The role of ethnicity within sub-Saharan African's fertility patterns

30 October 2019

Jet Wildeman, Radboud University Nijmegen
Sandor Schrijner, Radboud University Nijmegen
Jeroen Smits, Radboud University Nijmegen

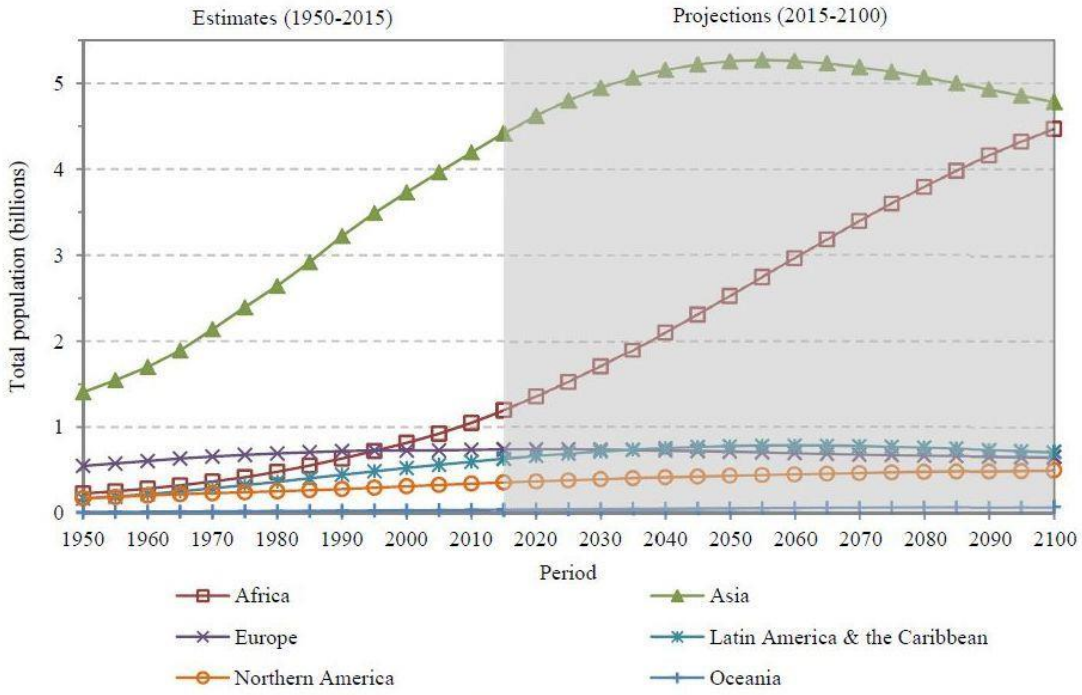
Abstract

In this study, we first examine to what extent fertility patterns differ between ethnic groups in the sub-Saharan African (SSA) context and whether the differences between the groups have changed over time. In the second part, we try to explain the group differences on the basis of socioeconomic and cultural group characteristics. We expect that fertility patterns vary over ethnic groups and that these differences have become smaller in the last decades. Furthermore, we expect that ethnic groups who are wealthier, more educated, work in non-farm occupations, have higher percentage of elites, are larger, are more urbanized, and where women have a stronger position have lower fertility levels and preferences. To answer our research questions, a database was constructed by combining data from 88 Demographic and Health Surveys (DHS). The database consists of 43 SSA countries and 420 sub national areas, covering in total 320 different ethnic groups. Fertility patterns are measured by women's preferred number of children, children ever born and age at first birth. The data will be analyzed using cross-classified multilevel regression models.

Introduction

Fertility and population growth go hand in hand. As it appears that population growth is hard to predict for sub-Saharan Africa (SSA), additional understanding of the fertility patterns in SSA's context is required. Exemplary of the hardness in predicting population growth in SSA are the continues upward adjustments of UN population predictions. Since 2004, the UN's population predictions have increased from 2.2 to 4.3 billion for Africa in 2100 which entails almost a doubling (Figure 1). Moreover, the confidence intervals surrounding these projections are large. For the most recent estimation, the 95% confidence interval lies between the 3.5 and 5.4 billion.

