

The Media or the Message?

Experimental evidence on mass media and modern contraception uptake in Burkina Faso

BREAD conference on the economics of Africa

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with

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Motivation

- The geography of poverty is changing
 - By 2030, 85% of people living in extreme poverty will be living in Sub-Saharan Africa ([World Bank, 2020](#))
 - Sub-Saharan Africa has the highest fertility rates in the world
- 25% of women aged 15-49 in SSA report unmet needs for contraception ([Family Planning, 2020](#))
 - Need for cost-effective scalable ways to help them achieve the lower level of fertility they desire
- Can mass media increase contraception uptake in Africa?
 1. Should we expect the rise in access to mass media to increase contraception uptake?
 - Mass media has been associated with lower fertility and more liberal views ([Jensen & Oster, 2009](#))
 - But it has also been used for ill ([Yanagizawa-Drott, 2014](#))
 2. Can mass media be used to promote contraception?
 - Providing information can change behavior ([Dupas 2011, Jensen 2010, Banerjee et al. 2019, Bursztyn et al. 2020](#))
 - Lack of evidence on the effect of mass media campaigns implemented in “real-world” conditions

This paper

Questions :

- What is the impact of increasing exposure to mass media on contraception uptake?
- What is the impact of an intensive family planning radio campaign implemented in « real-world » conditions?

Context : Community radios in rural Burkina Faso

Method : Two-level randomized experiment

- Individual level RCT: we varied exposure to mass media: 1500 women with no radio were given a radio
- Clustered level RCT: we varied mass media content
 - 8 (out of 16) local radio stations broadcasted an intensive 2.5 years family planning campaign

Main results :

- Giving radios in non-campaign areas had a negative effect on contraception use and on gender norms
- Large impact of the family planning campaign on modern contraception uptake (+20% or +6pp)

Contribution to the literature

- Exposure to media can change behavior, norms and preferences
 - Braga (2007), Farre & Fasani (2013), Cheung (2012), Keefer and Khemani (2011), Jensen & Oster (2009), La Ferrara et al. (2012), Chong & La Ferrara (2009)
- Information and mass media campaigns can change important behaviors
 - Dupas (2011), Jensen (2010), Bursztyn, et al. (2020), Dizon-Ross (2019), Fitzsimons et al. (2016), Beshears et al. (2015), Bhargava & Manoli (2015), Duflo & Saez (2003), Gerber et al. (2011), DellaVigna et al. (2014), Adena et al. (2015), Allcott & Gentzkow (2016)
 - Wakefield et al. (2010), Naugle & Hornik (2014), Kearney & Levine (2015), Bernard et al. (2015), Banerjee et al. (2015), Berg & Zia (2013), Banerjee et al. (2019), Dutta et al. (2015) Kasteng et al. (2018), Murray et al (2015)
- Effective solutions to reduce unmet needs for contraception
 - Silva & Tenreyro (2017), Miller et al. (2020), Ashraf et al. (2014), Zakariah et al. (2016)

Key contributions:

- First paper to simultaneously randomize access to mass media and mass media content
- Study the effect of mass media in “real-world” conditions in Africa

Outline

1. Context
2. Design and data
3. Results
4. Cost-effectiveness



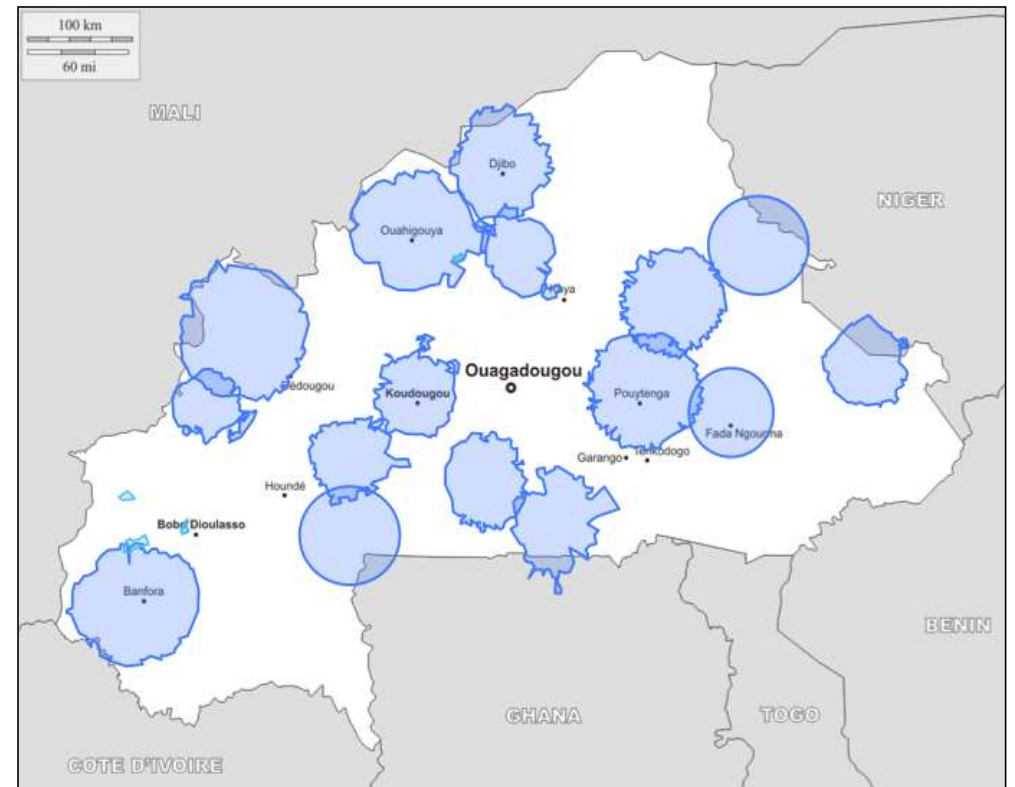
Context: Burkina Faso

- Annual GDP per capita (ppp): \$1,862
- Human development Index 2017: 183/189
- 19.2 million inhabitants in 2017
- Fertility rate: 6 births per woman (DHS 2010)
- 68% of households own a radio (DHS 2010)



Context: community radio stations in Burkina Faso

- Covering 6.5 million people (33% of the nat. pop.)
- Few people listen to national radio stations (in French)
- Broadcast in local languages
- Content:
 - Information shows
 - Sensitization programs on health and education
 - Debate and call-in shows
 - Religious programs



