

## **POPULATION IN BORDER AREAS AT THE EXTERNAL BORDER OF THE EUROPEAN UNION ON THE TERRITORY OF POLAND 2015–2019**

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### **ABSTRACT**

Demographic processes have always been one of the most important dimensions of socio-economic development. In recent years, unfortunately, unfavourable demographic changes have been observed both in Poland and in the border areas. The aim of the article is to present the demographic situation in the border area at the external border of the European Union on the Polish side in 2015–2019. There are 36 powiats in this zone, which cover an area of more than 40,000 km<sup>2</sup> representing nearly 13% of the Polish territory. The article presents the status and structure of the population living in the border areas, with particular attention to such characteristics as sex, place of residence, economic and biological age groups. It also contains information on the development of the basic coefficients of vital statistics, the number of marriages and divorces as well as inflow and outflow of population for permanent residence. The analysis was carried out on the basis of data of Statistics Poland in voivodship and powiat cross-sections.

**Key words:** border areas, population structure, external border of the European Union in Poland.

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### **1. State and structure of the population**

The external border of the European Union on the territory of Poland is 1,163 km long, which constitutes 33% of the length of the Polish state border. The longest section is the border with Ukraine – 535 km (i.e. 46% of the external border of the European Union on the territory of Poland), followed by Belarus – 418 km (36%) and Russia (Kaliningrad Oblast) – 210 km (18%).

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In the border area at the external border of the European Union on the Polish side there are 36 powiats, which cover an area of 40,277 km<sup>2</sup> constituting 12.9% of the territory of Poland.

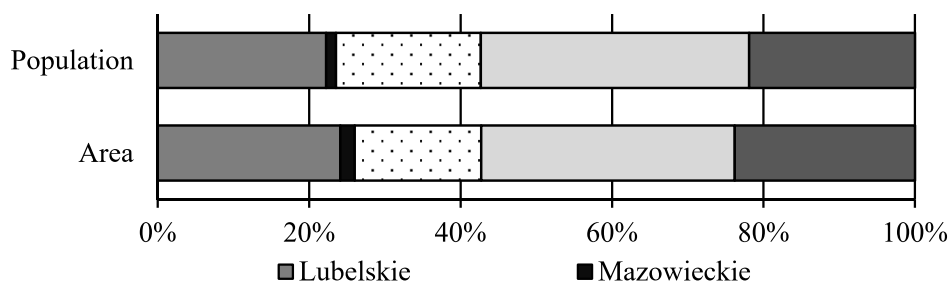


**Figure 1.** Powiats of the EU border area in 2019

Source: own work.

Among the powiats of the analysed zone, 10 are located in Warmińsko-Mazurskie and Podlaskie Voivodships, 8 in Lubelskie Voivodship, 7 in Podkarpackie Voivodship and 1 in Mazowieckie Voivodship.

Podlaskie Voivodship had the highest population of the border area in 2019 (35.4%), followed by Lubelskie Voivodship (22.2%), Warmińsko-Mazurskie Voivodship (21.9%) and Podkarpackie Voivodship (19.1%). The smallest number of border area inhabitants lived in Mazowieckie Voivodship – 1.3%.

