# Having children in the Italian regions: the role of the territorial well-being

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## Introduction

The Italian period fertility level (TFR) - measured by the mean number of children per woman – has reached a level far below that ensuring the replacement level (TFR=1.32 in 2017), one of the lowest levels in Europe and far distant from the ideal number of children that the Italians would like to have (Mencarini & Vignoli 2018). For these reasons, it is considered as an indicator of a serious demographic malaise. Although the traditional South-Centre-North differences are attenuated, there are notable distances among regions as to fertility, ranking from the highest and increasing TFR in the Province of Bolzano (TFR=1.74) to the very low level in Sardinia (TFR=1.06). These same territories are found in very distant positions in the ranking of the regions by well-being as measured by the indicators of Equitable and Sustainable Well-being (ISTAT 2018). One cannot but wonder about an association between the two phenomena. Without calling any causal approach in the field, the role played by the context in which individuals live on their reproductive behavior cannot be ignored as well as that of the implicit and explicit policies that, improving the citizens quality of life, also favor the realization of their reproductive expectations. This, in turn, makes the aggregate level of fertility increase with a positive effect on population balance and structure.

The goal of this work is to study the relationship between reproductive behavior of the individuals and the well-being measured at aggregate level in terms of social, economic, environmental conditions. The main hypothesis is that the regions with the highest level of well-being are also those with the highest level of fertility.

## Background and Hypotheses

Spatial aspects of fertility in Western countries and their underlying drivers have always attracted the scholars' interest. These studies differ with respect to their approaches (micro,

macro, micro-macro), the geographical scale of their analyses and the theoretical approaches. The variability in fertility observed at the local level might be interpreted according to three main hypotheses (see Fiori 2013 et al. for an extensive review). The first one, *compositional hypothesis*, argues that the territorial differences are only the reflection of the residential sorting of the population, and of the polarization of childbearing behaviour according to the demographic and socio-economic characteristics of individuals. The second explanation – *selection hypothesis* - refers to the idea that individuals or households with certain fertility expectations 'select themselves' into a given territory by moving there just in order to have a child. The third hypothesis – *contextual hypothesis* – directly posits that aspects of the area where individuals live may encourage or discourage their childbearing. For instance, the availability and affordability of housing, family-oriented services and infrastructure, or economic opportunities and constraints which affect the direct and indirect cost of children are often reported as contextual factors which might account for observed spatial variations in fertility. Also, the cultural factors such the values system, gender roles or other social norms, as well as the extension and power of the social networks, can differ among territory even within the same country and can account for the local environment which are thought to shape fertility. Many studies evaluate the role of the contextual factors on population reproductive behaviour (see for a review: Entwisle 1991). Meggiolaro (2011) in a study on Milan found that the characteristics of the place where people live influence their reproductive behaviours, even after controlling for individual factors. The changing social and economic conditions of a territory play a role in explaining differences in fertility. The recent economic downturn drew attention to the different reaction across European countries in terms of aggregate fertility (Goldstein et al. 2013). For Italy, Cazzola et al. (2016) found that, while in Northern and Central regions the rise of unemployment rate during the economic crisis related to a reduction in fertility levels, in the South the relationship has been weaker. Overall, the residential context helps explaining fertility diversity (Kulu & Washbrook 2014).

In this paper, we evaluate the contextual hypothesis with reference to Italy. Any speculation on contextual effects on childbearing behaviour requires a thorough reflection on how the 'context' is defined and measured (Fiori et al. 2013). Here we qualify the context in terms of territorial well-being.

Well-being is a complex and multidimensional concept, that involves many social and environmental dimensions. It is linked to the available resources, the quality of life, subjective well-being, equity and sustainability. One single indicator – namely GDP - is not enough to represent it and it is necessary to assess a measurement system. For over 20 years, OCSE,

European Commission, United Nations, World Bank and other international organizations have been promoting initiatives to sensitize governments to go beyond the economic production dimension. The rationale is to measure well-being by a multidimensional approach that includes, in addition to the objective socio-economic conditions, also measures of the quality of people's life with subjective evaluations and perceptions, as well as indicators of environmental sustainability.

Italy is ahead in defining and estimating well-being indicators. In 2011, CNEL, the National Council for Economics and Labour, and ISTAT began a collaboration, involving many social actors (institutions, citizens, companies, labour unions). The result was the definition of a system of indicators of the quality of life, measuring Equitable and Sustainable Well-being (BES) and organized in 12 thematic domains at regional and provincial level. Since 2013, ISTAT annually publishes the BES Report; in 2018 the sixth edition has been released (ISTAT 2018).

In this paper we hypothesis a positive association between the childbearing behaviour and the regional context of well-being measured by the BES indicators. We expect that women living in the regions performing better in terms of well-being conditions have higher odd of childbearing and that inequality in territorial well-being helps explaining the regional variability in fertility.