Figure 1. Population by region: Estimates, 1950-2015, and medium variant projection, 2015-2100 (Source: UN, 2017)



An explanation for the unstable population growth predictions can be found in the unusual fertility patterns in the SSA regions. Most prominent is the unexpected absence in fertility decline. After a seemingly 'normal' start in the 1970s and 1980s, fertility decline has stalled in many SSA countries, which is different from the fertility patterns in other developing regions in Asia and Latin America. In the last decades, fertility has even increased in some SSA countries. These unexpected absence of fertility decline in SSA stresses the importance of gaining insights in SSA's fertility patterns. Why do SSA's fertility patterns differ from that of other regions worldwide? These insights will be beneficial for more stable population predictions for Africa, and offer possibilities to increase effectiveness of policies aiming to diminish population growth.

An important factor which has not yet received much attention in fertility literature is the role of ethnicity. It is highly likely that ethnic groups differ in their fertility patterns as it is known that many aspects of behavior, including fertility, are socially regulated in traditional economies. On the one hand, ethnicity could have an endogenous effect on fertility patterns, meaning that within an ethnic group fertility patterns tend to vary with the average pattern of the group. On the other hand, ethnicity could have an exogenous effect, meaning that for example households' fertility patterns vary with the educational level of the group. This study aims to contribute to the literature by examining to what extent fertility patterns differ between ethnic groups, how this has changed over time and to what extent the differences are explained by socioeconomic and cultural characteristics of the groups. This resulted in the following research questions:

1) *To what extent and in what ways do fertility patterns in SSA vary between ethnic groups?*
2) *To what extent and in what ways has this variation changed in the last decades?*
3) *To what extent and in which ways can this variation and change be explained by socioeconomic and cultural characteristics of these ethnic groups?*

Hypotheses

Regarding the first question, we hypothesize that fertility patterns will vary significantly among ethnic groups. Regarding the second question, we hypothesize that these differences have become smaller in the last decades because improved information (communication and transport) has connected remote groups with other value patterns. Regarding the third question, we hypothesize that ethnic groups who are on average wealthier, more educated, work in non-farm occupations, have higher percentages of elites, are larger, are more urbanized, and where women have a stronger position have lower fertility levels and preferences.

Data and methodology

For this study, a dataset prepared by the Global Data Lab (www.globaldatalab.org) will be used in which 88 Demographic and Health Surveys (DHS, www.dhsprogram.com) for the period of 2000 to 2018 are combined and harmonized. DHS are large, nationally representative surveys that consist of women's and household surveys, in which basic information is collected of all household members. In the women's surveys, all women aged 15 to 49 are invited for an oral interview in which information is obtained on (reproductive) health-related issues plus demographic and socioeconomic background information. For each survey, clusters are randomly selected. In the selected clusters, a random sample of 25–30 households is selected for the interviews. Our combined dataset contains information derived from women living in 420 sub-national regions of 43 SSA countries.

Fertility patterns are measured by three characteristics of it. These are women's preferred number of children, women's age when they gave first birth, and women's children ever born. Ethnicity

is measured by reported ethnicity. The socio-economic status of ethnic groups is measured as the mean value of the households' International Wealth Index (IWI). The IWI is a comparable welfare index that is based on the household's possession of consumer durables, quality of housing, and access to water and electricity. Group's educational level is measured through mean years of schooling of adults aged 20-49 in the group, group's work status is measured as the percentage of households working in farm occupations and the percentage of members with a high-level occupation. The group size is measured as the percentage group members within the total population of a country. The urbanization of ethnic groups is measured as the percentage of households living in urban regions. The position of women is measured by the mean age difference between husband sand wives within the group.

To answer our research questions, the data will be analyzed using multilevel regression analyses with the three characteristics of fertility patterns as dependent variables. Cross-classified models are used to control for the fact that fertility is measured at the household level and that households are nested both, within regions and within ethnic groups, whereas regions and ethnic group are nested in countries.