

ARTICLES

FERTILITY TRENDS IN EUROPE: FERTILITY CHANGES AND RECENT CHARACTERISTICS IN BOSNIA AND HERZEGOVINA

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ABSTRACT

Fertility trends in Europe: fertility changes and recent characteristics in Bosnia and Herzegovina

At the end of the 20th century and at turn of the 21st century low and very low fertility is one of the key demographic and policy challenges in all European countries. The concept of the second demographic transition has relevance for explaining the ongoing changes in fertility patterns across Europe. The widespread transition from high to low fertility was strongly pronounced in Bosnia and Herzegovina. Among others, one of the purposes of this paper is to supplement the ongoing debate about the 'true' nature of the income - fertility and urbanization – fertility nexus with evidence from panel dataset of 109 municipalities in Bosnia and Herzegovina. Since the early 1990s there has been a marked shift in circumstances for reproductive behaviour in Bosnia and Herzegovina reflecting a move from a satisfactory and a more or less stable socio-economic and living environment to more impoverished living conditions with regard to each segment of life. The principal changes in fertility trends occurring in Bosnia and Herzegovina was in focus. The analysis presented here are based on statistical data from population censuses, more recent estimates from official sources and via fieldwork.

KEY WORDS

Second demographic transition, Europe, Bosnia and Herzegovina, fertility changes, income - fertility nexus, urbanization – fertility nexus

1. Introduction

The currently low fertility in Europe, which leads to a relatively rapid population ageing and population decline that will inevitably occur in the coming decades, is a particular concern of demographers. The official projection of Eurostat (2006a; 2006b; 2006c) envisions that the European population will start shrinking after 2025. The low fertility rate is mentioned in the Green Paper on “Confronting Demographic Change”, an official discussion document of the European Commission published in 2005, as a “*challenge for the public authorities*” (p.5) and a “return to demographic growth” as the first out of three ‘essential priorities’ which Europe should pursue to face up to the demographic change.

The concept of the second demographic transition (SDT) has relevance for explaining the ongoing changes in family and fertility patterns across Europe. Two main protagonists of the second demographic transition (SDT), Ron Leathaeghe and Dirk van de Kaa have connected the declining fertility rate noticed in most countries of Europe in the late 1970s and subsequently to various societal and economic changes. The latter include numerous structural and cultural changes marked by modernization, the expansion of higher education, the rise of secularization, the rise of individualistic values and the importance of self-fulfilment. Among technological changes are the advances in assisted reproduction, the adoption of modern contraception and new information technologies (see van de Kaa 1994). Van de Kaa (1996) pointed out that preoccupation with self-fulfillment, personal freedom of choice and lifestyle, as well as emancipation have marked the second demographic transition. He sees this as the main distinction from the first demographic transition and refers to these changes as reflections in family formation, attitudes towards fertility regulations and motivation for parenthood. All these changes were marked by the weakening of the ‘traditional’ family as an institution and to family life and children.

The idea of the second demographic transition has been subsequently elaborated upon in various publications (e.g., Leathaeghe and Neels 2002; Leathaeghe and Surkyn 2002 and 2004; van de Kaa 1994, 2001 and 2002; van Bavel 2007). In doing so, the shifts in values and attitudes related to family, reproduction, and children have been examined by numerous researchers. The link between the second demographic transition and fertility trends highlights its strong positive association with fertility at later childbearing ages, family policies and gender equality. Many researchers stress the diversity in family patterns and living arrangements across Europe. However, de Beer, Corijn and Deven (2000: 124) emphasise that different types of changes in family and fertility “*cannot simply be interpreted in one model of the second demographic transition*”.

Pinelli et al. (2001) posed several questions in order to seek answers about the influence of family and reproductive behaviour on the trend of fertility in the countries of different regions in Europe. She studied patterns of intensity and timing of nuptiality and the dissolution of unions together with the age at the start of sexual activity, cohabitation and the new ways of forming a union establishing whether the new patterns have an influence on individual fertility behaviour. In this paper it is *“hypothesized that individual reproductive behaviour is negatively influenced by: delay in starting a union or birth of a first (second) child; cohabitation; union instability-while indirect marriage (that is marriage after pre-marital cohabitation) and repartnering might have a very limited or even positive influence, and that the strength of these influences can differ in different contexts”* (Pinnelli et.al., 2001, p.51). The hypothesis is confirmed by using biographies of the women of reproductive age in four European countries (Italy, France, Hungary and Sweden) and data included in the model of decomposition of the fertility trends and analysed using event-history analysis.

According to Eurostat (2012) three-quarters of Europeans in 2010 lived in countries with total fertility rates below 1.5, and there are many reasons to be seriously concerned about population trends in Europe. Very low fertility levels in many countries and population decline in some are the consequence of voluntary childlessness as widely accepted lifestyle choice and small family sizes as usual in contemporary Europe. Contemporary population projections are based on better data, analytical tools and methods that can avoid many errors but unfortunately do support fears voiced about Europe’s demographic future.

As Giannakouris (2008) elaborated, by 2030 nearly half of the population of Western Europe will be over 50 years old and almost a quarter of the population of the European Union will be aged 65 and more. During the 1990s, Europe became the first continent with a 'mature society', where people aged 60 years and older outnumbered children and as this trend continues, the resulting 'aging societies' will differ from previous societies in their make-up, in their needs, and in their resource allocation (Harper 2005).

2. Fertility transition in Europe

Low and very low fertility is one of the key demographic and policy challenges in all European countries. According to Morgan and Taylor (2006) majority of the world population lives in societies with below-replacement fertility. Recent fertility trends in developed countries, such as most of the European countries, have usually been accompanied by a noticeable divergence in fertility. The spread of replacement and below- replacement fertility to previously low fertility countries has occurred faster than the convergence of many other socio-economic characteristics. As already mentioned by the end of the 20th

century Europe became the first continent reaching “mature society”, firstly as a consequence of the low fertility. Presumed reasons for the fertility decline and extent to which governments are concerned about fertility differs from one country to another. (United Nations Population Division 2011).

Around the 1950s, in all European countries total fertility rates had values above replacement level. Since the early 1960s, all European countries have experienced a considerable decline of fertility and by the end of the 20th century the rates were far below replacement levels almost everywhere. Nearly 7.5 million births per annum were registered in Europe by the end of the 20th century, a rate of average 10.0 births per 1000 population, with wide regional disparities from 10.7 births per 1000 in Western Europe to 9.0 births per 1000 in Eastern Europe.