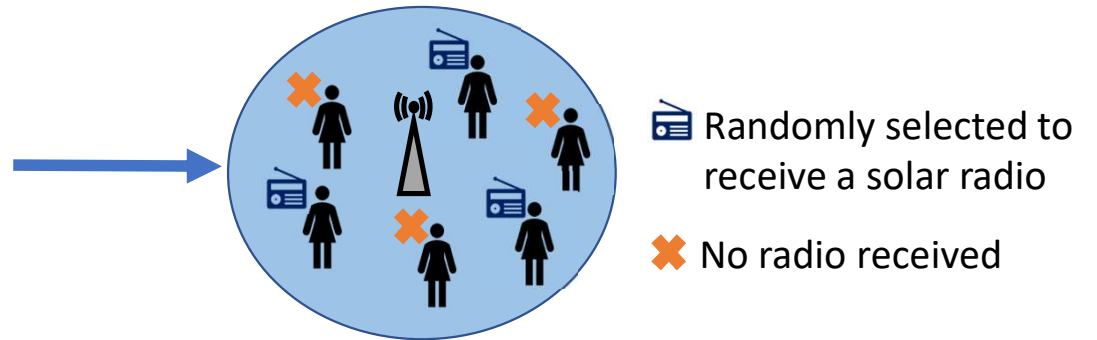
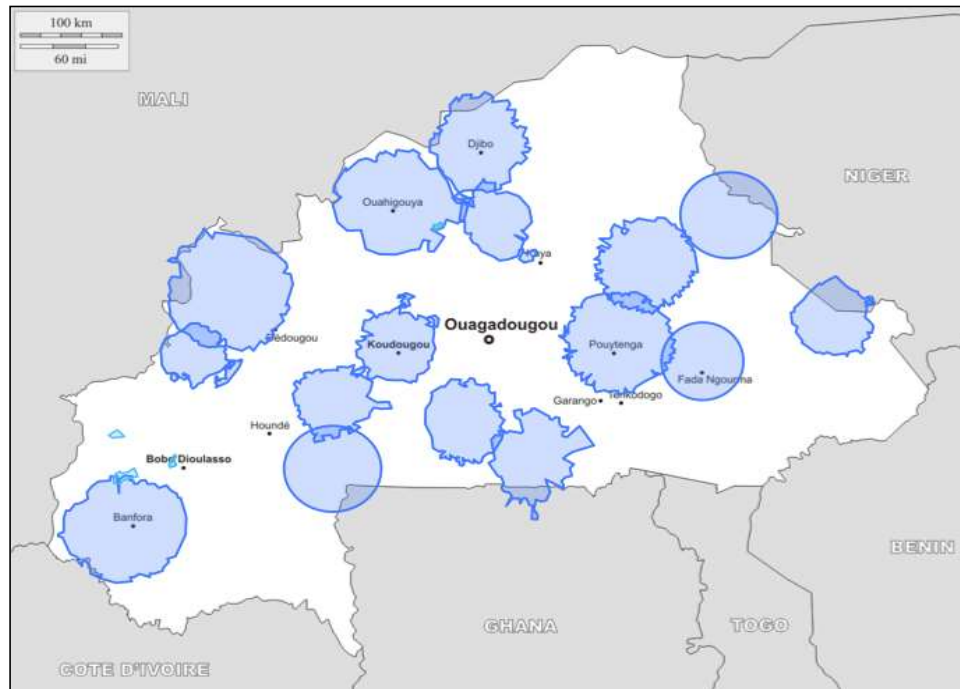
Broadcasting areas of 16 community radio stations

The radio campaign (implemented by *Development Media International*)

- The “*Saturation +*” approach
 - 10 radio spots per day (1.5min)
 - 3 Phone-in shows per week (2h)
 - In local languages
 - Informed by extensive formative research
 - 2.5 years of programming
- Designed to tackle potential barriers
 - Information on modern methods
 - Health and economic benefits of birth spacing
 - Gender norms, responsibility of men
- Represents 4% of total radio content and 20% of peak listening time

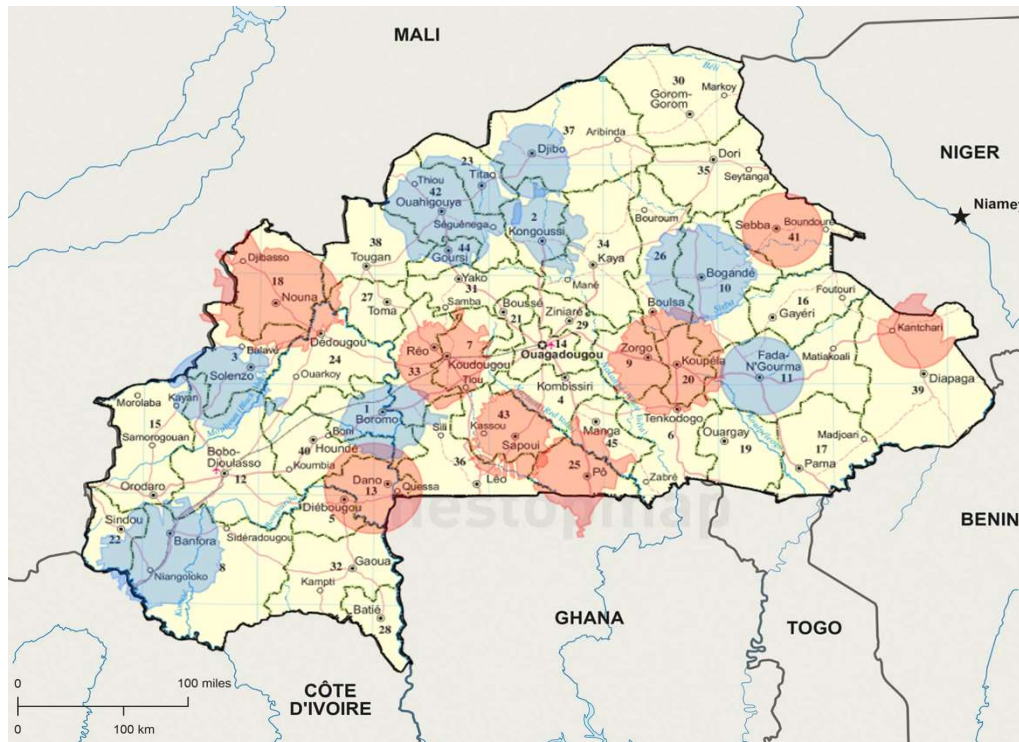


Design: Woman-level randomization



- 1500 women randomly selected to receive a radio among the 3000 without radio at baseline

