The spatial diffusion of non-marital cohabitation in Belgium since 1991

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Background

In the early 1970s, important socio-demographic changes took place in several European countries. They concern the disaffection with marriage, the diversification in formation of unions and increase in dissolution of unions, the delay of motherhood and the persistence of sub-replacement fertility. The theoretical framework of the Second Demographic Transition (SDT) was developed in the 1980s to describe and explain these different transformations (Van de Kaa and Lesthaeghe 1986). Having attracted much discussion and criticism, the SDT now represents a very broad theoretical and empirical literature (Zaidi and Morgan 2017). Nevertheless, paradoxically, there are few studies with a spatio-temporal approach to SDT, with the aim to analyze how the new demographic behaviours of the 1970s are propagated in space over time. There are several studies that have already highlighted a process of spatial diffusion, with in particular a propagation diffusion (Bleha and Ďurček 2019; Caltabiano et al. 2019; Kurek 2011; Valkonen et al. 2008; Vitali et al. 2015).

While several dimensions of SDT have been studied from the point of view of spatial diffusion (single-parent families, births out-of-wedlock, divorce, etc.), this is not the case for non-marital cohabitation. However, there are indications that the spatial diffusion process would be appropriate for this type of union. Cohabiting without being married can be considered a demographic innovation, as can voluntary birth control during the historical decline in fertility (Casterline 2001). Studies have shown that non-marital cohabitation would be "contagious" (Nazio 2008, p. 162) since its propagation in a population would follow a process of social diffusion, that is, it spreads through social interactions (Di Giulio and Rosina 2007; Guetto et al. 2016; Nazio and Blossfeld 2003). An innovation that spreads through social interaction is spread in space (Hägerstrand 1967). But, to our knowledge, no paper has highlighted how spatial diffusion of non-marital cohabitation occurs. This is surprising since non-marital cohabitation is a very important dimension of SDT because it marks a break with traditional family models, in which marriage is an obligatory prerequisite for a couple to cohabit in the same dwelling.

In this article, we try to fill this gap by studying the spatial diffusion of non-marital cohabitation in Belgium. This is one of the first countries where SDT has been identified and has been first a privileged field of study, among other things for spatial aspects (Lesthaeghe and Lopez-Gay 2013; Lesthaeghe and Neels 2002), although not in the context of non-marital cohabitation. In particular, no diachronic maps have been produced to describe the different stages of spatial diffusion. There are two objectives in this study:

1/ To verify the existence of a spatial diffusion of non-marital cohabitation in Belgium.

2/ To describe the spatial pattern of the process, *i.e.* the precursor regions where non-marital cohabitation appears, the directions of spatial diffusion, and the regions that are resistant to change.

3/ To model the expansion of non-marital cohabitation in Belgium since 1991, taking into account the spatial process induced by spatial diffusion.

Data

For this study, we use data from the National Register of Belgium. This centralized population register is a continuous and exhaustive registration of a certain number of individual information of residents: date of birth and dates of all demographic events that punctuate an individual's life, sex, marital status (marital status), place of residence, nationality, household status and position of the individual in the household.

This data source has several advantages. The first is the quality of the data produced, which has been validated in several studies (Poulain and Herm 2013). The second advantage is the large time coverage and the annual frequency of the data. Officially created in 1985, the National Register provides data from 1991 onwards. It therefore currently makes it possible to study the Belgian population exhaustively and annually for a period of a quarter of a century. The third advantage is the availability of data at the municipality level, which is the local geographical level for accurately identifying spatial diffusion, clearly distinguishing between urban and rural regions.

These three characteristics make the National Register the appropriate source for studying the spatial diffusion of demographic behaviour. Indeed, based on this data source, it is possible to spatially analyze a phenomenon both at a local geographical level (municipality) and with a very fine temporal granularity (annual).

To study non-marital cohabitation, we use the LIPRO household typology, created in 1991 by the Nederlands Interdisciplinair Demografisch Instituut (NIDI). The latter has 8 types of households (Lodewijckx and Deboosere 2008): one-person household, married couple without children, married couple with children, single-parent family, unmarried couple without children, unmarried couple with children, collective household and other household.