The emergence of this fertility decline process has been associated with, or better to say was a result of, delaying childbearing in most countries. The decline has contributed to a reduction in the average family size, which started to occur in the early 1960s and recently has been accompanied by the phenomenon of ageing of fertility and by increased childlessness. The most widespread and fundamental change has been the reduction in large families. Recently, the phenomenon of ageing of fertility has become a major factor in current fertility trends. According to Kohler and Ortega (2002, 91-144) an ongoing delay of childbearing is associated with postponement-quantum interactions that lead to a reduction in completed fertility. Analyses show that additional delay in childbearing shifts first and second births towards older ages. So, the probability of progressing to another child is declining (Kohler, Billari, and Ortega, 2002).

Several factors responded to socioeconomic changes, such as investment in higher education and a different type of labour market, and which are likely to reinforce individual desires to delay childbearing. Kohler et al. (2002) argue that a consequence of the delay of childbearing shares many characteristics with the fertility transition in Europe. Although, the above trends occurred in most European countries there are great variations among different countries in the timing and the level of the onset of the decline as well as the duration of the decline.

The variation in levels of the total fertility rates among countries is the result of the changes in timing and phases of transition they have reached. Also, the fertility level is the result of the complex relationship between social context and prevailing values and norms in a society and environment in which individuals behave and act.

Bosveld (2001) argues that the life strategy relevant for fertility behaviour consists of the three life domains: the family life domain, the economic life domain and the residential life domain, and each one have its own specific opportunity structure. According to Bosveld’s theory, the individual life course is characterized by the timing and sequence of events and sequence of life stages where the timing of an event refers to the moment a certain event occurs by age, while the sequence of events refers to whether or not an event will occur and order of events.

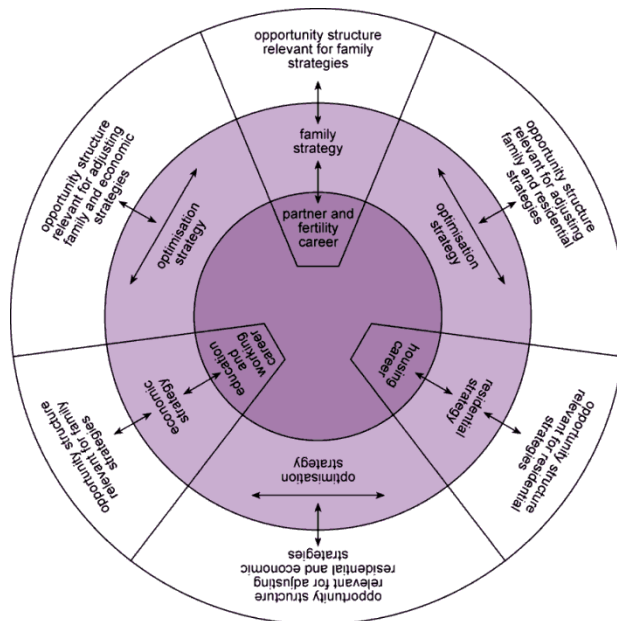


Figure 01. The life strategy approach
 Source: author drew according to Bosveld, 2001.

The scheme above offers an overview of the components of the life strategy that is divided into sub-strategies. Bosveld regards the family as the first life domain, referring to the partner and fertility career (the options are having children or not, the timing of the first child, the number of children and duration between the subsequent births). The second one concerns the economic life domain, and the third life domain comprises residential needs. The tactics people use to obtain their needs within each life domain, in this way is balanced between their needs within macro-level and micro-level opportunities and constraints in order to achieve life satisfaction on the best possible level. *“The actions that an individual can take concern the way careers are combined during the life course by the choice whether or not an event will occur and the timing of the occurrence. In this way we can speak of family strategies when we talk about the tactics people use to fill in their fertility and partner careers”* (Bosveld, 2001, p. 58).

Generally, wide fertility variations across Europe are registered, especially among the countries of South, North, and East Europe. At the same time within Central European countries patterns of fertility are more homogenous. In the 1960s, none of the countries in exhibited a total fertility rate of below reproductive value (2.1). In the early 1970s, for instance, ten countries attained and sustained below replacement fertility level Table 1. By the 1970s there were 20 countries with these fertility levels, and the number was increasing steadily. In 1997 almost all European countries (41 countries) had below replacement fertility levels, but in 2000s all European countries are experiencing fertility lower than replacement level (the exception is Albania at 2.10). Nowadays, even Albania has fertility 1.8 children per woman. In 2000s, all European countries had total fertility rates (TFR) below replacement level. Most countries with fertility rate (TFR) below the 1.5 are recently attempting to increase the rate with specific population policies (United Nations 2010). As Myrskylä, Kohler and Billari (2009) elaborated their finding that fertility reversing from a negative to a positive relationship with increases in development among the most advanced countries is consistent with the emerging literature documenting fertility increases for many developed countries starting in the late- 2000s (Goldstein, Sobotka and Jasilioniene 2009, Furuoka 2010, Myrskylä, Kohler and Billari 2011).

