Population Aging in Developing Countries and the Dilemma of Institutional Adaptation: Algeria as a Model

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Abstract: This study aims to analyze the phenomenon of population aging in developing countries, with a particular focus on the dilemma of institutional adaptation in Algeria. Population aging has become one of the most prominent transformations witnessed by many contemporary societies, resulting from declining fertility rates and increased life expectancy. This shift poses new challenges for social policies and public institutions.

The study employs a descriptive-analytical approach to examine the trajectory of demographic transition in Algeria and the evolution of the population aging phenomenon, in addition to studying the legal and institutional frameworks dedicated to elderly care.The findings indicate that Algeria has begun to experience a gradual shift in its age structure due to demographic transitions within society. This has led to an increasing proportion of the elderly and the emergence of socio-economic challenges related to healthcare, pension systems, and social protection. The results further demonstrate that institutional adaptation to these transformations is still in the developmental stages, necessitating the reinforcement of aging-oriented policies in a comprehensive and integrated manner.

Keywords: Population Aging; Institutional Adaptation; Developing Countries; Algeria.

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I. Introduction

In recent decades, the world has witnessed extensive demographic shifts affecting the structural composition of populations. Fertility rates have declined, and life expectancy at birth has risen, leading to an accelerated pace of population aging on a global scale. While this aging was historically associated with the trajectory of social, economic, and health modernization in industrialized nations, it has today become a characteristic of developing countries, albeit within economic and institutional contexts that differ from those of developed nations.

Aging in developed countries emerged as a natural consequence of demographic transition stages that unfolded over long periods. This path was characterized by gradualism, coinciding with industrialization, the expansion of social protection systems, and rising income levels. In contrast, aging in developing countries is occurring at a relatively rapid pace amidst incomplete economic transformations. Structurally, it relies on fragile sectors and suffers from weaknesses in social security and healthcare systems. Consequently, the phenomenon of aging in developing countries shifts from being a mere inevitable result of structural population change to a profound institutional and structural challenge affecting the sustainability of pension systems, the efficiency of health services, and the market's capacity to absorb demographic shifts.

In this context, the dilemma of institutional adaptation emerges as an analytical focal point for understanding the implications of population aging in developing countries. The rising number of elderly people in these nations does not necessarily constitute a crisis in itself; rather, the crisis lies in the extent to which various social, economic, and health institutions are prepared to accommodate this demographic and provide for its needs—especially as most, if not all, of these countries are moving toward a shrinking working-age population and rising dependency ratios for the elderly.

Algeria is part of this trajectory, having experienced a rapid demographic transition in recent decades characterized by a significant drop in fertility and continuous improvement in survival indicators. This has naturally led to a slight alteration in the population pyramid. Although the Algerian population pyramid is still characterized by its youthfulness, there are indicators suggesting that Algeria is entering a phase marked by an increasing elderly population, which raises fundamental questions about the readiness of the Algerian institutional system to confront the challenges of aging.

Based on the above, this article seeks to analyze the phenomenon of population aging in developing countries through a perspective that links demographic transition on one hand with the dilemma of institutional adaptation on the other, taking Algeria as a model for study. This is pursued by posing the following primary research question:

Primary Question:

✓ How has the demographic transition in Algeria affected its structural population composition, and to what extent are its institutions ready to accommodate the aging dynamics expected from this transition?

This primary question entails a set of sub-questions:

✓ What are the characteristics of the demographic transition in Algeria?

✓ To what extent have Algerian institutions adapted to the aging of society?

Study Hypotheses

❖ **Primary Hypothesis:** The acceleration of demographic transition in Algeria leads to a reconfiguration of its age structure in a way that increases the pace of aging, occurring amidst a gap between population dynamics and the adaptive capacity of institutions.

❖ **Sub-Hypotheses:**

1. The demographic transition in Algeria is characterized by an imbalance with its economic transformation, which limits the effectiveness of investing the demographic dividend. This is supported by the following indicators:

- ✓ Growth of the working-age population.
- ✓ Unemployment.
- ✓ Economic structure.

2. Algerian institutions do not adapt to the aging of society due to their fragility, which prevents them from absorbing the pressures resulting from the rising number of elderly people. This can be evidenced by the following indicators:

- ✓ Social coverage.
- ✓ Deficits in pension funds.
- ✓ Health expenditure.

II. Chapter One Demographic Transition and Population Aging in Algeria

In recent decades, the world has undergone profound demographic transformations characterized by a simultaneous decline in fertility and mortality rates alongside an increase in life expectancy. This has led to significant changes in the age structure of populations and a rise in the proportion of the elderly. The phenomenon of population aging is no longer confined to developed nations; it is emerging clearly and increasingly in many developing countries, foremost among them Algeria. Therefore, this study attempts to understand the trajectory of demographic transition as a primary entry point for interpreting the phenomenon of aging and its economic and social implications.

1) Conceptual Framework for Demographic Transition and Aging

1.1 The Concept of Demographic Transition

The term "demographic transition," as presented by Jean-Claude Chesnais, is derived from the phrase "demographic revolution," which dates back to the early 20th century. Demographic transition refers to the process of gradual change in fertility and mortality rates that all societies undergo during stages of population growth on one hand, and stages of socio-economic development on the other. In this process, populations shift from an "old" stage—characterized by high birth and death rates—to a "modern" stage characterized by a decline in both rates, resulting in major changes in population size and age structure.

1.2 Stages of Demographic Transition

There are several classifications for the stages of demographic transition; some scholars divide it into four stages, while others use three. We clarify this through the following:

The Four Classical Stages according to Jean-Claude Chesnais (Al – Makhadmi, 2005, p. 32):

- ❖ **Stage of Equilibrium:** Between high birth rates and high death rates.
- ❖ **Stage of Declining Mortality:** Characterized by accelerating demographic growth.
- ❖ **Stage of Declining Fertility:** Characterized by a contraction in natural growth.
- ❖ **Stage of Modern Equilibrium:** Between low death rates and low birth rates.

