AGE MODEL OF FERTILITY IN VOJVODINA
AT THE BEGINNING OF THE 21st CENTURY

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ABSTRACT: This paper presents an outlook on fertility trends of the population of Vojvodina in the first decade of the 21st century, a period that includes the results of the previous two Censuses held in 2002 and 2011. The main concern is identifying determinants of this development process and the dynamics regarding the age model of fertility as well as the way it is manifested in Vojvodina. Methodology of this research relies on evaluating age specific rates, determining its fluctuations and shifts in order to establish the course of the change. Census of 2002 and Census of 2011 provide useful data to complete fertility analyses. Total fertility rates also show the tendency of continuous decline therefore representing the shifts in the age model of fertility. After the devastating 1990s marked by wars and sanctions, the transitional processes were initiated at the turn of the millennium, leading to a change in socio-economic environment. Along with constant economic crisis and accompanying poverty, this situation strongly influenced reproductive behaviour of women and their attitude toward childbearing in general. The trend of late childbearing and a raise of women’s mean age at first birth continued.

KEYWORDS: fertility, Vojvodina

INTRODUCTION

Due to the characteristics of fertility and natural movement altogether, one of the dominant and most prominent features of the population of Vojvodina is low fertility rate and low reproductive norms as well. This trend appears to be the constant phenomenon in this region during the last few decades. It is the result of complex impacts of natural and migration components on the
overall dynamics of the population, as well as the variety of social, historical and geographical settings along with the inherent cultural traits. Since the mid-1950s, fertility level has not been high enough to ensure population replacement, and up to now, it has been promoting a reproductive model that is characterized by low birth rate. Therefore, there is a problem of ageing of fertility, the topic discussed in this paper.

ANALYTICAL FRAMEWORK

The aim of this study is to provide an overview of the age model of fertility in Vojvodina, at the beginning of this century. Present socio-economic and political circumstances, accompanied by post-transitional processes, caused by turbulent events in the 1990s such as wars and bombardment, affected most of the demographic trends, especially the ones related to reproductive performance. The tendencies in fertility behaviour are displayed through relevant indicators of fertility. The data relies on age specific fertility rates, regarding its dynamics in the interval from 2000 to 2012. This is how we can detect the direction of their advancement, along with the shifts in the age curve of fertility.

Along with low fertility characteristics leaning to depopulation tendencies and aspirations toward nuclear family, one of the most prominent demographic features of this region in the last few decades is postponement of childbearing. One of the main indicators of this phenomenon is registered through different quantum of age groups in total fertility in the observed period. An important component of the age model of fertility is mean age at first childbirth. During this, in demographic sense, relatively short period of time (13 years), this indicator revealed significant fluctuations, in terms of distinct raise of mean age at first childbirth.

AGE PATTERNS OF FERTILITY

In order to detect trends in the field of fertility, it is necessary to identify the changes of the shares of different age groups in the total fertility. Figure 1 shows the dynamics of specific fertility rates according to the Census of 2002 and 2011 in order to identify their changes in census years.

In the age model of birth, most visible changes in fertility are observed in the groups 20–24, 25–29, 35–39 and 40–44. Previously stable shape of the curve of fertility with a dominant share of age groups 20–24 and 25–29, has been disrupted by an increase of fertility in groups 30–35 and 34–39. Age group 25–29 still has the largest quantum, but with significantly lower values, while the older groups display a great amount of growth, which emphasizes an increasingly strong orientation of the female population to give birth at older age. One should not ignore the increasing specific fertility rates of the age group 40–44, given that its value in 2002 was 3.76, and in 2011 it was 5.26. The most distinctive changes have occurred in the age group 20–24. Its specific rates are less than 100 and have been in constant decline since the beginning of this period, and in the inter-census period decreased from 87.78 in 2002 to 59.92
at the last census, which is the lowest value recorded between 2000 and 2012. Next age group 25–29, recorded a steady decrease from 102.1 to 90.9.

Therefore, one of the main concerns is the growing tendency among women to transfer their reproductive behaviour outside the optimum period. Postponement of motherhood can be seen as a culturally based phenomenon present for decades, and at the same time, as an economic decision determined by the current socio-economic situation. Economic variable of childbirth is a rather significant one since it is reflected in the field of individual decisions in relation to this important demographic issue [Veljović R. 2013]. Structural barriers in the form of unemployment and general uncertainty in the economic field, lead to the postponement of important life events. Ignjatović S. [2009] considers the changes in fertility in the context of a more complex process, which is initiated by the transition to adulthood.

Figure 1. **Age specific fertility rates in Vojvodina in 2002 and 2011, Values calculated from the Demographic yearbook 2010, 2012**

In contrast to these trends, specific rates of the two older groups have a significant increase, which is especially noticeable in the group 50–34. In fact, in this age group, between the two censuses, specific rates recorded a steady increase from 58.3 to 71.7. In the next age group there is also an increase in the specific rates for a given period, from 19.4 to 29.2. The fertility transition from younger to older age groups explicitly points out the tendency of postponement of motherhood to older ages. This phenomenon in Vojvodina, given the low reproductive norms and the level of fertility below the generation replacement level since the second half of the 20th century, is not only the result of the recent socio-economic and political conditions, wars and the overall crisis that has lasted here for more than twenty years. It is also a kind of legacy of a cultural model that exists in this region much longer than the period observed in this paper.
Turbulent 1990s were followed by transitional processes, privatization and transition to market economy at the beginning of the 21st century, which most people were not prepared for. Economic reforms have not made the expected progress in new social relationships. Many individuals have faced a sense of hopelessness and insecurity, caused primarily by long-term economic instability and poverty.

