

Diagnosis of birth and death rate in terms of demographic security in Poland from a regional perspective

Diagnoza wskaźnika urodzeń i zgonów w kontekście bezpieczeństwa demograficznego Polski w ujęciu regionalnym

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Abstract:

Research objectives and hypothesis/research questions

The following research question was addressed in the article: what were the changes in the birth-to-death ratio in Poland in selected years, and to what extent did they vary regionally between voivodeships and spatially between urban and rural areas? The aim of this study is to present and explain changes in the birth-to-death ratio in Poland in selected years, taking into account the division into voivodeships and urban and rural areas. The following research hypothesis is outlined: it is assumed that during the analyzed period, Poland experienced a significant decline in the birth-to-death ratio in all voivodeships, with the scale and pace of those changes varying regionally and between urban and rural areas.

Research methods

A source analysis approach was used in the study, employing research techniques such as inference and analogy. The research tool used was SI Statistica.

Main results

Research also emphasizes the importance of coherence and long-term family policy (Super Biznes, 2026). Frequent changes to support instruments lower public trust and limit their effectiveness, while stable, predictable solutions encourage reproductive decisions at a younger age. In practice, that means a stronger focus on public policy, fostering care services, flexible employment, and a partnership-based family model, while treating migration as a complementary, not a substitute, element of demographic strategy.

Implications for theory and practice

The research has significant implications for both the theory of demographic processes and public policy practice. Theoretically, the results confirm the assumptions of the second demographic transition, according to which the decline in fertility and the permanent shift to negative natural increase are a consequence of long-term cultural (Poland in Practice, 2025), economic, and institutional changes, not solely short-term fluctuations in economic activity. Regional and sectoral (urban–rural) analysis indicates that those processes are universal, but their pace and intensity vary significantly across space, challenging simplistic approaches that treat demography as a homogeneous phenomenon nationwide. A particularly important theoretical finding is the observed reversal of demographic relations between cities and rural areas, which points to the growing role of structural factors, such as suburbanization (Królczyk-Lewandowska, 2025), selective internal migration, and the aging of the urban population, in shaping contemporary reproductive patterns.

Keywords:

natural increase, depopulation, demographic security, demographic policy, birth and death rate

Abstrakt:**Cel badań i hipotezy/pytania badawcze**

W artykule przyjęto następujący problem badawczy: jak kształtowały się zmiany wskaźnika relacji liczby urodzeń do liczby zgonów w Polsce w wybranych latach oraz w jakim stopniu były zróżnicowane regionalnie między województwami i przestrzennie między obszarami miejskimi i wiejskimi? Celem badań jest przedstawienie i interpretacja zmian wskaźnika relacji liczby urodzeń do liczby zgonów w Polsce w wybranych latach, z uwzględnieniem podziału na województwa oraz obszary miejskie i wiejskie. W artykule przyjęto następującą hipotezę badawczą: przypuszcza się, że w analizowanym okresie w Polsce nastąpił istotny spadek wskaźnika relacji liczby urodzeń do liczby zgonów we wszystkich województwach, przy czym skala i tempo tych zmian były zróżnicowane regionalnie oraz różniły się pomiędzy obszarami miejskimi i wiejskimi.

Metody badawcze

Do badań wykorzystano metodę analizy źródłowej, a w niej techniki badawcze w postaci wnioskowania i analogii. Użyto narzędzi badawczych – SI Statistica.

Główne wyniki

Badania podkreślają również znaczenie spójności i długoterminowości polityki rodzinnej (Super Biznes, 2026). Częste zmiany instrumentów wsparcia obniżają zaufanie społeczne i ograniczają ich skuteczność, podczas gdy stabilne, przewidywalne rozwiązania sprzyjają podejmowaniu decyzji prokreacyjnych w młodszy wiek. W praktyce oznacza to konieczność silniejszego ukierunkowania polityki publicznej na rozwój usług opiekuńczych, elastycznych form zatrudnienia oraz partnerskiego modelu rodziny, z jednoczesnym traktowaniem migracji jako uzupełniającego, a nie zastępczego elementu strategii demograficznej.

Implikacje dla teorii i praktyki

Przeprowadzone badania niosą istotne implikacje zarówno dla teorii procesów demograficznych, jak i dla praktyki prowadzenia polityki publicznej. W wymiarze teoretycznym uzyskane wyniki potwierdzają założenia drugiego przejścia demograficznego, zgodnie z którymi spadek dzietności i trwałe przejście do ujemnego przyrostu naturalnego są konsekwencją długookresowych zmian kulturowych (Polska w Praktyce, 2025), ekonomicznych i instytucjonalnych, a nie wyłącznie krótkookresowych wahań koniunktury. Analiza regionalna i sektorowa (miasto – wieś) wskazuje, że procesy te mają charakter powszechny, ale ich tempo i natężenie są silnie zróżnicowane przestrzennie, co podważa uproszczone ujęcia traktujące demografię jako zjawisko jednorodne w skali kraju. Szczególnie istotnym wnioskiem teoretycznym jest obserwowane odwrócenie relacji demograficznych pomiędzy miastami a obszarami wiejskimi, które wskazuje na rosnącą rolę czynników strukturalnych, takich jak suburbanizacja (Królczyk-Lewandowska, 2025), selektywne migracje wewnętrzne oraz starzenie się populacji miejskiej, w kształtowaniu współczesnych wzorców reprodukcyjnych.