Table 1 Average number of children per woman in european countries

	1970	1980	1990	1997	2002	2010	2012
Germany	2.03	1.56	1.45	1.37	1.3	1.4	1.4
W. Germany	1.99	1.45	1.45	1.44	n.a	n.a	n.a
E. Germany	2.19	1.94	1.50	1.04	n.a	n.a	n.a
Austria	2.29	1.65	1.45	1.37	1.3	1.4	1.4
Belgium	2.25	1.68	1.62	1.60	1.7	1.9	1.8
Denmark	1.95	1.55	1.67	1.75	1.7	1.9	1.7
Finland	1.83	1.63	1.78	1.75	1.7	1.9	1.8
France	2.47	1.95	1.78	1.71	1.9	2.0	2.0
Ireland	3.97	3.24	2.11	1.92	1.9	2.1	2.0
Iceland	2.83	2.48	2.30	2.04	2.0	2.2	2.0
Luxembourg	1.98	1.49	1.60	1.71	1.8	1.6	1.6
Norway	2.50	1.72	1.93	1.86	1.8	2.0	1.9
Netherlands	2.57	1.60	1.62	1.56	1.7	1.8	1.7
United Kingdom	2.43	1.90	1.83	1.72	1.6	1.9	1.9
England and Wales	2.40	1.88	1.84	1.73	n.a	n.a	n.a
Scotland	2.57	1.84	1.66	1.55	n.a	n.a	n.a
Northern Ireland	3.25	2.78	2.26	1.92	n.a	n.a	n.a
Sweden	1.92	1.68	2.13	1.52	1.6	2.0	1.9
Switzerland	2.10	1.55	1.58	1.48	1.4	1.5	1.5
Spain	2.88	2.20	1.36	1.18	1.2	1.4	1.3
Greece	2.40	2.22	1.39	1.31	1.3	1.5	1.3
Italy	2.43	1.64	1.33	1.20	1.3	1.4	1.4
Portugal	3.01	2.25	1.57	1.46	1.5	1.4	1.3
Albania	3.62	3.26	2.90	2.70	2.1	1.7	1.8
Bosnia and Hezegovina	2.71	1.93	1.71	1.65	1.6	1.2	1.3
Croatia	1.83	1.92	1.67	1.69	1.4	1.6	1.5
Macedonia	2.98	2.47	2.06	1.93	1.9	1.5	1.4
Slovenia	2.12	2.10	1.46	1.25	1.3	1.6	1.6
Yugoslavia	2.30	2.29	2.09	1.77	1.7	n.a	n.a
Bulgaria	2.17	2.05	1.82	1.09	1.3	1.6	1.5
Hungary	1.98	1.91	1.87	1.38	1.3	1.3	1.3
Poland	2.26	2.26	2.05	1.52	1.3	1.4	1.3
Romania	2.89	2.43	1.84	1.32	1.2	1.5	1.5
Czech Republic	1.90	2.10	1.90	1.17	1.1	1.5	1.5
Slovakia	2.41	2.31	2.09	1.43	1.2	1.4	1.3
Russia	2.00	1.86	1.90	1.23	1.3	1.6	1.6
Estonia	2.16	2.02	2.04	1.24	1.3	1.7	1.6
Latvia	2.01	1.90	2.01	1.11	1.2	1.4	1.4
Lithuania	2.39	1.99	2.02	1.39	1.3	1.5	1.6
Belarus	2.33	2.00	1.91	1.23	1.3	1.4	1.6
Moldova	2.56	2.39	2.39	1.67	1.3	1.5	1.5
Ukraine	2.09	1.95	1.89	1.25	1.1	1.4	1.5
USSR	n.a	n.a	n.a	n.a	n.a	n.a	n.a
Andorra	n.a	n.a	n.a	n.a	1.2	1.2	n.a
Liechtenstein	n.a	n.a	n.a	n.a	1.4	1.4	1.5
San Marino	n.a	n.a	n.a	n.a	1.2	n.a	1.3
Malta	n.a	n.a	n.a	n.a	1.7	1.4	1.4

Source: A. Monnier: "La conjuncture démographique: l'Europe et les pays développés d'outre-mer, in *Population* (Paris, Institut national d'études démographiques), Nos. 4-5, 1987. 2002 World Population Data Sheet of the population reference bureau, The World Bank IBRD IDA 2015 n.a. - not available

3. The restructuring of Bosnia and Herzegovina after Dayton Peace Accords and changes in fertility trends

Following the dissolution of the Socialist Federal Republic of Yugoslavia (SFRY), Bosnia and Herzegovina proclaimed independence on 1. March 1992 and was then affected by war during the period 1992 to 1995. Virtually every sector in Bosnia and Herzegovina was devastated, from the economy to the paralysis of the state infrastructure. Although the degree of damage varied, every community experienced some. The health and education systems were paralyzed and affected all citizens. The country was transformed from a middle-income SE European country with a satisfactory number of educated population and a reasonable standard of living to one with economic characteristics comparable with the Developing world. The war ended in December 1995 with the Dayton Peace Agreement – “*The General Framework for Peace in Bosnia and Herzegovina*”, according to which Bosnia and Herzegovina (BiH) continues to exist as a decentralised state, established on new principles and standards according to the terms the Peace Agreement and the Constitution of Bosnia and Herzegovina (refer. to HRI/CORE/1/Add.89/rev1. document) (UN, 2004).

The Dayton Peace Accords recognised two entities in Bosnia and Herzegovina: the Federation of Bosnia and Herzegovina (FBiH) and the Republic of Srpska (RS) and Brcko District (BD) with Sarajevo as the capital of BiH. FBiH comprises 51 per cent of the total territory and has a Bosniak (Muslim) and Croat population. FBiH is administratively divided into 10 cantons/districts which are further divided into 79 municipalities. The Republic of Srpska has the remaining 49 per cent of the territory, with a Bosnian Serb majority and is administratively divided into 62 municipalities. The city of Brcko is a separate administrative unit (Keil, 2013; Pobric, 2009).

After nearly four years of war which destroyed the country, the infrastructure was in ruins, the economy in collapse, almost 200 000 persons killed, around two million displaced internally or abroad and society fragmented by distrust and suspicion (Robinson and Pobric, 2006). Ethnic cleansing and widespread conflict resulted in a serious and radical shift in the demographic characteristics of the population. The most significant consequences have been population decrease as a result of war-time deaths and of massive population movements. These facts further produced a change in the sex ratio and modification of the population age structure which has an impact on the natural increase of the population of BiH. About one million people sought refuge abroad, while another million were displaced internally, and most were victims of ethnic cleansing. There is no accurate information on the gender composition of the close to 200 000 people killed, but it is believed that the majority of the dead or missing population were males of productive age. The United Nations High

Commissioner for Refugees (UNHCR) reports the only gender-disaggregated data available on refugees and displaced persons: 51 per cent were from the female population, and of the 830 000 returnees, internally displaced and vulnerable persons assisted by UNHCR, 55 per cent were women and girls (UNHCR, 1998).

