

AperTO - Archivio Istituzionale Open Access dell'Università di Torino

Generalized morality and contemporary fertility dynamics across European regions

This is a pre print version of the following article:

Original Citation:

Availability:

This version is available <http://hdl.handle.net/2318/1979530> since 2024-07-05T08:03:14Z

Published version:

DOI:10.1080/00343404.2024.2361126

Terms of use:

Open Access

Anyone can freely access the full text of works made available as "Open Access". Works made available under a Creative Commons license can be used according to the terms and conditions of said license. Use of all other works requires consent of the right holder (author or publisher) if not exempted from copyright protection by the applicable law.

(Article begins on next page)

Generalized morality and contemporary fertility dynamics across Europe regions*

Arnstein Aassve¹ Pierluigi Conzo² Francesca Luppi^{1,3} Letizia Mencarini¹

Abstract

This study focuses on the concept of generalized morality (GM), a cultural trait measured with the values of respect, obedience, generalized trust and control. Since GM drives economic prosperity and the way nations organize their welfare, we investigate how it matters for contemporary fertility trends. We consider the period between 2000 and 2014, when divergent fertility trends in Europe arose and the Great Recession happened. Using Eurostat and OECD data for 177 regions in 23 European countries, we demonstrate that GM plays a moderating role with educational expansion and when there is a global shock – here the Great Recession.

Keywords: Generalized morality, Culture, European fertility dynamics, Female education, Childcare provision

Funding. The authors gratefully acknowledge financial support from the European Research Council under the European FP7 ERC Grant Agreement no StG-313617 (SWELL-FER: Subjective Well-being and Fertility, P.I. Letizia Mencarini) and under the European Union's H2020 Programme ERC Grant agreement n° 694145 (IFAMID: Institutional Family Demography, P.I. Arnstein Aassve).

Conflicts of interest/Competing interests. Not applicable

Availability of data and material. Not applicable

Code availability. Not applicable

¹ Dondena Centre for Research on Social Dynamics and Public Policy, Bocconi University, Milan, IT. arnstein.aassve@unibocconi.it; letizia.mencarini@unibocconi.it

² Dept. of Economics and Statistics “Cognetti de Martiis”, University of Turin & Collegio Carlo Alberto, Turin, IT – pierluigi.conzo@unito.it

³ Dept. of Statistics, Università Cattolica del Sacro Cuore, Milan, IT – francesca.luppi@unicatt.it

1. *Introduction*

In demography, the term ‘culture’ is often invoked when explaining persistency in high fertility levels (e.g. Bork, 2014; Boling, 2008; Fernandez and Fogli, 2006 and 2009; Murphy, 2003; Pollak, 1993; Romaniuk, 2011). Several studies argue that individuals who have many siblings are themselves more likely to have more children, a pattern taken to support the idea that there is cultural transmission in contemporary fertility (Anderton et al., 1987; Dronkers and Härkönen, 2008; Fernández and Fogli, 2006). This is of course not wrong, but ignores that cultural transmission of ideas and attitudes (other than fertility preferences) may interact with and shape the structure of institutions and hence the policies that potentially affect fertility trends (Profeta and Galasso, 2019; Alesina and Giuliano, 2015). This is an important insight, because in recent years scholars have argued that cross-country differences in fertility dynamics can be explained by their institutional setting, typically captured by their welfare regime typology and the policies contained therein (Esping-Andersen, 1990). This literature is extensive and within the realm of the welfare regimes, several explanations have been put forward to explain fertility dynamics, including: labour-market policies as a means to balance work and family; public childcare provision; gender equity and equality; and policies geared towards supporting parenthood. The characteristics of welfare regimes, may themselves be driven by persistent ideas passed from one generation to another (e.g. Bjornskov and Svendsen, 2015). This would, of course, matter a great deal. One can argue that policies should be implemented, changed or adapted by policy-makers according to individuals’ preferences, values and attitudes. But many cultural traits are rigid: despite there being large differences across societies, they often persist over time. In so far they also matter for the institutional setting, including state bureaucracy, it may hinder necessary policy change (Williams, 1979; Inglehart and Baker, 2000).

Whereas there is a rich literature on cultural transmission in the social sciences that emphasize the welfare state (see Edlund 2006; Pfau-Effinger, 2005; and Rothstein, 1998, 2005 for examples), there is relatively little focus on *which* cultural traits may be important for demographic trends. This study makes a notable contribution by focusing in on one particular set of cultural traits

that received considerable attention in sociology and economics: the concept of ‘Generalized Morality’. Following Tabellini (2010), the concept has been taken to encompass values of *respect*, *obedience*, *generalized trust* and *control*. These cultural traits appear in the economic and sociological literature as stable features of diverse institutional arrangements (e.g. Banfield, 1957; Putnam, 1993; Platteau, 2000). They are of particular interest in economics because they are seen as being key to economic prosperity (e.g. Guiso et al., 2006; Tabellini, 2008; Algan and Cahuc, 2010). Low levels of trust and respect for others are typical of hierarchical societies. In these societies good conduct is a result of coercion (typically from the State) instead of internalized values. Parental control over children is sometimes exercised through forcefulness. Obedience is, therefore, fundamental in the transmission of values. Furthermore, a lack of control over one’s own life leads to resignation and low entrepreneurial spirit among individuals who feel that outcomes depend, not on their personal efforts, but on luck, uncontrollable events and the discretionary use of political power. Lack of trust and respect, high obedience and low control would subordinate the individuals’ morality to the interests of a small contact circle (e.g. the family) and discourage personal initiative.