Słowa kluczowe:

przyrost naturalny, depopulacja, bezpieczeństwo demograficzne, polityka demograficzna, wskaźnik urodzeń i zgonów

Introduction

The core of the study is related to the changing demographic situation in Poland (GUS, 2022; Business Insider, 2025), with particular emphasis on the birth-to-death ratio by region and by urban and rural areas. The analysis reveals the scale and pace of demographic change in recent decades and identifies significant spatial and structural differences. The rationale for this study is the growing importance of demography for the socio-economic development of the country, the functioning of the labour market, the social security system and public policy planning. The increasing natural population decline and an aging population make the analysis of those processes essential for outlining effective and long-term development actions.

Demographic processes (ZPE1, 2025) are among the key factors shaping the long-term socio-economic development of the country, influencing the labour market, the social security system, the spatial structure of settlement, and the rate of economic growth. In recent decades, Poland has been experiencing dynamic and increasingly unfavorable demographic changes (Chabros, 2024), related to declining fertility rates, an aging population, and increasing natural population decline. Those phenomena are widespread, but their scale and pace vary regionally and differ between cities and rural areas, requiring in-depth spatial analysis.

The study enabled to capture long-term demographic trends (Siemionczyk, 2025), identify regions with particularly disadvantaged conditions, and evaluate the extent to which the differences between urban and rural areas have changed over the past three decades. The birth-to-death ratio is a synthetic index of demographic condition, reflecting both the reproductive potential of the population and the advancement of the aging process.

The research results will enable to place the demographic situation of Poland within a broader European context and identify the social, economic, and institutional conditions influencing reproductive decisions. The findings also provide a basis for outlining conclusions and recommendations regarding demographic and family policy, particularly regarding measures that encourage earlier decision-making about having a first child and increasing the birth rate. Therefore, the analysis is not only descriptive but also applicable, providing a basis for discussion on the directions of public action to address the growing demographic challenges in Poland.

In summary, the research indicates that an effective response to the demographic crisis (Zagórska, Mis, 2025) requires integrating theoretical approaches with policy practice and shifting from short-term actions to comprehensive, evidence-based demographic development strategies. Only such an approach can mitigate the negative effects of observed trends and create conditions for more sustainable socioeconomic development in the long term.

1. Analysis of the literature on the subject of research

The demographic situation of Poland is currently in a phase of profound and structural crisis, the result of long-term social, economic, and cultural processes (Kielak, 2025). Since the early 1990s, Poland has transitioned from a widespread positive natural increase to a state of sustained population decline. The birth-to-death ratio has declined in all voivodeships, both in urban and rural areas, with a particularly pronounced decline visible in urban centers and in the central and southern regions of the country (Skomra, 2025). This process leads to rapid population aging (Zandberg, 2025), a decline in labour resources, and a growing burden on the pension, healthcare, and public finance systems.

Compared to other large European Union countries, Poland is increasingly similar to the German model (Frymark, 2025), characterized by low fertility and a rapidly aging population. However, Poland has a lower level of affluence and a shorter immigration history. For years, Germany has been compensating for its negative natural increase with an influx of migrants, which stabilizes its population and the labour market (Piwowarski, 2024; Wysocka, 2024). France, despite a significant decline in fertility in recent years, still maintains a higher level than most EU countries, a result of a long-term, coherent, and stable family policy based not only on financial transfers but primarily on an extensive system of care, education, and family-friendly services (Worldometer, 2025). Despite significant financial outlays on cash benefits, Poland has not achieved similar results, demonstrating that income redistribution alone is not a sufficient tool for changing demographic behavior.

The sources of the current situation in Poland are multidimensional. They include structural factors, such as the declining number of women of reproductive age and the echoes of demographic decline, as well as cultural changes related to delaying the decision to start a family, rising educational and professional aspirations, and changing lifestyles (Latosiewicz, Kozicki, Tomaszewski, 2025). Economic uncertainty among young adults, high housing costs, labour market instability at the beginning of a career, and difficulties in balancing work and parenthood also play a key role. In cities, suburbanization and the outflow of younger families beyond administrative boundaries are an additional factor, worsening the age structure of the urban population. Consequently, although rural areas are also experiencing natural decline, in many regions their situation is relatively less unfavorable than in cities.

In recent years, the Polish state has undertaken actions aimed at improving the demographic situation, primarily through extensive cash transfer programs, such as the 500+ program and subsequently the 800+ program (Serwis Rzeczypospolitej Polskiej, 2019). Those programs effectively reduced poverty among families with children and temporarily increased the birth rate, but did not lead to a lasting reversal of trends. International experience shows that the most effective demographic policies are based on a long-term combination of stable housing policies, universal

access to high-quality childcare, flexible employment options, and an even division of caregiving responsibilities between women and men. Scandinavian countries and France demonstrate that predictability and consistency are crucial, building trust in state institutions by young people (Danielewicz, 2024).

Migration is becoming a significant factor in mitigating the effects of the demographic crisis in Poland (ZPE2, 2025). The influx of people, primarily of working age, partially offsets the decline in the number of economically active people and supports economic growth (Kozicki, 2025). Migrants also influence the education system, especially in large cities, where the number of students is growing and the need for additional staff, language support, and integration activities increases. Migration also affects the housing market, increasing demand, which, given limited supply, can lead to price increases. However, it also strengthens the supply side of the economy and reduces inflationary pressures in other sectors (Walków, 2025). Its impact on exchange rates is indirect and long-term, related more to the potential for economic growth than to current population flows.

