Fertility transition in sub-Saharan Africa:
Translation of fertility preferences into reproductive behaviours

Kazuyo Machiyama, MPH, PhD
Faculty of Epidemiology and Population Health
London School of Hygiene & Tropical Medicine (LSTHM)

Michaelmas Term 2014 Seminar Series
'Fertility, Reproductive Health and Women's Empowerment'
The Oxford Institute of Population Aging
13 November 2014, Oxford, UK

UKaid
from the British people

LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE

STEPUP
STRENGTHENING EVIDENCE FOR PROGRAMMING ON UNINTENDED PREGNANCY

1. Characteristics of fertility transition in sub-Saharan Africa (SSA)

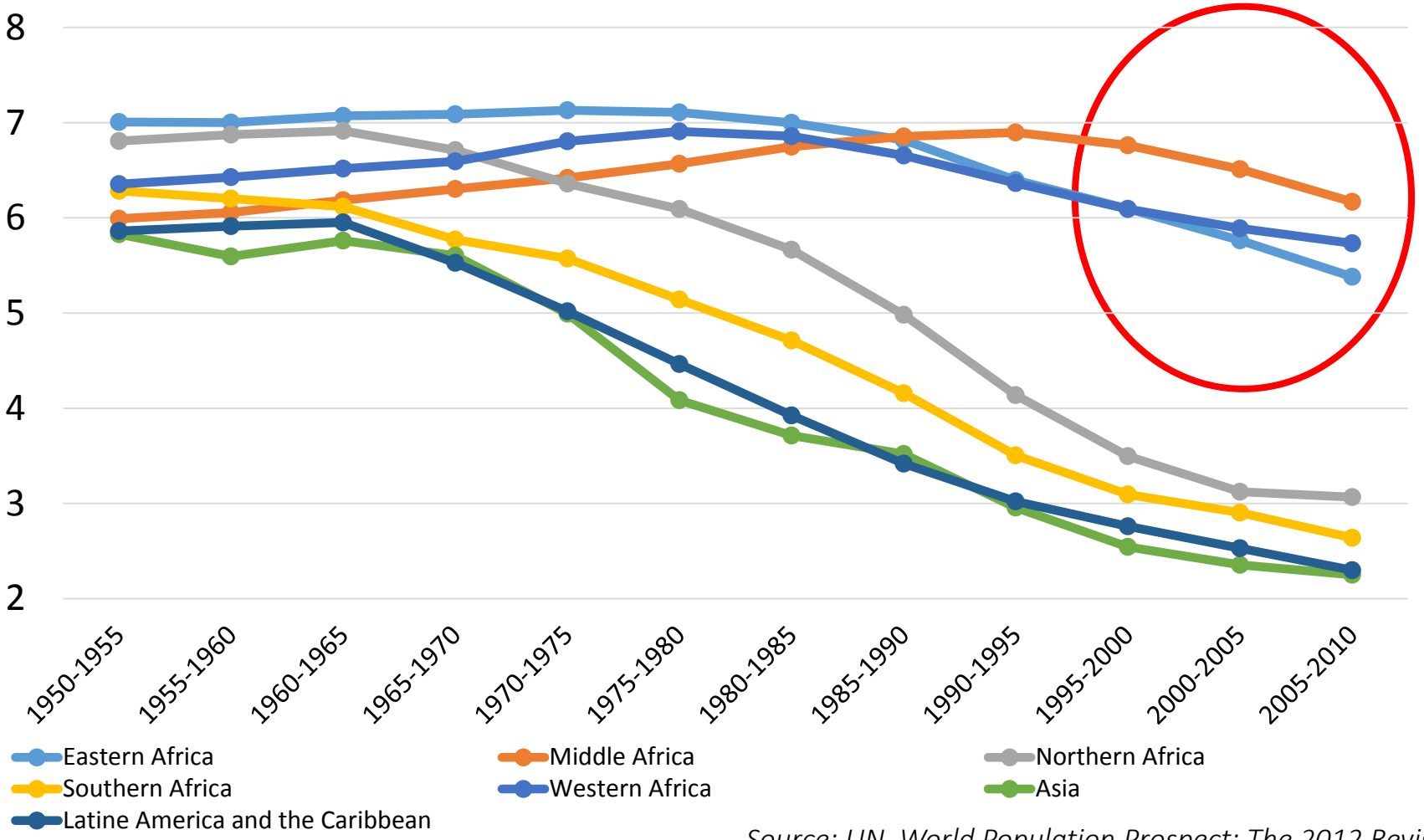
2. Case study 1

   An assessment of childbearing preferences in Northern Malawi

3. Case study 2

   Insights into unmet need for family planning(FP) in Ghana

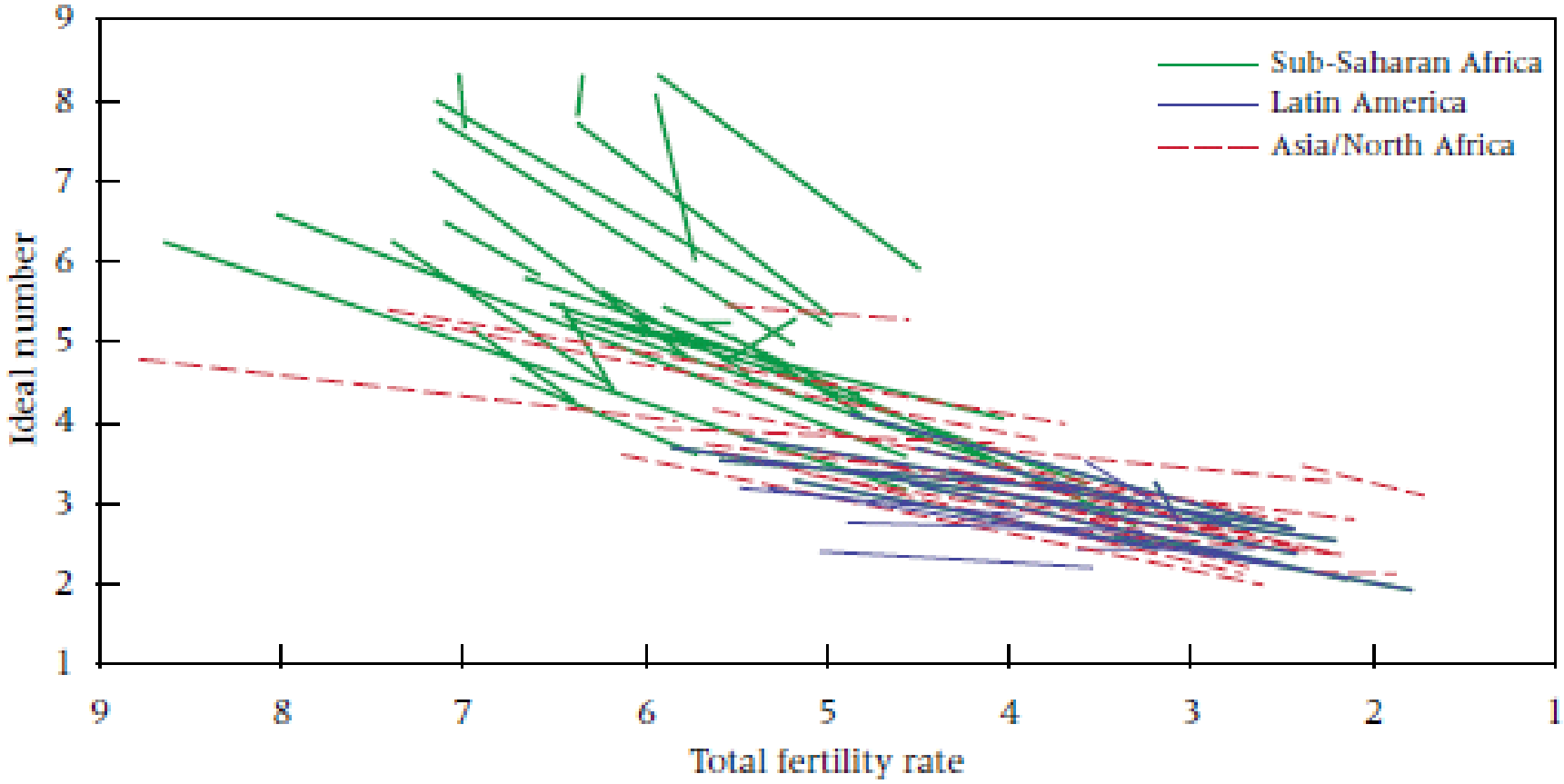
Trends in TFR in Africa, Asia and Latin America, 1950-2010



