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Impact of interactive radio programming on women's empowerment and agricultural development outcomes in Malawi

Catherine Ragasa

International Food Policy Research Institute

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Outline of the presentation

- Intervention
- Research questions
- Data sources
- Indicators and analytical methods
- Results
- Some reflections

Interventions

- Interactive radio programming piloted in the 2015 (Farm Radio Trust + DAES)
 - Radio messaging (national + community radio stations)
 - Daily broadcasting, varied innovations, farmers have choice on agricultural radio station
 - Call-in center (anyone can call for free)
 - Mobile platform (anyone can text for free)
 - Videos and short text messages sent via mobile phones
 - focused on a few districts: Kasungu, Dedza, Mchinji, and Ntchisi
 - Listening club (introduced ICT to existing farmers' groups)
 - focused on a few districts: Kasungu, Dedza, Mchinji, and Ntchisi
- Agricultural radio messages
 - Crop diversification, focusing on legumes promotion
 - Nutrition, focusing on dietary diversity
 - Gender equality (jingles, dramas and experts and farmer interviews)

Research questions

- Is there difference between access to radio and other sources of information by women and men and age group?
- Does access to radio messaging by women or men (or both) in the household have an effect on crop diversification, dietary diversity and intrahousehold equality?
- Does individual's access to radio messaging associated with greater empowerment?

Mixed methods

- Household and community surveys (nationally representative; 3000 HH: July-Sep 2016 (baseline); July-Sep 2018 (follow-up)
 - Modified A-WEAI (shorter questions on time use) only for 2018
- Focus group discussions (55 FGDs) (**dots on map**); Jan/Feb 2017, Jan/Feb 2019
 - Local enumerators fluent in Chichewa, Chibandya, and Chinyika
 - Enumerators were experienced in qualitative data collection and facilitators to encourage active participation and articulation of differing viewpoints
 - Discussions were recorded, transcribed, and translated and then thematically coded using NVivo 11
- 2018 data of callers in the call-in centers
- Census and monitoring of state and non-state extension service providers in 15 districts (**shaded districts in map on the right**): Dec 2016 - Mar 2017
- In-depth interviews with 30 service providers and 71 extension workers: Dec 2016 - Mar 2017



Indicators and Analytical Methods (individual and household levels)

▪ Individual level

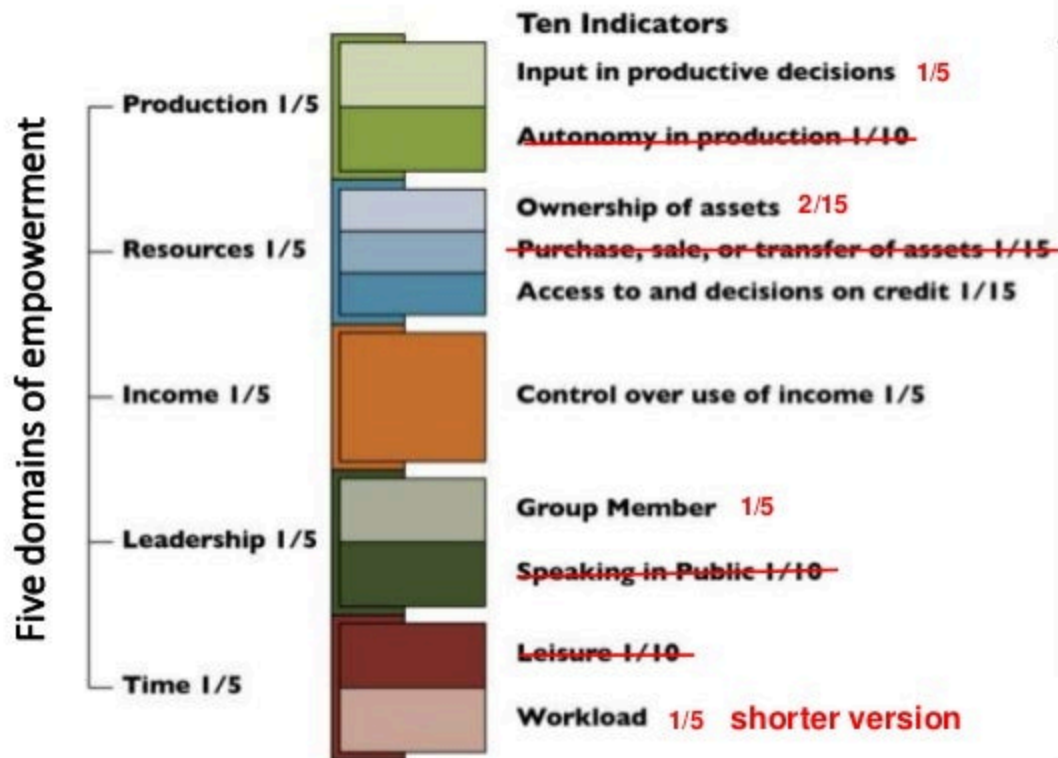
- Outcome: Empowerment (measured in terms of pro-WEAI empowerment score)
- Variable of interest: Listens to agricultural radio programming (0/1)
- Controls: other information sources, education, age, household asset, distance to nearest road, community-level indicators, district and region dummies, etc.
- Cross-sectional data analysis for determining treatment effects:
 - Matching techniques and instrumental variable approach (instrument: ownership of radio)
 - Fractional regression model (0-1 outcome indicators)
 - Compared focus districts (Kasungu, Dedza, Mchinji, and Ntchisi) with heavy promotion of mobile platform, videos, and listening clubs and comparable districts