This study diverges from the mainstream literature in as much as we go beyond the classical explanatory framework of welfare regimes as a means to explain fertility differences. Instead we construct the measure of Generalized Morality from the European Values Survey, which is matched with the respective sub-national regions in a set of European countries. The role of Generalized Morality is then assessed through a moderation analysis. In particular, we interact the measure of Generalized Morality with the usual fertility predictors. These predictors include: economic prosperity; women’s education; labour-force participation; labour-force uncertainty; and child-care. The empirical analysis takes data from 2000 to 2014, but where the unit of observations is at the NUTS 2 level. Given the observational window, the study does not answer to how cultural traits have influenced the formation of welfare regimes. Instead, we establish to what extent GM matter as we observe changes in the before-mentioned channels usually taken to explain fertility. Data on sub-national level data is important for two reasons. First, patterns of GM are not necessarily

limited to the nation state. Some countries even register three different levels of sub-regional GM, while the country itself is defined by just one. Second, exploiting within-country variation and controlling for period trends will net out unobserved country-specific effects, which may interact both with fertility and Generalized Morality. We find robust results that Generalized Morality moderates the effect of female education expansion. We also find that Generalized Morality matter in the face of unexpected shocks that may otherwise increase perceptions of uncertainty about the future. We discuss the implications of these findings in light of the existing literature on fertility dynamics.

2. *Background*

The concept of generalized morality, embraces ‘those customary beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation’ (Guiso et al. 2006, p. 23). The roots of this concept dates back to Max Weber (1958), who recognized the role of culture – in particular of religion – in economic and political outcomes. His main argument was that, by instilling, in the bourgeoisie, the pursuit of wealth as a principal moral duty, the ‘Protestant work ethic’ stimulated the creation of a new order based on markets and the search for individual profit. These developments became, Weber argued, the preconditions for the development of capitalism. In a similar spirit, but stressing the social component of culture, Banfield’s ethnographic research ascribed the underdevelopment of southern Italy to ‘amoral familism’ (Banfield, 1957): individuals only follow codes of good conduct within small family or clan circles, and selfishness in interactions with strangers is morally acceptable. Since ‘amoral familists’ have lower level of trust and trustworthiness when dealing with people outside their clan, they practice ‘limited’ as opposed to ‘generalized’ morality, something which stunts socio-economic exchanges and leads to inferior institutions (Platteau, 2000). Here individuals with limited morality are more inclined to free-ride on others when it comes to cooperating in the production of public goods, thereby hindering policies that might potentially benefit everybody (e.g. universalistic welfare regimes).

The components of generalized morality incorporates values of *respect* and *obedience*, and the levels of *generalized trust* and *control* (Tabellini, 2008). Low levels of trust and respect for others are typical of hierarchical societies, where communication and decision-making tend to be made vertically downwards rather than horizontally. In these societies, informal enforcement mechanisms – sustained by vertical obedience, strong family ties and parochial altruism – tend to crowd out demand for an effective, public legal system (Greif, 1994). Similarly, lack of control over one’s own life is a symptom of the resignation of individuals who feel that outcomes depend not on

their own efforts but on luck, uncontrollable events or the discretionary use of political power. In such societies, individuals tend to put less effort into economic activities, and often withdraw into private life, leaving the *res publica* to politicians who are reluctant to put reforms in place that would benefit society, at the cost of their own privileges.

In low generalized morality societies, socio-economic transactions rely on mutual obligations among known individuals. Therefore, the risk of being cheated is mitigated by informal but strong commitment formation. Trust in other unknown persons is, instead, jeopardized (Yamagishi et al. 1998), as strong and stable relations provide ‘assurance’ of mutual cooperation and decreased social risk (Yamagishi and Yamagishi 1994). Since such relations cannot easily extend into the larger institutional framework of a society, there is demand for stronger regulations, which make those institutions more hierarchical (Aghion et al 2014). This means that communications and decision-making processes operate in a vertical manner, and tend to do so across a range of institutions, including public-sector bureaucracy, schools and higher education. The consequence is that low GM societies become slower in terms of implementing policies in response to new emerging preferences.

Our aim here is to offer an insight into how and why, general morality matters for fertility. To do so, we present a set of standard channels considered important for fertility change, and we discuss how Generalized Morality moderates this relationship. First, economic prosperity may increase fertility through an income effect, though the effect might prove non-linear. In the past, economic development perhaps lowered fertility, as the opportunity cost of children outweighed the income effect; as Becker argued, with higher income, couples increase their investment in their children rather than increasing the number of children they have. But it is also true that those countries that have grown the most in terms of economic prosperity have higher fertility levels (Myrskala et al., 2009). One possible driver behind this trend is that dual worker households are becoming the norm in highly-developed countries. As men increase their share of household work, and women contribute equally to household income, it is no longer clear that the opportunity cost of children will dominate the income effect. But in so far GM associates with stronger hierarchical

structures it also implies more traditional gender roles. Despite stronger economic prosperity through a higher rate of dual earner couples, GM may hold back any revision in gender norms, and therefore hold back fertility – an argument that resonates with the idea of gender equity and gender equality as developed by McDonald (McDonald 2000; McDonald 2013), and followed up by Goldscheider and colleagues (Goldscheider et al 2015) and by Esping-Andersen and Billari (2015). The argument is also relevant when considering the issue of childcare policies. All else equal, low GM would discourage outsourcing of child care, whereas in high GM societies, women may accept it as a viable approach to handle the dual burden of working careers and childbearing. Within this line of argument, one must also consider the role of expansion in higher education. As women attain higher levels of education and seek to combine working life with family formation, traditional child-rearing activities need to be outsourced beyond the family. But with low GM, this may nevertheless be less accepted, despite there being an ever-increasing share of women embarking on higher education. Importantly, higher education may not only increase the demand for public child care due to the need to combine family with working careers: education has also an important impact on attitudes, and in particular, traditional views about gender roles are less prevalent among women with higher education (Aassve et al 2013). What we may then see is that the gap between gender equity and equality might be larger in low GM societies, meaning that any increase in the rate of higher education brings about lower fertility compared to high GM societies.

