The geography of secularization and reproductive behaviour. Continuity and change in a Catholic setting (North-Eastern Italy, 1946-2008)

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A vast literature shows the existence of an association between secularization and reproductive behaviour in different phases of the demographic transition, according to both individual and aggregate data (De Sandre 1971; Lesthaeghe 1983; Coale and Watkins 1986; Lesthaeghe and Wilson 1986; Lesthaeghe and Surkin 1988; Lesthaeghe and Neel 2002; Lesthaeghe and Neidert 2006, 2009; Lesthaeghe and Lopez-Gay 2013; Vitali and Billari 2015). The aim of this paper is to verify whether there is a continuity in the association between the geography of secularization and the geography of "new" fertility behaviours. In other words, we ask whether areas characterized by high secularization are the forerunners in Second-Demographic-Transition-related behaviours measured by low fertility, fertility postponement and non-marital childbearing. To test this hypothesis, we use data at a low level of territorial aggregation, the municipality, in an under-studies context, characterized by a high internal heterogeneity: the three North-Eastern Italian regions of Trentino-Alto-Adige, Veneto and Friuli-Venezia-Giulia. Our study area includes clusters of municipalities where the influence of Catholicism was most pervasive since the first half of the 20th century. These are most of the municipalities constituting the provinces Trento, Verona, Vicenza, Padova, Treviso and Pordenone. Alongside these traditionally Catholic areas, our sample also include neighbouring municipalities characterized by early secularization such as the urban area of Venice-Mestre, the provinces of Trieste and Gorizia, the mountain provinces of Belluno and Udine; the "red" province of Rovigo, and the German-speaking province of Bolzano (Allum 1996; Ginsborg 2004; Ramella 2010).

Data and Method

The paper employs a spatial econometric approach, with data from 1,200 municipalities in a highly Catholic setting, North-Eastern Italy.

We use estimates of municipal-level fertility in the 1950s, 1970s and 2000s, aimed at capturing fertility levels during the final phases of the First Demographic Transition (FDT), the initial phases of the Second Demographic Transition (SDT), and fertility recuperation, respectively. To measure SDT and fertility recuperation, in addition to fertility levels, we also use a measure of fertility postponement, i.e. the % of births to mothers aged 30+, and the % of births out of wedlock. Fertility measures are drowned from census data and birth registrations.

To measure secularization, we rely on municipal-level data on voting behaviour. In particular, we use the complement of the proportion of votes in favour of the Christian Democratic Party in 1946 and relate this measure of secularization to fertility levels in the 1950s. The political election of 1946 was the first national free election in Italy after the fall of the Fascism, and the first with the participation of women. We also use the proportion of votes in favour of the divorce law in the referendum of 1974, and relate this to fertility behaviours in the 1970s. The 1974 referendum represented a dramatic electoral challenge where the Church was openly and strongly sided against the possibility of divorcing. Finally, we use the % of civil marriages and the complement of the proportion of votes for the Christian Democratic Party at the 1992 political election and relate this to fertility behaviours in the 2000s. The 1992 election was the last national election with traditional parties, before the birth of new movements unrelated to religious values.

Finally, we consider the following control variables: whether the municipality is completely, partly or not mountainous; degree of urbanization; % of population in professional occupations on

total active population; % population aged 65+; % medium/high-educated female population; and % foreign residents.

To test the hypothesis of continuity between the geography of secularization and the geography of new reproductive behavior, we use Spatial Lag and Spatial Durbin regression models. These models are able to test if and to what extent the diffusion of secularization is able to explain the diffusion of new reproductive behaviours across space.