Poland is not in existential danger, but it faces a serious development challenge. Without decisive and comprehensive action, negative demographic processes will deepen, leading to a slowdown in economic growth, increasing regional inequalities, and increasing tensions within social security systems. At the same time, the demographic crisis is not irreversible. A responsible, long-term policy combining family support, investment in public services, a stable housing policy, and well-managed migration can significantly mitigate its consequences and create conditions for more sustainable socio-economic development in Poland in the upcoming decades.

To effectively encourage people to have more children and to make the decision to have their first child earlier, it is necessary to create a coherent and long-term support system that will truly reduce the life risks and costs of parenthood, rather than merely providing a short-term financial incentive. Procreative decisions are made today in terms of high economic and housing uncertainty, so a key factor in promoting early motherhood is a sense of stability at the beginning of adulthood. Young people are much more likely to decide to have a child when they have access to their own flat, even if it is a long-term lease, and predictable employment conditions that allow for future planning. The lack of such stability leads to the postponing of parenthood to increasingly later times, which results in lower total birth rate (Onet.pl, 2025).

Equally important is the reduction of the conflict between motherhood and women's professional development. Early childbirth is often perceived as a threat to careers, so the state should actively support solutions that enable combining work with childcare. Universal access to high-quality, with flexible hours, and affordable preschools plays a key role here. Where institutional care is readily available, women are less likely to postpone motherhood and are more likely to choose to have additional children. That system ought to be complemented by flexible employment

options, remote work options, and effective protection for mothers from marginalization in the labour market.

The model of family relationships is also a significant factor influencing reproductive decisions (Medonet, 2019). In societies where caregiving responsibilities are more evenly shared between women and men, fertility rates are higher and the first child is born earlier. Therefore, it is important to strengthen the role of fathers through parental leave, some of which is exclusively intended for them, and to promote a partnership-based family model. It reduces the burden on women and their fear of permanent retirement from the workforce.

The importance of reproductive health and education cannot be overlooked. As the age of first childbirth increases, the scale of fertility problems increases, further reducing the birth rate (Klinika Bocian, 2022). Providing widespread access to diagnostics, infertility treatment, and reliable information about the biological determinants of fertility promotes decisions about motherhood at an earlier age, without a sense of pressure or coercion. Stability and predictability in the family policy are also crucial – young people make decisions for years to come, so they must trust that state support will not fluctuate and be dependent on current political cycles.

The encouragement to have more children also requires the reduction of the organizational costs of family life, especially with second and third children. That means developing after-school and holiday care, family support services, and infrastructure that supports parents' daily functioning. In such circumstances, parenthood ceases to be a source of excessive stress and becomes compatible with young people's life aspirations.

Ultimately, effective demographic policy is not about persuading or exerting pressure, but rather about creating an environment in which the decision to have a child, even if made earlier, is rational, safe, and socially supported. Only a combination of stable housing conditions, a supportive labour market, extensive care services, partnership-based family relationships, and trust in public institutions can lead to a sustained increase in the birth rate and a rejuvenation of the demographic structure of the society.

Demographic policy also influences unemployment levels (Kozicki, Mitkow, 2021) indirectly and in the long term, primarily by shaping labour supply and the age structure of the population. In Poland, such a relationship is particularly evident in terms of progressive population aging and a decline in the number of working-age people. The relatively low unemployment rate (Kozicki, Kalwasiński, 2021) observed in recent years is not the result of an increase in the fertility rate, but primarily a consequence of shrinking labour resources, the emigration of some young people, and economic immigration, primarily from Ukraine. Family-friendly policy instruments, such as cash benefits, have had a limited impact on the labour market and have failed to lead to a lasting improvement in the demographic situation.

In some cases, they have contributed to a decline in women's labour force participation. In the long term, the lack of an effective and integrated demographic policy may lead to growing labour shortages, structural mismatches in the labour market, and a weakening of the development potential of the economy, despite persistently low unemployment. It will certainly impact the adequate level of demographic security of Poland (Mitkow, Kozicki, Mizura, 2020; Kozicki, 2022).

Although family policy remains within the member states, the European Union has a gradual process of understanding the adopted, starting from a demographic and related perspective. Current efforts focus primarily on equalizing the costs of raising children, developing care services, and creating working conditions conducive to professional and family activities, shifting from direct pronatal measures to preconditions for reproductive fulfillment. An acceptable trend includes limiting and making parental leave more flexible, including family ownership, developing institutional and home-based childcare, increasing professional responsibilities in solutions that ensure work-life balance, and using the tax system as a tool for family support. Such support ensures the security of the family system and the enforcement of public law in modern demographic democracies (Balcerzak-Paradowska, 2010).

2. Multidimensional comparative analysis of the number of births to the number of deaths in respective voivodeships in Poland

The research began by comparing data on the birth rate to the number of deaths in selected years in respective voivodeships in Poland.

