

# Roots of Gender Equality: the Persistent Effect of Beguinages on Attitudes Toward Women

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# Motivation and Research Question

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- Gender equality is conducive to economic prosperity.
  - Decreased fertility allowing human capital accumulation: de Moor and Van Zanden (2010)
    - Empirical evidence in present time: Klasen (2002) and Klasen and Lamanna (2009)
- Origins of gender equality less clear:
  - Physiological differences: Galor and Weil (1996), Alesina et al. (2013).
  - Historical accidents: Grosjean and Khattar (2015).
- Beguinages:
  - Female-only, semi-religious, medieval communities.
- Research Question:
  - Higher gender-equality during the 19th century in regions that hosted medieval beguinages?

## This Paper

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- Studies the causal effect of beguinages on gender equality.
- Focuses on one country: Belgium.
- Assesses gender equality during the 19th century.
  - Gender-equality tends to converge in the long-run.
  - Decreases mass migration concerns.

Contribution:

- **Cultural** origins of gender equality.
- Transmission mechanism.

# The Beguine Movement

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- Characteristics:
  - self-supporting, semi-religious communities of
  - **unmarried or widowed** women of
  - **different** socio-economic origins;
  - independent of any male authority.
- Where?
  - **The Low Countries** and neighbouring regions in France and Germany.
- When?
  - Beginning of the **13th century** onward.

# The Beguines

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- Did not take vows but followed a **semi-religious** life.
- Kept and accumulated wealth.
- Allowed to **leave the beguinage**.
- Economic activities to self-sustain:
  - market-oriented: teachers, nurses, labourers, traders;
- Urban based.
  - Tolerated by ecclesiastic and secular authorities

# Geographical Distribution

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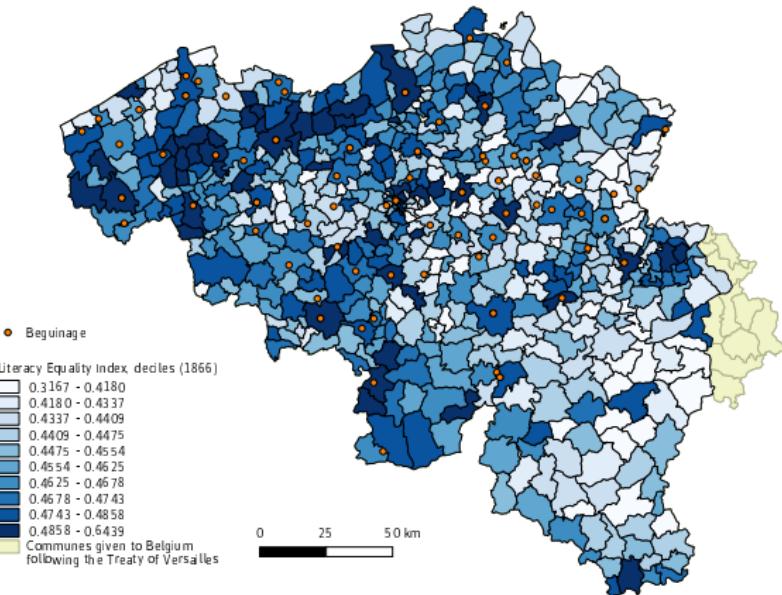
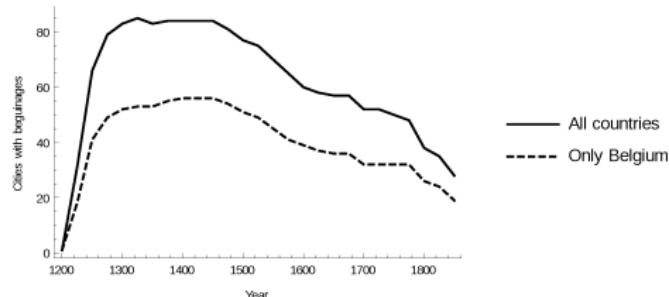
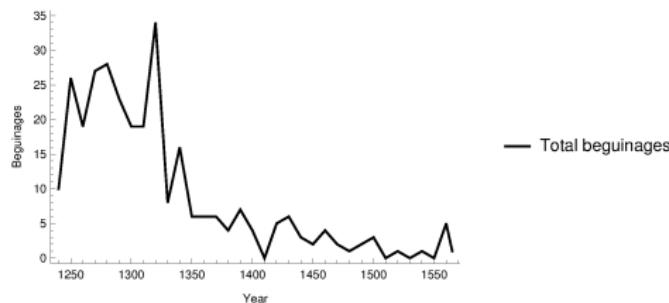


Figure: Beguinages in Belgium and measure of literacy equality

# Evolution of Beguinages



Total number of cities with at least one beguinage.



Number of new beguinages created per decade.

Source: *Simons (2010), p. 256*

# What We Do

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- Empirics:
  - we investigate the **long-run persistence of gender norms**,
  - we examine the legacy of the beguine movement on culture taking into consideration other confounding factors,
  - we also consider the potential endogeneity of beguinage location.
- Theory:
  - simple model relating opportunities for women with gender-equality,
  - highlights the importance of the marriage market,
  - intergenerational transmission of culture.

## Preview of the Results

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- In municipalities with a beguinage, literacy rate between men and women were more similar.
- Our results are strengthened when we use an instrumental variable approach correcting for the potential endogeneity of beguinage location.
- Results are in general robust to a host of additional covariates and sub-samples.

## Data

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- Exploit **cross-section** variation in beguinage location to identify their effects on gender-related outcomes.
- One country: Belgium.
- Census data:
  - Earliest possible data: censuses of 1846 and 1866.
  - **Not** individual data. Information is **aggregated** at the municipal level.
- We focus on two measures of gender equality:
  - Female literacy **compared** to male literacy.

# Econometric Specification

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- $y_{i,r} = \alpha + \beta \text{beguinage}_{i,r} + X_{i,r}\gamma + \kappa_r + \epsilon_{i,r}c$
- RHS - We use three indicators to account for beguinages:
  - Dummy variable - whether a city ever had a beguinage,
  - Exposure time to beguinage presence,
  - Five-level indicator combining presence and time.
- LHS - Outcomes of interest (measured in 1846 or 1866):
  - Literacy gap:  $\frac{\text{Number of literate women}}{\text{Number of literate men}}$
  - Female literacy share:  $\frac{\text{Number of literate women}}{\text{Number of literate women} + \text{Number of literate men}}$
  - Female literacy index:  $\frac{\text{Share of literate women}}{\text{Share of literate men}}$

