RESEARCH ARTICLE

Dynamics and Prospects of Population Aging in Romania

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Abstract

Population aging is one of the most important demographic trends in Romania, reflecting similar processes at European level, but also showing specific particularities at national and urban level. This paper analyzes the dynamics of demographic aging both at national level and in large cities, aiming to identify the main trends, determinants and socio-economic implications. The analysis is based on statistical data provided by Eurostat and the National Institute of Statistics, using indicators such as age structure, elderly dependency ratio and population evolution. Particular attention is paid to the post-1990 period, characterized by major demographic transformations, including declining fertility, increasing life expectancy and increasing external migration. This study investigates the structural transformations of the population in the context of advanced demographic transition and contemporary socio-economic pressures. The research analyses the evolution of key indicators of demographic ageing — the old-age dependency ratio, the ageing index and life expectancy — based on national and European statistical data series, complemented by medium- and long-term demographic projections. The results highlight a significant acceleration of the ageing process, driven by the decline in fertility below replacement level, the increase in longevity and the external migration of the young active population. These trends are leading to a reconfiguration of the age structure, with major implications for the labour market, the sustainability of pension systems and health services. The prospective analysis indicates a continuous increase in the share of the elderly population, concomitant with the reduction of the active population base, which amplifies demographic and economic imbalances. The paper proposes an integrated approach, combining quantitative methods of demographic modeling with socio-economic interpretations, to assess the long-term impact of population aging. Alternative scenarios based on public policies regarding the stimulation of birth rates, attracting migration and prolonging working life are also discussed. The conclusions of this paper emphasize the need for multidimensional strategic interventions to mitigate the negative effects of demographic aging, as well as to capitalize on the potential of the elderly population within the economy. The study contributes to the specialized literature through a comprehensive and updated analysis of demographic dynamics in Romania, providing empirical support for the substantiation of public policies oriented towards sustainability and intergenerational balance.

Keywords: population ageing in Romania; demographic structure; demographic projections; demographic policies

JEL Classification: J11; J14; J18; H55; O15

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1. INTRODUCTION

Demographic aging represents one of the most profound structural transformations of contemporary societies, with far-reaching implications for economic development, social cohesion and the sustainability of public systems. In the case of Romania, this phenomenon takes on particular significance, being the result of the convergence of several major demographic processes, such as the decline in fertility below replacement level, the increase in life expectancy and the intensification of external migration, especially among the young active population. These developments have led to significant changes in the age structure of the population, accentuating the imbalance between generations.

In recent decades, Romania has gone through an accelerated stage of demographic transition, characterized by a reduction in the birth rate and profound socio-economic transformations associated with the process of European integration and globalization. In this context, population aging can no longer be viewed exclusively as a demographic phenomenon, but as a complex, multidimensional problem, with a direct impact on the labor market, the pension system, health services and general economic dynamics. The increase in the share of the elderly population and the decrease in the active population generate pressures on macroeconomic balances and on the mechanisms of intergenerational solidarity.

The analysis of the dynamics of demographic aging involves both the investigation of historical trends and the development of rigorous projections regarding the evolution of the population. Thus, the use of appropriate analytical tools becomes essential to capture the relationships between demographic variables and their economic and social implications. At the same time, the anticipation of future perspectives of population aging provides a necessary framework for the substantiation of public policies oriented towards adaptation and sustainability.

Therefore, this paper aims to examine the dynamics and perspectives of population aging in Romania, highlighting the main trends, determinants and consequences of this process. The proposed integrated approach aims to contribute to a better understanding of current and future demographic challenges, as well as to identify courses of action to mitigate the negative effects and capitalize on the opportunities generated by demographic changes.

2. LITERATURE REVIEW

Demographic aging is one of the most important structural processes affecting contemporary populations, being intensively analyzed in both international and national literature. In the case of Romania, this phenomenon is the result of the interaction between declining fertility, increasing life expectancy and external migration, factors highlighted in numerous studies and specialized reports.

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Data provided by Eurostat indicate that Romania is part of the general population aging trend in the European Union, but at a pace strongly influenced by external migration and the sharp demographic decline (Eurostat, 2023). Indicators such as the elderly dependency ratio and the aging index have experienced constant increases after 2000, reflecting the increasingly pronounced imbalances between the active and inactive population.