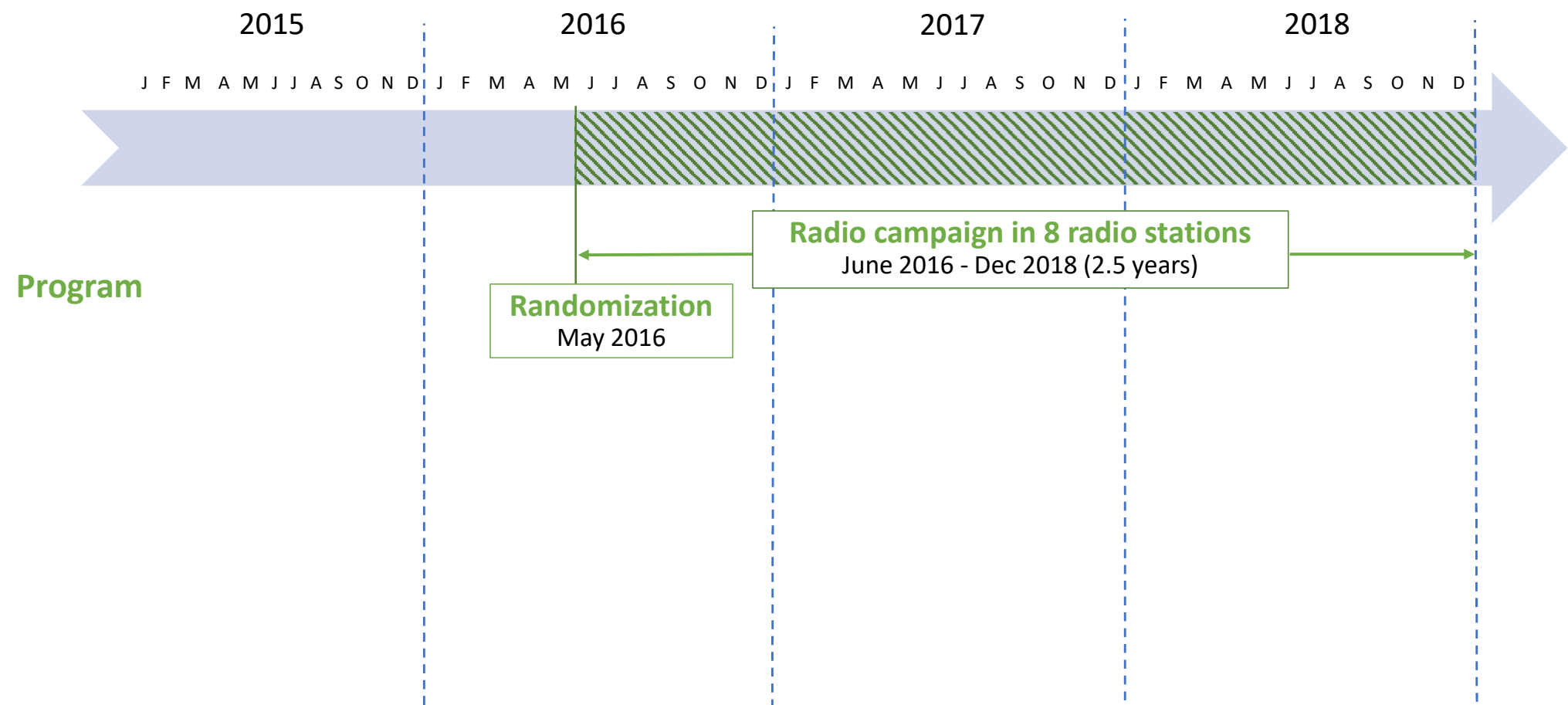
Design: Radio station level randomization



