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Fertility Intentions among High-Parity Women in West Africa: Sociodemographic and Cultural Determinants from Recent Demographic and Health Surveys

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Abstract: The desire to have children influences couples' fertility behaviour. This study aimed to analyse the factors associated with the desire to have more children among women who have already given birth to three or more children. Examining the determinants of fertility is of crucial political importance in designing, implementing, and evaluating the effectiveness of family planning policies in developing countries. The data for this study come from Demographic and Health Surveys (DHS) conducted between 2017 and 2021 in West African countries, including Benin (2017), Burkina Faso (2021), Côte d'Ivoire (2021), Gambia (2019), Guinea (2018), Liberia (2019), Mali (2018), Nigeria (2018) and Sierra Leone (2019). A total of 14,752 women aged 15–49 years with more than three

living children were included in the analysis. Among them, 38.9% expressed a desire to have more children, particularly among younger women aged 15-29 years (86.5%) compared to those aged 40-49 years (33.6%), rural residents (63.9% vs. 55.0% in urban areas), and women with no formal education (63.8%). Women who did not use modern contraceptives were more likely to want additional children (aOR = 1.45, 95% CI: 1.27-1.65) than those who did. Socioeconomic status also influenced this desire; women in the wealthiest quintile were less likely to want more children (aOR = 0.74) than those in the poorest group. Country-level variations were significant; compared to Benin, women in Gambia (aOR = 1.84), Burkina Faso (aOR = 1.60), and Nigeria (aOR = 1.48) had higher odds of desiring more children. At the same time, those in Liberia (aOR = 0.66) were less likely to be affected. Additionally, women with no sons had a higher desire for more children than those with multiple sons did. These findings highlight the need for tailored family planning policies targeting high-parity, younger, rural, and less-educated women through education and contraceptive counselling to support sustainable demographic transitions in West Africa.

Keywords: Fertility Intentions, High-Parity Women, Contraceptive Use, Family Planning Policy, Demographic and Health Surveys (DHS), Sociodemographic Determinants, West Africa.

Introduction

The persistence of elevated fertility rates in sub-Saharan Africa (SSA) contrasts sharply with the global demographic landscape, where most regions have either completed or made significant progress in their demographic transition. This divergence presents both a critical development challenge and a significant economic opportunity that is being missed. Without a sustained decline in fertility, numerous SSA countries remain unable to harness the demographic dividend, jeopardising their prospects for sustainable development and poverty reduction (Bongaarts & Casterline, 2013; Canning et al., 2015).

SSA is the only region in which demographic transition remains incipient or stalled (Guengant, 2007; Magrin & Ninot, 2021). With an annual population growth rate of 2.7%, which is more than double the global average of 1.2%, the region's population is projected to exceed 2.5 billion by 2050, accounting for over one-third of the world's population growth (Odimegwu et al., 2018). Fertility rates in most SSA countries remain above four children per woman, with the Sahel region recording the highest levels globally (five to seven children per woman) (Gribble & Bremner, 2022).

These demographic trends have profound implications for economic growth and human development. A persistently high youth dependency ratio constrains productivity, savings, and capital accumulation, thereby hindering the structural transformation required for sustainable development (Eastwood & Lipton, 2011). Empirical evidence suggests that a decline in fertility is a prerequisite for realising the demographic dividend, as it increases the share of the working-age population and enhances per capita investment in health and education (D. E. Bloom et al., 2018).

The low uptake of modern contraception is a critical barrier to fertility decline. Only 22% of married or in-union women in SSA use contraceptives, compared with 86% in East Asia and 72% in Latin America (Alkema et al., 2013; Tesfa et al., 2022).

In SSA, the use of modern contraceptives and other family planning strategies is minimal, resulting in a high incidence of unintended and unwanted pregnancies. The importance of advocating for contemporary family planning, with the aim of not only reducing fertility rates in developing nations but also enhancing the overall health and economic prosperity of individuals and families, represents a significant concern that has gained notable recognition within various development platforms (Rabbi, 2015).

This gap contributes to high rates of unintended pregnancies (76 million annually in SSA) with cascading effects on maternal and child health outcomes (Bearak et al., 2018). Increasing contraceptive prevalence is vital for reducing fertility and improving women's health, educational attainment, and labour force participation (Ahmed et al., 2012; Emina et al., 2014).

Despite global commitments to family planning (FP2030), progress in SSA remains uneven and is hindered by weak health systems, sociocultural barriers, and gender inequities (Cleland et al., 2014). Addressing these gaps requires evidence-based policies that integrate reproductive health services with broader development strategies (East Central and Southern Africa Health Community, 2011). This study examines the interplay between fertility, contraceptive use, and economic development in SSA, providing critical insights for policymakers aiming to accelerate demographic transitions and unlock sustainable growth.

Research Problem

Research on the demand for children frequently centres on the general population or younger women; however, there is a dearth of studies targeting women who have already borne several children, despite their potential to influence total fertility rates significantly. Gaining insight into their reproductive intentions would allow for the development of family planning strategies that are more effectively tailored to address their specific needs.

The enduring gap between desired fertility and actual fertility prompts critical enquiries into the dynamics of reproductive negotiation within couples, socio-cultural barriers to contraception, and the extent of women's decision-making authority. These dimensions remain inadequately integrated into the existing family planning policies.

This study examined the factors associated with demand for children among women who had more than three live births. By exploring the social, cultural, and economic determinants of sustained fertility desires in contexts marked by a low uptake of modern contraceptive methods, this study addressed a critical gap in the literature. The findings aimed to inform the design, implementation, and evaluation of more effective family planning policies and reproductive health interventions in developing countries. Furthermore, the study contributes to broader policy discussions on population dynamics and the potential to harness demographic dividends in sub-Saharan Africa.

Research Focus

This study focuses on women with more than three live births, as they account for a substantial share of total fertility in sub-Saharan Africa and play a pivotal role in slowing population growth (Bongaarts & Casterline, 2013; Caldwell & Caldwell, 2002). These women stand at reproductive crossroads, where their decisions to limit or continue childbearing have profound implications for health, family well-being, and the demographic structure (Casterline et al., 2017). Addressing their fertility intentions thus provides critical leverage for designing policies that promote birth limitation beyond birth spacing and contribute to achieving a demographic dividend (Ezeh et al., 2012; Mbacké, 2017).