The Three Stages according to John Weeks (Kradsha, 2009, p. 60):

- ❖ **High Equilibrium Stage:** Characterized by high fertility and high mortality rates, leading to low population growth.
- ❖ **Transition Stage:** Characterized by a rapid decline in mortality rates while fertility remains high, leading to high population growth.
- ❖ **Low Equilibrium Stage:** Characterized by low natural increase resulting from a simultaneous decline in both mortality and birth rates.

Despite the differences in the number of stages identified by various thinkers, the overall trajectory remains unified. All societies began with high birth and death rates, resulting in very low natural increase and a small population. Attention then turned toward public health; over time, health standards improved, leading to a decline in mortality while birth rates remained high. This situation produced high natural increase, eventually leading to the problem of "population explosion." Consequently, it became necessary to reduce these

numbers, with the only viable solution being a reduction in birth rates. Through various family planning policies adopted by different nations, birth rates were lowered, which in turn led to a decline in natural increase in most countries. This final stage is considered one of the most critical factors leading to the emergence of the phenomenon of population aging.

1.3 The Concept of Aging

Crandall views aging as "the period of chronological decline in human life." According to the Medical Dictionary, aging encompasses "everything that occurs and affects the human being in the health, psychological, and social aspects of the elderly, as well as a process of change within the social status of the older person"(Fahmy, 2007, p. 23).

Some regard aging as a relatively new phenomenon for humanity, having begun to spread alongside the advancement of science and healthcare in recent decades (Al – Sherbini, 1990, p. 34).

Chamirez defined the elderly person as "a person who has lived a long life through which they were able to gain vast and varied experiences not possessed by the youth or middle-aged individuals, and who is usually retired due to the resulting decline in physical and mental capacities" (Tamzout, 2022).

Based on the above, the concept of aging can be addressed from a comprehensive perspective that integrates biological, social, and psychological dimensions, describing a stage of human life characterized by multifaceted changes. Broadly, aging can be defined as the life stage that typically begins after the age of sixty, where vital bodily functions gradually begin to decline, the probability of chronic diseases increases, and the individual's social and psychological roles within the family and society undergo significant shifts.

2) Manifestations of Demographic Transition in Algeria

Like other developing nations, Algeria has undergone significant demographic transformations in recent decades. These shifts have reflected on birth and death rates and, consequently, on natural increase, which necessarily leads to changes in the total population. This evolution can be illustrated by examining the growth of the Algerian population during the period from 1966 to 2023.

Table No. 01: Represents the population growth in Algeria from 1966 to 2023.

Year	Population (Millions)
1966	13.1
1970	13.8
1975	15.7
1980	18.7
1985	22.1
1990	25.5
1995	28.4
2000	30.7
2005	33.1
2010	35.8
2015	40.0
2018	42.1
2020	44.0
2021	44.4
2022	45.1
2023	46.7

Source: Data prior to 1995 is derived from General Population Censuses; data after 2000 is based on international estimates from the World Bank.

The manifestations of this transformation in Algeria can be highlighted as follows:

A. Decline in Mortality Rates: Despite the contribution of developing health services and improved living conditions to the significant decline in mortality rates—particularly infant mortality—data from the National Office of Statistics (ONS) indicates a relative

stability in mortality rates with a slight upward trend due to population aging. Rates reached "approximately 4.32 per thousand in the ONS 2022 estimates and rose to about 4.77 and 4.80 per thousand respectively during the years 2024 and 2025 according to the same source, reflecting a continuous improvement in life expectancy, which was estimated at 78 years".(National Office of Statistics, 2025)

B. Evolution of Fertility Rates: Algeria has witnessed a remarkable decline in fertility rates since the late 1980s due to several factors, including the spread of education, improved health status, and delayed age of marriage. This is in addition to Algeria's adoption of family planning policies, which played a major role in reducing fertility rates. ONS data indicates that fertility rates dropped from "26 per thousand during 2015 to 19.32 per thousand during 2023"".(National Office of Statistics, 2025), alongside a decrease in marriage contracts.

C. Slowdown in Population Growth: It is logical for Algeria's population to experience a slowdown in growth, primarily attributed to the simultaneous decline in both birth and death rates. Consequently, the gap between them—representing natural increase—has narrowed.

D. Change in Age Structure: The age structure of the Algerian population has undergone a significant demographic shift, transitioning from a "youthful" society following independence to a society trending toward aging in recent years.

E. Rapid Urbanization: In recent years, Algeria has experienced extensive internal migration from rural areas to cities. This has increased pressure on urban infrastructure and services while simultaneously leading to a decline in the rural contribution to agricultural production.

3) The Evolution of the Aging Phenomenon in Algeria

3.1 Increasing Proportion of the Elderly

In recent years, Algeria has undergone significant demographic shifts, most notably a substantial rise in the number of elderly citizens. The National Office of Statistics (ONS) estimates the aging rate in Algeria at approximately 9% to 10% of the total population, equivalent to roughly 3.7 million people. This percentage is projected to increase, reflecting the Algerian society's transition toward an aging demographic structure.

3.2 Socio-Economic Characteristics

The elderly population is characterized by specific socio-economic traits that impose unique challenges, the most important of which are:

A. Need for Specialized Health Services:

Healthcare for the elderly is built upon two fundamental pillars:(Fahmy, 2007, p. 151)

- **The Therapeutic Basis:** This involves treating the health impairments and chronic diseases that affect the elderly, as well as managing their increased susceptibility to further illnesses.
- **The Preventative Basis:** This focuses on dietary guidance to avoid substances harmful to their condition and training in physical activities, such as walking, to reduce the risk of specific diseases.

Based on these two pillars, healthcare aims to prevent the deterioration of the elderly person's health status while simultaneously attempting to extend life expectancy or make life more vibrant. Establishing these foundations requires integration between various community and institutional bodies across different fields.

