Seasonal Education and Population Count Puzzle in Malawi

Tom Mtenje *
Ministry of Finance, Economic Planning and Development
Malawi
Hisahiro Naito†
Graduate School of Humanities and Social Sciences
University of Tsukuba, Japan

May 2019

*E-mail:tom.mtenje@gmail.com; Address: University of Tsukuba Tennodai 1-1-1, Tsukuba City Ibaraki Prefecture Japan. A technical officer at the Ministry of Finance and Economic Planning and Development. This research was conducted while Mtenje was affiliated with University of Tsukuba. This articled represent the author's opinion. The ministry of Economic planning and development is not responsible for any opinion expressed in this paper. Mtenje appreciates for the final support from World bank Japan scholarship.

†E-mail:naito@dpipe.tsukuba.ac.jp ;Address: University of Tsukuba Tennodai 1-1-1 Tsukuba City Ibaraki Prefecture Japan

‡I appreciate for comments from participants of Canadian Development Economics Study Groups Session during the Canadian Economic Association Conference at Ottawa 2016. I especially appreciate comments from Hao TongTong and Hiroaki Mori.

Abstract

The years of schooling in Malawi varies across birth months substantially and consistently, at least over thirty years. Those who were born in the second half of each year have 1.6 years longer of schooling than those who were born in the first half of each year. The difference is substantial given that the average number of years of schooling in Malawi is six years. This pattern is persistent in different times, geographic locations, and different demographic groups. The availability of food across months and the variation of birth weight across birth months do not match the variation in the number of years of schooling across birth months. Compulsory education law does not explain this pattern either.

To explain the pattern of years of schooling across birth months, we propose a selection mechanism hypothesis that among individuals who were born or who were to be born in the second half of each year, only those who have high innate ability could survive the malnutrition during pregnancy and the periods after birth. This implies that those who were born in the second half of each year and those who are alive now have higher innate ability on average than those who were born in the first half of the year. To prove our hypothesis, we show that the number of alive individuals who were born in the first half of each year is 2.5 times larger than the number of alive individuals who were born in the second half of each year. Second, we regress each persons years of schooling on his or her parents birth months controlling for each persons birth month and parents education. We show that the number of years of schooling of children whose parents were born in the second half of each year is longer than those of children whose parents were born in the first half of each year even after controlling various demographic characteristics. This result shows that individuals who were born in the last half of each year survived severe malnutrition and have higher innate ability.

In addition, our results suggest that half of each cohort who were born in the 2nd half of each year eventually die when they become adult in Malawi. Such an unusual pattern of mortality is quite rare. It suggests that intensive research is needed to undercover the possible cause of this pattern of mortality for a humanitarian point of view.