Scientific Research Publishing

Health, 2026, 18(7), 719-731
https://www.scirp.org/journal/health
ISSN Online: 1949-5005
ISSN Print: 1949-4998

Analysis of Fertility Trends by Socioeconomic Inequality, Educational Attainment, and Fertility Literacy in Benin: A Descriptive Study of the EDS and MICS Surveys (1996-2022)

Fousseni Seibou[1,2*], Charles Patrick Makoutode[1,2], Lamidhi Salami[1], Vignon Bedie[1], Virginie Mongbo[1]

[1]Regional Institute of Public Health Comlan Alfred Quenum (IRS-CAQ), University of Abomey-Calavi, Abomey-Calavi, Benin
[2]Institute of Nursing and Obstetric Training (IFSIO), University of Parakou, Parakou, Benin
Email: *fousseniseibou@gmail.com

How to cite this paper: Seibou, F., Makoutode, C.P., Salami, L., Bedie, V. and Mongbo, V. (2026) Analysis of Fertility Trends by Socioeconomic Inequality, Educational Attainment, and Fertility Literacy in Benin: A Descriptive Study of the EDS and MICS Surveys (1996-2022). *Health*, **18**, 719-731.
https://doi.org/10.4236/health.2026.187043

Received: June 8, 2026
Accepted: July 17, 2026
Published: July 20, 2026

Abstract

Background: In sub-Saharan Africa, rapid population growth poses a major challenge to sustainable development. Benin has high fertility that varies markedly across socioeconomic settings. This study analyzes fertility trends in Benin over three decades, examining differential variation by education, economic status, and fertility literacy, using data from the EDS and MICS surveys (1996-2022). **Methods:** This is a descriptive study based on a secondary analysis of the final reports of five Demographic and Health Surveys (EDS: 1996, 2001, 2006, 2011-2012, 2017-2018) and two Multiple Indicator Cluster Surveys (MICS: 2014, 2021-2022), validated by INSAE/INStaD. Estimates were taken directly from the tables published in these reports. Source selection followed the PRISMA-ScR protocol. **Results:** The Total Fertility Rate (TFR) declined from 6.0 children per woman in 1996 to 4.7 in 2021-2022, with a rebound to 5.7 between 2014 and 2018. Fertility remains higher in rural than urban areas (mean TFR: 6.0 vs. 4.7). Higher educational attainment is associated with lower fertility. Households in the poorest economic quintiles also show higher fertility levels. Improved fertility literacy and increased contraceptive use (16.9% in 2014 to 23.1% in 2021) are associated with the observed decline. **Conclusion:** Education, reproductive health literacy, and the reduction of socioeconomic inequalities are essential levers of the fertility transition in Benin. Their integration into public policy is essential to support sustainable demographic development.

Keywords

Fertility, Socioeconomic Inequalities, Educational Attainment, Fertility

Literacy, Benin

1. Introduction

Fertility control is a priority for many developing countries facing rapid population growth, particularly in sub-Saharan Africa, where it represents a major challenge to sustainable development [1] [2]. Factors such as women's educational attainment, access to family planning services, and sociocultural norms are associated with observed fertility levels [3]-[5]. Failure to manage these dynamics places pressure on resources and social services, hindering poverty reduction amid growing environmental instability [6]-[8]. In Benin, efforts to manage fertility date back to the 1994 ICPD Programme of Action, which shaped reproductive health and gender equality policies aimed not at systematically reducing birth rates, but at keeping them at a level compatible with available resources [9]. However, these interventions remain limited by a lack of coordination and poor adaptation to local realities [10].

Girls' education appears strongly associated with fertility behavior: higher educational attainment is linked to delayed age at marriage and a lower number of children per woman [11] [12]. In Benin, higher fertility levels are associated with areas that have low school enrollment rates and pronounced gender inequality. In these settings, often rural, sociocultural norms that value large families, early marriage, and certain religious beliefs are associated with lower uptake of modern contraception [13]. This study analyzes fertility trends in Benin over the past thirty years by women's educational attainment and economic status, in order to better understand demographic dynamics and inform the country's economic planning.

2. Materials and Methods

2.1. Study Setting

The study was conducted in Benin, a West African country bordered by Niger and Burkina Faso to the north, Nigeria to the east, Togo to the west, and the Atlantic Ocean to the south. It has approximately 13 million inhabitants (INSAE, 2023) and is marked by pronounced socioeconomic and cultural diversity between urban and rural areas, with lower female school enrollment in rural areas and regional disparities influencing fertility behavior.