Finally, GM may also play a role in face of large societal upheavals or global shocks. In the first part of the new millennium, Europe was characterized by a healthy fertility trend, but was halted with the Great Recession in 2008 (Goldstein et al. 2009). Such shocks affect couples' fertility planning in several ways. The question is, what role would GM have? In low GM societies, where decision making and policy implementation is slower, policy makers would simply be less able to adapt and react sufficiently in face of a crisis, and as a result, citizens may have less trust in their respective governments to deal with the shock, which may in turn make their perception about the future more uncertain. And uncertainty certainly matters for fertility (Vignoli et al 2020a; 2020b): children impose substantial long-term costs, and with greater uncertainty, people will necessarily

postpone projects that have long-term and irreversible consequences (Ranjan, 1999; Kohler et al 2002; Mills and Blossfeld, 2011). In so far as this is the case, strong Generalized Morality may be a benefit, simply because the citizens may fail to perceive the onset of more uncertain times as strongly as they would in societies relying on in-group relations and where GM is low. The lack of perceived control associate with low GM, would imply a stronger feeling of resignation, whereby life outcomes are felt to be about luck rather than effort. If this is the case, then, they will also feel a more acute lack of control in terms of what the future will bring. In other words, in societies with Limited Morality, there might be a stronger sense of uncertainty and an inability to cope. Instead, *strong* Generalized Morality should mirror the perceived ability of citizens to control their lives, and hence counterbalance the negative effects of increased uncertainty on making (irreversible) decisions, including childbearing.

3. *Data*

Following Tabellini (2008, 2010), we construct the measure of Generalized Morality (GM, hereafter) by using the values of (1) *generalized trust*, (2) *respect*, (3) *obedience* and (4) *control* as reported in the European Values Study (EVS, round 2000). The measure is consequently constructed at the beginning of the data series used for the empirical analysis. Whereas the measure is highly stable over time (see below), this approach avoids that the empirical measurement of generalized morality could be influenced by events taking place during the observational window.

In EVS, *generalized trust* (1) is measured by the question “Generally speaking, would you say that most people can be trusted or that you can’t be too careful in dealing with people?”. *Respect* (2) for others is measured by “tolerance and respect for other people” as being given in the question: “Here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important? Please choose up to five”. Similarly, the value of *obedience* (3) is represented by respondents naming “obedience” to the question above. The measurement of *control* over one’s own life (4) is built from the following question in the survey:

“Some people feel they have completely free choice and control over their lives, while other people feel that what we do has no real effect on what happens to them. Please use this scale (from 1 to 10) where 1 means “none at all” and 10 means “a great deal” to indicate how much freedom of choice and control in life you have over the way your life turns out”. Our measure of generalized morality is then created through a principal component analysis and the extraction of the first component (*GM*) (see Appendix A). As expected, the component is positively correlated with trust, respect and control but negatively with obedience. For our regression analysis, we aggregate the measure of generalized morality up to country levels, and regional levels (i.e. NUTS2).

We retrieve macro data on total fertility rates and *per capita* GDP (used here in natural logarithms) both at the country level and the NUTS-2 level (i.e. basic macro regions for the application of regional policies) from Eurostat and OECD databases.

We also include in the analysis a measure of female tertiary education, i.e. the proportion of women aged 30-34 with a tertiary degree in the region. This variable is collected from the Quality of Government regional dataset (QoG), where it is described as the “*Percentage of females 30-34 years old, whose highest level of education successfully completed is tertiary education (levels 5-8). It covers ISCED 2011 levels 5, 6, 7 and 8 (short-cycle tertiary education, bachelor's or equivalent level, master's or equivalent level, doctoral or equivalent level, online code ED5-8 'tertiary education')*”. Data up to 2013 refer to ISCED 1997 levels 5 and 6”.

The female unemployment rate is taken as a proxy of uncertainty. It is measured both at the country and at the regional level. It is commonly used in the demography literature, and can be thought of as a measure of “structural” uncertainty, in the sense that it can be used for present decisions to *predict* future outcomes, by looking at past and present degrees of uncertainty. Next, we consider the onset of the Great Recession in 2008. This the impact of the crisis correlates with economic prosperity, and countries and regions across Europe were hit differently by the crisis. Technically, the estimated effect of the crisis with respect to GM is implemented with the help of a pre/post design as explained below.

Several data sources are available for country variation in family policy. The OECD, for instance, contains a detailed menu of various family policies. However, the relevant information is not available at the sub-national level, and does not go back in time. We consequently use EU-SILC survey rounds from 2004 to 2015 to generate this kind of a measure for the sub-national level. Following Van Lancker and Ghysels (2016), we calculate the full-time equivalent (FTE) measure of formal care service use multiplying the *observed proportion of children in formal childcare in the region* by the *observed average number of hours per week in the region* (as percentage of the maximum number of hours per week of formal childcare among all countries), per each year, for children below the age of three. The FTE is based on EU-SILC data (waves from 2004 to 2014) and the measure is available for a subset of regions and countries, which varies year by year. The full distribution of this variable is reported in the Appendix (Table E2). Since childcare data are not available for each NUTS-2 level region, we aggregate them at a higher territorial level, i.e. NUTS-1 level.

The final sample (excluding the case where we use the measure of childcare) is made up 23 countries and 177 regions, which are consistent with the regions recorded by the EVS. With these variables, the earliest time point for our regression analysis is the year 2000, whereas when childcare policies are included, the earliest starting point is 2004 (the year EU-SILC was created). For this reason, in the regression analyses we flag the missing values for childcare and include all regions since 2000. Further statistical details are available in Appendix (section E).

4. Generalized Morality and fertility - descriptive analysis

Our measure of GM is derived from the European Values Survey (EVS). The items used to construct the variables are available in all survey rounds, though note that in earlier rounds considerably fewer countries participated. Nevertheless, it is useful to compare the GM variable over time. Appendix A shows that when comparing regions and countries over time, there is no significant difference across waves. Similarly, once countries and regions are split into three levels

of GM (i.e. high, medium and low according to the tertiles of the overall distribution of GM - see Table 1), we find hardly any difference in group membership across time. In fact, there is no change in group membership when considering countries. Whereas for sub-national regions, only a handful of regions change group membership. In other words, for the time periods covered by the EVS, GM remains remarkably stable.

