

Pázmány Péter Catholic University  
Faculty of Arts and Social Sciences  
Doctoral School of History

Gábor Harrach

## **THESES**

on the PhD dissertation entitled

**Regional characters of demographic indices  
in the Hungarian Kingdom  
at the beginning of the 20<sup>th</sup> Century**

Supervisor:

Dr. Margit Földesi PhD  
associate professor

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## **1. Preliminary: the basic problems**

Could it be possible that ethnic or religious ties determine demographic behaviour, including fertility? If so, how can we arrange this factor with other variables in the same causal hierarchy? The raised problems were drafted at the beginning of modern demography already. In this paper we examine the mutual relations of ethnicity, religion and fertility in the territory of the former Hungarian Kingdom at the beginning of the 20<sup>th</sup> century. This period is interesting for the fact that fertility rate in Hungary decreased by an extraordinary proportion, 40 percent between 1910–1930. The country – or, by its geographical name, the Carpathian Basin – had a unique ethnic and religious character at that time: seven main ethnic groups and seven relevant denominations had been registered by the 1910 Hungarian Census, thus the region is suitable for the empirical examinations of the mentioned coherences, in line with a methodological principle, connected to Durkheim, that comparison of denominations living in the same country is more effective than to compare different countries, where the affected groups live as separate majorities.

Our examination concerns the territory of the Carpathian Basin, as well as, the area covered by Hungary after 1920. The former (or historical) Hungarian Kingdom consisted of Hungary and Croatia, and it covered the present Hungary, Slovakia, Transylvania, Voivodina (part of Serbia nowadays) and Trans-Carpathia (today belongs to Ukraine), as well as, a large part of the present Croatia. The kingdom included approximately 325,000 square kilometres and more than 21 million inhabitants by the 1910 Census, thus it is a sufficiently big area and population for a representative research. The reason why we examine two different geographical sizes, is the political rearrangement of Central Europe after World War I. After that the territory of Hungary was reduced to its third part and, as its consequence, the population had been halved, the meanings of words like ‘whole population’, ‘national’, ‘nation-wide’, ‘country-wide’, etc. changed. These different senses related to the periods before and after 1920, created for us a special methodological problem, the solution of which is described below.

During the 20<sup>th</sup> century, the explanation theories on fertility were influenced by economic or social paradigms. Dudley Kirk in 1996 writes about the argumentations based on material viewpoints, connected generally to American authors, and the others, based on cultural values, traditionally linked to the Europeans. (Kirk named altogether seven kinds of fertility explanation theories.) The possibility of synthesis between the two big paradigms became accepted generally in the second half of the century, when more and more researchers recognized the complex feature and coherence of different demographic causes.

## 2. Methodology

We examine three indices on each ethnic and religious group:

1. nupciality of married women aged 15–49, henceforth: nupciality;
2. marital fertility rate (concerning married women aged 15–49);
3. overall fertility rate (concerning all women aged 15–49).

There is a logical connection between these rates: by the method of Ansley J. Coale (1986), the overall fertility – in this case the total fertility rate (TFR) – should be calculated by the next formula, if  $I_f$  means TFR,  $I_m$  is nupciality,  $I_g$  is total marital fertility rate (TMFR) and  $I_h$  means total extra-marital fertility rate.

$$I_f = I_m \cdot I_g + (1 - I_m) \cdot I_h$$

Considering the fact that extra-marital births amounted to almost 90 per cent of the all births of the Hungarian Kingdom in the examined period, the TFR was determined essentially by  $I_m$  and  $I_g$ . The product of them converges to the real value of TFR: the less the proportion of births out of wedlock is, the less is the deviation between the mentioned product and the real TFR on a local level. This mathematical fact is the reason why we examine henceforth only two indicators: the nupciality and the marital fertility rate.

The statistical database in the examined period does not allow us to

calculate TFR/TMFR related to the religious groups, thus during our research we prefer general (marital) fertility rate instead of the mentioned indices (except the Figure 6, which shows local TMFR values). It means that we do not use the index expressing the average number of births per one woman (concerned, of course, to a given year), but apply the rate of every births per every fertile women in a given year. However it needs to be emphasized that the use of general (marital) fertility rate instead of TFR/TMFR does not change the validity of the formula above.