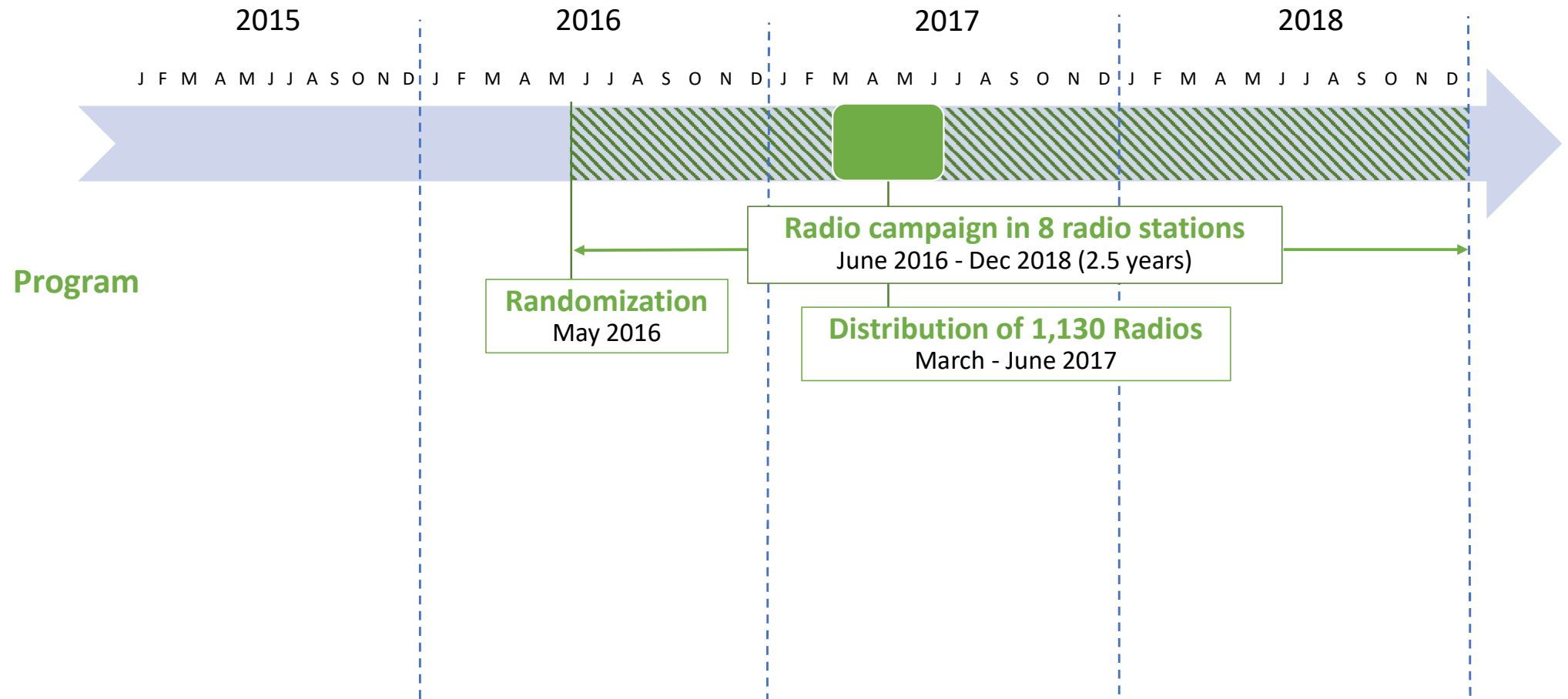
■ Radio campaign ■ No radio campaign

- 16 radio stations, 8 randomly assigned to treatment group
 - Paired-randomization
- Study stations reach 6.5 million people (33% of the nat. pop.)

