www.gi.sanu.ac.rs, www.doiserbia.nb.rs
J. Geogr. Inst. Cvijic. 2024, 74(2), pp. 257–272

Review paper

UDC: 911.3:314.15:314.116-026.24(497.5)
https://doi.org/10.2298/IJGI240212008G

Received: February 12, 2024
Reviewed: March 13, 2024
Accepted: April 23, 2024

THE IMPACT OF EMIGRATION ON POPULATION DECLINE IN CROATIA

Vera Graovac Matassi[1]*

[1]University of Zadar, Department of Geography, Zadar, Croatia; e-mail: vgraovac@unizd.hr

Abstract: In the last thirty years, the countries of south-eastern and eastern Europe have experienced significant population decline, and Croatia is no exception to that. This paper revisits the problem of depopulation in Croatia in the last two intercensal periods (2001–2011 and 2011–2021). The aim was to analyze the impact of emigration on depopulation in Croatia and investigate whether it had a greater impact on depopulation than natural decrease. Additionally, the aim was to investigate whether the number of emigrants was underreported in the official statistics. The results show that Croatia lost more population due to negative net migration than the official statistical data indicate. Recent migrations in Croatia did not only affect the population decline, but also age composition of the population, particularly in the last intercensal period due to emigration of families with children and population in their working and reproductive ages, as they composed a large proportion of emigrants. The paper provides an elaborate insight into the recent migration patterns in Croatia while highlighting the underestimation of the proportions of emigration from Croatia by the official statistics.

Keywords: population decline; emigration; natural decrease; Croatia

1. Introduction

Depopulation in Croatia has been present continuously since the early 1990s, but the underlying causes that ultimately led to depopulation had been identified much earlier, and were later coupled with political and socio-economic changes that occurred during the 1990s. The disintegration of the state socialist system in Central and Eastern Europe (CEE) in the late 1980s and early 1990s brought significant socio-economic changes that affected the demographic trends in the following period. Some of the most notable changes were: transition to market economy, unemployment and income inequalities, new political and social freedoms, expansion of university education, social stratification, etc. (Sobotka, 2011). The 2021 Population Census revealed that Croatia had 3.87 million inhabitants, which was approximately the same number of inhabitants Croatia had had in early 1950s (Croatian Bureau of Statistics, 2022a).

Depopulation of Croatia should also be considered through the prism of depopulation of the European Union (EU) periphery, more notably, the eastern and south-eastern European countries. Free mobility of labor force within the EU enabled an immense outflow of people from eastern and south-eastern European countries (Jurić & Hadžić, 2021; Koyama, 2020). The

*Corresponding author, e-mail: vgraovac@unizd.hr

consequences of that outflow are manifold, and closely related to future demographic and economic development of the origin countries (Koyama, 2020). Furthermore, population decline should be considered both as an outcome and as a process (Franklin, 2020). The research on depopulation in Europe is often focused on measuring the outcome of the process (i.e., decline in population number), and does not give necessary attention to the temporal aspect of the process of decline (Turok & Mykhnenko, 2007).

Similar depopulation trends as in Croatia have been recorded in other former socialist countries that are now EU members. According to the Eurostat, only three CEE countries recorded population increase between 1990 and 2020—Czechia, Slovakia, and Slovenia, while all the other countries experienced population decline (Eurostat, 2022). Emergence of depopulation and its acceleration after 1990 was the result of comparatively high mortality and declining fertility during 1990s, and outmigration (to western and northern European countries) that was largely driven by an array of push and pull factors (Sobotka & Fürnkranz-Prskawetz, 2020). According to the same authors, the most notable push factors were economic transition and unemployment, the lack of social and political stability, and conflicts. On the other hand, the most prominent pull factors were more favorable employment opportunities, particularly after the 2004 enlargement, higher wages, and comparatively higher living standard. In the case of Croatia, another aggravating factor of depopulation was emigration during the war and post-war period in 1990s. Besides Croats that emigrated to western and northern European countries in that period, thousands of ethnic Serbs emigrated from Croatia to Serbia, where they either settled or migrated to third countries (Ramet & Valenta, 2016).

Within the EU context, Croatia is economically less developed country, so in the globalization processes it is more affected by emigration. Furthermore, Croatia's position has weakened additionally after the accession to the EU due to one of the freedoms—free movement of people (Mesić, 2014). Even before the last emigration wave (after the accession to the EU), Croatia was among the European countries with intensive and long-term emigration, caused by various historical, political, and economic changes (Čizmić et al., 2005). Present-day demographic situation in Croatia is the reflection of numerous demographic changes (fertility decline, long-term emigration, and population ageing) that occurred in the past, particularly in the second half of the 20th century and at the beginning of the 21st century, but it has also been affected by other, specific factors, such as economic, social, health, and political ones (Wertheimer-Baletić, 2004). Consequently, depopulation and population ageing became the most prominent demographic processes. The problem of depopulation should also be considered through the prism of the second demographic transition (SDT).

The issue of depopulation has been widely discussed in Croatian scientific literature, particularly during the 1990s and 2000s. Although depopulation has been recorded at the national level since 1991, in certain parts of the country it occurred several decades before. The most comprehensive analysis of depopulation in Croatian regions, towns and municipalities from 1869 to 1981 was made by Nejašmić (1991). Gelo (2000) discussed the depopulation in Croatia at the beginning of the 21st century, emphasizing the rather unfavorable population projections, and the lack of official population policy. Wertheimer-Baletić (2004, 2007) also discussed depopulation and population ageing in Croatia, and stressed the importance of introducing an adequate population policy that would mitigate the anticipated negative effects of natural decrease and emigration. There were also studies focused on regional aspects of depopulation (Faričić et al., 2010; Lajić & Mišetić, 2013; Pejnović, 2004; Vojnović, 2004; Živić, 2017, 2018).

Recent migration patterns after the accession to the EU was also discussed by several authors, but from different perspectives. Komušanac (2023), for example, discussed the recent immigration of labor force, while Valenta et al. (2023) focused on labor migration in Croatia in the period from 1990 to 2023. Migration to and from Croatia before and a few years after the accession to the EU with the focus on destination countries were discussed by Mesarić Žabčić (2021).

