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

A. Frigo, E. Roca

IRES/IMMAQ
Université catholique de Louvain

December 13, 2017

The Beguine Movement

- Characteristics of the movement:
  - Organized, self-supporting, semi-religious communities of
  - **unmarried or widowed** women of
  - **various** socio-economic origins.
- About the beguines:
  - Followed a religious life.
  - Did **charitable work**: nurses, caring for the needies, etc.
  - Did **remunerated work**: teachers, labourers, traders.
- Geographical scope: mostly in **Low Countries** and neighbouring regions in France and Germany.
- Temporal scope: beguinning of the **13th century** onwards.

The Beguine Movement

- The beguines:
  - **were independent** of any male authority.
  - **did not** take vows, allowing them to
    - **keep and accumulate** property.
    - **leave the beguinage** and wed.

- Beguinages:
  - were **not officially recognized** by any religious institution.
  - were **tolerated** by the Church and secular institutions.
  - were integrated and **part of the urban economy**.

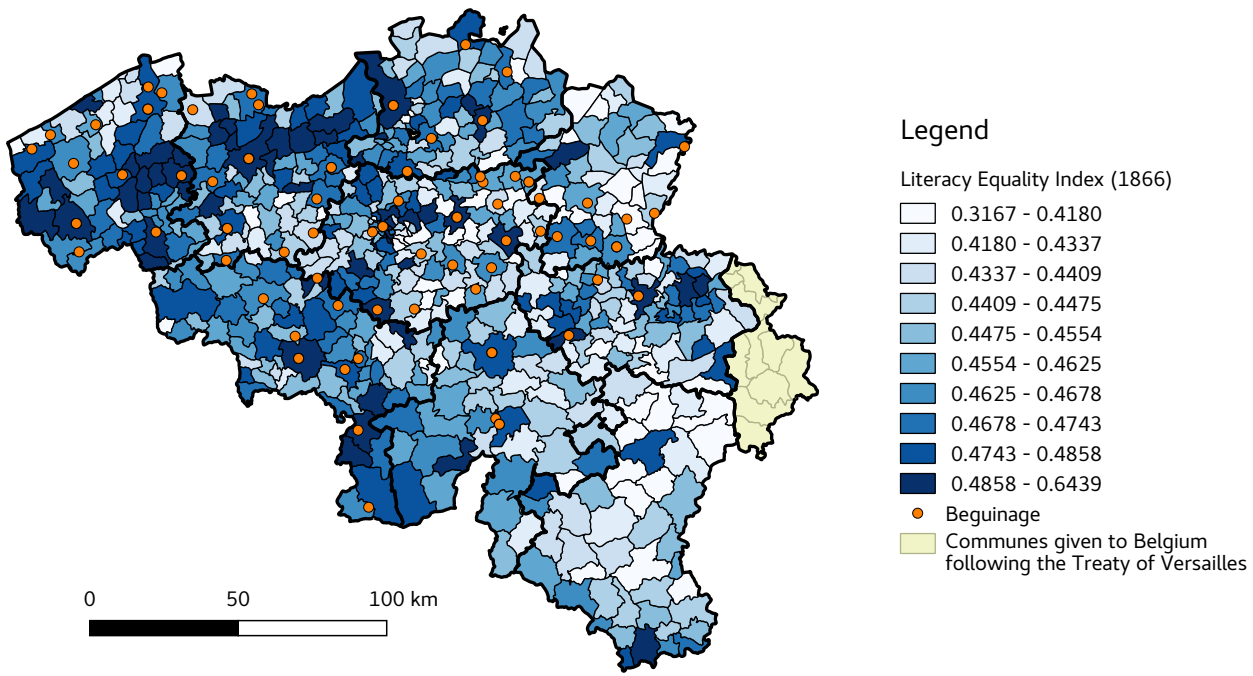
"Ci encoumence li diz des Beguines" (ca. 1260)

If a beguine marries,
that is her vocation,
her vows or profession
are not for life.
Last year she wept, now she prays,
next year she'll take husband.
Now she is Martha, then she is Mary;
now she is chaste, then she marries.
Say only good things of her,
the King would not tolerate otherwise.

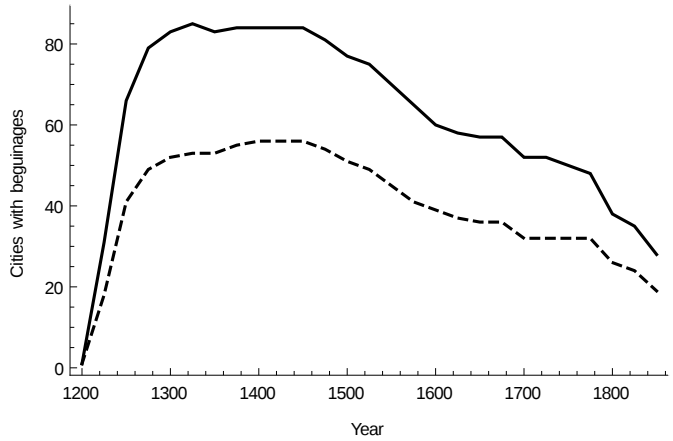
"Se Beguine se marie,
S'est sa conversacions:
Ces veulz, sa prophecions
N'est pas a toute sa vie.
Sest en pleure et cest en prie,
Et cest an panrra baron.
Or est Marthe, or est Marie,
Or se garde, or se marie.
Mais n'en dites se bien non:
Li roix no sofferoit mie."

Geographical Distribution

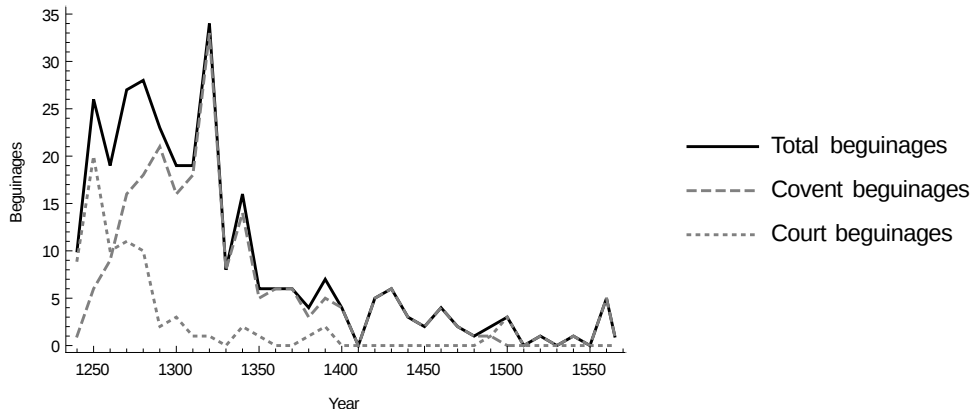
Figure: Beguinages in Belgium and measure of literacy equality



Evolution of Beguinages



Total number of cities with at least one beguinage.



