

Algerian Women in the Context of Demographic Transition: A Socio-Demographic Approach to the Challenges of Sustainable Development

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Abstract

Over the past decades, Algeria has undergone profound demographic and social transformations that have reshaped the status and roles of women within society, particularly in education, employment, economic participation and scientific research. The demographic transition has been accompanied by marked improvements in school enrolment indicators, rising levels of academic qualification and declining fertility rates, together with an expanding female presence in higher education and the civil service. These developments have made women a key actor in the formation of human capital and in supporting pathways to sustainable development.

This study aims to analyse the situation of Algerian women in the context of demographic transition and to explore the implications of these transformations for their developmental roles, through a socio-demographic approach that combines demographic analysis with sociological interpretation. It also seeks to highlight the principal gains achieved by Algerian women and to identify the challenges that continue to limit the use of their human potential in achieving sustainable development, particularly in the areas of economic participation, decision-making, scientific research and innovation.

The study adopts a descriptive-analytical method, drawing on national and international data and statistics issued by the National Office of Statistics, the Ministry of Higher Education and Scientific Research, the United Nations Development Programme, the World Bank and UN Women, together with recent relevant scholarly literature.

The study concludes that the demographic transition experienced by Algeria has strengthened women's educational and cognitive standing. However, converting this human endowment into a productive force for development still requires more integrated policies in the fields of economic empowerment, equality of opportunity, support for scientific research, and the promotion of women's participation in leadership and decision-making positions, in line with the Sustainable Development Goals and Algeria's vision for the future.

Keywords: Algerian women; demographic transition; sustainable development; empowerment; socio-demography.

Resumen

Durante las últimas décadas, Argelia ha experimentado profundas transformaciones demográficas y sociales que han reconfigurado la posición y los roles de las mujeres en la sociedad, especialmente en los ámbitos de la educación, el empleo, la participación económica y la investigación científica. La transición demográfica ha venido acompañada de mejoras significativas en los indicadores de escolarización, un aumento de los niveles de cualificación académica y un descenso de las tasas de fecundidad, junto con una creciente presencia femenina en la educación superior y la administración pública. Estos avances han convertido a las mujeres en un actor clave en la formación de capital humano y en el impulso de las vías hacia el desarrollo sostenible.

El presente estudio tiene como objetivo analizar la situación de las mujeres argelinas en el contexto de la transición demográfica y explorar las implicaciones de estas transformaciones para su contribución al desarrollo, mediante un enfoque sociodemográfico que combina el análisis demográfico con la interpretación sociológica. Asimismo, busca destacar los principales logros alcanzados por las mujeres argelinas e identificar los desafíos que siguen limitando el aprovechamiento de su potencial humano para alcanzar el desarrollo sostenible, particularmente en los ámbitos de la participación económica, la toma de decisiones, la investigación científica y la innovación.

La investigación adopta un método descriptivo-analítico, basado en datos y estadísticas nacionales e internacionales publicados por la Oficina Nacional de Estadística, el Ministerio de Educación Superior e Investigación Científica, el Programa de las Naciones Unidas para el Desarrollo, el Banco Mundial y ONU Mujeres, así como en la literatura académica reciente pertinente.

El estudio concluye que la transición demográfica experimentada por Argelia ha fortalecido la posición de las mujeres en los ámbitos educativo y del conocimiento. Sin embargo, transformar este capital humano en una fuerza productiva para el desarrollo sigue requiriendo políticas más integradas de empoderamiento económico, igualdad de oportunidades, apoyo a la investigación científica y promoción de la participación de las mujeres en puestos de liderazgo y toma de decisiones, en consonancia con los Objetivos de Desarrollo Sostenible y la visión de futuro de Argelia.

Palabras clave: Mujeres argelinas; transición demográfica; desarrollo sostenible; empoderamiento; sociodemografía.

Introduction

Women occupy a central position in the process of development as a fundamental human resource and an active element in building societies and achieving economic and social progress. Contemporary societies, Algerian society among them, have undergone profound demographic and social transformations that have affected women's circumstances, their roles and the areas in which they contribute to public life. Thanks to the expansion of education, improved health services and the development of legislation supporting women's rights, women's academic and social qualifications have risen, and they have become more visible across the various professional and institutional sectors.