Research Aim and Questions

This study aimed to examine the determinants of the desire for additional children among high-parity women in sub-Saharan Africa (SSA) and explore policy implications for fertility reduction and family planning programs.

The following research question guided the analysis:

- I. What are the sociodemographic and cultural determinants associated with the continued desire for childbearing among women with more than three live births?
- II. How are fertility preferences related to contraceptive knowledge and use in this population?
- III. To what extent do gender norms, household economic conditions, and partners influence fertility intentions in high-parity women?

Literature Review / Theoretical Overview

This literature review examines the primary sociodemographic, economic, and gender-related factors influencing fertility preferences, with a focus on the impact of male partners, religious norms, and structural constraints, including access to reproductive health services. Furthermore, it considers how women's reproductive intentions may evolve throughout their lives, influenced by changing experiences, household dynamics, and societal expectations. Ultimately, this review aims to establish a foundational understanding of how these factors interconnect with reproductive decision-making among women who have already borne multiple children and are frequently marginalised within fertility limitation programs.

A complex interplay of sociodemographic and cultural factors shapes fertility intentions among high-parity women in West Africa. High-parity women, typically defined as those with four or more children, represent a critical group for understanding regional fertility trends (Ahonsi, 1991). West Africa exhibits persistently high fertility rates, making it essential to investigate the factors that influence the desire for additional children among women who have already achieved high parity (Msoka et al., 2019).

While there is research on fertility intentions in a global context among women of childbearing age, there is limited research specifically focusing on women who have achieved high parity. This population, which is crucial to demographic transition, is often excluded from the explanatory models. Furthermore, the impact of marital instability, economic transition, and insecurity (such as conflict and displacement) on fertility preferences remains largely unexamined. Aspiration for having more children influences couples' fertility behaviour. Fertility desires and intentions are central to both theoretical and empirical approaches to studying childbearing behaviour and are among the most critical determinants of a country's future population structure. Assessing fertility intentions and determining the extent to which they predict fertility behaviour is also critical for the formulation of population policy and the evaluation of a country's family planning programs (Hutteman et al., 2014). Fertility preferences indicate the extent to which individuals wish to exercise control over reproductive outcomes and are therefore essential elements in the analysis of individual fertility behaviour and overall fertility trends within a country. Women's fertility preferences, as measured by desired family size and intentions regarding the limitation or delay of childbearing, have been the subject of ongoing study since the 1970s, owing to their predictive validity for subsequent childbearing (Hutteman et al., 2014; Kuhnt & Trappe, 2013; Magrin & Ninot, 2021).

Sociodemographic determinants play a significant role in shaping fertility intention. These factors include age, education, socioeconomic status, and place of residence (Akonor and Biney 2021; Evens et al. 2015; Seidu et al. 2023). Older women may have different fertility intentions than younger women because of factors such as menopause, health concerns, and the desire to focus on raising their existing children (Atama et al., 2023). Education levels often correlate with lower fertility desires, as educated women may have greater access to information about family planning, increased employment opportunities, and altered perceptions of the costs and benefits of having more children (Seidu et al., 2023). L'éducation des femmes, en particulier, est systématiquement associée à une préférence pour de plus petites tailles de famille (Ewemooje et al., 2020; Kuhnt & Trappe, 2013). Le niveau d'éducation agit à la fois comme facteur d'autonomisation et comme levier d'accès à l'information reproductive.

Socioeconomic status, encompassing income, occupation, and access to resources, also influences fertility intention (Biney et al., 2021). Women with a higher socioeconomic status may prioritise investments in their children's education and well-being over having additional children (Ewemooje et al., 2020). Urban versus rural residence is another important sociodemographic factor, as urban areas typically offer better access to healthcare, education, and employment opportunities, which can influence fertility decisions (Ewemooje et al., 2020). The perceived costs and benefits of raising children are crucial for fertility decisions. Studies have shown that emotional and psychological benefits are paramount for the first child, whereas economic and practical considerations are more important for higher parities. Modern societies have increasingly emphasised the emotional values of children, while the importance of instrumental values has declined. The opportunity costs associated with motherhood have also increased with the growing integration of women into the labour market, making up a significant proportion of the overall costs associated with motherhood (Hutteman et al., 2014; Kuhnt & Trappe, 2013; Testa & Stephany, 2017).

Cultural determinants are deeply embedded in the social fabric of West African societies and exert a strong influence on fertility intentions (Agu et al., 2022; Demissie et al., 2022; Saeed & Sultana, 2018). Gender norms, religious beliefs, and family structures all contribute to shaping women's attitudes towards childbearing (Bein et al., 2021; Golub et al., 2023; Msoka et al., 2019; Mutihir, 2017). In many West African cultures, women's status and identity are closely tied to their role as mothers, and having a large number of children may be seen as a sign of prestige and social acceptance (Ahinkorah, Seidu, Budu, et al., 2021). The desire for sons, driven by cultural preferences and inheritance practices, can also motivate women to continue childbearing until they achieve the desired number of male children (Eliason et al., 2018; Yang & Du, 2021). La pression sociale exercée sur les femmes pour avoir de nombreux enfants, souvent motivée par des logiques patriarcales et des attentes communautaires, persiste dans de nombreuses sociétés d'ASS. Furthermore, religious beliefs can influence fertility intentions, as some religions promote pro-natalist views and discourage the use of contraception (Msoka et al., 2019; Odusina et al., 2020). Family structures, such as extended family systems and the involvement of kin in child-rearing, can also impact fertility decisions by providing support and resources for raising children (Demissie et al., 2022).

Studies in Nigeria have found that fertility preference remains high among most women of reproductive age, who often give birth to more than four children, exceeding previous national policy recommendations (Ahonsi, 1991). Despite experiencing socio-economic changes, such as high literacy rates and migration, the Igbo people of Nigeria maintain high fertility due to socio-cultural institutions that support large families (Demissie et al., 2022). In rural Tanzania, women's perceptions and cultural beliefs about family planning are influenced by their desire to be loved more by their husbands through childbirth (Ahinkorah, Seidu, Budu, et al., 2021). This highlights the importance of understanding local perceptions and beliefs when designing family planning programs.