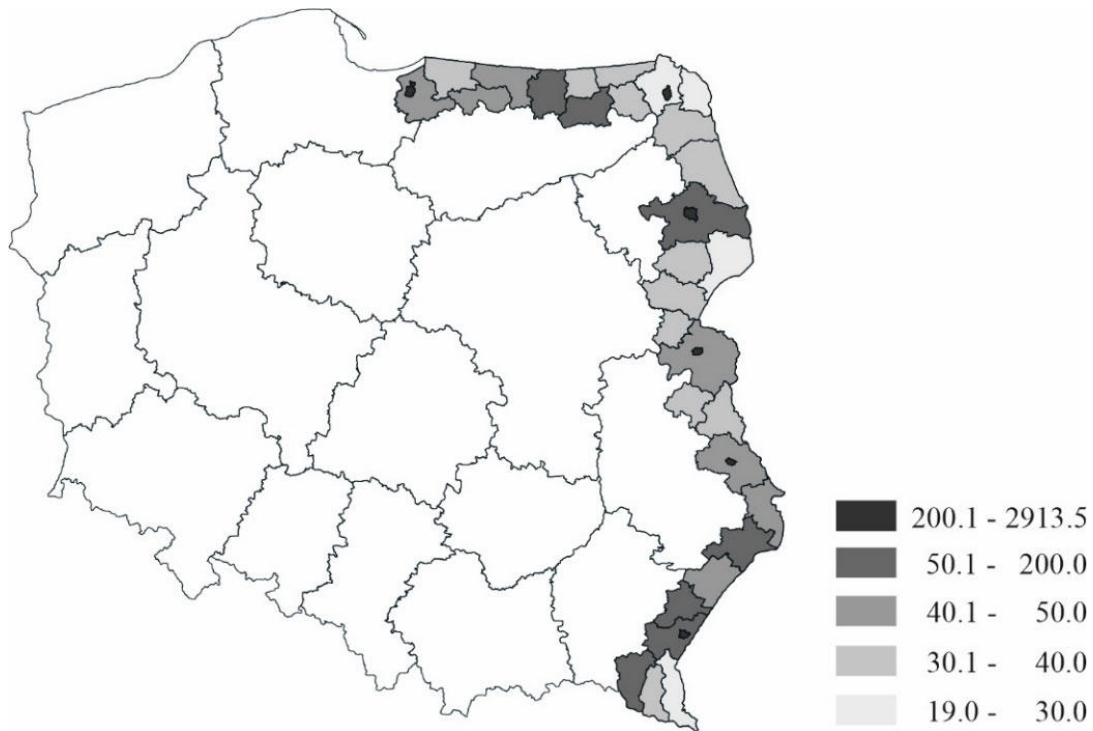


**Figure 2.** Structure of the EU border area and population by voivodship in 2019

Source: own work.

At the end of 2019, the population in the external border of the European Union on the Polish side amounted to 2 million 367 thousand, which constituted 6.2% of the population of Poland, of which 1 million 285 thousand people lived in urban areas and 1 million 82 thousand in rural areas. Compared to 2015, the population in the area in question decreased by 38.7 thousand people, and compared to 2018 by 12.4 thousand people. In 2019, the urban population accounted for 54.3% of the total population (in the country, the urban population share was 60.0%).

The average population density of the studied area in 2019 was 59 inhabitants per 1 km<sup>2</sup> (123 in Poland). This indicator showed considerable spatial variation – from the highest in Białystok (Podlaskie Voivodship) 2913 persons/km<sup>2</sup>, to the lowest in Bieszczadzki powiat (Podkarpackie Voivodship) 19 persons/km<sup>2</sup>. In urban areas, there were 891 people per 1 km<sup>2</sup> on average, while in rural areas 28 people.



**Figure 3.** Population of the EU border area per 1 km<sup>2</sup> in 2019

*Source: own work.*

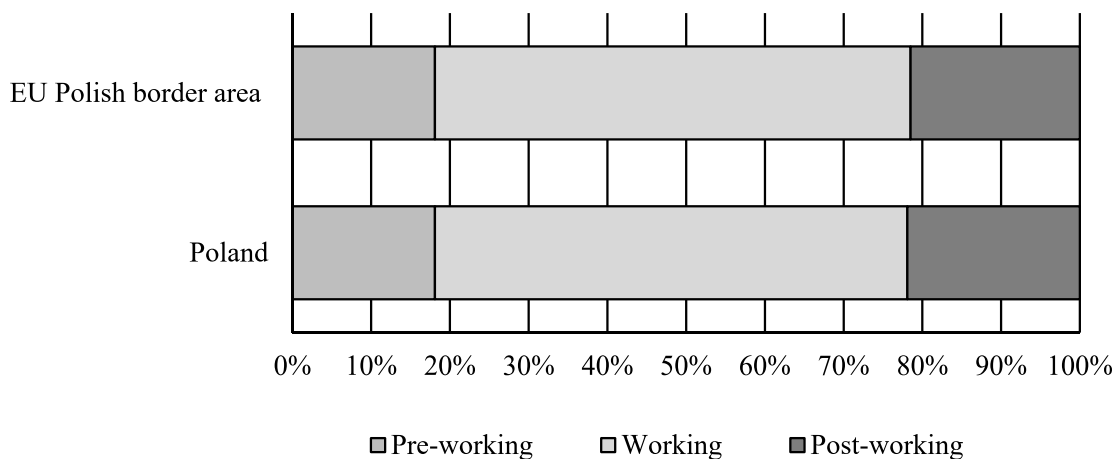
The total population was slightly dominated by women, who made up 51.2% of the population. In 2015–2019, the feminisation rate was 105, meaning that there were statistically 105 women per 100 men (107 in the country). Among the urban

population, the ratio was 110, significantly different from the rural population ratio of 99.