As seen from the previous elaboration, in the last two decades, Croatia experienced significant socio-economic and political changes (e.g., economic recession in late 2000s, accession to the EU in 2013, COVID-19 pandemic), which had a prominent impact on demographic trends, particularly on emigration. Therefore, this paper revisits the problem of depopulation in Croatia in the last two intercensal periods (2001–2011 and 2011–2021). This paper aims to assess the influence of emigration on population decline in Croatia and to explore whether it exerted a more significant influence on depopulation than natural decline. The secondary aim is to compare the official migration data with the intercensal net migration calculation and see whether the emigration volume was underestimated in the official statistics. Age and sex structure of the migrants as well as the most attractive destinations of the migrants are also discussed. So, the paper considers both outcomes of migration and its temporal evolution, as well as its impact of population decline. The main hypothesis is that in the first intercensal period, natural decrease had a more prominent role in depopulation, but in the second period, the negative net migration had more impact on depopulation, particularly after the accession to the EU. The second hypothesis is that in the second period, more families (children and young adults) emigrated in comparison to the first period.

2. Brief history of migrations in Croatia

The first official population census in Croatia was conducted in 1857, during the Austro-Hungarian Administration. At that time, Croatia had 2.18 million inhabitants and until 1991 the population was increasing almost continuously—the only exceptions were the war periods. Demographic transition in Croatia started in the late 19th century, and until 1930s the birth rates had been relatively high, while the death rates had been decreasing (Nejašmić, 2008). As the result, the population was increasing despite the intensive overseas emigration until mid-1920s (dominantly to the United States of America; Čuka et al., 2017; Nejašmić, 1991, 2008), and emigration to other European countries after 1960 (Nejašmić, 2008).

After the Second World War, similar trends were recorded. Population increased due to relatively high rates of natural increase and despite the intensive emigration that started in early 1960s. The Croatian population reached its peak in 1991 with 4.78 million inhabitants (Nejašmić, 2008). In the period that followed, depopulation and population ageing became the most prominent demographic processes in the country. After the accession to the EU, it was evident that the emigration from the country largely intensified and much was speculated on how many inhabitants Croatia had, particularly taking into consideration that the country started recording historically low birth rates and increasing death rates (Graovac Matassi & Rogić, 2023).

The 2021 Population Census revealed the actual proportions of depopulation, and the population decline was greater than the estimates and projections anticipated. Namely, according to the projections of the Croatian Bureau of Statistics (low variant), Croatia was expected to have 4.3 million inhabitants (Grizelj & Akrap, 2011), but the actual number was 3.8

million. Although it would have been interesting to analyze the depopulation in the period from 1991 to 2001, considering significant changes the country went through (the war in early 1990s, intensive war and post-war migrations), it is virtually impossible to reconstruct the demographic changes in that period due to changes in census methodologies and in registering migration and vital events during the war.

3 Data and methodology

The analyses in this paper are based on the official population data provided by the Croatian Bureau of Statistics (n.d.-a, n.d.-b). Census methodology in Croatia changed several times during the last few decades, and the most significant change refers to the definition of the total population. Namely, according to the censuses conducted from 1948 to 1991, the total population included persons with registered residence in Croatia, regardless of their actual presence or absence at the census moment and regardless of the period of absence (e.g., even persons who were absent for more than one year or even for 30 years, were included in the total population). During the 2001 Census, the total population was defined according to the "place of usual residence" concept, and the period of one year or more of absence or presence in the place of residence was included as an additional criterion for including or excluding a person from the total population. The 2011 Census (Croatian Bureau of Statistics, 2011) followed the same concept as the previous one (place of usual residence), but the intention to stay or leave the place of residence was another criterion that was used to define the total population. Due to specific differences in defining total population, the 2001 (Croatian Bureau of Statistics, 2001) and 2011 censuses (Croatian Bureau of Statistics, 2011) are not completely comparable with the previous censuses. Consequently, the differences in methodology do not mask the fact that Croatia was depopulating.

Second methodological limitation is related to the differences in registering migrants between Croatia and other European countries. The Croatian Bureau of Statistics regularly publishes the data on migration, but those data refer only to those who officially register or deregister their residence in Croatia with the Ministry of Interior. Namely, all emigrants should deregister their residence upon leaving the country, but since failing to do so is not actually penalized, many emigrants do not deregister their residence in Croatia mainly because they wish to keep certain benefits in their homeland (usually the health insurance), which indicates that the number of emigrants is much higher than officially registered. Additionally, when comparing the official data on the number of emigrants from Croatia to a specific country and the data from that country on the number of Croatian citizens that immigrated, the number of registered immigrants to a specific country is much higher (Jurić, 2017; Pavić & Ivanović, 2019). Consequently, Croatian demographers often calculate net migration by using more reliable data (population census and vital statistics): P2 – (P1 + NPC) = NM (P1 = population registered by older census; P2 = population registered by newer census; NPC = natural population change; NM = net migration). In this paper both official migration data and the calculation of net migration are used to indicate the discrepancies between the two. Regardless of the fact that the number of migrants was underreported in Croatian statistics, the available data can still be used as a proxy for age and sex structure, their country of origin/destination, and citizenship of the migrants.

4. Results and discussion

4.1. Period from 2001 to 2011

In this period, the total population of Croatia decreased by over 152,000 (Table 1). Population decline in this period was not uncommon among the former socialist countries in Europe that went through profound social, economic, and political changes during the late 1980s and early 1990s. However, there are certain differences among them regarding their economic and demographic developments. The comparison of the population of former socialist countries that are now EU member states indicates that, in the period from 2001 to 2011, only Czechia, Estonia, Poland, Slovenia, and Slovakia recorded population increase and the remaining six countries recorded a decrease (Eurostat, 2022).

Table 1. Population change in Croatia from 2001 to 2011

Year	Population	Intercensal population change	Intercensal population change (%)	Annual population change	Annual population growth rate (%)
2001	4,437,460	–152,571	–3.4	–15,257	–0.3
2011	4,284,889				

Note. Data in columns are calculated based on *2001 Census of Population, Households and Dwellings in the Republic of Croatia*, by Croatian Bureau of Statistics, n.d.-c (https://web.dzs.hr/Hrv/censuses/Census2001/Popis/H01_01_01/H01_01_01.html). In the public domain; *2011 Census of Population, Households and Dwellings in the Republic of Croatia*, by Croatian Bureau of Statistics, n.d.-d (https://web.dzs.hr/Hrv/censuses/census2011/results/htm/H01_01_01/H01_01_01.html). In the public domain.

