

Determinants of male fertility in Uganda

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Introduction: In spite of increasing recognition of research on male involvement in reproductive health, no study has examined determinants of male fertility in Uganda. Nonetheless, men significantly influence contraceptive use and childbearing decisions among couples. Thus, understanding determinants of male fertility is necessary to alleviate male reproductive health unmet needs and also to ensure attainment of effective male involvement in family planning, immunization and maternal health and child health programs in Uganda. This study examined determinants of male fertility in Uganda, to inform fertility control and reproductive health policies for attainment of optimal male involvement in sexual and reproductive health services. It was conceptualized using the Bongaarts' Proximate Determinants theory (2015) and the Easterlin's Economic Framework theory as modified by Bongaarts (1993).

Methods: The men's individual (MR) file for Uganda Demographic Health Survey (UDHS) 2016 was used. All men aged 15-54 years who had ever had sex were included while 872 respondents who had never had sex were excluded. The dependent variable was Children Ever Born (CEB). Kruskal Willis test and a Poisson generalized linear model with exponentiated regression were used to analyze data in STATA version 14. Permission to use the UDHS dataset was obtained online from the Monitoring and Evaluation to Assess and Use Results (MEASURE) DHS program and the dataset was accessed using the following login link: http://www.dhsprogram.com/data/dataset_admin/login_main.cfm

Results: Analysis was performed on a weighted sample size of 4,453 respondents. Onset of childbirth at 25+ years (RRR=0.83, 95% CI 0.80-0.87), had reducing incident rate ratio of having high number of CEB while timing of first childbirth before 18 years was associated with increasing number of CEB (RRR=1.12, 95% CI 1.05-1.20). Men aged 5+ years older than their spouses had increasing incident rate ratio of high number of CEB (RRR=1.04, 95% CI 1.01-1.08) than those who were older by 1-4 years. Urban areas had reducing incident rate ratio of having many children than rural areas of residence (RRR=0.95, 95% CI 0.90-0.99). Having 2+ number of wives had increasing incident rate ratio of having more children (RRR=1.33, 95% CI 1.28-1.39) while having no wife had reducing RRR of having many children (RRR=0.82, 95% CI 0.66-0.98). Death of a son (RRR=1.28, 95% CI 1.23-1.34), a daughter (RRR=1.32, 95% CI 1.26-1.38) or both sexes ((RRR=1.64, 95% CI 1.57-1.72) were associated with increased male fertility. Ethnicity, age of a man, sex of surviving children, fertility preference, duration of marriage and internet use were other determinants of CEB as shown in Table 1.

Conclusion: Fertility control and reproductive health policies should focus on improving child survival, reducing early onset of fatherhood and mitigating cultural beliefs that increase demand for children among men in Uganda.

Table 1: Poisson Regression of CEB

Variables	IRR	CI
Ethnicity		
Acholi and Jopadhola	1.047	0.979-1.119
Alur, Lugbara and Madi	1.045	0.970-1.127
Bafumbira and Banyarwanda	1.024	0.951-1.103
Banyoro and Batoro	1.039	0.962-1.122
Banyankore and Bakiga^	1.000	
Baganda	1.130***	1.067-1.196
Bagisu, Samia, Banyole	1.096***	1.032-1.163
Iteso, Karimojong and Lango	1.078***	1.019-1.140
Basoga	1.122***	1.047-1.203
Sabinyi, Pokot and others	1.114**	1.002-1.239
Timing of first child's birth		
14-17	1.120***	1.048-1.198
18-24^	1.000	
25+	0.834***	0.803-0.866
No birth	0.000	0.000-0.000
Partner age difference		
Man younger or equal age	0.962	0.901-1.027
Man older 1-4 years^	1.000	
Man older 5+	1.043**	1.006-1.083
Not Married	0.000	0.000-0.000
Age of respondent		
15-19^	1.000	
20-24	1.110	0.720-1.711
25-29	1.347	0.875-2.073
30-34	1.631**	1.059-2.513
35-39	1.900***	1.231-2.934
40-44	2.100***	1.358-3.246
45-49	2.313***	1.495-3.579
50-54	2.327***	1.502-3.606
Place of residence		
Urban	0.947**	0.903-0.993
Rural^	1.000	

Table 1: Poisson Regression of CEB (continued).

Variables	IRR	CI
Sex of surviving children		
No Child (Childless)	0.535***	0.386-0.740
Only sons^	1.000	
Only daughters	0.997	0.907-1.096
Both sex	1.663***	1.546-1.788
Current number of wives		
No wife	0.815**	0.675-0.984
1 wife^	1.000	
2+ wives	1.334***	1.282-1.388
Fertility preference		
Desire to have another child^	1.000	
Undecided	1.029	0.945-1.121
Wants no more children	1.089***	1.049-1.130
Sterilized or infecund	1.019	0.851-1.219
Sex of children who died		
No child died^	1.000	
Only sons	1.280***	1.225-1.337
Only daughters	1.317***	1.256-1.382
Both sex	1.642***	1.567-1.721
Duration of marriage		
Never married	0.964	0.783-1.186
1-4^	1.000	
5-9	1.161***	1.081-1.247
10-14	1.271***	1.178-1.371
15+	1.415***	1.309-1.531
Internet use		
No^	1.000	
Yes	0.918***	0.863-0.977
Access to mass media		
No^	1.000	
Yes	1.021	0.967-1.078
Number of lifetime sexual partners among men		
1-2^	1.000	
3-4	0.987	0.943-1.034
5+	1.023	0.979-1.069

Table 1: Poisson Regression of CEB (continued).

Variables	IRR	CI
Education level		
No education	1.013	0.950-1.081
Primary [^]	1.000	
Secondary+	0.967	0.930-1.006
Wealth status		
Poorest [^]	1.000	
Poorer	1.007	0.956-1.060
Middle	1.003	0.950-1.058
Richer	0.981	0.928-1.038
Richest	0.968	0.903-1.037
Occupation		
Not working	0.879	0.753-1.026
White collar jobs	0.947*	0.897-1.000
Agriculture [^]	1.000	
Services and domestic workers	0.952	0.893-1.014
Manual labour	0.969	0.930-1.010
Religion		
No religion	1.420**	1.027-1.964
SDA and Orthodox	0.983	0.845-1.143
Pentecostal	1.020	0.962-1.082
Anglican (Protestants)	1.025	0.988-1.064
Muslims	1.067**	1.013-1.124
Catholics [^]	1.000	
Others	1.027	0.883-1.194
Contraceptive use		
No [^]	1.000	
Yes	0.976	0.945-1.008
Constant	1.985***	1.282-3.074
*** p<0.01, ** p<0.05, * p<0.1 Reference category [^]		