2.2. Study Design

This is a descriptive study based on a secondary analysis of nationally representative data. The data used were drawn from the five Demographic and Health Surveys (EDS) conducted since 1996 (1996, 2001, 2006, 2011-2012, and 2017-2018) as well as a combined EDS-MICS survey conducted in 2022. These surveys provide essential, detailed data on fertility, educational attainment, socioeconomic

status, and other relevant variables. EDS data are particularly valuable because of their richness and comparability over time. Particular attention was paid to collecting data on the socioeconomic and cultural determinants influencing women's fertility in the Borgou and Alibori departments.

2.3. Data Sources and Selection Criteria

- ✓ The data come from the following seven national surveys:
- ✓ EDS-I Benin 1996 (INSAE, summary report)
- ✓ EDS-II Benin 2001 (INSAE, full report)
- ✓ EDS-III Benin 2006 (INSAE, full report)
- ✓ EDS-IV Benin 2011-2012 (INSAE, full report)
- ✓ EDS-V Benin 2017-2018 (INSAE, summary report)
- ✓ MICS Benin 2014 (INSAE/UNICEF, report)
- ✓ MICS Benin 2021-2022 (INStaD/UNICEF, full report)

Excluded were published scientific articles, any unofficial secondary source, and any report not validated by INSAE or its technical partners (UNICEF, ICF International). No date or language restriction was applied beyond the study period (1996-2022).

2.4. Data Extraction and Harmonization

All estimates presented in this study—overall and subgroup TFR, age-specific fertility rates, and proportions by educational attainment or wealth quintile—were taken directly from the tables published in each survey's final report; none was recalculated from the EDS/MICS microdata files.

To ensure comparability across waves, indicators were retained according to a common definition and reference age range (women aged 15 - 49 years). However, residual methodological differences between the EDS and MICS protocols—particularly in questionnaires, classifications of educational attainment, and the construction of wealth quintiles—could not be statistically corrected in this analysis and constitute a limitation to the strict comparability of the results.

Mean urban and rural TFR values for the 1996-2022 period were calculated as simple, unweighted arithmetic means of the values reported across the seven survey waves, without weighting by each wave's sample size. The percentage gaps between rural and urban TFR presented in the Results were calculated survey by survey, and the observed range is reported.

2.5. PRISMA-ScR Selection Process

Source selection followed a structured two-step approach, documented in accordance with PRISMA-ScR recommendations. First, a preliminary review identified the seven surveys meeting the inclusion criteria. Second, an in-depth reading of each final report verified the availability and consistency of fertility indicators with the study objectives. All seven surveys were retained; none was excluded. Selection decisions were recorded in an Excel spreadsheet. A PRISMA-ScR flow diagram is presented in the Results section.

2.6. Data Analysis

The data underwent a comparative descriptive analysis to identify temporal trends and sociodemographic disparities over the study period. TFR was calculated using the formula TFR = ΣASFR, where ASFR denotes the age-specific fertility rates for each five-year age group (15 - 49 years). Metadata analyses and chart design were carried out using STATA.

2.7. Methodological Limitations

This study has several limitations that should be considered when interpreting the results. First, the analysis relies exclusively on published reports rather than individual-level microdata, which precludes statistical adjustment or control for confounding factors. Second, methodological differences between the EDS (ICF International) and MICS (UNICEF) surveys—particularly in sampling protocols, questionnaires, and the classification of educational attainment—may affect the comparability of indicators across waves. Third, no test of statistical significance was performed, so the trends and associations described have not been formally tested. Fourth, the lack of adjustment for confounding factors (urbanization, access to health services, national policies) precludes establishing causal relationships between the variables examined and fertility.

3. Results

3.1. PRISMA-ScR Flow Diagram

The source selection process followed a structured approach, as shown in Figure 1. In total, seven sources were identified and screened: the five EDS reports (1996, 2001, 2006, 2011-2012, 2017-2018) and the two MICS reports (2014, 2021-2022), all drawn from the official INSAE/INStaD databases. No duplicates were detected. No source was excluded following title, abstract, or full-text screening. All seven sources were therefore included in the analysis.

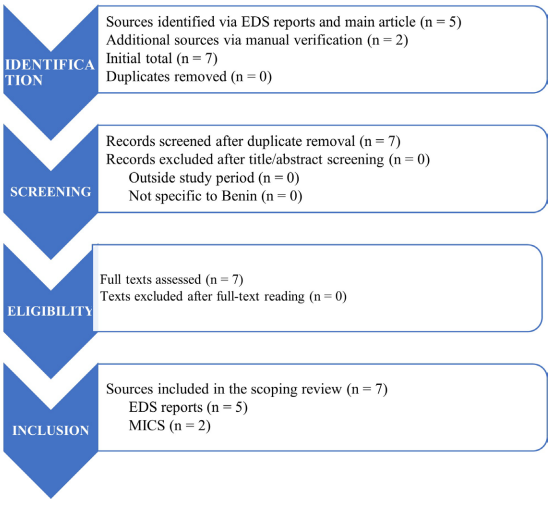

Figure 1. Source selection process (PRISMA-ScR). Source: Author, 2026.