Figure 1 illustrates the birth-to-death ratio in Polish voivodeships at four points in time: 1990, 2000, 2010, and 2024, revealing long-term and clearly unfavorable demographic changes. In 1990, that ratio was significantly above one in all voivodeships, indicating a significant surplus of births over deaths. The most favorable situation was in the northern and eastern regions, particularly in the Warmińsko-Mazurskie, Podkarpackie, and Pomorskie Voivodeships, where the ratio exceeded 1.67, and in the Warmińsko-Mazurskie Voivodeship it even approached 2.0. Relatively high values were also recorded in the Małopolskie, Lubuskie, Zachodniopomorskie, and Podlaskie Voivodeships. The lowest, although still positive, birth to death ratios were observed in central and industrialized voivodeships, such as the Łódzkie, Mazowieckie and Śląskie Voivodeships, where the ratio fluctuated around 1.2-1.3.

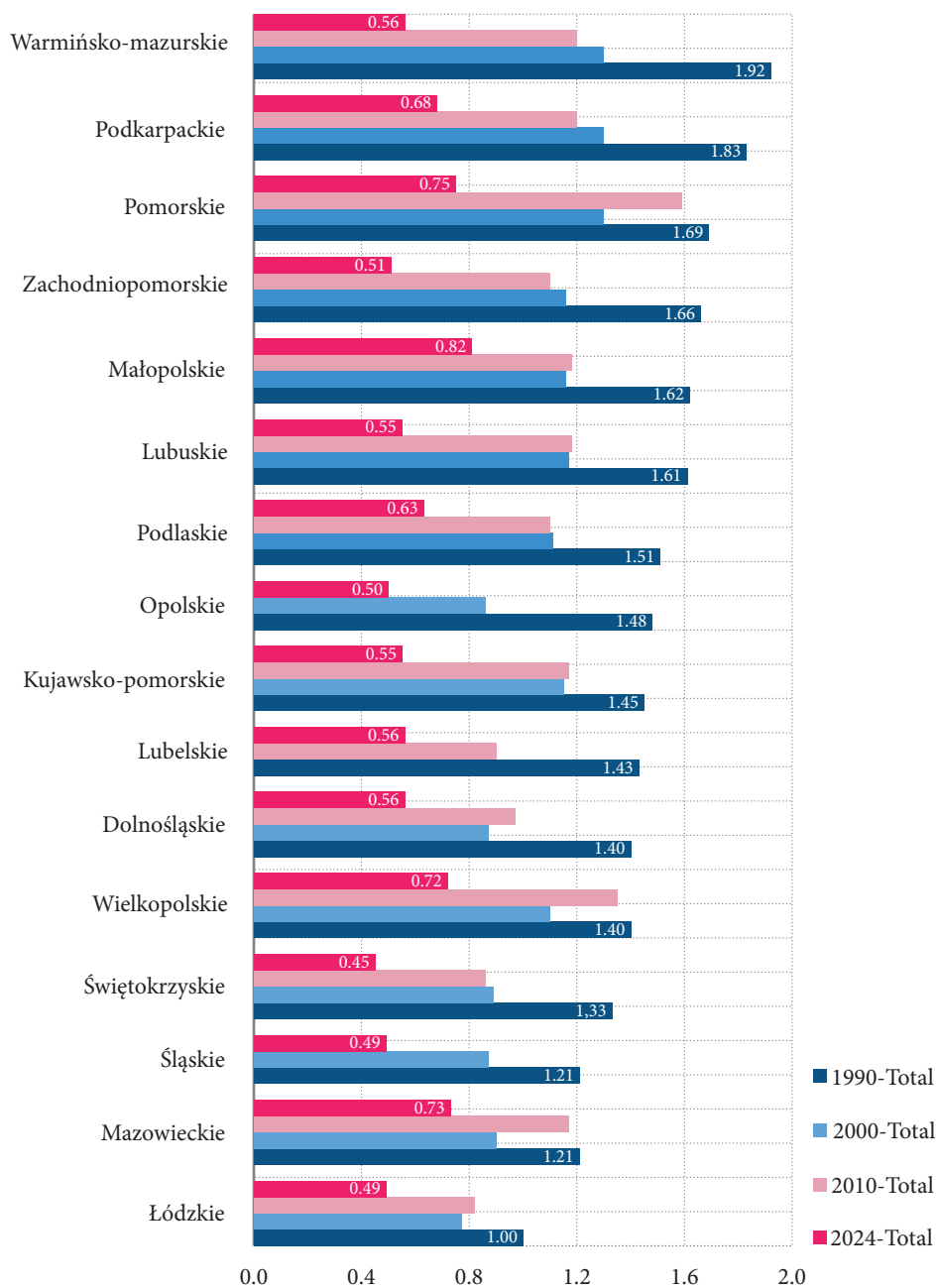


Fig. 1. Bar chart of data on the birth to death ratio in selected years in respective voivodeships in Poland

Source: own elaboration based on: GUS, 2026

Between 2000 and 2010, there was a significant decline in that index in all regions, although in most voivodeships the number of births still exceeded the number of deaths. The northern and southeastern voivodeships maintained the best situation, but regional differences began to narrow. In 2010, the downward trend deepened, and the index values in many voivodeships approached the level of demographic balance. Especially in the central and western regions, the index was only slightly above the value 1, signaling rapid population aging and declining reproductive potential.

2024 brings a fundamental change to the demographic picture of the country. In all voivodeships, the birth-to-death ratio falls below one, indicating widespread natural population decline. The lowest values are recorded in the Świętokrzyskie, Opolskie, Łódzkie, and Śląskie Voivodeships, where the ratio is around 0.45-0.50, indicating almost twice as many deaths as births. A slightly better, though still clearly unfavorable, situation is observed in northern and eastern voivodeships, such as Pomorskie, Podkarpackie, and Warmińsko-Mazurskie, where the ratio is around 0.7-0.8. Overall, the graph shows a strong and prolonged deterioration in the birth-to-death ratio across all regions of Poland, with a clear decline in the demographic advantages that distinguished some voivodeships in the early 1990s.