# Summary Statistics

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|                                  | Mean   | Std.Dev. | Min.  | Max.    |
|----------------------------------|--------|----------|-------|---------|
| <i>Beguinage presence</i>        |        |          |       |         |
| Beguinage (0/1)                  | 0.026  | 0.159    | 0     | 1       |
| Intensity: No Beg.               | 0.974  | 0.159    | 0     | 1       |
| Intensity: 1 Beg., < 200 years   | 0.007  | 0.086    | 0     | 1       |
| Intensity: 1 Beg., > 200 years   | 0.012  | 0.108    | 0     | 1       |
| Intensity: > 1 Beg., > 200 years | 0.003  | 0.054    | 0     | 1       |
| Intensity: > 3 Beg., > 200 y.    | 0.004  | 0.061    | 0     | 1       |
| Exposure (centuries)             | 0.134  | 1.065    | 0.000 | 22.440  |
| <i>Outcomes</i>                  |        |          |       |         |
| Lit. equality index, 1866        | 0.822  | 0.137    | 0.236 | 1.808   |
| Female lit. share, 1866          | 0.448  | 0.042    | 0.191 | 0.644   |
| Female lit. index, 1866          | 0.856  | 0.122    | 0.256 | 1.601   |
| <i>Controls</i>                  |        |          |       |         |
| Total men, 1866 (thousands)      | 0.949  | 2.622    | 0     | 74      |
| Total women, 1866 (thousands)    | 0.944  | 2.909    | 0     | 84      |
| Nuptiality men, 1866             | 0.360  | 0.036    | 0.181 | 0.669   |
| Nuptiality women, 1866           | 0.398  | 0.037    | 0.202 | 0.626   |
| Fem. monas.                      | 0.030  | 0.184    | 0     | 2       |
| Masc. monas.                     | 0.024  | 0.170    | 0     | 3       |
| Other monas.                     | 0.072  | 0.259    | 0     | 1       |
| Distance river (km)              | 9.082  | 8.757    | 0.002 | 52.396  |
| Distance Leuven (km)             | 69.560 | 33.467   | 0.377 | 167.249 |
| Min. distance beguinage (km)     | 16.265 | 18.164   | 0.000 | 122.010 |
| Distance big city (km)           | 18.577 | 19.988   | 0.000 | 114.328 |
| Observations                     | 2711   |          |       |         |

# OLS Results: Female literacy

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|                       | Dep. variable: Lit. equality index, 1866 |                     |                     |                     |                     |                     |                     |                     |                     |                     |                    |                    |  |
|-----------------------|--|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|--------------------|--|
|                       | Baseline                                 |                     |                     | Fixed-effects       |                     |                     | Geography           |                     |                     | All                 |                    |                    |  |
|                       | (1)                                      | (2)                 | (3)                 | (4)                 | (5)                 | (6)                 | (7)                 | (8)                 | (9)                 | (10)                | (11)               | (12)               |  |
| Beguinage (0/1)       | 0.144***<br>(0.019)                      |                     |                     | 0.153***<br>(0.019) |                     |                     | 0.125***<br>(0.019) |                     |                     | 0.043***<br>(0.013) |                    |                    |  |
| <i>Intensity</i>      |  |                     |                     |                     |                     |                     |                     |                     |                     |                     |                    |                    |  |
| 1 Beg., < 200 years   |  | 0.062***<br>(0.024) |                     |                     | 0.085***<br>(0.025) |                     |                     | 0.073***<br>(0.024) |                     |                     | 0.038**<br>(0.015) |                    |  |
| 1 Beg., > 200 years   |  |                     | 0.153***<br>(0.033) |                     | 0.160***<br>(0.034) |                     |                     | 0.150***<br>(0.032) |                     |                     | 0.047**<br>(0.019) |                    |  |
| > 1 Beg., > 200 years |  |                     |                     | 0.233***<br>(0.034) | 0.269***<br>(0.044) |                     |                     | 0.213***<br>(0.054) |                     |                     | 0.088**<br>(0.036) |                    |  |
| > 3 Beg., > 200 years |  |                     |                     |                     | 0.208***<br>(0.015) | 0.183***<br>(0.009) |                     | 0.092***<br>(0.025) |                     |                     | -0.041<br>(0.036)  |                    |  |
| Exposure (centuries)  |  |                     |                     | 0.021***<br>(0.003) |                     | 0.022***<br>(0.003) |                     |                     | 0.017***<br>(0.003) |                     |                    | 0.006**<br>(0.003) |  |
| Fixed-effects         | No                                       | No                  | No                  | Canton              | Canton             | Canton             |  |
| Geography             | No                                       | No                  | No                  | No                  | No                  | No                  | Yes                 | Yes                 | Yes                 | Yes                 | Yes                | Yes                |  |
| Demography            | No                                       | No                  | No                  | No                  | No                  | No                  | No                  | No                  | No                  | Yes                 | Yes                | Yes                |  |
| Observations          | 2549                                     | 2549                | 2549                | 2549                | 2549                | 2549                | 2549                | 2549                | 2549                | 2549                | 2549               | 2549               |  |
| R <sup>2</sup>        | 0.030                                    | 0.035               | 0.029               | 0.203               | 0.207               | 0.200               | 0.218               | 0.220               | 0.213               | 0.432               | 0.433              | 0.431              |  |

# OLS Results: Female literacy

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|                       | Dep. variable: Female lit. share, 1866 |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                    |
|-----------------------|--|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|
|                       | Baseline                               |                     |                     | Fixed-effects       |                     |                     | Geography           |                     |                     | All                 |                     |                    |
|                       | (1)                                    | (2)                 | (3)                 | (4)                 | (5)                 | (6)                 | (7)                 | (8)                 | (9)                 | (10)                | (11)                | (12)               |
| Beguinage (0/1)       | 0.041***<br>(0.004)                    |                     |                     | 0.043***<br>(0.005) |                     |                     | 0.035***<br>(0.005) |                     |                     | 0.011***<br>(0.004) |                     |                    |
| <i>Intensity</i>      |  |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                    |
| 1 Beg., < 200 years   |  | 0.020***<br>(0.007) |                     |                     | 0.026***<br>(0.007) |                     |                     | 0.023***<br>(0.007) |                     |                     | 0.012***<br>(0.004) |                    |
| 1 Beg., > 200 years   |  |                     | 0.042***<br>(0.007) |                     | 0.044***<br>(0.008) |                     |                     | 0.041***<br>(0.007) |                     |                     | 0.010**<br>(0.005)  |                    |
| > 1 Beg., > 200 years |  |                     |                     | 0.064***<br>(0.008) | 0.075***<br>(0.011) |                     |                     | 0.060***<br>(0.014) |                     |                     | 0.023**<br>(0.010)  |                    |
| > 3 Beg., > 200 years |  |                     |                     |                     | 0.059***<br>(0.004) | 0.051***<br>(0.002) |                     | 0.026***<br>(0.007) |                     |                     | -0.010<br>(0.010)   |                    |
| Exposure (centuries)  |  |                     |                     | 0.006***<br>(0.001) |                     | 0.006***<br>(0.001) |                     |                     | 0.005***<br>(0.001) |                     |                     | 0.002**<br>(0.001) |
| Fixed-effects         | No                                     | No                  | No                  | Canton              | Canton             |
| Geography             | No                                     | No                  | No                  | No                  | No                  | No                  | Yes                 | Yes                 | Yes                 | Yes                 | Yes                 | Yes                |
| Demography            | No                                     | No                  | No                  | No                  | No                  | No                  | No                  | No                  | No                  | Yes                 | Yes                 | Yes                |
| Observations          | 2549                                   | 2549                | 2549                | 2549                | 2549                | 2549                | 2549                | 2549                | 2549                | 2549                | 2549                | 2549               |
| R <sup>2</sup>        | 0.025                                  | 0.028               | 0.024               | 0.204               | 0.206               | 0.201               | 0.216               | 0.218               | 0.212               | 0.409               | 0.410               | 0.409              |