3.2. Trends in Key Demographic and Socioeconomic Indicators (1996-2022)

The seven surveys are based on a two-stage stratified probability sampling method ensuring national representativeness. Data were collected through structured questionnaires administered face-to-face to women and men aged 15 - 49 years. Table 1 presents a comparative summary of the main fertility, education, residence, population, and employment indicators from the seven surveys.

Table 1. Trends in key indicators (EDS and MICS, Benin, 1996-2022).

Survey	Year	Overall TFR	Women with no education	Urban/Rural TFR	Total population	Female labor force participation
EDS-I (summary)	1996	6.0	75.1%	~4.7/~7.0	4.9 M (1992 census)	67% employed
EDS-II	2001	5.6	60%	N/A	~6.8 M	84% (women in union)
EDS-III	2006	5.7	60%	N/A	~8.5 M	67% employed
EDS-IV	2011–2012	4.9	55%	N/A	~10 M	67% employed
EDS-V (summary)	2017–2018	5.7	55%	N/A	~12 M	84% (women in union)
MICS	2014	5.7	52.8%	N/A	~10 M	N/A
MICS	2021–2022	4.7	45.9%	~3.8/~5.7	~13 M	N/A

Source: Author 2026, based on data from EDS (1996, 2001, 2006, 2011-2012, 2017-2018) and MICS (2014, 2021-2022).

3.3. Fertility Trends

Over the past thirty years, the TFR fell from 6.0 children per woman in 1996 to 4.7 in 2021-2022, reflecting an overall decline (Figure 2). Three phases stand out: a gradual decrease between 1996 and 2011-2012 (from 6.0 to 4.9), a rebound to 5.7 between 2014 and 2017-2018, and then a further decline to 4.7 in 2021-2022, the lowest level recorded in thirty years.

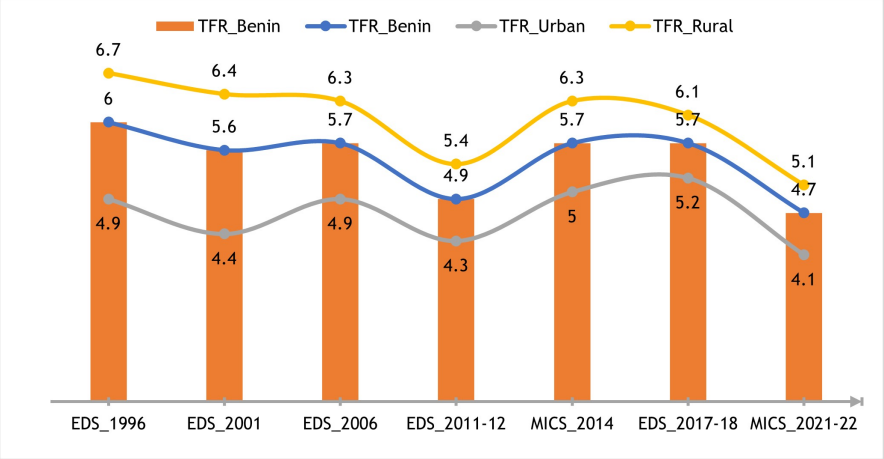

Figure 2. Trends in overall TFR and TFR by area of residence in Benin (1996-2022). Source: Author 2026, based on data from EDS (1996, 2001, 2006, 2011-2012, 2017-2018) and MICS (2014, 2021-2022).

Fertility is also associated with area of residence: rural areas have consistently recorded higher TFRs than urban areas since 1996. The relative gap between rural and urban TFR has ranged, depending on the survey, from 17.3% to 45.5%. Over the entire 1996-2022 period, the mean TFR is estimated at approximately 4.7 children per woman in urban areas versus approximately 6.0 in rural areas, an average gap of about 28% (these means correspond to simple, unweighted arithmetic averages of the values reported across the seven surveys, without weighting by each wave's sample size).

3.4. Fertility and Educational Attainment

Data from the seven surveys show a negative association between educational attainment and fertility: the lower the educational attainment, the higher the TFR tends to be (Figure 3). Over the study period, TFR ranges from a mean of 3.4 children per woman among those with upper-secondary education or higher to approximately 6.2 children among those with no education at all. Improved educational attainment and reduced educational inequality are associated with lower fertility and delayed first childbirth.