B. Reliance on Pension Systems:

While population aging poses a significant challenge to social security systems, it also presents an opportunity to develop and sustain these systems socio-economically. According to Christina Behrendt's report for the International Social Security Association (ISSA)

conference in Madrid, titled *"Population Aging and Social Security: Ten Important Conditions,"* key factors include:(Al – Zoubi, 2013, p. 127)

1. **Improving Employment Opportunities as a Key to Sustainability:** Enhancing job opportunities is a fundamental key to economic and social sustainability. It contributes to creating stable income sources, reducing unemployment, and alleviating poverty. Diversified and decent employment increases a society's ability to achieve stability and productivity while supporting social integration. Thus, investing in employment and skill development contributes directly to long-term sustainable development.
2. **Addressing the Phenomenon of Actual Early Retirement:** Confronting early retirement is pivotal for the sustainability of socio-economic systems, especially given demographic shifts and increased life expectancy. Early retirement deprives the labor market of essential expertise and increases pressure on pension funds by raising the number of beneficiaries relative to contributors. Addressing this requires integrated policies, such as tightening early retirement conditions, improving working conditions—especially for physically demanding professions—and encouraging voluntary extension of service through material and moral incentives.
3. **Confronting the Challenges of Insecure Labor:** Addressing insecure (precarious) labor is a priority for achieving socio-economic stability, particularly with the expansion of the informal economy. This type of labor is characterized by a lack of social protection, low wages, and professional instability, exposing workers to continuous economic and health risks.

To address these challenges, the legal framework must first be strengthened, and labor laws strictly enforced to guarantee workers' rights, while expanding the social protection umbrella to include vulnerable groups and informal sector workers. Integrating the informal economy into the formal system is a fundamental step, achieved by simplifying administrative procedures and incentivizing small enterprises to declare their activities.

Furthermore, investing in vocational training and skill development is of great importance to enhance employability and improve the quality of job opportunities. The role of social dialogue between the state, employers, and unions is equally important in establishing fair and balanced policies. Consequently, addressing insecure labor is not limited to the economic aspect alone but requires a comprehensive approach that integrates social, legal, and developmental dimensions to ensure decent and sustainable work.

4. Mitigating Retirement Readiness Risks:

Reducing retirement readiness risks is essential for ensuring a safe and stable transition from professional life to the post-work stage. A lack of prior preparation can lead to financial difficulties, psychological distress, and a decline in social integration. To counter these risks, early financial planning should be promoted by encouraging savings and diversifying income sources to ensure post-retirement economic stability. It is also advisable to provide awareness and training programs that help individuals understand the requirements of this stage and how to adapt to it.

Additionally, psychological and social preparation is vital, encouraging retirees to engage in social and voluntary activities that maintain their psychological balance and enhance their sense of purpose. Phased retirement or part-time work can be supported as a transitional mechanism to reduce the sudden shock of leaving work. Finally, public policies play a decisive role in providing adequate social protection and appropriate health services, ensuring a dignified life for retirees and limiting the risks associated with this stage.

5. Securing Adequate Income for the Retiree:

Securing an adequate income for retirees is a cornerstone for ensuring a dignified and stable life after the end of a professional career, especially given rising living costs and increased life expectancy. Low income after retirement can lead to economic vulnerability and negatively impact health and social inclusion. To achieve this, retirement systems should first be strengthened by ensuring their financial balance and sustainability, allowing for the

provision of adequate pensions aligned with the standard of living. Encouraging individuals to engage in voluntary savings during their working years, whether through supplementary funds or simple investments, secures additional income sources.

Flexible policies, such as phased retirement or offering part-time work opportunities for willing retirees, contribute to improving their income and continued social integration. The state plays an important role in providing social support to low-income groups through targeted grants or assistance. Finally, controlling health expenditures and providing universal health coverage are complementary factors in securing income, as they alleviate the financial burden on the retiree and enhance their economic and social stability.

6. The Growing Role of the State in an Aging Society:

The growing role of the state in an "aging society" (characterized by a high proportion of elderly people) indicates an expansion of its responsibilities in responding to demographic shifts and ensuring social and economic balance. As the number of elderly people increases and life expectancy rises, the state is required to strengthen social protection systems, particularly in the areas of pensions, healthcare, and specialized social services.

This role is manifested in developing health policies directed toward geriatrics, expanding health infrastructure to meet growing needs, and supporting long-term care services. It is not limited to health aspects; it also includes establishing programs to integrate the elderly into social and economic life and encouraging their active participation rather than marginalization. Additionally, the state works to adapt the labor market to these shifts through flexible policies, such as delaying the retirement age or encouraging part-time work, to achieve a balance between financial system sustainability and the preservation of individual dignity. Supporting the family and civil society as partners in elderly care is also paramount. Thus, the state's growing role in an aging society reflects its transition from a limited traditional role to a primary actor in managing the challenges of aging, ensuring sustainable development and social justice.

7. Ensuring Gender Equality:

Ensuring gender equality is a fundamental pillar for achieving social justice and sustainable development, aiming to empower both women and men to enjoy the same rights and opportunities in various fields of life without discrimination. The absence of this equality leads to the exclusion of half of society and weakens its developmental potential.

To achieve this, the legal framework ensuring equal opportunity and criminalizing all forms of gender-based discrimination must be strengthened, alongside the effective implementation of these laws. Economically empowering women by supporting their participation in the labor market and providing equal opportunities in wages and promotion is a crucial step. Furthermore, education plays a vital role in instilling a culture of equality from the early stages by changing stereotypes and promoting values of respect and parity. Supporting women's participation in political and administrative decision-making is also a decisive factor in achieving fair representation. Finally, ensuring gender equality requires a comprehensive approach involving the state, civil society, and the media to build a more equitable and balanced society that allows all its members to contribute effectively to development.

8. Providing Healthcare for the Elderly:

Providing healthcare for the elderly is a fundamental pillar for ensuring quality of life in old age, especially given the rising number of seniors and increased life expectancy. This age group often suffers from multiple chronic diseases, requiring specialized and continuous health services. To achieve effective care, geriatric medical services must be developed, and multidisciplinary medical teams capable of handling the complex health needs of the elderly must be provided, alongside strengthening preventive care for early detection and mitigation of diseases. The importance of primary healthcare and periodic follow-ups is also prominent, in addition to providing medications and treatments at affordable prices.