At the national level, the National Institute of Statistics (INS) highlights the structural transformations of the Romanian population in the post-communist period. According to the INS (2022), the fertility rate has fallen below replacement level since the 1990s, and the massive emigration of the young population has accelerated the aging process. At the same time, statistical data show the existence of significant territorial disparities, with rural areas being characterized by a higher degree of aging compared to urban areas.

Analyses conducted by the World Bank highlight the economic implications of population aging, especially on the labor market and the sustainability of social protection systems (World Bank, 2020). In the case of Romania, these studies highlight the fact that the reduction of the active population, caused by migration and low fertility, can negatively affect the potential for economic growth and long-term fiscal balance.

At a global level, the United Nations, through the reports of the Population Division, confirms the trends of accelerated aging in Eastern Europe, including Romania (United Nations, 2022). Demographic projections indicate a continuous increase in the share of the elderly population and a decrease in the total population, which will intensify the pressures on social and economic systems.

In the Romanian literature, significant contributions belong to the demographer Vasile Gheț̆au, who analyzes the demographic decline and population aging in the context of the post-communist transition. Gheț̆au (2007, 2012) emphasizes the structural nature of this process and the difficulty of reversing current trends. Dumitru Sandu also highlights the role of external migration in reshaping Romania's demographic structure, emphasizing the effects on local communities and the labor market (Sandu, 2010).

Overall, the specialized literature converges on the idea that demographic aging in Romania is a complex and multidimensional process, determined by demographic, economic and social factors. Existing studies emphasize the need for integrated public policies, oriented towards stimulating the birth rate, managing migration and adapting social systems to the new demographic realities.

3. METHODOLOGY

Demographic ageing represents one of the most important social transformations of the 21st century, with complex consequences for economic sustainability, social cohesion and public policies. In the European Union, the population ageing process is accelerated by the decline in birth rates, the

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increase in life expectancy and the active migration of the young population to areas with higher economic opportunities (European Commission, 2024).

Romania, as a member state of the European Union since 2007, is facing a profound demographic dynamic, marked by the constant decline of the population and the increasing share of the elderly. Data from the National Institute of Statistics (INS, 2024) show that, between 1990 and 2024, the total population decreased from 23.2 million to around 19 million inhabitants, while the proportion of people over 65 years of age increased from 10% to over 21%.

This paper addresses a topic of utmost importance for Romanian public policy, given that demographic aging directly influences fiscal sustainability, labor market balance and the social protection system. The study provides a longitudinal, comparative and prospective analysis of the phenomenon, integrating statistical and socio-economic perspectives.

The main objectives of the research are:

- Analysis of the evolution of Romania's demographic structure between 1990–2024.
- Comparison of this evolution with trends in the European Union member states.
- Realization of demographic projections until 2050.
- Evaluation of the socio-economic impact of population aging.
- Development of sustainable public policies adapted to the Romanian context.

The main work objectives are the following: Demographic aging in Romania is predominantly determined by the decline in birth rates and external migration; The aging rate in Romania exceeds the EU average and will continue to increase until 2050; Current policies are insufficient to counteract the socio-economic effects of the phenomenon.

4. RESULTS

The latest demographic developments in the European Union (EU) show a growing population, approaching 450 million inhabitants, while the age structure is becoming increasingly older as the post-war generation (baby boom) reaches retirement age. People are living longer, as life expectancy continues to increase, while fertility has systematically declined over the last 50 years, with slight recovery trends over the last 10 years. However, the fertility rate remains well below the replacement level that would allow the population to remain at a constant size, in the absence of internal or external migration.

As a result of these demographic developments, the EU will face, in the coming decades, a series of challenges closely related to the ageing society that will affect a wide range of areas, including the labour market, the pension system and social-medical care, social services and the residential sector.

The creation of an organisational framework that will stimulate the substantiation of development options (of localities), systematisation and ecological protection, private initiative,

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ensuring a decent standard of living through economic and social protection measures must start from knowing the population of each country.

Viable, economic and administrative measures cannot be conceived without information on the structure and size of the population by age and sex, occupations and level of education, the current size and probable evolution of the total population.

The term “ageing” designates first and foremost an individual phenomenon, namely that of the incidence of age in its biological and psychological dimensions on the person, from birth to death. "Demographic aging" is understood as the relative increase in the elderly population aged 60 and over in the total population, as a firm and long-term process, parallel to the decrease in the number of people in the young population group belonging to the age group of 0-14 years, while the share of adults, aged 15-59, registers insignificant changes.