Bosnia and Herzegovina started the process of demographic transition later than was the case with the neighbouring countries, certainly later than other European countries, and hence its natural population growth for many years was well above the European average. The country had dynamic changes in population during the last fifty years in 20th and the first decade in 21st century. Despite net out-migration, the total population increased between each census year until the 1990s, but with decreased intensity of the rate of growth (from 2.1% in 1953 to 0.6 in 1991 and negative one -1.5% in 2010). During the period 1991-2013 population numbers fell by 13.4 per cent (total population 4 337033 in 1991 and 3 791 662 in 2013).

There was a persistent decline in the total fertility rate (TFR) registered during the four decades for which data are available (from 1953-1991). In the 1950s, BiH was still in the first phase of the demographic transition, with a TFR measuring 4.82 in 1953. In the 1960s and early 1970s the country entered the middle phase of the transition, with the fertility rate falling to 3.80 in 1961 and 2.81 in 1971. In the early 1980s, the country had a moderately low fertility (2.02), and by the census of 1991 BiH had a fertility rate lower than that needed to reach the replacement level of the population (TFR of 1.88). The TFR decreased by 61 per cent during the thirty-eight year period, from 1953-1991, representing a fall of 2.94 children per woman. This fall was the highest within the neighbouring countries (during that period republics of the SFRY).

4. The income-fertility nexus and urbanisation-fertility nexus

Considering the fact that in BiH a national population census has not been conducted since 1991 until 2013, there is no possibility to provide an adequate and accurate analysis of fertility behaviour and fertility patterns at the municipality level in different parts of the country for the post-war period. In fact, data obtained during the last census in 2013 are not official and still in process and will be available in second half of 2015. However, other data can be used as indicators of fertility levels and to form a general demographic picture of the country (e.g. Agency for Statistics BiH , 2006; 2008; 2011; 2014; Federal Office of Statistics BiH, 2005; 2010; 2013; 2014). Although the analysis performed below refers to 1991 is of great importance because the fertility - urbanisation and fertility incom nexus has never before been the subject of research, at the level of municipalities provides a good basis for monitoring trends in fertility in BiH (Figure2 and3).

Various authors (e.g. Lesthaeghe and Wilson, 1986; Coale and Treadway, 1987) have suggested patterns of fertility change as a result of urbanization and the occupational changes that accompany industrialization and rising income per capita. Knodel (1974) suggests that urbanization may not have been the cause of fertility decline, but instead considers urbanization a response to the already changing social and economic structures within society. Sharlin (1986) argues that shift from rural living to urbanization has been one of the dominant arguments for understanding the transitions in fertility in Europe. The relationship between fertility and income has been regarded as an issue of high importance in development economics and policy. A popular concept is the idea that the fertility-income relationship takes the form of an inverted U, which is raised by Birdsall (1980) and subsequently displayed in the 1984 World Development Report. Ehrlich and Lui (1991), and Galor and Weil (2000) have provided theoretical justifications for an inverted U shaped path of fertility transition.

Among others, one of the purposes of this paper is to supplement the ongoing debate about the 'true' nature of the income-fertility and urbanization-fertility nexus with evidence from a panel dataset of 109 municipalities in Bosnia and Herzegovina, observed in 1991. So, is provided an overview of this investigation, though it should be noted that analysis of this dataset focuses only on certain variables and that these possibly exclude a considerable variety of other socio-economic factors, which may possess significant explanatory power for human fertility. In the database (initially collected by Professor Bosnjovic and the author), the income variable equals the real GDP* per capita in 1991, and fertility is measured as the total fertility rate (children per woman), as compiled by the Institute of Economics in Bosnia and Hercegovina and the Federal Office of Statistics. For a more precise measurement and understanding of the levels of total fertility in the municipalities in Bosnia and Herzegovina some statistical analyses were performed. As has already been mentioned, one of the aims of this research is to investigate the existence and the strength of bivariate relationships between fertility and urbanization and the relationships between fertility and GDP (\$ per capita). The investigation of the strength of the relationships between these variables is developed via regression analysis.

4.1. Regression analysis of total (fertility and GDP \$ per capital)

In order to investigate the form of the relationships between two variables, when one variable is deemed to be dependent upon another (in this case fertility is the dependent variable and GDP is the independent variable), it was important to analyse them for all (109) municipalities in Bosnia and Herzegovina in 1991.

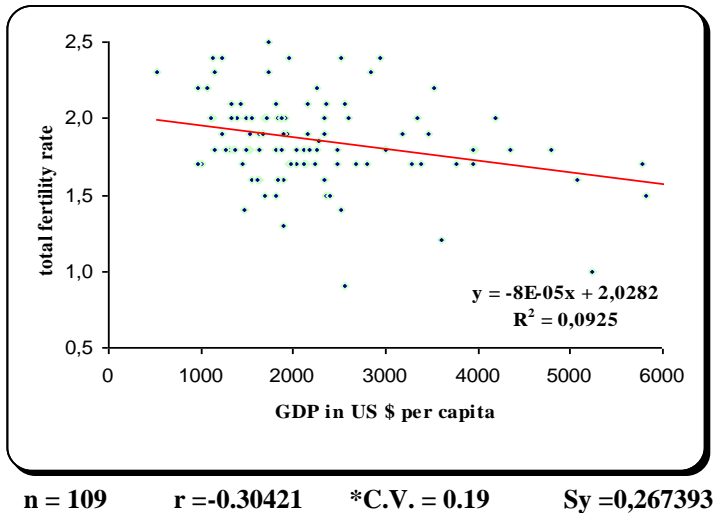


Figure 2. The relationship between GDP and TFR in BiH

The relationship is statistically significant at the 0.05 (95%) level indicated by calculated the correlation coefficient $r = -0.30421$ (C.V. = 0.197).

Descriptive statistics of total fertility rate for all municipalities in Bosnia and Herzegovina are as follows:

Mean	1.857407
Standard Error	0.027127
Median	1.8
Mode	1.8
Standard Deviation	0.281917
Sample Variance	0.079477
Kurtosis	1.240068
Skewness	-0.37527
Range	1.6
Minimum	0.9
Maximum	2.5
Sum	200.6
Count	109
Confidence Level (95.0%)	0.053777

*C.V.= Critical values of the correlation coefficient at the selected significance level for a sample size of n.

Furthermore, the municipalities were also divided into five groups, with membership of each group expressed as a value of the GDP (between \$523 and \$6122 in 1991).

