Decomposing the gains in the number of women using a modern method of contraception between 2000 and 2030 in Sub-Saharan Africa

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Objective
This work investigates demographic dynamics underlying the gains in the number of women that use modern contraception in Sub-Saharan Africa. It decomposes the differences in the number of modern users between 2000 and 2015 and 2015 and 2030 to explain how much of the difference is attributable to actual behavioural change in the use of modern contraception and how much of the difference is explained by compositional change related to population growth and change in the proportions of women that are married or in a union.

Methodology
We applied a multistate standardisation and decomposition procedure (Das Gupta 1993) to two time periods: t1=2000 to t2=2015 and t1=2015 to t2=2030. We expressed the change in the number of modern users (mCPR, where t1 and t2), the contraceptive prevalence rate of married/in-union women (CPR), the contraceptive prevalence rate of unmarried women (CPR”), the rate of population growth over the period (g), changes in the proportion of women who are married/in-union (𝑈𝑊), and changes in the proportion of women who are unmarried/not-in-union (𝑈𝑁) as:

\[
\Delta \text{mCPR}_{t2} = \Delta \text{mCPR}_{t1} = \Delta \text{mCPR}_{t1} = \Delta \text{mCPR}_{t2} = \Delta \text{mCPR}_{t2} \times (t_1 \times \text{CPR}_{t1} - t_2 \times \text{CPR}_{t2} + t_1 \times \text{CPR}_{t1} - t_2 \times \text{CPR}_{t2})
\]

Componental change is calculated as follows:

\[
\Delta \text{mCPR}_{t2} = \text{mCPR}_{t2} - \text{mCPR}_{t1} = \Delta \text{mCPR}_{t1} - \Delta \text{mCPR}_{t2} = \Delta \text{mCPR}_{t2} - \Delta \text{mCPR}_{t1} = \Delta \text{mCPR}_{t2} \times (t_1 \times \text{CPR}_{t1} - t_2 \times \text{CPR}_{t2} + t_1 \times \text{CPR}_{t1} - t_2 \times \text{CPR}_{t2})
\]

Decomposition Results
Difference in the number of women of reproductive age using modern contraception explained by i) population growth, ii) change in proportions married/in-union, and iii) increase in modern contraceptive prevalence (mCPR).

Sub-Saharan Africa:
Between 2000 and 2015, in Sub-Saharan Africa population growth contributed 8.3m (42%) to the total increase of 19.9m in women using modern contraception while mCPR contributed 11.7m (60%). Between 2015–2030, population growth is projected to become the largest contributor, accounting for 19.1m additional users compared to 17.1m due to increased mCPR. The decline in the proportion married/in-union has a dampening effect because contraceptive prevalence tends to be higher among married/in-union women in most countries.

Conclusion
This decomposition exercise highlights the contributions of population growth, changes in proportions married, and increases in mCPR to the increasing number in women using modern contraception. Population growth will become an increasingly important driver between 2015 and 2030 in Sub-Saharan Africa. Initiatives to maintain the increases in mCPR seen between 2000–2015 will need to be significantly expanded to meet the needs of populations that will likely continue to grow.

Outlook: Population growth in Sub-Saharan Africa expected to remain high beyond 2030
Sub-Saharan Africa is projected to become the region with the largest number of women of reproductive age by 2035. While in most regions of the world the number of females aged 15-49 is or will soon decline, in Sub-Saharan Africa, it is projected to continue growing throughout this century.

References

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Images

Data
The estimates and projections of demographic components were sourced from different United Nations Population Division’s data sets:
• family planning indicators by marital/union status (United Nations 2018b)
• population of women of reproductive age (United Nations 2019b)
• 2012 Sub-Saharan Africa fertility survey data
• 2013-2014 Demographic and Health Survey of Nigeria, 2013-2014 Demographic and Health Survey of Ethiopia, 2013-2014 Demographic and Health Survey of Rwanda, 2014 Demographic and Health Survey of South Africa
• Demographic and Health Survey of India, 2015-2016 Demographic and Health Survey of Bangladesh

Increase in Modern Contraceptive Users
In Sub-Saharan Africa, there has been substantial growth in the number of women of reproductive age who report currently using a modern contraceptive method. The number of users of modern contraception has increased rapidly in Sub-Saharan Africa from 20.7 million in 2000 to 51.2 million in 2019 and is projected to continue to increase with accelerating pace to 108.6 million by 2030 (Median, 95% uncertainty interval 95.2–112.6 million). Contributing to the increase in modern users are demographic dynamics of changes in population composition and changes in the use of contraception.

Proportion of women using modern contraception increased in all regions in Sub-Saharan Africa, with the largest increases in Saharan Africa, Ethiopia, Nigeria, Kenya and Tanzania. In these countries, 15-19 year olds (growing from 348.2 million in 2000 to 2268.8 million in 2015) and is projected to continue to increase to 3489.6 million by 2030 (median estimate, 95% uncertainty interval 3484–3496 million).

Marital status changes
The proportion of women of reproductive age who are married or in a cohabiting union is declining in Sub-Saharan Africa. In 2015, 82 percent of women of reproductive age were married or in a union, down from 66 percent in 2000. This proportion is estimated to further decline to 58 percent by 2030.

Behavioural changes contributing to a change in the number of users of modern contraception
In South Africa population growth contributed to a slighted increase in the number of modern users despite a small decrease in mCPR from 57.5% in 2000 to 55.1% in 2015. Without population growth the fall in mCPR would have led to a decline in the number of modern users.

Top 20 countries with largest absolute change
Ethiopia, Nigeria, Kenya and Tanzania experienced the largest increase in modern users over the 2000-2015 period with rising modern contraceptive prevalence accounting for most of the change. Only in Nigeria, the country that is projected to see the largest gain in users over the 2015-2030 period, will mCPR remain the strongest driver.