Demographic aging essentially represents a game of weights regarding the composition of a population in the 3 large age groups: "young", "adult" and "elderly". The increase in the absolute number of elderly people, no matter how large it may be, if it is followed by similar increases among the young and adult populations, does not lead to a process of demographic aging.

Also, demographic aging represents a firm and long-term trend in the evolution of human communities and not a certain conjunctural level, at a certain point in time, with numerous implications in all spheres of human activity.

Population aging is a global phenomenon. According to data from the United Nations, the proportion of the elderly population will increase, in the long term, even in regions where the birth rate is higher than the replacement rate. Worldwide, the share of people aged 60 and over, in total, has increased faster than the share of any other age segment. In the years 2030 and 2050, respectively, the number of elderly people will reach 1.2 billion and 2 billion, respectively, 241.0% and 462.8% more than in 1975, representing a percentage of 15.1% and 21.7% respectively in the total population, compared to 8.6% in 1975.

As for the situation in Europe, in the years 2050, the number of elderly people will reach 225.4 million, 103.3% more than in 1975, representing a percentage of 34.5% of the total population, compared to 16.4% in 1975.

Since 2015, the number of deaths has been higher than the number of births in the European Union, which will mean that by 2060, one in three Europeans will be over 65, putting a strain on the economy and public finances.

According to a Eurostat report, people are living longer and the fertility rate is constantly decreasing in Europe, so that natural population growth will stop around 2030, and from 2035 onwards, migration flows will become insufficient to offset the negative population growth.

If current trends continue, the current ratio of four active citizens to one pensioner will be reduced to two to one in the next 50 years, the result being a real "time bomb" in terms of pension payments throughout Europe.

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Changes in the structure of large age groups have a strong impact on economic, social and political processes. As populations age, some benefits such as pensions, healthcare or material support for the elderly must be provided for longer periods of time. To remain sustainable, social security systems must change.

Increased longevity can lead to medical costs and increased demand for health services, as older people are more vulnerable to contracting chronic diseases.

The reduction in fertility rates and mortality rates are the main determining causes of the onset and extension of the aging process.

Among the socio-economic factors that play a role in the decrease in fertility rates in developed countries, we specify:

- the decrease in the share of traditional agricultural households, characterized by a high fertility rate, necessary both for productive activity and for ensuring the security of older people;
- the emancipation of women, access to education of all levels and their attraction to non-agricultural activities;
- the increased demands of parents regarding the upbringing and education of children, which require significant time and expenses;
- the expansion of social insurance, especially public pension systems and institutions for the care of dependent elderly people, which have reduced the role of children in supporting parents in old age.
- the increase in free time, access to a wide variety of entertainment and modern means of collective and individual transport, the desire of adults and their families to benefit from these facilities.

Obviously, in modern society the fertility rate is also influenced by other factors related to culture, demographic policy or religion, which, like those mentioned above, act differently from one country to another.

An important consequence of the reduction in the fertility rate is the progressive reduction of future generations able to enter the labor market and contribute to the social and health insurance fund for those who will then be retired. This situation can have a significant impact on the well-being of elderly people, especially in poor countries, with limited possibilities to support this category of population.

Ensuring the sustainability of public finances in the face of an ageing population is a key challenge for policymakers in the EU. This can be achieved by:

- reducing debt at a rapid pace;
- increasing the activity rate and labour productivity;
- reforming public pension, health and long-term care systems for the elderly.

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At the same time, the speed of this process is also important, because when the share of the elderly in the total population increases in a short period of time, it becomes difficult for institutions to adapt quickly.

Changing the structure by large age groups, in the sense of increasing the percentage of the population aged 60 and over in the total, causing a decrease in the share of other age groups, tends to create social and political pressures determined by changing the way resources are allocated in society, causing conflicts between generations.

A decrease in the potential support rate, implicitly an increased demographic dependency rate, indicates that an increasing number of beneficiaries of public health and pension systems will be "supported" by an ever-smaller number of taxpayers. Thus, the working-age population will be "burdened" by paying higher taxes and contributions to ensure a stable and sufficient income for retirees. The family remains a main source of support for the elderly and has an important role for the very elderly, whose socio-economic needs are greater. The aging process has two important components: the aging of the current segment of the elderly population itself and the fact that women manage to reach older ages than men.