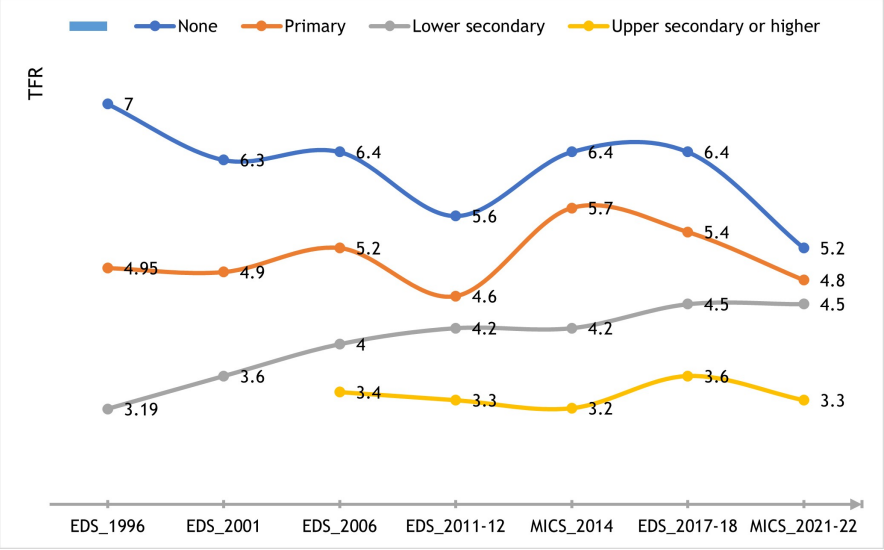

Figure 3. Fertility by educational attainment in Benin (1996-2022). Source: Author 2026, based on data from EDS (1996, 2001, 2006, 2011-2012, 2017-2018) and MICS (2014, 2021-2022).

Disparities nonetheless exist within educational levels: fertility remained relatively stable among women with primary education (4.95 in 1996 vs. 4.8 in 2021-2022) and among those with upper-secondary education (3.4 across the entire period). By contrast, an increase in TFR is observed among women with lower-secondary education (from 3.19 in 1996 to 4.5 in 2021-2022), a trend that appears to be associated with dropping out of school before obtaining the BEPC (lower-secondary school certificate). According to the 2021-2022 MICS, the birth rate ranges

from 16‰ among women with upper-secondary education or higher to 149‰ among adolescents with no education, illustrating the marked association between education and adolescent fertility. It should be noted that education is not associated with delayed sexual debut: the median age at first sexual intercourse remained stable between 1996 and 2017-2018 (17.6 years among women, 18.4 years among men).

3.5. Fertility and Socioeconomic Disparities

Economic conditions are associated with fertility at two levels: macroeconomic and microeconomic.

3.5.1. Economic Crises and Fertility: Observed Associations

Descriptively, periods of major macroeconomic shocks coincide with declines in TFR across all social classes (**Figure 4**). The 2008 global economic crisis coincides with a decline in TFR, from 5.7 in 2006 to 4.9 in 2011-2012. After a rebound to 5.7 between 2014 and 2018, the Covid-19 pandemic (2020-2021) coincides with a further decline to 4.7 in 2021-2022. These temporal associations are consistent with downward birth planning during periods of economic downturn, although the absence of multivariate analysis precludes establishing a direct causal link.

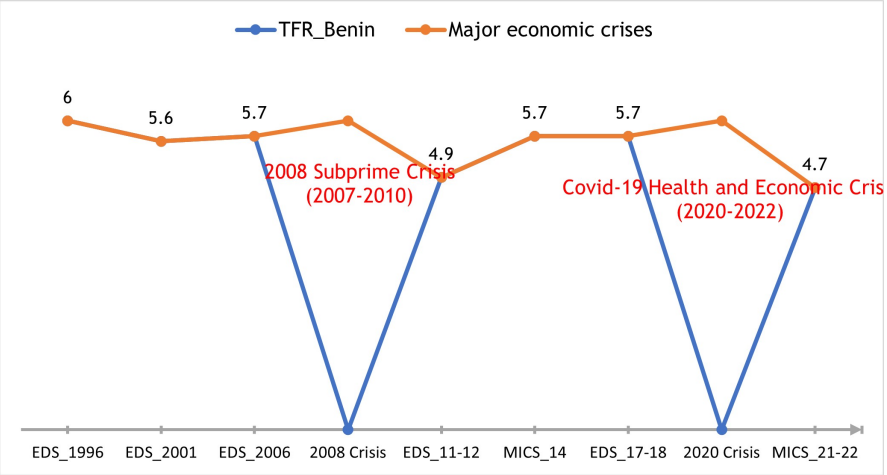

Figure 4. Trends in TFR and coincidence with recent economic shocks. Source: Author 2026, based on data from EDS (1996, 2001, 2006, 2011-2012, 2017-2018) and MICS (2014, 2021-2022).