# OLS Results: Female literacy

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| Dep. variable: Female lit. index, 1866 |                     |                   |                     |                     |                     |                     |                     |                     |                    |                     |                    |        |
|--|---------------------|-------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|---------------------|--------------------|--------|
|  | Baseline            |                   |                     | Fixed-effects       |                     |                     | Geography           |                     |                    | All                 |                    |        |
|  | (1)                 | (2)               | (3)                 | (4)                 | (5)                 | (6)                 | (7)                 | (8)                 | (9)                | (10)                | (11)               | (12)   |
| Beguinage (0/1)                        | 0.055***<br>(0.011) |                   |                     | 0.061***<br>(0.012) |                     |                     | 0.052***<br>(0.012) |                     |                    | 0.040***<br>(0.013) |                    |        |
| <i>Intensity</i>                       |                     |                   |                     |                     |                     |                     |                     |                     |                    |                     |                    |        |
| 1 Beg., < 200 years                    |                     | 0.028*<br>(0.016) |                     |                     | 0.050***<br>(0.016) |                     |                     | 0.044***<br>(0.015) |                    |                     | 0.038**<br>(0.016) |        |
| 1 Beg., > 200 years                    |                     |                   | 0.063***<br>(0.018) |                     | 0.062***<br>(0.019) |                     |                     | 0.061***<br>(0.018) |                    |                     | 0.041**<br>(0.018) |        |
| > 1 Beg., > 200 years                  |                     |                   |                     | 0.101***<br>(0.020) | 0.131***<br>(0.031) |                     |                     | 0.106***<br>(0.037) |                    |                     | 0.082**<br>(0.035) |        |
| > 3 Beg., > 200 years                  |                     |                   | 0.048***<br>(0.015) |                     | 0.027<br>(0.018)    |                     |                     | -0.013<br>(0.025)   |                    |                     | -0.039<br>(0.035)  |        |
| Exposure (centuries)                   |                     |                   |                     | 0.008***<br>(0.002) |                     | 0.007***<br>(0.002) |                     |                     | 0.006**<br>(0.002) |                     | 0.006**<br>(0.003) |        |
| Fixed-effects                          | No                  | No                | No                  | Canton              | Canton              | Canton              | Canton              | Canton              | Canton             | Canton              | Canton             | Canton |
| Geography                              | No                  | No                | No                  | No                  | No                  | No                  | Yes                 | Yes                 | Yes                | Yes                 | Yes                | Yes    |
| Demography                             | No                  | No                | No                  | No                  | No                  | No                  | No                  | No                  | No                 | Yes                 | Yes                | Yes    |
| Observations                           | 2549                | 2549              | 2549                | 2549                | 2549                | 2549                | 2549                | 2549                | 2549               | 2549                | 2549               | 2549   |
| R <sup>2</sup>                         | 0.005               | 0.006             | 0.005               | 0.205               | 0.206               | 0.203               | 0.217               | 0.219               | 0.215              | 0.233               | 0.234              | 0.232  |

# Robustness

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- Sub-sample regressions, OLS and IV:
  - Only towns 5km, 10km and 20km away from a beguinage. Buffers
  - Removing municipalities with an ongoing beguinage at census time. Ongoing
- Regressors, OLS and/or IV:
  - Randomly allocated beguinages: significant only in 20% of the cases.
  - Male literacy rate as regressor. Male lit.
  - Municipal charter (instrument) as regressor. Charters
  - Other: alternative definition of exposure, distance to beguinage as regressor. Other

## Threats to Identification

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- Potential endogeneity of beguinage location:
  - selection of towns that were more favourable to women.
- Instrumental variable approach:
  - Binary variable indicating whether a town obtained a "municipal charter" before the 13th century.

## Treats to Identification: Instrument

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- Municipal charters typically:
  - increased municipal autonomy,
  - conveyed benefits for citizens: partial exemption from war and a municipal judicial system,
  - allowed towns to organize a market and establish gilds, and
  - charters granted after the lord secured a hefty payment.
- Considering the secular occupations of beguines (education, spinning, trade), towns with a municipal charter are likely to attract them as they can be more economically dynamic (e.g. presence of a market).

## Threats to Identification: Instrument

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- Exclusion restriction:
  - Historical evidence suggests that the acquisition of a charter was not introducing any institution promoting gender equality.
  - Towns granted a municipal charter could have grown larger and, thus, education would have been a more productive investment.
    - We compute the growth rate of towns between 1437 and 1866 (only for a sub-sample).
    - We cannot reject equal growth rate for those with and without a municipal charter.
  - Our outcome of interest is **not literacy per se** but the comparison between male and female outcomes.

# Threats to Identification: Instrument

- Compare literacy among municipalities with and without a municipal charter.

|   | Lit. eq. index, 1866<br>(1) | Fem. lit. share, 1866<br>(2) | Fem. lit. index, 1866<br>(3) |
|---|-----------------------------|------------------------------|------------------------------|
| Panel A: Municipalities with beguinage    |                             |                              |                              |
| Municipal charter                         | -0.027<br>(0.044)           | -0.002<br>(0.014)            | -0.012<br>(0.046)            |
| Fixed-effects                             | Arrond.                     | Arrond.                      | Arrond.                      |
| Geography                                 | Yes                         | Yes                          | Yes                          |
| Demography                                | Yes                         | Yes                          | Yes                          |
| Observations                              | 70                          | 70                           | 70                           |
| R <sup>2</sup>                            | 0.974                       | 0.959                        | 0.916                        |
| Panel B: Municipalities without beguinage |                             |                              |                              |
| Municipal charter                         | 0.037<br>(0.034)            | 0.010<br>(0.011)             | 0.038<br>(0.037)             |
| Fixed-effects                             | Canton                      | Canton                       | Canton                       |
| Geography                                 | Yes                         | Yes                          | Yes                          |
| Demography                                | Yes                         | Yes                          | Yes                          |
| Observations                              | 2479                        | 2479                         | 2479                         |
| R <sup>2</sup>                            | 0.406                       | 0.391                        | 0.231                        |

# IV Results: Female Literacy

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|                       | Lit. eq. index, 1866 |                    |        | Fem. lit. share, 1866 |                    |        | Fem. lit. index, 1866 |                    |        |
|-----------------------|----------------------|--------------------|--------|-----------------------|--------------------|--------|-----------------------|--------------------|--------|
|                       | (1)                  | (2)                | (3)    | (4)                   | (5)                | (6)    | (7)                   | (8)                | (9)    |
| Beguinage (0/1)       | 0.065**<br>(0.026)   |                    |        | 0.018**<br>(0.008)    |                    |        | 0.065**<br>(0.027)    |                    |        |
| <i>Intensity</i>      |                      |                    |        |                       |                    |        |                       |                    |        |
| No Beg.               | Ref.                 |                    |        | Ref.                  |                    |        | Ref.                  |                    |        |
| 1 Beg., < 200 years   | 0.064<br>(0.057)     |                    |        | 0.025<br>(0.017)      |                    |        | 0.073<br>(0.057)      |                    |        |
| 1 Beg., > 200 years   | 0.072***<br>(0.024)  |                    |        | 0.015***<br>(0.006)   |                    |        | 0.062***<br>(0.020)   |                    |        |
| > 1 Beg., > 200 years | 0.131***<br>(0.049)  |                    |        | 0.035***<br>(0.013)   |                    |        | 0.124***<br>(0.046)   |                    |        |
| > 3 Beg., > 200 years | -0.068<br>(0.056)    |                    |        | -0.015<br>(0.015)     |                    |        | -0.058<br>(0.053)     |                    |        |
| Exposure (centuries)  |                      | 0.012**<br>(0.005) |        |                       | 0.004**<br>(0.002) |        |                       | 0.012**<br>(0.005) |        |
| Fixed-effects         | Colony               | Colony             | Colony | Colony                | Colony             | Colony | Colony                | Colony             | Colony |
| Geography             | Yes                  | Yes                | Yes    | Yes                   | Yes                | Yes    | Yes                   | Yes                | Yes    |
| Demography            | Yes                  | Yes                | Yes    | Yes                   | Yes                | Yes    | Yes                   | Yes                | Yes    |
| 1st-st. F-val.        | 54.9                 | 3.8                | 28.4   | 54.9                  | 3.8                | 28.4   | 54.9                  | 3.8                | 28.4   |
| Observations          | 2549                 | 2549               | 2549   | 2549                  | 2549               | 2549   | 2549                  | 2549               | 2549   |
| R <sup>2</sup>        | 0.431                | 0.432              | 0.430  | 0.409                 | 0.409              | 0.408  | 0.232                 | 0.233              | 0.230  |