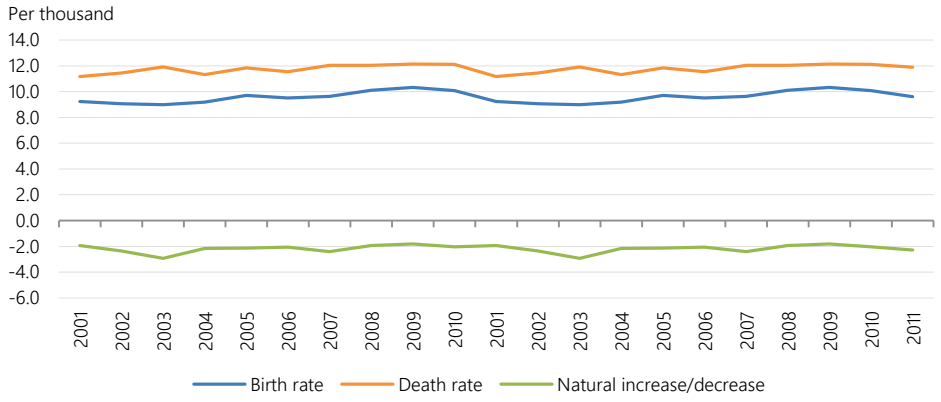

Figure 1. Birth rates, death rates and natural increase/decrease in Croatia from 2001 to 2011.

Note. Data in the figure adapted from *Natural population change in Croatia* [Data set], by Croatian Bureau of Statistics, 2019a (https://podaci.dzs.hr/hr/arhiva/stanovnistvo/prirodno-kretanje-stanovnistva-republike-hrvatske/). In the public domain.

The registered decrease in Croatia in this period was primarily the result of natural decrease—in this period, the number of deaths outnumbered the births by over 95,000 persons (Figure 1), and natural decrease accounted for 62.3% of the total population decline. In 1991, Croatia registered natural decrease for the first time (excluding the war periods) and until 2021 there had been only two years when the number of births surpassed the number of deaths

(1996 and 1997), but that was just a small-scale baby boom after the war. As for the other post-socialist EU countries, most of them (except Poland, Slovenia, and Slovakia) also had natural decrease in this period. Only in Bulgaria and Croatia, the natural decrease accounted for over 60% of the total population decrease, while the negative net migration did not have such a prominent role in population decline. On the other hand, in Latvia, Lithuania, and Romania, the impact of negative net migration on population decline was much greater (Eurostat, 2022).

The beginning of the 21st century in Croatia was marked by historically low number of births and total fertility rates—in 2003 the number of births fell below 40,000 for the first time (for comparison, the number of births in 1991 was over 51,000). In the following years there was a gradual recovery in the number of births, because somewhat more numerable generations born in late 1970s reached their reproductive age, and that increase reached its peak in 2009. At the same time, the number of deaths recorded a slight increase (Figure 2). During the whole period there were 418,601 births and 513,648 deaths recorded, which resulted in natural decrease of 95,047.

According to the official data on migration in Croatia, provided by the Croatian Bureau of Statistics (2012), in the period from 2001 to 2011, the total net migration was positive, with 153,432 registered immigrants and 82,595 registered emigrants. However, the analysis of the migration throughout the period reveals that the net migration was positive from 2001 to 2008, and after that, the immigration to Croatia decreased notably, and the emigration increased, which was the result of the global financial crisis of 2007–2008, that had negative effects on Croatian economy (Sopek, 2009). In 2009, the number of immigrants decreased by almost 42.0%, while the number of emigrants increased by almost 33.0% in comparison to 2008. Additionally, in 2010, the number of immigrants declined by 41.0% in comparison to the previous year (Figure 2).

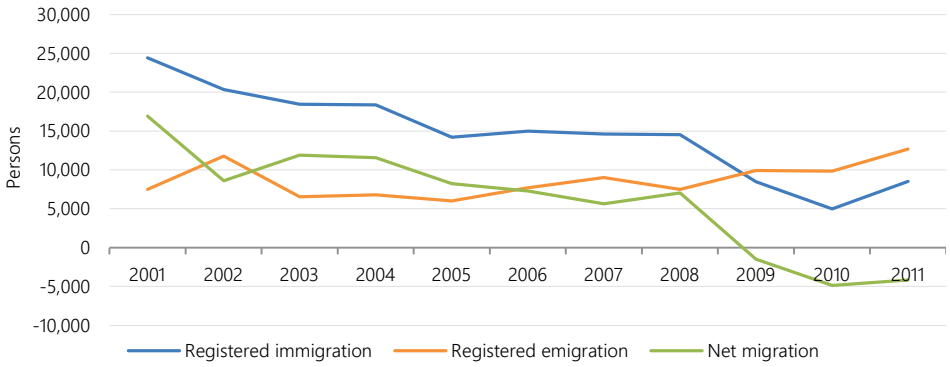

Figure 2. Migration in Croatia from 2001 to 2011.

Note. Data in the figure adapted from *Migrations in Croatia* [Data set], by Croatian Bureau of Statistics, 2019b (https://podaci.dzs.hr/hr/arhiva/stanovnistvo/migracija-stanovnistva-republike-hrvatske/). In the public domain.

It is particularly important to investigate the age structure of migrants as the migration of population belonging to a certain age group can affect the labor market, reproduction, etc. There were some differences between the age structure of immigrants and emigrants in Croatia. In both groups of migrants, the most numerous were those aged 20–39, followed by

those aged 40–59. However, among the immigrants the least numerous were those aged 60+, and among the emigrants, the least represented group were those aged 0–19 (Table 2).

Table 2. Age structure of migrants (in %) in Croatia, 2001–2011

Age	Immigrants	Emigrants
0–19	22.4	12.6
20–39	40.5	37.7
40–59	24.4	25.5
60+	12.7	24.2

Note. Data in columns are calculated based on *Migrations in Croatia* [Data set], by Croatian Bureau of Statistics, 2019 (https://podaci.dzs.hr/hr/arhiva/stanovnistvo/migracija-stanovnistva-republike-hrvatske/). In the public domain.

As it has been mentioned previously, Croatia is a traditional emigrational country, and the most significant destination for the emigrants from the mid-20th century have been other European countries, predominantly Germany. The period from 2001 to 2011 was no exception to that. Data provided by the Croatian Bureau of Statistics (2019) showed that during the war, in early 1990s, and in the post-war period, there were intensive migrations between Croatia and Bosnia and Herzegovina, and Croatia and Serbia. Namely, period of 1990s and early 2000s was characterized by conflict-induced migrations of ethnic Serbs from Croatia to Serbia and to Bosnia and Herzegovina on one hand, and ethnic Croats from Serbia and Bosnia and Herzegovina to Croatia on the other (Ramet & Valenta, 2016; Valenta et al., 2023). Accroding to Nejašmić (2008), approximately 270,000 ethnic Serbs emigrated from Croatia in the period from 1991 to 2001. By calculating the absolute data regarding the immigrants in the period from 2001 to 2011, relative values were obtained. These values show that only 17.7% of the immigrants were from EU countries, and on the other hand, the EU countries were the destination for 31.2% of emigrants. Furthermore, as much as 82.3% of the immigrants came from non-EU countries, and those countries were destination countries for 68.8% of emigrants from Croatia. Destination of a substantial percentage of the emigrants was unknown.