Among the powiats of the border area, Przemysl, Chem and Białystok had a particularly large number of women over men in 2019 (113 women per 100 men), while Suwalski powiat was the least feminised with 96 men for every 100 women.

When observing the numerical relationship between men and women with a simultaneous breakdown by age group, the numerical predominance of women over 60 is observed. This is due to the fact that women live longer than men. Although boys predominate among the number of new-borns, women outnumber men in the overall population structure.

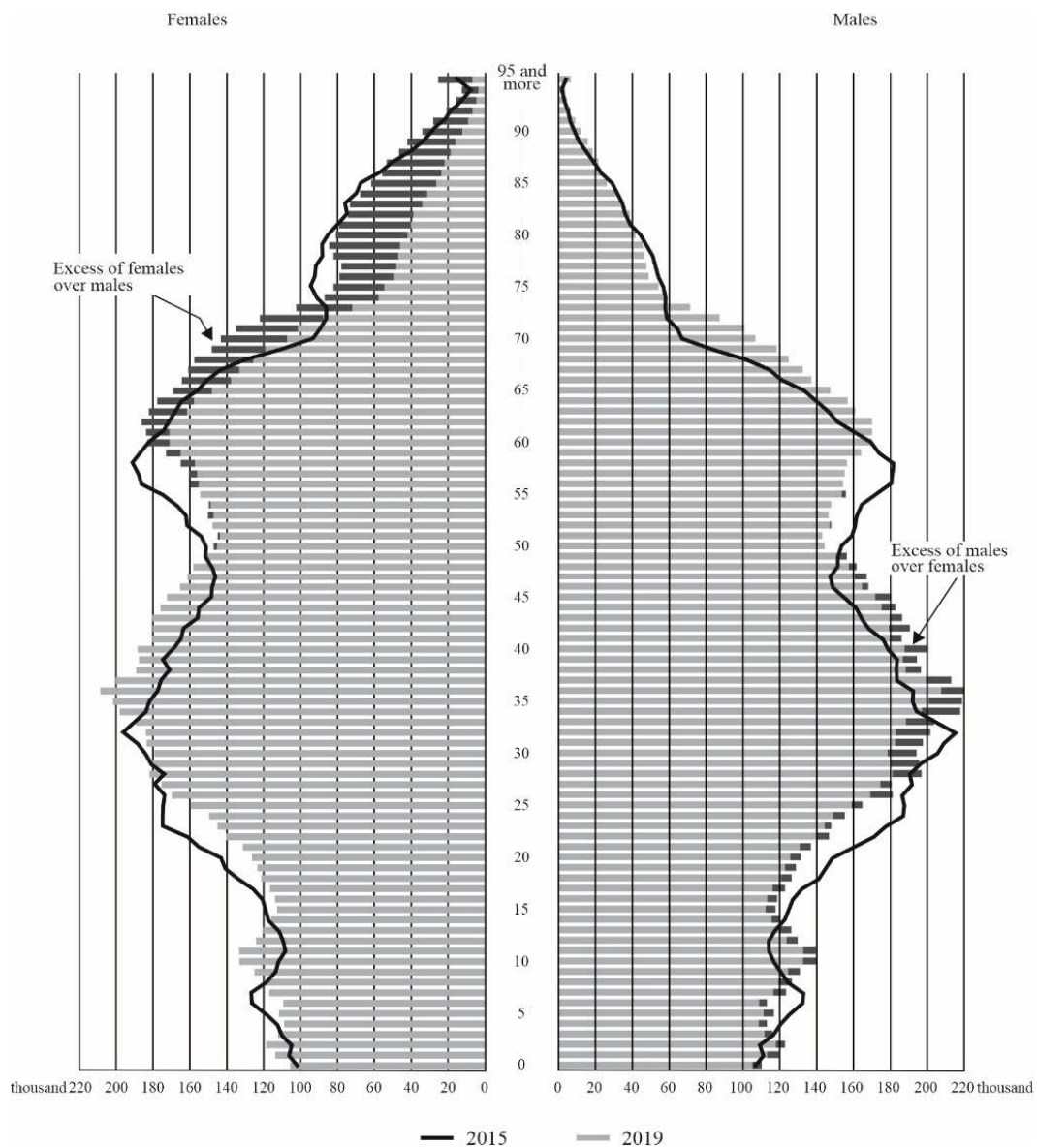
Between 2015 and 2019, there was a gradual decrease in the proportion of children and young people (0-17 years) in the total population of the border area, with an increase in the post-working age population (men aged 65 and over and women aged 60 and over). The proportion of the population of pre-working age decreased from 17.6% in 2015 to 17.4% in 2019 (in Poland from 18.0% to 18.1%).