# Beguinages and Gender Equality

- Possible mechanisms linking beguinages with gender equality:
  - Role modelling:  
Exposition to independent women being successful without male intervention → Change in perceptions of women.
  - Increased opportunities beyond marriage and monastic life  
Better bargaining position for women leading to better outcomes.

|                 | Lit. eq. index, 1866 | Fem. lit. share, 1866 | Fem. lit. index, 1866 |
|-----------------|----------------------|-----------------------|-----------------------|
|                 | (1)                  | (2)                   | (3)                   |
| Fem. monastery  | 0.046**<br>(0.019)   | 0.014***<br>(0.005)   | 0.049**<br>(0.019)    |
| Masc. monastery | -0.011<br>(0.012)    | -0.003<br>(0.004)     | -0.012<br>(0.013)     |
| Other monastery | 0.010<br>(0.018)     | 0.004<br>(0.006)      | 0.012<br>(0.019)      |
| Fixed-effects   | Canton               | Canton                | Canton                |
| Geography       | Yes                  | Yes                   | Yes                   |
| Demography      | Yes                  | Yes                   | Yes                   |
| Observations    | 2479                 | 2479                  | 2479                  |
| R <sup>2</sup>  | 0.405                | 0.391                 | 0.231                 |

## A Theoretical Model

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- Economy populated by adult men and women.
- Genders differ in outside options with respect to marriage:
  - Women:  $f_{i,t} = f$ .
  - Men: distributed according to a Pareto distribution.  
 $m_{i,t} \sim P(\mu_t/2, 2)$ ,  $\mu_t$  average men.
- Individuals randomly match and bargain over marital surplus  $y$ .
- Marriage possible if and only if:  $f + m_{i,t} \leq y$ .

$$\max_s (sy - m_{i,t})^\beta ((1-s)y - f)^{1-\beta}$$

- Optimal sharing rule:

$$s^* = \frac{m_{i,t}(1-\beta) + \beta(y-f)}{y}$$

## A Theoretical Model

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- Married couples have children: a son and a daughter.
- Daughters inherit their mothers' trait:  $f$ .
- Sons observe the **average** amount shared  $s^*y$  (only married households share) at the social level:
- Their type is a draw from a Pareto distribution with average  $\mu_{t+1}$ .

$$\mu_{t+1} = E(s^*y|m_{i,t} \leq y - f) = y \frac{\int_{-\infty}^{y-f} s^*(m_{i,t})f(m_{i,t})dm_{i,t}}{\int_{-\infty}^{y-f} f(m_{i,t})dm_{i,t}}$$

- It is possible to write  $\mu_{t+1} = f(\mu_t)$

# A Theoretical Model

## Proposition

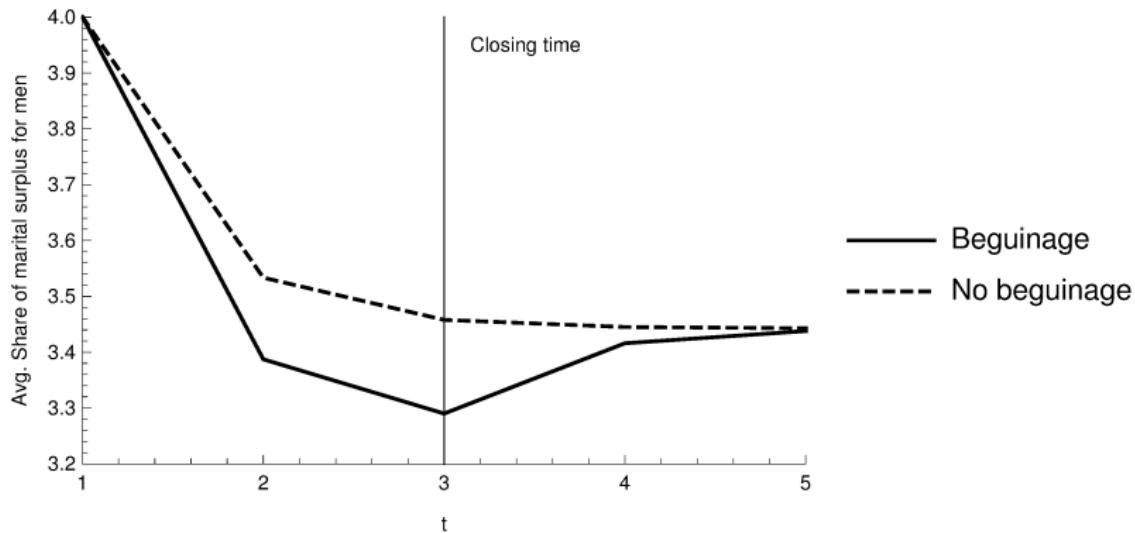
If men enjoy initially a good outside option ( $\mu_0$  is large),  $\mu_t$  decreases over time and converges to a unique, asymptotically stable steady-state:

$$\mu = \lim_{t \rightarrow \infty} \mu_t = \frac{1}{2}(y - f)\sqrt{\beta}(\sqrt{8 + \beta} - \sqrt{\beta})t$$

- A beguinage increases the outside option for women:  $f^b > f$ .
- The value of  $\mu$  at the steady-state decreases:  $\frac{\partial \mu}{\partial f} < 0$ .
  - Women enjoy a larger share of marital output → more gender equality.

- **Illustration:**

- Create a beguinage and close it some periods after.
- Women are better-off during the entire path.



## Concluding Remarks

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- We provide new evidence on the long-lasting effects institutions have on gender-related outcomes.
- We find that towns that held a beguine community, were more favourable towards women:
  - literacy rates were more similar,
- We can derive a causal effect between the presence of beguine communities and improved female outcomes.
- Results are compatible with a model of cultural transmission highlighting the role of the marriage market.

## APPENDIX

# Robustness: Buffers around beguinages, 5km: OLS

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|                       | Lit. eq. index, 1866 |                   |                   | Beguinage < 5km       |                    |                    | Fem. lit. index, 1866 |                    |                   |
|-----------------------|----------------------|-------------------|-------------------|-----------------------|--------------------|--------------------|-----------------------|--------------------|-------------------|
|                       |                      |                   |                   | Fem. lit. share, 1866 |                    |                    |                       |                    |                   |
|                       | (1)                  | (2)               | (3)               | (4)                   | (5)                | (6)                | (7)                   | (8)                | (9)               |
| Beguinage (0/1)       | 0.040**<br>(0.020)   |                   |                   | 0.012**<br>(0.006)    |                    |                    | 0.041**<br>(0.020)    |                    |                   |
| <i>Intensity</i>      |                      |                   |                   |                       |                    |                    |                       |                    |                   |
| No Beg.               |                      | Ref.              |                   |                       | Ref.               |                    |                       | Ref.               |                   |
| 1 Beg., < 200 years   |                      | 0.039*<br>(0.021) |                   |                       | 0.014**<br>(0.006) |                    |                       | 0.041*<br>(0.021)  |                   |
| 1 Beg., > 200 years   |                      | 0.037<br>(0.027)  |                   |                       | 0.009<br>(0.008)   |                    |                       | 0.035<br>(0.027)   |                   |
| > 1 Beg., > 200 years |                      | 0.093*<br>(0.050) |                   |                       | 0.028**<br>(0.013) |                    |                       | 0.096**<br>(0.047) |                   |
| > 3 Beg., > 200 years |                      | -0.006<br>(0.041) |                   |                       | 0.002<br>(0.011)   |                    |                       | 0.005<br>(0.039)   |                   |
| Exposure (centuries)  |                      |                   | 0.007*<br>(0.004) |                       |                    | 0.002**<br>(0.001) |                       |                    | 0.007*<br>(0.003) |
| Controls              |                      |                   |                   |                       |                    |                    |                       |                    |                   |
| Fixed-effects         | Canton               | Canton            | Canton            | Canton                | Canton             | Canton             | Canton                | Canton             | Canton            |
| Geography             | Yes                  | Yes               | Yes               | Yes                   | Yes                | Yes                | Yes                   | Yes                | Yes               |
| Demography            | Yes                  | Yes               | Yes               | Yes                   | Yes                | Yes                | Yes                   | Yes                | Yes               |
| Observations          | 371                  | 371               | 371               | 371                   | 371                | 371                | 371                   | 371                | 371               |
| R <sup>2</sup>        | 0.661                | 0.664             | 0.660             | 0.620                 | 0.623              | 0.619              | 0.478                 | 0.482              | 0.477             |