The interplay between sociodemographic and cultural factors creates unique patterns of fertility intentions among high-parity women in West Africa (Cammock et al., 2023; Kane et al., 2016). For instance, a woman's educational level may interact with cultural norms to influence fertility decisions. Educated women may be more likely to challenge traditional gender roles and make independent decisions about family size, whereas less-educated women may be more strongly influenced by cultural expectations (Seidu et al., 2023). Similarly, socioeconomic status may interact with religious beliefs to shape fertility intentions (Biney et al., 2021). A woman with a higher socioeconomic status may be better able to afford family planning services, even if her religion discourages their use. In contrast, a woman with a lower socioeconomic status may face greater barriers to accessing contraception.

Addressing the challenges of high fertility in West Africa requires a comprehensive approach that considers both sociodemographic and cultural factors (Kapadia-Kundu et al., 2022; Okenyuru et al., 2023; Ouahid et al., 2025). Family planning programs should be culturally sensitive and tailored to the specific needs and contexts of different communities (Cammock et al., 2023). These programs should aim to empower women by providing them with access to education, economic opportunities, and reproductive health services (Fantaye & Damtew, 2024; Kapadia-Kundu et al.,

2022). Additionally, efforts should be made to promote gender equality and challenge the harmful cultural norms that perpetuate high fertility rates (Agu et al., 2022; Paul & Grönlund, 2024).

The literature highlights the importance of men's roles in fertility-related decisions (Bado et al., 2020; Sarnak et al., 2021). Numerous studies have identified spousal support for family planning as a critical determinant of contraceptive method adoption (Bhan et al., 2022; Msoka et al., 2019). However, most research continues to focus on women, thereby marginalising the understanding of dyadic interactions in reproductive decision-making (Bado et al., 2020). For instance, the number of children a woman chooses to have often reflects not only her aspirations, but also the perceptions and expectations of her partner and immediate social circle (Ewemooje et al., 2020; Odimegwu et al., 2018; Odusina et al., 2020).

Research Methodology

General Background

This study utilised data from Demographic and Health Surveys (DHS) conducted between 2017 and 2021 across several West African countries, specifically Benin (2017), Burkina Faso (2021), Côte d'Ivoire (2021), Gambia (2019), Guinea (2018), Liberia (2019), Mali (2018), Nigeria (2018) and Sierra Leone (2019). These countries are situated in West Africa, a region characterised by some of the highest fertility levels globally and a number of the poorest nations.

DHS represents a globally standardised and well-established data collection initiative implemented by ICF International in collaboration with national statistical offices and ministries of health. The core DHS instruments comprise household questionnaires, women's questionnaires, men's questionnaires, and biomarker questionnaires. These instruments are standardised across countries to ensure comparability over time and across diverse contexts. The women's questionnaire, which served as the primary data source for this study, included validated modules addressing fertility preferences, contraceptive use, reproductive health, and demographic characteristics. The reliability and validity of DHS instruments have been established through extensive pilot testing, standardised interviewer training, and consistent question wording across nations. Moreover, internal consistency and construct validity have been corroborated by various peer-reviewed evaluations of the DHS indicators across multiple settings.

The DHS employs a two-stage stratified cluster sampling technique. In the first stage, enumeration areas (EAs) are selected with a probability proportional to their size. In the second stage, a fixed number of households (typically 25–30) were sampled within the selected enumeration areas using a systematic sampling technique.

Sample and participants

This study specifically focused on women in unions with four or more live-born children at the time of the survey. Women who were sterilised or identified as infertile were excluded from the analysis because their fertility intentions and behaviours were structurally constrained. The final pooled analytic sample included 14,752 women from nine countries.

The justification for focusing on women with at least four children arises from the importance of understanding high-parity fertility intentions in regions characterised by strong pronatalist norms. Targeting this subgroup facilitates a nuanced analysis of sustained fertility behaviour beyond initial childbearing, which is particularly relevant for policy interventions aimed at reducing high fertility rates and addressing unmet needs for contraception.

A post hoc power analysis was conducted to ensure adequate statistical power for multivariate analyses. Given the substantial sample size and the high frequency of the outcome variables (e.g., desire for additional children), the study demonstrated over 90% power to detect small to medium effect sizes at a significance level of $p < 0.05$.

Study Variables

The dependent variable in this study was women's desire to have additional children. To gather information on fertility preferences, the DHS solicited responses from women regarding the number of additional children they wished to have in the future, the desired interval before having their next child, and the total number of children they aspired to have. Our dependent variable was coded as one if the woman indicated a desire for an additional child, and 0 if she did not.

The literature review selected the explanatory variables. They included age, type of marriage, place of residence, wealth level, occupation of both the woman and her partner, level of education of both the woman and her partner, number of children already born, contraceptive use, media exposure, ideal number of children, and discussions regarding family planning within the couple.

Data Analysis

A descriptive analysis was conducted using percentage frequencies to characterise the study sample. The explanatory variables were subjected to bivariate analyses to estimate the significance of their association with the dependent variable using the chi-squared test. Multilevel logistic regression was employed to identify the individual and contextual effects. The hierarchical nature of the DHS data facilitates the application of multilevel logistic regression models. Three multilevel logistic models were considered: Model 0 was a null or empty model with no predictors, aiming to measure the variation between strata (intra-stratum variance). In Model 1, nearly all the explanatory variables were incorporated into the model, excluding the country variable. Model 2 included all the variables. Associations were assessed using adjusted odds ratios (aORs) with p-values and 95% confidence intervals. Variations were evaluated using intraclass correlation (ICC), where represents the proportion of variation in the dependent variable attributable to contextual factors. The ICC was zero in the absence of variance between groups.

Ethical Considerations

This study was based on an analysis of secondary data, without using information that would reveal the participants' identities. ICF International and the national ethics committee in each host country approved all DHS surveys. All participants provided written informed consent before

participating in the survey. This study did not require additional ethical approval; however, we obtained written permission from the DHS program to use the data for this purpose.

Results

Sociodemographic characteristics of study participants

Table 1 presents the sociodemographic characteristics of the surveyed women. The total sample comprised 14,752 women aged between 15 and 49 years who had more than three (03) living children at the time of the survey. Of these women, the majority (70.16%) resided in rural areas, while 29.84% resided in urban areas. The majority of women in the sample were from Nigeria (21.35%), Burkina Faso (14.65%), and Benin (12.98%), whereas the least represented countries were Gambia (6.55%), Liberia (6.16%), and Guinea (7.56%). Just over half of these women (50.43%) lived in households with a poor standard of living, and 52.58% had four to five living children. In this sample, 75.91% and 76.32% of the women had 1–3 boys and 1–3 women living at home, respectively. The average age of the women in this sample predominantly fell within the 30–39 age bracket, representing 53.40% of the sample.