Source: UN. World Population Prospect: The 2012 Revision

- Pre-transitional fertility is modestly higher
- The onset of fertility transition was much later
  - SSA entered fertility transition at lower level of socioeconomic development (*Bongaarts 2014)*
- The pace of decline is slower
  - However, fast decline in Rwanda and Ethiopia
- Distinct fertility preferences?
  - Persistently high fertility demand – Pronatalist
  - No parity-specific fertility control? *(Caldwell et al. 1992),* Postponement *(Moultrie, Sayi and Timæus 2012)*
- Low contraceptive prevalence + High unmet need for FP
- High discontinuation of FP

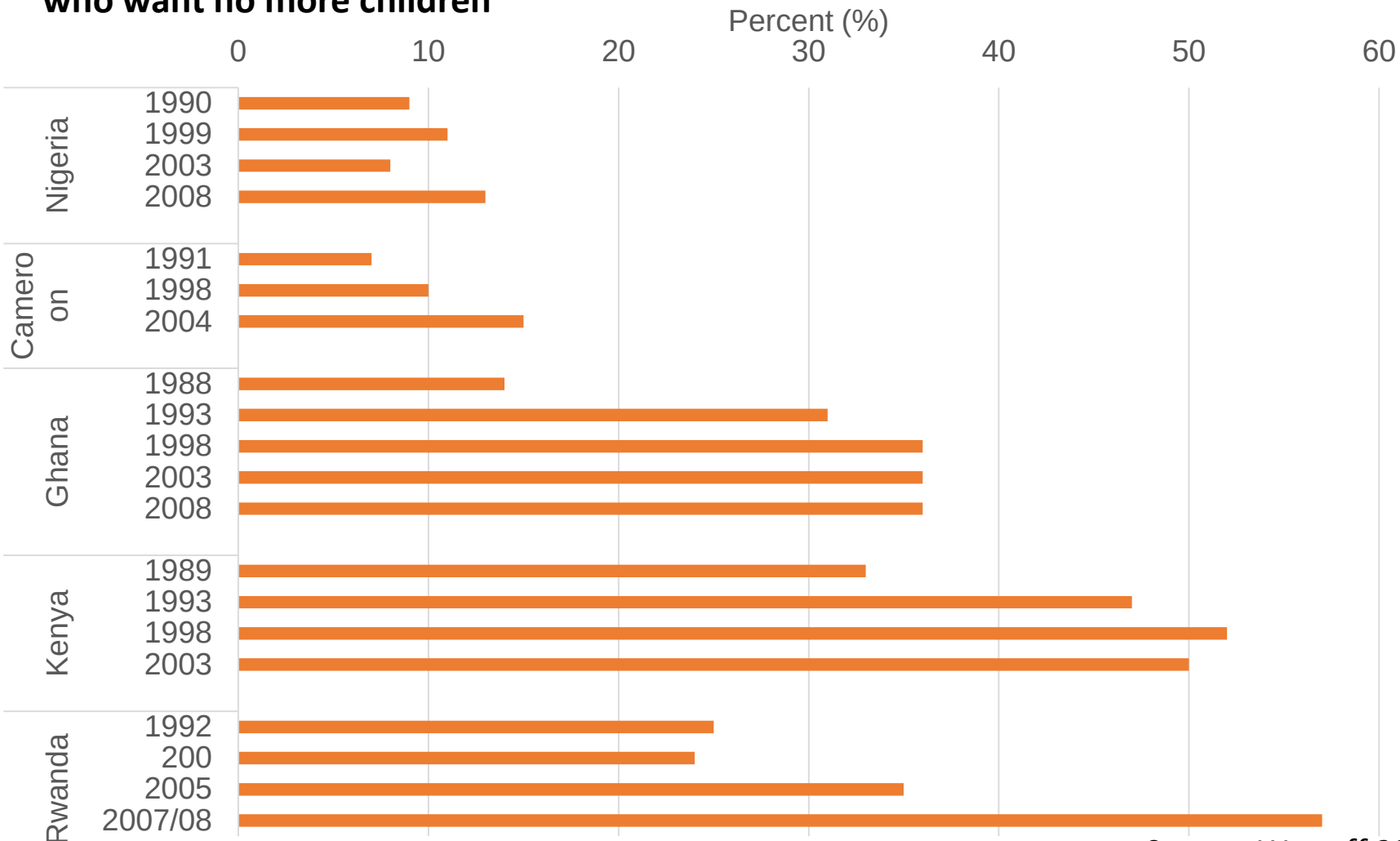
Trends in ideal number of children by TFR



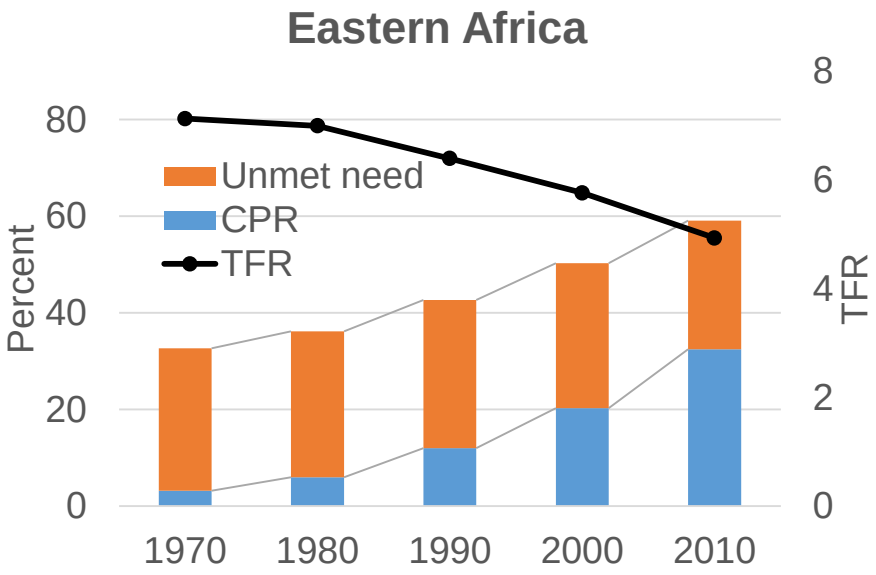
NOTE: Earliest and most recent survey in each country, n = 63 countries.

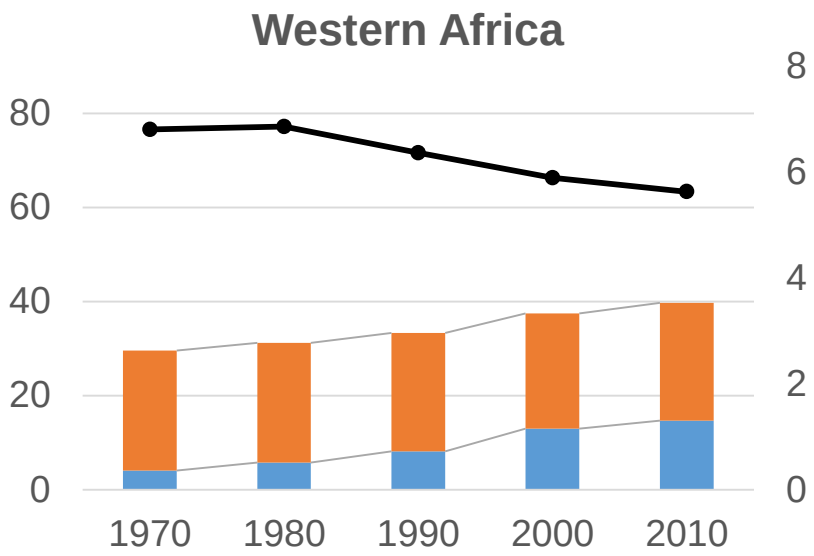
Source: Bongaarts and Casterline 2012

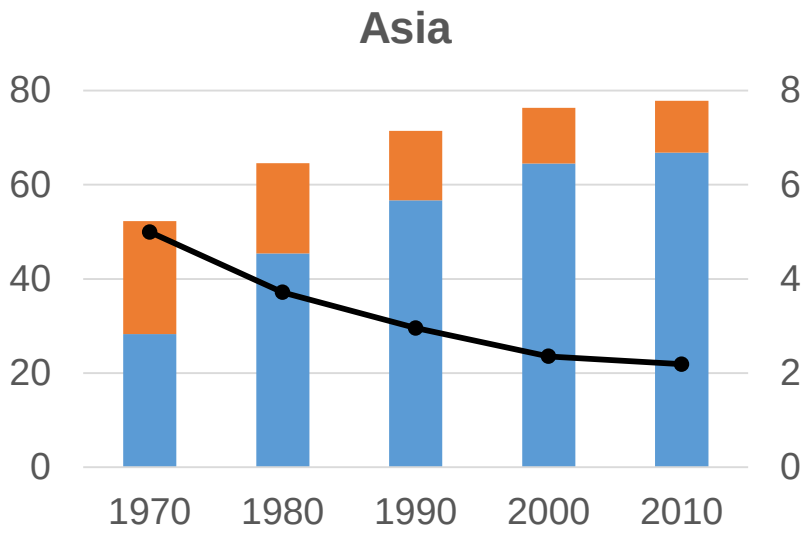
Trends in the percentage of currently married women with 3 children who want no more children