3.5.2. Standard of Living and Fertility: A Microeconomic Approach

Fertility shows a negative association with wealth quintile: the lower the standard of living, the higher the TFR tends to be (**Figure 5**). The desire to limit births is more common in wealthier households: in 2017-2018, 29.9% of women in union in the highest quintile wanted no more children, compared with 20.3% in the lowest quintile. A similar trend is observed among men: in 2021-2022, the proportion of men in union whose last birth was unwanted rose from 6% in the lowest quintile to 12.4% in the highest quintile. By the end of the reproductive years, the mean

TFR gap between the extreme quintiles narrowed from 2.8 children in 2006 to 1.9 children in 2021-2022, reflecting a gradual convergence of fertility behavior across social classes.

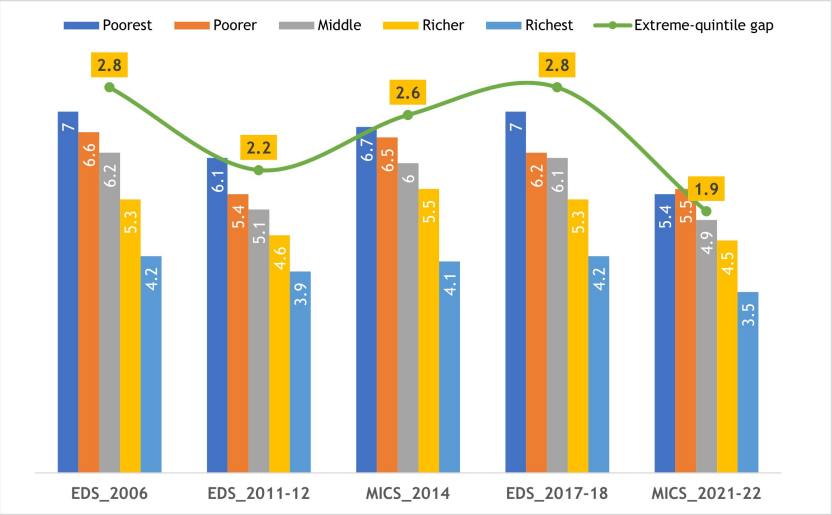

Figure 5. Fertility by wealth quintile in Benin (2006-2022). Source: Author 2026, based on data from EDS (1996, 2001, 2006, 2011-2012, 2017-2018) and MICS (2014, 2021-2022).

3.6. The Role of Age in Fertility

Age-specific fertility rate (ASFR) profiles remained similar across surveys over the study period (**Figure 6**). Fertility rises rapidly from adolescence, peaks among women aged 25 - 29, and then declines steadily after age 30. According to the 2021-2022 MICS, the ASFR is 77 births per 1000 women among adolescents aged 15 - 19, and peaks at 243‰ among those aged 25 - 29. Adolescent fertility is a monitoring indicator for the SDGs (Target 3.7, Indicator 3.7.2) on universal access to sexual and reproductive health services.

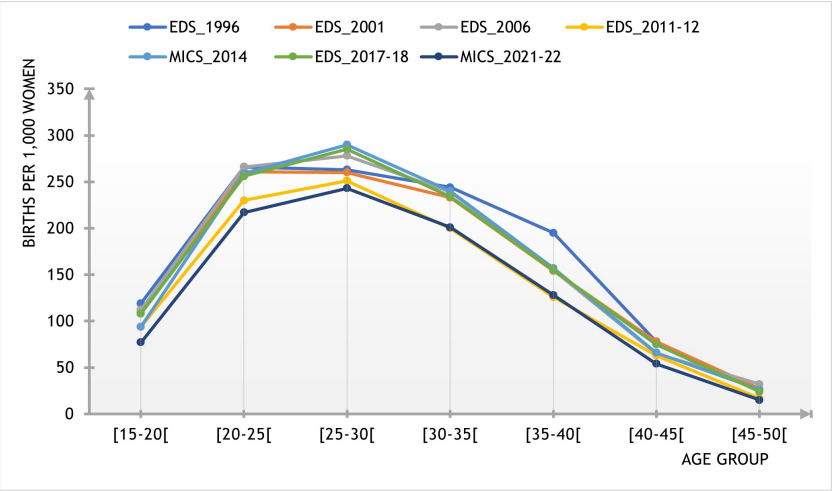

Figure 6. Age-specific fertility rates in Benin (1996-2022). Source: Author 2026, based on data from EDS (1996, 2001, 2006, 2011-2012, 2017-2018) and MICS (2014, 2021-2022).

