Socio-Demographic Changes in the Timing of First Birth in Ghana: Evidence from

Three Waves of the Demographic and Health Survey Data

By

Acheampong Yaw Amoateng

And

Natal Ayiga

Research Focus Area

Faculty of Humanities & Social Sciences

North-West University (Mafikeng Campus)

South Africa.

Abstract:

This study employs the 1988, 1998 and 2014 waves of the Demographic and Health Survey Data to examine the effect of the social and demographic factors such as birth cohorts, education, marital status, place of residence, region of residence, ethnicity, and religion on changes in the age at first birth in Ghana. Preliminary analysis using the Cox regression model of the data show that overall age at first birth has been increasing over the years in Ghana. Moreover, the data show that the changes in age at first birth has been affected by the two main coordinates of modernization, namely, education and level of urbanization even though factors such as ethnicity, birth cohorts, marital status and religion have also played a role in explaining the changes in the timing of birth. The policy implications of the findings are discussed.

Introduction and Aim of Study

In most developing countries, especially in sub-Saharan Africa, where the event of first childbirth occurs early, there has been visible transition in this pattern as a result of such modernizing influences as urbanization, education (Gibbs, Wendt, Peters & Hogue, 2012; Gupta & Mahy, 2003), and improvements in child health and survival (Aksan, 2014). Generally, the absence of longitudinal studies has hampered the examination of changes in the timing of central family events such as the timing of these events. However, in recent years the availability of several waves of the Demographic and Health Survey data in several sub-Saharan African countries has provided researcher with ample opportunities to examine some of these changes.

The aim of the present study is to use three waves of the Ghana Demographic and Health Survey data (1988, 1998 and 2014) to examine the effect of several socio-demographic factors on changes in the timing of first birth in Ghana.

Theoretical focus

The study employs two distinct but complementary theoretical perspectives to help understand changes in the timing of birth in Ghana, namely, modernization theory and the family life course perspective. Modernization theory identifies the social variables that contribute to social progress

and development of societies, and seeks to explain the process of social change. In general, modernization is linked to an overarching process of rationalization. While modernization theory helps to identify the social variables that effect social change, the family life course perspective helps in understanding how the individual interfaces these social institutions through rational choices as they go through life. The family life course approach directs attention to the powerful connection between individual lives and the historical and socioeconomic contexts in which these lives unfold. As a concept, a life course is defined as "a sequence of socially defined events and roles that the individual enacts over time" (Giele and Elder, 1998: 22).

Data & Methods

The present study employs data from Ghana Demographic and Health Surveys (GDHS) from the individual files of ever married women aged 15 to 49 years old for the survey periods 1988, 1998 and 2014 totaling 18,720 cases (4481, 4843 and 9396 respectively). Data collected across the three surveys included such background characteristics as education, ethnicity, religion, place of residence, region of residence, age at first sexual intercourse, age at first marriage or cohabitation, age at first birth, marital duration, total number of children ever born, health service providers, communities, household health expenditures of women as well as information on young adults.

Statistical analyses

Both the Kaplan-Meier and Cox survival techniques are employed for the bivariate and multivariate analyses respectively (Kleinbaum and Klein, 2005). For the Kaplan Meier life table, the outcome variable is the 'amount of time a woman ''survives'' without having a birth'. For any woman who has not yet had a child, the 'age at first birth' is yet unknown (except it is known that the age at first birth will be at least as large as her current age) and hence the time is considered to be 'censored'. In reality, the age of a woman when she has a birth for the first time could be measured in days (or

years and fractions of years) by taking the difference between her date of birth and the date of her first birth.

Results

Table 1   Profile of respondents by selected variables and years of survey

Variable	Year of survey					
	1988		**1998**		**2014**	
Age						
15-19	18.9	(849)	18.4	(889)	18.7	(1756)
20-24	19.3	(867)	18.3	(887)	16.7	(1571)
25-29	19.3	(867)	17.7	(857)	16.6	(1564)
30-34	14.3	(644)	13.6	(661)	14.3	(1343)
35-39	11.8	(531)	12.9	(627)	13.4	(1260)
40-44	8.1	(364)	10.0	(484)	11.0	(1032)
45+	8.2	(366)	9.0	(438)	9.3	(870)
Place of residence						
Urban	33.9	(1523)	32.7	(1585)	49.0	(4602)
Rural	66.1	(2965)	67.3	(3258)	51.0	(4794)
Level of education						
No education	39.7	(1783)	35.9	(1737)	24.3	(2281)
Primary	52.8	(2369)	16.8	(813)	18.6	(1747)
Secondary	6.6	(296)	45.2	(2188)	51.7	(4854)
Tertiary	0.9	(40)	2.2	(105)	5.5	(514)
Marital Status						
Never married	19	(889)	22.5	(1092)	32.4	(3041)
Currently married	70.3	(3156)	66.7	(3229)	58.1	(5456)
Never married	9.9	(442)	10.8	(522)	9.6	(899)
Ethnicity						
Akan	53.0	(2379)	46.3	(2240)	41.3	(3876)
Ga/Adangbe	8.9	(397)	7.1	(344)	5.5	(519)
Ewe	16.0	(718)	13.3	(646)	11.9	(1118)
Guan	2.3	(104)	1.5	(71)	2.7	(256)
Mole/Dagbani	11.0	(492)	10.5	(510)	24.2	(2270)
Others	8.8	(395)	21.3	(1032)	14.4	(1356)

Religious groups

Variable	1988		1998		2014	
No religion	11.8	(531)	7.0	(340)	2.9	(273)
Catholic	17.1	(765)	16.?	(17??)	14.3	(1341)
Other Christians	53.1	(2381)	56.2	(27??)	62.?	(5828)
Muslim	9.9	(445)	13.3	(642)	17.4	(1726)
Others	8.1	(363)	7.5	(362)	2.4 -	(227)