Number of new beguinages created per decade.

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

Beguinages and gender equality

- Two mechanisms linking beguinages with gender equality:
  - Role modelling:
    constant 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.

Research Question

- 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.

Research Question

Do we observe a more gender-equal culture during the 19th century in regions characterized by the presence of beguinages in the Middle Age?

Preview of the Results

- Beguinage presence contributes to reduce the wage gap in agriculture between men and women.
- 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 a host of additional covariates and sub-samples.

Related Literature

- Beguinage historiography:
  - Pye (2014),
  - Simons (2001),
  - de Moor (2013).
- Cultural transmission:
  - Bisin and Verdier (2001),
  - Galor and Moav (2002).
- Long-lasting effects of culture:
  - Qian (2008)
  - Alesina et al. (2013),
  - Andersen et al. (2015),
  - Valencia Caicedo (2015),
  - Galor and Ozak (2016),
  - Giuliano (2017).

Data and Methods

- 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:
  - Wage gap in agriculture.
  - Female literacy **compared** to male literacy.

Data and Methods

- $y_{i,r} = \alpha + \beta beguinage_{i,r} + X_{i,r}\gamma + \kappa_r + \epsilon_{i,r}c$
- 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):
  - Wage gap in agriculture: $\frac{\text{Wage of women}}{\text{Wage of men}}$
  - 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

Variable	Mean	Sd	Max	Min
Beg (0/1)	0.0274	0.163	1	0
Total time with a beg. (centuries)	0.142	1.097	22.44	0
No beguinage	0.973	0.163	1	0
1 beguinage, $<$ 200 years	0.00783	0.0882	1	0
1 beguinage, $>$ 200 years	0.0125	0.111	1	0
$>$ 1 beguinage, $>$ 200 years	0.00313	0.0559	1	0
$>$ 3 beguinages, $>$ 200 years	0.00392	0.0625	1	0
Total men, 1846 (thousands)	0.858	2.198	59.50	0.0190
Total women, 1846 (thousands)	0.862	2.361	64.37	0.0170
Total men, 1866 (thousands)	0.949	2.622	74.17	0.00900
Total women, 1866 (thousands)	0.944	2.909	83.74	0.00900
Population density, canton level	1962.0	4003.3	176825.3	245.9
Lit. equality index, 1866	0.822	0.137	1.808	0.236
Female lit. share, 1866	0.448	0.0424	0.644	0.191
Female lit. index, 1866	0.856	0.122	1.601	0.256
Wage equality index in agri., 1846	0.641	0.142	1.222	0.178
Fem. monasteries	0.0313	0.189	2	0
Masc. monasteries	0.0259	0.175	3	0
Other monasteries	0.0149	0.121	1	0
Distance to Leuven (km)	68.59	32.91	165.8	0.377
Min. distance to beguinage (km)	16.27	18.16	122.0	0
Min. distance to big town (km)	17.97	19.24	113.6	0
Potential caloric yield before 1550	2142.1	72.76	2305.8	1908.8
Potential caloric yield after 1550	8894.7	310.7	9780.8	8292.4
Distance to closest river (km)	9.082	8.757	52.40	0.00230
Steam engines per 1000 people	0.0715	0.689	12.49	0

OLS Results: Log-wage gap in agriculture, 1846

	Logarithm female-to-male wages in agriculture, 1846					
	(1)		(2)		(3)	
Beg (0/1)	0.0410**	(2.18)				
No beg.			Ref.			
1 beg., $<$ 200 years			0.0367	(1.31)		
1 beg., $>$ 200 years			0.0411	(1.49)		
$>$1 beg.,$>$ 200 years			0.0271	(0.58)		
$>$3 beg., $>$ 200 years			0.0985*	(1.82)		
Total time with a beg. (centuries)					0.00853**	(2.03)
Big town	-0.00474	(-0.47)	-0.00423	(-0.41)	-0.00309	(-0.30)
Potential caloric yield, pre-1550	0.000417	(1.37)	0.000417	(1.37)	0.000422	(1.39)
Potential caloric yield, post-1550	-0.0000128	(-0.21)	-0.0000128	(-0.21)	-0.0000143	(-0.23)
Distance to closest big municipality (km)	0.00685	(0.56)	0.00693	(0.56)	0.00663	(0.54)
Distance to closest river (log-km)	0.0197**	(2.46)	0.0198**	(2.47)	0.0198**	(2.48)
Population density, canton level	-0.000000962	(-0.34)	-0.000000925	(-0.33)	-0.000000855	(-0.31)
Steam engines per 1000 people	0.00605	(1.07)	0.00581	(1.03)	0.00602	(1.07)
Arrondissement FE	Yes		Yes		Yes	
Migration	Yes		Yes		Yes	
Demography	Yes		Yes		Yes	
Observations	2507		2507		2507	

t statistics in parentheses. Standard errors clustered at the canton level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Demography: total men and women, literacy rate by gender and female nuptiality rate.