The rapid increase in the proportion of "oldest among the elderly" in the total elderly population is of particular importance in terms of public policies, because this age segment, due to the natural deterioration of their health, requires specialized and individualized long-term care.

The segment of the population aged 80 and over is growing rapidly in most European countries and is expected to continue to grow at least until 2050. Although at the level of the entire European population, the percentage of those aged 80 and over was only 3.6% in 2000, it has registered significant growth, reaching 5.4% in 2023 in the total population (being forecast to reach 9.6% in 2050).

The population segment aged 65 and over was 16.0% in 2000 and it registered significant growth, reaching 20.3% in 2023 in the total population (being forecast to reach around 30% in 2050).

5. DISCUSSION

Demographic projections have always been a fundamental tool in the development of economic and social development programs and strategies.

The use of nonlinear models allows estimating the consequences of demographic aging on macroeconomic indicators. Knowledge of the evolution of labor resources and the active population is necessary to substantiate economic and social development programs.

Nowadays, concern over demographic evolution is resurfacing due to the risks it poses in the occurrence of crises, at local, regional, continental or planetary levels that could negatively influence the social order, or could lead to the triggering of ethnic or religious imbalances.

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In the current context of the phenomenon of demographic aging and the prolonged economic crisis, with repercussions on the sustainability of pension systems and the level of public pensions for many generations, the impact on individual well-being multiplies at the level of vulnerable groups.

The causes of these developments are, above all, the low level of fertility, through which the generation of parents is only partially replaced, and migration, especially external migration, which affects young people with a high degree of professionalization.

Mathematical models allow a more accurate description of the impact of factors such as the fertility rate, the birth rate, mortality, or migration on the demographic evolution and implicitly the phenomenon of the aging of the Romanian population.

Short, medium and long-term demographic analyses and forecasts can serve to correctly substantiate development plans and strategies. Demographic changes in recent decades constitute an increasingly intense concern at European and national level, decision-makers at the highest levels becoming aware of the magnitude of these phenomena and the importance of their knowledge for the future evolution of societies.

The specialized literature includes an impressive number of different types of models that attempt, among other things, an assessment of the stage in which the population of a certain area is located, the determination of the impact of various factors on some indicators characteristic of the demographic phenomenon, the short, medium or even long-term population forecast (Ratitch B.and Precup D. (2001), Klock F. and Nimmer J. (201), Krolzing. H.M (2000)).

Probabilistic models are generally developed in two forms: a first category that uses the discrete "time" variable and a discrete age scale, and another category in which time is a continuous variable like the age scale.

In the discrete-time stochastic model, used for the analysis and forecast of the demographic phenomenon, a series of assumptions are made, namely:

- the census of the total population and by sex. The female population (called population F) is carried out at discrete time intervals, n=1, 2, 3...;

- this population is divided into k age groups $\mathrm{k} \in Z^*$;

- the number of women in the age groups, at time n is given by the random variable $\eta_n(j)$. Therefore, the moment and dispersion of the random variable becomes: $\mathrm{E}\eta_n(j) = M_{j,n}$ and $\mathrm{D}\eta_n(j) = D_{j,n}$.

- if a member of the age group *j* at time *n-1* gives birth to a girl at time *n*, then the number of women in the age group *0* at time *n* whose mothers belonged to age group *j*, is a random variable $\eta_n^{(j)}(0)$, with $\eta_n(0) = \sum_{j=0}^{k} \eta_n^{(j)}(0)$;

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- the probability p_j that a person in the age group j at time *n* will be in the age group $j+1$ after a unit of the time interval, is fixed and which for $j<k$ is positive, and $p_k=0$. These probabilities are assumed independent, so $q_j=1-p_j$;

- the probability b_j that a person in the age group *j* at time *n* will give birth to a single girl in the time interval *(n, n+1)* and that this girl will be active in the group *0* at time *n+1*, is fixed and these are assumed independent. So: $d_j=1-b_j$

- the birth and death processes are assumed to be independent;