Table 1. Distribution of countries across the three levels of Generalized Morality

Country	Generalized Morality	Trust	Control	Respect	Obedience
Bulgaria	low	16.34	21.88	65.35	59.89
Slovakia	low	14.19	30.44	54.79	70.17
Hungary	low	19.02	41.33	71.84	64.67
Italy	low	31.67	32.56	71.02	56.55
Czech Republic	low	30.31	25.77	50.00	66.91
Portugal	low	22.38	28.37	67.48	63.32
Latvia	low	25.60	29.96	71.66	62.29
Romania	low	18.56	50.23	71.75	72.23
Poland	medium	27.73	35.70	72.04	66.05
Lithuania	medium	29.76	20.29	53.80	69.85
Malta	medium	22.53	30.28	58.65	74.58
Belgium	medium	34.21	36.57	83.19	63.59
France	medium	27.03	28.37	86.57	62.74
Estonia	medium	32.34	27.11	75.61	65.44
Slovenia	high	24.05	25.28	71.59	71.68
UK	high	36.88	45.52	76.48	70.78
Germany	high	36.83	12.71	68.82	66.42
Spain	high	37.51	27.58	80.37	69.11
Austria	high	36.48	13.52	71.01	70.89
Netherland	high	63.02	31.52	84.82	66.70
Finland	high	64.96	19.58	84.98	75.70
Denmark	high	75.92	14.41	86.68	77.01
Sweden	high	71.95	16.11	92.37	76.82

Figure 1 shows the geographical patterns of GM by NUTS-2 sub-national regions. The sub-national distribution suggests that the common practice of classifying countries according to cultural traits, here GM, is not strongly supported by the data. Some countries appear very homogenous, yet for most of them, there is considerable variation across sub-national units (within-country variation), Spain serving as an important example. The Nordic countries are all homogenous and all classified as high GM. This applies to Germany as well, but as with Spain, we see considerable variation across the German regions. The UK is another example where there is considerable within-country variation. Some British regions get classified as high GM, and others as low. Poland is yet another example. If taking the country as the unit of observation, Poland gets classified as medium GM, but as the figure shows, there are within country regions with both low and high levels of GM. In Italy there is a sizeable within-country variation in terms of GM, too. Most of the regions have low GM, whereas some are medium, and the smallest region in the North (Aosta Valley) has high GM.

Figure 1: Regional variation (sub-national level) of Generalized Morality

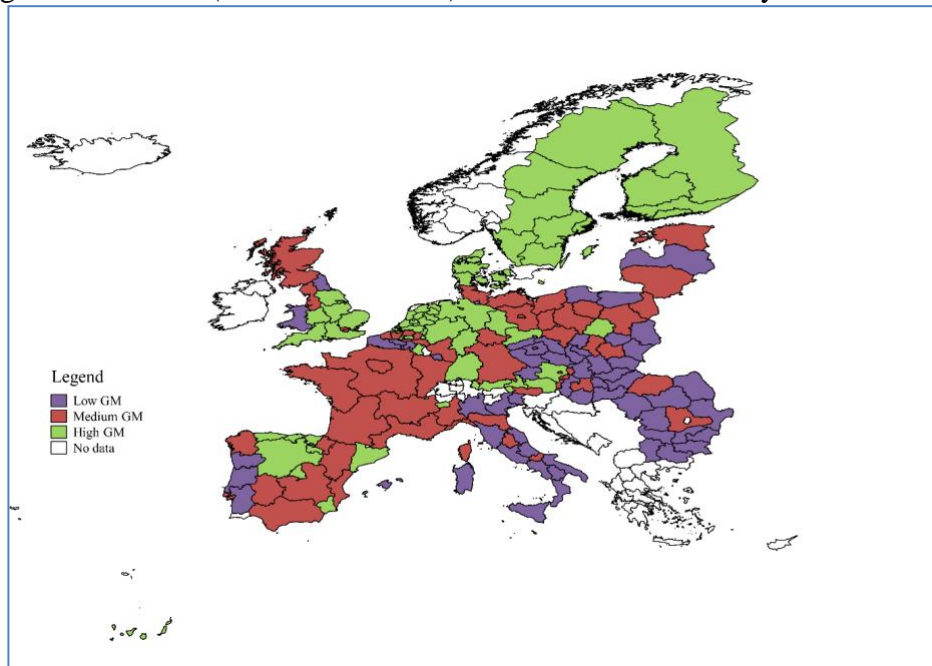


Figure 2 shows trends in TFR from 1990 to 2015, but where countries are grouped according to the GM level. The black solid line represents countries with high levels of GM, the dotted line medium level, and the grey solid line represents countries with low GM levels. These trends do not look particularly different from when TFR would have been plotted against welfare regimes. The black solid line mimics quite closely the TFR of social-democratic Nordic countries, the dotted line Eastern European countries, and grey dotted line Southern European countries. We see that from 2002 onwards, all three groups experience an increase in fertility, a trend many referred to as a “small baby boom” and that consequently pointed to the end of the lowest-low fertility era (Sobotka, 2009). However, coinciding with the economic recession, we observe that TFR is flat from 2008 and onwards, and that there is a slight decline in fertility even for the high GM countries.

Figure 2: Country level trends of TFR by three levels of Generalized Morality (GM)