Regarding education, 71.36% of these women had no formal education, 15.20% had attained primary education, and 13.44% had completed secondary education or higher. Additionally, 62.30% of the participants had partners who lacked formal education. The majority of these women were primarily engaged in agricultural activities (34.04%), with only 2.87% occupying managerial or clerical positions.

Of the women surveyed, 95.57% were aware of modern contraceptive methods, while 4.43% were unknowledgeable about them. However, 77.74% of the participants did not use these methods. Moreover, 65.23% of these women were frequently or regularly exposed to media.

Concerning fertility preferences, only 38.93% expressed a desire to have more children, whereas 60.81% believed that the ideal number of children was at least six. Regarding their spouses, 39.61% wanted to have more children, and a substantial proportion (28.37%) were uncertain about the preferred number of children they would have. It is also noteworthy that 80.15% of women are in couples who do not engage in discussions about family planning or the number of children they want to have.

Table 1

Sociodemographic characteristics of women with more than three children (study sample)

Variables	N(%)
N	14,572
Want additional children	
Don't Want	5,639 (38.7%)
Want additional children	8,933 (61.3%)
Country	
Benin	1,807 (12.4%)
Burkina	2,069 (14.2%)
Gambia	925 (6.3%)

Guinea	1,035 (7.1%)
Liberia	824 (5.7%)
Mali	1,311 (9.0%)
Nigeria	3,758 (25.8%)
RCI	1,464 (10.0%)
Sierra Leone	1,379 (9.5%)
Type of place of residence	
Urban	4,199 (28.8%)
Rural	10,373 (71.2%)
Wealth index combined	
Poorest	4,021 (27.6%)
Poorer	3,499 (24.0%)
Middle	3,138 (21.5%)
Richer	2,424 (16.6%)
Richest	1,490 (10.2%)
Number of ever born children	
4-5	7,351 (50.4%)
6 and above	7,221 (49.6%)
Number of sons at home	
No son	1,656 (11.4%)
1-3 sons	11,046 (75.8%)
4 and above sons	1,870 (12.8%)
Number of daughters at home	
No daughter	2,054 (14.1%)
1-3 daughters	11,166 (76.6%)
4 and above daughters	1,352 (9.3%)
Age	
15-29	2,523 (17.3%)
30-39	7,779 (53.4%)
40-49	4,270 (29.3%)
Education attainment	
No Education	10,565 (72.5%)
Primary	2,139 (14.7%)
Secondary or above	1,868 (12.8%)
Women's occupations	
Inactive	3,098 (21.3%)
Managers/Employees	382 (2.6%)
Sale	4,231 (29.0%)
Women farmers	4,741 (32.5%)
Domestic workers	2,120 (14.5%)
Current type of contraceptive	
Modern	3,142 (21.6%)
No method or traditional	11,430 (78.4%)
Frequency on media (radio, tv, magazines)	
Not at all	5,300 (36.4%)
Often or regularly	9,272 (63.6%)
Husband Education level	
No education	9,206 (63.2%)
Primary	2,124 (14.6%)
Secondary/higher	3,242 (22.2%)
Ideal number of children	
0-3 children	820 (5.6%)
4-5 children	3,406 (23.4%)

6 & above children	10,346 (71.0%)
Husband's desire for children	
Both want same	3,914 (26.9%)
Husband wants more	6,061 (41.6%)
Husband wants fewer	628 (4.3%)
Don't know	3,969 (27.2%)
Discussion within the couple about FP and the number of children	
Yes	2,883 (19.8%)
No	11,689 (80.2%)

Source: Author's own development.

Association between participants' sociodemographic characteristics and desire for additional children (unadjusted analyses)

The results in Table 2 elucidate the relationships between various sociodemographic variables and the desire or lack thereof to have additional children among the surveyed women. The variables examined included country of residence, living environment, wealth index, number of children already born, family composition regarding sons and daughters, age, level of education, occupation, choice of contraception, media exposure, spouse's level of education, ideal number of children, spouses' desires regarding procreation, and discussions within the couple about family planning and number of children. The findings revealed significant differences in the desire to have more children based on the country of residence. For instance, in Liberia, a higher percentage of women do not wish to have more children than those who do. Women residing in rural areas appear more inclined to desire additional children than their urban counterparts. Furthermore, women in higher socioeconomic categories are less likely to consider having more children than those in lower socioeconomic categories.

Women with four to five children exhibited a lower desire to have additional children than those with six or more children. Younger women (aged 15–29 years) expressed a greater desire to have children than their older counterparts (aged 40–49 years). Furthermore, women with a higher level of education are less inclined to envisage larger families. Women employed in managerial or white-collar positions are also less likely to wish to expand their families than those who are not employed or those engaged in agricultural work.

Women who utilise modern contraceptive methods demonstrate a reduced desire to increase their family size compared to those who employ no method or traditional methods. Additionally, a higher level of education in a partner is correlated with a decreased desire to have more children. Women who perceive the ideal number of children to be six or more tend to express a greater desire for a larger family than those who hold different views.

However, discussions between partners regarding family planning and desire for the number of children do not appear to be significantly associated with the inclination to expand the family.

Table 2

Association between participants' sociodemographic characteristics and the desire for additional children among women with more than 3 children (unadjusted analyses)