# Robustness: Buffers around beguinages, 10km: OLS

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|                       | Lit. eq. index, 1866 |                    |        | Beguinage < 10km    |                    |        | Fem. lit. index, 1866 |                    |        |
|-----------------------|----------------------|--------------------|--------|---------------------|--------------------|--------|-----------------------|--------------------|--------|
|                       | (1)                  | (2)                | (3)    | (4)                 | (5)                | (6)    | (7)                   | (8)                | (9)    |
| Beguinage (0/1)       | 0.042***<br>(0.015)  |                    |        | 0.012***<br>(0.004) |                    |        | 0.040***<br>(0.015)   |                    |        |
| <i>Intensity</i>      |                      |                    |        |                     |                    |        |                       |                    |        |
| No Beg.               | Ref.                 |                    |        | Ref.                |                    |        | Ref.                  |                    |        |
| 1 Beg., < 200 years   | 0.033**<br>(0.016)   |                    |        | 0.012**<br>(0.005)  |                    |        | 0.034**<br>(0.017)    |                    |        |
| 1 Beg., > 200 years   | 0.047**<br>(0.021)   |                    |        | 0.012**<br>(0.006)  |                    |        | 0.043**<br>(0.020)    |                    |        |
| > 1 Beg., > 200 years | 0.099**<br>(0.041)   |                    |        | 0.029**<br>(0.011)  |                    |        | 0.097**<br>(0.040)    |                    |        |
| > 3 Beg., > 200 years | -0.036<br>(0.040)    |                    |        | -0.008<br>(0.011)   |                    |        | -0.034<br>(0.039)     |                    |        |
| Exposure (centuries)  |                      | 0.007**<br>(0.003) |        |                     | 0.002**<br>(0.001) |        |                       | 0.007**<br>(0.003) |        |
| Controls              |                      |                    |        |                     |                    |        |                       |                    |        |
| Fixed-effects         | Canton               | Canton             | Canton | Canton              | Canton             | Canton | Canton                | Canton             | Canton |
| Geography             | Yes                  | Yes                | Yes    | Yes                 | Yes                | Yes    | Yes                   | Yes                | Yes    |
| Demography            | Yes                  | Yes                | Yes    | Yes                 | Yes                | Yes    | Yes                   | Yes                | Yes    |
| Observations          | 1114                 | 1114               | 1114   | 1114                | 1114               | 1114   | 1114                  | 1114               | 1114   |
| R <sup>2</sup>        | 0.516                | 0.518              | 0.515  | 0.488               | 0.490              | 0.488  | 0.317                 | 0.319              | 0.316  |

# Robustness: Buffers around beguinages, 20km: OLS

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|                       | Lit. eq. index, 1866 |                     |        | Beguinage < 20km    |                     |        | Fem. lit. index, 1866 |                     |        |
|-----------------------|----------------------|---------------------|--------|---------------------|---------------------|--------|-----------------------|---------------------|--------|
|                       | (1)                  | (2)                 | (3)    | (4)                 | (5)                 | (6)    | (7)                   | (8)                 | (9)    |
|                       | Beguinage (0/1)      | 0.045***<br>(0.014) |        |                     | 0.012***<br>(0.004) |        |                       | 0.043***<br>(0.013) |        |
| <i>Intensity</i>      |                      |                     |        |                     |                     |        |                       |                     |        |
| No Beg.               | Ref.                 |                     |        | Ref.                |                     |        | Ref.                  |                     |        |
| 1 Beg., < 200 years   | 0.042***<br>(0.016)  |                     |        | 0.014***<br>(0.005) |                     |        | 0.042**<br>(0.016)    |                     |        |
| 1 Beg., > 200 years   | 0.048**<br>(0.020)   |                     |        | 0.011**<br>(0.005)  |                     |        | 0.043**<br>(0.018)    |                     |        |
| > 1 Beg., > 200 years | 0.090**<br>(0.039)   |                     |        | 0.025**<br>(0.010)  |                     |        | 0.086**<br>(0.037)    |                     |        |
| > 3 Beg., > 200 years | -0.033<br>(0.039)    |                     |        | -0.007<br>(0.010)   |                     |        | -0.030<br>(0.037)     |                     |        |
| Exposure (centuries)  |                      | 0.006**<br>(0.003)  |        |                     | 0.002**<br>(0.001)  |        |                       | 0.006**<br>(0.003)  |        |
| Controls              |                      |                     |        |                     |                     |        |                       |                     |        |
| Fixed-effects         | Canton               | Canton              | Canton | Canton              | Canton              | Canton | Canton                | Canton              | Canton |
| Geography             | Yes                  | Yes                 | Yes    | Yes                 | Yes                 | Yes    | Yes                   | Yes                 | Yes    |
| Demography            | Yes                  | Yes                 | Yes    | Yes                 | Yes                 | Yes    | Yes                   | Yes                 | Yes    |
| Observations          | 2060                 | 2060                | 2060   | 2060                | 2060                | 2060   | 2060                  | 2060                | 2060   |
| R <sup>2</sup>        | 0.435                | 0.436               | 0.433  | 0.419               | 0.420               | 0.418  | 0.243                 | 0.245               | 0.242  |

# Robustness: Buffers around beguinages, 5km: IV

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|                      | Lit. eq. index, 1866 |        |                   | Beguinage < 5km     |        |                    | Fem. lit. index, 1866 |        |                    |
|----------------------|----------------------|--------|-------------------|---------------------|--------|--------------------|-----------------------|--------|--------------------|
|                      | (1)                  | (2)    | (3)               | (4)                 | (5)    | (6)                | (7)                   | (8)    | (9)                |
| Beguinage (0/1)      | 0.053***<br>(0.018)  |        |                   | 0.016***<br>(0.005) |        |                    | 0.055***<br>(0.018)   |        |                    |
| Exposure (centuries) |                      |        | 0.009*<br>(0.005) |                     |        | 0.003**<br>(0.001) |                       |        | 0.011**<br>(0.005) |
| Controls             |                      |        |                   |                     |        |                    |                       |        |                    |
| Fixed-effects        | Canton               | Canton | Canton            | Canton              | Canton | Canton             | Canton                | Canton | Canton             |
| Geography            | Yes                  | Yes    | Yes               | Yes                 | Yes    | Yes                | Yes                   | Yes    | Yes                |
| Demography           | Yes                  | Yes    | Yes               | Yes                 | Yes    | Yes                | Yes                   | Yes    | Yes                |
| Observations         | 301                  |        | 371               | 301                 |        | 371                | 301                   |        | 371                |
| R <sup>2</sup>       | 0.633                |        | 0.659             | 0.593               |        | 0.618              | 0.415                 |        | 0.475              |
| 1st-stage F-val.     | 213.1                |        | 24.4              | 213.1               |        | 24.4               | 213.1                 |        | 24.4               |