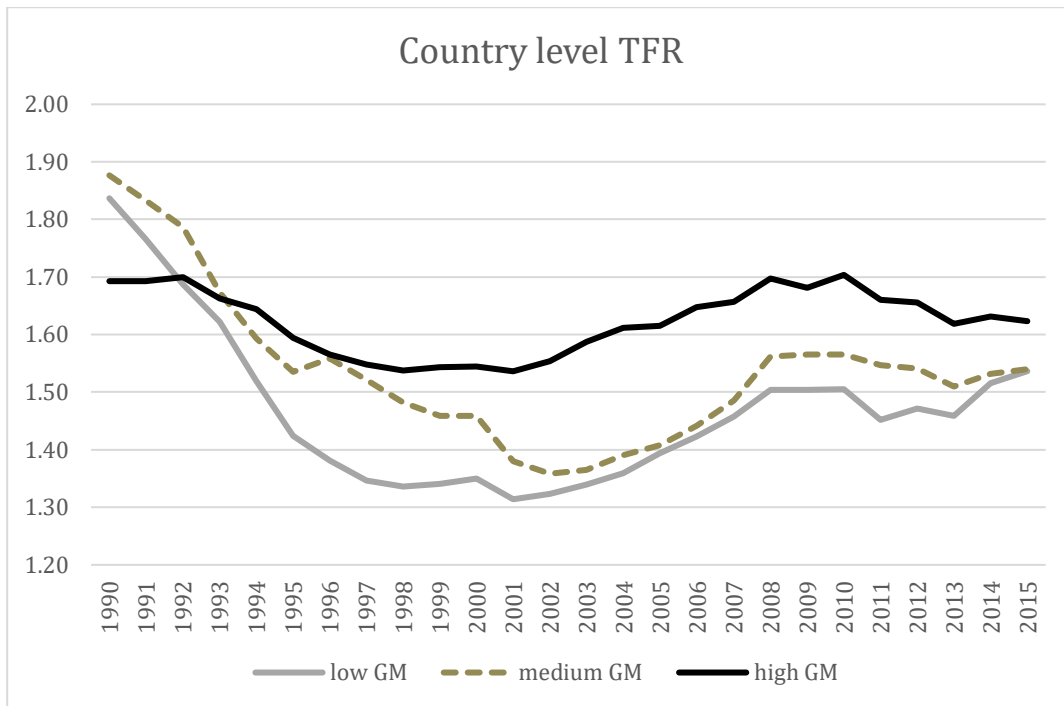


Table 2 reports general descriptive statistics, whereas Table 3 shows the correlations between our measure of generalized morality and the key variables which are used to explain fertility. Whereas the direct correlation between GM and TFR is close to zero, Generalized Morality correlates positively with the rate of female tertiary education and GDP *per capita*. It is, instead, negatively correlated with unemployment, but, not unexpectedly, positively correlated with childcare use (FTE). As for the TFR, it correlates positively with female tertiary education, negatively with GDP, negatively with high female unemployment, whereas there is a positive correlation with childcare use. It is also important to note the positive correlation between the female education rate and GDP *per capita*, since the two measures have opposite sign of their correlation with the TFR. They both have positive correlations with GM.

Table 2: Descriptive Statistics of relevant variable, own elaboration

Variable	Obs	Mean	Std. Dev.	Min	Max
<i>Culture</i>					
Generalized Morality, GM (2008-2011)	2640	0.101	0.452	-0.892	1.282
Trust	2640	0.363	0.186	0.058	0.914
Obedience	2640	0.290	0.144	0.000	0.833
Respect	2640	0.745	0.134	0.280	1.000
Control	2640	6.673	0.644	4.442	8.404
<i>Fertility Rates, T = 2000-2014</i>					
Total Fertiltiy Rate (TFR)	2417	1.485	0.282	0.727	2.428
<i>Other controls, T = 2000-2014</i>					
% women in tertiary educ.	2428	31.858	13.497	4.700	67.400
GDP (per capita, in natural logarithm)	2517	9.912	0.481	8.132	10.953
Female unemployment	2452	8.738	5.467	0.800	35.200
Formal childcare (FTE)	1394	24.325	7.036	1.941	44.442

Table 3: Correlations matrix of relevant variables

	GM	TFR	Female tertiary education	lnGDPpc	Female unemployment	Formal Childcare (FTE)
GM	1					
TFR	0.0055	1				
Female tertiary education	0.4241	0.1423	1			
GDP	0.4762	-0.266	0.3977	1		
Female unemployment	-0.2463	-0.1338	-0.0464	-0.3571	1	
Formal childcare (FTE)	0.231	0.0848	0.4168	0.2698	-0.0689	1

5. Generalized Morality as a moderator for fertility

In the regression analysis, we interact Generalized Morality with the hypothesized channels through a series of OLS fixed-effect models. Since the unit of observation is at the NUTS-2 level, we also include country-fixed effects. In contrast to the trends shown in previous section, with the available data the regression analysis is limited to a sample that starts in 2000. This means that our analysis of GM as a moderator for fertility applies to the period in which fertility was again increasing after 2000. The regression equation is expressed as:

$$TFR_{rt} = \alpha_t + \sum_k \beta_k X_{k,rt} + \sum_k \beta_k X_{k,rt} * GM_r + \varepsilon_{rt} \quad \text{Eq. 1}$$

where TFR is the total fertility rate in region r and at time t . X is the vector of time varying variables, which are included as controls but also as interaction terms with the time-constant variable of Generalized Morality. These reflect, therefore, the potential moderation effects of GM.

Consistent with the theoretical exposition, the controls considered are: female education measured by the percentage of women enrolled in tertiary education; GDP; female unemployment; and childcare use. Given that the unit of analysis is at the sub-national NUTS-2 level, which is nested within countries, we cluster standard errors by country; this allows us to account for error correlation within the cluster. Adding also time dummy variables to all models (α_t), we are able to control for macro-level time trends. The estimation of Eq. 1 through fixed-effects panel OLS rests on variation of regions *over time* (within-region variation), as well as variation *across* regions belonging to the common institutional and political context of the country (within-country variation), the effect of which is absorbed into the intercept of the estimated model. We also perform random-effects estimates, which provide similar results (see Appendix B). Our preferred model is the fixed-effects OLS because of the properties of the fixed-effects estimator, especially concerning the potential unobserved heterogeneity stemming from time-invariant characteristics of regions that might undermine the validity of our estimates (which in this model is, instead, completely ruled out).