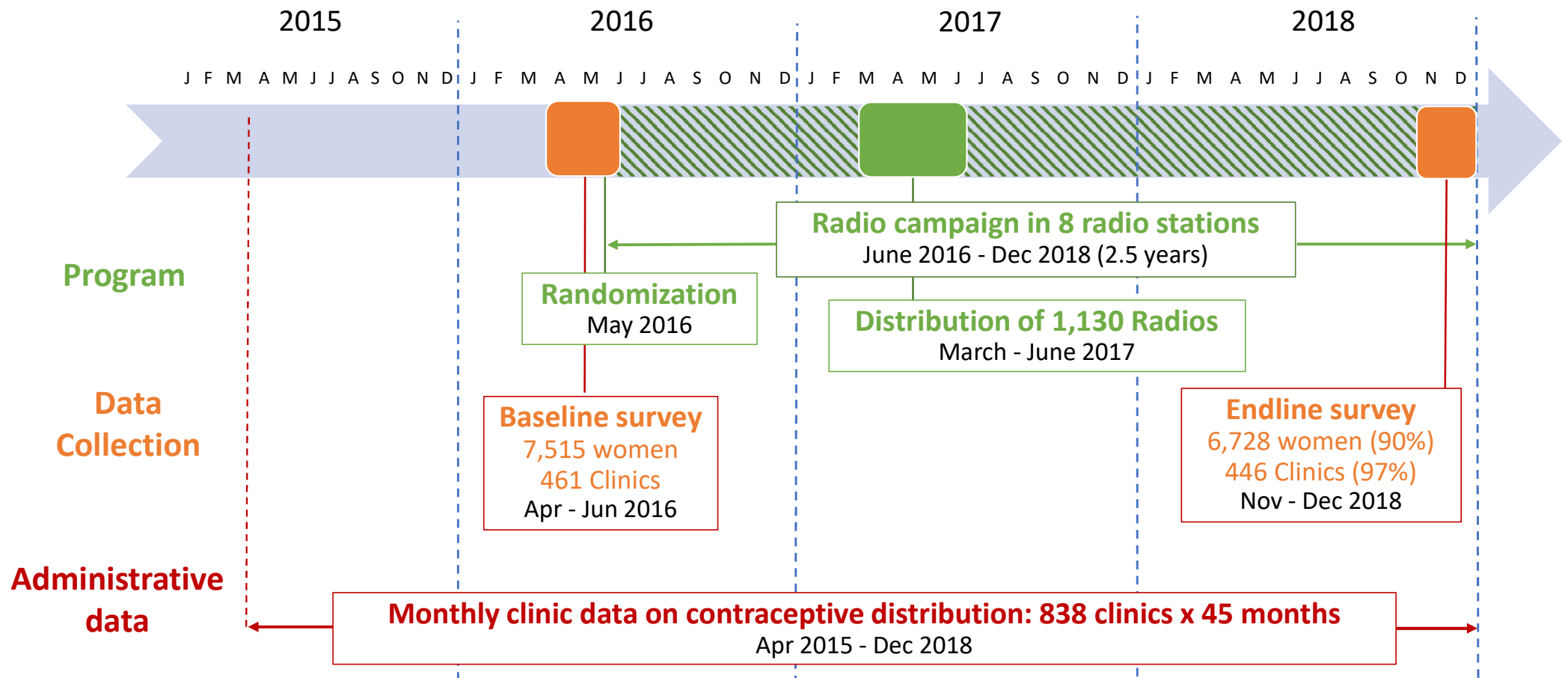
Timeline and Data



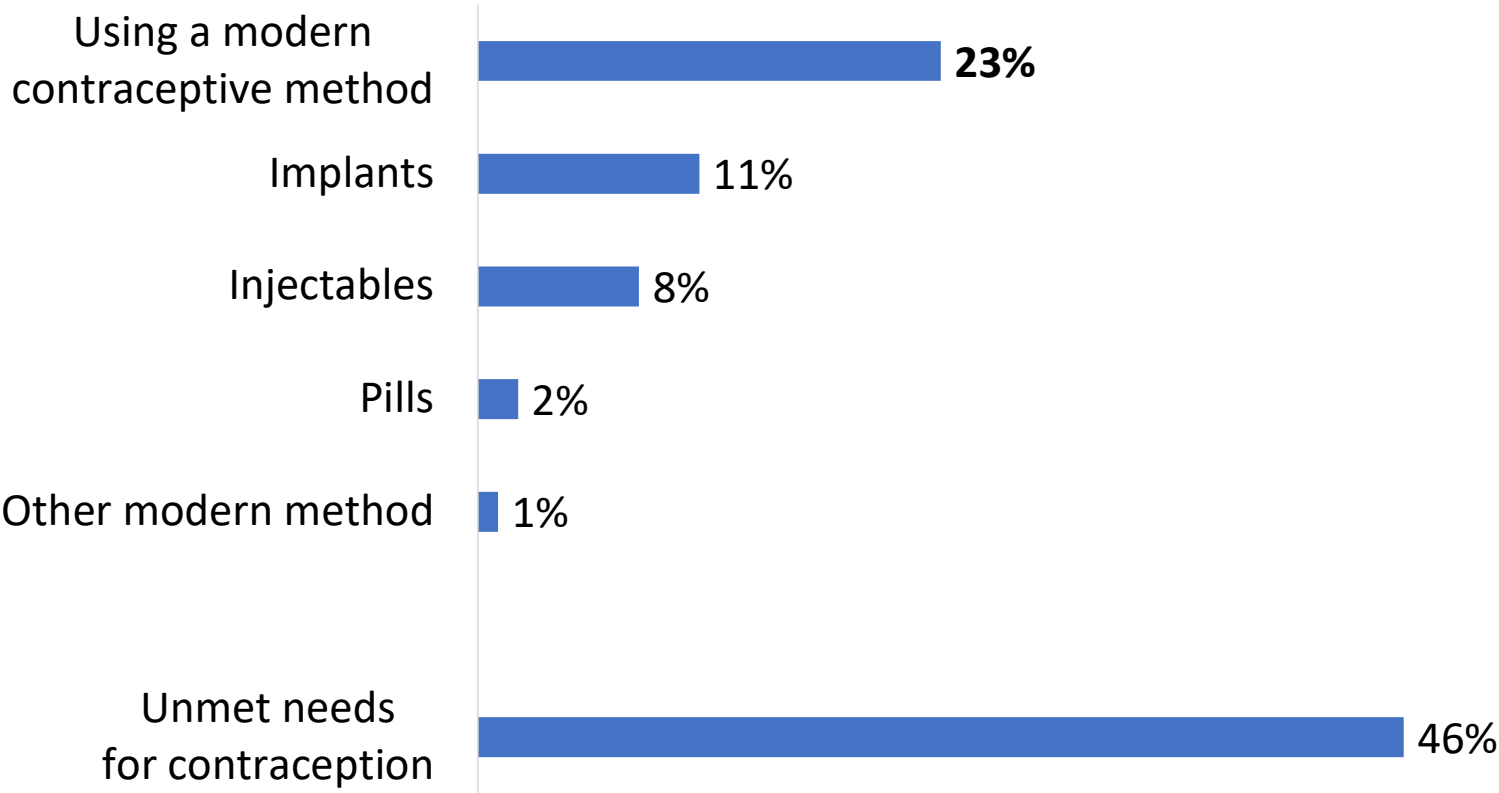
Timeline and Data



Timeline and Data



Baseline use of modern contraception



Empirical strategy

- Impact of radio distribution using survey data:

$$Y_{i,t=1} = a + b_1 Radio_i + X'_i + \epsilon_{it}$$

X'_i : vector of strata fixed effects

ϵ_{it} : error term clustered at the household-level

- Impact of the radio campaign using survey data:

$$Y_{i,t=1} = \alpha + \beta_1 Treat_i + X'_i + \epsilon_{it}$$

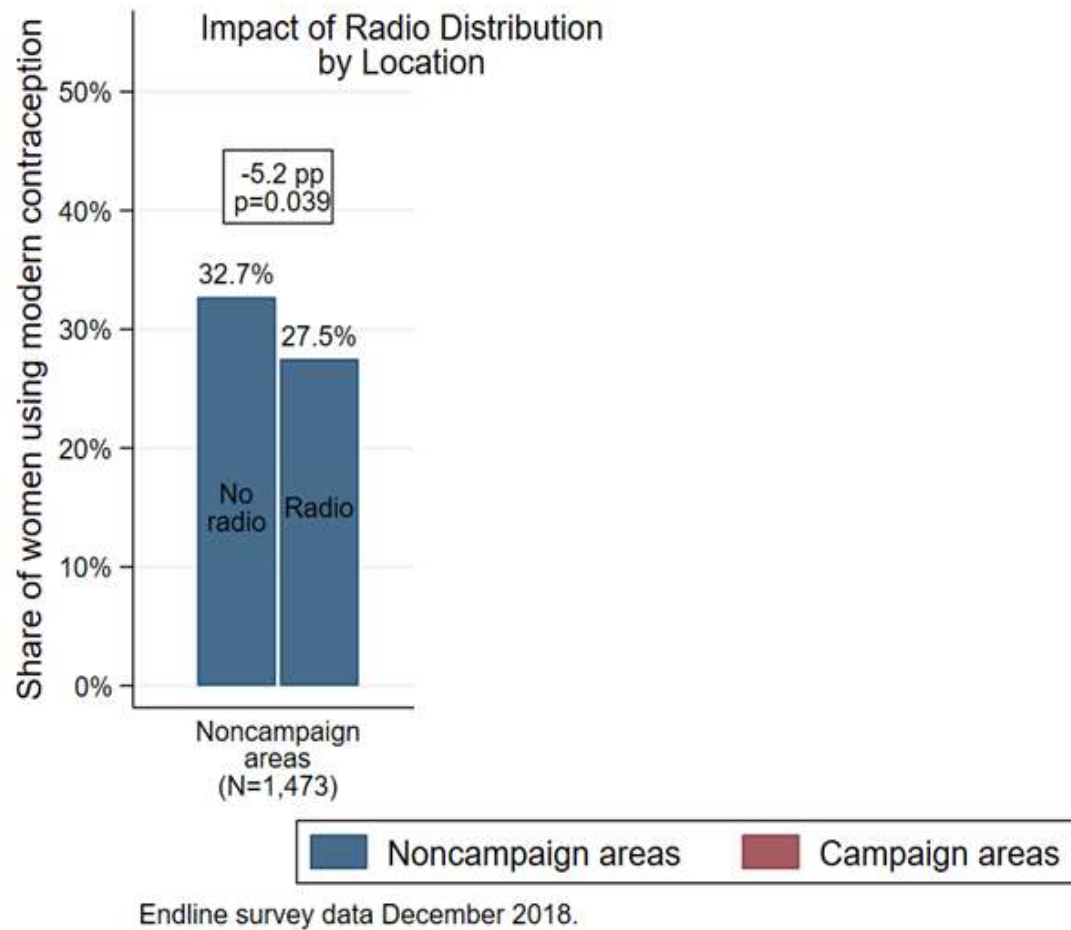
ϵ_{it} : error term clustered at the radio station level

P-values calculated using wild bootstrap procedure (Cameron et al., 2008)