In Algeria, women make up nearly half of the population, which gives them considerable demographic weight and makes them an essential partner in achieving national development. This numerical weight, however, is not always matched by an equivalent level of economic participation and representation in decision-making positions. This raises questions about the extent to which society is able to convert women's demographic endowment into productive and effective developmental energy, particularly in the light of current social, cultural and economic transformations.

Accordingly, the central problem of this paper revolves around the following main question:

To what extent has the demographic weight of Algerian women, in the context of current social transformations, strengthened their contribution to national development?

Several sub-questions follow from this main question:

- What are the most significant demographic indicators reflecting the numerical weight of Algerian women?
- What are the most important social transformations that women's situation has undergone in recent decades?
- How has the contribution of Algerian women manifested itself in the various fields of development?
- What challenges continue to limit the full use of women's developmental potential?

To answer these questions, the paper adopts the descriptive method, as the most suitable for studying demographic and social phenomena, by describing and analysing the statistical indicators and the demographic and social data relating to Algerian women and by drawing on national and international reports and relevant scholarly studies. A socio-demographic approach is also employed in order to link demographic variables to social transformations and to their effect on development.

The paper seeks to highlight the relationship between the demographic weight of Algerian women and their developmental effectiveness, and to identify the opportunities and challenges presented by current social transformations, thereby enriching the scholarly debate on the mechanisms for strengthening women's role in achieving sustainable development.

1. The Demographic Development of Algerian Women

Table 1: Number of females and their share of the total population

Demographic indicator	Value
Population of Algeria (2024)	46.7 million
Share of females	49.4%
Share of males	50.6%
Annual population increase	703,000
Natural growth rate	1.52%

Source: National Office of Statistics (ONS), 2024.

The table shows that women represent nearly half of the population, which makes them a fundamental human resource in the development process. It follows that women's demographic weight is measured not only by their numerical size but by their capacity to become a productive force that influences economic and social development.

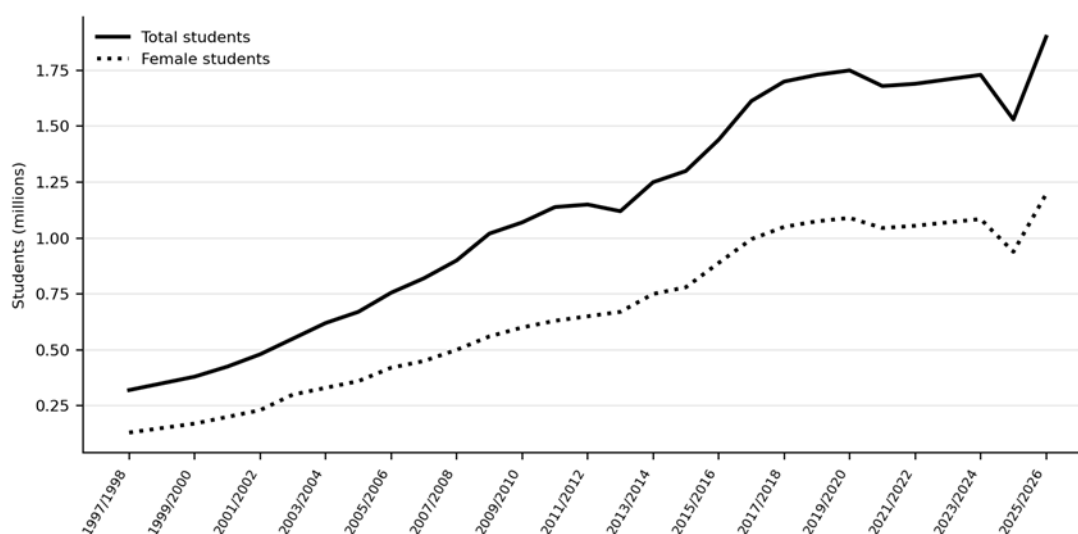
2. Social Transformations and Their Effect on the Status of Women

2.1. Algerian Women, Education and Scientific Research

Algeria is among the Arab countries that have made considerable progress in women's education and academic empowerment, especially since the expansion of the educational base after independence and the adoption of free education. This is clearly reflected in the rising rates of girls' school enrolment and their entry into higher education and scientific research. The educational policies pursued have entrenched the principle of equal opportunities between the sexes, so that Algerian women have a strong presence within universities and scientific research institutions.

