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The condition and tendencies in demographic structure transformations in small towns of Opole district

Bulletin of Geography. Socio-Economic Series nr 6, 119-130

2006

Artykuł został opracowany do udostępnienia w internecie przez Muzeum Historii Polski w ramach prac podejmowanych na rzecz zapewnienia otwartego, powszechnego i trwałego dostępu do polskiego dorobku naukowego i kulturalnego. Artykuł jest umieszczony w kolekcji cyfrowej bazhum.muzhp.pl, gromadzącej zawartość polskich czasopism humanistycznych i społecznych.

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THE CONDITION AND TENDENCIES IN DEMOGRAPHIC STRUCTURE TRANSFORMATIONS IN SMALL TOWNS OF OPOLE DISTRICT

ABSTRACT. The subject matter of this research are the towns with up to 10,000 inhabitants, which at the same time are not the seats of local authorities. Such a definition refers to 20 towns out of 34 of the total number of towns in Opole district.

Both the structure transformations and their consequences were analyzed in the context of socio-demographic phenomena in relation to small towns of Opole district. The analysis of given phenomena can be justified by the wish to draw the attention of local authorities to demographic problems, which in due time may result either in development or in stagnation of local communities. The development of small towns of Opole district was limited or even halted in the period of 1996-2003. The research presented here shows a major differentiation in the pace of demographic transformations in this particular area.

KEY WORDS: small town, demographic structure, demographic transformations, demographic changes.

INTRODUCTION

One of the consequences of socio-economic transformations which have been taking place in Poland for 15 years is the impasse of development and demographic changes that accompany this process. Small towns in Opole district, as the ones that dominate in the net of settlements suffer in many ways from the results of transformations, i.e. the decrease in town population, the appearance of negative birth rate, a sudden drop in internal migration balance, and the persisting tendency in emigration.

The subject matter of this research are the towns of up to 10,000 inhabitants which are not the seats of local authorities at the same time. Such a definition refers to 20 towns out of 34 of the total number of towns in Opole district.

Both socio-economic transformations and their consequences were analyzed in the context of socio-demographic phenomena in relation to small towns of Opole district. Demographic processes in the given district, after the Second World War as well as in the contemporary times, proceed differently according to the regional background of a particular population group. Currently, Opole district is facing crucial discrepancies in the demographic picture of its local and immigrant population. The analysis of given phenomena can be justified by the wish to draw the attention of local authorities to demographic problems, which in due time may result either in development or in stagnation of local communities.

The chosen research period exhibiting the transformations mentioned above includes years from 1996 to 2003. Administrative changes which came to life on 1st January 1999 were also taken into account. The analysis is based on the data published in statistical annual publications and in Regional Database.

Demographic changes of Polish towns within the transformation period of the 90s were caused by economic and social difficulties (the abolishment of State owned factories, the appearance of the seemingly unemployed and the black economy, and the impoverishment of society) affecting mainly small towns, particularly mono-functional ones. A distinct drop in birth rate in small towns parallel to negative migration balance is a consequence of the adaptation processes of the society to the new economy. Results of such processes are reflected by limited development dynamics or even regress of towns in the Opole district.

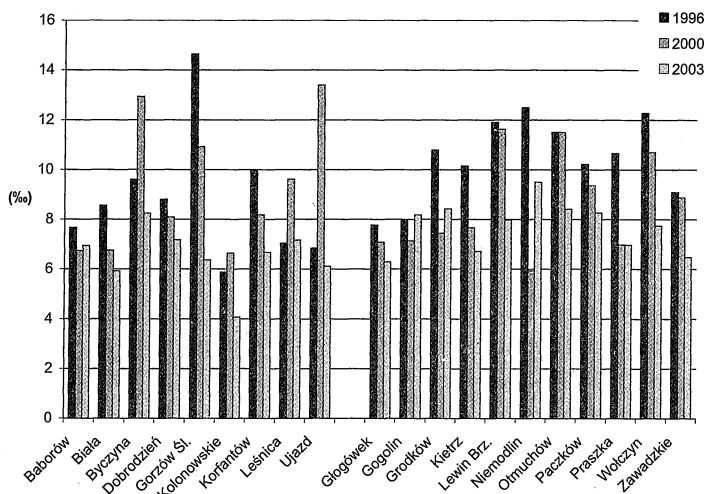


Fig. 1. Births rate dynamics in small towns of Opole district

Source: Data based on GUS (Główny Urząd Statystyczny – Central Statistical Office) publications.