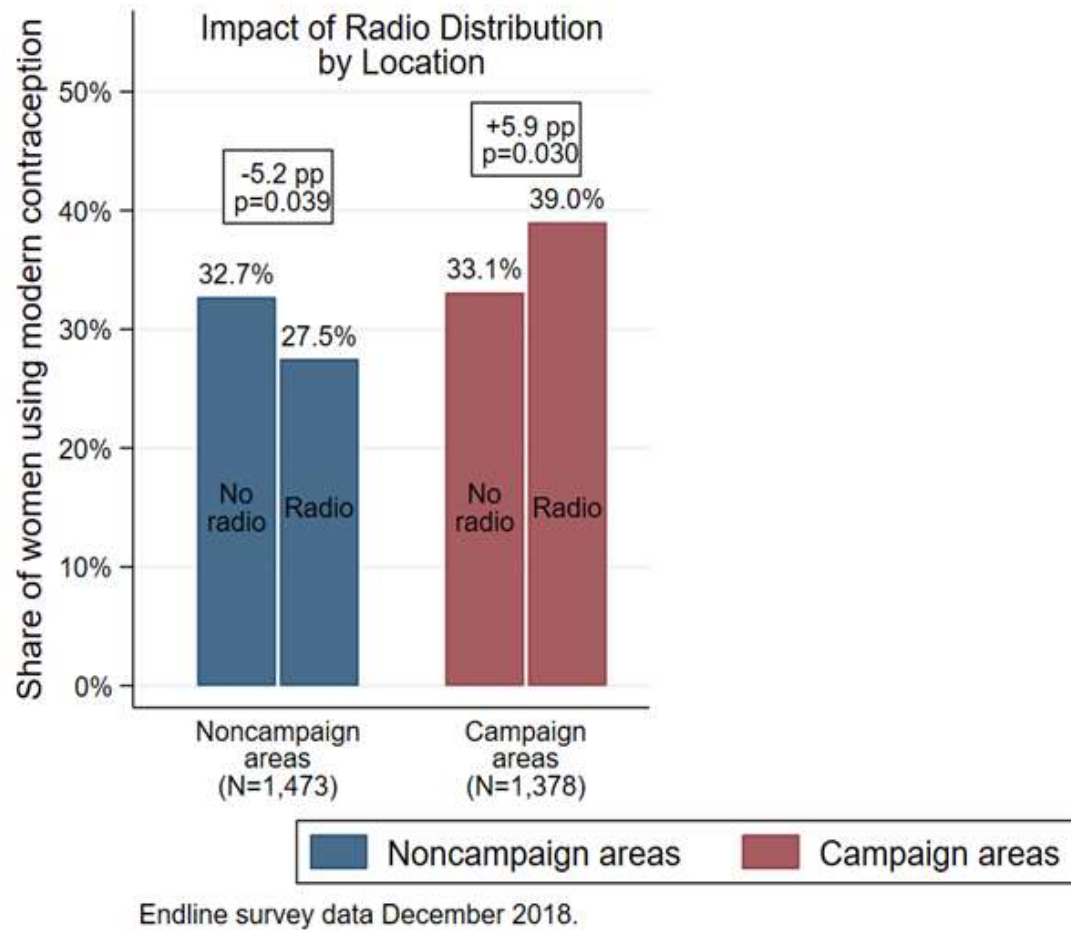
First Stage: Radio Listenership

- Radio listenership (all women)
 - 55% of women have a radio
 - They spend 2h listening to radio per week on average
 - Similar in campaign and non-campaign areas
- Radio distribution (women with no radio at baseline)
 - Radio ownership ↑ from 32% to 66%
 - Weekly time spend listening to the radio ↑ from 1.3 to 3 hours
 - Similar in campaign and non-campaign areas

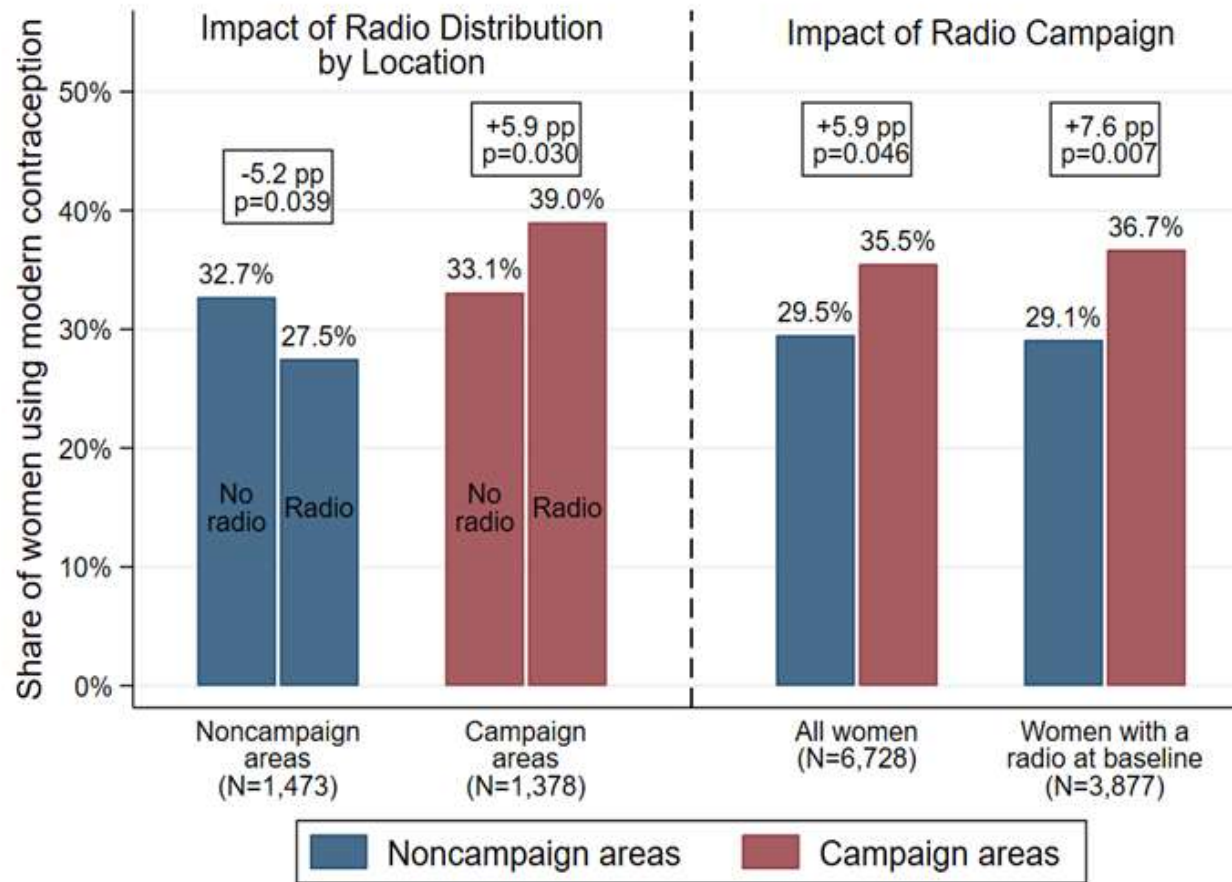
Impact on modern contraception prevalence rate (mCPR)



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Endline survey data December 2018.