Although it has often been implied that the volume of emigration from Croatia has been greater than the official statistics show (Pokos & Turk, 2022), there has been no attempt to calculate or estimate it. If the intercensal population change and natural increase/decrease in the same period are compared, the total net migration can be calculated. According to the official migration statistics, in the period from 2001 to 2011, Croatia had positive net migration of 70,837 persons, but if the above-mentioned calculation based on more reliable data (population censuses and vital statistics) is applied, the net migration was actually negative (Table 3). In that period, the country experienced a population decline exceeding the size of the eighth largest town in Croatia at that time (town of Pula).

Table 3. Calculation of net migration in Croatia from 2001 to 2011

Year	Population	Intercensal natural population change	Expected number of inhabitants	Net migration
2001	4,437,460	–95,047	4,342,413	–57,524
2011	4,284,889			

Note. Data in columns are calculated based on *2001 Census of Population, Households and Dwellings in the Republic of Croatia*, by Croatian Bureau of Statistics, n.d.-c (https://web.dzs.hr/Hrv/censuses/Census2001/Popis/H01_01_01/H01_01_01.html). In public domain; *2011 Census of Population, Households and Dwellings in the Republic of Croatia*, by Croatian Bureau of Statistics, n.d.-d (https://web.dzs.hr/Hrv/censuses/census2011/results/htm/H01_01_01/H01_01_01.html). In the public domain; *Natural population change in Croatia* [Data set], by Croatian Bureau of Statistics, 2019a (https://podaci.dzs.hr/hr/arhiva/stanovnistvo/prirodno-kretanje-stanovnistva-republike-hrvatske/). In the public domain.

4.2. Period from 2011 to 2021

Prior to 2021 Population Census, Croatian Bureau of Statistics (2022a) estimated, and many demographers speculated, that Croatia had approximately four million inhabitants. However, the official results showed that the actual number was much lower—3.87 million. That indicates that in the last intercensal period, the total population of Croatia declined by over 413,000 persons (Table 4), which is more than the total population of the second, third, and fourth largest cities in Croatia combined (Split, Rijeka, and Osijek).

Table 4. Population change in Croatia from 2011 to 2021

Year	Population	Intercensal population change	Intercensal population change (%)	Annual population change	Annual population growth rate (%)
2011	4,284,889	–413,056	–9.6	–45,895	–1.1
2021	3,871,833				

Note. Data in columns are calculated based on *2011 Census of Population, Households and Dwellings in the Republic of Croatia*, by Croatian Bureau of Statistics, n.d.-d (https://web.dzs.hr/Hrv/censuses/census2011/results/htm/H01_01_01/H01_01_01.html). In the public domain; *2021 Census of Population, Households and Dwellings in the Republic of Croatia*, by Croatian Bureau of Statistics, n.d.-e (https://dzs.gov.hr/naslovna-blokovi/u-fokusu/popis-2021/88). In the public domain.

In the same period, seven out of eleven former socialist EU countries also recorded population decline (Bulgaria, Croatia, Latvia, Lithuania, Hungary, Poland, and Romania) (Eurostat, 2022), but in Croatia, the decline was the largest. On the other hand, Slovenia and Slovakia recorded a population increase, while in Czechia and Estonia the population number practically stagnated. In both Slovenia and Slovakia population increase was the result of natural increase and positive net migration, but in Slovenia most of the increase was due to positive net migration. In Croatia, 34.2% of the population decrease can be attributed to natural decrease, which indicates that in this period negative net migration had a more prominent role in population decline. Similar trend was recorded in Latvia and Lithuania, where negative net migration was the main cause of population decline (Eurostat, 2022).

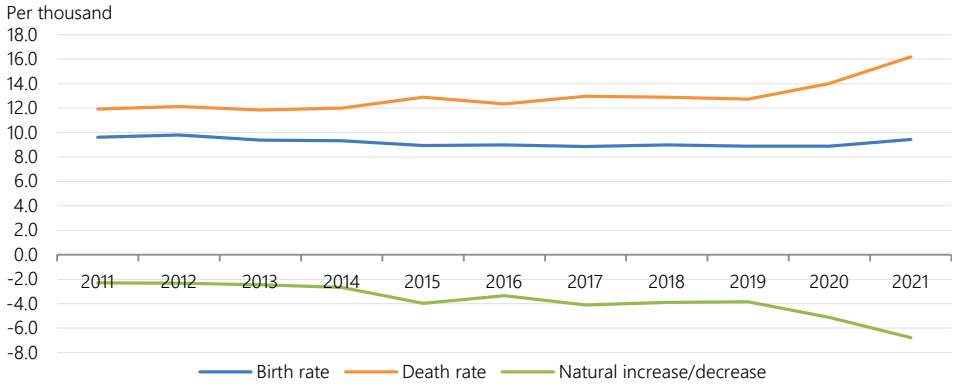

Figure 3. Birth rates, death rates and natural increase/decrease in Croatia from 2011 to 2021.

Note. Data in the figure adapted from *Natural population change* [Data set], by Croatian Bureau of Statistics, 2022b (https://podaci.dzs.hr/2022/hr/29028). In the public domain.

In comparison with the previous period, the number of births in Croatia decreased additionally by 8.5%, while the number of deaths increased by 2.1%, particularly at the end of the period. The annual number of births fell below 40,000 again in 2013, and from that point on it continued to decrease, reaching the new historical low (below 36,000 in 2020). In 2020, the number of deaths was 7.5% higher (approximately 4,000 deaths more) than the average for the preceding five-year period (2015–2019). It was the result of the COVID-19 epidemic—during the second wave of the epidemic (November and December 2020), the number of deaths surpassed the five-year average (Graovac Matassi & Josipovič, 2023). The gap between the birth rates and the death rates was widening and consequently Croatia lost over 141,000 inhabitants due to natural decrease (Figure 3).