In 1996-2003 period, **birth rate** in all analyzed towns (except Gogolin) decreased fluctuating between 5.9‰ (Kolonowskie), 14.6‰ (Gorzów Śląski) in 1996 and 3.9‰ (Kolonowskie) and 9.6‰ (Niemodlin) in 2003. The decline in birth rate was characteristic mainly of towns of less than 5,000 inhabitants as well as of the towns in the south-east of Opole district (Fig. 1).

Between 1996 and 2003, **death rate** increased in half of the investigated towns. In the analyzed group of settlements the rate varied between 4.6‰ (Ujazd) and 13.7‰ (Dobrodzień) in 1996, and from 6.2‰ (Praszka, Zawadzkie) to 12.9‰ (Korfantów) in 2003. An increasing number of deaths bears a significant role in forming population decline in small towns of up to 5,000 inhabitants. Spatial distribution of death rate does not show any specific tendencies (Fig. 2).

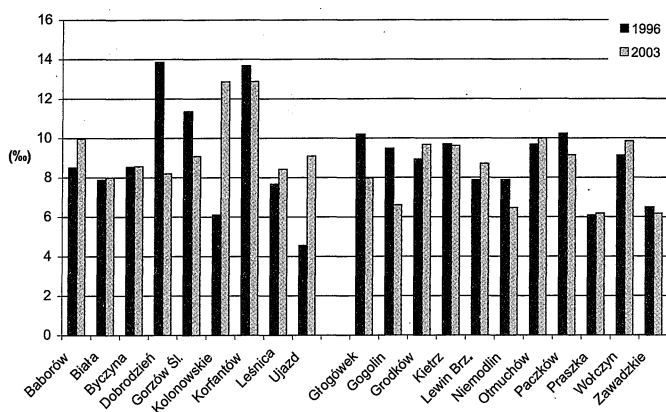


Fig. 2. Death rate dynamics in small towns of Opole district

Source: Data based on GUS (Główny Urząd Statystyczny – Central Statistical Office) publications.

Natural increase, as the subtraction between the number of live births and the number of deaths, reached a positive value in 65% of the towns in 1996, whereas in 2003 the positive rate could be attributed merely to 20% of the towns. The negative values were characteristic of all towns with fewer than 5,000 inhabitants and in 7 out of 11 towns with the population of 5,000-10,000. In 2003, Kolonowskie was the only town to reach the lowest natural increase, simultaneously reaching the highest death rate and migration balance. Spatial structure of migration balance overlapped with the dispersion of birth and death figures reaching the lowest values in the south of Opole district (Fig. 3).

Half of the analyzed settlements were characterized by a positive **migration balance** in 1996, with the highest rate in Gogolin (6.5‰) as an example of a bigger town, and in Byczyna (5.3‰) and Kolonowskie (4.9‰) representing small towns. The declining tendency of migration balance intensified in 2003 reaching negative values in 85% of the towns. The lowest figures of migration balance were recorded in the north-east of the district, i.e. in Baborów (-34.6‰), Kolonowskie (-30.5‰), Głogówek (-29.6‰), Biała (-21.5‰), Gogolin (-15.1‰), Dobrodzień (-15‰), and

in Zawadzkie (-13.7%). The situation can be explained by unfavorable economic circumstances and by work migration to the European Union, particularly true for people with both Polish and German citizenships (Fig. 4).