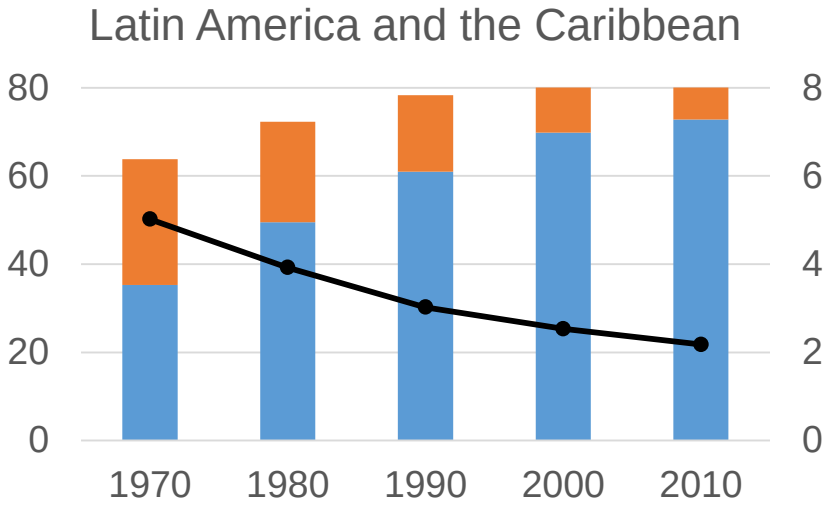


Source: Westoff 2010



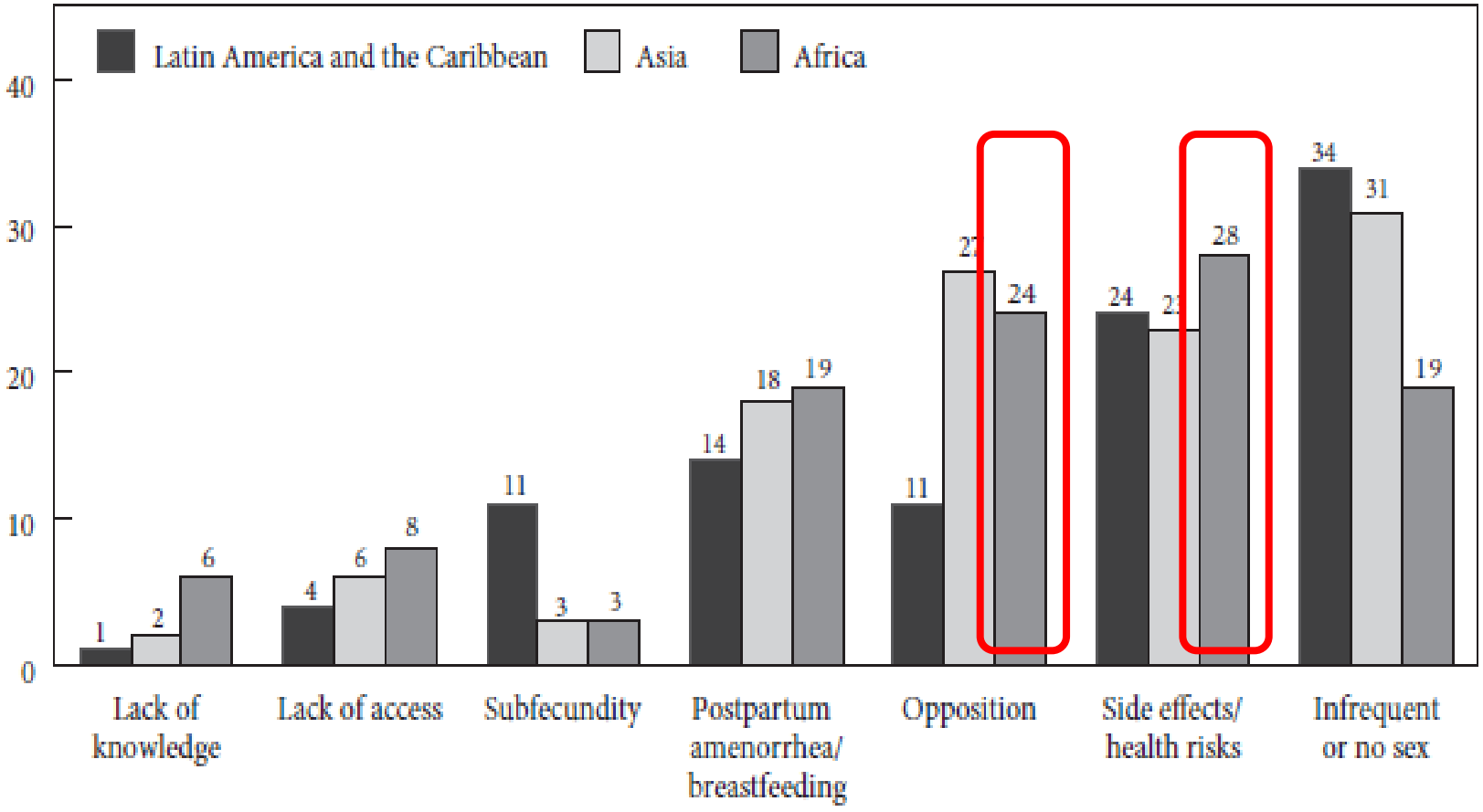






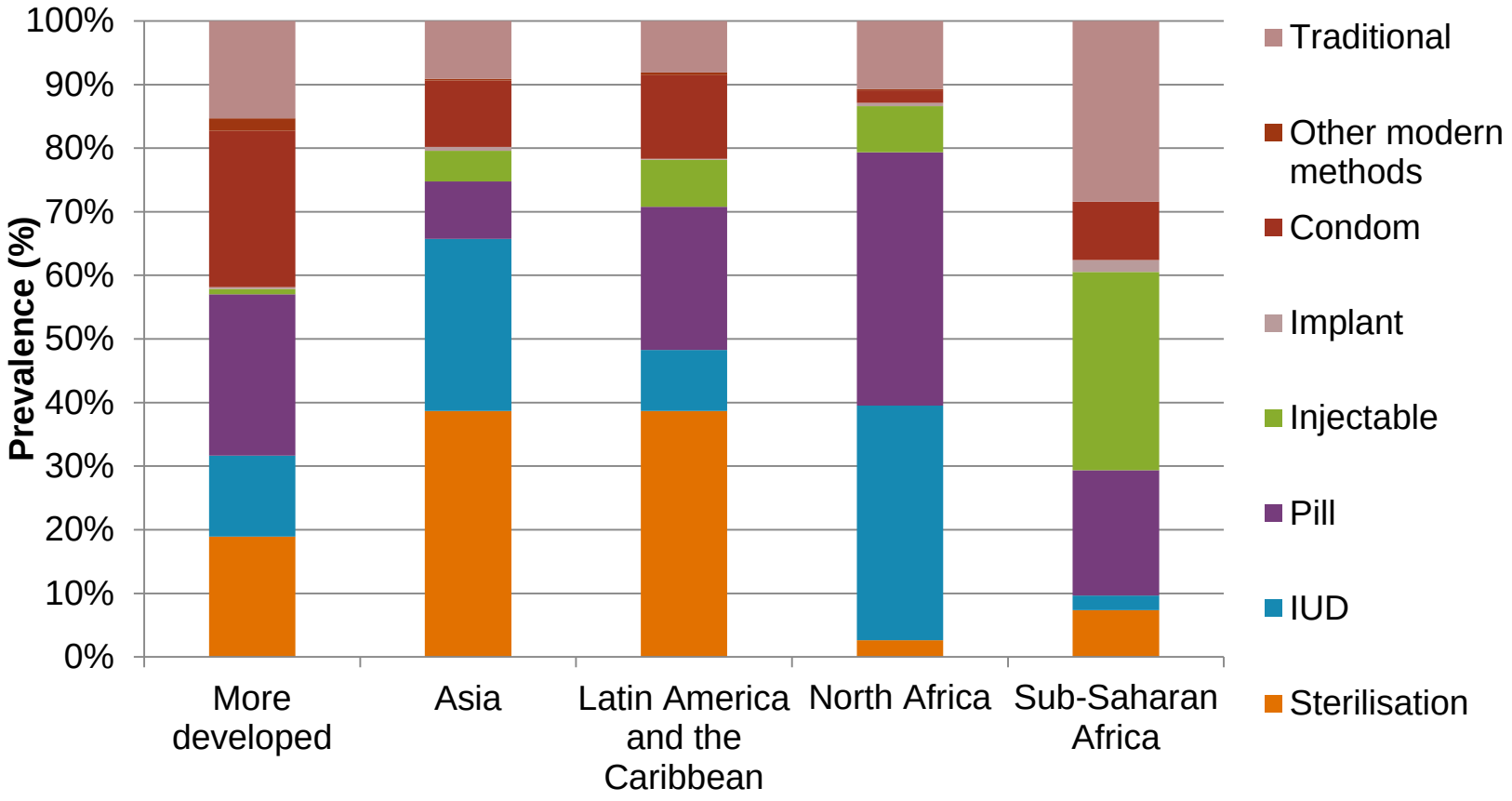
Source: UNPD 2013

Percentages of married women aged 15-49 citing key reasons for nonuse of contraception, by region, 2006-13