The trend of intensive emigration from Croatia that started in late 2000s, continued in this period, but it additionally intensified after the Croatian accession to the EU. Croatia became a member of the EU on 1st July 2013, and in the years that followed, the number of emigrants was increasing constantly, reaching its peak in 2017 (Figure 4). Namely, in 2017, the registered number of emigrants was three times higher than in 2013 (47,352 and 15,262, respectively). Germany, as the most attractive destination for emigrants from Croatia, opened its labor market to Croatian citizens on 1st July 2015, and after that, emigration from Croatia recorded a sharp increase (Jurić, 2017). After 2017, the volume of emigration started depleting presumably because most of those who intended to emigrate, did that in the first few years after the accession. A sharp decrease in the number of emigrants was recorded in 2020, and it was related to COVID-19 pandemic. On the other hand, the number of immigrants started increasing steadily in the first few years following the accession to the EU, but it accelerated after 2017. In 2020, the number of emigrants and immigrants was almost equal, but the data for 2021 show that the number of emigrants increased more than the number of immigrants. The researches indicate that the most important push factors in this period were low wages, high corruption rates, dissatisfaction with political leadership in the country and justice system, inability to resolve housing issues, etc. (Jurić, 2017; Mesarić Žabčić, 2021).

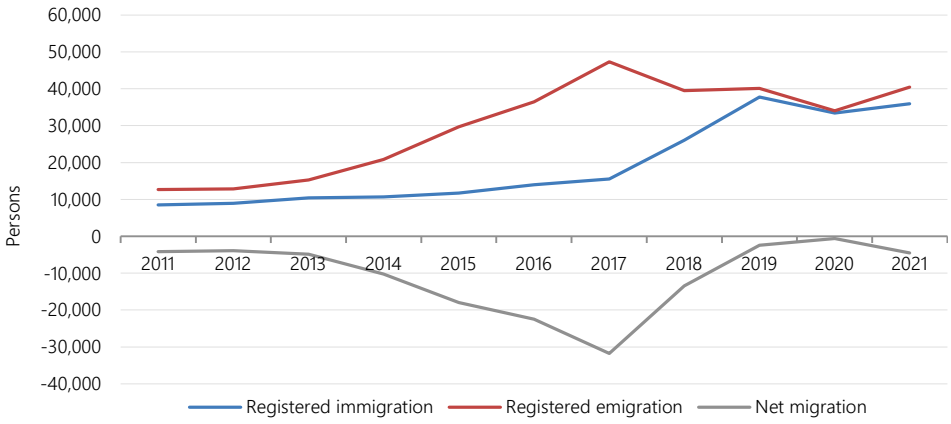

Figure 4. Migration in Croatia from 2011 to 2021.

Note. Data in the figure adapted from *Migrations in Croatia* [Data set], by Croatian Bureau of Statistics, 2022c (https://podaci.dzs.hr/2022/hr/29030). In the public domain.

Given the increase in the volume of migration and the underlying causes of migration, there were notable changes in the age structure of migrants in comparison with the previous period. Both among the immigrants and emigrants, the most numerous age group was 20–39, followed by the 40–59 (Table 5). The only age group that recorded a decrease were the immigrants aged 0–19, which leads to a conclusion that the number of immigrant families with children declined. Another fact that supports this thesis is that the number of male immigrants in working and reproductive ages is much higher than the number of female. In the period from 2001 to 2011, the share of males and females in the total number of immigrants and emigrants was approximately the same—male comprised 52.2% of all immigrants and 51.0% of all emigrants (Croatian Bureau of Statistics, 2022c).

Table 5. Age composition of migrants (in %) in Croatia, 2011–2021 and comparison to 2001–2011 period

Age	2011–2021		Comparison of 2011–2021 period with 2001–2011 period (in %)	
	Immigrants	Emigrants	Immigrants	Emigrants
0–19	10.5	16.9	–35.4	417.5
20–39	49.0	43.6	65.5	345.4
40–59	28.4	28.9	59.3	336.2
60+	12.1	10.5	31.5	66.6

Note. Data in columns are calculated based on *Migrations in Croatia*, by Croatian Bureau of Statistics, 2023 (https://podaci.dzs.hr/2023/hr/58061). In public domain; *Migrations in Croatia*, by Croatian Bureau of Statistics, 2020 (https://podaci.dzs.hr/2021/hr/9939). In public domain.

On the other hand, in the period from 2011 to 2021, the sex composition of the migrants changed significantly—as much as 66.8% of immigrants were male, and given their age composition, it is evident that most of the immigrants to Croatia in this period were male in their working age (immigrant labor force). The difference in sex composition among the emigrants indicates a moderate masculinization tendency, with 55.9% of them being male (Croatian Bureau of Statistics, 2023). Although there was an increase in the number of immigrants in their working age, the number of emigrants of the same age increased even more (over 300%). However, the most notable increase was recorded among the youngest population (aged 0–19), which indicates that in this period there was an intensive emigration of the whole families.

Similar to the previous period, most of the immigrants to Croatia came from non-EU countries, predominantly Bosnia and Herzegovina and Serbia, but Croatia became increasingly attractive to immigrants from other European countries, such as North Macedonia, Ukraine, etc. Besides from these European countries, an increasing number of immigrants also came from Asian countries (from 373 immigrants in the 2001–2011 period to 8,855 immigrants in the 2011–2021 period). Given the fact that in this period Croatia was faced with a notable shortage of workforce, it is reasonable to assume that many of the immigrants in this period were migrant workers (Butković et al., 2022; Komušanec, 2023).

As the result of the Croatian accession to the EU, the EU countries became the most important destinations for emigrants from Croatia. By calculating the data on emigration from Croatia obtained from the Croatian Bureau of Statistics (2020), percentage values were obtained. They show that almost 70.0% of all emigrants that went to EU countries settled in Germany. Other EU countries that attracted emigrants from Croatia were Austria, Ireland,

Italy, Slovenia, and Sweden. Another significant change regarding immigration to Croatia is the citizenship of the immigrants. In the first period analyzed, 90.6% of the immigrants were Croatian citizens, but in the second period they comprised only 37.5% of the immigrants. This indicates that in the second period, particularly after the accession to the EU, Croatia became attractive for foreign nationals, and given their age composition, it is clearly the case of intensive immigration of foreign labor force.

The comparison of intercensal population change and natural decrease in the same period indicated that the magnitude of negative net migration was much larger than the official statistics registered—the official net migration in this period was –111,922, but according to calculation, it was –271,606 (Table 6). So, in a short period of time Croatia lost over a quarter of a million inhabitants due to negative net migration, primarily as the result of the emigration to the EU countries after the accession. On the other hand, immigration to Croatia also increased, but it was not enough to mitigate the negative effects of emigration.