Table 2 Municipalities grouped by GDP in US \$ per capita

GDP \$ p.c.	Number of municipalities	Total fertility (\bar{x})	Total fertility (σ)	GDP \$ p.c. (\bar{x})	GDP \$ p.c. (σ)
less than 1500	25	2.0	0.25	1217	220 (18%)
1500-2000	23	1.9	0.26	1762	145 (8%)
2000-3000	30	1.8	0.31	2396	267 (11%)
3000-4000	13	1.8	0.23	3518	311 (9%)
4000 and more	8	1.6	0.30	5170	708 (13%)

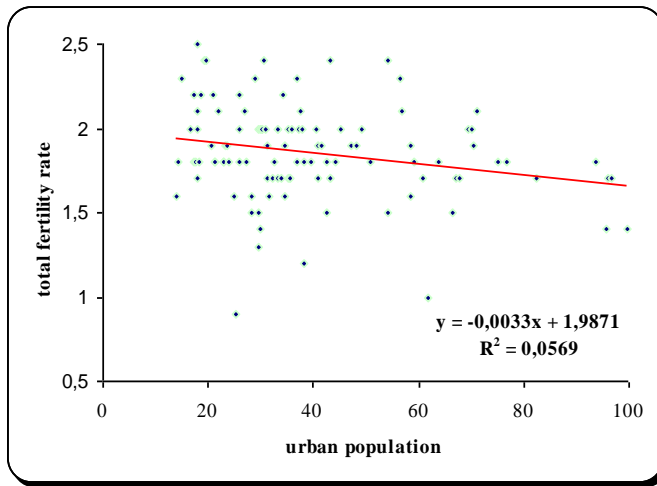
Source: Author's calculation based on the data from Institute of Economics in Bosnia and Herzegovina and Federal Office of Statistics.

The full interpretation of the bivariate relationships begins with elementary statistical description, namely the arithmetic mean and two other commonly used measures, the mode and the median as well as the standard deviation. The values of the arithmetic mean lie in the range from 1.6 to 2.0 children per women.

It is perceived clearly that the average deviation of observations about the mean expressed as a standard deviation are the smallest for the total fertility (0.23) and GDP (\$311 or 9%) in the group of municipalities where GDP was between \$3000 and \$4000. The variation of the number of children ($\sigma = 0.31$) is highest in the group with GDP between \$2000 and \$3000.

4.2. The regression analysis of total fertility and urbanization

As well as investigating the relationships between GDP per capita and fertility, the relationship between urbanization and fertility was also examined within all 109 municipalities. The relationship's strength is expressed by the correlation coefficient $r = -0.238595$ (C.V. = 0.197), which suggests a relatively high negative association between these two variables.



$n = 109$ $r = -0.238595$ C.V. = 0.197 $S_y = 0,273732$

Figure 3. The relationship between urbanization and TFR in BIH

Analogous to the previous analyses of the relationships between total fertility and GDP per capita, analysis of the relationships between total fertility and urbanization on different levels shows that the smallest arithmetic mean of total fertility (1.7) and the smallest standard deviation ($\sigma = 0.17$) were in the municipalities with the highest level of urbanization (between 75 and 100 per cent).

Table 3 Municipalities grouped by level of urbanization

Level of Urbanization (%)	Number of municipalities	Total Fertility (x)	Total Fertility (σ)	Urbanization (x)	Urbanization (σ)
0-25	25	2.0	0.24	19	2.9
25-50	58	1.8	0.28	35	6
50-75	18	1.8	0.32	62	6
75-100	8	1.7	0.17	89	10

Source: Author's calculation based on data from the Federal Office of Statistics

5. Recent Fertility characteristics in BiH

Since the early 1990s there has been a marked shift in circumstances for reproductive behaviour in BiH – reflecting a move from a satisfactory and a more or less stable socio-economic and living environment to more impoverished living conditions with regard to each segment of life, especially during the war itself, but in the post-war period as well (e.g. Helms, 2013; Vuillamy, 2013). There are no accurate data about the number of live births during the 1992-1995 period, but their number had declined sharply by 1996 when compared with the number in 1991. The number of live births accounted for 64,769 in 1991 and in 1996 their number was only 46,594. Generally, clear differences in the number of live births can be observed between the FBiH and the RS, but with an almost continuous decline for both entities. In 1996 there were 34,331 (73%) live births in the FBiH and 12,263 (27%) in the RS. However, during the 1996-2006 period their number was smaller: 12,729 and 2,238 live births in the FBiH and in the RS, respectively, with a slight increase of the share (35%) of live births in the RS in 2006. Unfortunately, these differences are with respect to a more emphasized decline in childbearing in the FBiH registered since 2000, and not as a result of childbearing increase in the RS where the amount of childbearing was smaller by about 16% in 2006 than in 1997 (Tables 4 and 5).

Table 4 Rates of Natural Population Change in the FB&H, 1991-2011

Year	Live births	Deaths	Natural increase	Marriages	Infant deaths per 1000 births	Divorces per 1000 marriages
	Per 1000 present inhabitants					
1991	15.6	6.7	8.9	6.7	15.1	44.3
1996	15.2	6.3	8.9	6.5	13.8	25.7
1997	14.6	6.9	7.7	6.8	13	68.4
1998	14.1	7.3	6.8	6.7	12.1	77.9
1999	12.3	7.1	5.2	6.3	11.2	84.1
2000	11.0	7.4	3.6	6.0	11.0	84.9
2002	10.0	7.4	2.6	5.6	10.5	110.5
2004	9.6	7.9	1.7	5.9	8.5	62.6
2006	9.3	8.0	1.3	5.6	9.5	71.7
2011	9.6	8.7	0.9	5.9	7.6	58.9

Source: Federal Office of Statistics, Bosnia and Herzegovina

Table 5 Rates of Natural Population Change in RS, 1991-2011

Year	Live births	Deaths	Natural increase	Marriages	Infant deaths per 1000 births	Divorces per 1000 marriages
	Per 1000 present inhabitants					
1991	15.6	6.7	8.9	6.7	15.1	44.3
1997	9.8	8.3	1.5	5.1	11.3	103.5
1998	9.5	8.7	0.7	5.2	8.3	110.7
1999	10.0	8.6	1.4	5.7	8.2	96.9
2000	9.7	9.1	0.6	5.4	7.3	93.6
2002	8.5	8.9	-0.4	5.0	7.2	117.2
2004	8.1	9.2	-1.1	5.3	5.3	81.9
2006	7.7	9.3	-1.5	5.3	4.3	81.2
2011	7.1	9.4	-2.4	4.0	4.3	81.4

Source: Institute of Statistics, Republic of Srpska

Data on vital statistics have been collected each year by registration officers and municipal courts. According to the legal regulations on registration, the events of births, deaths and marriages are obligatorily registered in population registers of the area where they took place, irrespective of the residence of persons to whom these events refer. Unfortunately, though, data on the total number of women and the number of women of reproductive age are not available at a municipality level, which means it is impossible to calculate the age-specific fertility rate or the total fertility rate for each municipality. However, we have utilised other data available that can help provide an overview of some of the recent demographic changes in the country, including fertility trends. These data include some from official sources, as well as from interviews with key officials in state and local government across the country.