# Robustness: Buffers around beguinages, 10km: IV

|                       | Lit. eq. index, 1866 |                   |       | Beguinage < 10km<br>Fem. lit. share, 1866 |                    |       | Fem. lit. index, 1866 |                   |       |
|-----------------------|----------------------|-------------------|-------|---|--------------------|-------|-----------------------|-------------------|-------|
|                       | (1)                  | (2)               | (3)   | (4)                                       | (5)                | (6)   | (7)                   | (8)               | (9)   |
| Beguinage (0/1)       | 0.090***<br>(0.025)  |                   |       | 0.023***<br>(0.007)                       |                    |       | 0.085***<br>(0.025)   |                   |       |
| <i>Intensity</i>      |                      |                   |       |   |                    |       |                       |                   |       |
| No Beg.               | Ref.                 |                   |       | Ref.                                      |                    |       | Ref.                  |                   |       |
| 1 Beg., < 200 years   | 0.079<br>(0.052)     |                   |       | 0.031**<br>(0.016)                        |                    |       | 0.091*<br>(0.053)     |                   |       |
| 1 Beg., > 200 years   | 0.073***<br>(0.026)  |                   |       | 0.018***<br>(0.007)                       |                    |       | 0.065***<br>(0.023)   |                   |       |
| > 1 Beg., > 200 years | 0.117**<br>(0.048)   |                   |       | 0.033***<br>(0.013)                       |                    |       | 0.113**<br>(0.045)    |                   |       |
| > 3 Beg., > 200 years | -0.041<br>(0.048)    |                   |       | -0.006<br>(0.012)                         |                    |       | -0.031<br>(0.046)     |                   |       |
| Exposure (centuries)  |                      | 0.008*<br>(0.004) |       |   | 0.003**<br>(0.001) |       |                       | 0.008*<br>(0.004) |       |
| <i>Controls</i>       |                      |                   |       |   |                    |       |                       |                   |       |
| Fixed-effects         | Canon                | Canon             | Canon | Canon                                     | Canon              | Canon | Canon                 | Canon             | Canon |
| Geography             | Yes                  | Yes               | Yes   | Yes                                       | Yes                | Yes   | Yes                   | Yes               | Yes   |
| Demography            | Yes                  | Yes               | Yes   | Yes                                       | Yes                | Yes   | Yes                   | Yes               | Yes   |
| Observations          | 723                  | 1114              | 1114  | 723                                       | 1114               | 1114  | 723                   | 1114              | 1114  |
| R <sup>2</sup>        | 0.516                | 0.516             | 0.515 | 0.486                                     | 0.487              | 0.488 | 0.305                 | 0.316             | 0.316 |
| 1st-stage F-val.      | 147.4                | 3.7               | 32.7  | 147.4                                     | 3.7                | 32.7  | 147.4                 | 3.7               | 32.7  |

# Robustness: Buffers around beguinages, 20km: IV

|                       | Lit. eq. index, 1866 |                    |        | Beguinage < 20km<br>Fem. lit. share, 1866 |                    |        | Fem. lit. index, 1866 |                    |        |
|-----------------------|----------------------|--------------------|--------|---|--------------------|--------|-----------------------|--------------------|--------|
|                       | (1)                  | (2)                | (3)    | (4)                                       | (5)                | (6)    | (7)                   | (8)                | (9)    |
| Beguinage (0/1)       | 0.097***<br>(0.024)  |                    |        | 0.024***<br>(0.007)                       |                    |        | 0.090***<br>(0.023)   |                    |        |
| <i>Intensity</i>      |                      |                    |        |   |                    |        |                       |                    |        |
| No Beg.               | Ref.                 |                    |        | Ref.                                      |                    |        | Ref.                  |                    |        |
| 1 Beg., < 200 years   | 0.078<br>(0.058)     |                    |        | 0.030*<br>(0.017)                         |                    |        | 0.089<br>(0.058)      |                    |        |
| 1 Beg., > 200 years   | 0.076***<br>(0.025)  |                    |        | 0.017***<br>(0.006)                       |                    |        | 0.066***<br>(0.021)   |                    |        |
| > 1 Beg., > 200 years | 0.139***<br>(0.052)  |                    |        | 0.038***<br>(0.014)                       |                    |        | 0.133***<br>(0.049)   |                    |        |
| > 3 Beg., > 200 years | -0.061<br>(0.060)    |                    |        | -0.012<br>(0.015)                         |                    |        | -0.049<br>(0.056)     |                    |        |
| Exposure (centuries)  |                      | 0.013**<br>(0.006) |        |   | 0.004**<br>(0.002) |        |                       | 0.013**<br>(0.006) |        |
| <i>Controls</i>       |                      |                    |        |   |                    |        |                       |                    |        |
| Fixed-effects         | Canton               | Canton             | Canton | Canton                                    | Canton             | Canton | Canton                | Canton             | Canton |
| Geography             | Yes                  | Yes                | Yes    | Yes                                       | Yes                | Yes    | Yes                   | Yes                | Yes    |
| Demography            | Yes                  | Yes                | Yes    | Yes                                       | Yes                | Yes    | Yes                   | Yes                | Yes    |
| Observations          | 955                  | 2060               | 2060   | 955                                       | 2060               | 2060   | 955                   | 2060               | 2060   |
| R <sup>2</sup>        | 0.464                | 0.434              | 0.432  | 0.442                                     | 0.418              | 0.416  | 0.255                 | 0.243              | 0.240  |
| 1st-stage F-val.      | 153.7                | 3.8                | 26.9   | 153.7                                     | 3.8                | 26.9   | 153.7                 | 3.8                | 26.9   |

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# Robustness: No open beguinage, OLS

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|                       | Lit. eq. index, 1866 |                    |        | No open beguinage   |                    |        | Fem. lit. index, 1866 |                    |        |
|-----------------------|----------------------|--------------------|--------|---------------------|--------------------|--------|-----------------------|--------------------|--------|
|                       | (1)                  | (2)                | (3)    | (4)                 | (5)                | (6)    | (7)                   | (8)                | (9)    |
| Beguinage (0/1)       | 0.046***<br>(0.014)  |                    |        | 0.012***<br>(0.004) |                    |        | 0.042***<br>(0.014)   |                    |        |
| <i>Intensity</i>      |                      |                    |        |                     |                    |        |                       |                    |        |
| No Beg.               |                      | Ref.               |        |                     | Ref.               |        |                       | Ref.               |        |
| 1 Beg., < 200 years   | 0.039**<br>(0.015)   |                    |        | 0.012***<br>(0.005) |                    |        | 0.038**<br>(0.016)    |                    |        |
| 1 Beg., > 200 years   | 0.056**<br>(0.025)   |                    |        | 0.013**<br>(0.006)  |                    |        | 0.049**<br>(0.022)    |                    |        |
| > 1 Beg., > 200 years | 0.088**<br>(0.036)   |                    |        | 0.023**<br>(0.010)  |                    |        | 0.082**<br>(0.035)    |                    |        |
| > 3 Beg., > 200 years | -0.041<br>(0.037)    |                    |        | -0.011<br>(0.010)   |                    |        | -0.040<br>(0.036)     |                    |        |
| Exposure (centuries)  |                      | 0.007**<br>(0.003) |        |                     | 0.002**<br>(0.001) |        |                       | 0.006**<br>(0.003) |        |
| Fixed-effects         | Colton               | Colton             | Colton | Colton              | Colton             | Colton | Colton                | Colton             | Colton |
| Geography             | Yes                  | Yes                | Yes    | Yes                 | Yes                | Yes    | Yes                   | Yes                | Yes    |
| Demography            | Yes                  | Yes                | Yes    | Yes                 | Yes                | Yes    | Yes                   | Yes                | Yes    |
| Observations          | 2539                 | 2539               | 2539   | 2539                | 2539               | 2539   | 2539                  | 2539               | 2539   |
| R <sup>2</sup>        | 0.428                | 0.429              | 0.427  | 0.407               | 0.407              | 0.406  | 0.231                 | 0.232              | 0.230  |