**Figure 4.** Population structure by economic age group in 2019

*Source: own work.*

The share of the working age population also decreased – from 63.1% to 60.9% (in the country – from 62.4% to 60.0%). At the same time, the share of people of working age increased – from 19.2% in 2015 to 21.7% in 2019 (in the country – from 19.6% to 21.9%). In 2019, there were 64 people of non-working age (pre-working and post-working age) per 100 people of working age (men aged 18-64 and women aged 18-59), compared with 58 in 2015 and 62 in 2018.

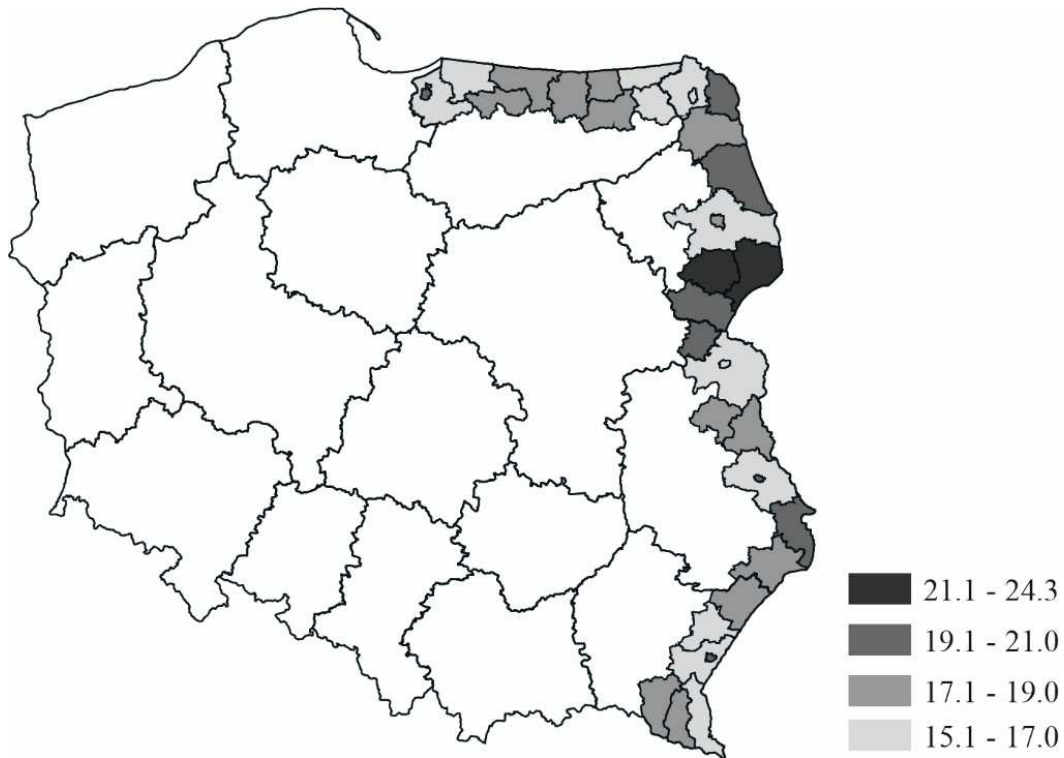


**Figure 5.** Population of the EU border area on the Polish side by age

*Source: own work.*

The population of the study area is ageing, which is primarily shown by the increase in the number of elderly people in the total population. Taking the age of 65 as the threshold for old age, the **old age rate** is used, which is the percentage of the population aged 65 and over in the total population. This coefficient in the border area in 2019 stood at 17.8 (in the country at 18.1) and was 2.2 pp higher than that recorded in 2015.

Considering the powiats of the border zone, the highest percentage of elderly people in 2019 was in Hajnowski powiat at 24.3% and the lowest in Suwałki at 15.1%. Between 2015 and 2019, all powiats in the described zone experienced an increase in the percentage of the elderly population, with the largest occurring in Chełm – by 4.0 pp, and the lowest in Bielski powiat – by 0.9 pp.