Variables	Don't Wan (n=5639)	Want additional children (n=8933)	Total (14572)	P-value
Country				0.001
Benin	795 (44.00%)	1012 (56.00%)	1807 (100.00%)	
Burkina	687 (33.20%)	1382 (66.80%)	2069 (100.00%)	
Gambia	289 (31.24%)	636 (68.76%)	925 (100.00%)	
Guinea	365 (35.27%)	670 (64.73%)	1035 (100.00%)	
Liberia	481 (58.37%)	343 (41.63%)	824 (100.00%)	
Mali	442 (33.71%)	869 (66.29%)	1311 (100.00%)	
Nigeria	1416 (37.68%)	2342 (62.32%)	3758 (100.00%)	
RCI	528 (36.07%)	936 (63.93%)	1464 (100.00%)	
Sierra Leone	636 (46.12%)	743 (53.88%)	1379 (100.00%)	
Type of place of residence				0.001
Urban	1890 (45.01%)	2309 (54.99%)	4199 (100.00%)	
Rural	3749 (36.14%)	6624 (63.86%)	10373 (100.00%)	
wealth index combined				0.001
poorest	1363 (33.90%)	2658 (66.10%)	4021 (100.00%)	
poorer	1288 (36.81%)	2211 (63.19%)	3499 (100.00%)	
middle	1205 (38.40%)	1933 (61.60%)	3138 (100.00%)	
richer	1024 (42.24%)	1400 (57.76%)	2424 (100.00%)	
richest	759 (50.94%)	731 (49.06%)	1490 (100.00%)	
Number of ever born children				0.001
4-5	1961 (26.68%)	5390 (73.32%)	7351 (100.00%)	
6 and above	3678 (50.93%)	3543 (49.07%)	7221 (100.00%)	
Number of sons at home				0.001
No son	625 (37.74%)	1031 (62.26%)	1656 (100.00%)	
1-3 sons	4197 (38.00%)	6849 (62.00%)	11046 (100.00%)	
4 and above sons	817 (43.69%)	1053 (56.31%)	1870 (100.00%)	
Number of daughters at home				0.001
No daughter	858 (41.77%)	1196 (58.23%)	2054 (100.00%)	
1-3 daughters	4229 (37.87%)	6937 (62.13%)	11166 (100.00%)	
4 and above daughters	552 (40.83%)	800 (59.17%)	1352 (100.00%)	
Age				0.001
15-29	340 (13.48%)	2183 (86.52%)	2523 (100.00%)	
30-39	2464 (31.68%)	5315 (68.32%)	7779 (100.00%)	
40-49	2835 (66.39%)	1435 (33.61%)	4270 (100.00%)	
Education attainment				0.001
No Education	3824 (36.19%)	6741 (63.81%)	10565 (100.00%)	
Primary	950 (44.41%)	1189 (55.59%)	2139 (100.00%)	
Secondary or above	865 (46.31%)	1003 (53.69%)	1868 (100.00%)	
Women's occupations				0.001
Inactive	965 (31.15%)	2133 (68.85%)	3098 (100.00%)	
Managers/Employees	182 (47.64%)	200 (52.36%)	382 (100.00%)	

Sale	1699 (40.16%)	2532 (59.84%)	4231 (100.00%)	
Women farmers	1862 (39.27%)	2879 (60.73%)	4741 (100.00%)	
Domestic workers	931 (43.92%)	1189 (56.08%)	2120 (100.00%)	
Current type of contraceptive				0.001
Modern	1464 (46.59%)	1678 (53.41%)	3142 (100.00%)	
No method or traditional	4175 (36.53%)	7255 (63.47%)	11430 (100.00%)	
Frequency on media (radio, tv, magazines)				0.001
Not at all	1895 (35.75%)	3405 (64.25%)	5300 (100.00%)	
Often or regularly	3744 (40.38%)	5528 (59.62%)	9272 (100.00%)	
Husband Education level				0.001
No education	3188 (34.63%)	6018 (65.37%)	9206 (100.00%)	
Primary	964 (45.39%)	1160 (54.61%)	2124 (100.00%)	
Secondary/higher	1487 (45.87%)	1755 (54.13%)	3242 (100.00%)	
Ideal number of children				0.001
0-3 children	427 (52.07%)	393 (47.93%)	820 (100.00%)	
4-5 children	2004 (58.84%)	1402 (41.16%)	3406 (100.00%)	
6 & above children	3208 (31.01%)	7138 (68.99%)	10346 (100.00%)	
Husband's desire for children				0.001
Both want same	1785 (45.61%)	2129 (54.39%)	3914 (100.00%)	
Husband wants more	2074 (34.22%)	3987 (65.78%)	6061 (100.00%)	
Husband wants fewer	284 (45.22%)	344 (54.78%)	628 (100.00%)	
Don't know	1496 (37.69%)	2473 (62.31%)	3969 (100.00%)	
Discussion within the couple about FP and the number of children				0.195
Yes	1146 (39.75%)	1737 (60.25%)	2883 (100.00%)	
No	4493 (38.44%)	7196 (61.56%)	11689 (100.00%)	

P-values by t-test for continuous variables and Chi2 test for binary/categorical variables.

Source: Author's own development.

Results of multivariate analysis of multi-level logistic regression

Adjusted models' fixed effects

Table 3 presents the results of multilevel logistic regression analysis investigating the desire for family expansion among women who already had four or more children. The results are expressed as odds ratios (ORs) for various variables. Interpretation of the fixed effects indicates that initially, women residing in rural areas were 1.429 times more likely to desire additional children than those living in urban areas. This association diminished slightly when other variables were accounted for (M1: OR = 1.149; M2: OR = 1.138).

An overarching trend emerges regarding the socioeconomic status of households: as this status improves, the probability of wanting more children decreases. This trend was most pronounced among the highest socioeconomic categories.

Women who already have four to five children are 0.334 times less likely to express a desire for additional children than those with six or more children, a trend that remains consistent across all models. The presence of one to three or four or more sons appears to influence the desire for further offspring, with the effects varying according to the model employed. Conversely, the presence of one or three daughters did not significantly affect this desire. Older women (aged 30–39 and 40–49 years) and those with a higher level of education demonstrated a reduced desire for more children, in contrast to younger women (aged 15–29 years) or those with lower educational attainment. Women in managerial, employed, commercial, agricultural, or domestic positions exhibit a lower propensity to desire additional children than their inactive counterparts do. The use of traditional contraceptives or the absence of any contraceptive method is associated with a greater desire for additional children than the use of modern contraceptives.

The partner's desire for more children and communication regarding family planning as well as the country of residence within the couple are also correlated with the desire to expand the family.

Overall, this analysis underscores the significant influence of factors such as the number of children already born, age, level of education, occupation, contraceptive choice, and marital communication on the desire for family extension among women who already have four or more children.

Significant differences were observed across the countries. The Gambia displays the highest propensity (1.839), followed by Burkina Faso (1.596), Nigeria (1.479), Côte d'Ivoire (RCI) (1.458), Mali (1.261), and Guinea (1.182), in comparison to Benin, for women who already have four or more children to desire an additional child. By contrast, Sierra Leone (0.906) and Liberia (0.657) showed a low propensity for women with four or more children to wish for an additional child.