3.7. Fertility Literacy and Contraceptive Use

The contraceptive prevalence rate among women in union aged 15 - 49 rose from 16.9% in 2014 to 23.1% in 2021-2022, suggesting a gradual improvement in fertility literacy and access to contraceptive methods. This trend is associated with a lengthening of the birth interval. According to the 2017-2018 EDS, the median birth interval is 28.9 months when the preceding child died, compared with 34.5 months when the child survived, reflecting a rapid replacement strategy following infant death. Motherhood at a very young age and short birth intervals (under 24 months) are associated with an increased risk of obstetric complications, low birth weight, and neonatal mortality (EDS, 2017). Improved knowledge of these risks appears to be associated with better birth planning.

3.8. Desire for Additional Children by Parity

The desire for additional children is linked to age, the number of living children, and union status (EDS, 2011-2012). In 2017-2018, approximately 25% of women in union aged 15 - 49 wanted no more children or were sterilized, while 64% still wanted at least one more (24% in the short term, 34% after two years). The proportion of women with four children who no longer wanted to have children rose from 25% in the 1960s to 37% in 2011-2012, and then to 30% in 2017-2018 (**Figure 7**). These trends are associated with a gradual shift in fertility preferences.

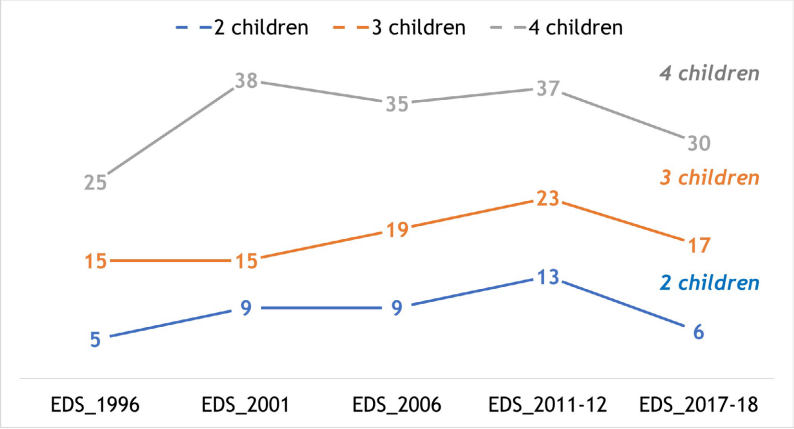

Figure 7. Desire to limit childbearing by parity threshold in Benin (1996-2018). Source: Author 2026, based on data from EDS (1996, 2001, 2006, 2011-2012, 2017-2018).

4. Discussion

This study describes fertility trends in Benin over three decades using the seven available national surveys (EDS and MICS, 1996-2022). The overall decline in TFR, from 6.0 to 4.7 children per woman, fits within the demographic transition under way in sub-Saharan Africa, although the pace remains slower than in Latin America or South Asia [5] [14], and well below that observed in Europe and Asia [15]. Globally, TFR fell from 5 children per woman in the 1960s to approximately 2.2 in 2024 [15], whereas Africa maintains higher fertility, potentially favorable to

the demographic dividend provided socioeconomic inequalities are reduced [16].

The associations between education and fertility observed in Benin are consistent with the literature on sub-Saharan Africa [14] [15] [17]-[19]. Higher educational attainment is associated with delayed entry into union and more frequent contraceptive uptake, which contributes to lower fertility. These associations are confirmed in other African settings (Senegal, Zimbabwe, Ethiopia, Kenya, Burkina Faso) [20]-[22]. The increase in fertility observed among women with lower-secondary education deserves attention: it is probably associated with early school dropout, which offsets part of the expected benefits of education on birth planning. Recent studies in Benin confirm the importance of keeping girls in school beyond lower-secondary level for a significant effect on fertility [23] [24].

The association between socioeconomic status and fertility is also robust and consistent with the international literature [23] [25]-[27]. Disadvantaged households show higher TFR, lower contraceptive use, and a less frequent desire to limit births. The narrowing of the TFR gap between the extreme quintiles (from 2.8 to 1.9 children between 2006 and 2022) is interpreted as a sign of gradual convergence, but cannot be attributed to a single cause in the absence of multivariate analyses. The temporal coincidences between economic shocks (the 2008 crisis, the Covid-19 pandemic) and declines in TFR are consistent with the mechanisms described in the literature [28] [29], although the available data do not allow the causal nature of this relationship to be established.