Then, Figure 2 presents data on the ratio of birth rates to deaths in selected years in cities in respective voivodeships.

Figure 2 outlines the changes in the birth-to-death ratio in cities across Polish respective voivodeships in 1990, 2000, 2010, and 2024, indicating a profound and progressive deterioration in the demographic situation of urban areas. In 1990, that ratio clearly exceeded the value 1 in all voivodeships, indicating a significant surplus of births over deaths in cities. The most favorable situation was observed in the southeastern and eastern voivodeships, particularly in the Podkarpackie and Podlaskie Voivodeships, where the ratio exceeded 2.0, as well as in the Warmińsko-Mazurskie and Lubelskie Voivodeships, with values above 1.7. Relatively high values were also recorded in the Lubuskie, Opolskie, and Zachodniopomorskie Voivodeships. The lowest, although still positive, birth to death ratios were found in highly urbanized and industrialized voivodeships, such as the Łódzkie, Mazowieckie and Śląskie Voivodeships, where the index ranged from approximately 0.92 to 1.18.

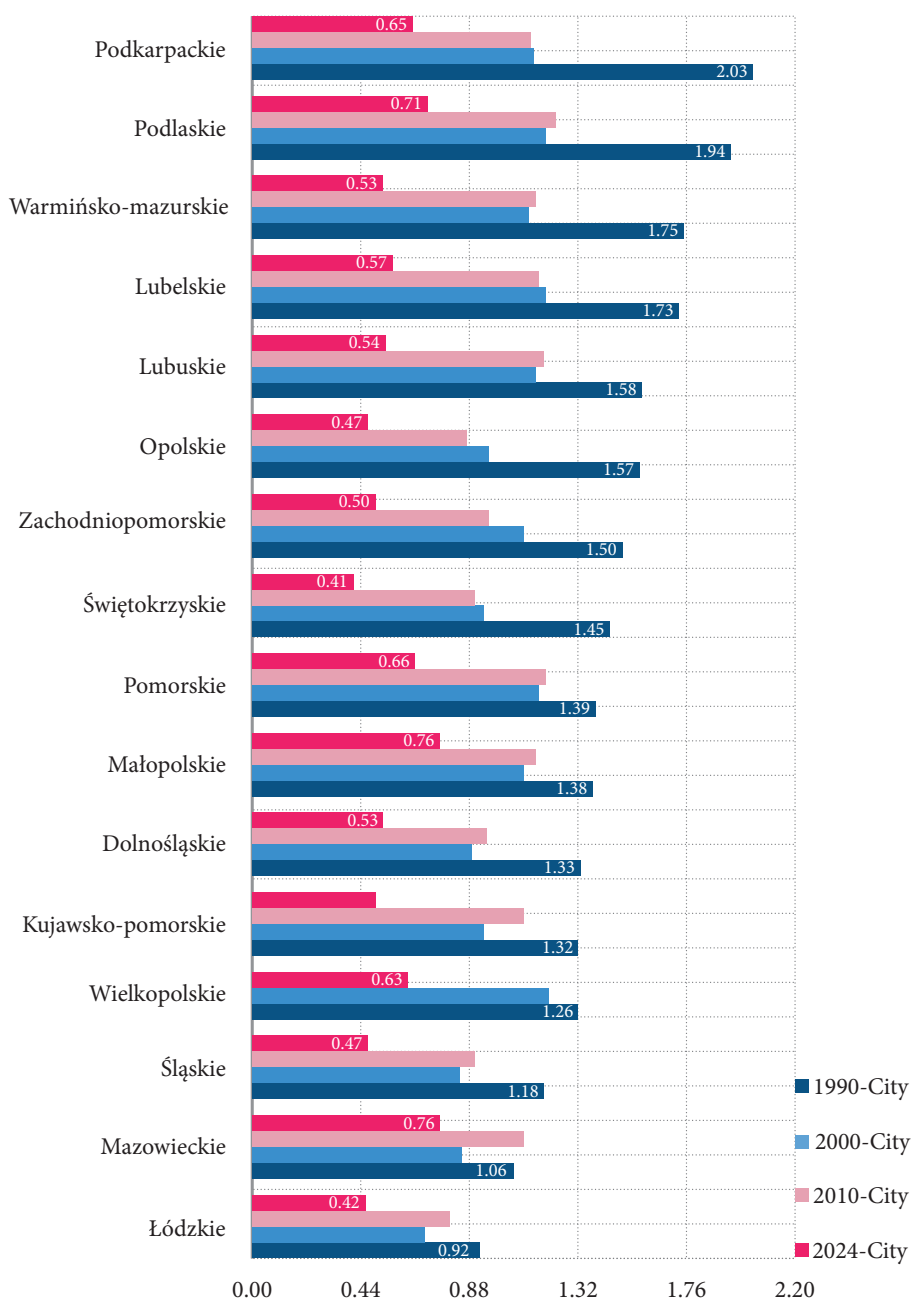


Fig. 2. Bar chart of data on the birth to death ratio in selected years in cities in respective voivodeships in Poland

Source: own elaboration based on: GUS, 2026

In 2000, a widespread decline in the index was evident across all voivodeships, although in most of them the number of births still exceeded the number of deaths. Regional differences partially narrowed, but the eastern and northeastern voivodeships still had a more favorable demographic situation. In 2010, a further decline in the index was observed, and in many voivodeships, in urban areas, its value approached the demographic stability threshold. In nine voivodeships, the index exceeded the value 1, signaling the rapid aging of the urban population and the declining reproductive potential of cities.