Furthermore, supporting home care services and long-term care is essential, particularly for elderly individuals with limited mobility, while improving the infrastructure of health

institutions to be suitable for their needs. The psychological and social aspects are equally important; psychological support programs and social activities must be provided to reduce isolation. Finally, improving healthcare for the elderly requires coordination between the state, the family, and civil society within a comprehensive approach that guarantees dignity and independence for this group and enhances their social integration.

9. Assisting Developing Countries in Facing Population Aging Challenges:

Assisting developing countries in facing population aging challenges is an urgent necessity given the unprecedented acceleration of the demographic transition, as these countries transition into "aging societies" before achieving sufficient levels of economic development. This imposes increasing pressures on pension systems, healthcare, and social structures. To confront these challenges, these countries should first be supported technically and financially to develop effective population and social policies, particularly in social protection and expanding universal health coverage. Transferring expertise and successful experiences from developed countries is also important, provided they are adapted to local specificities.

Additionally, investment must be made in strengthening health systems—especially geriatric services and long-term care—alongside enhancing vocational training in elderly care. The role of supporting and integrating the informal economy is also vital to ensure a broader contribution to funding pension systems. Furthermore, civil society and family initiatives in elderly care should be encouraged, along with raising community awareness of aging issues. Innovation and the use of technology can also be supported to provide more efficient health and social services. Consequently, assisting developing countries requires a comprehensive international solidarity approach that combines financial support, knowledge transfer, and capacity building to ensure sustainable adaptation to the aging phenomenon and achieve balanced development.

10. Social Security as a Condition for Active Aging:

Social security is considered one of the essential conditions for achieving active aging because it provides the elderly with the financial and social stability necessary to continue their lives actively and with dignity after their professional careers end. The absence of social security exposes the elderly to poverty and vulnerability and reduces their ability to participate in society or benefit from health, recreational, and educational opportunities. To activate the role of social security in supporting active aging, the sustainability of pension systems must first be ensured and their coverage expanded to include all groups, ensuring adequate income for retirees. It is also advisable to develop integrated health insurance programs that meet the needs of the elderly, providing support for medications, home care, and long-term care.

In addition, social security can be integrated with recreational, educational, and training programs that encourage the elderly to participate in community activities and maintain their physical and mental health. Promoting awareness of the importance of early financial planning is a complementary factor, as it allows individuals to make the most of social security upon retirement. Therefore, social security guarantees not only financial protection but also empowers the elderly to exercise their social and psychological roles actively and independently, which is a fundamental condition for achieving effective aging and sustainable dignity.

3. The Shifting Role of the Family in Elderly Care

Parents have historically performed immense and arduous roles in raising their children, ensuring their health, providing sustenance, maintaining their well-being, and assisting them in building and advancing their futures. Consequently, the aging of these parents should not allow children to neglect them or leave them prey to weakness, illness, and disability; rather, they must be nurtured and cared for.

"However, with the emergence of the social changes witnessed in contemporary life across various fields, certain negative manifestations have appeared within the family and societal environment. these affect concepts and values that were prevalent until recently. The

existence of these negative phenomena has led to regrettable cases of indifference, lack of concern, and the neglect of some elderly individuals, as well as placing them in nursing homes to evade the responsibility of serving them"(Al-Zubaidi, 2008, p. 65).

4. Future Projections for Aging

Demographic projections indicate that Algeria is heading toward a gradual yet profound shift toward population aging, within a demographic transition framework that combines declining fertility with rising life expectancy. After the proportion of the elderly (60 years and over) remained below 10% for decades, it is expected to exceed this threshold in the coming few years, reaching approximately 20% by 2050. This signifies a transition from a youthful society to a society in the process of aging, and eventually to an aged society.

This transformation is attributed to a set of overlapping factors, most notably the improvement in public health indicators, the rise in average life expectancy, and social shifts related to urbanization and changing family patterns. However, this trajectory is not without structural challenges, as it will lead to an increase in the elderly dependency ratio. This imposes growing pressures on pension and social protection systems, in addition to a rising demand for healthcare and long-term care services.

Conversely, these shifts open horizons for repurposing the human capital of the elderly within an "active aging" approach, contributing to the alleviation of economic burdens and the enhancement of social cohesion. Accordingly, forecasting aging in Algeria necessitates the adoption of proactive public policies based on demographic planning, the reform of social protection systems, and the development of care services to ensure a sustainable balance between generations.

Table No. 02: Represents the Future Projections of Aging in Algeria

Time Period	Percentage of Elderly(60+ Years)	Societal Characteristics
2010–2020	7%–9%	Youthful Society
2025	10%	Beginning of Aging
2030	12%–14%	Accelerated Transformation
2050	20%	Aged Society
Post-2050	More than 20%	Advanced Aging

Source: Prepared by the researcher, based on calculations of the elderly population ratio derived from the data in Table 01.

By examining and analyzing the table above, the stages of demographic population projections for aging in Algeria can be categorized as follows:

Stage One: Short-Term Projections (2025–2030): The proportion of the elderly in 2025 is estimated at 10%. This is a significant increase compared to 2010 and 2020, where the percentages were 7% and 9%, respectively. In this regard, it can be stated that Algeria is clearly moving toward a society in the process of aging. The primary demographic evidence for this is the emergence of what is demographically known as "nascent aging."

Stage Two: Medium-Term Projections (2030–2050): The proportion of the elderly by 2050 is estimated at 20%, representing approximately 12 million elderly people out of Algeria's total population. This suggests that Algeria will have transitioned into an "aged society."

Stage Three: Long-Term Projections (Post-2050): The proportion of aging will gradually rise above 20%. During this stage, population growth is expected to decline, inevitably leading to a future reduction in the working-age population. This will be accompanied by an increase in the elderly dependency ratio and growing pressure on social systems.