OLS Results: Female literacy

	Literacy Equality Index, 1866					
	(1)		(2)		(3)	
Beg (0/1)	0.0781***	(4.69)				
No beg.			Ref.			
1 beg., <200 years			0.0446**	(2.10)		
1 beg., >200 years			0.111***	(4.44)		
>1 beg., >200 years			0.110***	(2.83)		
>3 beg., >200 years			-0.128	(-1.62)		
Total time with a beg. (centuries)					0.00811**	(2.55)
Big town	0.0469***	(7.20)	0.0465***	(7.41)	0.0493***	(7.40)
Population density, canton level	-0.00000170	(-1.30)	-0.00000174	(-1.34)	-0.00000185	(-1.42)
Steam engines per 1000 people	0.00387	(0.97)	0.00505	(1.25)	0.00389	(0.97)
Wage equality index in agri., 1846	-0.0496**	(-2.17)	-0.0498**	(-2.16)	-0.0502**	(-2.19)
Fem. monas.	0.0341**	(2.11)	0.0453***	(2.61)	0.0396**	(2.34)
Masc. monas.	-0.0158	(-1.03)	-0.0125	(-0.85)	-0.0156	(-1.00)
Other monas.	-0.0113	(-0.55)	-0.0170	(-0.85)	-0.00836	(-0.40)
Schools per 10000 people, 1851	0.00903*	(1.92)	0.00898*	(1.91)	0.00907*	(1.93)
Distance to Leuven (log-km)	0.0338***	(3.39)	0.0352***	(3.49)	0.0345***	(3.45)
Regional FE	Yes		Yes		Yes	
Migration and Demography	Yes		Yes		Yes	
Other controls	Yes		Yes		Yes	
Observations	2507		2507		2507	

t statistics in parentheses. Standard errors clustered at the canton level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Demography: total men and women, literacy rate by gender and female nuptiality rate.

Other controls: share of electors as % of the population. % of professors, % farmers and % industrialists among voters (provincial level).

OLS Results: Female literacy

	Female Literacy Share, 1866					
	(1)		(2)		(3)	
Beg (0/1)	0.0217***	(5.26)				
No beg.			Ref.			
1 beg., <200 years			0.0144**	(2.34)		
1 beg., >200 years			0.0295***	(5.50)		
>1 beg., >200 years			0.0302***	(2.92)		
>3 beg., >200 years			-0.0346	(-1.60)		
Total time with a beg. (centuries)					0.00222**	(2.60)
Big town	0.0145***	(7.64)	0.0144***	(7.78)	0.0152***	(7.86)
Population density, canton level	-0.000000568	(-1.42)	-0.000000581	(-1.46)	-0.000000613	(-1.53)
Steam engines per 1000 people	0.000931	(0.83)	0.00126	(1.11)	0.000937	(0.83)
Wage equality index in agri., 1846	-0.0150**	(-2.09)	-0.0151**	(-2.08)	-0.0152**	(-2.11)
Fem. monas.	0.00830**	(2.07)	0.0114***	(2.69)	0.00988**	(2.38)
Masc. monas.	-0.00322	(-0.74)	-0.00233	(-0.56)	-0.00317	(-0.72)
Other monas.	-0.00249	(-0.41)	-0.00397	(-0.67)	-0.00164	(-0.27)
Schools per 10000 people, 1851	0.00301*	(1.94)	0.00300*	(1.93)	0.00303*	(1.95)
Distance to Leuven (log-km)	0.0106***	(3.44)	0.0110***	(3.50)	0.0108***	(3.49)
Regional FE	Yes		Yes		Yes	
Migration and Demography	Yes		Yes		Yes	
Other Controls	Yes		Yes		Yes	
Observations	2507		2507		2507	

t statistics in parentheses. Standard errors clustered at the canton level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Demography: total men and women, literacy rate by gender and female nuptiality rate.

Other controls: share of electors as % of the population. % of professors, % farmers and % industrialists among voters (provincial level).

OLS Results: Female literacy

	Female Literacy Index, 1866					
	(1)		(2)		(3)	
Beg (0/1)	0.0260**	(2.18)				
No beg.			Ref.			
1 beg., <200 years			0.0131	(0.82)		
1 beg., >200 years			0.0366**	(2.13)		
>1 beg.,>200 years			0.0488	(1.31)		
>3 beg., >200 years			-0.0476	(-1.42)		
Total time with a beg. (centuries)					0.00390	(1.52)
Big town	0.0188***	(3.29)	0.0187***	(3.29)	0.0196***	(3.46)
Population density, canton level	-0.00000139	(-0.97)	-0.00000140	(-0.98)	-0.00000139	(-0.97)
Steam engines per 1000 people	-0.00261	(-0.81)	-0.00216	(-0.67)	-0.00262	(-0.81)
Wage equality index in agri., 1846	-0.0156	(-0.70)	-0.0156	(-0.70)	-0.0159	(-0.71)
Fem. monas.	0.0314**	(2.22)	0.0348**	(2.34)	0.0320**	(2.22)
Masc. monas.	-0.0161	(-1.59)	-0.0147	(-1.50)	-0.0162	(-1.60)
Other monas.	0.0000762	(0.00)	-0.00199	(-0.12)	0.000517	(0.03)
Schools per 10000 people, 1851	0.00468	(1.01)	0.00466	(1.00)	0.00469	(1.01)
Distance to Leuven (log-km)	0.0302***	(2.92)	0.0308***	(2.94)	0.0305***	(2.95)
Regional FE	Yes		Yes		Yes	
Migration and Demography	Yes		Yes		Yes	
Other controls	Yes		Yes		Yes	
Observations	2507		2507		2507	

t statistics in parentheses. Standard errors clustered at the canton level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Demography: total men and women, literacy rate by gender and female nuptiality rate.

Other controls: share of electors as % of the population. % of professors, % farmers and % industrialists among voters (provincial level).

Endogeneity

- 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.

Municipal Charters

- Municipal charters typically:
  - decentralized decision-making, grating municipal authorities power,
  - conveyed benefits for citizens: partial exemption from war and a municipal judicial system,
  - allowed towns to organize a market and establish gilds, and
  - signal prosperous towns: lords required a town to pay a large sum of money before obtaining the charter.
- 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).

Endogeneity

- 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 subsample).
    - 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.