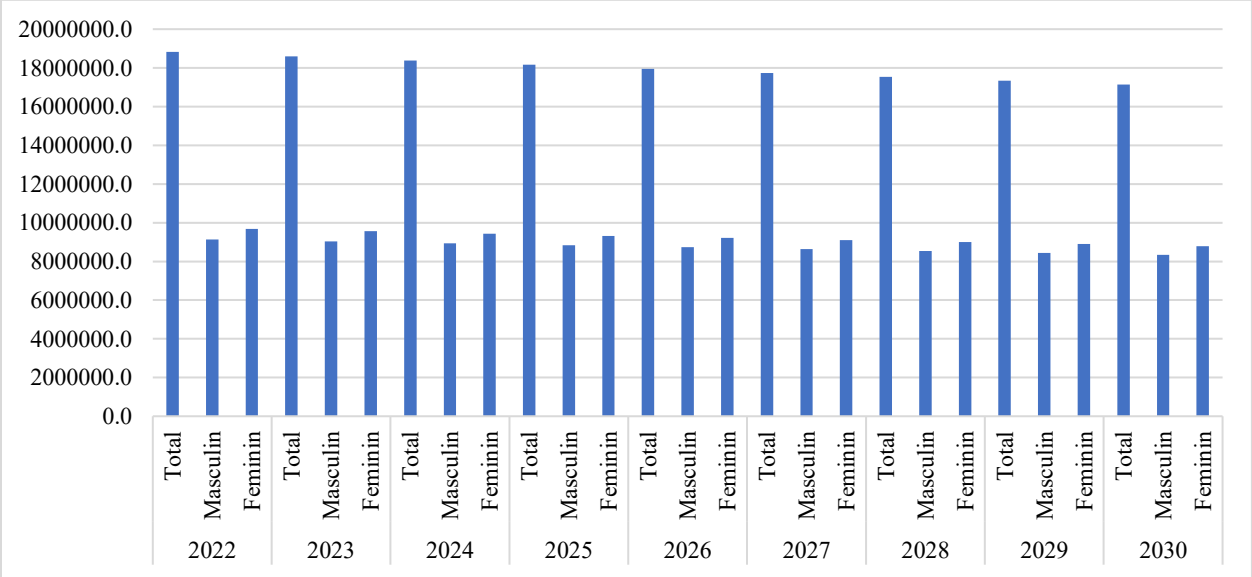
- changes in the male population structure are assumed to be consistent with the assumptions of the constant fertility measure $\{b_j\}$.

Application of the mathematical population forecasting model presented in this paper used the following indicators: the number of the Romanian population by age and sex registered in the 2021 population census, the survival probabilities by sex and the short-term fertility index - live births per 1000 inhabitants (Annex 1). The indicators survival probabilities by sex and the short-term fertility index - live births per 1000 inhabitants were considered to be unchanged throughout the analyzed period.

The mathematical model did not take into account emigration or immigration, considering that its balance is close to 0.

Following the application of the mathematical model and data processing, it is found that the population of Romania is in permanent decline until 2030 (Figure 1).

Figure 1 Evolution of Romania's population calculated based on the model



Source: Own calculations based on data https://www.recensamantromania.ro/rezultate-rpl-2021/rezultate-definitive/

Interpreting data from the mathematical model - general population trend (2025–2030)

The data highlights a continuous decrease in the total population of Romania: from 18,158,349 people in 2025, to 17,134,645 people in 2030 (absolute decline: approximately -1,023,704 people - rate ~-200,000 people/year). This evolution confirms a regressive demographic dynamic, determined by negative natural increase and external migration.

Regarding the structure of the 3 major age groups, the conclusion resulting from data analysis is that: increasing aging.

- Young population (0–14 years), a slight but constant decrease is observed: the 0–4 year old group decreases visibly ("under 1 year": 121,791 → 119,654), indicates persistent low fertility
- Active population (15–64 years), there are fluctuations, but the general trend is of reduction and imbalance, large generations (35–50 years) are advancing towards older ages, future labor shortage.
- Elderly population (65+ years), significant increases are observed: e.g. 70 year old group from 246,036 in 2025 to 186,740 in 2030 (decreases pointwise but large cohorts are catching up), 75–85+ groups are increasing overall and remain high, the share of the dependent population increases.

