# Is Fertility Behavior in Africa Different?*

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**Abstract**

Half a century ago TFR was around seven children in most regions but is now mostly around the replacement level of 2.1. The outlier is Sub-Saharan Africa. Fertility decline has progressed at a much slower pace in Sub-Saharan Africa than in other regions, and even appears to have stalled in some countries. Why does fertility behavior in Sub-Saharan Africa appear to differ from other areas? This project uses DHS from countries in East Asia, South Asia, Latin America, and Sub-Saharan Africa to examine whether the determinants of urban fertility differ across regions. I focus on urban fertility for two reasons. First, urban areas tend to be less different across countries, which allows us to understand better whether Sub-Saharan Africa is inherently different. Second, despite significant projected increases in urbanization, we know much less about the determinants of fertility in urban areas of developing countries than about fertility in rural areas.
JEL: Keywords:

# 1 Introduction

Most developing countries have seen astonishing declines in their total fertility rate (TFR) over the last half century, moving from between 6 and 7 children to below or only slightly above replacement (Pörtner, 2018). The exception is Sub-Saharan African, where TFR is about twice as large as other regions. Most of the future increase in the world's population is therefore projected to come from Sub-Saharan Africa (Gerland, Raftery, Ševčíková, Li, Gu, Spoorenberg, Alkema, Fosdick, Chunn, Lalic, Bay, Buettner, Heilig and Wilmoth, 2014).

An important question—both from a policy and an academic standpoint—is why the fertility decline in Sub-Saharan Africa appears to have moved at a much slower pace, and may even have stalled in some countries (Ainsworth, 1996; Bongaarts and Casterline, 2013; Singh, Bankole and Darroch, 2017). Many prominent demographers argue that "African exceptionalism" is behind the slow decline in fertility (Caldwell and Caldwell, 1987, 1988; Caldwell, Orubuloye and Caldwell, 1992; Bledsoe, Banja and Hill, 1998; Bongaarts and Casterline, 2013). The argument is that reported ideal family size, and therefore actual fertility, is much higher than we should expect given Sub-Saharan Africa's level of development and mortality risk. For example, mortality in Sub-Saharan Africa is currently at the same level as mortality was in South Asia around the turn of the century, but fertility is about 1.5 children higher in Sub-Saharan Africa now than fertility was in South Asia at the turn of the century. If strong pronatalistic cultural norms are, indeed, behind the slow decline in fertility this has important policy implication.

The purpose of this project is to examine whether "exceptionalism" is supported by data; specifically, do the determinants of fertility differ across regions? Contrary to others who have addressed this question, I focus on urban fertility. Part of the motivation is that, despite projected significant increases in urbanization, we know much less about urban fertility determinants than we do about rural fertility for developing countries. More importantly, focusing on urban areas allows me to better understand whether there are some-

thing inherently different in Sub-Saharan Africa fertility behavior by abstracting from factors that are potentially important for fertility, but hard to measure well. Two important examples are land access and contraceptive access.

First, there is, on average, more land per capita in Sub-Saharan Africa than in other regions. At Sub-Saharan Africa's median projected population growth its population density will only be roughly equal to China's current density (Gerland et al., 2014, p 235). The low density leads to a higher return to children in rural Sub-Saharan Africa than in the other regions and little pressure to lower rural fertility for fear of running out of land (Caldwell et al., 1992; Bongaarts and Casterline, 2013). Surveys contain, however, only limited information on current land access and none on potential future land access. The return to children is much more homogeneous across built-up areas, and focusing on urban areas therefore ameliorate this concern when examining determinants of fertility.

Second, demographers have argued that Sub-Saharan Africa exhibit a substantial "unmet need" for contraception compared to other regions (Bongaarts and Casterline, 2013; Casterline and Agyei-Mensah, 2017; Singh et al., 2017). Contraceptive use is, indeed, lower in Sub-Saharan Africa, but historical data show that fertility reduction is possible even in the absence of modern contraceptives, and it is unclear whether the low use rate is an independent factor or simply a reflection of higher desired fertility (Schultz, 1985; Galloway, 1987; Bailey and Chambers, 1998; Bengtsson and Dribe, 2006). In either case, urban areas have substantially better access to contraceptives (Jones, 2015), effectively eliminating access as an explanation across regions.

This project uses Demographic and Health Surveys (DHS) from countries in East Asia, South Asia, Latin America, and Sub-Saharan Africa to examine whether the determinants of urban fertility differ across regions. I plan to focus on urban fertility for two reason. First, although there are substantial difference in farming practices and land availability across countries, urban areas tend to be less different across countries. Hence, focusing on urban areas allows us to better understand whether there are something inherently differ-

ent in Sub-Saharan Africa fertility behavior as suggested by (Caldwell et al., 1992). Second, all countries are projected to see significant increases in urbanization, but we know much less about the determinants of fertility in urban areas of developing countries than we do about fertility in rural areas.

## 2 Data

The data comes from 248 Demographic and Health Surveys (DHS) from countries in East Asia, South Asia, Latin America, North Africa, and Sub-Saharan Africa. The data cover 1985 to 2016. The sample consists of all surveyed women aged 15 to 49 and there are 1,536,172 observations. Table 1 shows the complete listing of the countries and years of the surveys.