Preliminary Results

Preliminary results are reported in Figure 1 and Table 1. They show the existence of spatial patterns for both fertility behaviours and secularization: areas with similar fertility behaviors tend to cluster together in space, as well as areas with similar levels of secularization. Such spatial patterns are persistent across the different phases of the demographic transitions: areas that were forerunners in low fertility in the 1950s are also the forerunners in fertility postponement in the 1970s and in non-marital childbearing in the 2000s; areas characterized by low secularization in the 1950s remain the least secularized also in the 2000s. We find secularization to be a significant predictor of uptake of "new" fertility behaviours for all time periods analyzed. Results from spatial regression models show that the spatial autocorrelation coefficient declines over time in magnitude, indicating that the "contagion" of fertility innovations across neighbouring municipalities was more pervasive in the past than it is today, as one would expect due to technological change.

Secularization is strongly related to the 1st demographic transition, also after controlling for other indicators of modernization and social conditions (urbanization and degree of montanity are strongly significant). Weaker, but still significant is the association between secularization and fertility decline during the 2nd demographic transition. The negative significant association between secularization and fertility at the beginning of the 21st century does not confirm the hypothesis of a positive role of secularization on fertility recovery, but this result calls for further analysis, and a possible reconsideration about the choice of the dependent variable.

The final version of the paper will include 1) detailed choropleth maps and descriptive bivariate associations between our variables of interests over time; 2) results based on Spatial Durbin Models where we will include indirect spatial ("spillover") effects, in addition to the direct effects measured by the currently shown Spatial Lags Models; 3) Results on the spatial association between secularization and other indicators of fertility changes during the SDT, such as fertility postponement (after age 30), and out-of-wedlock births.

Figure 1. Choroplet Maps of independent (left) and dependent (right) variables

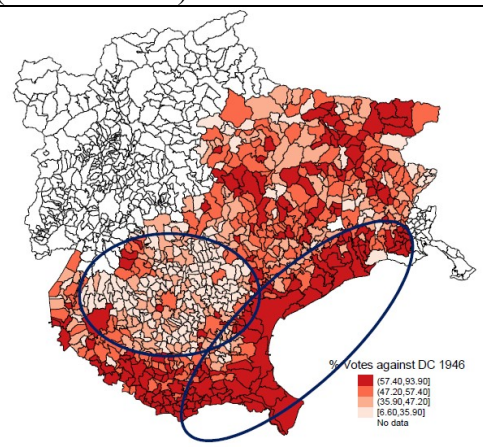
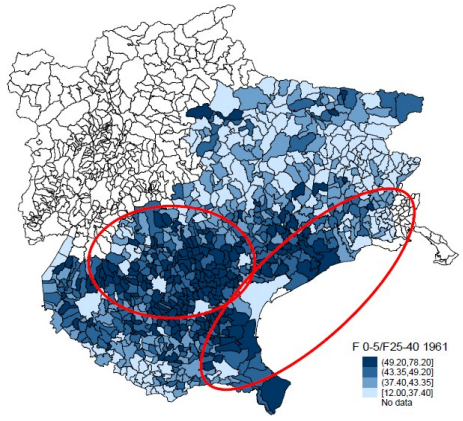
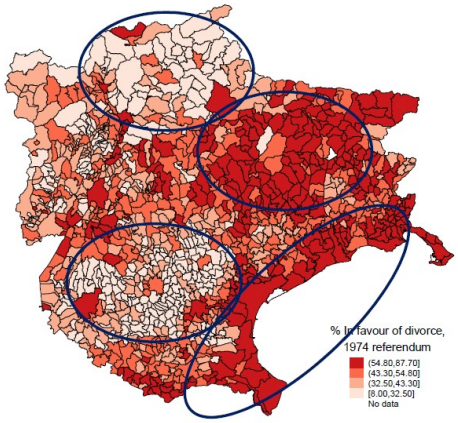
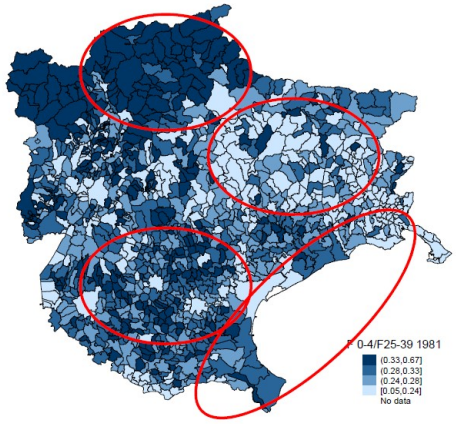
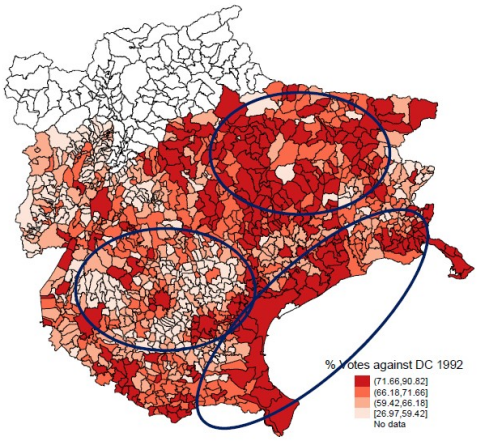
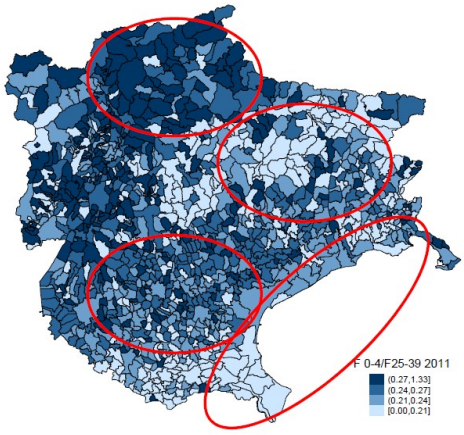
Votes 'against' the Christian Democratic Party (1946 election)	Fertility at the end of the 1st DT (1950s)
	