Table 6. Calculation of net migration in Croatia from 2011 to 2021

Year	Population	Intercensal natural population change	Expected number of inhabitants	Net migration
2011	4,284,889	–141,450	4,143,439	–271,606
2021	3,871,833			

Note. Data in columns are calculated based on *2011 Census of Population, Households and Dwellings in the Republic of Croatia*, by Croatian Bureau of Statistics, n.d.-d (https://web.dzs.hr/Hrv/censuses/census2011/results/htm/H01_01_01/H01_01_01.html). In the public domain; *2021 Census of Population, Households and Dwellings in the Republic of Croatia*, by Croatian Bureau of Statistics, n.d.-e (https://dzs.gov.hr/naslovna-blokovi/u-fokusu/popis-2021/88). In the public domain; *Natural population change* [Data set], by Croatian Bureau of Statistics, 2022b (https://podaci.dzs.hr/2022/hr/29028). In the public domain.

Croatia is undoubtedly facing a severe demographic crisis. Continuous natural decline in the last thirty years should be observed through the prism of the SDT theory. van de Kaa (2002) argues that the core concept of the SDT revolves around the notion that industrialized countries have entered a distinctive phase in their demographic development. This phase is distinguished by the extensive control over fertility, indicating a divergence from traditional demographic patterns. To be more precise, the couples usually opt for one or two children, resulting in below-replacement fertility levels, and a noticeable trend of postponing childbearing to late 20s and early 30s. These trends have also been observed in Croatia (Graovac Matassi & Talan, 2021).

Post-transitional stage in Croatia started in the mid-1980s, and the socio-economic and political changes that followed had a profound impact on the demographic trends. In the last thirty years, there have been three distinct emigration waves: during and immediately after the war in the early 1990s, after the onset of the financial crisis of 2007–2008, and after the Croatian accession to the EU in 2013.

The underreported emigration has also been confirmed by the data provided by statistical offices of the destination countries. Namely, the number of immigrants from Croatia registered in destination countries (Germany, Ireland, Austria) was much larger than the number of emigrants to those countries registered in Croatia (Pokos, 2017). According to Sopek (2009), based on the data for Germany, Austria, and Ireland, the number of Croatian immigrants to those countries was approximately 62% higher than recorded by Croatian statistics. The research results

presented by Jurić (2017) indicate that more than half of the Croatian immigrants to Germany were aged 20–40, previously employed in their home country, and they emigrated with their whole families. This indicates that unemployment is not always the main reason for emigration, but rather better work and living opportunities in the host country. Similar trends were recorded in other post-socialist EU countries, e.g., Romania (Vasile, 2014).

According to the data provided by the Croatian Bureau of Statistics (2019), during the 2000s, the most intensive migration was among Croatia and two neighboring countries—Bosnia and Herzegovina and Serbia. Namely, the dissolution of Yugoslavia resulted in significant migrations among the former republics. More intensive emigration from Croatia began in the late 2000s, due to economic crisis that contributed to increased unemployment and poverty that forced the population to pursue better socio-economic opportunities (Miljenović, 2013). After the Croatian accession to the EU, the emigration from Croatia became even more voluminous and oriented toward the EU countries. In the second period, the most attractive destination for emigrants from Croatia was Germany, mostly because of the long tradition that dates back to the 1960s, during the great immigration of guest workers to Germany, largely from southern and south-eastern European countries, like Italy, Greece, Croatia, Turkey, Bosnia and Herzegovina, etc. (Borkert & Bosswick, 2007; Lederer, 1997; Nejašmić, 2008). The more notable increase of emigrants was registered in 2015, when Germany provided equal opportunities and access to labor market to Croatian nationals (Jurić, 2017).

Parallel to intensive emigration from Croatia after 2013, the country started to attract an increasing number of immigrants, particularly male working force. Namely, the national economy has been faced with an immense outflow of the labor force following the accession to the EU, which has been the most prominent in public healthcare sector, but also in other sectors such as construction, tourism and hospitality, and metal industry. Consequently, the country has become highly dependent on migrant workers (Butković et al., 2022).

5. Conclusion

In both of the analyzed periods (2001–2011 and 2011–2021), Croatia experienced natural decrease, with the decrease being more pronounced in the second period compared to the first. Therefore, in the first period analyzed, the natural decrease contributed more to the population decline than negative net migration, but in the second period, the negative net migration became the main cause of population decline. The official data indicate that the net migration was positive in the first period, but it became negative in the second period due to intensive emigration. However, calculation shows that the net migration was negative in both periods and that the magnitude of emigration was obviously underreported. The reason for underreported number of emigrants is that many emigrants from Croatia fail do deregister their residence after emigrating to another country in order to maintain certain benefits in their homeland (such as health insurance).

Recent migrations in Croatia did not only affect the population decline, but also age composition of the population, particularly in the last intercensal period due to emigration of young population and population in their working and reproductive ages. In the last intercensal period, the decline of the number of young adults was much higher than the decline of total population. Given the fact that more than two-thirds of the emigrants in the same period were aged 0–39, it is reasonable to assume that the whole families emigrated, particularly since a significant proportion of emigrants were children. On the other hand,

immigrants of the same age were far less numerable. Emigration of children and young adults does not only affect the population number, but it also might affect fertility in the future as the number of men and women in their reproductive age decreases. Although the official data regarding migrations are underreported, the available data on age and sex structure, origin and destination of migrants and their citizenship can still be used as a proxy for migration trends in Croatia. Consequently, both of the hypotheses were confirmed. The observed trends of natural decrease and negative net migration indicate that, unless these negative trends are reversed, Croatia will continue to depopulate. In view of increased immigration of third-country immigrants in the last few years, there is a necessity to investigate that migration.

The most important contribution of this paper is that it clearly identifies the drivers of population decline and highlights the discrepancy between reported and actual migration during the investigated periods. It also specifies the differences in age and sex composition between emigrants and immigrants, and how these differences impact the age and sex composition of the entire country, consequently influencing population decline. The observed trends provide valuable insights into the multifaceted challenges of population decline in Croatia, including the intensive emigration of the working-age population and their families, and the associated socio-economic consequences. The findings underscore the crucial importance of accurate data, targeted policies, and further research to address the specific consequences of current trends. Further research should particularly focus on the socio-economic impact of population decline, with an emphasis on its effects on the labor market and future economic development, as well as on fertility and future population trends. Additionally, research should address the causes of emigration to identify the main reasons behind the intensive emigration. This will contribute to the design of migration policies that could mitigate negative trends and potentially reduce emigration by introducing various incentives to improve the socio-economic status of the population.