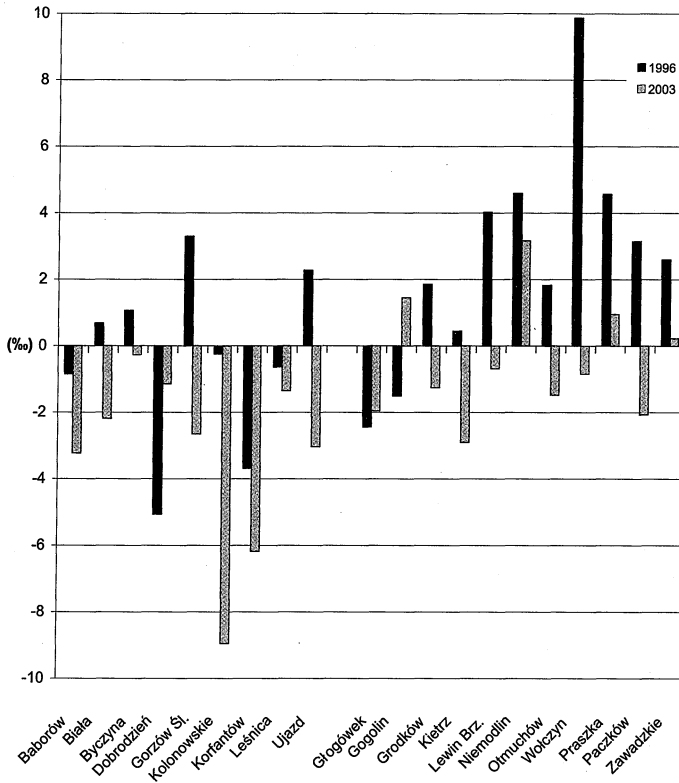


Fig. 3. Natural increase dynamics in small towns of Opole district

Source: Data based on GUS (Główny Urząd Statystyczny – Central Statistical Office) publications.

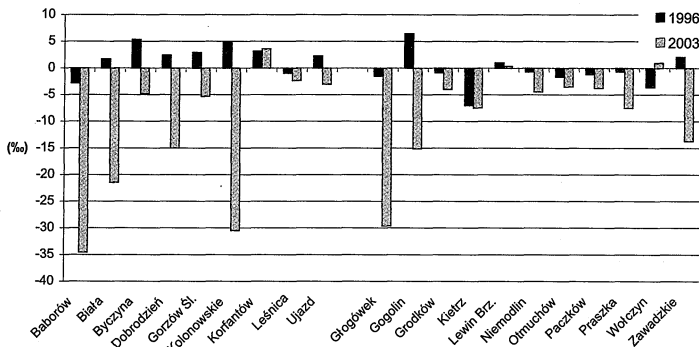


Fig. 4. External migration dynamics in small towns of Opole district

Source: Data based on GUS (Główny Urząd Statystyczny – Central Statistical Office) publications.

The level of **feminization** in small towns also underwent radical changes in the 1996-2003 period. By and large, towns of up to 5,000 inhabitants demonstrated higher feminization figures, reaching higher absolute values (except for Korfantów, Byczyna, Leśnica). As many as 70% of the towns are characterised by the increase in the feminization ratio in 2003 in comparison with the earlier period. In all settlements (apart from Baborów, Ujazd), women outnumbered men in the given period (apart from Ujazd), which is the result of low birth rate, population ageing, and of the outflow of young male population (Fig. 5).