**Data and Methods**

We combine household data from the ISTAT Daily Life Survey 2017 with the aggregate information of BES at regional level, we analyse the logit of having one (more) child among women in reproductive age and currently in union in a multilevel framework, where the second level units are the Italian regions and second-level factors are the BES indicators measured in 2014-15, that is two-years lagged.

In the BES proposal, well-being is treated like a multidimensional concept and measured by means of a huge number of elementary indicators (around 130) grouped in 12 domains, each dealing with a domain of human well-being. It is a dynamic measurement system: every year the indicators are updated (confirmed or substituted) to account for any change in their trends or in the data source. The 12 domains pertain: health, education, work life and balance, economic well-being, subjective well-being, social relationships, safety, politics and institutions, landscapes and cultural heritage, environment, quality of services, innovations research and creativity (ISTAT, 2018). We propose the use of the effective syntheses of the

BES indicators, that is the composite indicators built with the AMPI method[1] (Mazziotta & Pareto 2016). We selected the BES composite indicators at regional level as provided by ISTAT, and the regional TFRs for the period 2014-15.

**Preliminary Results**

The geographical variability of the TFR and that of the BES (Figure 1) composite indicators has been illustrated by means of a detailed mapping of the data (Figure 2) and a rank association analysis through the Spearman correlation coefficient (De Rose et al. 2019). The results of those analyses confirm the existence of a positive association between ranking of the regions for BES levels and the one for TFR level: the regions where all the well-being indicators are at the highest value (i.e. Trentino Alto Adige) show the highest level of fertility, while those with the lowest fertility level (and Sardegna among them), perform worse as far as many BES indicators is concerned. Both TFR and BES indicators show significant variations through time. Thus, both the territorial and the temporal dimension have to be considered. The correlations between fertility and BES based on region-years units (Table 1) confirms the statistical association between the quality of life of citizens and the (average) number of children they express, as well as a persistent geographical variability in the associations themselves. While in the North and in the Centre of the country the well-being is likely to favour the reproductive behaviour, in the South of Italy better economic and social conditions are still acting as factors of decreasing fertility. These outcomes clearly evoke the existence of a non-negligible relationship between the well-being of the territory and the reproductive behaviour of the population. The message for the policy is quite straightforward: increasing people's quality of life enables them to carry out their projects in terms of family building.
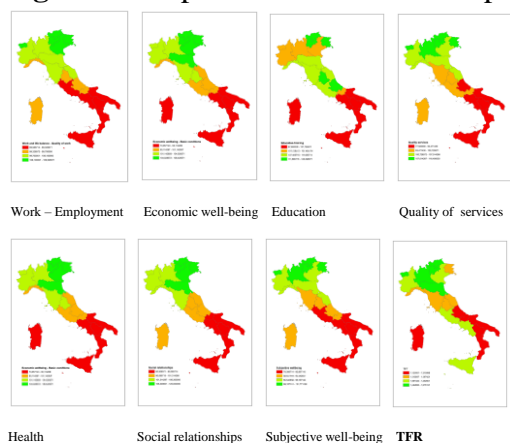
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[1] The Adjusted Mazziotta-Pareto Index (MPI) is a non-compensatory composite indicator based on a standardization of the individual indicators.

**Figure 1**: BES composite indicators by geographical areas. Average 2010-2016.



**Figure 2:** Maps of selected BES composite indicators and TFR. Average 2010-2016



Work – Employment    Economic well-being    Education    Quality of services

Health    Social relationships    Subjective well-being    **TFR**

**Table 1:** Correlation analysis – TFR versus BES composite indicators (region-years units)

| | CORRELATION WITH TFT | | |
|---|---|---|---|
| | **BOZEN AND TRENTO** | **OTHER REGIONS IN THE CENTRE-NORTH (PLUS ABRUZZO)** | **SOUTH AND ISLES** |
| Health | 0.09 | -0.15 | -0.61 |
| Education and training | -0.52 | -0.75 | -0.56 |
| Work and life balance - Employment | 0.89 | 0.55 | -0.86 |
| Work and life balance - Quality of work | 0.00 | 0.66 | -0.76 |
| Economic wellbeing - Income and Inequalities | 0.94 | 0.61 | -0.80 |
| Economic wellbeing - Basic conditions | 0.30 | 0.51 | -0.80 |
| Social relationships | 0.85 | 0.45 | -0.83 |
| Politics and institutions | 0.66 | -0.14 | 0.07 |
| Safety - Homicides | 0.42 | -0.04 | -0.38 |
| Safety - Burglaries, Pick-Pocketing, Robberies | 0.03 | 0.03 | -0.75 |
| Subjective wellbeing | 0.72 | 0.58 | -0.33 |
| Landscape and cultural heritage | 0.88 | 0.33 | -0.70 |
| Environment | -0.24 | 0.03 | -0.48 |
| Innovation, research and creativity | -0.78 | 0.00 | 0.50 |
| Quality of services | -0.80 | 0.62 | -0.81 |

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