Data available only from 2000 to 2006 enable municipalities in the FBiH and in the RS to be divided into six groups (Tables 6 and 7), with membership of each group as a value of the crude birth rate (CBR) for the period 2000-2006. Unfortunately, the RS Institute of Statistics has no available data for the total population for 2005 and 2006 at the municipality level and so it was not possible to calculate CBRs for these years. There was a natality rate between 0.1‰ and 5.0 ‰ in a few municipalities of the FBiH and in a higher number of municipalities of the RS (as many as 16, or 25.8%, in 2004). The municipalities with CBRs below 10‰ had the highest proportion with a constant increase and by 2004 they accounted for 95.2 per cent in the RS. Their number increased from 37 in 2000 to 59 in 2004 in the RS, while the situation in the FBiH can be characterised as slightly better, but with a significant increase in the last three

years when they accounted for 64.2 per cent in 2004, and for a similar percentage (62%) in 2005 and in 2006. So, from 2003 to 2006 most municipalities in the FBiH had CBRs between 5.1‰ and 10.0‰. Generally, the number of municipalities with CBRs from 15.1 to 20‰, although higher in the FBiH than in the RS, declined during the 2000-2006 period. Busovača (60 km north-west of the capital, Sarajevo) was the single municipality in the FBiH with a CBR more than 20‰ (the highest = 24.3‰ in 2001), accompanied by Trnovo (25.1‰ in 2003), 30 km south-east of Sarajevo. These two municipalities belong to a low urbanised and moderate income per capita group according to the 1991 classification, and in recent years they have had more births in the rural areas of their respective municipalities. Both of these municipalities have received displaced inhabitants from other parts of BiH, during the war or afterwards. The municipalities with CBRs over 20‰ in the RS (Istocni Drvar, Petrovac, Ostra Luka and Kupres) have only small numbers of inhabitants and very low population density. Generally, the number of live births in these municipalities is only about 10 per annum in each. So, their natality level does not really improve the overall demographic situation.

The observed declining values of CBRs in the municipalities of BiH can be attributed to many factors impacting on the level of natality. Using field-work and personal contacts with municipal mayors, municipal staff and other individuals, research supports the argument that variations in the declining natality reflect the operation of specific factors in the various municipalities. Among these are capacity building for local planning, project formulation and implementation that promotes local development as well as opportunities for education and employment. In addition, the kind of problem that returnees are faced with has changed from being a predominantly security related one to problems linked to the education of their children and deficient employment possibilities, to health care and insurance, and housing problems (see Ministry of Finance, 2013; UNDP BiH, 2013).

Table 6 Municipalities by Live Births per 1000 Population, FBiH,2000-2006

CBR (‰)	2000	2001	2002	2003	2004	2005	2006
0.0	-	-	-	-	1	1	-
0.1-5.0	8	9	9	8	5	5	6
5.1-10.0	24	25	31	28	45	43	43
10.1-15.0	39	40	35	40	27	29	29
15.1-20.0	7	4	3	1	1		1
more than 20.0	1	1	1	2	-	-	-
Total	79	79	79	79	79	79	79

Source: First author's calculations based on data from Agency for Statistics of Bosnia and Herzegovina

Table 7 Municipalities by Live Births per 1000 Population, RS, 2000-2006

CBR (‰)	2000	2001	2002	2003	2004	2005	2006
0.0	-	2	-	1	2	na	na
0.1-5.0	9	8	11	15	16	na	na
5.1-10.0	28	33	35	38	41	na	na
10.1-15.0	20	17	13	6	2	na	na
15.1-20.0	1	1	1	1	-	na	na
more than 20.0	4	1	2	1	1	na	na
Total	62	62	62	62	62	na	na

Source: First author's calculations based on data from Agency for Statistics of Bosnia and Herzegovina

A survey conducted by the rights-based Municipal Development Programme, RMAP, and initiated by the UNDP BiH, the BiH Ministry for Human Rights and Refugees (MHRR) and selected BiH municipalities revealed that almost half of the municipalities have no development strategies nor have they updated their strategies in recent years (MHRR, 2006). On the other hand, among municipalities with valid strategies there are serious shortcomings regarding implementation and follow-up, because most of them have not developed an action plan for the implementation of the strategy (Personal communications with Eldar Sarajlic, UNDP BiH staff). Only 10 per cent of municipalities can ensure adequate financial resources at their disposal to implement their plans.

The recent post-civil war demographic situation and fertility/natality behaviour in BiH have some similar characteristics to those outlined in the Second Demographic Transition (SDT) and commonly applied to European countries (Leasthaeghe and Neels 2002; Leasthaeghe and Surkyn 2002; 2004; van de Kaa 1994; 2001; 2002; van Bavel 2007). This Transition, in which birth rates fall to below replacement level, refers to ongoing changes in family and fertility patterns linked to structural and cultural changes marked by modernisation, the expansion of higher education, the rise of secularisation, the growth of individualistic values and the importance of self-fulfilment. Among technological changes have been advances in assisted reproduction, adoption of modern contraception and new information technologies. Van de Kaa (1996) stressed that preoccupation with self-fulfilment, personal freedom of choice and lifestyle, as well as emancipation have characterised the SDT. He saw this as the main distinction to the first demographic transition (the move from high birth rates/high death rates to low birth rates/low death rates), and refers to these changes as reflections of family formation, and changing attitudes towards fertility regulation and motivations for parenthood.