# Robustness: No open beguinage, IV

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|                       | Lit. eq. index, 1866 |                    |        | No open beguinage     |                    |        | Fem. lit. index, 1866 |                    |        |
|-----------------------|----------------------|--------------------|--------|-----------------------|--------------------|--------|-----------------------|--------------------|--------|
|                       |                      |                    |        | Fem. lit. share, 1866 |                    |        |                       |                    |        |
|                       | (1)                  | (2)                | (3)    | (4)                   | (5)                | (6)    | (7)                   | (8)                | (9)    |
| Beguinage (0/1)       | 0.096***<br>(0.021)  |                    |        | 0.025***<br>(0.006)   |                    |        | 0.089***<br>(0.021)   |                    |        |
| <i>Intensity</i>      |                      |                    |        |                       |                    |        |                       |                    |        |
| No Beg.               | Ref.                 |                    |        | Ref.                  |                    |        | Ref.                  |                    |        |
| 1 Beg., < 200 years   | 1.362***<br>(0.397)  |                    |        | 1.362***<br>(0.397)   |                    |        | 1.362***<br>(0.397)   |                    |        |
| 1 Beg., > 200 years   | 0.191<br>(0.141)     |                    |        | 0.191<br>(0.141)      |                    |        | 0.191<br>(0.141)      |                    |        |
| > 1 Beg., > 200 years | 0.637<br>(0.393)     |                    |        | 0.637<br>(0.393)      |                    |        | 0.637<br>(0.393)      |                    |        |
| > 3 Beg., > 200 years | -0.039<br>(0.489)    |                    |        | -0.039<br>(0.489)     |                    |        | -0.039<br>(0.489)     |                    |        |
| Exposure (centuries)  |                      | 0.019**<br>(0.008) |        |                       | 0.006**<br>(0.002) |        |                       | 0.019**<br>(0.008) |        |
| Fixed-effects         | Colton               | Colton             | Colton | Colton                | Colton             | Colton | Colton                | Colton             | Colton |
| Geography             | Yes                  | Yes                | Yes    | Yes                   | Yes                | Yes    | Yes                   | Yes                | Yes    |
| Demography            | Yes                  | Yes                | Yes    | Yes                   | Yes                | Yes    | Yes                   | Yes                | Yes    |
| Observations          | 831                  | 2539               | 2539   | 831                   | 2539               | 2539   | 831                   | 2539               | 2539   |
| R <sup>2</sup>        | 0.463                | 0.411              | 0.424  | 0.440                 | 0.411              | 0.403  | 0.245                 | 0.411              | 0.226  |
| 1st-stage F-val.      | 163.0                | 5.0                | 14.3   | 163.0                 | 5.0                | 14.3   | 163.0                 | 5.0                | 14.3   |

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# Robustness: Male literacy, OLS

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|                       | Lit. eq. index, 1866 |                     |                     | Male literacy       |                     |                     | Fem. lit. index, 1866 |                     |                     |
|-----------------------|----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-----------------------|---------------------|---------------------|
|                       | (1)                  | (2)                 | (3)                 | (4)                 | (5)                 | (6)                 | (7)                   | (8)                 | (9)                 |
| Beguinage (0/1)       | 0.031**<br>(0.012)   |                     |                     | 0.007**<br>(0.003)  |                     |                     | 0.027**<br>(0.011)    |                     |                     |
| Intensity             |                      |                     |                     |                     |                     |                     |                       |                     |                     |
| No Beg.               |                      | Ref.                |                     | Ref.                |                     | Ref.                |                       | Ref.                |                     |
| 1 Beg., < 200 years   |                      | 0.034**<br>(0.014)  |                     | 0.011***<br>(0.004) |                     |                     | 0.033**<br>(0.014)    |                     |                     |
| 1 Beg., > 200 years   |                      | 0.032*<br>(0.019)   |                     | 0.005<br>(0.005)    |                     |                     | 0.025<br>(0.017)      |                     |                     |
| > 1 Beg., > 200 years |                      | 0.060<br>(0.037)    |                     | 0.014<br>(0.010)    |                     |                     | 0.054<br>(0.035)      |                     |                     |
| > 3 Beg., > 200 years |                      | -0.060*<br>(0.033)  |                     | -0.017*<br>(0.009)  |                     |                     | -0.059*<br>(0.032)    |                     |                     |
| Exposure (centuries)  |                      |                     | 0.004<br>(0.003)    |                     |                     | 0.001<br>(0.001)    |                       |                     | 0.003<br>(0.002)    |
| Male lit. rate, 1866  | 0.268***<br>(0.027)  | 0.268***<br>(0.027) | 0.269***<br>(0.027) | 0.093***<br>(0.009) | 0.093***<br>(0.009) | 0.093***<br>(0.009) | 0.281***<br>(0.028)   | 0.281***<br>(0.028) | 0.282***<br>(0.028) |
| Fixed-effects         | Colombia             | Colombia            | Colombia            | Colombia            | Colombia            | Colombia            | Colombia              | Colombia            | Colombia            |
| Geography             | Yes                  | Yes                 | Yes                 | Yes                 | Yes                 | Yes                 | Yes                   | Yes                 | Yes                 |
| Demography            | Yes                  | Yes                 | Yes                 | Yes                 | Yes                 | Yes                 | Yes                   | Yes                 | Yes                 |
| Observations          | 2549                 | 2549                | 2549                | 2549                | 2549                | 2549                | 2549                  | 2549                | 2549                |
| R <sup>2</sup>        | 0.469                | 0.470               | 0.468               | 0.456               | 0.456               | 0.455               | 0.284                 | 0.285               | 0.283               |