**Figure 6.** Old age rate of the EU border area in 2019

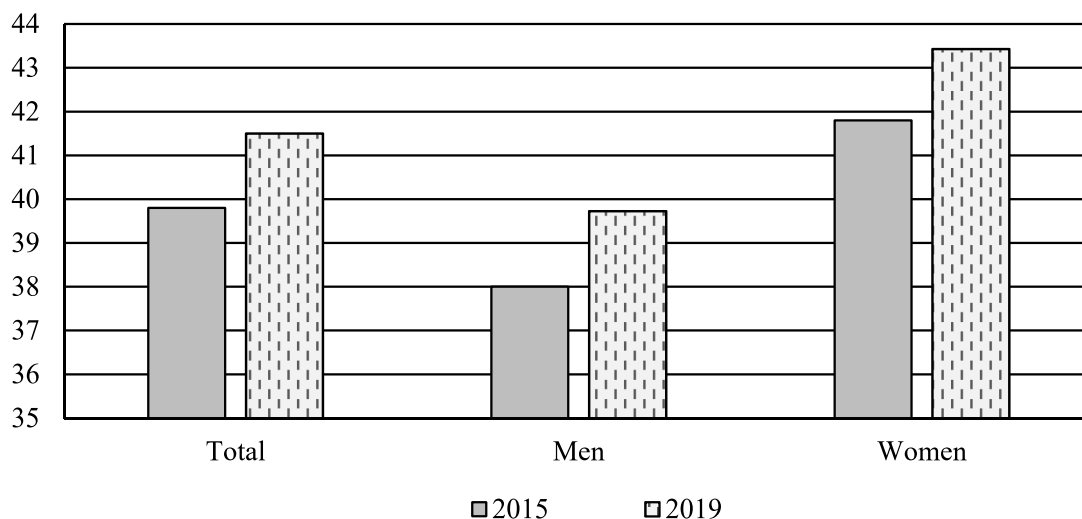
*Source: own work.*

One measure of population ageing is the **ageing ratio**, which measures the relationship between the grandparent and grandchild generation (the number of people aged 65 and over per 100 people aged 0-14). At the end of 2019, the ageing ratio in the border area was 123 people, which means that on average there were 123 grandparents or grandmothers per 100 grandchildren (108 people in 2015). In the country, the index was 118 people in 2019 and 106 people in 2015. There was considerable variation in this index by powiat in 2019 from 96 people in Suwałki to 205 people in Hajnowski powiat.

Among the 36 powiats in the zone, the ageing ratio above the national average was recorded in 19 powiats.

To illustrate the intergenerational relationship between the oldest people and their children, the **parent support ratio** is used to show how many people aged 85 and over there are per 100 people aged 50-64. At the end of 2019, both in the border area and in the country, this ratio was 11 people. Between 2015 and 2019, the value of the ratio in the study area increased by 1 person. In 2019, spatial differentiation of this ratio was observed, which in Bieszczadzki powiat, Braniewski powiat, Biała Podlaska and Suwałki was 8 persons, while in Bielski and Hajnowski powiats it was 18 persons. In 2015, the values of the rate were lower in each of the powiat and ranged from 6 persons in Biała Podlaska, Bieszczadzki and Braniewski powiats to 16 persons in Bielski powiat.

The middle age (**the median** - indicating the age limit that half of the people in a given community have already passed and the other half have not yet reached) of border areas is getting higher every year. In 2019, the median age was 41.5 years (41.3 years in the country), which means that half of the population passed this age (in 2015, the median was 39.8 years, as in the country). Regardless of the place of residence, the median age for women was higher than for men. In 2019, in the border area, half of the women were 43.4 years old and half of the men were 39.7 years old (in 2015, 41.8 and 38.0 years old respectively). Among the border population in 2019, the youngest were residents of Olecki and Suwalski powiats, with the median age of 39.3 years, while the oldest lived in Hajnowski powiat, with the median age of 47.1 years.