It is clear from the above that Algeria has experienced significant demographic shifts in recent decades, leading to changes in the population structure and a gradual rise in the proportion of the elderly. These transformations are fundamental factors compelling social and economic institutions toward institutional adaptation to meet the requirements of population aging, which will be addressed in the following section.

III. Challenges of Population Aging and the Dilemma of Institutional Adaptation in Developing Countries

Many developing nations have witnessed a remarkable acceleration in the pace of population aging in recent decades due to demographic shifts affecting fertility and mortality rates. However, these countries face greater challenges than developed nations due to weaker economic capabilities and limited social protection systems. Consequently, the issue of institutional adaptation to the aging phenomenon has become a central concern requiring public policy attention.

1) Characteristics of Population Aging in Developing Countries

1.1 Accelerated Pace of Aging:

Aging in developing countries is a unique phenomenon that differs from its counterpart in developed nations, particularly regarding the speed at which the proportion of the elderly increases. In these countries, accelerated aging results from the intersection of multiple factors, most importantly declining birth rates and rising life expectancy due to relative improvements in health and preventive services (e.g., vaccinations, primary care, and infectious disease control). Although health improvements have extended lives, these countries often lack the advanced health infrastructure to keep pace with this demographic change, leading to significant challenges in elderly care.

Other characteristics of aging in these countries include socio-economic limitations; many elderly individuals live in relative poverty and rely primarily on the family to meet their daily needs. Furthermore, the decline of the extended family and increasing internal and external migration have weakened traditional family support, making the elderly more vulnerable to isolation and health or social neglect.

The accelerated pace of aging in these countries means that the percentage of elderly people doubles in a short period compared to developed nations, exerting immense pressure on the health system and social institutions. The demand for specialized medical services, such as geriatrics, home care, and preventive programs, increases rapidly while financial and human resources are often limited.

Additionally, it is noted that the elderly in developing countries suffer from multi-morbidity and high rates of functional disability, necessitating continuous follow-up and long-term treatment. These challenges intersect with cultural and social transformations where the roles of the family and civil society in providing support are changing, making reliance on the state more necessary despite often insufficient institutional capabilities.

In summary, aging in developing countries is characterized by:

- A rapid increase in the number of elderly people.
- Weak health and social infrastructure.
- Traditional family dependency.
- Prevalence of chronic diseases.
- High demand for specialized care.

This makes strategic planning for aging policies an urgent and vital matter to ensure the quality of life for the elderly and the overall sustainability of society.

1.2. Weak Institutional Readiness:

Weak institutional readiness signifies that governmental, social, and health institutions are insufficiently equipped to confront the demographic shifts associated with the rising proportion of the elderly. In many developing countries, resources are predominantly

concentrated on economically active age groups, while the needs of the elderly remain marginalized—whether in terms of funding, specialized personnel, or preventive and therapeutic programs. This deficit leads to a weakness in strategic planning, as institutions often deal with the health and social issues of aging as emergencies rather than adopting a proactive, long-term approach.

Manifestations of weak institutional readiness also include the absence of specialized institutional structures, such as units or departments within the Ministry of Health or Social Security specifically tasked with elderly programs. Furthermore, the shortage of medical competencies specialized in geriatrics and long-term care increases pressure on public hospitals and limits the effectiveness of services. These gaps render the health system vulnerable to overcrowding and sometimes lead to prioritizing emergency cases over the routine and continuous care required by the elderly.

Beyond the health sector, weak institutional readiness encompasses social and insurance planning, where pension and insurance programs remain limited and often cover only a fraction of the elderly's needs, while a large segment relies on family or unstable income sources. Poor coordination between health and social institutions also leads to a duplication of efforts or a waste of resources, reducing the efficiency of programs directed toward seniors. Moreover, the lack of a culture of institutional adaptation and innovation means that institutions do not sufficiently benefit from international experiences or modern technical solutions, such as home healthcare, health information systems, or elderly-oriented prevention programs. This lack of adaptation reinforces the system's fragility in the face of rapid changes in the size and multifaceted needs of the elderly population.

1.3. Social and Familial Transformations:

Developing societies, including Algeria, are undergoing profound social and familial transformations that directly affect the aging experience and the quality of life for the elderly. One of the most prominent shifts is the decline of the traditional extended family, which provided daily support and the primary social network for the elderly, and its replacement by the smaller nuclear family consisting of fewer individuals capable of providing care. This change has led to a weakening of traditional family support and an increased reliance on health and social institutions to meet the daily needs of older adults.

Additionally, internal and external migration plays a significant role in weakening family ties, as young people migrate in search of work or education, leaving the elderly alone or dependent on a few relatives. This phenomenon increases the social isolation of the elderly and places them in difficult situations regarding daily care, health accompaniment, and psychological support.

Social transformations also include the changing roles of women in society. In the past, women were the core of caregiving within the family; however, women's entry into the labor market and their increasing professional commitments have reduced their ability to provide direct care for the elderly, doubling the need for support services outside the family.

On the other hand, these transformations are accompanied by changing cultural and social values toward aging. Societies have begun to focus on individual independence and rights, which reflects in a decline in the traditional respect accorded to the elderly compared to previous generations, increasing their sense of isolation. Furthermore, these shifts affect the consumption and health patterns of the elderly, as it becomes more difficult for them to access healthy food, regular medical care, and social activities due to weakened family and social bonds. This is compounded by the impact of urbanization and economic transformation on the status of the elderly in society, as urban neighborhoods become less interconnected compared to rural communities, increasing the difficulty of daily accompaniment and care.

2) The Social and Economic Impacts of Population Aging

2.1 Impact of Aging on the Labor Market

An increase in the proportion of the elderly leads to a decline in the youthful, working-age population, which may affect economic production. This can be explained through the direct impact on "universal social security systems and savings programs by the same factor,

which is the system's dependency ratio—the ratio of contributors to retirees—rather than the age dependency ratio, which exerts an indirect influence. Therefore, the size of the workforce or the amount of labor the economy can absorb is the most significant factor; high unemployment rates will negatively impact these systems" (Al – Zoubi, 2013, p. 110).