By distinguishing married couples from unmarried couples, this typology is adapted to obtain an indicator of non-marital cohabitation in Belgium. We choose to calculate the proportion of cohabiting unmarried couples among cohabiting couples (married and unmarried) whose head of household is between 15 and 44 years old. We do not calculate the proportion on all households. If our indicator refered to all households, it would be biased by the change in the proportion of other types of households, such as single-parent households or single households. In addition, we limit the calculation of our indicator to households with a head of household aged 15 to 44 years, as this is an age group frequently used in the literature to measure cohabitation outside marriage with cross-sectional data (Gassen and Perelli-Harris 2015; Heuveline and Timberlake 2004; Kennedy and Bumpass 2008).

Methods

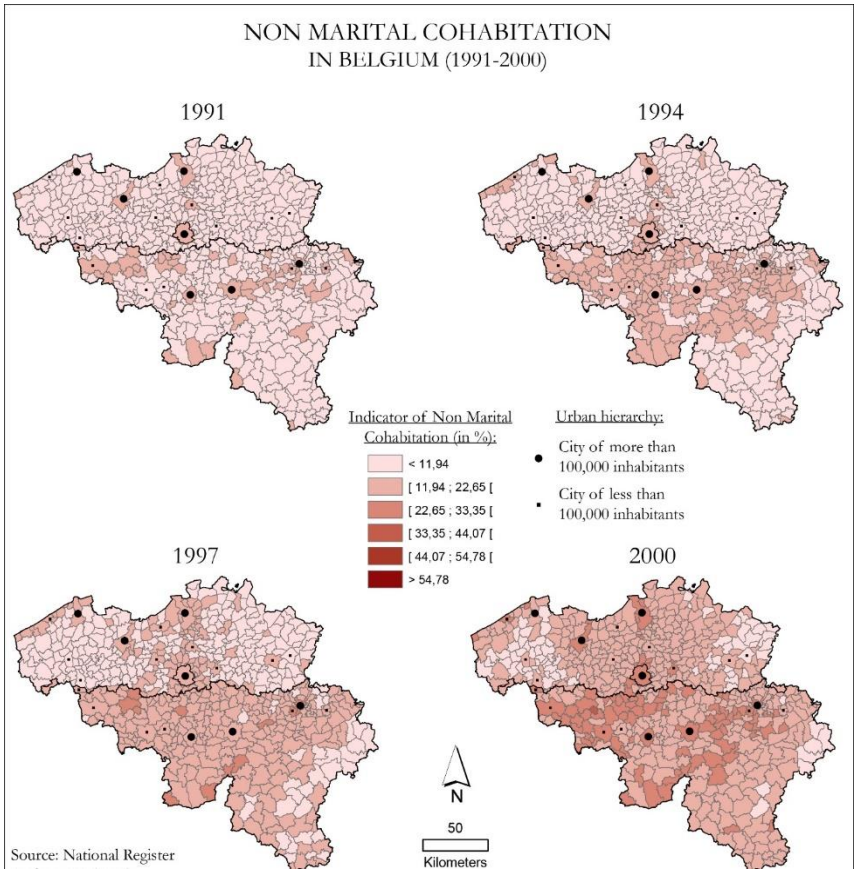
To answer the first two objectives of this communication (verify the existence of a spatial diffusion and describe the spatial pattern of the process), we map our indicator at the level of the 589 Belgian municipalities. Our result is a series of 9 diachronic maps, with one map every 3 years between 1991 and 2015. Traditional data sources generally do not allow observing a phenomenon both at a fine geographical level and at short time intervals. This is as much true for non-marital cohabitation, which is generally measured from census data, allowing its evolution to be monitored approximately every 10 years for most countries.

For the modelling of the process, we will mobilize different explanatory factors related to the different explanatory theories of family change (Second Demographic Transition, Globalization, Pattern of Disadvantage etc.), both socio-demographic, economic or spatial factors.
The fact that there is a spatial diffusion of the non-marital cohabitation implies that a spatial process guides the phenomenon. In fact, there is a spatial dependence on observations: traditional statistical models are not suitable for measuring this type of phenomenon. To do this, it is necessary to use spatial models (Anselin 1988; Elhorst 2010; Vitali et al. 2015).

First results

The maps show a spatial diffusion of non-marital cohabitation in Belgium. This spatial diffusion occurs through the expansion diffusion (by geographic proximity) and the hierarchical diffusion (through the urban hierarchy) (Saint-Julien 2007). In addition, the spatial pattern of this diffusion is very similar to that of fertility decline during the first demographic transition (Lesthaeghe and Neels 2002).

To support our comments, here are the maps for the period 1991-2000. Of course, other maps will be presented at the conference.



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