Random effects

In the random effects analysis, it was observed that in the initial model (Model 0), the intraclass coefficient of variation (ICC) was set at 3.4%. However, with the introduction of all relevant variables, including the country factor in Model 3, the ICC decreased slightly to 3.0%. These results suggest that the individual characteristics of women with four or more children play a significant role in understanding their desire to have an additional child. In other words, these individual characteristics appear to be more predictive of desire than contextual factors.

Table 3

Results of multilevel logistic regression of the desire for an additional child in women with more than three children

Variables	Model 0	Model 1 aOR	Model 2 aOR
Type of place of residence			
Urban		1	1
Rural		1.149 [0.998, 1.322] **	1.138 [0.985, 1.314] **
Wealth Index			
Poorest		1	1

Poorer	0.959 [0.827, 1.114]	0.965 [0.830, 1.122]
Middle	0.964 [0.822, 1.130]	0.964 [0.820, 1.134]
Richer	0.893 [0.742, 1.076]	0.897 [0.739, 1.087]
Richest	0.707 [0.559, 0.895] ***	0.736 [0.576, 0.940] ***
Number of children		
4-5	1	1
6 and above	0.322 [0.284, 0.364] ***	0.324 [0.286, 0.368] ***
Number of sons at home		
No son	1	1
1-3 sons	0.889 [0.749, 1.054] *	0.837 [0.705, 0.995] ***
4 and above sons	0.878 [0.706, 1.092]	0.799 [0.640, 0.998] ***
Number of daughters at home		
No daughter	1	1
1-3 daughters	1.036 [0.889, 1.209]	0.976 [0.835, 1.140]
4 and above daughters	1.125 [0.898, 1.411]	1.013 [0.805, 1.275]
Age		
15-29	1	1
30-39	0.449 [0.375, 0.537] ***	0.439 [0.366, 0.526] ***
40-49	0.106 [0.087, 0.129] ***	0.101 [0.083, 0.124] ***
Education attainment		
No education	1	1
Primary	0.816 [0.696, 0.958] ***	0.802 [0.682, 0.943] ***
Secondary or above	0.787 [0.648, 0.954] ***	0.719 [0.588, 0.880] ***
Women's occupations		
Inactive	1	1
Managers/Employees	0.888 [0.626, 1.261]	0.874 [0.614, 1.243]
Sale	0.905 [0.773, 1.059]	0.929 [0.791, 1.092]
Women farmers	0.745 [0.638, 0.869] ***	0.865 [0.734, 1.020] **
Domestic workers	0.708 [0.589, 0.850] ***	0.743 [0.614, 0.899] ***
Current type of contraceptive		
Modern	1	1
No method or traditional	1.404 [1.236, 1.595] ***	1.445 [1.267, 1.647] ***
Frequency on media (radio, tv, magazines)		
Not at all	1	1
Often or regularly	1.019 [0.907, 1.146]	0.952 [0.842, 1.076]
Husband Education level		
No education	1	1
Primary	0.811 [0.693, 0.950] ***	0.843 [0.717, 0.990] ***
Secondary/higher	0.875 [0.75, 1.022] **	0.928 [0.788, 1.092]
Ideal number of children		
0-3 children	1	1
4-5 children	0.644 [0.509, 0.814] ***	0.638 [0.504, 0.809] ***
6 & above children	3.057 [2.447, 3.819] ***	2.903 [2.320, 3.631] ***
Husband's desire for children		
Both want same	1	1
Husband wants more	1.466 [1.286, 1.672] ***	1.411 [1.235, 1.613] ***
Husband wants fewer	0.922 [0.707, 1.201]	0.917 [0.702, 1.196]
Don't know	1.298 [1.125, 1.499] ***	1.328 [1.145, 1.540] ***
Discussion within the couple about FP and the number of children		
Yes	1	1
No	0.993 [0.870, 1.134]	0.969 [0.846, 1.109]
Country		
Benin	1	1
Burkina		1.596 [1.287, 1.979] ***
Gambia		1.839 [1.398, 2.419] ***
Guinea		1.182 [0.920, 1.519] *
Liberia		0.657 [0.501, 0.863] ***

Mali			1.261 [0.993, 1.601] **
Nigeria			1.479 [1.211, 1.807] ***
RCI			1.458 [1.159, 1.833] ***
Sierra Leone			0.906 [0.718, 1.143]

Intercept	1.572 [1.508, 1.640] ***	4.164 [2.741, 6.325] ***	3.820 [2.443, 5.973] ***
/var(Intercept[v001])	1.11 [1.05, 1.18] ***	1.110 [1.046, 1.178] ***	1.109 [1.045, 1.178] ***
Observations	14572	14572	14572
ICC	0.034 [0.024; 0.048]	0.030[0.006; 0.047]	0.030[0.02;0.047]

*** Pvalue≤ 1%; ** Pvalue≤ 5%, * Pvalue≤ 10%; aOR= Adjusted Odds ratio; ICC= intraclass-correlation coefficient

Source: Author's own development.

Discussion

This study aimed to analyse the factors associated with demand for children among women with more than three live births. It also has a considerable impact on women's development and empowerment (Osotimehin, 2015). The results of the study indicate that place of residence, household standard of living, number of children the woman has, number of boys among the children, woman's age, woman's level of education, woman's occupation, use of modern contraception, spouse's education, ideal number of children desired, and country of residence are significant determinants of the desire to have an additional child among women who already have more than three children.

Expected Results

This study confirms several well-established associations. As anticipated, higher parity, advanced age, increased education, urban residence, and the use of modern contraceptives correlated with a reduced desire for additional offspring. These findings align with the classic demographic transition theory and prior evidence from sub-Saharan Africa (Bongaarts, 2020; Emina et al., 2014; Kebede et al., 2022). Education plays a transformative role by expanding women's autonomy, access to information, and life opportunities beyond childbearing (Upadhyay & Karasek, 2012). Similarly, the inverse relationship between household wealth and fertility preferences reflects the cost-of-child theory, wherein families with greater economic resources tend to invest more in fewer children (Gries & Grundmann, 2018; Schultz, 2007).

These individual characteristics play a major role in family planning decisions and in the fulfilment of women's reproductive desires. While the desire for more children reflects aspirational preferences, it does not always translate into actual childbearing behaviour. Factors such as perceived behavioural control, partner opposition, fear of side effects from contraception, or provider bias may mediate the gap between fertility desire and action. Integrating a behavioural framework aids in interpreting the inconsistencies between high contraceptive knowledge and low usage rates (Ajzen, 1991; Speizer et al., 2022).