In order to count nupciality and marital fertility rate of the different ethnic groups and denominations, country-wide or in the counties, first of all we should know the number of married women aged 15–49 belonging to each religious group. It is obvious that these data, in fact being the combinations of three basic variables (age, religion, family status), can not be found in any census databases or they can only be estimated, not computed. In our case only certain cross-data are published, composed any way by two of the mentioned variables, from which we can calculate the elements of the estimation-formula. To create this formula, initially we consider the number of 15–49 years old women from  $d$  religion as a starting datum ( $w_{15-49}^d$ ), and then we try to define the number of married ones within this group. It is expedient to multiply the  $w_{15-49}^d$  with the quotient of the married women aged 15–49 ( $m_{15-49}$ ) and the total number of women from the same age-group ( $w_{15-49}$ ). However we know the fact from the census-statistics that each of denomination has different nupciality level, consequently the product mentioned before should be multiplied with that proportional number also which shows the relation between the nupciality of adult women from  $d$  religion ( $w_{15+}^d$ ) and of every adult women ( $w_{15+}$ ). Namely, because the nupciality means a proportion too (married women to total women), as a matter of fact the latter relation is a quotient of two other quotients. In consequence of all, we can get the next formula:

$$m_{15-49}^d \approx w_{15-49}^d \cdot \frac{m_{15-49}}{w_{15-49}} \cdot \frac{\frac{m_{15+}^d}{w_{15+}^d}}{\frac{m_{15+}}{w_{15+}}} = \frac{w_{15-49}^d \cdot m_{15-49} \cdot m_{15+}^d \cdot w_{15+}}{w_{15-49} \cdot w_{15+}^d \cdot m_{15+}}$$

In theory, the total sum of the different  $m^d_{15-49}$  indices (which stand for the married women in a given denomination, aged between 15–49) should be equal to the whole number of married women in the same age-group (and in the same area, of course). Because the latter number can be calculated directly from census-statistics, it is possible to control the validity of the above estimation formula. We have completed this simple calculation on national level: the result was only 0,2 per thousand proportion-deviation between the real and the estimated numbers.

As a methodological notion, we defined a representation limit for denominations. In those counties and cities where the number of fertile women, belonging to a given religious group, was less than hundred, or did not reach one per cent of every productive woman living in the same area, their data are shown neither in the statistics, nor on the maps, because in this case the affected group would not be regarded representative. By our own database, established related to this research, it is proved by many examples that under-representation could cause extremely high or low demographic values.

We defined also the demographic behaviour patterns of the inhabitants, including ethnic and religious groups. Societies or communities, who reached fertility reduction by limitation of marriages, but sustained the natural (or close to the natural) level of marital fertility, are called malthusian. Where fertility reduction was achieved in an opposite manner – high nuptiality rate and birth control at the same time – we can speak about neomalthusian groups. A society with high nuptiality and marital fertility is traditional, and if that has low values, it is simply modern.

As we mentioned before, the adjective ‘country-wide’ refers to different areas and population before and after World War I. For the sake of mutual comparability, only in case of chronological analyses, we tried to reduce the country-wide data of 1910 to the territory of Hungary after the Trianon Treaty. It was not an absolutely exact procedure indeed, because most of the demographic statistics from 1910 were published only on county level, and the new frontiers tore apart many counties into two or three parts. Thus these modified data

on country-level, from 1910, were counted to a heap of counties, the total territory and population of which approximately covered, as much as possible, the territory/population of Hungary after 1920.

Last but not least, we calculated 4241 demographic data as results of this research, concerning the whole population and denominations also. Calculations were based on the 1910, 1920 and 1930 Hungarian Census, as well as, on other statistical issues published by the Hungarian Central Statistical Office.

### **3. New results**

#### Regional features of nupciality and marital fertility at the end of the Dualism

People living in Carpathian Basin applied the Eastern European marriage pattern (low age at wedding and high nupciality). The territories, where Western and Eastern patterns were realized, were separated from each other by the Hajnal-line, an imaginary straight, connecting St.Petersburg and Trieste. However this line took place close to the Western border of Hungary, the regional impact of this fact – as an expectable lower nupciality in Western-Hungary – was realized only among women aged 20–24. The proportion of marital women within the group of entire productive women was lower at the periphery, and higher in the centre and Southern regions of the Carpathian Basin. According to our hypothesis, regional features of nupciality can be connected to agricultural yield: counties with highest nupciality were known as „the larder of the Monarchy”.

The other main component, the marital fertility can be characterized by the geographical differences of the values. Hereby different sized demographic regions formed, each of them extended to many counties, but were varying related to the covered area. Marital fertility was high outstandingly at Northwest and Northeast Hungary, as well as, in the Land of Székelys in East Transylvania and at the Croat side of the River Drava. In the Southern regions – South Transdanubiam Banat and South Transylvania – the values were extremely low. However these areas, being whether high or low,

could not be connected with the economical, ethnic and denominational regions.

