-1990, in 10-year intervals

- **Sources – *Statistics Sweden, SCB***
  - BiSOS A Tredje – Folkräkningen – Folk och bostads-räkningen
  - BiSOS A – Befolkningsrörelsen
  - BiSOS N – Lönestatistisk Årsbok
  - Historiska lönedatabasen
  - Valstatistik
  - Etc.
Critical Areas

Historical Gender Gap Index

Economic Participation
- Participation Gap
  - Female labor force
  - Male labor force
- Remuneration Gap
  - Female wage
  - Male wage

Health and Survival
- Survival Gap
  - Female mortality
  - Male mortality
- "Missing" women
  - Female living birth
  - Male living birth

Political Empowerment
- Representation Gap
  - Female elected
  - Male elected
Historical Gender Gap Index

• Main Features

  ▪ Gender Equality versus Women’s Empowerment

  ▪ Gaps versus Levels

  ▪ Outcomes versus Inputs

  ▪ Comparable across time and space
Steps

1. Convert to ratios

2. Data rescaling at equality benchmark
   - Equality benchmark = 1
   - Except for sex ratio = 0.944
   - Except for mortality ratio = 1.06

3. Calculation of weighted average scores
   - Integrate the same relative impact

4. Calculation of sub-index scores
   - Economic, Health, Political

5. Calculation of final scores
   - Average sub-indices
Spread of the Data
## Subindex Scores

<table>
<thead>
<tr>
<th>Subindex</th>
<th>Standard Deviation</th>
<th>Standard Deviation per 1%</th>
<th>Weights</th>
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<tbody>
<tr>
<td><strong>1 Economic Opportunity</strong></td>
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<tr>
<td>Female-to-male labor force</td>
<td>0.1627</td>
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<td>Female-to-male wage</td>
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<td><strong>2 Health and Survival</strong></td>
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<tr>
<td>Female-to-male mortality (reversed)</td>
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<td>Female-to-male living births</td>
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<td><strong>Total</strong></td>
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<td><strong>3 Political Empowerment</strong></td>
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<tr>
<td>Female-to-male election ratio</td>
<td>0.1658</td>
<td>0.0603</td>
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<tr>
<td><strong>Total</strong></td>
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<td><strong>0.0603</strong></td>
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Longitudinal Evolution – HGGI, 1870-1990
Swedish HGGI

- Phase 1 – Stable
  - Large inequalities until 1940s
  - Sweden had closed ~ 48.5% of gender gap

- Phase 2 – Continuous (sharp) increase
  - From 1940s onwards
  - Faster after 1970
  - In 1990, Sweden had closed 80.6% of gender gap
The Historical Gender Gap Index

HGGI Subindex, 1870-1990

- Economic subindex
- Health subindex
- Political subindex
Spatial Distribution – HGGI, 1870-1990
Spatial Distribution, 1870-1990

1880
1900
Spatial Distribution, 1870-1990

1970
Spatial Distribution, 1870-1990

1980

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Spatial Distribution, 1870-1990

1990

The Historical Gender Gap Index
Spatial Evolution

- **Convergence/Divergence Pattern?**
  - Swedish counties follow similar trends
  - Note different trajectories → E.g. Älvsborg vs. Stockholm

- **Identify general trends**
  - Catch up of ‘Backward’ counties?
  - Decrease/Increase in regional inequalities?
  - Implementation of efficient policies at the national level?
### HGGI Scores - Heatmap

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Karlsson-Kok-Perrin

The Historical Gender Gap Index
Economic Subindex, 1870-1990

Beta-convergence

Sigma-convergence

\[ R^2 = 0.963 \]

\[ R^2 = 0.9001 \]
Health Subindex, 1870-1990

**Beta-convergence**

R² = 0.6396

**Sigma-convergence**

R² = 0.4808
Political Subindex, 1930-1990

Beta-convergence

Sigma-convergence

R² = 0.7249

R² = 0.7553
Opened Questions

- What factors explain the takeoff? The spatial convergence?

- Candidates
  - Economic factors – Structural change and modern growth
  - Institutional determinants – Policies in favor of gender equality
  - Cultural forces – Change in attitude
HGGI vs GDP per Capita, 1870-1990

R² = 0.6364
Summary

➢ Construction of a Historical Gender Gap Index

• Sweden, 1870-1990
• Measuring outcome gap on 3 dimensions – economic, health, political

➢ Highlight

• Strong improvement in gender equality from 1940 onwards
• Heterogeneity among Swedish counties...
• ... decreases over time → Convergence
Further Steps

➢ Extend the HGGI

• Find education data by gender
  ➢ Add Education attainment subindex
• Sketch the evolution over longer time period (?)

➢ Empirical Investigations

• Input – Roots of gender inequalities
• Output – Effects on economic and demographic developments
• Investigate the predictions of theoretical models
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