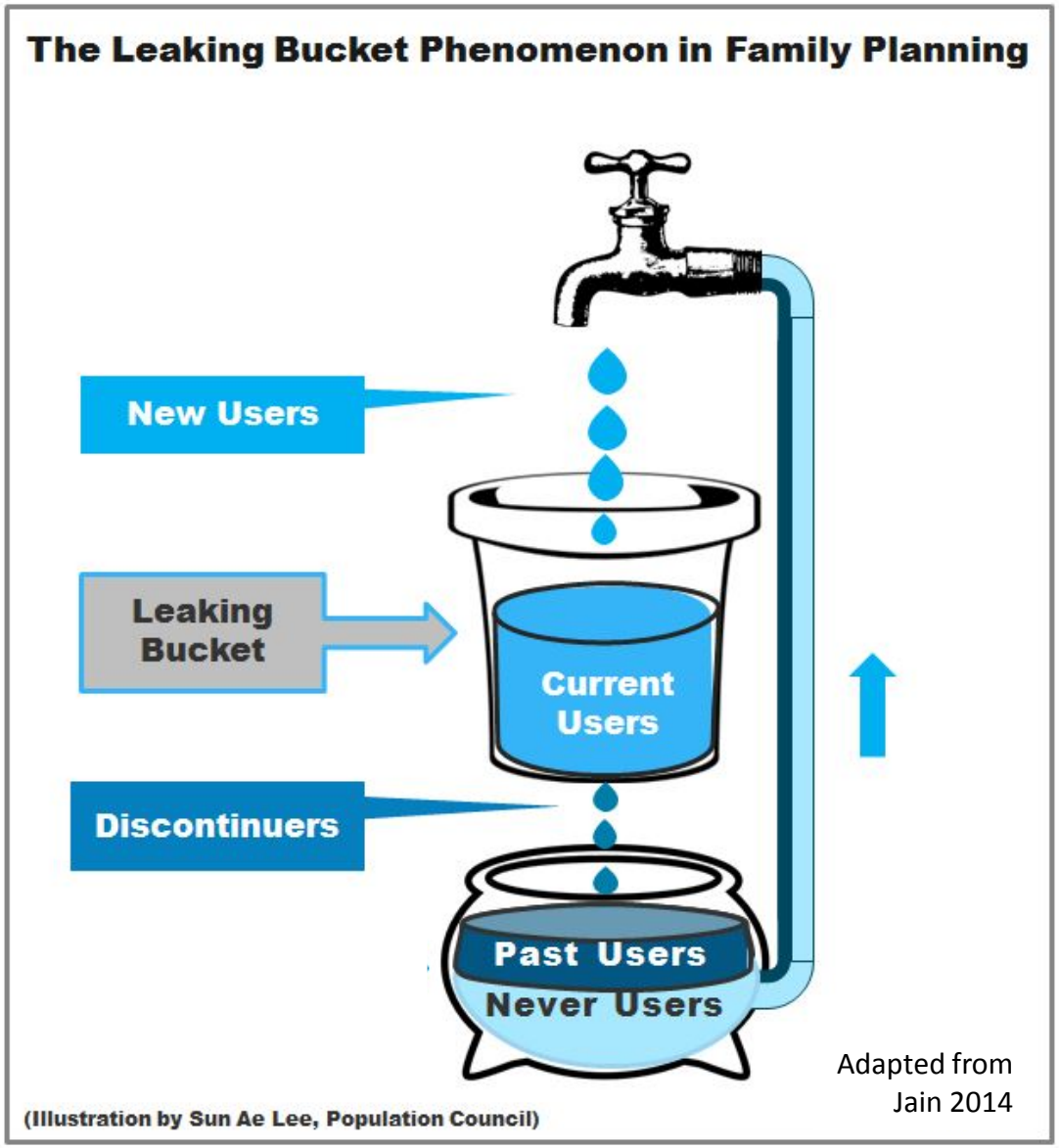


Source: Sedgh and Hussain 2014

Method mix: among all married users, percent using specific method

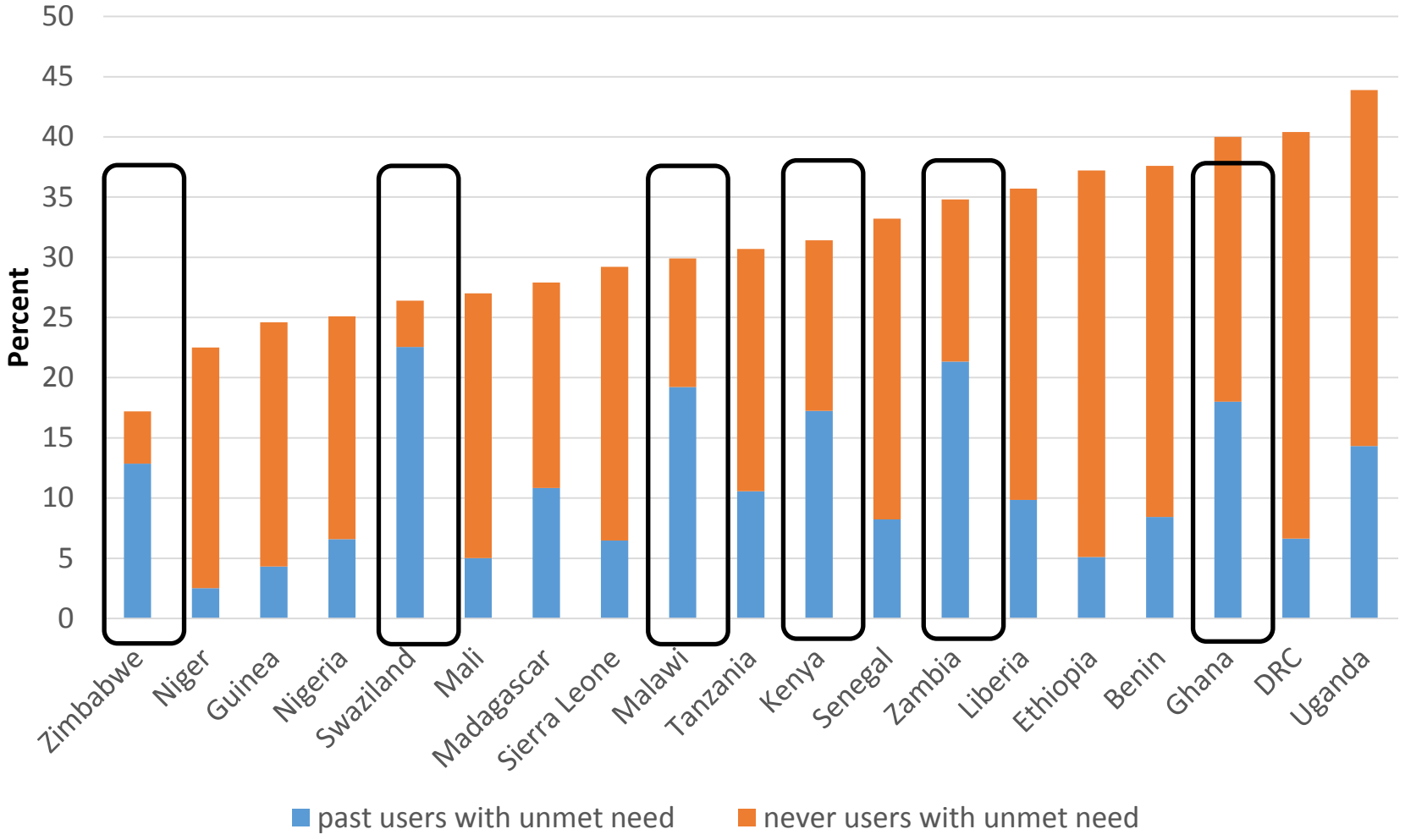


Source: United Nations (2011) World Contraceptive Use 2011



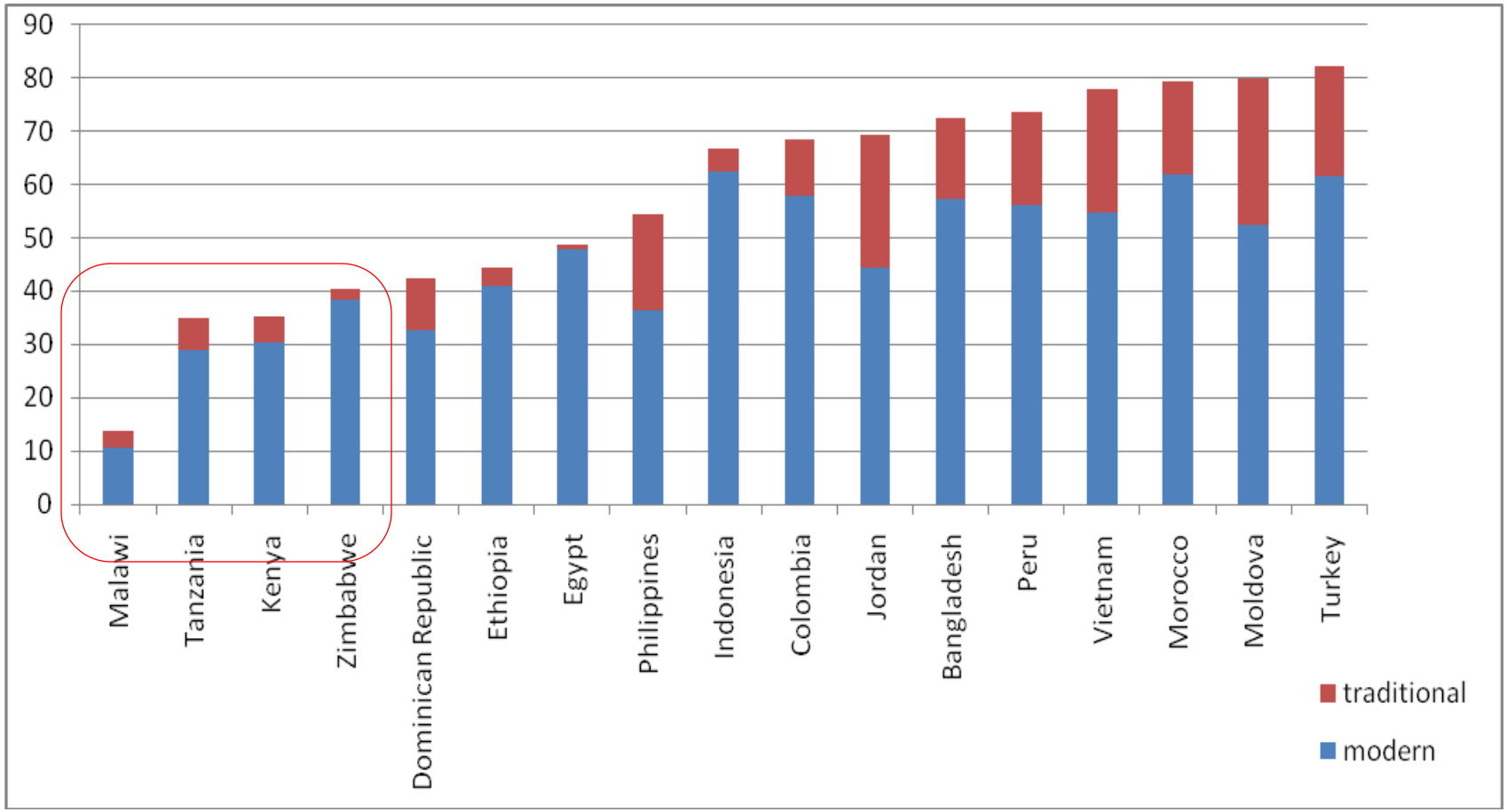
Adapted from Jain 2014

Unmet need for FP: past user vs never users



Source: Jain et al.2014

Percent who switched to a modern and to a traditional method within three months of method-related discontinuation



Source: Ali et al. 2012

1. Fertility desire

- High fertility demand
- Parity-specific fertility control is limited. Postponement.

- Meeting unmet need for FP is not sufficient for fertility decline in SSA *(Casterline et al 2014)*
- Transition of fertility desire is required for further faster decline
- Understanding reproductive preferences in SSA is important

Case study 1 in Malawi

2. Unmet need for family planning

- More effective translation of existing desire into behaviours is needed
- Reduce concerns about side effects
- Reduce discontinuation of FP and promote immediate switching
- How is TFR declining without high modern CPR in West Africa?

Case study 2 in Ghana

1. An assessment of childbearing preferences

A Case Study in Northern Malawi

Machiyama K, Baschieri A, Albert D, Crampin, AC, Glynn, JR, French, N, Cleland J. *An Assessment of childbearing preferences in Malawi. (under review)*

- Fertility decision-making is complex in first place
  - Pregnancy is not always an outcome of reasoned action
  - Multi-dimensional
    - An appreciable proportion of women report births resulting from accidental pregnancy due to discontinuation or failure of contraceptives as wanted
    - 18% of women in US are neither avoiding nor trying pregnancy (Väisänen and Jones 2014)
  - Fluid, tentative, or ambivalent
  - Sequential over time

- The major source of fertility intention data is predominantly cross-sectional surveys, which is vulnerable to *post-factum* rationalisation
- Few prospective studies were conducted in SSA

- A high degree of instability of fertility preferences among young women was suggested by studies in Ghana and Malawi *(Johnson-Hanks 2002, 2005, Kodzi et al. 2010, Sennott and Yeatman 2012)*