Statistics of the Algerian Ministry of Higher Education and Scientific Research for the 2024-2025 academic year indicate that about 1.53 million students were enrolled in higher education institutions, of whom 938,000 were female, or roughly 63% of all students, compared with only 37% male. This reflects the numerical predominance of women within the Algerian university.

Figure 1: Evolution of the number of students in higher education in Algeria by sex (1997-2026)



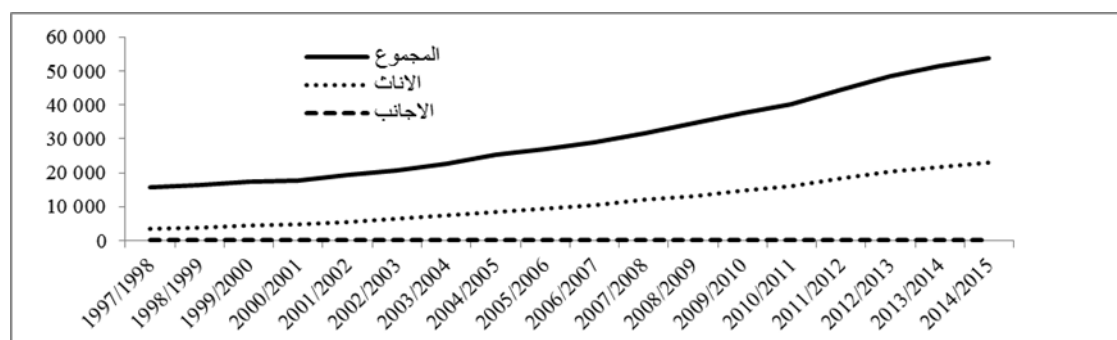
Source: Prepared by the researcher on the basis of data from the Algerian Ministry of Higher Education and Scientific Research, 2025.

The graph shows the evolution of the total number of students and of female students from the 1997/1998 academic year to 2025/2026, revealing a clearly upward trend in both indicators and reflecting the continuous expansion of the education system and growing enrolment in educational institutions. The total number of students rose from about 320,000 at the beginning of the period to nearly 1.9 million at its end, while the number of female students rose from about 130,000 to some 1.2 million over the same period. The data indicate that the growth rate of female enrolment was faster than that of total enrolment, which increased women's relative weight within the Algerian university and moved them from a relatively under-represented category to one that forms the majority in many disciplines and university institutions. It may also be observed that the period between 2005/2006 and 2017/2018 saw high growth rates, interspersed with some periods of slowdown and relative stability, particularly between 2019/2020 and 2023/2024. Although a marked decline was recorded in 2024/2025, both indicators rose sharply again in 2025/2026, reaching the highest values in the series.

This development does not reflect a mere numerical increase in the number of female students; it is an important demographic and social indicator of the transformations in the status of Algerian women in recent decades. Rising enrolment in higher education indicates the growth of women's human capital and a broader base of academically and professionally qualified women, which strengthens their capacity to contribute to the various fields of economic and social development.

2.2. Educational Expansion, the Growing Contribution of Women and Indicators of Gender Equality

Figure 2: Evolution of the number of teachers in higher education and scientific research in Algeria



Source: Prepared by the researcher on the basis of data from the Algerian Ministry of Higher Education and Scientific Research, 2025. (Original figure reproduced; legend, from top to bottom: Total; Females; Foreigners.)

The curve of the number of teachers by sex highlights the changes that human resources in Algerian higher education have undergone. The number of permanent teachers has risen continuously, as a result of the expansion of the university system and growing demand for pedagogical and research supervision. The curve also shows women's increasing contribution to the higher education profession: the number of female teachers has risen at an accelerating pace compared with earlier periods, reflecting continuing improvement in women's access to academic and research careers. Although men remain numerically predominant in certain ranks or disciplines at particular stages, the gender gap has narrowed gradually over time. This development is explained by the policies adopted to expand university recruitment and by the growing number of women graduates holding master's and doctoral degrees, which has strengthened women's presence within the teaching body. The curve thus reflects not only the quantitative growth in the number of teachers but also the social and institutional transformations associated with promoting gender equality within the Algerian university.