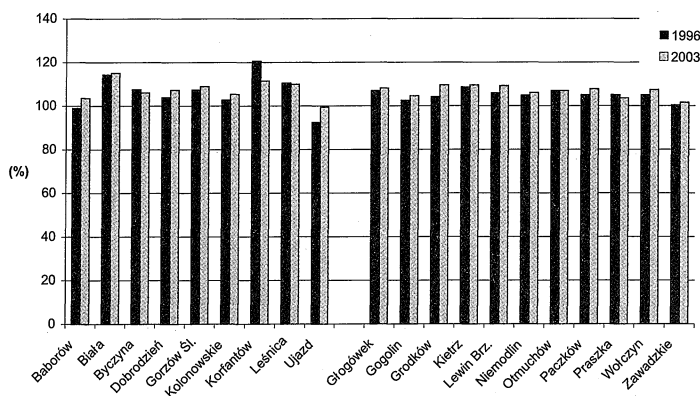


Fig. 5. Feminization dynamics in small towns of Opole district

Source: Data based on GUS (Główny Urząd Statystyczny – Central Statistical Office) publications.

The process of stagnation in small towns is visible particularly in **population dynamics** (Table 2). The analysis refers to two comparative periods: 1996-2000 and 2000-2003. In the former interval, 10 towns (including six of those with 5,000-10,000 inhabitants) recorded an increase of the population as a result of quite high birth rate figures. In the latter period, 19 out of 20 given towns (Niemodlin being the only exception) regardless of their size registered a significant drop in population. A greater decline in the number of inhabitants is typical for indigenous populations due to the migration to Germany or to a high proportion of people aged 60 plus. Small towns with fewer than 5,000 dwellers show more intensive dynamics as well as higher population values (Fig. 6).

A crucial element of the diagnosis of demographic transformations is the analysis of **the population age structure**. In 1996, the contribution of inhabitants aged under 20 in the population fluctuated between 27.9% in Kolonowskie and 36% in Praszka. In accordance with general tendencies in this sphere, the percentage of inhabitants aged under 20 was reduced due to the decline of birth rate and increasing migration reaching 23.4% in Kolonowskie and 23.8% in Biała (Fig. 7).

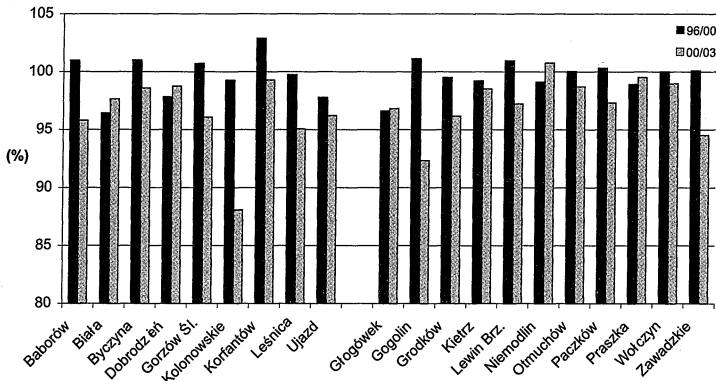


Fig. 6. Population dynamics in small towns of Opole district

Source: Data based on GUS (Główny Urząd Statystyczny – Central Statistical Office) publications.

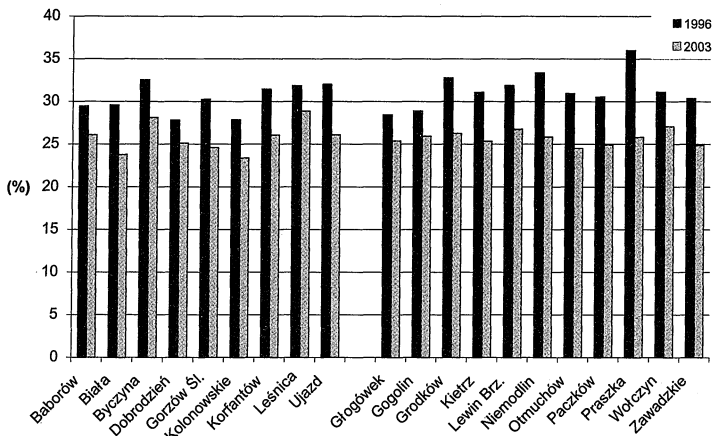


Fig. 7. Contribution of inhabitants aged under 20 in the population of small towns in Opole district

Source: Data based on GUS (Główny Urząd Statystyczny – Central Statistical Office) publications.