- High stability among married women who want to cease childbearing in Egypt, Morocco and Pakistan over 2-3 years at individual level *(Westoff and Bankole 1998, Casterline et al. 2003, Jain et al. 2014)*

Objectives

Investigate prospective fertility intention in terms of their degree of spousal agreement and association with future childbearing

Setting

- Karonga, Malawi (patrilineal)

Data

- Fertility intention study nested in Karonga HDSS over 3 rounds between 2008-2011
- Married women aged 15-49
- Matched couple data are used

Wife's fertility intention	Husband's fertility intention (%)					Total (%)
	Want no more children	Unsure about having a child	Want to wait 3+ years	Want within 3 years/unsure about the timing	No intention	
Want no more children	66.6	3.2	6.3	17.9	6.2	100.0
Unsure about having a child	46.1	11.2	6.7	31.5	4.5	100.0
Want to wait 3+ years	21.7	3.9	33.5	38.5	2.4	100.0
Want within 3 years/unsure about timing	15.3	2.0	12.9	66.9	2.9	100.0
Total	39.9	3.2	13.3	39.4	4.2	100.0

N=2,071

	Adjusted OR	95% CI		p-value
Wife's fertility intention				
Want no more children	1.00			
Unsure about having a child	1.30	0.814	2.083	
Want to wait 3+ years	**1.59**	1.179	2.131	**
Want within 3 years/unsure	**2.24**	1.729	2.900	***
Husband's fertility intention				
Want no more children	1.00			
Unsure about having a child	1.72	1.024	2.883	*
Want to wait 3+ years	**1.55**	1.134	2.125	**
Want within 3 years/unsure	**2.02**	1.579	2.575	***
Missing	1.26	0.754	2.100	
Wife's age				
15-29	1.00			
30-49	0.35	0.267	0.445	***

* $p < 0.05$, ** $p < 0.01$,*** $p < 0.001$

Adjusted for no of living children, type of marriage, wife's educational status

Predicted probabilities of birth or pregnancy within 3 years by wife's and husband's fertility intention at baseline

Prospective fertility intension	Predicted probability	95% CI	
Neither wife nor husband want another	0.33	0.283	0.370
Wife wants no more but husband wants another/undecided	0.47	0.422	0.521
Wife wants another/undecided, but husband wants no more	0.48	0.429	0.532
Both want another	0.63	0.598	0.662
N	2,063		

Adjusted for women's age, Number of living children, type of marriage and women's education

- Spousal agreement on fertility intention is high among limiters and those who want to have a child soon.