Other conclusions drawn from the analysis:

- Feminization of aging: at older ages (70+) women are significantly more numerous than men, which reflects the life expectancy differential.
- Major structural imbalances: The dependency ratio grows rapidly (fewer young people + more elderly), resulting a pressure on the active population; The "demographic bubble" the 45–55 age group is the most numerous: in the next 10–15 years they will enter the 65+ category, aging will accelerate.
- Projections and implications based on data: aging is irreversible in the medium term, the pension system will be subject to increasing pressure, the labor market will suffer from a labor shortage and a aging of the active population.
- The calculated indicators highlight a rapid deterioration of the demographic balance, characterized by: increasing the aging index (133 → 160), increasing the elderly dependency rate (31% → 38%), increasing pressure on the active population
- The analyzed data confirm that Romania is in an advanced phase of demographic aging, characterized by: accelerated population decline, reduction of the young base, increase in the share of the elderly, accentuation of intergenerational imbalances

In the absence of effective demographic policies, the trend will continue, with a major impact on economic and social sustainability. In the public space in Romania, there are several themes that dominate the debate about the demographic future. One is population decline. The idea of a Romania of 16 or only 15 million by 2050 is repeated. Another theme is that of emigration and the relationship with the diaspora in a broader sense. Emigration has changed both regional demography and the structure of

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the workforce, and even if its pace seems to have slowed in recent years, there is still a perception that it will contribute to an economic and social decline and even to a cultural transformation caused by the departure of dynamic and entrepreneurial people.

But Romania's demographic transformation means much more. On the one hand, it implies a transformation of the composition of the population. The age structure will change, just as the ethnic and religious composition will most likely change. Last but not least, the balance between regions will undergo substantial changes, in ways that are not yet fully clear.

Here, the situation is quite clear, at least if we talk about simple forecasts and the general trend. In a scenario in which migration stabilizes at 0, the number of inhabitants will decrease by just over 2 million people by 2050. The exact number is difficult to predict, even in the migration-neutral scenario, because it is impossible to predict the evolution of birth rates or life expectancy. Romania has not registered a convergence with the average life expectancy at the European Union level, in 2024 there was a difference of 5.7 years. Life expectancy in the EU was 81.3, the Romanian one was 75.6. If between 2010 and 2020 the difference had decreased slightly, the pandemic increased it again. In 2021, life expectancy in Romania had decreased to just 72.8 years, compared to the EU average of 80.1. Even if some convergence is expected if recent economic trends continue, the example of the USA (where economic and life expectancy developments have decoupled) shows us that there is no absolute correlation between macroeconomic development and life expectancy. Similarly, population fertility can fluctuate quite abruptly. Rapid declines in the total fertility rate have recently been observed in countries and territories as diverse as Finland, Scotland, Lithuania, Turkey, Russia, Argentina, etc. Demography is no stranger to abrupt developments.

In the meantime, we can focus on the average scenario. Eurostat sees 16.4 million inhabitants in 2050, so a regression to the population of the early 1950s. It is a relatively realistic scenario, if we start from a population of 19 million at the end of 2024. However, there is a risk of building even this scenario on some optimistic premises. Notably, Rethink considers that the number of births in Romania is overestimated.

A quasi-certainty is the increase in the average age of the population. The large generation of people born in the years after 1967 will contribute to the increase in the average age of the population and to an unfavorable ratio between the number of pensioners and that of active people. Eurostat estimates an average age of over 49 years in 2050, although – again – there are a lot of factors that can lead to its increase or decrease.

The fact is that, unless biotechnological developments or drastic variations in natural demographic indicators occur, a Romania with moderate immigration will have fewer inhabitants and a considerably older population in 2050.

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6. CONCLUSIONS

The demographic aging process in Romania is emerging as a profound structural phenomenon, with long-term cumulative effects, which go beyond the strictly demographic sphere and directly influence economic and social balances. The analysis carried out highlights the fact that this process is not a temporary one, but the result of a persistent combination of factors: declining fertility, increasing life expectancy and external migration of the young population. In this context, Romania is entering an advanced stage of demographic transition, characterized by a reduction in the active population base and an increase in the share of elderly people.

An essential aspect highlighted by the study is the cumulative nature of demographic imbalances. The reduction of young cohorts not only produces immediate effects on the labor market, but also generates long-term consequences on the sustainability of social systems. Thus, the pressure on the pension system and on health services will continue to increase, in parallel with the decrease in the human resources available to support them. In addition, the phenomenon of "aging within aging" (the growth of the 80+ segment) will amplify the demand for medical and specialized care services.

At the same time, research suggests that population aging should not be interpreted exclusively as a vulnerability, but also as an opportunity to reshape public policies and economic models. Capitalizing on the potential of the elderly population, through active aging policies, extending working life and adapting working conditions, can contribute to reducing pressures on social systems.