Votes favorable to the Divorce Law (1974 referendum)	Fertility decline during the 2nd DT (1970s)
	
Votes 'against' the Christian Democratic Party (1992 election)	Fertility recovery during the 2nd DT (2000s)
	

Table 1. Association between secularization and fertility, net of control variables. Results from Spatial Lag Regression Models

	Y1 A - Fertility 1950s			Y2 A - Fertility 1970s			Y3 A - Fertility 2000s		
	Coeff.		s.e.	Coeff.		s.e.	Coeff.		s.e.
Constant	26,562	***	2,088	2,88E-01	***	2,56E-02	2,90E-01	***	2,31E-02
% Votes AGAINST DC 1946	-0,139	***	0,015						
% Votes in favour of divorce 1974				-1,43E-03	***	1,55E-04			
% Votes AGAINST DC 1992							-1,26E-03	***	2,47E-04
Degre of urbanization 1961 (Medium-Low = Ref. cat.):									
Low	1,976	***	0,481						
Medium-High	-1,887	***	0,680						
High	-8,030	***	2,078						
Degre of urbanization 2001 (Medium = Ref. cat.):									
Low							-2,34E-02	***	7,20E-03
High							1,29E-02		1,05E-02
Population density				-8,19E-06		8,72E-06	-9,00E-06		1,22E-05
Degree of montanity (Not mountainous =ref. cat.)									
Partially montainous	-2,320	***	0,897	7,93E-03		8,40E-03	9,61E-03		9,24E-03
Completely mountaineous	-2,319	***	0,580	2,08E-02	***	4,39E-03	3,23E-02	***	6,81E-03
% Medium/High-educated female population				-2,49E-03	***	8,78E-04			
% High-educated female population							1,86E-03		1,28E-03
% in professional occupations on Total active population				-1,43E-03	***	4,20E-04			
% Employed females aged 15+/Total female population aged 15+				9,80E-04	**	4,02E-04			
% Population aged 65+				-2,33E-03	***	6,00E-04	1,04E-04		5,88E-04
% Foreign residents							1,73E-03	**	6,72E-04
Spatial Autocorrelation	0,546			0,34162			0,04363		

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