- Predictive validity of the stated intention to **stop** childbearing is high and consistent with the findings from the previous studies in Morocco, Egypt and Pakistan

- Weaker spousal agreement and predictive power of desire to **postpone** childbearing

- The influence of the reproductive wishes of husband and wife on subsequent childbearing were symmetrical

2. Insights into unmet need for family planning

A Case Study in Ghana

Machiyama and Cleland. 2014. Unmet need for family planning in Ghana: The shifting contributions of lack of access and attitudinal resistance. *Studies in Family Planning* 45(2):203-226.

Objective

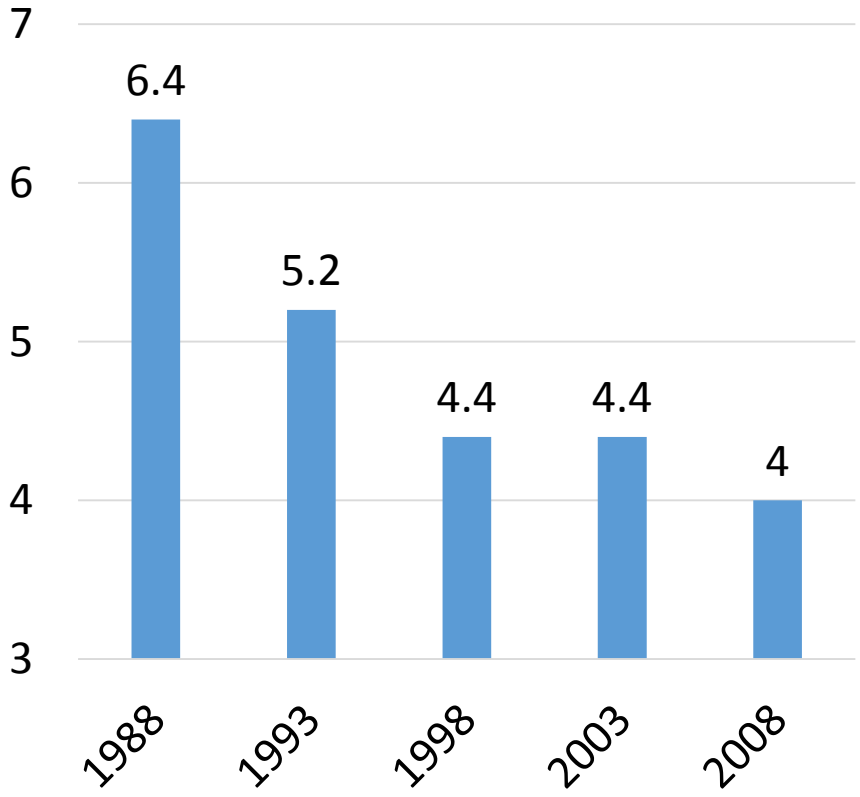
Assess reasons for non-use of family planning and