Malthusian counties, described as areas with low nuptiality and high fertility, were situated at the geographical periphery in the Carpathian Basin, neomalthusian counties, with the opposite character, were founded at Southern Hungary; counties having high values related to both of these variables, were placed in the centre, and most of the cities produced the modern demographic behaviour pattern.

### Characters of the fertility reduction between 1910–1930

General fertility rate of Hungary decreased by 40 per cent between 1910–1930. The complete process was influenced in the counties between 1910–1920 by decreasing of nuptiality, and between 1920–1930 by marital fertility reduction, while in the cities the main influential factor was only the latter phenomenon during these two decades. All things consider, however, the most important statistical cause on national level was the fall of marital fertility between 1920–1930. There was a common rule in the twenties in each counties: the higher the marital fertility rate, the stronger the reduction of its proportion and/or numerical value was. This rule resulted on the one hand a general equalization-process of regional differences in fertility, on the other hand, as a consequence of the radical demographic change, the Southern Transdanubian demographic region „extended” to the Central and Southern Hungarian Plain during only one decade, creating a huge demographic region in Southern Hungary with uniformly low rates.

### The main characters of ethnic and religious demography

We did not observe relevant differences between nuptiality values of ethnics or denominations, but the deviations are more significant on marital fertility. The main feature is the stronger willing to childbearing by Slavonic nations, mainly Northern Slavs, moreover the higher fertility of Catholics compared to Protestants. However

these differences are not significant generally, more serious deviations can be observed rather on local level. The only one exception are the Jews, whose nupciality and marital fertility were much lower than the others on national level also.

Related to the chronological changes, between 1910–1930 the general fertility rate of Hungarians decreased slightly in the first decade, and roughly in the second, while Slovak's formed during this period vice versa. Germans' general fertility raised a little bit in the first decade, and after that it decreased strongly also. Opposite these facts, in connection with the most of denominations, general fertility reduced until this period to an equal degrees, except Orthodox and Greek Catholics, whose reduction began only at the second decade. Denominational values show significant deviations: Greek Catholics have an outstanding high, and Jews have a specially low fertility, while the others produce average rates, being close to each other.

Concerned to the demographic behaviour, among the ethnic groups, Hungarians applied the Malthusian, Germans and Rumanians did the neomalthusian, and Slavonic nations did the traditional pattern. Among the denominations, Roman Catholics had malthusian, Calvinists, Lutherans and Ortodoxes had neomalthusian, Greek Catholics had traditional, Jews and Unitarians had modern demographic behaviour. However these classifications refer only the nationwide statistical average, but on county level deviated patterns are realized in many cases by the ethnic and religious groups.

#### The role of religion and ethnicity within the hierarchy of causes: the theory of the demographic factors

The county values of marital fertility of denominations and the same rates of the entire county populations show colleration with each other. (Therefore most of the denominational values have a correlation also.) It means that not the religion but a so-called geographical factor determines the marital fertility in the counties. The geographical cause is called by us the primer demographic factor, while the religious-cultural cause, which determines standard sequence of values in case of some denominations, is called the

second demographic factor. However the latter one can influence also, even partially, the marital fertility of total population, but its real potential depends on the denominational composition in the given area. Because of the significant cross-cover of certain ethnic and religious groups, a question has arisen that the second demographic factor can be considered as a religious or rather as an ethnic factor. From our cross-table examinations, performed in two regions with the lowest fertility, it turned out unambiguously that the causal role of the religion and ethnicity manifest themselves differently by regions: for example in South-Transdanubia the previous one, but in the Banat and South-Transylvania the latter one played more important role.

#### **4. The author's publication in the topic**

Különleges státus és nemzetgyarapodás. Demográfiai tendenciák és anyaországi szerep. (Special status and nation-growth. Demographic tendencies and role of the motherland.) *Magyar Kisebbség*, Kolozsvár, 1999. 2–3. 32–39.

A megkoronázott város. Magyar–szlovák kapcsolatok az EU-bővítés után. (The crowned city. Hungarian–Slovak relations after the EU-enlargement.) *Polisz*, Budapest, 2006. február (91.) 49–58.

A „demographic peninsula” in Croatia. Fertility features of the Drava region based on the Hungarian census in 1910. *Podravina*, Kapronca, 2011. 11. 93–101.

Miért üres az éléskamra? Erdély, Bánság és Partium demográfiai régiói a 20. század elején. (Why is the larder empty? Demographic regions in Transylvania, Banat and Partium at the beginning of the 20<sup>th</sup> Century.) *Transindex.ro*, 2012. március 7.