Endogeneity

- We also compare literacy outcomes among municipalities with and without a municipal charter for the subsample of municipalities with a beguinage

	Lit. equality index, 1866		Lit. share, 1866		Lit. index, 1866	
Charter granted before 13th century	-0.0325	(-0.80)	-0.00329	(-0.36)	-0.0129	(-0.48)
Big town	0.0106	(0.21)	0.00833	(0.60)	-0.0152	(-0.41)
Population density, canton level	-0.0000114	(-1.26)	-0.00000250	(-1.24)	-0.00000719	(-0.99)
Steam engines per 1000 people	0.00129	(0.07)	0.00289	(0.65)	0.00220	(0.17)
Wage equality index in agri., 1846	-0.135	(-0.94)	-0.0250	(-0.70)	-0.0276	(-0.29)
Fem. monas.	0.00948	(0.37)	0.000217	(0.04)	0.000147	(0.01)
Masc. monas.	-0.0472	(-1.63)	-0.0101	(-1.43)	-0.0340*	(-1.80)
Other monas.	-0.0286	(-0.57)	-0.00853	(-0.63)	-0.00920	(-0.25)
Schools per 10000 people, 1851	-0.00410	(-0.27)	-0.00120	(-0.33)	-0.00510	(-0.41)
Distance to Leuven (log-km)	-0.0172	(-0.41)	-0.00662	(-0.70)	-0.0235	(-0.91)
Regional FE	Yes		Yes		Yes	
Observations	68		68		68	

t statistics in parentheses. $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Regression results for all three indexes of relative female literacy rates.
Regressions only consider municipalities that ever had a beguinage. Our main variable of interest it whether the same municipality also enjoyed a municipal charter before the 13th century. Standard errors are **not** clustered.

IV Results: Log-wage gap in agriculture, 1846

	Logarithm of female-to-male wages in agriculture, 1846			
	(1)		(2)	
Beg. (0/1)	0.0728**	(2.54)		
Total time with a beg. (centuries)			0.0127*	(1.67)
Total men, 1846 (thousands)	0.0179	(0.75)	0.0235	(0.97)
Total women, 1846 (thousands)	-0.0170	(-0.78)	-0.0257	(-1.10)
Big town	-0.00477	(-0.47)	-0.00292	(-0.29)
Share of literate men, 1866	-0.0897	(-0.99)	-0.0924	(-1.02)
Share of literate women, 1866	0.0598	(0.76)	0.0601	(0.77)
Female nuptiality, 1846	0.0503	(0.31)	0.0486	(0.30)
Potential caloric yield after 1550	-0.0000120	(-0.20)	-0.0000145	(-0.24)
Potential caloric yield before 1550	0.000418	(1.39)	0.000425	(1.42)
Distance to closest big municipality (log-km)	0.00763	(0.63)	0.00714	(0.59)
Distance to closest river (log-km)	0.0198**	(2.51)	0.0202**	(2.54)
Population density, canton level	-0.000000840	(-0.30)	-0.000000652	(-0.24)
Steam engines per 1000 people	0.00616	(1.10)	0.00605	(1.09)
Arrondissement FE	Yes		Yes	
Migration	Yes		Yes	
1st stage F-stat	63.70		29.97	
Observations	2507		2507	

t statistics in parentheses. Standard errors clustered at the canton level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

In Column 1, Probit first-stage including controls measured during the 13th-16th centuries. Column 2, standard 2SLS.

IV Results: Female Literacy

	Literacy equality, 1866		Literacy share, 1866		Literacy index, 1866	
Beg (0/1)	0.0853***		0.0248***		0.0308	
	(3.58)		(3.14)		(1.21)	
Total time with a beg. (centuries)		0.0201***		0.00587***		0.00834
		(2.93)		(3.04)		(1.61)
Big town	0.0469***	0.0490***	0.0145***	0.0151***	0.0188***	0.0194***
	(7.24)	(7.30)	(7.68)	(7.79)	(3.31)	(3.44)
Steam engines per 1000 people	0.00388	0.00374	0.000935	0.000892	-0.00261	-0.00268
	(0.98)	(0.97)	(0.84)	(0.82)	(-0.81)	(-0.85)
Wage equality index in agri., 1846	-0.0497**	-0.0509**	-0.0151**	-0.0154**	-0.0157	-0.0161
	(-2.18)	(-2.22)	(-2.10)	(-2.14)	(-0.71)	(-0.73)
Fem. monas.	0.0325*	0.0272	0.00763	0.00610	0.0303*	0.0273*
	(1.77)	(1.31)	(1.61)	(1.17)	(1.86)	(1.66)
Masc. monas.	-0.0162	-0.0173	-0.00340	-0.00369	-0.0163	-0.0168*
	(-1.07)	(-1.16)	(-0.79)	(-0.87)	(-1.61)	(-1.68)
Other monas.	-0.0121	-0.0139	-0.00283	-0.00331	-0.000448	-0.00152
	(-0.59)	(-0.67)	(-0.46)	(-0.54)	(-0.03)	(-0.09)
Schools per 10000 people, 1851	0.00903*	0.00898*	0.00301*	0.00300*	0.00468	0.00465
	(1.93)	(1.92)	(1.95)	(1.94)	(1.01)	(1.01)
Distance to Leuven (km)	0.0338***	0.0356***	0.0106***	0.0112***	0.0302***	0.0309***
	(3.40)	(3.52)	(3.45)	(3.55)	(2.93)	(2.98)
First-stage F-stat	61.74	30.20	61.74	30.20	61.74	30.20
Region FE	Yes		Yes		Yes	
Migration and Demography	Yes		Yes		Yes	
Other	Yes		Yes		Yes	
Observations	2507		2507		2507	

t statistics in parentheses. Robust standard errors clustered at the canton level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Other controls: % electors. % of professors, % farmers and % industriaists among voters (provincial level). Population density (canton level)

Robustness

- Sub-sample regressions, OLS and IV:
  - Only towns 5Km, 10Km and 20Km away from a beguinage. Buffers
  - Restricting the sample to towns above certain population. Deciles
  - Removing municipalities with an on-going beguinage at census time. On-going
- Regressors, OLS and/or IV:
  - Treat towns less than 5Km from a beguinage as if these had one. True beguinages dropped from regressions. Neighbours
  - Randomly allocated beguinages: significant only in 20% of the cases.
  - Municipal charter (instrument) as regressor. Charters

Concluding Remarks

- 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:
  - wage differentials across genders were smaller, and
  - literacy rates were more similar.
- We can derive a causal effect between the presence of beguine communities and improved female outcomes.