Investigate fertility decline with low modern CPR in Ghana

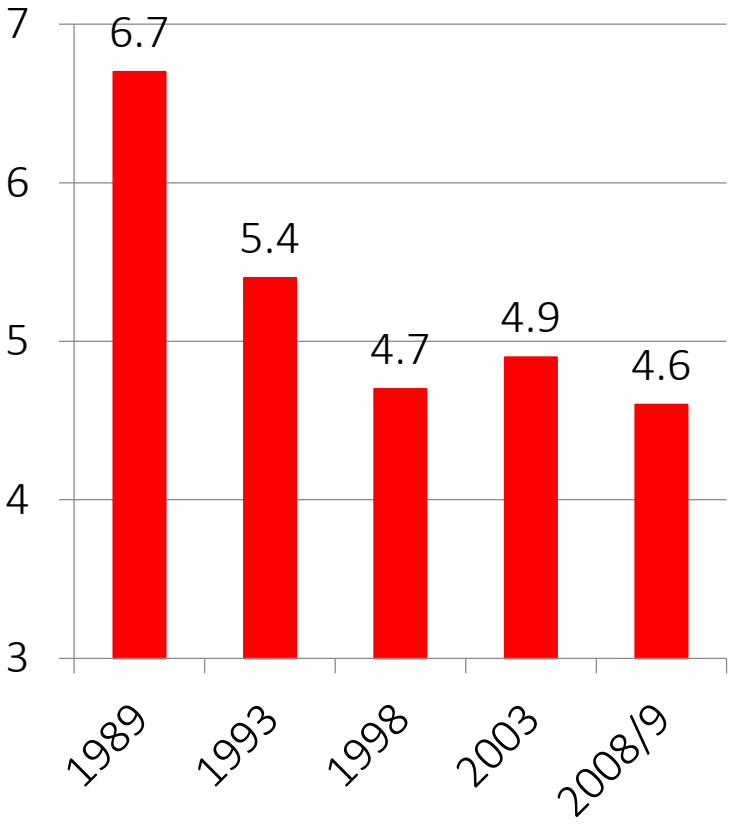
Data

- Ghana DHS 2008
- Married women aged 15-49

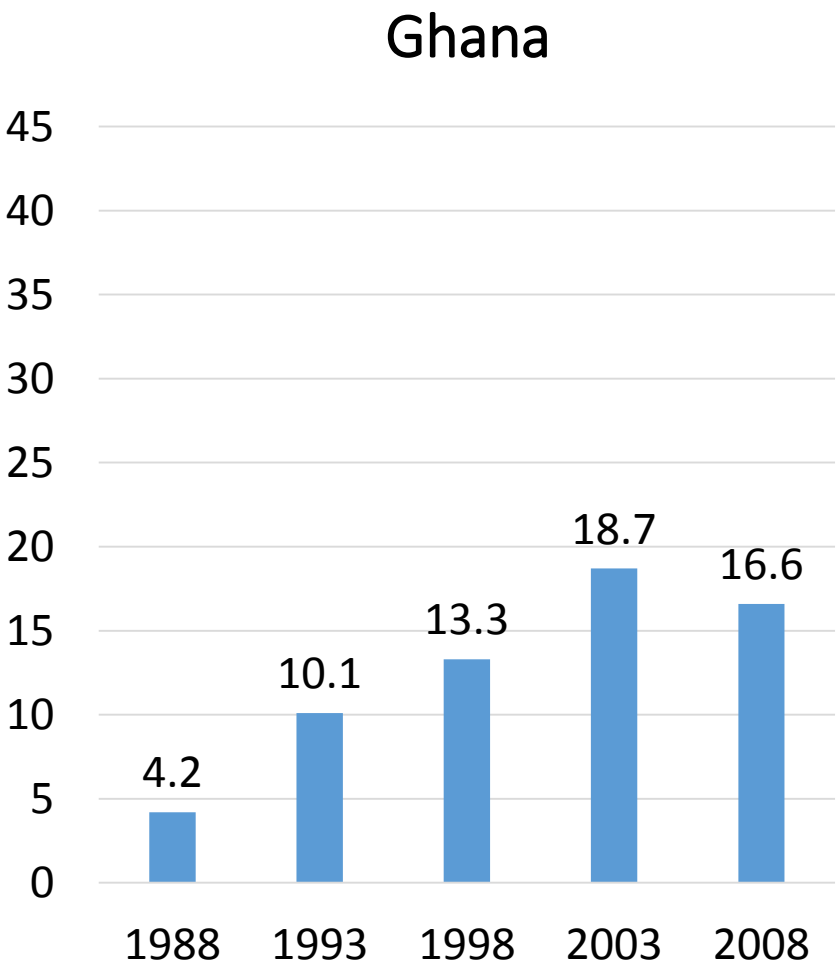
Ghana

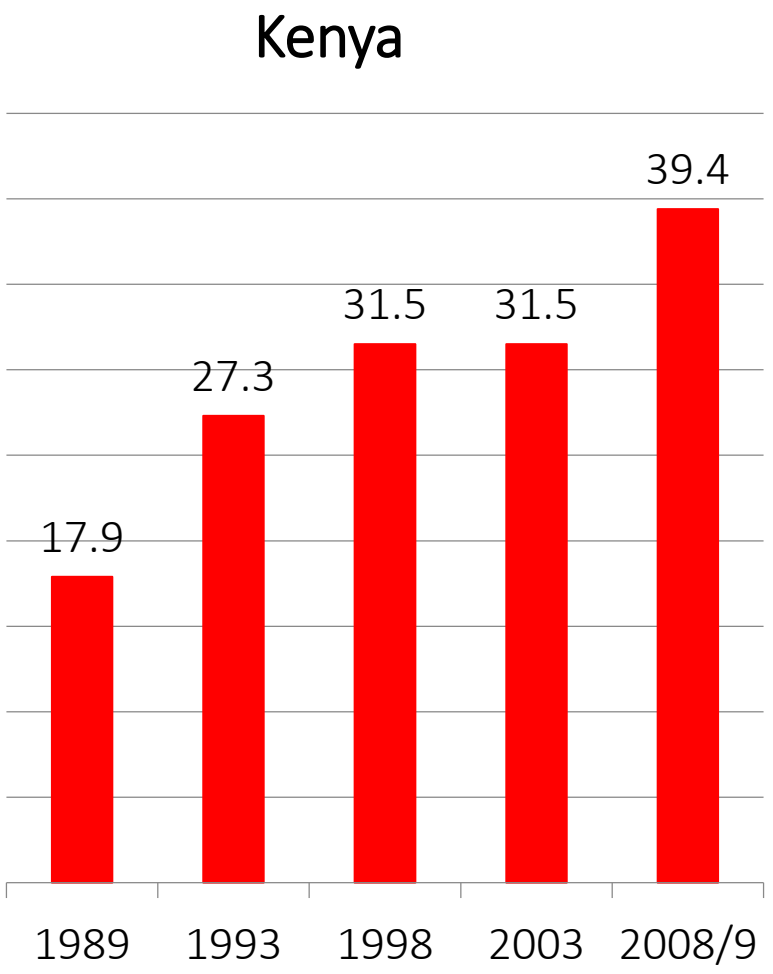


Kenya



Source: DHS STATcompiler

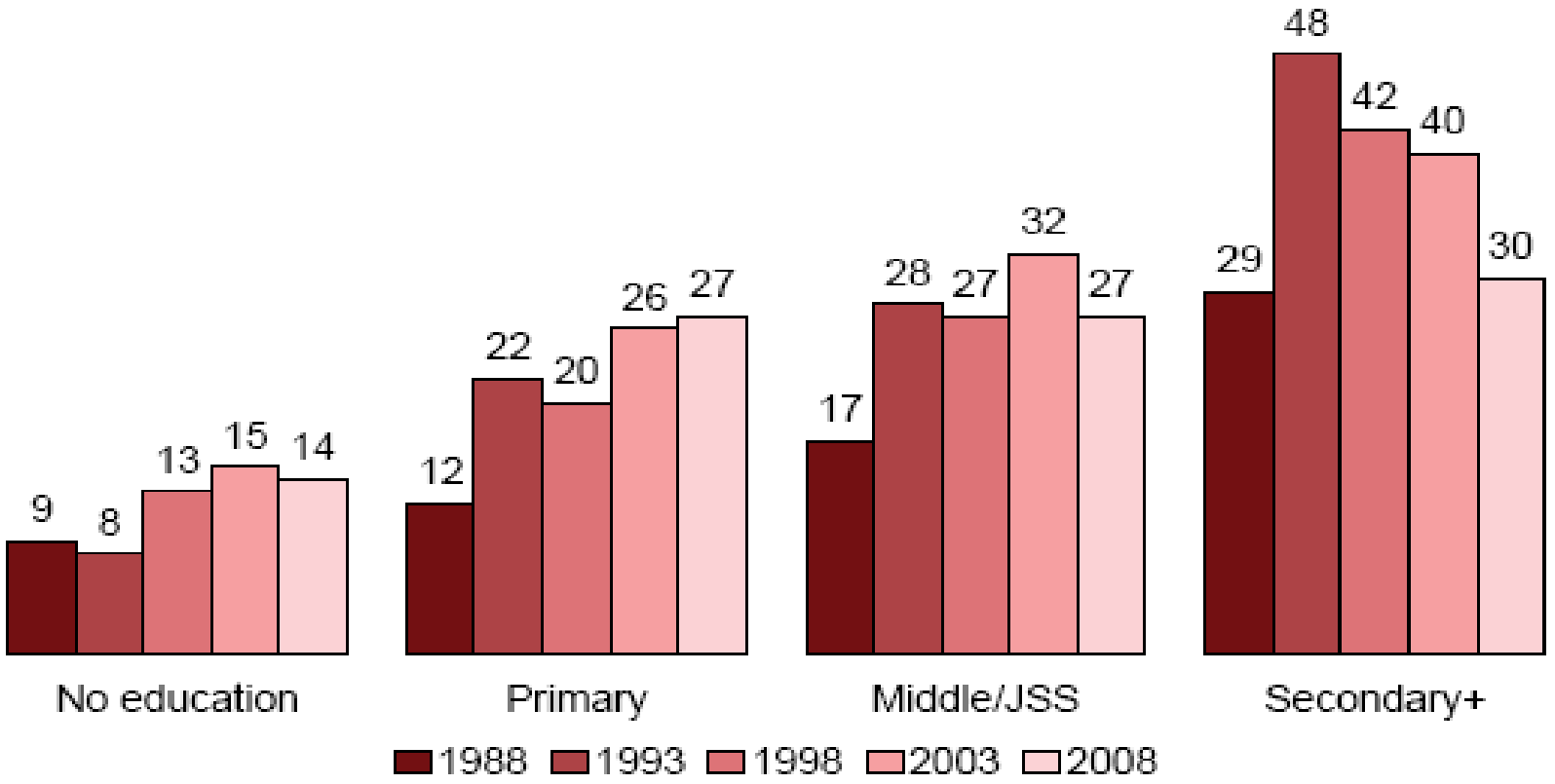




Among currently married women *Source: DHS STATcompiler*

Background

Percentage of Currently Married Women 15-49 Currently Using a Contraceptive Method, by Level of Education