Mechanisms

- Why does exposure to local radio stations have a negative impact in non-campaign areas?
 - Negative impact on gender norms
 - Qualitative evidence that many phone-in shows promote conservative views
- Why did the information campaign work?
 - Large impact on contraceptive knowledge (↓misinformation on side effects)
 - Better attitudes toward contraception
 - No impact on fertility preferences
- Heterogeneity of information campaign impact
 - Larger impact among women using contraception at baseline (many are using it inconsistently)
 - Larger impact among women with more knowledge and positive views on family planning
- Impact of the campaign on other key outcomes (on which we are underpowered)
 - 10% reduction in fertility
 - 30% increase on a standardized index of self-assessed well-being

Cost effectiveness

Pilot program (8 radio stations)

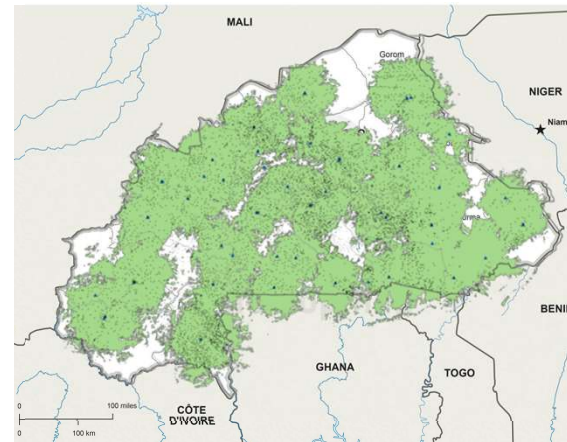
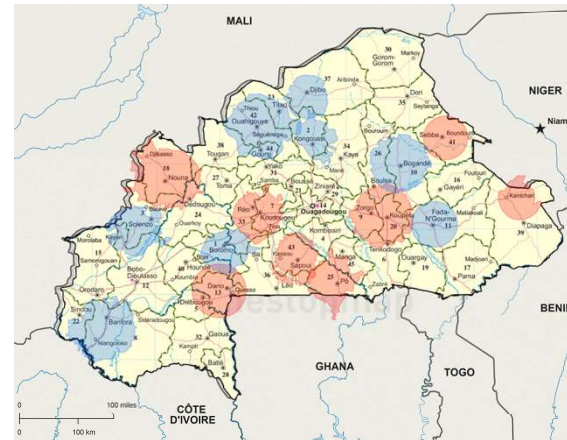
- Population reached: 630k women (15-49)
- Extra women using contraception: 37k
- Annual cost per extra women : \$47

Nationwide scale-up (38 radio stations)

- Pop reached: 3.8 million women (15-49)
- Extra women using contraception: 225k
- Annual cost per extra women : \$8
- Key assumption: same impact than in pilot areas

Alternative approaches:

- Integrating FP and HIV services in Kenya ([Shade et al. 2013](#)) : **\$65 per new user**
- Integrating FP and immunization services in Rwanda ([Dulli et al. 2016](#)): **\$32 per new user**
- Comprehensive com. campaign (incl. in-person interactions) in Zambia and Guinea: **\$30 per new user**