Population aged over 65 demonstrated more intensive dynamics of change. In 1996, the lowest contribution of the old fluctuated between 6.3% in Praszka and 12.9% in Korfantów. In 2003, this contribution increased in 90% of the towns and it ranged from 6.3% in Praszka to 17.9% in Ujazd. The highest rate of the given factor was recorded in southern towns of the district (Fig. 8). This particular situation was influenced by the drop in numbers of births, intensive work migration, as well as by the longer life span.

The factors mentioned above result in the ageing process of population, which is characterised by a relatively high pace in recent years. It is illustrated

by demographic ageing rate calculated for years 1996-2003 (W_{sd}) (1). For the given group of towns in Opole district, the ageing rate fluctuated from 3.8% in Baborów to 15% in Ujazd.

On the basis of the collected data on the analyzed towns with fewer than 5,000 inhabitants as well as those with 5,000-10,000 dwellers, it may be concluded that there are numerous differences in terms of the dynamics of change. The highest values were recorded in towns characterized by low migration, negative birth rate and significant participation of inhabitants aged over 65. The following towns formed a group which is far advanced in the ageing process of the population: Ujazd, Niemodlin, Praszka, Biała, and Zawadzkie (Fig. 9).

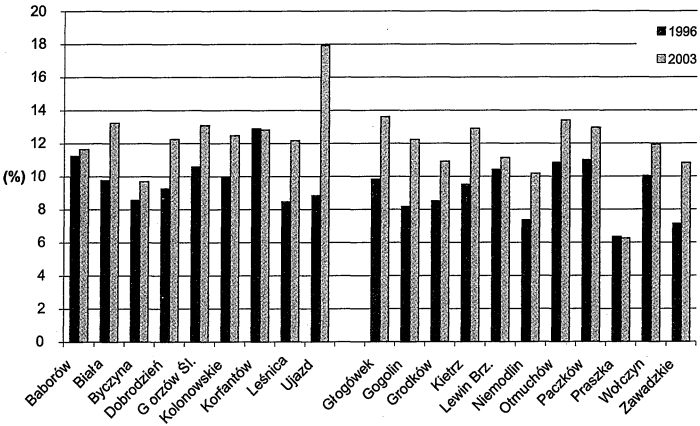


Fig. 8. Contribution of inhabitants aged over 65 in the population of small towns in Opole district
Source: Data based on GUS (Główny Urząd Statystyczny – Central Statistical Office) publications.

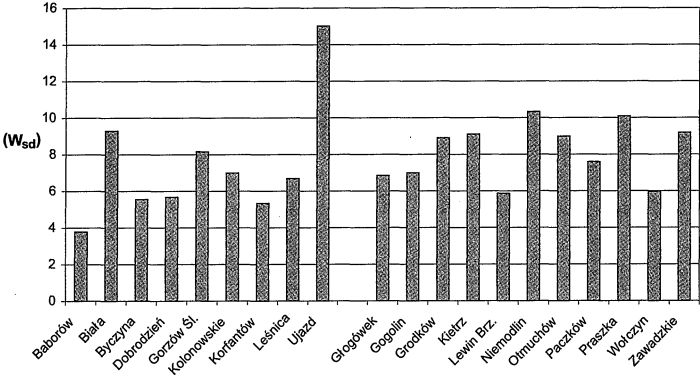


Fig. 9. Demographic ageing index (1996-2003)
Source: author's analysis.

The figures of **burden index** (2) ranged from 58,1% in Zawadzkie to 77,5% in Korfantów in 1996. However, in 2003 the figures dropped in most of the towns and varied between 44.1% in Praszka and 66.9% in Ujazd. From the dynamic perspective, between years 1996 and 2000, 17 analyzed towns demonstrated a decline in demographic strain, namely by the rejuvenation of population with the biggest figures in Praszka and Niemodlin. The ageing process was most visible in Głogówek and Gogolin. In the second period 2000-2003, a further decrease of the ageing process was recorded in 12 towns, which clearly indicated the continuous rejuvenation of their population. On the other hand, the remaining 8 towns were characterised by a growth in the pace of ageing (Baborów, Dobrodzień, Gorzów Śl., Kolonowskie, Ujazd, Głogówek, Gogolin, Wołczyn). The increase in burden index referred mostly to towns in the south-east of the district (Fig. 10).