It is noteworthy that as the number of elderly increases, more vacancies are created in the positions they held, allowing for the employment of a large number of unemployed youth, which helps combat unemployment and mitigate its effects.

2.2 Pressure on Pension Systems

Aging poses a challenge to pension systems due to the rising number of retirees relative to contributors. "Social security focuses on the old-age dependency ratio in retirement insurance to estimate the contribution burden placed on working youth to support the elderly. However, using the old-age dependency ratio suffers from two flaws: first, it overlooks the decline in the child dependency ratio accompanying population aging, which lowers the total dependency ratio for many years; second, it is a coarse rate because it does not reflect the actual status of working elderly individuals who are incorrectly counted among the dependents"(Al – Zoubi, 2013, p. 126).

2.3 Rising Healthcare Costs

This is one of the most prominent challenges facing the Algerian health system, driven by several interconnected factors:

- **Chronic and Multi-causal Diseases:** With age comes an increased likelihood of chronic conditions (diabetes, hypertension, heart disease, osteoporosis, and memory disorders), requiring continuous monitoring, multiple medications, and specialized treatment.
- **Duration of Treatment and Care:** The elderly often require long-term care, whether in hospitals or at home, including nursing follow-up, physical therapy, and mental health support.
- **Shortage of Medical Specializations:** The lack of sufficient specialization in geriatrics leads to reliance on general practitioners, which may increase costs due to misdiagnosis or inappropriate treatment.
- **High Prices of Medications and Supplies:** Increased costs for long-term medications and medical devices (monitoring devices, mobility aids) directly impact families and state budgets.
- **Home and Nursing Care:** Additional costs emerge for nursing staff, transportation, and home medical equipment.
- **Socio-economic Challenges:** Rising costs often clash with limited insurance coverage, leading to delayed treatment and complicated health conditions.

3) Institutional Adaptation to Population Aging

3.1 Concept of Institutional Adaptation

"It is the organizational capacity of institutions to modify their structure, functions, policies, and working mechanisms to align with internal and external transformations—economic, social, demographic, or environmental. This concept is not limited to emergency response but includes proactive planning and continuous renewal to ensure performance sustainability and long-term goal achievement" (Amer, 2010).

To understand institutional adaptation more broadly, we address its dimensions:

- **Structural Dimension:** Reorganizing administrative hierarchies and creating specialized units (e.g., a geriatrics department).
- **Functional Dimension:** Modifying services to meet new needs (e.g., introducing home healthcare).
- **Strategic Dimension:** Adopting a long-term vision to anticipate risks and opportunities.
- **Human and Cultural Dimension:** Developing competencies and fostering a culture of innovation and flexibility.

❖ **Operational and Technical Dimension:** Utilizing technology and modern management tools (e.g., health information systems).

❖ **Social and Community Dimension:** Responding to societal shifts and involving civil society in policy formulation.

3.2 Areas of Institutional Adaptation

A) **Social Protection:** This evolved from disaster assistance to the "Social Protection Floor" initiative (UN, 2009). Types include:

- **Social Assistance:** Resource transfers to vulnerable individuals.
- **Social Insurance:** Contributory schemes (e.g., health or unemployment insurance).
- **Labor Market Interventions:** Programs like minimum wage and job placement for the poor.
- **Informal/Community-Based Protection:** Financial aid, food assistance, and fee exemptions for health and education.

B) **Pension Policies:** European countries and the ILO (Conventions 102 and 128) consider retirement a human right and a core component of social security.

C) **Social Integration Programs:** Ensuring the elderly are not marginalized through free medical visits, specialized clubs, nursing homes, and adequate pensions.

D) **Health Policies:** In Algeria, health policy has become a strategic element for maintaining quality of life. Goals include:

a) **Facility Adaptation:** Equipping centers and training staff on chronic geriatric diseases.

b) **Primary and Preventive Care:** Early detection and nutrition programs to reduce hospital burdens.

c) **Family-Institutional Integration:** Supporting home care to complement traditional family efforts.

d) **Health Technology:** Using telemedicine and remote monitoring to facilitate home follow-up.

Despite these efforts, challenges remain—such as resource limitations and geographical disparities in service distribution—requiring more integrated policy designs between the state, institutions, and the family.

3.3 International Experiences in Aging Management:

Many countries have moved toward adopting policies aimed at promoting what is known as "Active Aging," a concept advocated by the World Health Organization (WHO). This policy aims to improve the quality of life for the elderly by enhancing their participation in economic and social life.

In conclusion, it is evident that the phenomenon of population aging represents an increasing challenge for developing countries, especially in light of limited resources and weak social protection systems. Therefore, institutional adaptation to these demographic shifts has become an urgent necessity to ensure the needs of the elderly are met and to achieve socio-economic balance.

IV. Institutional Adaptation to Population Aging in Algeria

With the increasing manifestations of population aging in Algeria resulting from the demographic transitions the society has undergone in recent decades, the issue of institutional adaptation to the needs of the elderly has become a matter of growing importance. This requires the development of social, economic, and health policies capable of responding to the requirements of this group and ensuring their integration into society. Accordingly, we will analyze the institutional framework and public policies directed toward Algeria's elderly and evaluate their capacity to confront aging challenges.

I. The Legal and Institutional Framework for Elderly Care in Algeria

1.1 The Legal Framework for Aging Protection in Algeria:

Algeria has paid significant and increasing attention to aging through a set of legislations aimed at guaranteeing social protection and healthcare for this group. Among the

most important legal texts in this field is the Law on the Protection and Promotion of Elderly Persons, which aims to strengthen the rights of seniors and ensure their social and medical care.

1.2 Institutions Tasked with Aging Care:

Several institutions are responsible for implementing policies related to aging protection, including:

- Ministry of Social Solidarity.
- Social Care Institutions.
- Elderly Care Centers (Nursing Homes).
- Charitable Associations and Civil Society Organizations.