Improved fertility literacy—defined as the ability to interpret and use reproductive health information to plan one's fertility—is associated with better management of birth intervals and greater uptake of modern contraception. This trend, documented in several sub-Saharan African countries, extends beyond formal education alone: even among poorly educated populations, access to good-quality reproductive health information can positively influence behavior [20] [27]. In Benin, the rise in the contraceptive rate (from 16.9% in 2014 to 23.1% in 2021) is an indicator of improvement in this literacy [28].

5. Conclusion

This descriptive study highlights marked associations between fertility, educational attainment, economic conditions, and reproductive health literacy in Benin over the 1996-2022 period. These findings underscore the need for integrated interventions combining girls' schooling, reduced socioeconomic inequality, and strengthened access to reproductive health information. Integrating these levers into public policy is essential to support a fertility transition compatible with the demographic dividend and sustainable development. Analytical studies incorporating multivariate adjustment and use of the EDS/MICS microdata would be needed to test the observed associations and better understand the underlying mechanisms.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

[1] Casterline, J.B. and Odden, C. (2016) Trends in Inter-Birth Intervals in Developing Countries 1965-2014. *Population and Development Review*, **42**, 173-194. https://doi.org/10.1111/j.1728-4457.2016.00134.x

[2] UNICEF, WHO (2025) Levels and Trends in Child Mortality in 2024: Estimates Developed by the United Nations Inter-Agency Group for Child Mortality Estimation. United Nations Children's Fund (UNICEF), World Health Organization (WHO). https://reliefweb.int/report/world/levels-trends-child-mortality-report-2024

[3] Cleland, J., Conde-Agudelo, A., Peterson, H., Ross, J. and Tsui, A. (2012) Contraception and Health. *The Lancet*, **380**, 149-156. https://doi.org/10.1016/s0140-6736(12)60609-6

[4] Bankole, A. (1995) Desired Fertility and Fertility Behaviour among the Yoruba of Nigeria: A Study of Couple Preferences and Subsequent Fertility. *Population Studies*, **49**, 317-328. https://doi.org/10.1080/0032472031000148536

[5] Timæus, I.M. and Moultrie, T.A. (2020) Pathways to Low Fertility: 50 Years of Limitation, Curtailment, and Postponement of Childbearing. *Demography*, **57**, 267-296. https://doi.org/10.1007/s13524-019-00848-5

[6] Dasgupta, A. and Dasgupta, P. (2017) Socially Embedded Preferences, Environmental Externalities, and Reproductive Rights. *Population and Development Review*, **43**, 405-441. https://doi.org/10.1111/padr.12090

[7] Eastwood, R. and Lipton, M. (2011) Demographic Transition in Sub-Saharan Africa: How Big Will the Economic Dividend Be? *Population Studies*, **65**, 9-35. https://doi.org/10.1080/00324728.2010.547946

[8] Turner, A. (2009) Population Priorities: The Challenge of Continued Rapid Population Growth. *Philosophical Transactions of the Royal Society B: Biological Sciences*, **364**, 2977-2984. https://doi.org/10.1098/rstb.2009.0183

[9] UNECE, United Nations (2023) Ensuring Rights and Choices amid Demographic Change: Report on the Implementation of the Programme of Action of the International Conference on Population and Development in the UNECE Region. United Nations Economic Commission for Europe (UNECE), 221 p. https://unece.org/population/publications/ensuring-rights-and-choices-amid-demographic-change-report-implementation

[10] WHO (2023) Trends in Maternal Mortality 2000 to 2020: Estimates by WHO, UNICEF, UNFPA, World Bank Group and UNDESA/Population Division. World Health Organization (WHO), 108 p. https://www.who.int/publications/i/item/9789240068759

[11] Veillard, J. (2019) Strengthening Primary Care Is the Best Way to Reduce Health Inequities. World Bank Blogs. https://blogs.worldbank.org/fr/voices/renforcer-les-soins-primaires-est-le-meilleur-moyen-de-reduire-les-inegalites

[12] Bodkin, A., Van Camp, L., Harrington, D. and Simeoni, S. (2024) Health Literacy and Health Promotion. Ontario Agency for Health Protection and Promotion (Public Health Ontario), 14 p.