# Robustness: Male literacy, IV

|                       | Male literacy        |                     |                     |                       |                     |                     |                       |                     |                     |
|-----------------------|----------------------|---------------------|---------------------|-----------------------|---------------------|---------------------|-----------------------|---------------------|---------------------|
|                       | Lit. eq. index, 1866 |                     |                     | Fem. lit. share, 1866 |                     |                     | Fem. lit. index, 1866 |                     |                     |
|                       | (1)                  | (2)                 | (3)                 | (4)                   | (5)                 | (6)                 | (7)                   | (8)                 | (9)                 |
| Beguinage (0/1)       | 0.057***<br>(0.017)  |                     |                     | 0.012**<br>(0.005)    |                     |                     | 0.050***<br>(0.017)   |                     |                     |
| <i>Intensity</i>      |                      |                     |                     |                       |                     |                     |                       |                     |                     |
| No Beg.               |                      | Ref.                |                     |                       | Ref.                |                     |                       | Ref.                |                     |
| 1 Beg., < 200 years   |                      | 0.038<br>(0.052)    |                     |                       | 0.015<br>(0.015)    |                     |                       | 0.044<br>(0.052)    |                     |
| 1 Beg., > 200 years   |                      | 0.054**<br>(0.023)  |                     |                       | 0.009<br>(0.006)    |                     |                       | 0.042**<br>(0.020)  |                     |
| > 1 Beg., > 200 years |                      | 0.080*<br>(0.046)   |                     |                       | 0.021*<br>(0.012)   |                     |                       | 0.077*<br>(0.044)   |                     |
| > 3 Beg., > 200 years |                      | -0.071<br>(0.052)   |                     |                       | -0.021<br>(0.014)   |                     |                       | -0.069<br>(0.049)   |                     |
| Exposure (centuries)  |                      |                     | 0.008*<br>(0.005)   |                       |                     | 0.002<br>(0.001)    |                       |                     | 0.008<br>(0.005)    |
| Male lit. rate, 1866  | 0.205***<br>(0.035)  | 0.266***<br>(0.026) | 0.268***<br>(0.026) | 0.069***<br>(0.011)   | 0.093***<br>(0.009) | 0.093***<br>(0.009) | 0.213***<br>(0.037)   | 0.280***<br>(0.027) | 0.280***<br>(0.027) |
| Fixed-effects         | Canon                | Canon               | Canon               | Canon                 | Canon               | Canon               | Canon                 | Canon               | Canon               |
| Geography             | Yes                  | Yes                 | Yes                 | Yes                   | Yes                 | Yes                 | Yes                   | Yes                 | Yes                 |
| Demography            | Yes                  | Yes                 | Yes                 | Yes                   | Yes                 | Yes                 | Yes                   | Yes                 | Yes                 |
| Observations          | 973                  | 2549                | 2549                | 973                   | 2549                | 2549                | 973                   | 2549                | 2549                |
| R <sup>2</sup>        | 0.494                | 0.469               | 0.468               | 0.475                 | 0.456               | 0.455               | 0.296                 | 0.284               | 0.283               |
| 1st-stage F-val.      | 197.4                | 3.7                 | 30.5                | 197.4                 | 3.7                 | 30.5                | 197.4                 | 3.7                 | 30.5                |

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# Robustness: Municipal charter, OLS

|                       | Municipal charter    |                  |                  |                       |                  |                  | Fem. lit. index, 1866 |                  |                  |
|-----------------------|----------------------|------------------|------------------|-----------------------|------------------|------------------|-----------------------|------------------|------------------|
|                       | Lit. eq. index, 1866 |                  |                  | Fem. lit. share, 1866 |                  |                  | Fem. lit. index, 1866 |                  |                  |
|                       | (1)                  | (2)              | (3)              | (4)                   | (5)              | (6)              | (7)                   | (8)              | (9)              |
| Beguinage (0/1)       | 0.037**<br>(0.016)   |                  |                  | 0.009**<br>(0.005)    |                  |                  | 0.033**<br>(0.016)    |                  |                  |
| <i>Intensity</i>      |                      |                  |                  |                       |                  |                  |                       |                  |                  |
| No Beg.               | Ref.                 |                  |                  | Ref.                  |                  |                  | Ref.                  |                  |                  |
| 1 Beg., < 200 years   | 0.037**<br>(0.017)   |                  |                  | 0.012**<br>(0.005)    |                  |                  | 0.036**<br>(0.017)    |                  |                  |
| 1 Beg., > 200 years   | 0.044*<br>(0.024)    |                  |                  | 0.009<br>(0.006)      |                  |                  | 0.036*<br>(0.022)     |                  |                  |
| > 1 Beg., >200 years  | 0.084**<br>(0.037)   |                  |                  | 0.021**<br>(0.010)    |                  |                  | 0.076**<br>(0.036)    |                  |                  |
| > 3 Beg., > 200 years | -0.042<br>(0.036)    |                  |                  | -0.010<br>(0.009)     |                  |                  | -0.040<br>(0.034)     |                  |                  |
| Exposure (centuries)  |                      | 0.004<br>(0.003) |                  |                       | 0.001<br>(0.001) |                  |                       | 0.004<br>(0.003) |                  |
| Municipal charter     | 0.016<br>(0.020)     | 0.007<br>(0.021) | 0.025<br>(0.017) | 0.005<br>(0.006)      | 0.004<br>(0.006) | 0.008<br>(0.005) | 0.019<br>(0.020)      | 0.011<br>(0.021) | 0.027<br>(0.018) |
| Fixed-effects         | Canton               | Canton           | Canton           | Canton                | Canton           | Canton           | Canton                | Canton           | Canton           |
| Geography             | Yes                  | Yes              | Yes              | Yes                   | Yes              | Yes              | Yes                   | Yes              | Yes              |
| Demography            | Yes                  | Yes              | Yes              | Yes                   | Yes              | Yes              | Yes                   | Yes              | Yes              |
| Observations          | 2549                 | 2549             | 2549             | 2549                  | 2549             | 2549             | 2549                  | 2549             | 2549             |
| R <sup>2</sup>        | 0.432                | 0.433            | 0.431            | 0.409                 | 0.410            | 0.409            | 0.233                 | 0.234            | 0.232            |

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# Robustness: Distance, alternative exposure, OLS

|   | Lit. eq. index, 1866 | Fem. lit. share, 1866 | Fem. lit. index, 1866 |
|---|----------------------|-----------------------|-----------------------|
|   | (1)                  | (2)                   | (3)                   |
| Panel A: Distance to beguinage as regressor |                      |                       |                       |
| Dist. closest beg. (log-km)                 | -0.014***<br>(0.005) | -0.004***<br>(0.001)  | -0.013***<br>(0.005)  |
| Observations                                | 2549                 | 2549                  | 2549                  |
| R <sup>2</sup>                              | 0.431                | 0.409                 | 0.233                 |
| Panel B: Alternative definition of exposure |                      |                       |                       |
| Alt. exposure (centuries)                   | 0.008***<br>(0.003)  | 0.002**<br>(0.001)    | 0.008***<br>(0.003)   |
| Observations                                | 2549                 | 2549                  | 2549                  |
| R <sup>2</sup>                              | 0.431                | 0.409                 | 0.232                 |
| Controls (common to all Panels)             |                      |                       |                       |
| Fixed-effects                               | Canton               | Canton                | Canton                |
| Geography                                   | Yes                  | Yes                   | Yes                   |
| Demography                                  | Yes                  | Yes                   | Yes                   |

# Robustness: Distance, alternative exposure, IV

|   | Lit. eq. index, 1866 | Fem. lit. share, 1866 | Fem. lit. index, 1866 |
|---|----------------------|-----------------------|-----------------------|
|   | (1)                  | (2)                   | (3)                   |
| Panel A: Distance to beguinage as regressor |                      |                       |                       |
| Dist. closest beg. (log-km)                 | -0.038**<br>(0.016)  | -0.011**<br>(0.005)   | -0.038**<br>(0.016)   |
| Observations                                | 2549                 | 2549                  | 2549                  |
| R <sup>2</sup>                              | 0.426                | 0.405                 | 0.226                 |
| 1st-stage F-val.                            | 34.7                 | 34.7                  | 34.7                  |
| Panel B: Alternative definition of exposure |                      |                       |                       |
| Alt. exposure (centuries)                   | 0.013**<br>(0.005)   | 0.004**<br>(0.002)    | 0.013**<br>(0.005)    |
| Observations                                | 2549                 | 2549                  | 2549                  |
| R <sup>2</sup>                              | 0.431                | 0.409                 | 0.232                 |
| 1st-stage F-val.                            | 36                   | 36                    | 36                    |
| Controls (common to all Panels)             |                      |                       |                       |
| Fixed-effects                               | Canton               | Canton                | Canton                |
| Geography                                   | Yes                  | Yes                   | Yes                   |
| Demography                                  | Yes                  | Yes                   | Yes                   |

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