In the field of scientific research, the presence of Algerian women in universities and research centres has developed markedly: the number of female teachers and researchers has risen compared with previous decades, and women now participate actively in scientific research projects, academic publication and university training. Official statistics also indicate that more than 42,000 people are affiliated with scientific research laboratories in Algeria, within a research network comprising 1,851 laboratories and 32 research centres.

Despite this progress, Algerian women still face a set of challenges related to insufficient funding for scientific research, difficulty in integrating into international research networks, and limited access to senior leadership positions within university and research institutions. Other challenges include the gap between university training and labour-market requirements and the weakness of the innovation environment that supports scientific research. Many academic and public debates have voiced criticism of the Algerian university with regard to curricula, applied research and the linkage between the university and economic development.

Nevertheless, the Algerian experience remains one of the important Arab experiences in supporting women's education, especially given women's numerical predominance in universities and the higher rates of women's enrolment in higher education compared with a number of developing countries. This makes investment in women's scientific and cognitive competencies a strategic wager for promoting human development and building a knowledge society in Algeria and the Arab world.

3. Women's Contribution to Development

Education is one of the most important basic indicators of human development, since it contributes to developing individuals' capacities, improving quality of life and raising the level of social and economic participation. Women's education is of twofold importance, as women are an active element in raising generations, achieving social stability and promoting economic development. Reports of the United Nations Development Programme have confirmed that a higher level of women's education has a positive effect on indicators of health, income and social awareness, and also contributes to reducing poverty and unemployment and strengthening economic and political participation.

Table 2: Socio-demographic variables of Algerian women

Socio-demographic variable	Statistical indicator	Value
Population structure	Women as a share of the total population	49.4%
Higher education	Female share of higher education students	61.4%
Higher education	Gross enrolment ratio of females in higher education	66.1%
Education and illiteracy	Literacy rate among young women (aged 15-24)	98%
Scientific training	Female share of university teaching staff	47.3%
Social integration	Female life expectancy	79 years
Economic activity	Female labour-force participation rate	14%
Education	Female enrolment rate in basic education	More than 95%

Source: Prepared by the researcher on the basis of data from the National Office of Statistics, the Ministry of Higher Education and Scientific Research, the World Bank and human development reports.

The table shows that Algerian women make up nearly half of society, which gives them considerable demographic weight. They have also made marked progress in education: they now form the majority of students in higher education institutions, and literacy rates among young women have reached levels approaching the eradication of illiteracy. The high proportion of women among university teaching staff reflects women's transformation from consumers of knowledge into producers of it. Despite these gains, women's economic participation remains below the level of their educational qualifications, which highlights a gap between the available female human endowment and the degree to which it is employed in the development process. The fundamental challenge therefore lies not in the size of the female

population but in converting this demographic weight into developmental effectiveness that contributes to achieving sustainable development.

4. Findings of the Study

The socio-demographic analysis of the situation of Algerian women under demographic transition produced a number of principal findings, which may be summarized as follows:

- The study showed that the demographic transition in Algeria has helped to reshape women's social status. Rising levels of education, declining fertility, increasing life expectancy and expanding urbanization moved women from traditional roles to more effective developmental roles in education, the economy, administration and scientific research.
- Women have become the main component of university human capital in Algeria, making up about 63% of all higher education students. This indicator reflects the success of policies of universal education and equal opportunity and confirms that public investment in women's education has created a qualified human base able to contribute to national development.
- The study revealed a gap between educational empowerment and economic empowerment. Despite women's numerical and qualitative superiority in higher education, their rates of economic participation and their representation in some positions of responsibility and decision-making remain below their level of academic qualification. This means that the developmental return on investment in women's education has not yet reached its optimal level.
- It became clear that demographic transition alone is not sufficient to achieve sustainable development unless it is accompanied by an institutional and economic transformation capable of absorbing female talent and directing it toward the sectors of production, innovation, entrepreneurship and the digital economy.
- The study confirmed that women's education is one of the most important determinants of improved human development indicators: it is associated with better health, lower child mortality, improved education of subsequent generations, higher productivity and stronger civic participation. These results are consistent with the international literature and with the reports of the United Nations Development Programme and the World Bank.
- The study showed that Algeria possesses an important demographic opportunity (the demographic dividend), represented by a rising share of the working-age population and a broad base of university-qualified women. Benefiting from this opportunity, however, requires effective policies to raise women's economic activity rates and improve the quality of employment.
- The study concluded that investment in women yields a multiplier effect compared with investment in other sectors, given its simultaneous effects on the family, education, health, productivity, innovation and social cohesion. This makes women's empowerment a developmental choice and an investment in human capital, not merely a social policy.