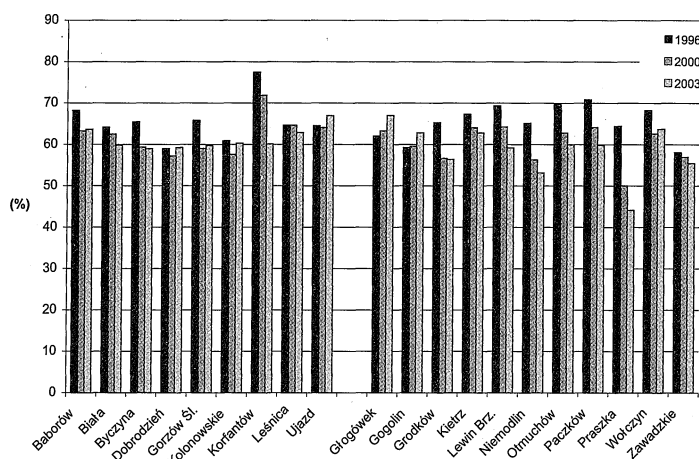


Fig. 10. Burden index in small towns of Opole district
Source: author's analysis.

On the account of the pace of the changes in the burden index strain in the given period, this research intends to create a proper typology of the towns. In the given group 4 types and 6 sub-types have been distinguished assuming that the process dynamics may be of the following values: negative, positive, zero, and increasing or decreasing in the pace (Table 1).

According to the above stated foundations, there are 5 municipal subtypes. The first of them is type AI with positive population ageing dynamics and an increasing ageing pace in the given periods. There are 2 towns of AI type characterized by intensive migration (Table 2). Type B consists of a group of towns with variable dynamics, where in the first period the rejuvenation of the age structure takes place and later in the second period it is surpassed by

ageing process (BI); or in the first period ageing takes place and later rejuvenation (BII). Type C is characterized by continuous process of rejuvenation with a variable intensity (CI – most intensive in the second period of research, CII – in the first period). Following the established typology, type C towns dominate over other types, which is illustrated by Fig. 10.

Table 1. Types of ageing population processes based on the process dynamics – a theoretical analysis

TYPE	TYPE NAME	SUB-TYPE	AGEING DYNAMICS	
			1996-2000	2000-2003
A	ageing	AI	+	<+
		BI	-	+
B	variable dynamics	BII	+	-
		CI	-	<-
C	rejuvenation	CII	->	-

+ positive dynamics; - negative dynamics; < + higher dynamics figures; -> lower dynamics figures

Source: based on Kurek, S. 2002.

Table 2. Typology of small towns of Opole district in terms of ageing process dynamics

TYPE	TOWNS
A	Głogówek, Gogolin
BI	Baborów, Dobrodzień, Gorzów Śląski, Kolonowskie, Ujazd, Wołczyn
BII	Leśnica
CI	Biała, Korfantów, Lewin Brzeski, Zawadzkie
CII	Byczyna, Grodków, Kietrz, Niemodlin, Otmuchów, Paczków, Praszka

Source: author's analysis.

Table 3 aims at spotting the interdependency between population dynamics and population strain in the investigated periods. A scheme for dividing towns into 3 types and 10 sub-types has been postulated here. In Type A, the increase in population in both research periods resulted in positive ageing dynamics. Contrary, in type B the decline in town population caused no increase in population dynamics neither in the first (type BII) nor in the second period (type BI). Type C towns did not demonstrate any influence of changes in population on the ageing dynamics. The towns collected under type C in the typology of towns in relation to ageing process dynamics were grouped once

more in type C in the next typology of interdependency of population dynamics and ageing dynamics.