Age groups
15-19
20-24   19   21   22

Region

Variable	1988		1998		2014	
Western 25-29	8.7	(392) 20	10.7	(5?9) 19	10.9 21	(1027)
Central 30-34	10.3	(464) 19	9.2	(4?7) 20	10.0 21	(941)
Greater Accra 35-39	13.3	(598) 19	14.3	(6?2) 20	10.6 20	(999)
Eastern 40-44	15.7	(703) 18	11.4	(5?0) 20	9.7 20	(907)
Volta 45+	11.1	(500) 19	9.1	(4?0) 20	8.5 20	(795)
Ashanti **Place of residence**	18.3	(823)	13.0	(629)	11.1	(1040)
Brong Ahafo	11.1	(500)	6.4	(309)	10.7	(1005)
Northern	11.3	(508)	26.0	(1258)	28.5	(2682)
Total	**100.0**	**(4488)**	**100.0**	**(48843)**	**100.0**	**(9396)**

Table 2   **Median age at first birth by selected characteristics and year of survey**

Urban	20	21	22
Rural	19	20	20
Level of education			
No education	19	20	19
Primary	19	20	19
Secondary	22	21	22
Tertiary	25	25	28
Marital Status			
Never married	-	-	-
Currently married	19	20	34
Never married	18	19	20
Ethnic groups			
Akan	19	20	21
Ga/Adangbe	20	21	22
Ewe	20	21	22
Guan	19	20	21
Mole/Dagbani	19	20	20
Others	19	20	20
Religious groups			
No religion	19	20	19
Catholic	19	20	21
Other Christians	19	20	21
Muslim	19	20	21
Others	19	20	19
Region of residence			
Western	19	20	21
Central	19	20	21
Greater Accra	20	22	24
Eastern	19	20	21

Volta	19	20	21
Ashanti	19	20	22
Brong Ahafo	19	19	20
Northern	19	20	20
Total	**19**	**20**	**21**

Table 3   **The Cox proportional hazard model showing the risk ratios indicating risk factors to age at first birth by year of survey**

Risk factors	Model 1 1988 HR	Model 1 1988 CI	Model 2 1998 HR	Model 2 1998 CI	Model 3 2014 HR	Model 3 2014 CI
Age						
15-19	1.64****	1.34-2.02	1.53***	1.21-1.93	1.60****	1.33-1.92
20-24	1.29****	1.12-1.48	1.25***	1.10-1.43	1.42****	1.28-1.58
25-29	1.10	0.97-1.26	1.03	0.91-1.16	1.16***	1.06-1.27
30-34	1.22**	1.07-1.40	1.10	0.97-1.25	1.07	0.98-1.16
35-49	1.11	0.97-1.28	1.04	0.92-1.18	0.96	0.88-1.05
40-44	1.21**	1.05-1.41	1.10	0.96-1.25	1.04	0.95-1.14
45+	1.00		1.00		1.00	
Place of residence						
Urban	0.87**	0.80-0.95	0.91	0.84-1.00	0.78****	0.74-0.82
Rural	1.00		1.00		1.00	
Level of education						
No education	2.29****	1.55-3.38	2.06****	1.61-2.64	3.06****	2.65-3.52
Primary	2.11****	1.42-3.09	1.98***	1.54-2.54	3.16****	2.74-3.64
Secondary	1.29	0.86-1.95	1.56****	1.22-1.99	2.11****	1.85-2.41
Tertiary	1.00		1.00		1.00	
Marital Status						
Never married	0.13****	0.10-0.17	0.09****	0.07-0.11	0.19****	0.17-0.22
Currently married	0.96	0.86-1.06	0.92	0.83-1.02	1.00	
Ever married	1.00		1.00			
Ethnicity						
Akan	1.31***	1.12-1.53	1.13	0.97-1.32	1.18***	1.06-1.30
Ga/Adangbe	1.17	0.96-1.42	1.05	0.85-1.29	1.18*	1.02-1.36
Ewe	1.12	0.94-1.34	1.01	0.84-1.21	0.97	0.86-1.10

Guan	1.08	0.83-1.40	1.12	0.84-1.49	1.10	0.93-1.29
Mole/Dagbani	0.91	0.78-1.06	1.11	0.98-1.26	1.05	0.96-1.14
Others	1.00		1.00		1.00	
Religious groups						
No religion	1.03	0.89-1.20	1.04	0.88-1.24	0.93	0.77-1.12
Catholic	1.03	0.88-1.20	1.01	0.87-1.18	0.92	0.78-1.07
Other Christians	1.01	0.88-1.17	0.93	0.80-1.07	0.97	0.81-1.10
Muslim	1.18*	1.00-1.39	0.93	0.80-1.08	0.99	0.85-1.15
Others	1.00		1.00		1.00	
Region						
Western	0.88	0.73-1.06	1.34***	1.12-1.60	0.95	0.84-1.06
Central	0.88	0.73-1.05	1.24*	1.03-1.50	1.03	0.91-1.16
Greater Accra	0.86	0.71-1.05	1.09	0.90-1.32	0.82**	0.72-0.92
Eastern	1.02	0.86-1.22	1.27**	1.07-1.52	1.02	0.90-1.15
Volta	0.87	0.72-1.06	1.33**	1.10-1.62	1.09	0.95-1.24
Ashanti	0.84*	0.71-0.99	1.28**	1.08-1.51	0.96	0.86-1.07
Brong Ahafo	0.80**	0.68-0.95	1.40****	1.16-1.67	1.03	0.93-1.14
Northern	1.00		1.00		1.00	