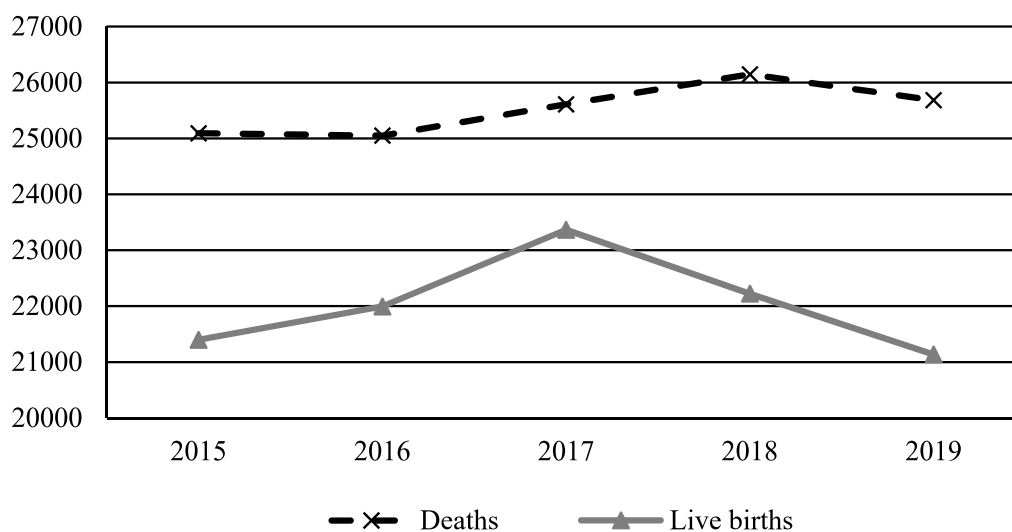


**Figure 7.** Median age of the EU border area population

*Source: own work.*

## 2. Population natural increase

In the analysed years 2015–2019, the EU border zone experienced a negative natural increase, meaning that the number of deaths here was greater than the number of births. The natural increase per 1,000 population in 2019 was -1.9 (in the country -0.9). The highest negative increase per 1,000 population was recorded in Hajnowski powiat (-8.8). The highest positive increase occurred in Białystok (2.5). Negative natural increase was recorded in 32 powiats of the zone.



**Figure 8.** Births and deaths in EU border area

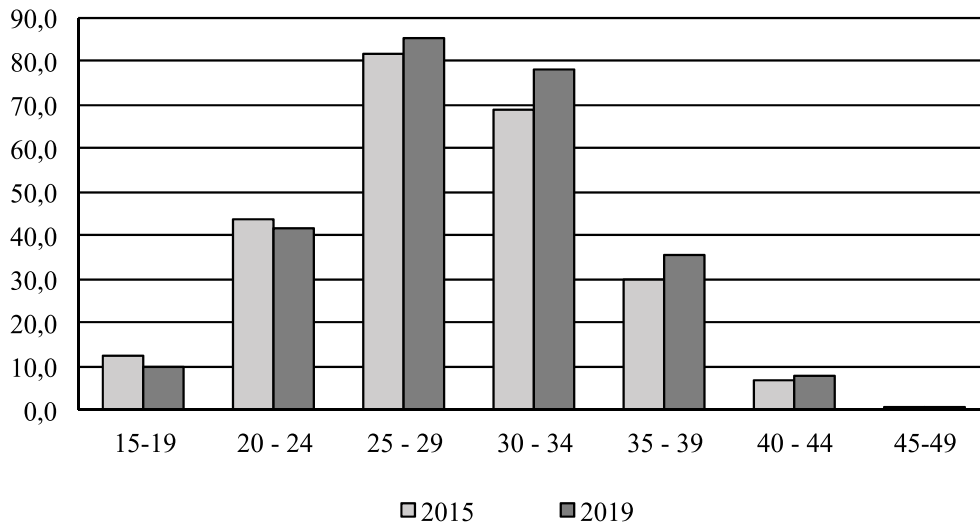
*Source: own work.*

In 2019, 21,135 live births were recorded in the EU border area, 4.9% (by 1087 births) less than in the previous year and 1.2% (by 262 births) less than in 2015. Among the new-borns in 2019, 51.3% were boys. The birth rate at the time was 8.9‰, unchanged from 2015. There were 9.1 live births per 1,000 population in urban areas and 8.6 in rural areas. The lowest birth rate was in Kętrzyński powiat (7.0‰) and the highest in Białystok (11.1‰).

The changes in the number of births at the external EU border in Poland over the past five years were accompanied by changes in the intensity of births by age of mother. One of the measures of these intensities is the fertility rate, determined by the number of live births per 1,000 women of reproductive age (15-49 years). It stood at 38.6‰ in 2019 and was 1.3 pp higher than that recorded in 2015. In the country, the fertility rate was higher and amounted to 41.8‰.