In the medium and long term, the results indicate the need for an integrated approach, combining demographic, economic and social policies. One-off interventions are not sufficient in the absence of a coherent strategic vision, oriented towards intergenerational balance. Also, uncertainties related to the evolution of fertility, migration and life expectancy require the use of flexible and adaptive scenarios in the policy-making process.

In conclusion, population aging represents one of the most important structural challenges of contemporary Romania, and its effective management depends on the institutional capacity to anticipate changes and implement sustainable policies, oriented both towards reducing risks and capitalizing on new demographic realities.

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AUTHOR CONTRIBUTIONS

Conceptualization, B.M.R.; Methodology, B.M.R.; Formal analysis, B.M.R.; Data curation, B.M.R.; Writing, original draft, B.M.R.; Writing, review and editing, B.M.R.

DATA AVAILABILITY

The analysis uses publicly available data from Eurostat, the National Institute of Statistics of Romania (INS), the United Nations Population Division and the 2021 Population and Housing Census.

DECLARATION OF INTEREST

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The author declares no conflict of interest.

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APPENDIX A. Data used in the mathematical model for population forecast: the number of the Romanian population by age and sex recorded in the 2021 population census, the survival probabilities by sex and the short-term fertility index - live births per 1000 women

	2021 - Population Census			Survival Probabilities		Short-term fertility rate - live births per 1000 women
	Total	Male	Female	Male	Female	
Under 1 year	158478	81355	77123	0.97417	0.97942	0.0
1 year	188458	97376	91082	0.99706	0.99749	0.0
2 years	197300	100970	96330	0.9981	0.99846	0.0
3 years	203797	104446	99351	0.99868	0.99887	0.0
4 years	208682	107153	101529	0.99903	0.99928	0.0
5 years	207833	106759	101074	0.99924	0.99945	0.0
6 years	205048	105474	99574	0.99929	0.99955	0.0
7 years	203052	104372	98680	0.99928	0.99953	0.0
8 years	201173	103333	97840	0.99935	0.99959	0.0
9 years	206426	106090	100336	0.99948	0.99969	0.0
10 years	205383	105780	99603	0.99949	0.99968	0.0
11 years	219573	112608	106965	0.99953	0.99961	0.0
12 years	226076	116349	109727	0.99945	0.9997	0.0
13 years	224857	115826	109031	0.99943	0.99966	0.0
14 years	217766	111994	105772	0.9994	0.99963	0.0
15 years	217491	111548	105943	0.99926	0.99962	10.0
16 years	219454	112537	106917	0.99918	0.99956	17.8
17 years	211978	108981	102997	0.99916	0.99963	23.1
18 years	204361	105086	99275	0.99899	0.99951	32.7
19 years	185799	95354	90445	0.99879	0.99947	41.6
20 years	186273	95638	90635	0.99878	0.99949	47.6
21 years	193719	99251	94468	0.99874	0.99947	52.0
22 years	192090	98405	93685	0.99869	0.99942	54.0
23 years	192752	98280	94472	0.99865	0.99947	58.0
24 years	188457	96507	91950	0.99859	0.99943	62.2
25 years	184701	94401	90300	0.99857	0.99933	67.2
26 years	186915	95598	91317	0.99832	0.99935	72.2
27 years	192485	98449	94036	0.99845	0.99922	73.9
28 years	193206	98804	94402	0.99819	0.99924	77.1
29 years	202029	103841	98188	0.99808	0.99915	73.1
30 years	205396	105545	99851	0.9977	0.99912	71.7
31 years	235293	120439	114854	0.99759	0.99902	64.0