APPENDIX

Size of the Effects

Variable	Mean	Sd
Wage gap in agriculture, 1846	0.6411	0.1417
Beguinage (0/1), OLS	0.0413	
Beguinage (0/1), IV	0.0736	
Total time with beguinage (centuries), OLS	0.00889	
Total time with beguinage (centuries), IV	0.0130	
Literacy eq. index, 1866	0.8220	0.1365
Beguinage (0/1), OLS	0.0789	
Beguinage (0/1), IV	0.0841	
Total time with beguinage (centuries), OLS	0.00784	
Total time with beguinage (centuries), IV	0.0199	
Lit. women / total lit. pop	0.4489	0.042
Beguinage (0/1), OLS	0.0220	
Beguinage (0/1), IV	0.0242	
Total time with beguinage (centuries), OLS	0.00213	
Total time with beguinage (centuries), IV	0.00579	
Share lit. women / share lit. men	0.8559	0.1222
Beguinage (0/1), OLS	0.0266	
Beguinage (0/1), IV	0.0293	
Total time with beguinage (centuries), OLS	0.00360	
Total time with beguinage (centuries), IV	0.00813	

Robustness: Buffers around beguinages: OLS (1)

	Logarithm of female-to-male wage in agriculture, 1846					
	(1)		(2)		(3)	
	Beguinage< 5km		Beguinage< 10km		Beguinage< 20km	
Beg. (0/1)	0.0530	(1.58)	0.0383	(1.61)	0.0332	(1.55)
No beg.	Ref.		Ref.		Ref.	
1 beg., <200 years	0.0537	(1.26)	0.0391	(1.07)	0.0412	(1.26)
1 beg., >200 years	0.0467	(1.03)	0.0390	(1.23)	0.0253	(0.88)
>1 beg., >200 years	0.0823	(1.52)	-0.00380	(-0.08)	0.0116	(0.23)
>3 beg., >200 years	0.119	(1.48)	0.118*	(1.76)	0.102	(1.59)
Total time with a centuries. (beg)	0.00910	(1.57)	0.00754*	(1.76)	0.00679	(1.57)
Observations	365		1097		2033	

t statistics in parentheses. Standard errors clustered at the canton level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Back

Robustness: Buffers around beguinages: OLS (2)

		(1)		(2)		(3)	
		Beguinage< 5km		Beguinage< 10km		Beguinage< 20km	
Fem. Eq. Index	Beg. (0/1)	0.0828***	(3.81)	0.0870***	(4.91)	0.0797***	(4.63)
	No beg.	Ref.		Ref.		Ref.	
	1 beg., <200 years	0.0678**	(2.44)	0.0578**	(2.36)	0.0547**	(2.34)
	>1 beg., >200 years	0.0967***	(3.08)	0.109***	(4.18)	0.102***	(4.00)
	>1 beg., >200 years	0.0871*	(1.94)	0.129***	(3.37)	0.117***	(2.75)
	>3 beg., >200 years	-0.0104	(-0.17)	-0.0739	(-1.16)	-0.0888	(-1.24)
	Total time with a beg. (centuries)	0.0108***	(2.67)	0.0124***	(3.61)	0.00970***	(2.74)
Fem. Lit. Share	Beg. (0/1)	0.0231***	(3.80)	0.0249***	(5.43)	0.0222***	(5.13)
	No beg.	Ref.		Ref.		Ref.	
	1 beg., <200 years	0.0206**	(2.60)	0.0188**	(2.59)	0.0174**	(2.52)
	1 beg., >200 years	0.0254***	(2.96)	0.0293***	(4.78)	0.0269***	(4.70)
	>1 beg., >200 years	0.0251**	(2.35)	0.0375***	(4.02)	0.0326***	(2.92)
	>3 beg., >200 years	-0.0176	(-1.07)	-0.0181	(-1.10)	-0.0230	(-1.21)
	Total time with a beg. (centuries)	0.00305***	(2.85)	0.00359***	(4.01)	0.00271***	(2.89)
Fem. Lit. Index	Beg. (0/1)	0.0198	(1.07)	0.0289**	(2.34)	0.0262**	(2.23)
	No beg.	Ref.		Ref.		Ref.	
	1 beg., <200 years	0.0303	(1.14)	0.0286	(1.42)	0.0258	(1.42)
	1 beg., >200 years	0.0156	(0.66)	0.0303*	(1.79)	0.0271	(1.59)
	>1 beg., >200 years	0.0167	(0.35)	0.0505	(1.50)	0.0483	(1.33)
	>3 beg., >200 years	-0.0317	(-0.69)	-0.0583	(-1.51)	-0.0343	(-0.97)
	Total time with a beg. (centuries)	0.00202	(0.57)	0.00409	(1.62)	0.00373	(1.44)
	Observations	365		1097		2033	

t statistics in parentheses, clustered at the canton level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Back

Robustness: Buffers around beguinages, IV

	(1) Beguinage< 5km		(2) Beguinage< 10km		(3) Beguinage< 20km	
	Panel A: Wage equality index					
Beg. (0/1)	0.0537*	(1.66)	0.0392	(1.36)	0.0465	(1.62)
Total time with a beg. (centuries)	0.0109	(1.20)	0.00778	(1.07)	0.00762	(1.10)
Observations	365		1097		2033	
	Panel B: Literacy equality index					
Beg. (0/1)	0.0929***	(2.78)	0.101***	(3.96)	0.0953***	(3.76)
Total time with a beg. (centuries)	0.0167**	(2.39)	0.0191***	(3.21)	0.0214***	(3.18)
Observations	365		1097		2033	
	Panel C: Female literacy share					
Beg. (0/1)	0.0279***	(2.74)	0.0308***	(4.23)	0.0282***	(3.95)
Total time with a beg. (centuries)	0.00503**	(2.54)	0.00578***	(3.60)	0.00629***	(3.33)
Observations	365		1097		2033	
	Panel D: Female literacy index					
Beg. (0/1)	0.0265	(0.91)	0.0335	(1.43)	0.0360	(1.28)
Total time with a beg.	0.00544	(0.99)	0.00648	(1.55)	0.00855*	(1.72)
Observations	365		1097		2033	

t statistics in parentheses. Standard errors clustered at the canton level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