- The study showed that social and cultural transformations in Algeria have reshaped women's aspirations and career paths, but that certain cultural and organizational obstacles still limit the full use of female talent, particularly in scientific research, leadership and entrepreneurship.
- The study found that the achievement of the Sustainable Development Goals in Algeria remains tied to the capacity of public policy to move from the logic of universalizing education to the logic of putting knowledge to use, by linking the university to the economy, encouraging innovation and turning female talent into a force that produces knowledge and wealth.
- In light of these findings, the study affirms that Algerian women are no longer merely a demographic variable within the population structure but a strategic actor in the production of human capital, and that investment in their education and in their scientific and economic empowerment is one of the most important determinants of the national economy's competitiveness in the coming decades.

Conclusion

This study has concluded that the demographic transition Algeria has experienced in recent decades has not been confined to changes in population indicators; it has also produced profound transformations in the social structure and in women's roles within the family, society and the labour market. Algerian women have moved from a position of limited participation in public life to become a principal actor in building human capital, benefiting from the considerable expansion of opportunities for education and training and from the equal-opportunity policies pursued by the state since independence.

The statistical indicators confirm this transformation: women today account for about 63% of all higher education students in Algeria, which reflects a numerical and qualitative superiority in university training. Algerian universities also host more than 1.53 million students, of whom nearly 939,000 are women, spread across the various scientific and humanistic disciplines, together with more than 50,000 doctoral students, within a system comprising 117 higher education institutions, 32 scientific research centres and 1,851 research laboratories. These figures reflect the scale of the human endowment Algeria possesses, which could form a strategic basis for building a knowledge economy if properly invested.

At the same time, the study reveals that this quantitative progress is not always matched by comparable progress in indicators of economic participation, scientific output and representation in leadership and decision-making positions. Women's economic activity rates remain below their educational potential, and their presence in senior leadership and research posts remains below the level that university training indicators would suggest. This highlights a gap between the outputs of education and the mechanisms for investing female human capital in development pathways.

From a socio-demographic perspective, the demographic transition Algeria has undergone, marked by declining fertility, rising life expectancy, improved educational levels and increasing urbanization, has created a more favourable environment for expanding women's participation in development. The success of this transition, however, depends on the capacity of public policy to convert educational gains

into economic productivity, scientific innovation, entrepreneurship and effective participation in shaping public policy.

The significance of these findings extends beyond the national framework, aligning with the Sustainable Development Goals, in particular Goal 4 on quality education, Goal 5 on gender equality, Goal 8 on decent work and economic growth, Goal 9 on innovation and Goal 17 on building partnerships. These goals confirm that women's empowerment is not merely a social issue but a pillar of comprehensive and sustainable development.

Accordingly, the real challenge is no longer to ensure that Algerian women have access to education, a field in which Algeria has come a considerable way, but to maximize the developmental return on this human investment: by supporting scientific research, encouraging innovation and entrepreneurship, strengthening women's participation in the digital economy, and expanding their presence in leadership and decision-making positions. Every increase in the use made of women's competencies is a direct addition to national human capital and a lever for strengthening economic competitiveness and achieving more equitable and sustainable development.

In this light, it may be said that Algeria's development future will be determined not only by the size of its natural resources but by its capacity to mobilize its human resources, foremost among them female talent. Algerian women are no longer merely beneficiaries of development policies; they have become among the most important makers of them. This requires a shift from the logic of supporting women's participation to the logic of strategic investment in their scientific, cognitive and creative capacities, as one of the most important drivers of development in the twenty-first century.

This also lays the groundwork for future quantitative research that uses regression models or socio-demographic modelling to measure the real effect of variables such as women's education, fertility and economic participation on human development indicators in Algeria.

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