The results of our study indicate that women residing in rural areas exhibit a greater propensity to desire more children than their urban counterparts do. This inclination among rural women can be largely attributed to the prevailing social and cultural norms within these regions, which generally

promote larger families (Matovu et al., 2017; Wildeman et al., 2023). Consequently, the value ascribed to children appears to be contingent, at least in part, in the residential context, with rural areas favouring a larger family dynamic than urban settings (Mosha et al., 2013). This finding aligns with numerous previous studies conducted in SSA (Ahinkorah et al., 2020; Ahinkorah, Seidu, Armah-Ansah, et al., 2021; Bongaarts, 2020; Van Hoyweghen et al., 2023). This trend can be largely explained by a set of socio-cultural factors specific to the region. Indeed, in many societies within SSA, large families are often perceived as indicators of prestige, social status, and economic security (Alawode et al., 2022; Caldwell, 1976; Kishimba, 1998). Cultural norms frequently endorse the notion that having more children translates to increased labour for agricultural activities and enhanced family support during times of need (Balbo et al., 2013). Rural women are often more entrenched in these traditional norms than their urban counterparts, and the desire for larger families may diminish couples' interest in contraceptive methods, resulting in lower contraceptive demand (Kahansim et al., 2013). Furthermore, women in rural settings frequently encounter limited access to family planning and reproductive health services compared to those in urban environments (Ahinkorah, Seidu, Armah-Ansah, et al., 2021).

A woman's level of education is a significant factor that can positively influence her ability to plan and control fertility, thereby reducing her preference for larger families. The findings of our study, along with those of previous research, corroborate this assertion (Bongaarts, 2020; Kebede et al., 2022; Upadhyay & Karasek, 2012). The elevated levels of desired family size in rural SSA primarily result from relatively low levels of educational attainment (Kebede et al., 2022).

In our study, gender preference for children emerged as a significant determinant of desire for additional offspring among women with three or more children. In households lacking male children, the propensity to desire an additional child remained pronounced, even when the woman had already given birth to more than three children. This finding corroborates several results documented in prior studies conducted in Africa and other regions, which have demonstrated that male children's preferences can significantly influence the desire for larger family sizes (Ajaero & Odimegwu, 2021; Calhoun et al., 2013; Garenne & Stiegler, 2023; Mutharayappa, 1997; Okyere et al., 2023). Women who have attained the desired number of male children may exhibit a reduced inclination to seek further offspring. In the patriarchal context, the preference for sons is often regarded as a deeply entrenched social bias. The ongoing social valorisation of motherhood and male progeny serves to reinforce pro-natalist expectations, particularly in rural and patriarchal environments. These cultural constructs surrounding femininity and reproductive success may restrict women's capacity to freely express or act upon their fertility preferences, even when they are aware of and have access to modern contraceptive methods (Basu, 2002; Greene & Biddlecom, 2000). In this context, couples may aspire to raise children who exhibit culturally accepted male characteristics. Such preferences frequently shape behaviours and can result in gender discrimination, which has detrimental effects on the well-being, health, and survival of girls and women (Adebowale & Palamuleni, 2015).

Women with a greater number of sons than daughters are less likely to express a desire for additional children than those with more daughters than sons. High awareness of modern

contraception does not necessarily equate to access quality and client-centred reproductive health services. Factors such as provider bias, stockouts, distance to facilities, and lack of method choice constrain women's ability to act on their fertility preferences, particularly in rural areas (Tumlinson et al., 2015). This suggests that once women have reached their desired number of sons, they tend to use modern contraceptive methods, although they may also select alternative family planning methods. A study conducted in Malawi demonstrated a connection between the desire for additional children and the preference for the sex of children already born. Further research corroborates this finding, emphasising the significance of the number of living children and the gender composition of siblings in relation to fertility desires (Adebawale & Palamuleni, 2015). A study in Ghana indicated that women with only one son exhibited a significantly reduced risk of unplanned pregnancy, suggesting deliberate intention to conceive (Eliaison et al., 2018). Indeed, in many patriarchal societies, as observed in several countries included in this study, the preference for sons remains deeply entrenched. Couples may aspire to have a son because of the cultural norms and traditional gender roles associated with masculinity (Bongaarts & Guilamoto, 2015; Goli et al., 2022; Guilamoto, 2015).

Women's occupations were found to be associated with preferences for additional children within couples. The results revealed that women in managerial, employed, commercial, agricultural, or domestic positions exhibited a lower propensity to desire additional children than inactive women. Women's employment is a key indicator used to measure their autonomy within society (Asaolu et al., 2017). Researchers have investigated the associations between women's empowerment, contraceptive use, and fertility. These studies indicate that women's empowerment is significantly linked to the utilisation of modern contraceptives and contributes to a reduction in fertility (Phan, 2013; Yaya et al., 2018). Previous studies have also demonstrated that women's empowerment serves as a pathway through which education influences fertility (Adebawale & Palamuleni, 2015).

Two significant measures of women's fertility status are education and employment, which enable them to earn income. Both factors are crucial for enhancing women's independence and facilitating their roles as equal partners within the conjugal unit (Kahansim et al., 2013). It is increasingly acknowledged that women's participation in household decision-making affects their ability to make reproductive choices. The demographic literature indicates that active involvement in domestic decision-making reflects women's power within the household and, consequently, their capacity to control their fertility. Numerous studies have demonstrated that women with limited autonomy within the household are less likely to make innovative decisions (Acharya et al., 2010; Asabu & Altaseb, 2021; Beaujoin et al., 2021; S. S. Bloom et al., 2001; Gebeyehu et al., 2022). The influence of gender-based power dynamics in sexual relationships between men and women on reproductive outcomes is increasingly being recognised (Idris et al., 2023). Women's empowerment, as evidenced by their socioeconomic and professional status, educational attainment, household organisation, marital relationship dynamics, and participation in household decision-making, is a significant factor contributing to the decline in fertility rates in developing countries (Samari, 2019).

The relationship between paid employment and demographic behaviour has been shown to be particularly strong, especially regarding its impact on contraception and fertility (Mosha et al., 2013).