These institutions work to provide social and health services for the benefit of the elderly, especially those who lack financial resources or family support.

3.3 The Role of the Social Protection System:

Social protection systems play a pivotal role in supporting the elderly, particularly through the pension system and health coverage, which are overseen by two primary institutions:

A) **The National Pension Fund (CNR):** Defined as a "public body concerned with managing the retirement system by collecting contributions and paying out retirement pensions to workers after reaching the retirement age" (Baali, 2015, p. 112).

- The CNR is a cornerstone of the social protection system in Algeria, managing pensions for salaried workers following their professional careers. It was established within the social system organization to guarantee an alternative income for workers upon retirement or in cases of disability.
- **Tasks:** Its primary tasks include disbursing retirement pensions to salaried workers, managing retirement rights (old age, disability, survivors' benefits), and ensuring income continuity after work cessation.
- **Importance in Aging:** It serves as a fundamental tool for confronting economic aging risks but faces challenges related to the rising number of retirees compared to the shrinking number of contributors.

B) **The National Social Insurance Fund (CNAS):** Defined as a "public body responsible for managing the social insurance system for workers, such as insurance for sickness, maternity, disability, and work accidents" (Boudiaf, 2017, p. 85).

- The CNAS is the body tasked with managing social insurance for salaried workers, particularly regarding health coverage and social compensation.
- **Tasks:** Its primary tasks include reimbursing the costs of treatment and healthcare, providing compensation for illness, maternity, and work accidents, and ensuring health coverage for the insured and their dependents.
- **Importance in Aging:** It plays a central role in the medical care of the elderly and contributes to alleviating the financial burdens associated with chronic diseases.

II. Evaluating the Effectiveness of Institutional Adaptation in Algeria

2.1 The Pension System

The pension system is one of the most critical social protection mechanisms for the elderly, ensuring a source of income after retirement. However, despite the pivotal role played by the National Pension Fund (CNR) and the National Social Insurance Fund (CNAS) in supporting institutional adaptation, this system faces a series of structural challenges:

- **Demographic Imbalance:** The system is trending toward a decline in the ratio of contributors to beneficiaries due to accelerated aging and lower fertility rates. This places immense pressure on financial balances, particularly for the CNR, which relies on a redistribution (pay-as-you-go) system.
- **Fragility of the Funding Base:** The expansion of the informal economy leads to weak social contributions and shrinking resources. This is a major obstacle to financial sustainability amidst rising expenditures for pensions and healthcare.

- **Epidemiological Transition:** The shift from infectious diseases to chronic illnesses has increased the demand for long-term services, posing an additional burden on the CNAS, especially given the limited mechanisms for specialized geriatric care.
- **Governance and Management Deficiencies:** Bureaucracy, weak digitalization, and delays in updating databases affect the efficiency of service delivery and the speed of response to beneficiaries' needs.
- **Lack of Proactive Vision:** Interventions remain largely curative and situational rather than adopting a proactive approach based on long-term planning and the promotion of "Active Aging."

2.2. Healthcare for the Elderly in Algeria

Healthcare for the elderly in Algeria faces challenges linked to high demand, particularly regarding chronic age-related diseases. These include: "hearing impairment, visual impairment, osteoporosis, memory loss, heart disease, Alzheimer's, Parkinson's, and senile dementia" (Bacha, 2017, p. 210).

Despite current efforts, geriatric care still encounters obstacles:

- Weak medical specialization in geriatrics.
- Shortage of specialized facilities.
- Limited preventive programs.
- High cost of treatment for groups not covered by social security.

Consequently, there is an urgent need to develop a health policy based on promoting geriatrics, enhancing preventive care, expanding home care services, and intensifying specialized medical training.

2.3 The Role of the Algerian Family in Elderly Care

The Algerian family plays a central role in caring for the elderly, acting as the primary framework for material, psychological, and moral support, rooted in cultural and religious values of filial piety and respect. Historically, the extended family relied on solidarity among its members to meet the daily needs of the elderly.

However, modern social transformations have challenged this traditional role:

- **The Shift from Extended to Nuclear Families:** Smaller households have fewer members to provide care.
- **Women Entering the Workforce:** Reduced availability for direct at-home caregiving.
- **Migration of Children:** Leaving the elderly geographically isolated.
- **Rising Costs of Living:** Making specialized healthcare a heavy financial burden for the family unit.

A critical reading of the situation shows that near-total reliance on the family is becoming unsustainable. Therefore, a participatory care model must be developed, integrating the efforts of the family, the state, and civil society. This includes providing financial and moral support, health training for family members, and investing in technology to facilitate remote monitoring of the elderly.

In conclusion, while the Algerian family remains the cornerstone of elderly care, ensuring the dignity and quality of life for seniors requires a genuine integration of all stakeholders.

III. Future Horizons for Developing Institutional Adaptation to Aging in Algeria

3.1 Strengthening Active Aging Policies

Promoting active aging policies in Algeria represents one of the major challenges imposed by demographic and social transformations. As Algerian society undergoes a gradual transition toward a higher proportion of elderly citizens, it is necessary to rethink the nature of policies directed at this demographic. Aging is no longer reduced to a biological dimension of health decline; rather, it has become a stage that can be invested in developmentally by empowering the elderly to continue performing their social and economic roles.

In this context, it is vital to adopt a comprehensive approach based on three interconnected dimensions:

- **Health Promotion:** Through prevention and continuous care.
- **Support for Participation:** By integrating the elderly into community activities and volunteer work.
- **Ensuring Social Security:** Through effective and sustainable protection systems.

This requires moving beyond the traditional approach based solely on care and dependency toward empowering policies that focus on independence and improving quality of life, especially given the shifts in the Algerian family structure. Achieving active aging requires a change in societal perception—viewing the elderly as a latent energy source and a reservoir of experience that can support development and enhance intergenerational solidarity.