Table 3. Typology of interdependency of population dynamics and ageing dynamics on the basis of small towns in Opole district

TYPE	POPULATION DYNAMICS 1996-2000	AGEING DYNAMICS 1996-2000	POPULATION DYNAMICS 2000-2003	AGEING DYNAMICS 2000-2003	TOWNS
AI	+	+	<+	<+	Głogówek
AII	+>	+	+	<+	Gogolin
BI	+>	+	+	-	Leśnica
BII	+>	-	+	+	Baborów, Gorzów Śląski, Kolonowskie, Ujazd, Wołczyn
BIII	+	-	<+	+	Dobrodzień
CI	+>	->	<+	-	Byczyna
CII	+	->	<+	-	Niemodlin, Praszka
CIII	+>	->	+	-	Grodów, Kietrz, Otmuchów, Paczków
CIV	+>	-	+	<-	Korfantów, Lewin Brzeski, Zawadzkie
CV	+	-	<+	<-	Biała

+ positive dynamics; - negative dynamics; <+ dynamics coefficient higher than in the previous period; <- dynamics coefficient lower than in the previous period

Source: author's analysis.

SUMMARY

The discussed tendencies in vital statistics and migratory movement of the population in the analyzed towns reflect the tendencies of the process taking place in Poland in the time of socio-economic transformations. This period limited or even impeded the development of small towns of Opole district. The research showed a major differentiation in the pace of demographic transformations in this particular area. High dynamics of the transformations at the beginning of the research period weakened in the following years. Here, the diminishing role of natural and migratory movements has become more visible. The constituents of the movements are: decreasing birth rate in all of the analyzed towns, an increasing role of deaths in the outflow of people from towns, a decreasing number of towns with positive birth rates, a growing number of towns with negative migration balance – mainly in the eastern part of the district, a domination of external migration over birth rate, a distinct decline in birth rate dynamics, and higher feminization rate in the majority of the investigated towns. The analysis of ageing process of the population indicated spatial

differentiation between the north and the south-east of the district in favour of the latter.

The threat to the demographic development of small towns in Opole district lies first and foremost in a low level of socio-economic development. It clearly influences the assumed attitude of the population towards the migration, where the internal and external migration of young people intensified. The processes are particularly visible among the indigenous populations, which lead to a deformation of the demographic structure (age and sex). As a result such deformations have got an immense influence on the number of marriages and births. This unfavourable demographic situation of small towns, lacking external stimuli, allows for further socio-economic stagnation of the analyzed towns.

NOTES

$$(1) W_{sd} = [U_{(0-20)t} - U_{(0-20)t+n}] + [U_{(>65)t+n} - U_{(>65)t}]$$

W_{sd} – demographic ageing rate

$U_{(0-20)t}$ – contribution of the population aged under 20 at the beginning of the given period

$U_{(0-20)t+n}$ – contribution of the population aged under 20 at the end of the given period

$U_{(>65)t+n}$ – contribution of the population aged over 65 at the beginning of the given period

$U_{(>65)t}$ – contribution of the population aged over 65 at the end of the given period

After: Długosz, Z. 2002: Stan i tendencje procesu starzenia się ludności miast Polski w świetle wybranych mierników. In Szczegot H. editor, *Demograficzne i społeczne aspekty rozwoju miast*. Opole: Uniwersytet Opolski, pp. 98.

(2) Burden index – understood as the number of people aged 0-14 and 60 and older (population in the non-working age) contributing to population of 100 inhabitants aged 15-59 (population in working age). It's an official and formal distribution used in international comparisons.

The ratio is illustrated by following model:

$$\frac{L_{0-14} + L_{60+}}{L_{15-59}} \cdot 100$$

After: Holzer, J.Z. 2003: *Demografia*. Warszawa: PWE, p. 139.

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