References

Borkert, M., & Bosswich, W. (2007). *Migration Policy-Making in Germany – between national reluctance and local pragmatism?* (Working paper No. 20). https://migrant-integration.ec.europa.eu/sites/default/files/2008-08/docl_1453_955927173.pdf

Butković, H., Samardžija, V., & Rukavina, I. (2022). *Foreign workers in Croatia: Challenges and opportunities for economic and social development*. Institute for Development and International Relations. https://irmo.hr/wp-content/uploads/2022/03/Strani-radnici-u-Hrvatskoj.pdf

Čizmić, I., Sopta, M., & Šakić, V. (2005). *Iseljena Hrvatska* [Croatian Emigration]. Golden Marketing – Tehnička knjiga.

Croatian Bureau of Statistics (2019a). *Natural population change in Croatia*. [Data set]. https://podaci.dzs.hr/hr/arhiva/stanovnistvo/prirodno-kretanje-stanovnistva-republike-hrvatske/

Croatian Bureau of Statistics. (2001). *Popis stanovništva 2001. Metodološka objašnjenja* [2001 Population Census. Notes on Methodology]. https://web.dzs.hr/Hrv/censuses/Census2001/census_met.htm

Croatian Bureau of Statistics. (2011). *Popis stanovništva, kućanstava i stanova 2011. Metodološka objašnjenja* [2011 Census on Population, Households and Dwellings. Notes on Methodology]. https://web.dzs.hr/Hrv/censuses/census2011/results/censusmetod.htm

Croatian Bureau of Statistics. (2019). *Migrations in Croatia*. [Data set]. https://podaci.dzs.hr/hr/arhiva/stanovnistvo/migracija-stanovnistva-republike-hrvatske/

Croatian Bureau of Statistics. (2020). *Migrations in Croatia*. https://podaci.dzs.hr/2021/hr/9939

Croatian Bureau of Statistics. (2022a). *Past censuses data*. https://dzs.gov.hr/naslovna-blokovi/u-fokusu/popis-2021/88

Croatian Bureau of Statistics. (2022b). *Natural population change* [Data set]. https://podaci.dzs.hr/2022/hr/29028

Croatian Bureau of Statistics. (2022c). *Migrations in Croatia* [Data set]. https://podaci.dzs.hr/2022/hr/29030

Croatian Bureau of Statistics. (2023). *Migrations in Croatia*. https://podaci.dzs.hr/2023/hr/58061

Croatian Bureau of Statistics. (n.d.-a). *Stanovništvo* [Population]. https://podaci.dzs.hr/hr/podaci/stanovnistvo/

Croatian Bureau of Statistics. (n.d.-b). *Publikacije* [Publications]. https://web.dzs.hr/

Croatian Bureau of Statistics. (n.d.-c). *2001 Census of Population, Households and Dwellings in the Republic of Croatia*. https://web.dzs.hr/Hrv/censuses/Census2001/Popis/H01_01_01/H01_01_01.html

Croatian Bureau of Statistics. (n.d.-d). *2011 Census of Population, Households and Dwellings in the Republic of Croatia*. https://web.dzs.hr/Hrv/censuses/census2011/results/htm/H01_01_01/H01_01_01.html

Croatian Bureau of Statistics. (n.d.-e). *2021 Census of Population, Households and Dwellings in the Republic of Croatia*. https://dzs.gov.hr/naslovna-blokovi/u-fokusu/popis-2021/88

Čuka, A., Mirošević, L., Faričić, J., & Graovac Matassi, V. (2017). Phylloxera revisited: the spread of grapevine disease in Dalmatia and its influence on socio-economic development and agricultural landscape. *Annales—Anali za istrske in mediteranske študije—Series Historia et Sociologia*, *27*(1), 101–118. https://doi.org/10.19233/ASHS.2017.09

Eurostat. (2022). *Population on 1 January by age and sex*. [Database]. Retrieved August 22, 2022 from https://ec.europa.eu/eurostat/databrowser/view/demo_pjan/default/table?lang=en&category=demo.demo_pop

Faričić, J., Graovac, V., & Čuka, A. (2010). Small Croatian islands – Residential and/or leisure area. *Geoadria, 15(*1), 145–185. https://doi.org/10.15291/geoadria.548

Franklin, R. S. (2020). I come to bury (population) growth, not to praise it. *Spatial Economic Analysis*, *15*(4), 359–373. https://doi.org/10.1080/17421772.2020.1802056

Gelo, J. (2000). Dvadeset i prvo stoljeće—Hrvatska na nizbrdici depopulacije [Twenty–first century—Croatia on depopulation slope]. In N. Vidović (Ed.). *Hrvatsko gospodarstvo za 21. stoljeće* (pp. 61–84). Nakladni zavod Matice hrvatske.

Graovac Matassi, V. & Josipovič, D. (2023). Different Demographic Pathways of the Post-Socialist Transition: Mortality Trends in Croatia and Slovenia during COVID-19. *Treatises and Documents, Journal of Ethnic Studies*, *91*, 115–138. https://doi.org/10.2478/tdjes-2023-0017

Graovac Matassi, V., & Rogić, A. (2023). Mortality trends in Croatia in the first two decades of the 21st century. *Geoadria*, *28*(1), 97–126. https://doi.org/10.15291/geoadria.4094

Graovac Matassi, V., & Talan, A. (2021). Recent marriage and childbearing trends in Croatia and Slovenia: A comparative review. *Acta Geographica Slovenica, 61*(1), 25–40. https://doi.org/10.3986/AGS.8596

Grizelj, M., & Akrap, A. (2011). *Population Projections of the Republic of Croatia.* Croatian Bureau of Statistics. https://podaci.dzs.hr/media/rrtpfgyn/projekcije_stanovnistva_2010-2061.pdf

Jurić, T. (2017). Suvremeno iseljavanje Hrvata u Njemačku: karakteristike i motivi [Contemporary Emigration of Croats to Germany: Motives and Characteristics]. *Migracijske i etničke teme, 33*(3), 337–371. https://doi.org/10.11567/met.33.3.4

Jurić, T., & Hadžić, F. (2021, November 29–December 1). *Socio-economic consequences of population emigration from Croatia, Bosnia and Herzegovina and Serbia - current situation and perspectives*. Wittingstein Centre Conference, Vienna, Austria. https://www.oeaw.ac.at/fileadmin/subsites/Institute/VID/PDF/Conferences/2021/Posters/B4_full-paper_Juric-Hadzic.pdf

Komušanac, M. (2023). Recentna imigracija radne snage u Hrvatsku: razmjeri, trendovi, obilježja [Recent Immigration of the Workforce in Croatia: Proportions, Trends, and Features]. *Migracijske i etničke teme*, *39*(2), 183–207. https://doi.org/10.11567/met.39.2.3

Koyama, Y. (2020). Emigration from EU Periphery and Its Depopulation. *EU Studies in Japan*, *40*, 175–198. https://doi.org/10.5135/eusj.2020.175

Lajić, I., & Mišetić, R. (2013). Demografske promjene na hrvatskim otocima početkom 21. stoljeća [Demographic Changes on Croatian Islands at the Beginning of the 21st Century]. *Migracijske i etničke teme, 29*(2), 169–199. https://doi.org/10.11567/met.29.2.3

Lederer, H. W. (1997). *Migration und Integration in Zahlen: ein Handbuch* [Migration and Integration in Numbers: A handbook]. Europ. Forum für Migrationsstudien.