3.2. Developing Specialized Healthcare Services

Healthcare services for the elderly in Algeria have seen qualitative shifts driven by rising life expectancy and the prevalence of chronic diseases (heart disease, diabetes, hypertension). Initially, health policy focused on expanding coverage and ensuring free treatment in public institutions. However, epidemiological shifts have necessitated a redirection toward improving the quality of care and adapting it to the complex needs of the elderly.

In this framework, several key areas for development have emerged:

- **Geriatrics as a Specialty:** The importance of developing geriatrics as an independent medical specialty is rising. While still in the early stages in Algeria, university hospitals are gradually integrating specialized training for doctors to improve diagnosis and follow-up mechanisms.
- **Multidisciplinary Teams:** Adopting teams that include doctors, psychologists, and social workers ensures integrated care that goes beyond narrow clinical treatment.
- **Home and Long-Term Care:** Services are expanding beyond hospital walls to include home-based care, particularly for those who have lost their independence. However, these services still face challenges regarding geographical distribution and organization between urban and rural areas.
- **Preventive Health Programs:** Shifting from a curative logic to a preventive one through awareness campaigns focused on balanced nutrition, physical activity, and early detection of chronic diseases.

Despite these efforts, the system faces structural challenges, including a shortage of specialized geriatric cadres, weak infrastructure tailored to the elderly, and limited financial resources. Developing these services requires a strategic vision that effectively integrates geriatrics into the national health system, intensifies specialized training, and improves coordination among various actors to transform the demographic challenge into a sustainable developmental opportunity.

3.3 Supporting the Role of Civil Society:

Supporting the role of civil society in elderly care and the promotion of active aging in Algeria is a fundamental pillar for complementing state efforts and achieving comprehensive care for the elderly, especially given the social transformations affecting family structures and the decline of traditional caregiving capacities. Civil society, through its various components such as associations and non-governmental organizations (NGOs), possesses significant field flexibility and the ability to reach vulnerable groups, making it a pivotal actor in providing complementary social and health services.

This role is manifested through organizing social and cultural activities for the benefit of the elderly, which helps break isolation and enhance social inclusion, alongside launching home-based care initiatives for those who have lost their independence. Furthermore, civil society plays an important role in spreading health awareness through campaigns on chronic

disease prevention, proper nutrition, and physical activity, thereby supporting active aging trends.

On the other hand, civil society contributes to defending the rights of the elderly and advocating for the improvement of public policies directed at them by conveying their concerns to decision-makers and proposing innovative solutions suited to local contexts. It can also serve as a space for promoting intergenerational solidarity through volunteer programs that bring youth and seniors together, strengthening social bonds and facilitating the transfer of expertise and values. Despite these vital roles, civil society in Algeria faces several challenges, including limited financial resources, weak professional training and formation, and a lack of coordination with official institutions, which reduces the effectiveness of its intervention. Therefore, activating the role of civil society requires support through funding, strengthening partnerships with the public sector, and building organizational capacities to allow it to be a true partner in achieving a dignified, active, and sustainable aging process in Algeria.

It is noteworthy in this regard that Algeria has begun developing a set of policies and institutions directed toward elderly care; however, the acceleration of demographic shifts imposes new challenges that require enhancing the institutional capacity for adaptation to the requirements of population aging. This necessitates the adoption of comprehensive and advanced policies based on improving social life systems, developing health services, and reinforcing the community's role in supporting aging.

IV. Testing Institutional Adaptation to Aging in Algeria with Study Hypotheses and Results:

Despite the efforts made by Algeria in the field of elderly protection through the development of the legal framework and the expansion of social protection systems, institutional adaptation to the phenomenon of population aging still faces a set of challenges.

- We observe that policies directed at aging still focus primarily on providing social support and financial aid, while attention remains limited regarding policies that seek to promote the participation of the elderly in social and economic life. This orientation leads to dealing with aging as a social and familial burden rather than viewing it as a stage of demographic transition that all nations undergo.
- Although there is a social protection system that includes pensions and health coverage, this system faces increasing pressures as a result of demographic changes that have led to a rise in the number of retirees.
- Healthcare services directed toward the elderly suffer from some deficiencies, particularly regarding geriatric medicine and specialized infrastructure for seniors.
- The social system in Algeria relies heavily on the role of the family in elderly care, reflecting the strength of social ties within Algerian society. However, these ties are vulnerable to the risk of rapid social changes that may lead to a decline in the family's capacity to perform this role, necessitating the reinforcement of the role of social institutions.

Finally, it can be concluded that institutional adaptation to aging in Algeria is still in its initial stage, as public authorities have begun to realize the importance of this phenomenon; however, the institutional response requires further development through the adoption of comprehensive policies based on promoting the concept of Active Aging.

V. Conclusion

This study concludes that the phenomenon of population aging has become one of the prominent demographic transformations witnessed by many contemporary societies. It is no longer confined solely to developed nations but has begun to appear increasingly in developing countries as a result of improvements in health indicators, declining fertility rates due to population policies, and falling mortality rates thanks to health strategies. In this

context, Algeria has experienced significant demographic shifts over recent decades, reflected in a changing population structure and a gradual rise in the aging ratio.

The analysis of the demographic transition trajectory in Algeria demonstrated that the noticeable decline in fertility rates and the rise in life expectancy have effectively contributed to the emergence of population aging features. This indicates that Algerian society is on the verge of new demographic and social transformations in the coming decades.

Furthermore, the study showed that these shifts impose an urgent necessity for social and economic institutions to achieve institutional adaptation for this growing segment of the population. The analysis of the institutional framework in Algeria clarified that the state has made efforts in the field of elderly protection by developing legislation and strengthening social protection systems—particularly regarding the pension system and health coverage overseen by institutions such as the National Pension Fund (CNR) and the National Social Insurance Fund (CNAS).

However, these efforts continue to face several challenges related to the increasing number of retirees and rising healthcare costs, in addition to social transformations that may affect the family's role in elderly care. Consequently, it can be said that institutional adaptation to the phenomenon of population aging in Algeria is still in a developmental stage, necessitating the adoption of more comprehensive and effective policies that take into account various future demographic shifts.

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