As a sort of relic of the overall instability of the society, reflected in constant economic crisis, there are changes in attitudes toward childbearing. Studies based on attitudes on reproduction behavior, display numerous changes in the motivational system, related to children and parenting, which are in line with changes of the social position of an individual through the historical development [Petrović M. 1992]. Therefore, changes in the sphere of reproductive behaviour can not be considered separately from the social and historical context.

Polarization of life goals, diversification of the roles of women, the pursuit of self-realization and individualism, self-orientation and fulfillment of personal needs and accelerated lifestyle, followed by the shift of normative systems, are just some of the structural factors that have directly or indirectly affected the decisions to postpone parenthood.

Figure 2. Age specific fertility rates in Vojvodina. Source: as Figure 1

Figure 2 depicts the changes in quantum of specific fertility rates of different age groups in the period from 2000 to 2012. Changes in fertility of the youngest and the oldest groups are not statistically significant, especially when it comes to the age group 45–49, so they will not be analyzed separately here. The most notable is the precipitous decline in specific fertility rates of women aged 20 to 24. In 2000, it was at 94.8, and in 2012 it was at 63.6. Furthermore, women aged 25 to 29 had a steady decline. Specific rates in the beginning had
an upward character and reached a value of over 100, but since 2005, with minor fluctuations, they have continued in a downward trend. The following three age groups reflected continuous growth of specific fertility rate, with a distinct group of women aged 30 to 34.

As Figure 2 shows, the specific rates of these groups have had a steady growth from 50.2 (2000) to 75.9 (2012) and display the tendency of further growth in the future. A similar trend has been detected in the following two age groups. Decline in shares of fertility of groups 20–24 and 25–29, which until a few decades ago had had the highest fertility rates, primarily on account of the age groups 30–34 and 35–39, is undoubtedly an indicator of the fertility transition into the older age of life. Rapid decrease in fertility rate of the group 20–24 and somewhat moderate decline in fertility rate of the group 25–29 in a relatively short period of 13 years, indicate substantial structural changes that have had indirect influence on the characteristics of the reproductive behaviour of women. The impact of external, in this case, primarily socio-economic factors, have rapidly reflected on attitudes about motherhood, suggesting a functional interdependence between social conditions and demographic variables, in this case reproductive behaviour.

Important and direct indication of the current age model of birth in Vojvodina is the mean age of mothers at first childbirth. Figure 3 shows the changes of this indicator during the thirteen-year long period. Since the beginning of the 21st century an upward trend has been registered. At the beginning of the millennium, in 2000, the mean age of mothers at first childbirth was 24.7, and during the first few years there was a slight increase up to 2004 (25.8). In the

![Figure 3. Mean age at first childbirth. Source: as the figure 1](image-url)
following year there was a small decline, and the next seven years are marked by steady and continuous increase in mean age of first births, so at the end of the period, in 2012, it reached a value of 27.4.

This means that during the thirteen-year period there was an increase in the mean age of mothers at first birth of 2.7 years. A steep growth in the age of primiparas during a short period of time promotes the advancing processes of the second demographic transition in the region, with postponement of procreative behaviour for mature age, as one of its main manifestations. Aspirations toward economic autonomy of women and financial stability prolong the period of taking childbearing decisions.

**GENERATION REPLACEMENT**

In order to analyze the range of reproduction of female population, that is, generation replacement, we use transversal method. In this regard, the gross and net reproduction rates are introduced. A simple reproduction of the population is obtained if the value of the rate is 1. Taking into account the transversal analysis, the degree of generation replacement is most accurately detected by net reproduction rates. Net reproduction rate indicates that in Vojvodina there is no simple replacement of generations since 1956 [Penev 2001]. According to the data of the demographic statistics of corresponding years, the beginning of the 21st century was marked by higher rates of net reproduction compared to the last two years of the last century. However, the trend of lower values of this rate insufficient to ensure generation replacement, continued in 2005, when the values were the same as in 1999 and 2002. With minor fluctuations, until the Census of 2011, the values of the net reproduction rate were relatively stable and ranged around 0.67.

![Figure 4. Gross and net reproduction rates in Vojvodina. Source: as the figure 1](image)

Decreasing difference between the values of gross and net reproduction rates suggests a reduction in mortality of women in childbearing age, and therefore stimulates less impact of mortality component of natural movement
on fertility level. Slightly higher value of net reproduction rate of female population of 0.69 in 2012 is, among other things, the result of a more intensive decrease of mortality component, since the values of the gross and net reproduction rates in 2009 were equal (0.68). This means that the mortality of the female population in fertile age was zero. Yet, despite the reduction of these rates, the fertility level is still 30% below the level needed to ensure generation replacement. The impact of the continuous fertility decline is the main determinant of its dynamics.