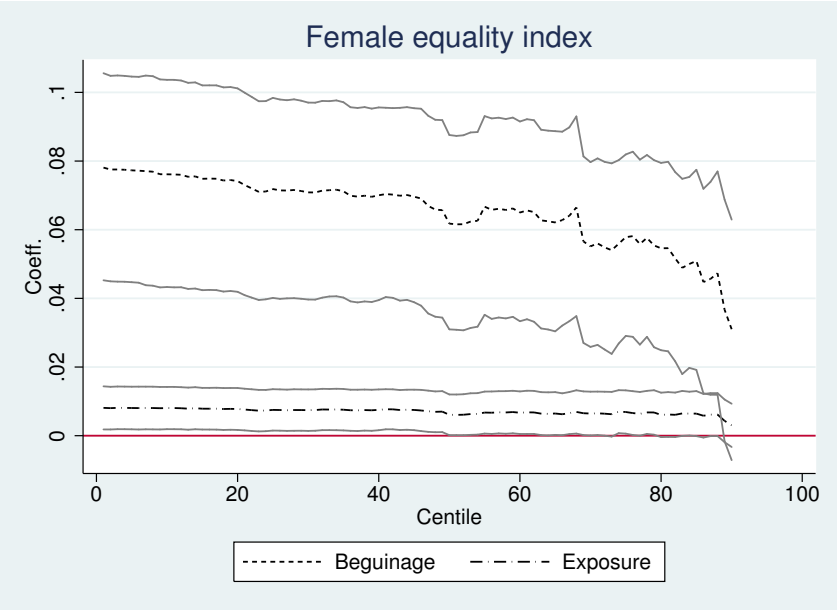
Back

Robustness: Population Deciles: OLS (1)

Figure: Regression coefficients for centiles of population

(a) Log. of female-to-male agricultural wages

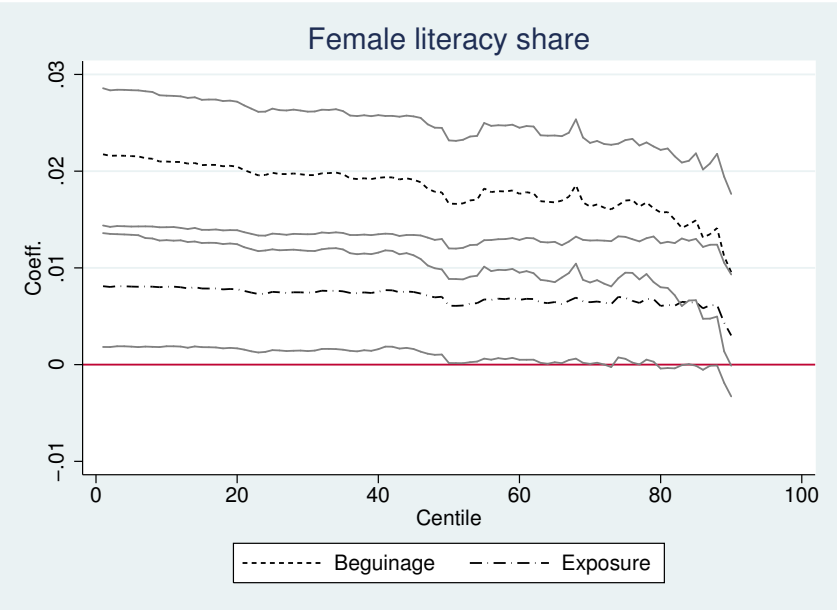
(b) Female equality index



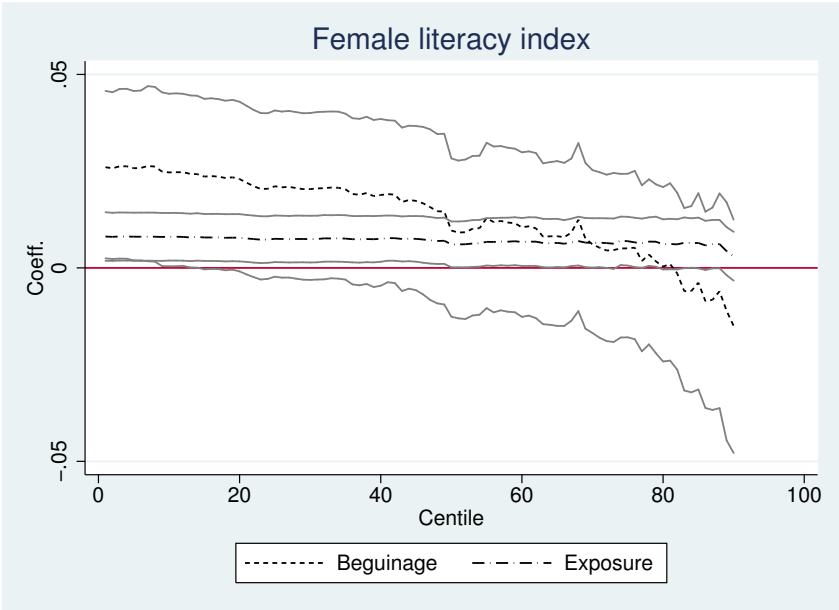
Robustness: Population Deciles: OLS (2)