TFR is the dependent variable, and explanatory variables are included stepwise, as shown in Table 4. In column 1, we only include female tertiary-education and its interaction with GM. Interaction is strong and positive showing that as more women enter higher education, fertility is higher in regions with high GM values. This result suggests that education expansion and higher fertility, as we have observed in some countries, do not necessarily go together. In column 2, we also include *GDP per capita* and its interaction with GM. We do not find any significant effects here, whereas the impact of education interacted with GM remains. Also, the inclusion of the female unemployment rate, which we take as a proxy for structural uncertainty, has no significant effects, though again the effect of education interacted with GM remains significant. In the last model, we also include a proxy for childcare supply and flag the missing values of the variable (column 4). Note that variable measures the use of childcare, and is consequently not a direct measure of the actual supply. Whereas the coefficient of the interaction is not significant, the

moderating effect of GM in the relationship between education expansion and fertility is confirmed.³

³ In the Appendix (section B), we re-estimate table 4 through Random Effects OLS and find that the results are confirmed. We also replicate results from Table 4 standardizing all variables, and plot the interaction between GM and education with a contour graph function to easy the interpretation (see Appendix, section B). Furthermore, in additional model specifications, we exclude that our findings are driven by other three potentially omitted factors that can be correlated with GM and fertility, i.e. i) urbanization rate, ii) the level of immigration, and iii) the remaining variation in welfare regimes stemming from time changes in welfare policies at country level which is not captured by our fixed effects (see Appendix, section C, for further details). Finally, we run several checks showing the absence of significant nonlinear relationships between our regressors and TFR (see Appendix, section D). Results are also confirmed when we use one-year lag of the unemployment variable instead of the contemporaneous measure (available upon request).

Table 4: Fixed-effect estimation, region-level regressions (TFR)

	(1)	(2)	(3)	(4)
Female tertiary education	-0.00164 (0.00144)	-0.00112 (0.00109)	-0.00147 (0.000996)	-0.00150 (0.00105)
GM*Female tertiary education	0.00427*** (0.00120)	0.00459*** (0.00124)	0.00518*** (0.000922)	0.00492*** (0.00112)
lnGDPpc		-0.0831 (0.0949)	-0.118 (0.0911)	-0.117 (0.105)
GM*lnGDPpc		-0.0567 (0.101)	-0.0852 (0.105)	-0.0917 (0.122)
Female unemployment			-0.00300 (0.00213)	-0.00305 (0.00194)
GM*Female unemployment			-0.00132 (0.00489)	-0.00120 (0.00489)
FTE				0.00136 (0.00122)
GM*FTE				-0.000354 (0.00141)
Observations	2,310	2,277	2,249	2,249
R-squared	0.427	0.419	0.424	0.429
Number of regions	168	168	167	167

Standard errors in parentheses, clustered at country level. Missing values of *FTE* are flagged. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

6. Generalized Morality, shocks and fertility reactions

Our sample captures the period in which the economic recession hit in 2008. As with the current COVID pandemic, this shock was, to a large extent, unexpected for most European households. Not only did it mean economic hardship for many regions, but it also introduced greater uncertainty. As we have argued in the background section, weak GM may exacerbate the perception of uncertainty, not least because citizens may have poor expectations in terms of how the government and public institutions are able to help in face of a sudden economic down turn. Naturally, these shocks make the future less predictable than shocks related to the business cycle, but the associated unpredictability may have been felt stronger in the low GM societies.

Following the approach by Aassve et al (2020) for Italy, we take advantage of the 2008 Great Recession to assess to what extent GM moderates the effect of the recession on fertility. Again, we take TFR as the dependent variable. It is also important to note that we do control for GDP and unemployment throughout the observation window. This is important since GM do correlate both with economic prosperity and welfare regimes. The model we estimate is described with the following equation:

$$FR_{rt} = \alpha_t + \sum_k \beta_k X_{k,rt} + \gamma \text{ post crisis}_t * \text{Low GM}_r + \varepsilon_{rt} \quad \text{Eq. 2}$$

where *post crisis* is a dummy variable equal to one for the post-recession period (2008-2014), and zero otherwise; *Low GM* is a dummy variable equal to one for regions that are below the country-level median value of Generalized Morality, and zero otherwise. We are interested in the interaction coefficient γ , which captures the differential effect of the shock across low vs. high GM regions. X is the vector of time varying variables as in eq. 1 above.

Table 5 reports regression results for total fertility rates. The fertility reaction is significantly different across low and high GM regions, with the former facing lower fertility after 2008 than high-GM regions. One cannot be sure about the exact mechanism at play. We have argued that the 2008 shock may induce different perceptions of uncertainty. With such an interpretation, one would here argue the 2008 recession brought about a stronger sense of uncertainty about the future for the low GM settings – much less so in the high GM societies. But as we also argued, GM associates with stronger hierarchy, more inefficient bureaucracy, and slower decision making: it may be that low GM societies are simply slower in coping with the upheavals of the economic recession. In effect, these two mechanisms are quite possibly correlated: a poor handling of a crisis, brings about higher uncertainty about how the crisis will be dealt with.

Table 5: The moderating effect of Generalized Morality with respect to the 2008 economic crisis.

	(1)	(2)	(3)
Post crisis	0.145*** (0.0443)	0.184*** (0.0366)	0.156*** (0.0415)
Low GM*post crisis	-0.0247** (0.00945)	-0.0208** (0.00902)	-0.0214** (0.00907)
lnGDPpc		-0.133 (0.0856)	-0.121 (0.0987)
Female tertiary education		-0.00106 (0.00126)	-0.00118 (0.00127)
Female unemployment		-0.00261 (0.00233)	-0.00250 (0.00233)
FTE			0.00192 (0.00118)
Year dummies	Yes	Yes	Yes
Observations	2,417	2,249	2,249
R-squared	0.410	0.412	0.413

7. *Discussion*

There is necessarily a range of cultural traits passed on across generations, and not all will matter for demographic trends. However, some do, and this analysis demonstrated that Generalized Morality may very well matter in our understanding for fertility trends and fertility differentials across societies. As such the study makes an important contribution to the debate over the way in which cultural ideas matter for fertility trends, thereby complementing findings from other studies that have emphasized the role of family ties, for instance, in explaining fertility decline (Livi-Bacci, 2001).