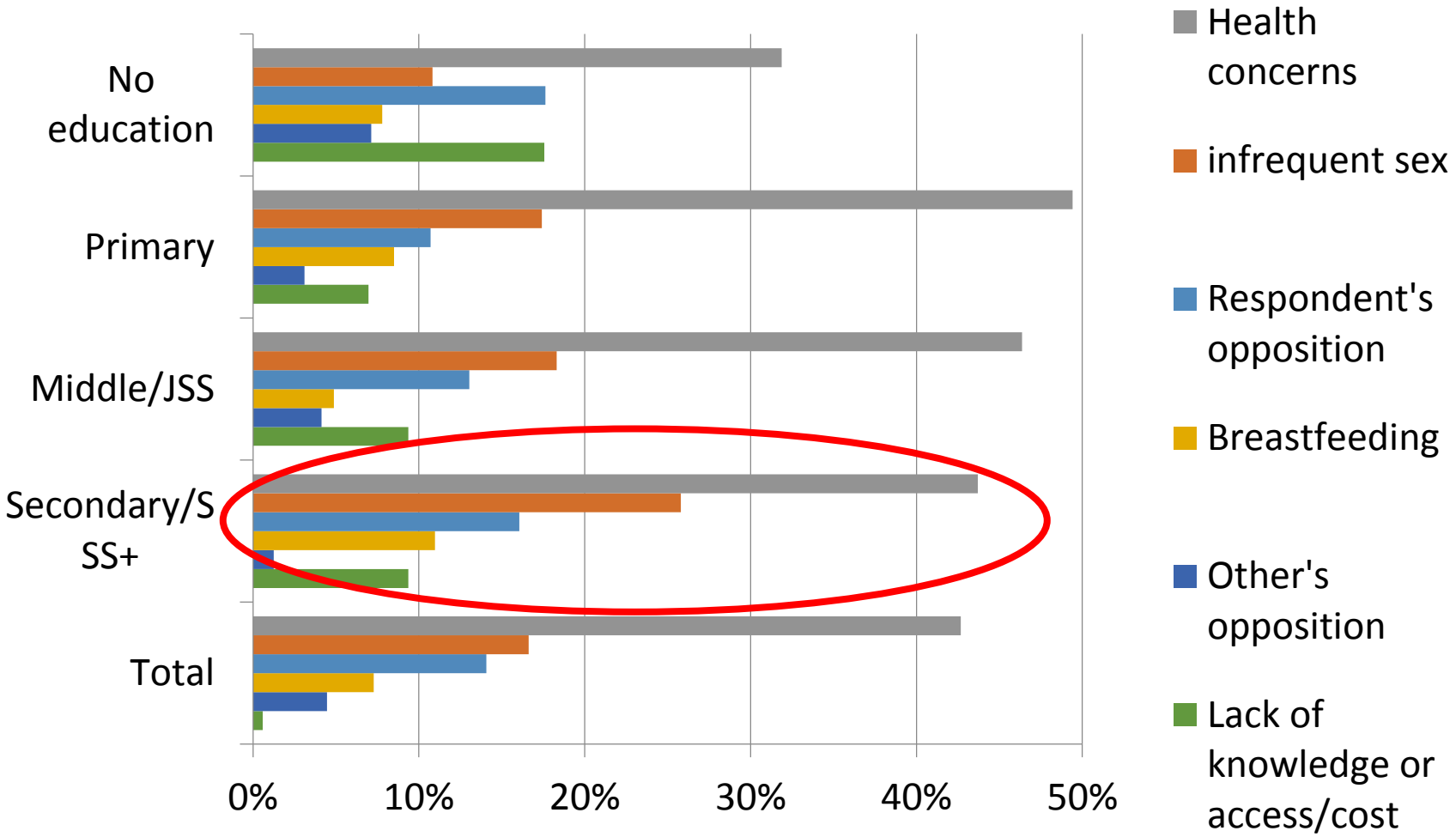


Source: ICF Macro 2010

Adjusted odds ratios for currently using traditional method vs non-users

	Adjusted OR	95% CI		
Residence (ref. urban)				
Rural	1.05	0.70	1.57	
Area (ref. Southern)				
Greater Accra	1.63	0.94	2.85	
Middle	1.31	0.82	2.07	
Northern	0.09	0.03	0.31	***
Education (ref. no education)				
Primary	2.22	1.16	4.25	*
Middle/JSS	1.80	0.97	3.35	
Secondary/SSS+	2.45	1.14	5.26	*
Religion (ref. Protestant)				
Catholic	0.95	0.50	1.77	
Other Christian	0.85	0.49	1.48	
Moslem	0.69	0.33	1.42	
Traditional/spiritualist	2.25	0.74	6.85	
Other	1.15	0.38	3.47	

N=1046

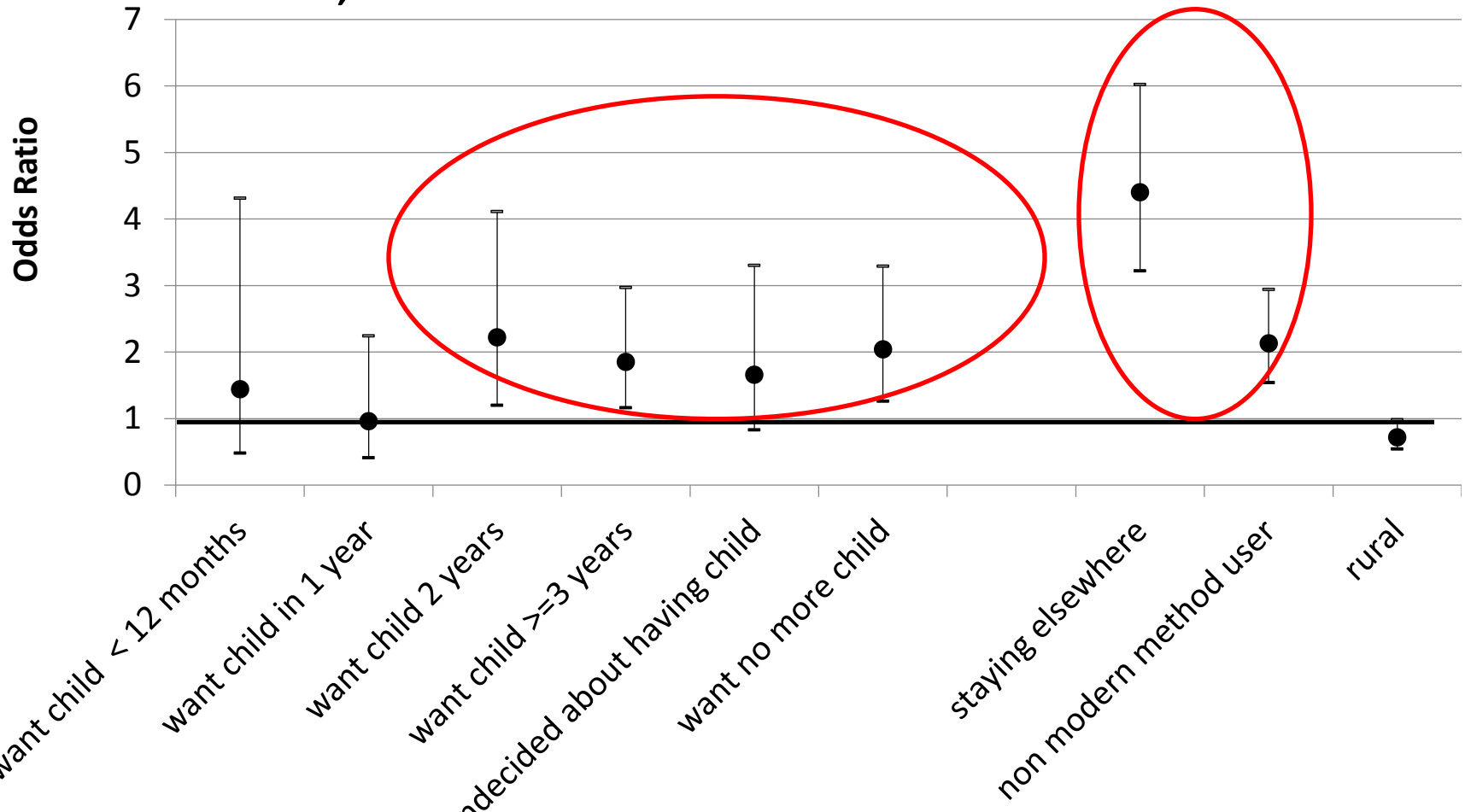

No education
Primary
Middle/JSS
Secondary/SSS+
Total
0%
10%
20%
30%
40%
50%
Health concerns
infrequent sex
Respondent's opposition
Breastfeeding
Other's opposition
Lack of knowledge or access/cost

Recency of last sex by whether infrequent sex was given as a reason for non-use, 2008

Recency of last sex	Reason for non-use: Infrequent sex		Total
	No	**Yes**	**Total**
in last 4 weeks	71.3	32.6	64.8
in last 3 months	19.8	28.9	21.3
4 or more months ago	6.2	34.0	10.8
before last birth	0.0	1.6	0.3
Missing	2.7	2.9	2.8
Total	100.0	100.0	100.0

N=479

Adjusted odds ratios for not having sex in the last 4 weeks versus having sex in the last 4 weeks, 2008



Adjusted for education, parity, postpartum status, age group, polygyny

- An enduring resistance to hormonal methods may lead many Ghanaian women to use non-hormonal methods, i.e. male condom, periodic abstinence or reduced coital frequency as an alternative means of reducing pregnancy-risk.

  - The elite group use less effective method, but the TFR has continuously declined.

➡ Is Ghanaian fertility transition powered by less effective methods with medical abortion as back-up? (Osei 2009)

1. Fertility intention
   - Meeting unmet need will not be sufficient for fertility decline in SSA *(Casterline et al 2014)*
   - Transition of fertility demand is required
   - Further understanding of reproductive decision-making is needed.

2. High unmet need for family planning
   - Shifting contributions of from lack of access to attitudinal resistance
   - Re-visit ‘traditional’ (natural) methods

➡ **More effective translation of existing desire into behaviours by strong FP programmes**

Acknowledgement

- UKaid (STEP-UP)
- ESRC/Hewlett Foundation
- Karonga Prevention Study
- Population Studies Group, LSHTM

UKaid
from the British people

LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE

STEP UP
STRENGTHENING EVIDENCE FOR PROGRAMMING ON UNINTENDED PREGNANCY

Thank you!

Contact: Kazuyo.machiyama@lshtm.ac.uk