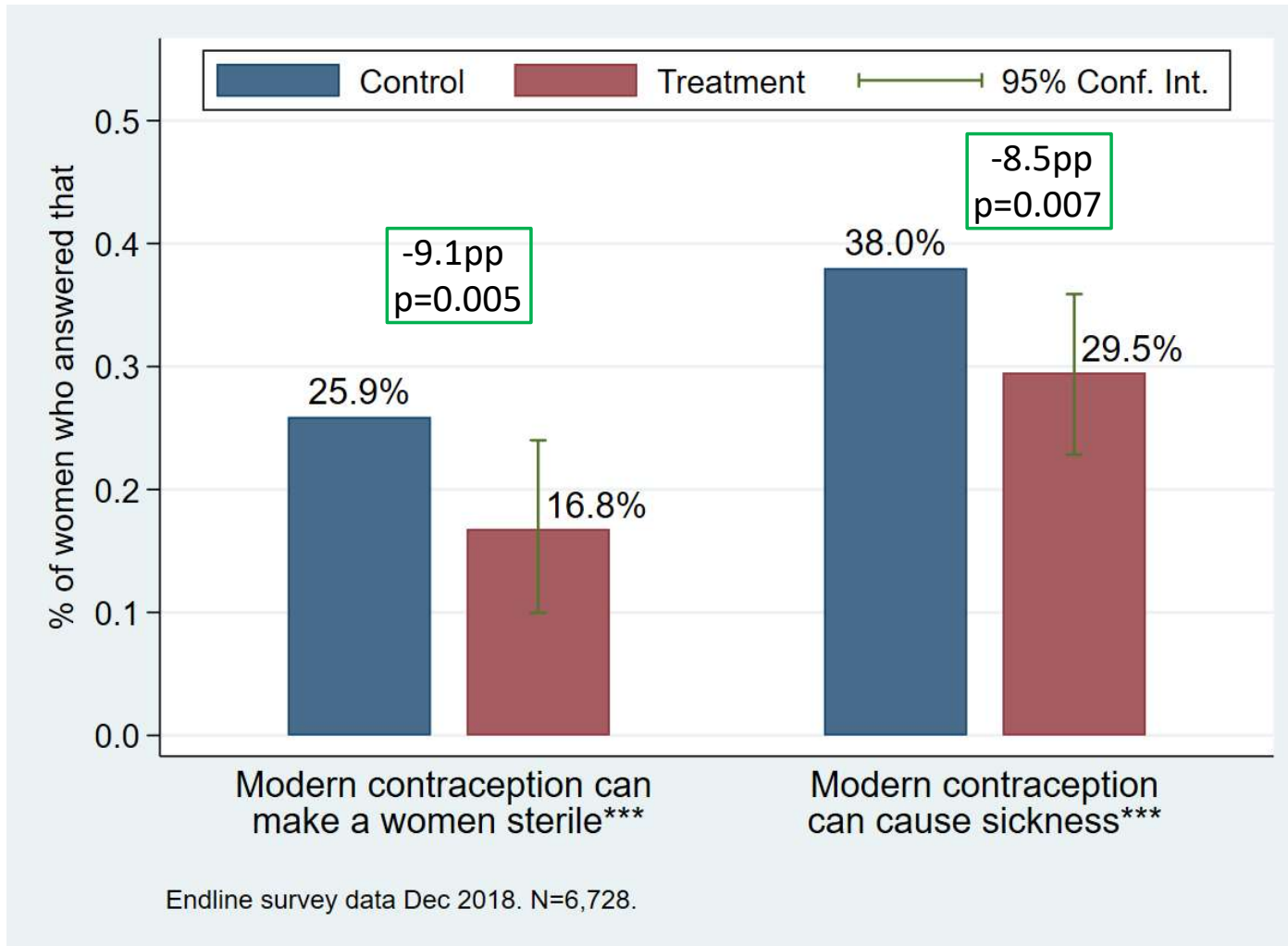


Conclusion

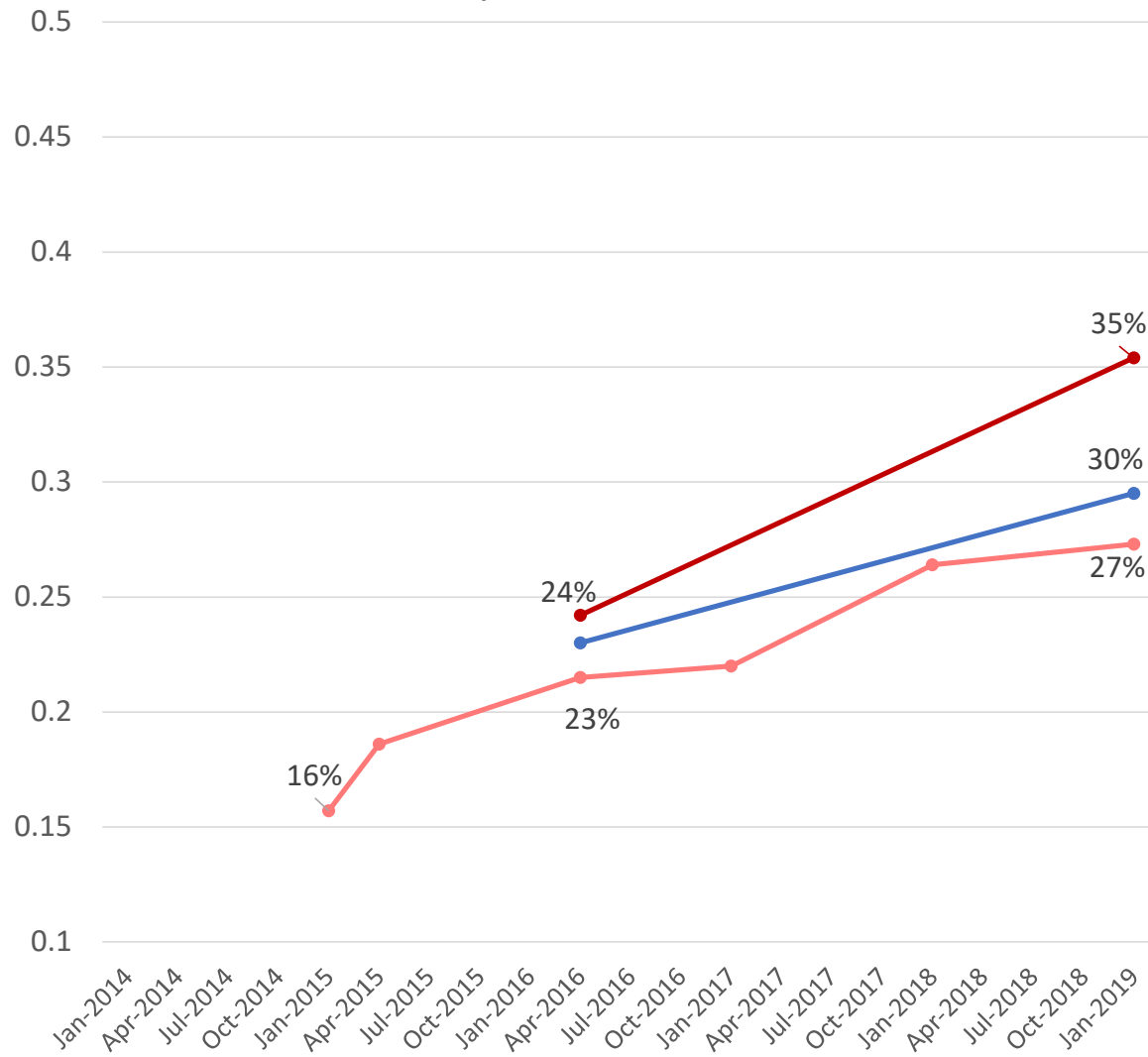
- Increasing exposure to community radio stations had negative effects on contraception use and gender norms in this context
- Large impact of an intensive radio campaign on modern contraception uptake (+20% or + 6pp)
 - Information is still a barrier (especially on side effects)
 - Positive impact on self-declared well-being and reduction in fertility
 - Larger impact on women closer to the adoption margin or who are using contraception inconsistently
 - Media campaigns promoting modern contraception can be cost-effective
 - \$8 annually per additional woman using contraception (nationwide scale-up)

Annexes

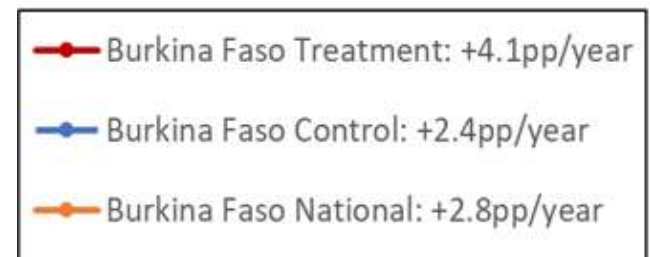
Contraception Knowledge : impact on misinformation



Modern Contraceptive Prevalence Rate (mCPR)



Annualised increase in mCPR by country



Modern Contraceptive Prevalence Rate (mCPR)

Annualised increase in mCPR by country