I regress children ever born on dummies for age, years of education, survey year groups, and region, together with interactions between region and the three other covariates. I am still working on presenting the results, but the preliminary results are as follows. The differences in fertility across regions is smaller in urban areas than for rural areas. But, even controlling for education and survey period, the number of children ever born among urban women is still significantly higher in Sub-Saharan Africa than in other regions. Despite the higher level of fertility, the decline in fertility over time is similar in Sub-Saharan Africa as in the East Asia/Pacific region.

# Table 1: Demographic and Health Surveys Used for Analysis

| Country | Survey Years |
|---|---|
| Afghanistan | 2015/16 |
| Angola | 2006/07, 2015/16 |
| Bangladesh | 1993/94, 1996/97, 1999/2000, 2004, 2007, 2011, 2014 |
| Benin | 1996, 2001, 2006, 2011/12 |
| Bolivia | 1989, 1993/94, 1998, 2003/04, 2008 |
| Brazil | 1986, 1991/92, 1996 |
| Burkina Faso | 1992/93, 1998/99, 2003, 2010 |
| Burundi | 1987, 2010/11 |
| Cambodia | 2000, 2005/06, 2010/11, 2014 |
| Cameroon | 1991, 1998, 2004, 2011 |
| Central African Republic | 1994/95 |
| Chad | 1996/97, 2004, 2014/15 |
| Colombia | 1986, 1990, 1995, 2000, 2004/05, 2009/10, 2015/16 |
| Comoros | 1996, 2012 |
| Congo | 2005, 2011/12 |
| Congo Democratic Republic | 2007, 2013/14 |
| Cote d'Ivoire | 1994, 1998/99, 2011/12 |
| Dominican Republic | 1986, 1991, 1996, 1999, 2002, 2007, 2013 |
| Ecuador | 1987 |
| Egypt | 1988/89, 1992/93, 1995/96, 2000, 2003, 2005, 2008, 2014 |
| Ethiopia | 2000, 2005, 2011, 2016 |
| Gabon | 2000/01, 2012 |
| Gambia | 2013 |
| Ghana | 1988, 1993/94, 1998/99, 2003, 2008, 2014 |
| Guatemala | 1987, 1995, 1998/99, 2014/15 |
| Guinea | 1999, 2005, 2012 |
| Guyana | 2009 |
| Haiti | 1994/95, 2000, 2005/06, 2012 |
| Honduras | 2005/06, 2011/12 |
| India | 1992/93, 1998/2000, 2005/06, 2015/16 |
| Indonesia | 1987, 1991, 1994, 1997, 2002/03, 2007, 2012 |
| Jordan | 1990, 1997, 2002, 2007, 2009, 2012 |
| Kenya | 1988/89, 1993, 1998, 2003, 2008/09, 2014 |
| Lesotho | 2004/05, 2009/10, 2014 |
| Liberia | 1986, 2006/07, 2013 |
| Madagascar | 1992, 1997, 2003/04, 2008/09 |
| Malawi | 1992, 2000, 2004/05, 2010, 2012, 2015/16 |
| Maldives | 2009 |
| Mali | 1987, 1995/96, 2001, 2006, 2012/13 |
| Mexico | 1987 |
| Morocco | 1987, 1992, 2003/04 |
| Mozambique | 1997, 2003/04, 2011, 2015 |
| Namibia | 1992, 2000, 2006/07, 2013 |
| Nepal | 1995/96, 2000/01, 2005/06, 2010/11, 2016 |
| Nicaragua | 1997/98, 2001 |
| Niger | 1992, 1998, 2006, 2012 |
| Nigeria | 1990, 2003, 2008, 2013 |
| Nigeria (Ondo State) | 1986/87 |
| Pakistan | 1990/91, 2006/07, 2012/13 |
| Paraguay | 1990 |
| Peru | 1991/92, 1996, 2000, 2003/08, 2003/08, 2009, 2010, 2011, 2012 |
| Philippines | 1993, 1998, 2003, 2008, 2013 |
| Rwanda | 1992, 2000, 2005, 2007/08, 2010/11, 2014/15 |
| Sao Tome and Principe | 2008/09 |
| Senegal | 1986, 1992/93, 1997, 2005, 2010/11, 2012/13, 2014, 2015, 2016 |
| Sierra Leone | 2008, 2013 |
| South Africa | 1998 |
| Sri Lanka | 1987 |
| Sudan | 1989/90 |
| Swaziland | 2006/07 |
| Tanzania | 1991/92, 1996, 1999, 2004/05, 2007/08, 2009/10, 2015/16 |
| Thailand | 1987 |
| Timor-Leste | 2009/10 |
| Togo | 1988, 1998, 2013/14 |
| Trinidad and Tobago | 1987 |
| Tunisia | 1988 |
| Uganda | 1988/89, 1995, 2000/01, 2006, 2011, 2011, 2016 |
| Vietnam | 1997, 2002 |
| Yemen | 1991/92, 2013 |
| Zambia | 1992, 1996, 2001/02, 2007, 2013/14 |
| Zimbabwe | 1988/89, 1994, 1999, 2005/06, 2010/11, 2015 |

**Note.** More information on the 248 individual surveys is available at dhsprogram.com. Survey years are based on the surveys, rather than the official years from the DHS program.

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