Women aged 25-29 were characterised by the highest fertility, with the fertility rate reaching 85.1‰ in 2019, and mothers in this age range giving birth to 7,000 children, accounting for 33.1% of all live births.



**Figure 9.** Fertility rates of women in EU border area

*Source: own work.*

In the analysed years of the border zone, the number of births gradually decreased while the number of deaths increased, therefore the value of **the demographic dynamics rate** (number of live births per 1 death in a given period) decreased from 0.9 in 2015 to 0.8 in 2019.

25.7 thousand people died in 2019, an increase of 2.4% compared to 2015. 13.4 thousand men died in the year in question, accounting for 52.0% of all deaths in the border area.

**The mortality rate** in the border areas was higher than in Poland and was 10.8‰ in 2019 (meaning that there were 10.8 deaths per 1,000 population), while in 2015 it was 10.4‰. In Poland, the number of deaths per 1,000 population amounted to 10.7 in 2019 and 10.3 in 2015. The number of deaths per 1,000 population in 2019 in the zone's urban areas was 10.1, which was lower than in rural areas by 1.6 pp. The highest death rate was recorded in 2019 in Hajnowski powiat at 16.3 and the lowest in Białystok at 8.7.

In 2019, the most recorded causes of death at the external border of the European Union in Poland were cardiovascular diseases, which accounted for 41.8% of the total number of deaths in the area and decreased by 3.9 pp compared to 2015. In the country, the share of people who died from cardiovascular diseases

was lower than in the border zone by 2.3 pp. The second highest cause of death in the analysed zone was cancer diseases, whose share decreased by 0.5 pp between 2015 and 2019 from 25.3% in 2015 to 24.8 in 2019.

There was an increase in the proportion of deaths due to respiratory diseases, which accounted for 6.4% of all deaths in 2019, up from 5.6% in 2015.

### **3. Population natural increase**

The second factor, besides natural increase, with a significant impact on the population status is population migration. In 2019, at the external border of the European Union in Poland – as in previous years – the outflow of population (de-registrations from permanent residence) exceeded the inflow of population (registrations for permanent residence). In 2019, the outflow of population for permanent residence amounted to 33.5 thousand (in 2015 – 28.4 thousand), while the inflow – 25.9 thousand people (in 2015 – 21.8 thousand). The value of the negative permanent migration balance increased from minus 6,614 in 2015 to minus 7,605 in 2019. The main contribution to the negative migration balance of the border area in 2019 was from urban residents (minus 5,031), while for rural areas it was (minus 2,574).

In 2019, the migration balance ratio per 1,000 population reached minus 3.2‰ and was 0.5 pp higher compared to 2015 (in the country it was 0.2‰). A positive value of this rate in 2019 was recorded only in Białostocki powiat - 9.8. The worst situation was in Chełm (minus 8.9‰).

### **4. Population migrations**

In 2019, 10,900 marriages took place in the studied area, accounting for 5.9% of the total number of contracted marriages in Poland. This represents a decrease from both 2018 and 2015 of 5.7% and 9.0% respectively. More marriages in 2019 were contracted in urban areas – 52.9%, and in the country 60.2%. In 2019, there were 4.6 marriages for every 1,000 population, 4.8 in 2018 and 5.0 in 2015. The marriage intensity rate for urban and rural areas was 4.5‰ and 4.7‰ respectively. Similarly, for the country it was 4.8‰ each for the total, urban and rural areas. The lowest value of the marriage rate per thousand population was recorded in 2019 in Przemyśl and Olecki powiat, 3.7‰ each, while the highest occurred in Lubaczowski powiat – 5.6‰.

In 2019, 4,149 divorces were pronounced in border powiats, accounting for 6.3% of all divorces recorded in the country. Compared to 2015, 1.6% more divorces were pronounced.

An indicator of the intensity of divorces is their number per 1,000 inhabitants. In 2019, its value in the border zone remained at 1.7‰ (2.2‰ in urban areas and

1.2‰ in rural areas). For comparison, in the country this indicator in 2019 was at the level of 1.7‰ (urban areas – 2.0‰, rural areas – 1.2‰).

Among powiats, the lowest value of the divorce intensity index was recorded in Łosicki powiat (0.9‰), the highest in Białystok – 2.6‰.

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