All these changes have been marked by the weakening of the `traditional` family as an institution and by changing attitudes towards family life and children.

For BiH numerous societal and cultural changes have contributed to the country's modernisation, but it can be argued that the recent sharp decline of fertility is primarily a consequence of the very difficult socio-economic situation in the country, though it is possible also to identify the impact of the rise of individualistic values and the importance of self-fulfilment, as stressed in the SDT and applying widely in the majority of West European countries. In BiH the choice of new types of households (pre-marital single living, cohabitation and parenthood within cohabitation) have contributed to a delay in starting a marriage union or birth of the first or second child and are all linked to individualistic and non-conformist value orientations in a great variety of spheres. Hence these associations between household types and value orientations not only hold for northern and western Europe, but now also for southern, central and eastern Europe (Hoem and Kostova, 2008; Liefbroer and Fokkema, 2008). In contrast, reproductive behaviour and its effects on fertility and patterns of intensity and timing of nuptiality as well as the dissolution of unions in BiH have been attributed by many observers to ongoing socio-economic difficulties and problems rather than to modernisation (UNDP BiH, 2013).

Data from the Agency for Statistics of BiH and that obtained from field-work support the conclusion that rural-urban migration of the population, which has helped reduce populations in rural areas, has contributed to the higher number of live births in urban areas. However, the overall decline in total fertility rates in recent years has been influenced by ongoing changes in family patterns and various societal and economic changes. A gradual decline in marriages registered for under 30s has been continued, and increased age of marriage and age of mothers at first childbirth as well as the decrease in the rates in the higher birth orders have undoubtedly affected and contributed to lower fertility levels. Economic hardships post-war have added strains to family life; young couples have found it very hard to find available and affordable housing; unemployment rates have been very high (around 44% in 2013 according to the Federal Office of Statistics, BiH); there is also high reliance on part-time jobs and jobs with low salaries; and there is no guarantee of continuing employment for women who leave the workforce to have children. These findings and information obtained through personal communications also provide the basis to confirm that the stronger decline in natality in recent years than in the years immediately after the war ended partly reflects the absence of any systematic population policy adopted by the state governments within BiH.

In recent years across BiH's municipalities, there has been a remarkable decline in crude birth rates. In particular, people when asked about their decisions to have none or only one child answered that they have lost hope of better living conditions and they are afraid for the future. The majority of municipalities need assistance in planning and project management targeted at the local level, which will help to build capacities to improve the socio-economic situation and develop communities. There are some observable examples of projects currently being implemented (see also UNDP/SADC, 2011), though they are mainly only small-scale, e.g., Bugojno municipality – strawberry growing/production targeting the most vulnerable unemployed rural population; Drvar municipality – public lighting scheme near the elementary school; Odzak municipality – new equipment for the Healthcare Centre (acquiring an ultrasound machine); Orasje municipality – connecting a local school to the water supply network; Teslic municipality – central heating installation at the elementary school in Vitkovici.

6. Total fertility and age specific fertility rates in BiH

Considering the limitations in the available data we can provide only age specific fertility rates and total fertility rates for BiH as a whole while the ability to do the same at the municipality level is restricted. Furthermore, a review of the contemporary differential fertility characteristics according to relevant background differences such as place of residence, ethnicity, educational attainment, and female employment cannot be provided either. However, according to the analysis of TFRs during the four decades for which data are available (from 1953 to 1991) there was a persistent decline, and by the last census of 1991 the fertility rate in BiH was lower than that needed to reach the replacement level of the population (TFR of 1.88). This was not surprising but represents the new tendency of reproduction typical for modern developed societies. However, the fertility trends have shown a more pronounced decline in the past two decades. Thus, in 1996 the fertility rate was 1.64, but only 1.17 in 2006 (which is lower by 0.71 children per woman than in 1991). A slight increase was registered in 2011 when TFR was 1.26 (Figures 4 and 5).

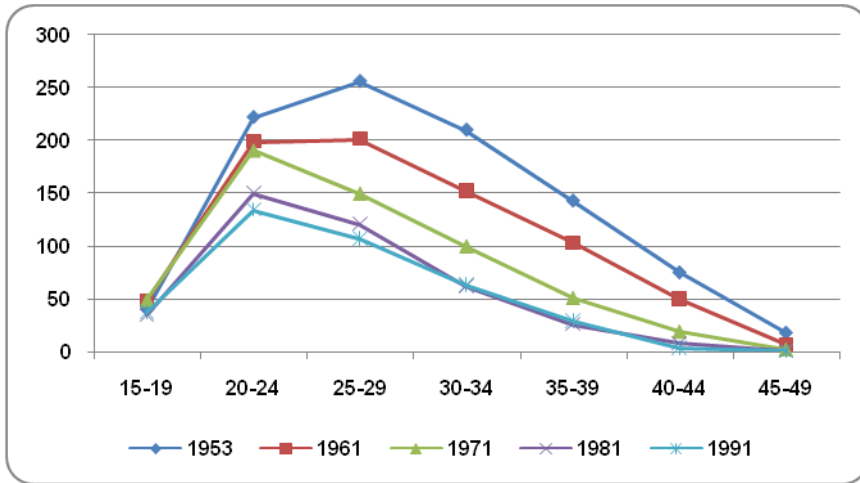


Figure 4. Age Specific Fertility Rates for BiH by Census Years 1961-1991

Source: Authors' calculations based on data from the Federal Office of Statistics.