2024 brings a decidedly worse demographic picture for cities across the country. In all voivodeships, the birth-to-death ratio falls below 'one', indicating a widespread natural decline in the urban population. The lowest values are recorded in the Świętokrzyskie, Opolskie, Łódzkie, and Śląskie Voivodeships, where the ratio is around 0.4-0.5, demonstrating a very strong excess of deaths over births. Slightly higher, but still clearly unfavorable, values are found in the Podkarpackie, Małopolskie, and Mazowieckie Voivodeships, where the ratio is around 0.65-0.75. Overall, the chart clearly shows that cities in all regions of Poland have experienced a profound and systematic deterioration in the birth-to-death ratio, with the scale of negative changes being particularly pronounced in highly urbanized voivodeships with an older population structure.

Figure 3 presents data on the birth to death ratio in selected years in respective voivodeships in rural areas in Poland.

Figure 3 illustrates changes in the birth-to-death ratio in rural areas in respective Polish voivodeships in 1990, 2000, 2010, and 2024, revealing the long-term deterioration of the demographic situation of rural areas despite their relatively more favorable location compared to cities. In 1990, this ratio significantly exceeded the value 1 in all voivodeships, indicating a significant surplus of births over deaths in rural areas. The highest values were recorded in the northern and northwestern voivodeships, primarily in the Pomorskie Voivodeship, where the ratio reached approximately 2.38, as well as in the Warmińsko-Mazurskie and Zachodniopomorskie Voivodeships, with values above 2.12. A favorable situation was also observed in the Małopolskie, Podkarpackie, Lubuskie and Kujawsko-Pomorskie Voivodeships. The lowest, although still positive, indices were characteristic of central voivodeships, such as Łódzkie and Podlaskie, where the ratio of births to deaths was only slightly higher than one.

In 2000, there was a significant decline in the index in all voivodeships, but in most rural regions, the number of births still exceeded the number of deaths. Regional differences persisted, with northern and western regions still enjoying a more favorable demographic situation. In 2010, the decline deepened further, and in some voivodeships, particularly central and eastern ones, the index approached demographic stability. Nevertheless, rural areas still maintained a relatively better demographic condition than urban areas, due in part to their younger age structure and higher fertility rates.