Unexpected

Contrary to expectations and findings from previous studies (Beaujoin et al., 2021; Mosha et al., 2013), spousal communication regarding family planning did not significantly influence the desire for more children. This unexpected result may reflect the limitations of DHS communication measures, which do not capture the quality, frequency, or negotiation dynamics of such discussions. Furthermore, it is plausible that discussions may occur in patriarchal households, yet decision-making still disproportionately resides with male partners (Greene & Biddlecom, 2000). Another surprising finding was that frequent media exposure did not significantly affect fertility desire in the multivariate model, despite the literature suggesting an influential role of media in shaping fertility norms and contraceptive behaviour (Gries & Grundmann, 2018; Reed et al., 1999). This could indicate that while media exposure may raise awareness, it is insufficient to counteract strong cultural norms or address structural barriers, such as contraceptive access, cost, or partner opposition.

In contrast to studies from East Africa (Casterline et al., 2017; Cleland et al., 2006), which indicate that fertility preferences among high-parity women have declined substantially, the persistence of high fertility desire in West Africa, particularly in countries such as Gambia, Burkina Faso, and Nigeria, suggests a regional divergence that may be rooted in slower progress in female education, limited reproductive health infrastructure, or entrenched pro-natalist ideologies.

Strengths and limitations

The primary strength of this study lies in its use of a nationally representative dataset for each country included in the research. This study employed a multi-stage sampling methodology to select respondents. Furthermore, the relatively large sample size facilitated a robust logistic regression analysis to model the factors associated with the desire to have an additional child among women who had already given birth to more than three children while controlling for confounding variables.

Despite these strengths, this study has some limitations. The analysis was constrained to the variables available in the dataset, thus precluding the consideration of other elements, such as sociocultural norms and values. Additionally, reliance on cross-sectional secondary data limits our capacity to draw causal conclusions regarding the factors influencing the desire to have more children among women who already have several offspring. Moreover, the analysis did not permit exploration of associations with all potential determinants of the desire for high fertility as some of these elements were not included in the data collected. Future research could investigate the role of couple dynamics, women's negotiation power within marriage, and community norms using mixed methods or longitudinal designs. Incorporating men in future surveys and disaggregating results by parity and birth intervals would also enhance the understanding of fertility decision-making.

Theoretical Implications for Demographic Science

These findings contribute to the refinement of fertility transition theories by highlighting the role of high-parity women as a distinct group whose reproductive behaviour does not always conform to the predictions of conventional models. While classical transition theory posits that as socioeconomic conditions improve, fertility preferences decline, our results indicate that preferences may remain elevated due to enduring cultural norms or household dynamics, even when women are educated or economically active.

This suggests the need for more nuanced models that integrate behavioural, gender-relational, and cultural frameworks (Ajzen, 1991; Speizer et al., 2022). Furthermore, this study supports the inclusion of a gender-power dimension in fertility research, as women's preferences are often shaped or overridden by male partners and kin networks. Future theoretical developments should also differentiate between spacing and limiting intentions and account for nonlinear trajectories of fertility desire, particularly in high-parity contexts.

Policy Implications

The findings of this study indicate that desire for additional children varies across countries and is undoubtedly influenced by cultural, economic, and social factors. The cross-country variation observed in the desire for additional children suggests the impact of national policy environments, including investments in girls' education, availability and quality of family planning services, and community-based health outreach. Countries with progressive gender policies and robust family planning/reproductive health programming, such as Rwanda and Ethiopia, tend to exhibit significant fertility declines, even among high-parity women (Cleland et al., 2006; Mbacké, 2017). The differences observed may also be explained by family planning and women's education programs implemented in each country. Indeed, women's education and family planning programs have emerged as the principal determinants of fertility decline, with their effects reflected in a reduction in both desired and unwanted fertility (Bongaarts, 2020).

The persistent desire for additional children among high-parity women challenges the design of current family planning policies in West Africa that often target young or nulliparous women. Policymakers must acknowledge that women with multiple children constitute a key demographic for fertility reduction.

Conclusions and Implications

This study identified several significant factors associated with the demand for children among women who had given birth to more than three live children. These determinants include place of residence, household standard of living, number of children the woman has, number of boys among the children, woman's age, woman's level of education, woman's occupation, use of modern contraception, spouse's education, ideal number of children desired, and country of residence.

The results highlight the complexity of the factors influencing women with large families' desire to have additional children. Rural residence, low socioeconomic status, and limited educational

attainment were all associated with a heightened desire for additional children, reflecting the persistence of traditional norms and the perceived value of large families as sources of social capital, labour, and old-age security. Gender preferences, particularly for male offspring, further complicated fertility decisions, even when women attained high parities. This highlights the entrenched cultural norms that continue to valorise male children in patriarchal societies. Furthermore, women's empowerment, as indicated by employment status and educational level, was inversely related to their desire for more children, thereby reinforcing the significance of autonomy and opportunity costs in shaping reproductive intentions.

The findings underscore the importance of considering these factors to better understand fertility dynamics and develop family planning policies and programs that go beyond a one-sex-fits-all approach. Tailored interventions must consider women's parity, contextual reality, and household dynamics. Specifically, programs should target women of high parity using culturally sensitive communication strategies, inclusive reproductive education for men, and improved access to modern contraception, particularly in rural areas.

Ultimately, integrating these nuanced insights into national and regional family planning strategies is essential for slowing population growth, promoting reproductive autonomy, and supporting sustainable development goals across sub-Saharan Africa.

Suggestions for Future Research

Although this study provides valuable insights into fertility intentions among high-parity women in West Africa, several areas warrant further exploration. There is a need to examine community-level influences, such as the role of religious leaders, social networks, and policy environments, which may moderate or amplify individual-level determinants. Understanding how religious teachings, kinship obligations, and traditional authorities influence reproductive norms could reveal key pathways for social norm changes. Context-specific investigations into how education, employment, and access to quality family planning services affect reproductive autonomy in women with high parity would assist in tailoring interventions. Future research should also evaluate the influence of health system factors, including service quality, provider bias, shortage of contraceptives, and accessibility of long-acting methods, which may either facilitate or impede the attainment of fertility preferences. Additionally, it would be beneficial to investigate the intergenerational transmission of fertility norms and attitudes, including how daughters of high-parity women perceive and internalise family size ideals. Ultimately, comparative studies across countries with divergent fertility trajectories can shed light on best practices in policy and programming. Cross-country analyses could help to identify how institutional investments in women's education, legal reforms promoting gender equality, and strategic behaviour change communication campaigns contribute to declining fertility desires. Addressing these gaps would contribute to more nuanced and gender-sensitive strategies for reducing fertility rates and achieving sustainable demographic transitions across the region.

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Conflicts of Interest

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