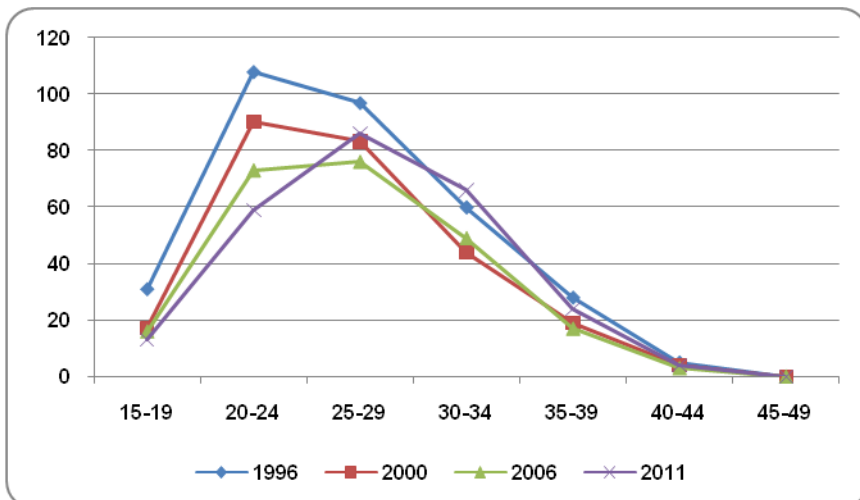


Figure 5. Age Specific Fertility Rates for BiH, Estimates for 1996, 2000, 2006 and 2011

Source: Authors' calculations based on data from the Federal Office of Statistics

At the same time, the overall decline in total fertility was accompanied by a differential in the number of births by women in different age groups. In particular, there was a sharp decline in the fertility of teenage mothers. This tendency towards decline in the fertility of women among each age group was weakly emphasised in the first two or three years after the war ended. So, the fertility rates of women aged from 15 to 19 years first registered a rise and then declined sharply after 1998. In 2011 it accounted only for 35.4 per cent of the 1991 value. The age specific fertility rate (ASFR) of women in the age group 15-19 was 38.1‰ in 1991, but in 2006 it was only 13.5‰. Women in their twenties, which are the optimal years for child bearing, have been producing a much smaller number of births during the post-war period (1996-2011) than in 1991. For those women aged from 20 to 24 years, the rate of fertility in 1991 (134.0‰) had been more than halved by 2011 (59.1‰). For a decline of about 40 per cent the full forty-year period 1953-1991 was needed (222.4‰ and 134.0‰ respectively). Since 1961 a sharper decline in the rate of fertility among women aged 25-29 occurred, as a consequence of a marked shift in reproductive behaviour: from a limited use of modern contraception and strong reliance on induced abortion to the widespread use of effective contraceptive methods, mostly the Pill and intrauterine device (IUD). However, there has been a significant decline of fertility among women in both age groups and a slightly higher participation in child bearing among women aged from 25 to 29 since 2001. This reflects various developments, including greater reliance on contraception, a concern for the patterns of intensity and timing of nuptiality, changes in family behaviour and the fact that people may be forced to renounce having children or decide to have only one, because they entered into marriage later or too late, or their desire for children is limited by the country's poor economic situation (McLanahan, 2004).

The fertility rate among women in their thirties experienced a very steep decline during the first three decades in the second half of the 20th century, but since 1981 it started to increase and in 1991 was maintained at a slightly higher rate. Such a change can be explained as a consequence of postponing the age of marriage, the later age of first births caused by mass education of the female population that had started earlier, and by the economic development in the country. The secularisation of society is also favouring new patterns of reproductive behaviour.

From 1996 to 2006, ASFRs among women in their 30s started to decline and were lower in comparison with 1991, but their percentage participation in the number of births was higher more recently than earlier. So, the fertility rate among women in the age group 30-34 was 63.1‰ in 1991 and was lower by more than 20 per cent in 2006 (49.0‰). Even the recent decline in the fertility rate in 2006 among women aged from 35 to 39 was almost 50 per cent of the value in 1991 (28.6‰ in 1991 and 16.8‰ in 2006). The increase in the percentage share of births was almost doubled among women in this age group

(from 4.9 per cent in 1991 to 9.3 per cent in 1996 and 7.5 per cent in 2006). A slight increase in fertility was registered among women in the age group 40-44: from 3.9‰ in 1991 to 5.3‰ in 1996, but since 2002 it has declined and in 2011 the value had returned to 3.9‰. The birth rates among these female populations had the sharpest declines of over 97 per cent from 1953 to 1991, reflecting a shortening of the child-bearing period amongst the female population. At the same time, the recent slight increase is related to a generally later age of first births and seems compatible with people paying more attention to quality of life and overall personal fulfillment. So, a shortening of the child-bearing period is characteristic of the recent period, but with more emphasised postponement of the first birth and a decline in the share of births of the second and higher orders.

Regarding the economic situation in the country's municipalities, the kind of problems that many spouses face are multi-dimensional, irrespective of whether they are returnees. However, in most of the municipalities living conditions are increasingly difficult. The local people and especially returned refugees experience stress regarding their main problems: the education of their children, lack of employment possibilities, low and irregular salaries, temporary or insecure employment, poor health care and housing problems (Bennett, 2014; see also Rotariu, 2006).

7. Conclusion

This paper focuses on one of these Eastern European countries, Bosnia and Herzegovina, where additional factors in demographic change are associated with war of the early 1990s and its aftermath. Two decades after the war the economic disruptions from the conflict are still readily apparent and the new political structure is associated with various instabilities contributing to demographic patterns that reflect not only the SDT but also specific internal factors.

This principal demographic changes occurring in Bosnia and Herzegovina are identified, both since the last decades in 20th century and in recent years since the end of the war in 1995. It has focused on the fertility trends and characteristics, with especial concern in 1991 census year. The pronounced reduction in fertility can be linked to particular circumstances in BiH following the war and subsequent economic stagnation and instability accompanying changes in societal behaviour postulated in theory pertaining to the so-called Second Demographic Transition, such as co-habitation instead of marriage, greater female labour force participation and growth of individualistic values.

Despite the lack of some standard population data in BiH since the outbreak of the war, using a combination of pre-war census data, more recent official statistics from various national and international sources as well as personal

interviews, the analysis of demographic change in BiH reveals some differences between the two main entities in the country, with a sharper decline in natality in Republica Srpska (RS), which also had a higher rise in the mortality rate. The numbers of live births per annum have fallen across the country, though with variations that seem to suggest the significance of local factors, including the presence of returned refugees, investment in key infrastructure and availability of schools and health-care facilities. However, other factors may also be influential, including changes to the nature of household formation, the widespread desire to limit family size and later age of conception of the first child. This paper presented the nature of the income-fertility and urbanization-fertility nexus with evidence from a panel dataset of 109 municipalities in Bosnia and Herzegovina, observed in 1991. So, it provided an overview of this investigation, which may possess significant explanatory power for human fertility. The potential for more detailed analysis of geographical variations in the various manifestations of these changes is currently limited by the lack of some standard data collection activities in the country.

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