This period is characterized by relatively slow dynamics of total fertility rate, which reflects the average number of children per woman. During the entire period, the value of the total fertility rate is far below the level needed to ensure generation replacement. With minor deviations, it is about 1.4, as it is found at the beginning and at the end of the observed period, while the lowest value was recorded in the middle of the period (in 2007 value of the TFR was 1.37).

In the cohort analysis of fertility we observe total fertility rate of a generation that includes the entire reproductive period. Censuses of the population allow us to obtain data to calculate the cumulative fertility rate. The average number of live births per woman, being part of the longitudinal analysis, is relatively accurate method for monitoring fertility of the female population during this period.

**Table 1. Cumulative fertility rate in Vojvodina**

<table>
<thead>
<tr>
<th>Women's age</th>
<th>1991*</th>
<th>2002*</th>
<th>2011**</th>
</tr>
</thead>
<tbody>
<tr>
<td>15–19</td>
<td>0.08</td>
<td>0.04</td>
<td>0.03</td>
</tr>
<tr>
<td>20–24</td>
<td>0.6</td>
<td>0.33</td>
<td>0.25</td>
</tr>
<tr>
<td>25–29</td>
<td>1.26</td>
<td>1.95</td>
<td>1.37</td>
</tr>
<tr>
<td>30–34</td>
<td>1.67</td>
<td>1.49</td>
<td>1.27</td>
</tr>
<tr>
<td>35–39</td>
<td>1.82</td>
<td>1.75</td>
<td>1.61</td>
</tr>
<tr>
<td>40–44</td>
<td>1.82</td>
<td>1.83</td>
<td>1.75</td>
</tr>
<tr>
<td>45–49</td>
<td>1.82</td>
<td>1.83</td>
<td>1.81</td>
</tr>
</tbody>
</table>

*Sources: *Rašević, 2006; **Calculated on the basis of the Census of population 2011

Values of cumulative fertility rate, according to the Census of 2011, compared to the data from the two previous censuses, are uniform for women aged 45–49 years (1.8 children per woman). The two oldest cohorts, practically out of the reproductive age, may represent the final fertility. They recorded the approximate values in the last three censuses. Given that the average number of children in the groups 40–44 and 45–49 in 2011, is almost equal (Table 1), it can be considered that the level of fertility is steady.

However, lower cumulative fertility rates in younger age groups, 20–24 and 25–29, can indicate postponement of childbearing. Given that these women are still in their reproductive age, the issue of their overall reproduction is still open. The reduction of the cumulative fertility rate and a certain increase in the proportion of women in the cohort 30–34 who have not given birth,
implies the shifts in reproductive norms. According to Census 2002, every fifth woman did not give birth, and in 2011 one in three. All in terms of the postponement of reproductive behaviour.

CONCLUSION

Within the comprehensive analyses of some of the main indicators of the change in age pattern related to fertility rate in Vojvodina, there has been detected a rapid change in fertility indicators, as a continuation of previous developments. Tendencies toward low fertility and low reproductive norms that exist here for more than half a century, are the result of complex social and economic circumstances, caused by long-term crisis, and distinctive cultural ambience. Diverse roles of women, along with changes in social and economic spheres, enhanced by greater social mobility, lead to postponing some of the important life events, reproduction being one of the main features.

The beginning of 21st century is marked by negative demographic trends, especially the ones referring to reproductive behavior. The age pattern of fertility has not changed its course, tendencies in terms of low birth rate still remain, but the intensity of the dynamics regarding low fertility rate and its indicators has become more explicit and distinct.

REFERENCES


САЖЕТАК: У овом раду размотрено је кретање фертилитета становништва Војводине у првој декади XXI века, у периоду који обухвата два последња пописа. Проучене су детерминанте овог развојног процеса. Акценат је стављен на промене у старосном моделу фертилитета, тј на начин на који се оне манифестују на територији Војводине. Резултати Пописа пружају увид у анализу кохортног фертилитета. На овом већ деценијама уназад нисконаталитетном подручју карактеристике фертилног нараштања жена се огледају у промени удела специфичних стопа фертилитета петогодишњих старосних група и стопама укупног фертилитета у корист старијих кохорти, као и у постепеном повећању старости мајке при рођењу првог детета. Промене у старосном моделу фертилитета су затим представљене кретањем стопе укупног фертилитета, тј просечног броја деце по жени, при чему је забележена тенденција опадања СУФ-а, присутна на овом простору већ деценијама уназад.

Након турбулентних 90-их година 20. века, обележених ратовима и санкцијама, транзициони процеси започети на почетку овог миленијума, довели су до значајних промена у социоекономском окружењу, које су уз дуготрајну економску кризу, праћену сиромаштвом, снажно утицале на репродуктивно понашање жена и уопште на њихов став у односу на рађање. Тренд све каснијег родитељства и пораст просечног староста жена при прворођењу је настављен.

КЉУЧНЕ РЕЧИ: фертилитет, Војводина