However, this particular study makes important head-way as it connects a cultural concept widely studied in economics and sociology, but rarely considered in demography. Typically, family demographers emphasize tangible structural causes and specific policies to explain fertility trends and differences. But the focus on cultural traits suggest that trends may diverge once societies systematically differ in those traits. Generalized Morality encompasses a specific set of values that are deemed important in the social sciences in explaining societal development: trust, obedience, respect and control. We show how these traits interacts with those traditional policy channels which are usually invoked when explaining country differences. In particular, where educational expansion tends to lower fertility, it does so more strongly in low GM societies compared to the stronger GM societies. Moreover, Generalized Morality has an important effect when there is an economic shock. That might be driven by differences in individuals' perception of uncertainty: individuals in low GM settings may perceive the future to be more uncertain than those living in high GM societies – in part driven by a poorer expectation about how state institutions are able to cope in face of crises.

The significance of Generalized Morality in explaining fertility is also important because it appears to be generally stable over time. At first, that might seem counter-intuitive, since fertility

has both increased and declined substantially since the end of the Second World War. Here we suggest instead that stable cultural traits, such as Generalized Morality, affect fertility through its interaction with global changes. Such changes would include, for example, the widespread expansion in education and global shocks like the 2008 Great Recession, and it is possible that we will see similar effects now with the ongoing pandemic. This might also have implications for our understanding of recent theoretical developments to explain fertility trends. Esping-Andersen (2009) and Esping-Andersen and Billari (2015) argued that fertility could fall as our societies move from the traditional male bread-winner model to new egalitarian societies characterized by dual earner couples where there is consistency between gender equity and equality. This is an optimistic argument, since the idea is that fertility decline is viewed as temporary and will eventually return to a higher level, in this case characterized by a new gender egalitarian equilibrium. The perspective taken here suggest that in so far cultural traits matter, and they persist over time, any mismatch between equity and the policy environment can instead remain for extended periods of time: a new egalitarian equilibrium with higher fertility can by no means be taken for granted.

The fact that long-standing cultural traits matter for fertility trends leads us to an important question: what role should policy take? In our descriptive analysis we demonstrated that when countries are split by different levels of Generalized Morality, the ensuing trends in fertility mimicked those of the classic welfare regime categories. On the one hand, this would suggest that cultural traits themselves determine the welfare package that countries pursue (assuming that they do, in fact, affect fertility), which would eventually give rise to observed welfare differences across Europe. Clearly, we cannot test such a conjecture with the data we have available. Still, it does pose an important question regarding the effectiveness of policies if trends are determined by ingrained cultural traits, which are highly resistant to change. It also means that policies operating successfully in one setting may not necessarily work equally well in other settings, where cultural beliefs are different. Or, at the very least, policy would have to be tweaked in order to fit a different cultural heritage. Thus, designing policies using a best practice principle may give disappointing results in so far as the cultural environment is not factored in. Understanding culture is, on the

evidence of this paper, critically important for designing and implementing fertility and other kinds of policies.

References

- Aassve, A. Le Moglie, M. and Mencarini, L. (2020), Trust and Fertility in Uncertain Times, *Population Studies*, 75 (1), 19-36.
- Aassve, A., Billari, F. C., & Pessin, L. (2016). Trust and Fertility Dynamics. *Social Forces; a Scientific Medium of Social Study and Interpretation*, 95(2), 663–692.
- Aassve, A., M. Sironi, V. Bassi. (2013). Explaining attitudes to demographic behaviour. *European Sociological Review*, 29 (2), 316 – 333.
- Alesina, A., & Giuliano, P. (2011). Family ties and political participation. *Journal of the European Economic Association*, 9(5), 817-839.
- Alesina, A., & Giuliano, P. (2015). Culture and institutions. *Journal of Economic Literature*, 53(4), 898-944.
- Algan, Y., & Cahuc, P. (2010). Inherited Trust and Growth. *American Economic Review*, 100, 2060–2092.
- Anderton, D. L., Tsuya, N. O., Bean, L. L., & Mineau, G. P. (1987). Intergenerational transmission of relative fertility and life course patterns. *Demography*, 24(4), 467-480.
- Banfield, E. C. (1957). *The Moral Basis of a Backward Society*. Glencoe, IL: The Free Press.
- Bergh, A. and C. Bjornskov (2014). Trust, welfare states and income inequality: Sorting out the causality. *European Journal of Political Economy*, 35, 183-199.
- Bjornskov, C. and G.T. Svendsen (2013). Does social trust determine the size of the welfare state? Evidence using historical identification. *Public Choice*, 157 (1), 269-286
- Boling, P. (2008). Demography, culture, and policy: Understanding Japan's low fertility. *Population and Development Review*, 34(2), 307-326.
- Borck, R. (2014). Adieu Rabenmutter—culture, fertility, female labour supply, the gender wage gap and childcare. *Journal of Population Economics*, 27(3), 739-765
- Billari, F., & Kohler, H. P. (2004). Patterns of low and lowest-low fertility in Europe. *Population Studies*, 58(2), 161-176.

- Butler, J. V., Giuliano, P., & Guiso, L. (2015). Trust, values, and false consensus. *International Economic Review*, 56(3), 889-915.
- Coleman, J. (1990) *Foundations of Social Theory*. Harvard University Press.
- Delhey, J., & Newton, K. (2005). Predicting cross-national levels of social trust: global pattern or Nordic exceptionalism? *European Sociological Review*, 21(4), 311-327.
- Dohmen, T., Falk, A., Huffman, D., & Sunde, U. (2012). The intergenerational transmission of risk and trust attitudes. *The Review of Economic Studies*, 79(2), 645-677.
- Dronkers, J., & Härkönen, J. (2008). The intergenerational transmission of divorce in cross-national perspective: Results from the Fertility and Family Surveys. *Population Studies*, 62(3), 273-288.
- Edlund, J. (2006), "Trust in the Capability of the Welfare State and General Welfare State Support: Sweden 1997-2002", *Acta Sociologica*, 49: 395-417.
- Ermisch, J., & Gambetta, D. (2010). Do strong family ties inhibit trust? *Journal of Economic Behavior & Organization*, 75(3), 365-376.
- Esping-Andersen, G. (1990). *The three worlds of welfare capitalism*. Cambridge: Polity.
- Esping-Andersen, G., & Billari, F. C. (2015). Re-theorizing Family Demographics. *Population and Development Review*, 41(1), 1-31.
- Fernández, R., & Fogli, A. (2006). Fertility: The role of culture and family experience. *Journal of the European Economic Association*, 4(2-3), 552-561.
- Fernandez, R., & Fogli, A. (2009). Culture: An empirical investigation of beliefs, work, and fertility. *American economic journal: Macroeconomics*, 1(1), 146-77.
- Galasso, V., & Profeta, P. (2018). When the state mirrors the family: the design of pension systems. *Journal of the European Economic Association*, 16(6), 1712-1763.
- Goldscheider, F., Bernhardt, E., & Lappegård, T. (2015). The gender revolution: A framework for understanding changing family and demographic behavior. *Population and Development Review*, 41(2), 207-239.
- Goldstein, J.R., T. Sobotka, and A. Jasilioniene. (2009). The end of lowest fertility? *Population and Development Review*, 35(4), 663-699.
- Gorodnichenko, Y., & Roland, G. (2011). Individualism, innovation, and long-run growth. *PNAS*, 108(Supplement 4), 21316-21319.