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	2021 - Population Census			Survival Probabilities		Short-term fertility rate - live births per 1000 women
	Total	Male	Female	Male	Female	
32 years	261335	133841	127494	0.99751	0.99895	58.8
33 years	270550	138878	131672	0.99731	0.99893	47.6
34 years	271547	139598	131949	0.99711	0.9988	43.6
35 years	263793	135690	128103	0.99683	0.99852	35.9
36 years	256590	132339	124251	0.99664	0.99862	30.6
37 years	247744	127677	120067	0.99622	0.99853	26.1
38 years	227963	117214	110749	0.99596	0.99834	20.7
39 years	247972	127753	120219	0.99564	0.99819	16.3
40 years	271888	139932	131956	0.99541	0.99808	12.2
41 years	285233	146481	138752	0.99492	0.99782	8.5
42 years	292631	150598	142033	0.9944	0.99752	5.2
43 years	296555	151740	144815	0.99375	0.99718	3.1
44 years	305285	156147	149138	0.9935	0.99713	1.8
45 years	301279	154335	146944	0.99319	0.99696	1.1
46 years	301910	154313	147597	0.99246	0.99673	0.5
47 years	307922	156942	150980	0.99158	0.99645	0.2
48 years	273086	139281	133805	0.99094	0.99607	0.3
49 years	282801	143466	139335	0.99079	0.99578	0.1
50 years	290007	146800	143207	0.98915	0.99553	0.0
51 years	305959	154110	151849	0.98837	0.99495	0.0
52 years	334716	168189	166527	0.98719	0.99484	0.0
53 years	377847	188649	189198	0.98645	0.99401	0.0
54 years	356674	177869	178805	0.98493	0.99362	0.0
55 years	194805	97224	97581	0.98433	0.99296	0.0
56 years	200442	98458	101984	0.98275	0.99275	0.0
57 years	202051	99080	102971	0.9819	0.99218	0.0
58 years	204011	98864	105147	0.98079	0.99105	0.0
59 years	209218	100175	109043	0.97957	0.99044	0.0
60 years	220932	105325	115607	0.97746	0.98917	0.0
61 years	234566	110321	124245	0.97623	0.98829	0.0
62 years	245460	112924	132536	0.97442	0.98638	0.0
63 years	256047	115738	140309	0.97204	0.98547	0.0
64 years	262315	117053	145262	0.97058	0.98395	0.0
65 years	267822	119396	148426	0.96723	0.98221	0.0
66 years	277975	123339	154636	0.96577	0.98071	0.0
67 years	250472	110113	140359	0.96219	0.97831	0.0
68 years	235619	102802	132817	0.95976	0.97598	0.0
69 years	231513	99818	131695	0.95662	0.97242	0.0
70 years	220768	93924	126844	0.95268	0.96832	0.0
71 years	221831	93337	128494	0.94769	0.96472	0.0
72 years	218857	90641	128216	0.94117	0.96015	0.0
73 years	173280	70916	102364	0.94077	0.95693	0.0

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	2021 - Population Census			Survival Probabilities		Short-term fertility rate - live births per 1000 women
	Total	Male	Female	Male	Female	
74 years	155295	63724	91571	0.93496	0.95358	0.0
75 years	152550	61156	91394	0.92823	0.94697	0.0
76 years	116845	45608	71237	0.9203	0.94022	0.0
77 years	129910	50018	79892	0.91506	0.93271	0.0
78 years	107756	40692	67064	0.90639	0.92468	0.0
79 years	108520	40280	68240	0.897	0.91426	0.0
80 years	105382	37789	67593	0.88753	0.90515	0.0
81 years	104043	36712	67331	0.87677	0.89292	0.0
82 years	103881	35551	68330	0.85925	0.87584	0.0
83 years	94013	31418	62595	0.84838	0.86014	0.0
84 years	82931	27573	55358	0.83331	0.84643	0.0
85 years	74572	24256	50316	0.81628	0.82758	0.0
86 years	59789	19459	40330	0.79918	0.80896	0.0
87 years	50997	16120	34877	0.78102	0.78913	0.0
88 years	42005	13292	28713	0.76181	0.7681	0.0
89 years	37608	11864	25744	0.74154	0.74588	0.0
90 years	27694	8386	19308	0.72022	0.72244	0.0
91 years	22027	6611	15416	0.69784	0.69781	0.0
92 years	15883	4757	11126	0.67441	0.67198	0.0
93 years	12242	3621	8621	0.64993	0.64494	0.0
94 years	8322	2438	5884	0.62439	0.6167	0.0
95 years	5799	1619	4180	0.5978	0.58726	0.0
96 years	3759	996	2763	0.57016	0.55662	0.0
97 years	2608	697	1911	0.54146	0.52477	0.0
98 years	1572	436	1136	0.5117	0.49172	0.0
99 years	986	270	716	0.48089	0.45784	0.0
100 years and over	1254	358	896	0.44903	0.42202	0.0

Source: National Institute of Statistics - 2021 Population Census and Tempo-online database, http://statistici.insse.ro/shop/

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