Figure: Regression coefficients for centiles of population

(a) Female literacy share



(b) Female literacy index

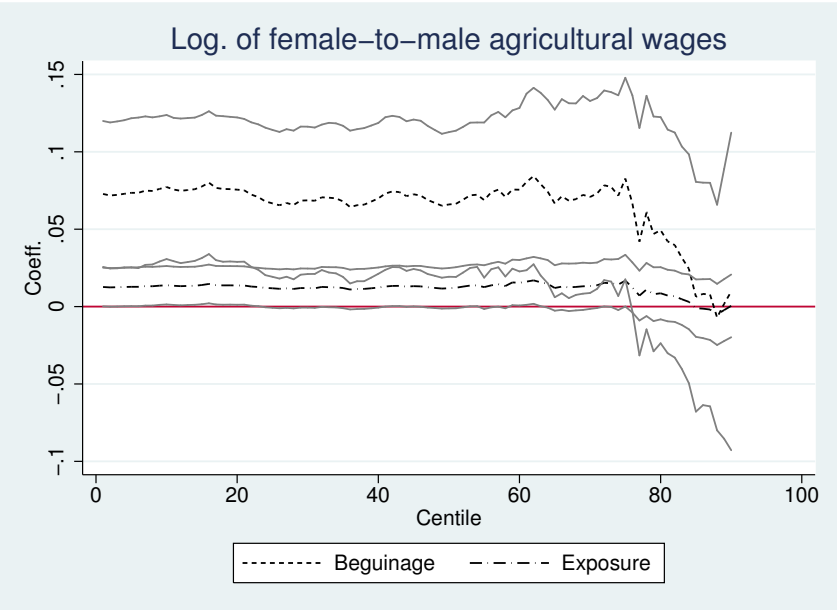


Back

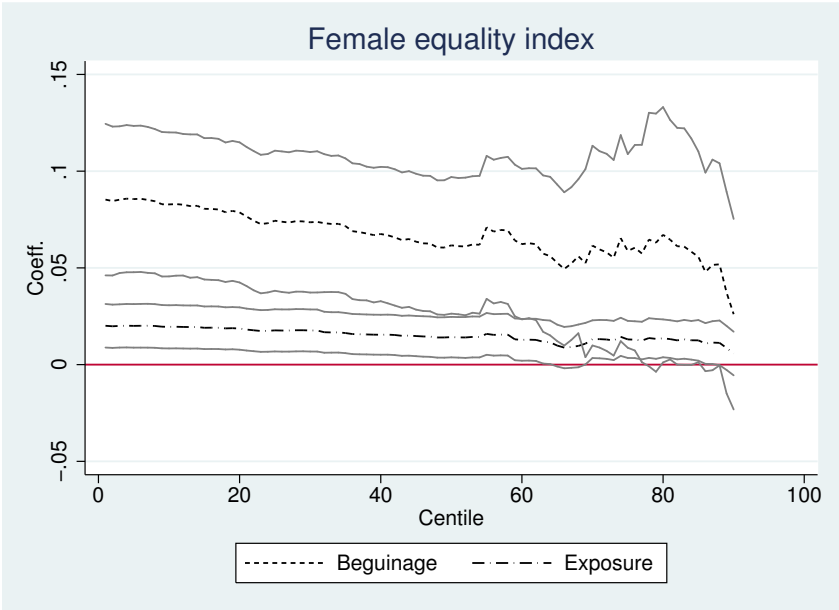
Robustness: Population Deciles: IV (1)

Figure: Regression coefficients for centiles of population

(a) Female-to-male agricultural wages



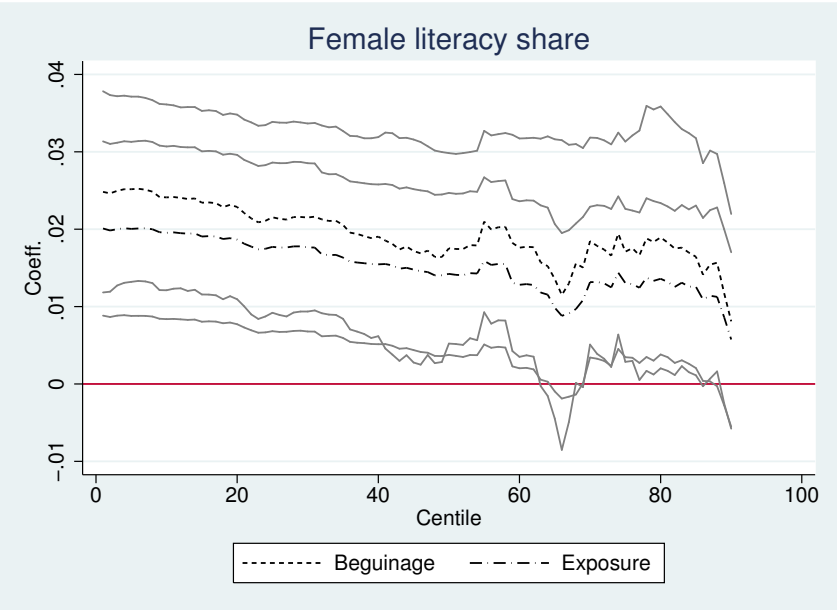
(b) Female equality index



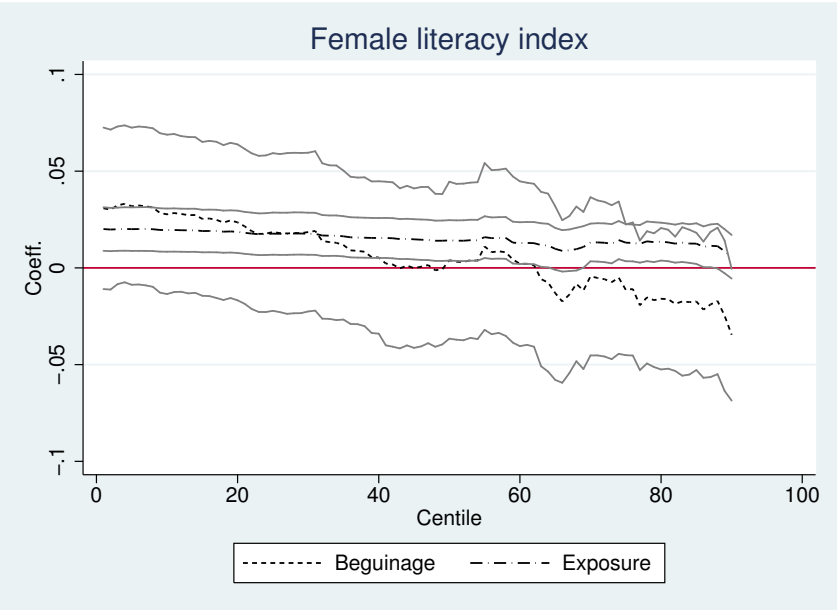
Robustness: Population Deciles: IV (2)

Figure: Regression coefficients for centiles of population

(a) Female literacy share



(b) Female literacy index



Back

Robustness: OLS (1)