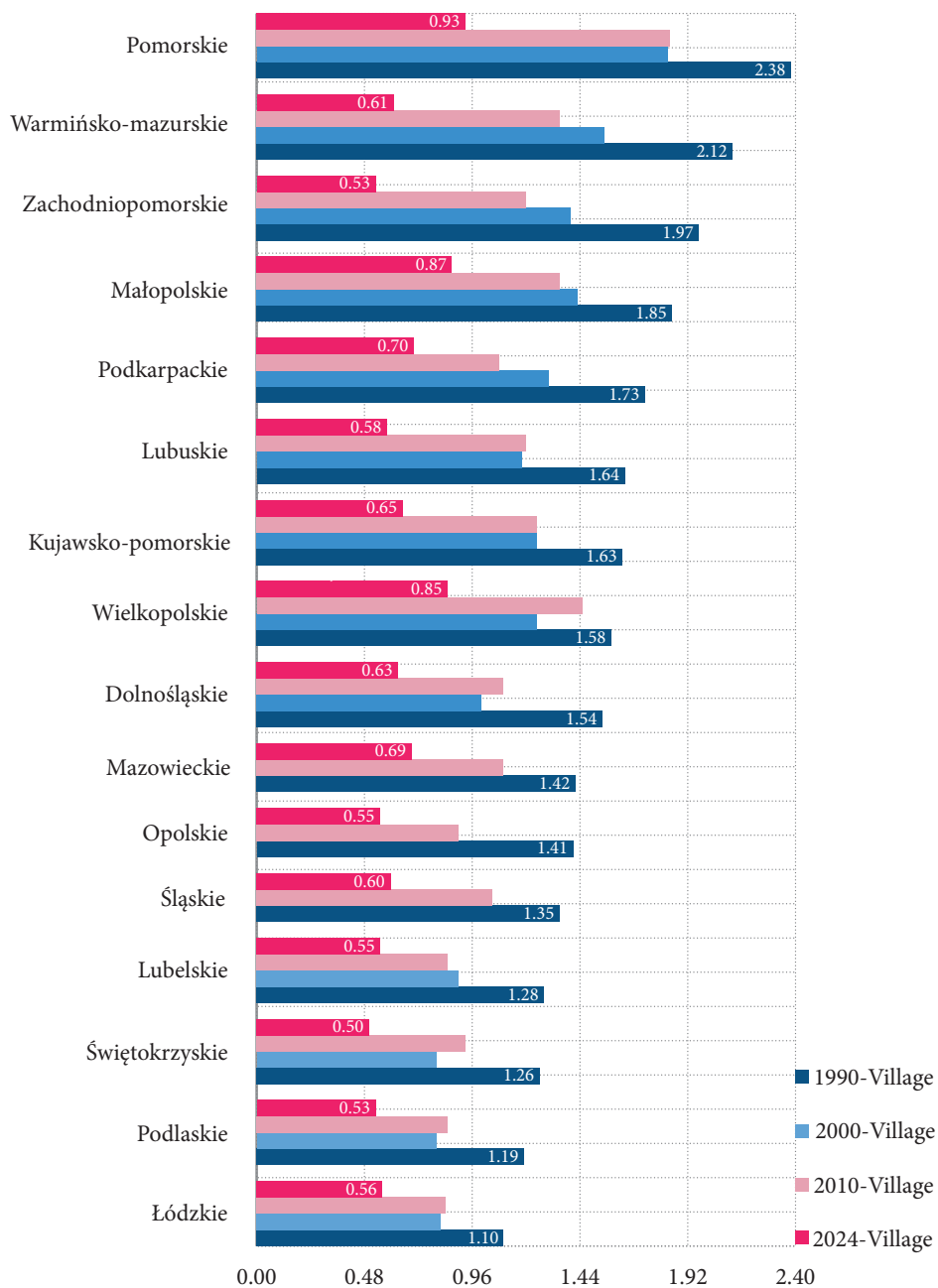


Fig. 3. Bar chart of data on the birth to death ratio in selected years in respective voivodeships and rural areas in Poland

Source: own elaboration based on: GUS, 2026

However, 2024 brought a clearly unfavorable picture for rural areas, as well. In all voivodeships, the birth-to-death ratio fell below the value 1, indicating a widespread natural decline in the rural population. The lowest values were recorded in the Świętokrzyskie, Lubelskie, Opolskie and Podlaskie Voivodeships, where the ratio fluctuated around 0,5-0,55. Slightly higher, though still negative, values occurred in the Pomorskie, Wielkopolskie and Małopolskie Voivodeships, where the ratio approached 0,9. Overall, the chart indicates that although rural areas have long had a more favorable birth-to-death ratio than urban areas, they have also been subject to strong and widespread depopulation processes, leading to a deepening demographic crisis across the country.

The last stage of the research was to present the data on the difference in birth rates between cities and villages in 1990 and 2024 in Poland in Figure 4.

Figure 4 shows the difference in birth rates (the ratio of births to deaths) between urban and rural areas in respective Polish voivodeships in 1990 and 2024, allowing for evaluation of the scale and direction of spatial changes in the demographic structure of the country. In 1990, that difference was positive in all voivodeships, indicating a clearly more favorable demographic situation in cities than in rural areas. The greatest advantage of cities over rural areas was noted in the Pomorskie Voivodeship, where the difference in rates reached 0.99, as well as in the Zachodniopomorskie, Małopolskie and Warmińsko-Mazurskie Voivodeships, with values ranging from 0.37 to 0.47. Relatively large positive differences also occurred in the Mazowieckie, Wielkopolskie and Kujawsko-Pomorskie Voivodeships. Smaller, though still positive, disparities characterized central and southern voivodeships, such as the Śląskie, Łódzkie and Opolskie Voivodeships. That shows that in the early 1990s, cities were characterized by a higher birth-to-death ratio than rural areas, which was related, among other things, to the younger structure of the urban population and internal migration.

In 2024, the situation was significantly reversed. In most voivodeships, the difference in rates became negative, meaning that the ratio of births to deaths became more favorable in rural areas than in urban areas. The largest negative differences were recorded in the Podlaskie Voivodeship, where the rural-to-urban advantage reached approximately -0.75, as well as in the Lubelskie and Podkarpackie Voivodeships. Clearly negative values also occur in the Świętokrzyskie, Opolskie, Wielkopolskie, and Kujawsko-Pomorskie Voivodeships. Only in a few voivodeships, such as the Pomorskie, Zachodniopomorskie, Małopolskie and Warmińsko-Mazurskie Voivodeships, do the differences remain positive or close to zero, indicating a relatively similar or still slightly better demographic situation in cities. Overall, the chart clearly indicates a profound transformation in the demographic structure of Poland: over the past three decades, there has been a shift from an advantage of cities over rural areas to a situation in which rural areas in most regions have a relatively more favorable birth rate, despite the current unfavorable overall level of that index nationwide.