- Greif, A. (1994). Cultural beliefs and the organization of society: A historical and theoretical reflection on collectivist and individualist societies. *Journal of Political Economy*, 102(5), 912-950.
- Guiso, L., Sapienza, P., & Zingales, L. (2006). Does culture affect economic outcomes?. *The Journal of Economic Perspectives*, 20(2), 23-48.
- Guiso, L., Sapienza, P., & Zingales, L. (2008). Alfred Marshall lecture social capital as good culture. *Journal of the European Economic Association*, 6(2-3), 295-320.
- Inglehart, R., & Baker, W. E. (2000). Modernization, cultural change, and the persistence of traditional values. *American Sociological Review*, 19-51.
- Kohler, H. P., Billari, F. C., & Ortega, J. A. (2002). The emergence of lowest-low fertility in Europe during the 1990s. *Population and Development Review*, 28(4), 641-680.
- Kohler, H. P., Billari, F. C., & Ortega, J. A. (2006). Low fertility in Europe: Causes, implications and policy options. *The baby bust: Who will do the work*, 48-109.
- Livi-Bacci (2001) Too Few Children and Too Much Family, *Daedalus*, Vol. 130, No. 3. pp. 139-155
- McDonald, P. (2000). Gender equity, social institutions and the future of fertility. *Journal of Population Research*, 17(1), 1-16.
- McDonald, P. (2006). Low fertility and the state: The efficacy of policy. *Population and Development Review*, 32(3), 485-510.
- Murphy, R. (2003). Fertility and distorted sex ratios in a rural Chinese county: Culture, state, and policy. *Population and Development Review*, 29(4), 595-626.
- Myrskylä, M., Kohler, H. P., & Billari, F. C. (2009). Advances in development reverse fertility declines. *Nature*, 460(7256), 741-743.
- Myrskylä, M., Goldstein, J. R., & Cheng, Y. A. (2013). New Cohort Fertility Forecasts for the Developed World: Rises, Falls, and Reversals, *Population and Development Review*, 39, 1728-4457.
- Pfau-Effinger, B (2005) Culture and welfare state policies: Reflections on a complex interrelation. *Journal of Social Policy*. 34(1): 3-20
- Platteau, J. P. (2000). *Institutions, social norms, and economic development* (Vol. 1). Psychology Press.

- Pollak, R. A., & Watkins, S. C. (1993). Cultural and economic approaches to fertility: Proper marriage or misalliance? *Population and Development Review*, 467-496.
- Putnam, R. (1993). *Making democracy work: civic traditions in modern Italy*. Princeton University press.
- Raymo, J.M. & Shibata, A. (2017). Unemployment, Nonstandard Employment, and Fertility: Insights From Japan's "Lost 20 Years", *Demography* on line first.
- Romaniuk, A. (2011). Persistence of high fertility in tropical Africa: The case of the Democratic Republic of the Congo. *Population and Development Review*, 37(1), 1-28.
- Rothstein, B. (1998). *Just Institutions matter. The moral and political logic of the Universal Welfare state*, Cambridge UP.
- Rothstein, B. (2005). *Social Traps and the problem of trust*. Cambridge UP.
- Sobotka, T. (2004). Is Lowest-Low Fertility in Europe Explained by the Postponement of Childbearing? *Population and Development Review*, 30(2), 195-220.
- Tabellini, G. (2008). Institutions and culture: presidential address. *Journal of the European Economic Association*, 6(2-3), 255-94.
- Tabellini, G. (2010). Culture and institutions: economic development in the regions of Europe. *Journal of the European Economic Association*, 8(4), 677-716.
- Uslaner, E. M. (2002). *The Moral Foundations of Trust*. New York, Cambridge University Press.
- Yamagishi, T. & Yamagishi, M. (1994). Trust and commitment in the United States and Japan. *Motivation and Emotion*, 18: 9-66.
- Yamagishi, T., Cook, K.S. & Watabe, M. (1998). Uncertainty, trust, and commitment formation in the United States and Japan. *American Journal of Sociology*, 104: 165-194.
- Van Lancker, W., & Ghysels, J. (2016). Explaining patterns of inequality in childcare service use across 31 developed economies: A welfare state perspective. *International Journal of Comparative Sociology*, 57(5), 310-337.
- Vignoli, D., Mencarini, L., & Alderotti, G. (2020a). Is the effect of job uncertainty on fertility intentions channeled by subjective well-being? *Advances in Life Course Research*, 46, 100343.
- Vignoli, D., Tocchioni, V., & Mattei, A. (2020b). The impact of job uncertainty on first-birth postponement. *Advances in Life Course Research*, 45, 100308.
- Weber, M. (1958). *The Protestant ethic and the spirit of capitalism*. New York: Scribner.

Williams Jr, R. M. (1979). Change and stability in values and value systems: A sociological perspective. *Understanding Human Values*, 15, 46.

Zak, P. J., & Knack, S. (2001). Trust and growth. *The economic journal*, 111(470), 295-321.