[13] Institut National de la Statistique et de l'Analyse Économique (INSAE) (2018) Fifth Demo-Graphic and Health Survey in Benin (EDSB-V) 2017-2018. Report No. 5, INSAE, 148 p. https://instad.bj/images/docs/insae-statistiques/enquetes-recensements/EDS/2017-2018/1.Benin_EDSBV_Rapport_final.pdf

[14] Shapiro, D. and Hinde, A. (2017) On the Pace of Fertility Decline in Sub-Saharan Africa. *Demographic Research*, **37**, 1327-1338. https://doi.org/10.4054/demres.2017.37.40

[15] United Nations Department of Economic and Social Affairs (2025) World Fertility Report 2024. Report No.: UN DE-SA/POP/2024/TR/NO.10. United Nations, 76 p. https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/undesa_pd_2025_wfr_2024_final.pdf

[16] Sen, A. (1999) Development as Freedom. 3rd Edition, Alfred A. Knopf, 384 p. https://kuangaliablog.wordpress.com/wp-content/uploads/2017/07/amartya_kumar_sen_development_as_freedombookfi.pdf

[17] Bongaarts, J. and Casterline, J. (2013) Fertility Transition: Is Sub-Saharan Africa Different? *Population and Development Review*, **38**, 153-168. https://doi.org/10.1111/j.1728-4457.2013.00557.x

[18] Bongaarts, J. (1978) A Framework for Analyzing the Proximate Determinants of Fertility. *Population and Development Review*, **4**, 105-132. https://doi.org/10.2307/1972149

[19] Sène, A.M. (2017) Évolution de la fécondité et enjeux de développement. *Population & Avenir*, **735**, 15-17. https://doi.org/10.3917/popav.735.0015

[20] Towriss, C.A. and Timæus, I.M. (2018) Contraceptive Use and Lengthening Birth Intervals in Rural and Urban Eastern Africa. *Demographic Research*, **38**, 2027-2052. https://doi.org/10.4054/demres.2018.38.64

[21] Millogo, R., Duthé, G., Diemé, B. and Rossier, C. (2021) Diffusion spatiale de la fécondité basse au Sénégal: Quels facteurs accélèrent la transition démographique? Document de travail DEMOSTAF n˚16. INED. https://demostaf.site.ined.fr/sites/default/files/imported_images/inline-images/rte/158/WP16-Millogo-et-al.pdf

[22] Millogo, R., Rossier, C. and Soura, A.B. (2024) Fertility Transition in Dakar, Ouagadougou, and Nairobi: A Uniform Decline across All Age Groups, Supported by Increasingly Longer Birth Intervals? In: Duthé, G., Dasré, A., Diemé, B.N., Masquelier, B., Pilon, M., Rossier, C., Soura, A.B., Wayack Pambè, M., Marcoux, R., Eds, *Promoting and Comparing Existing Statistical Sources to Address Demographic Challenges in Sub-Saharan Africa*, Presses de l'Université du Québec, 163-189. (African Societies in Transition).

[23] Gbéto, J.R.A. and Houngué, V. (2020) Impact de la fécondité sur l'autonomisation économique de la femme au Bénin. Document de travail AERC. African Economic Research Consortium (AERC). https://aercafrica.org/wp-content/uploads/2020/11/A4aJosette-Rosine-Aniwuvi-and-Veronique-HOUNGUE-%E2%80%93-WIP-French.pdf

[24] Ahinkorah, B.O., Dickson, K.S. and Seidu, A.A. (2018) Women's Decision-Making Capacity and Intimate Partner Violence among Women in Sub-Saharan Africa. *Archives of Public Health*, **76**, Article No. 5. https://doi.org/10.1186/s13690-018-0253-9

[25] Kravdal, Ø. (2002) Education and Fertility in Sub-Saharan Africa: Individual and Community Effects. *Demography*, **39**, 233-250. https://doi.org/10.1353/dem.2002.0017

[26] Caldwell, J.C. and Caldwell, P. (1987) The Cultural Context of High Fertility in Sub-Saharan Africa. *Population and Development Review*, **13**, 409-437. https://doi.org/10.2307/1973133

[27] Schyve, P.M. (2007) Language Differences as a Barrier to Quality and Safety in Health

Care: The Joint Commission Perspective. *Journal of General Internal Medicine*, **22**, 360-361. https://doi.org/10.1007/s11606-007-0365-3

[28] Houéto, D. and Laverack, G. (2014) Promotion de la santé et autonomisation dans le contexte africain. http://ebolacommunicationnetwork.org/wp-content/uploads/2014/10/promotion_de_la_sante_et_autonomisation_dans_le_contexte_africain.pdf

[29] Marmot, M. (2017) The Health Gap: The Challenge of an Unequal World: The Argument. *International Journal of Epidemiology*, **46**, 1312-1318. https://doi.org/10.1093/ije/dyx163