Mesarić Žabčić, R. (2021). New wave of emigration from the Republic of Croatia. *Croatian Studies Review, 16-17*(1), 87–101. https://hrcak.srce.hr/279627

Mesić, M. (2014). Međunarodne migracije: teorijski pristupi [International Migration: theoretical approaches]. In V. Puljiz, J. Tica & D. Vidović (Eds.). *Migracije i razvoj Hrvatske. Podloga za hrvatsku migracijsku strategiju* (pp. 157–174). Hrvatska gospodarska komora.

Miljenović, A. (2013). Ekonomska kriza—pokretač transformacije profesije socijalnog rada [Economic crisis—Driving force for the transformation of the social work]. *Ljetopis socijalnog rada, 20*(1), 51–70. https://hrcak.srce.hr/file/153684

Nejašmić, I. (1991). *Depopulacija u Hrvatskoj: korijeni, stanje, izgledi* [Depopulation in Croatia: origins, state, perspectives]. Globus.

Nejašmić, I. (2008). *Stanovništvo Hrvatske: demogeografske studije i analize* [Population of Croatia: demographic studies and analyses]. Hrvatsko geografsko društvo.

Pavić, D., & Ivanović, I. (2019). Razlike u prikupljanju migracijskih podataka: usporedba Hrvatske i odabranih europskih zemalja [Differences in collecting migration data: comparison between Croatia and selected European Countries]. *Migracijske i etničke teme, 35*(1), 7–32. https://doi.org/10.11567/met.35.1.1

Pejnović, D. (2004). Depopulacija županija i disparitet u regionalnom razvoju Hrvatske [Depopulation of counties and disparity in regional development of Croatia]. *Društvena istraživanja, 13*(4/5), 701–726. https://hrcak.srce.hr/file/24563

Pokos, N. (2017). Osnovna demografska obilježja suvremenog iseljavanja iz Hrvatske [Basic demographic features of modern emigration from Croatia]. *Političke analize, 8*(31), 16–23. https://hrcak.srce.hr/file/283891

Pokos, N. & Turk, I. (2022). Problematika statističkog praćenja iseljavanja u inozemstvo [The Issues of Statistical Monitoring of Emigration]. *PILAR – časopis za društvene i humanističke studije, 17*(32/1), 47–58. https://hrcak.srce.hr/clanak/432802

Ramet, S. P. & Valenta, M. (2016). *Ethnic minorities and politics in post-socialist Southeastern Europe*. Cambridge University Press.

Sobotka, T. & Fürnkranz-Prskawetz, A. (2020). Demographic change in Central, Eastern and Southeastern Europe: trends, determinants and challenges. In R. Holzmann, D. Ritzberger-Grünwald & H. Schuberth (Eds.), *30 Years of Transition in Europe* (pp. 196–222). Edward Elgar Publishing Limited.

Sobotka, T. (2011). Fertility in Central and Eastern Europe after 1989: Collapse and Gradual Recovery. *Historical Social Research, 36(2)*, 246–296. http://www.jstor.org/stable/41151282

Sopek, P. (2009). The Effect of the Financial Crisis on Croatia's Primary Budget Deficit and Public Debt. *Financial Theory and Practice 33*(3), 273–298. https://hrcak.srce.hr/48570

Turok, I., & Mykhnenko, V. (2007). The trajectories of European cities, 1960–2005. *Cities, 24(3)*, 165–182. https://doi.org/10.1016/j.cities.2007.01.007

Valenta, M., Jakobsen, J., Gregurović, M. & Župarić-Iljić, D. (2023) Changes in the Croatian migration system: conceptualising the complexities of migrations, 1990–2023. *Labor History*, 1–18. https://doi.org/10.1080/0023656X.2023.2280052

van de Kaa, D. J. (2002, January 29). *The Idea of a Second Demographic Transition in Industrialized Countries*. Sixth Welfare Policy Seminar of the National Institute of Population and Social Security. Tokyo, Japan https://www.researchgate.net/publication/253714045_The_Idea_of_a_Second_Demographic_Transition_in_Industrialized_Countries

Vasile, V. (2014). Labour mobility impact on sending countries. Romanian EU workers case study. *Procedia Economics and Finance, 8*, 737–746. https://doi.org/10.1016/S2212-5671(14)00152-X

Vojnović, N. (2004). Depopulacija u Istarskoj županiji 1981.-2001 [Depopulation in the Region of Istria between 1981 and 2001]. *Annales: Anali za istrske in mediteranske študije. Series historia et sociologia, 14*(1), 61–72. https://zdjp.si/wp-content/uploads/2004/07/Annales-14-2004-1-SHS-PDF-A.pdf

Wertheimer-Baletić, A. (2004). Depopulacija i starenje stanovništva—temeljni demografski procesi u Hrvatskoj [Depopulation and population ageing—Basic demographic processes in Croatia]. *Društvena istraživanja, 13*, 631–651. https://hrcak.srce.hr/16231

Wertheimer-Baletić, A. (2007). Depopulacija, starenje stanovništva i populacijska politika u Hrvatskoj [Depopulation, population ageing and population policy in Croatia]. *Rad Hrvatske akademije znanosti i umjetnosti, 45*, 73–120. https://hrcak.srce.hr/file/24554

Živić, D. (2017). Demografsko izumiranje hrvatskoga istoka [Demographic extinction of Eastern Croatia]. *PILAR—Časopis za društvene i humanističke studije, 24*(2), 9–26. https://hrcak.srce.hr/232244

Živić, D. (2018). Depopulacija i starenje u Istočnoj Hrvatskoj [Depopulation and population ageing in Eastern Croatia]. *Diacovensia: teološki prilozi, 26*(4), 657–679. https://doi.org/10.31823/d.26.4.6