	(1) Agr. wage		(2) Lit. Eq. Index		(3) F. Lit. Share		(3) F. Lit. Index	
			Panel A: Male literacy rates					
Beg (0/1)			0.0690***	(4.13)	0.0187***	(4.54)	0.0174	(1.50)
Men lit. rate			0.259***	(9.71)	0.0875***	(10.24)	0.246***	(9.81)
No beg.			Ref.		Ref.		Ref.	
1 beg., <200 years			0.0428**	(2.10)	0.0138**	(2.34)	0.0113	(0.78)
1 beg., >200 years			0.0992***	(3.94)	0.0256***	(4.77)	0.0256	(1.52)
>1 beg., >200 years			0.0897**	(2.22)	0.0232**	(2.17)	0.0290	(0.73)
Men lit. rate			0.259***	(9.76)	0.0875***	(10.27)	0.246***	(9.81)
Total time with a beg. (centuries)			0.00594*	(1.80)	0.00149*	(1.68)	0.00185	(0.70)
Men lit. rate			0.261***	(9.84)	0.0880***	(10.33)	0.247***	(9.84)
Observations			2507		2507		2507	
			Panel B: Excluding on-going beguinages					
Beg (0/1)	0.0525**	(2.48)	0.0716***	(3.76)	0.0198***	(4.24)	0.0260**	(2.07)
No beg.	Ref.		Ref.		Ref.		Ref.	
1 beg., <200 years	0.0371	(1.31)	0.0448**	(2.11)	0.0144**	(2.34)	0.0132	(0.83)
1 beg., >200 years	0.0690**	(1.98)	0.115***	(3.23)	0.0298***	(4.07)	0.0421**	(2.06)
>1 beg., >200 years	0.0300	(0.61)	0.111***	(2.82)	0.0302***	(2.89)	0.0504	(1.36)
>3 beg., >200 years	0.114*	(1.87)	-0.128	(-1.58)	-0.0350	(-1.58)	-0.0454	(-1.33)
Total time with a beg. (centuries)	0.0120**	(2.29)	0.00524	(1.33)	0.00137	(1.30)	0.00373	(1.31)
Observations	2497		2497		2407		2407	

t statistics in parentheses. Robust standard errors clustered at the canton level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Continued below.

Robustness: OLS (2)

	(1) Agr. wage		(2) Lit. Eq. Index		(3) F. Lit. Share		(3) F. Lit. Index	
	Panel C: Log-Distance to closest beguinage							
Dist. closest beg. (log-km)	-0.0107	(-1.05)	-0.00701	(-1.26)	-0.00188	(-1.09)	-0.0000809	(-0.02)
Observations	2507		2507		2507		2507	
	Panel D: Alternative definition of exposure							
Alt. total time with a beg. (centuries)	0.00721	(1.59)	0.0150***	(4.98)	0.00416***	(5.18)	0.00586**	(2.14)
Observations	2507		2507		2507		2507	
	Panel E: Placebo beguinage in municipalities less than 5km from a beguinage							
Placebo beguinage	-0.0000143	(-0.00)	-0.00434	(-0.41)	-0.000929	(-0.28)	-0.000772	(-0.07)
Observations	2439		2439		2439		2439	
	Panel F: Municipal charter as regressor							
Beg (0/1)	0.0344	(1.42)	0.0707***	(3.12)	0.0193***	(3.45)	0.0210	(1.41)
Municipal charter	0.0.0173	(0.58)	0.0195	(0.72)	0.00653	(0.91)	0.0132	(0.68)
No beg.	Ref.		Ref.		Ref.		Ref.	
1 beg., <200 years	0.0314	(1.05)	0.0456*	(1.96)	0.0143**	(2.10)	0.0121	(0.68)
1 beg., >200 years	0.0306	(0.89)	0.113***	(3.37)	0.0292***	(4.15)	0.0345*	(1.67)
>1 beg., >200 years	0.0141	(0.26)	0.113***	(2.66)	0.0299**	(2.60)	0.0463	(1.19)
>3 beg., >200 years	0.0951*	(1.76)	-0.128	(-1.62)	-0.0347	(-1.61)	-0.0482	(-1.44)
Municipal charter	0.0226	(0.72)	-0.00405	(-0.13)	0.000573	(0.07)	0.0044	(0.22)
Total time with a beg. (centuries)	0.00731	(1.44)	0.00455	(1.14)	0.00114	(1.06)	0.00258	(0.89)
Municipal charter	0.0162	(0.57)	0.0483**	(2.05)	0.0147**	(2.26)	0.0179	(1.04)
Observations	2507		2507		2507		2507	

t statistics in parentheses. Robust standard errors clustered at the canton level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Back

Robustness: IV

	(1) Agr. wage		(2) Lit. Eq. Index		(3) F. Lit. Share		(3) F. Lit. Index	
			Panel A: Male literacy rates					
Beg (0/1)			0.0721***	(3.06)	0.0199**	(2.34)	0.0170	(0.67)
Men lit. rate			0.259***	(9.75)	0.0875***	(10.27)	0.246***	(9.84)
Total time with a beg. (centuries)			0.0181***	(3.06)	0.00518***	(2.67)	0.00641	(1.21)
Men lit. rate			0.257***	(9.62)	0.0868***	(10.14)	0.245***	(9.76)
Observations			2507		2507		2507	
			Panel B: Excluding on-going beguinages					
Beg (0/1)	0.0862***	(2.65)	0.0716**	(2.36)	0.0201	(1.49)	0.0449	(1.41)
Total time with a beg. (centuries)	0.0152	(1.45)	0.0216**	(2.05)	0.00642**	(2.14)	0.0125*	(1.65)
Observations	2497		2497		2407		2407	
			Panel C: Log-Distance to closest beguinage					
Dist. closest beg. (log-km)	-0.0334*	(-1.77)	-0.0479***	(-3.00)	-0.0140***	(-3.12)	-0.0199	(1.62)
Observations	2507		2507		2507		2507	
			Panel D: Alternative definition of exposure					
Alt. total time with a beg. (centuries)	0.000127*	(1.68)	0.000204***	(3.05)	0.0000596***	(3.16)	0.0000847	(1.62)
Observations	2507		2507		2507		2507	

t statistics in parentheses. Robust standard errors clustered at the canton level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Back