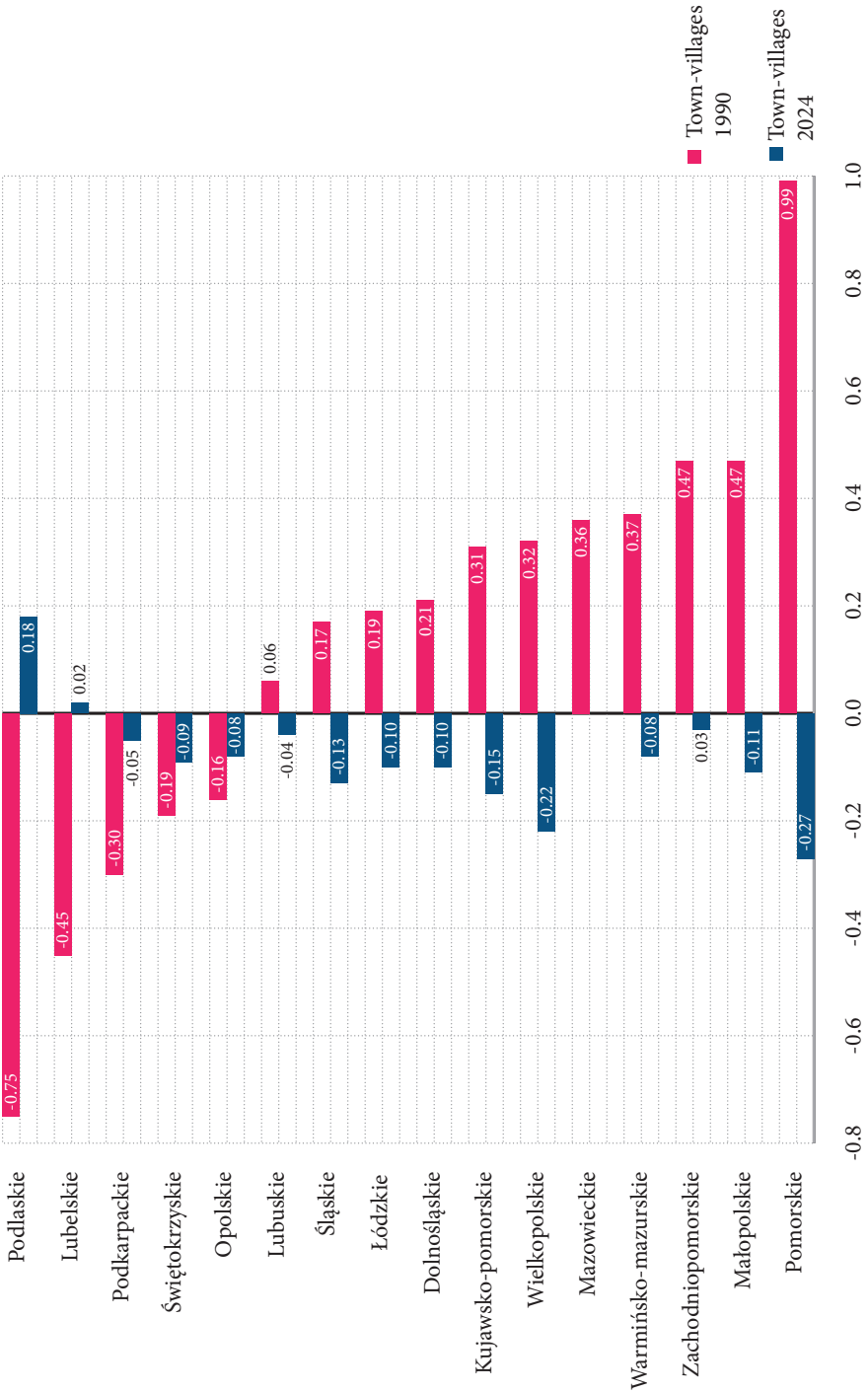


Fig. 4. Bar chart of data on the difference in birth rates between urban and rural areas in 1990 and 2024 in Poland
Source: own elaboration based on: GUS, 2026

3. Summary and Conclusions

The research was designed to present a coherent and unambiguous picture of profound and long-term demographic changes in Poland, occurring both regionally and across urban and rural areas. A significant decline in the birth-to-death ratio was observed across all voivodeships from 1990 to 2024, marking a transition from widespread positive natural increase to a nearly universal natural decline. In the early 1990s, Poland enjoyed a favorable demographic situation, particularly in the northern, eastern, and southeastern regions, where the surplus of births over deaths was noticeably pronounced. Over time, regional differences diminished, and negative trends affected all voivodeships, regardless of their location, level of urbanization, or economic structure.

The conclusions drawn from comparing urban and rural areas indicate a significant shift in the spatial pattern of demographic processes. In 1990, cities in almost all voivodeships were characterized by a higher birth-to-death ratio than rural areas, which resulted from factors such as the concentration of young adults, better availability of jobs and services, and intensive migration to urban centers. In 2024, that relationship was reversed – in most regions, rural areas demonstrate a relatively more favorable ratio than cities, although in both types of areas those values are clearly below ‘one’. It indicates that urban depopulation is progressing faster, which is related to their aging age structure, suburbanization, and the outflow of younger population groups. At the same time, it should be emphasized that the rural advantage is relative and does not indicate good demographic condition, but merely a slower rate of deterioration.

Particularly disturbing are the trends observed in central and southern voivodeships, such as the Łódzkie, Śląskie, Świętokrzyskie and Opolskie Voivodeships, where birth-to-death ratios are among the lowest in both urban and rural areas. Those regions face the fastest population aging, shrinking labour forces, and increasing strain on social systems. The relatively better, though still unfavorable, situation in the northern and partially western voivodeships does not alter the fact that those negative processes are nationwide and structural in nature.

Recommendations resulting from the analysis of the charts emphasize the urgent need for a long-term, integrated demographic policy that takes into account strong regional differences and the different dynamics of change in cities and rural areas. It is necessary to strengthen instruments that support reproductive decisions, particularly employment stability, housing availability, childcare, and work-life balance. At the same time, it is crucial to take measures aimed at improving the quality of life for seniors and adapting infrastructure and public services to an aging society. In cities, policies that retain young residents and mitigate the negative effects of suburbanization should play a special role, while in rural areas – policies that strengthen local labour markets and access to public services.

Without comprehensive and consistent demographic measures, the trends observed in the charts will deepen, leading to a permanent decline in population and increasing development disparities between Polish regions.

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