Indicators and Analytical Methods (individual and household levels)

▪ Household level

- Outcome:
 - Household dietary diversity score
 - Legumes promotion (acres planted with legumes)
 - Crop diversification (Simpson index for crop diversification)
- Variables of interest:
 - Whether woman received agricultural/nutrition information from radio (0/1)
 - Whether man received of agricultural/nutrition information from radio (0/1)
- Controls: other information sources, education and age of woman and man; household asset, distance to road, GIS-related data, community-level data, etc.
- Panel data analysis for determining treatment effects: Correlated random effects model and instrumental variable approach (instrument: ownership of radio)

Modified Abbreviated WEAI (modified A-WEAI)



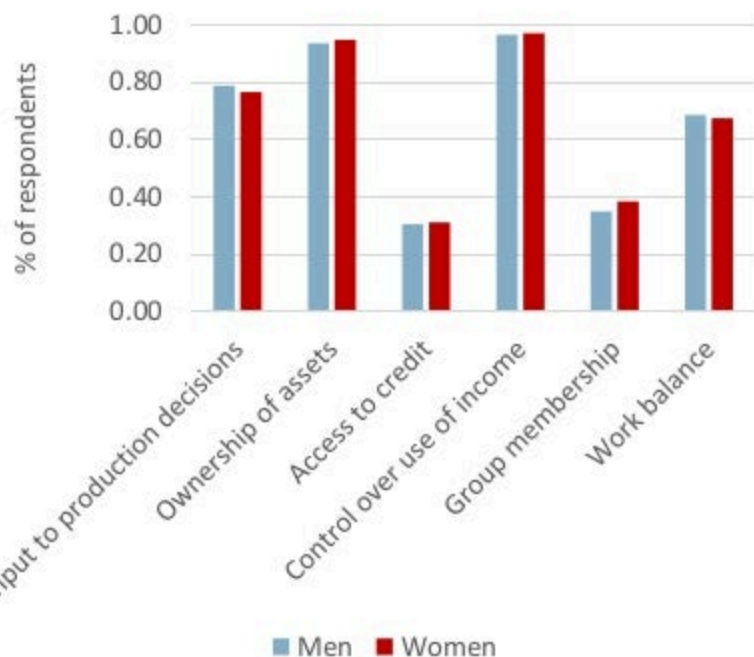
Questions on time constraint:

1. If you wanted to do something (livelihood-related, training-related, self-care), will you be able to reorganize your tasks so that you can make time to do it?
2. If you wanted to do something (livelihood-related, training-related, self-care) and could not take your child with you, is there someone who could care for your child in your absence?
3. If you had an additional 2 hours in your day to do anything, how would you spend that time? → *if answered "more sleep/rest", we coded as time constrained*

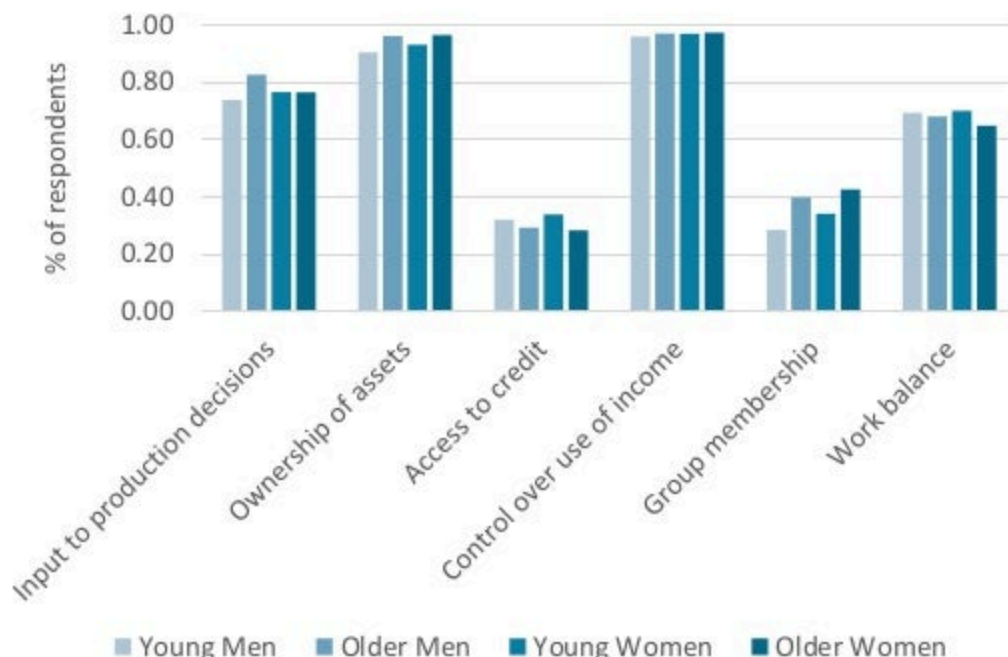
1. Lack of access to credit and group membership are the major sources of disempowerment
2. Similar levels of empowerment by women and men

3. Young men are more disempowered in terms of lack of inputs to production decisions
4. Young men and women are more disempowered in terms of lack of group membership
5. Older women are more disempowered in terms of heavier workload
6. Older men and women are disempowered in terms of lack of access to credit

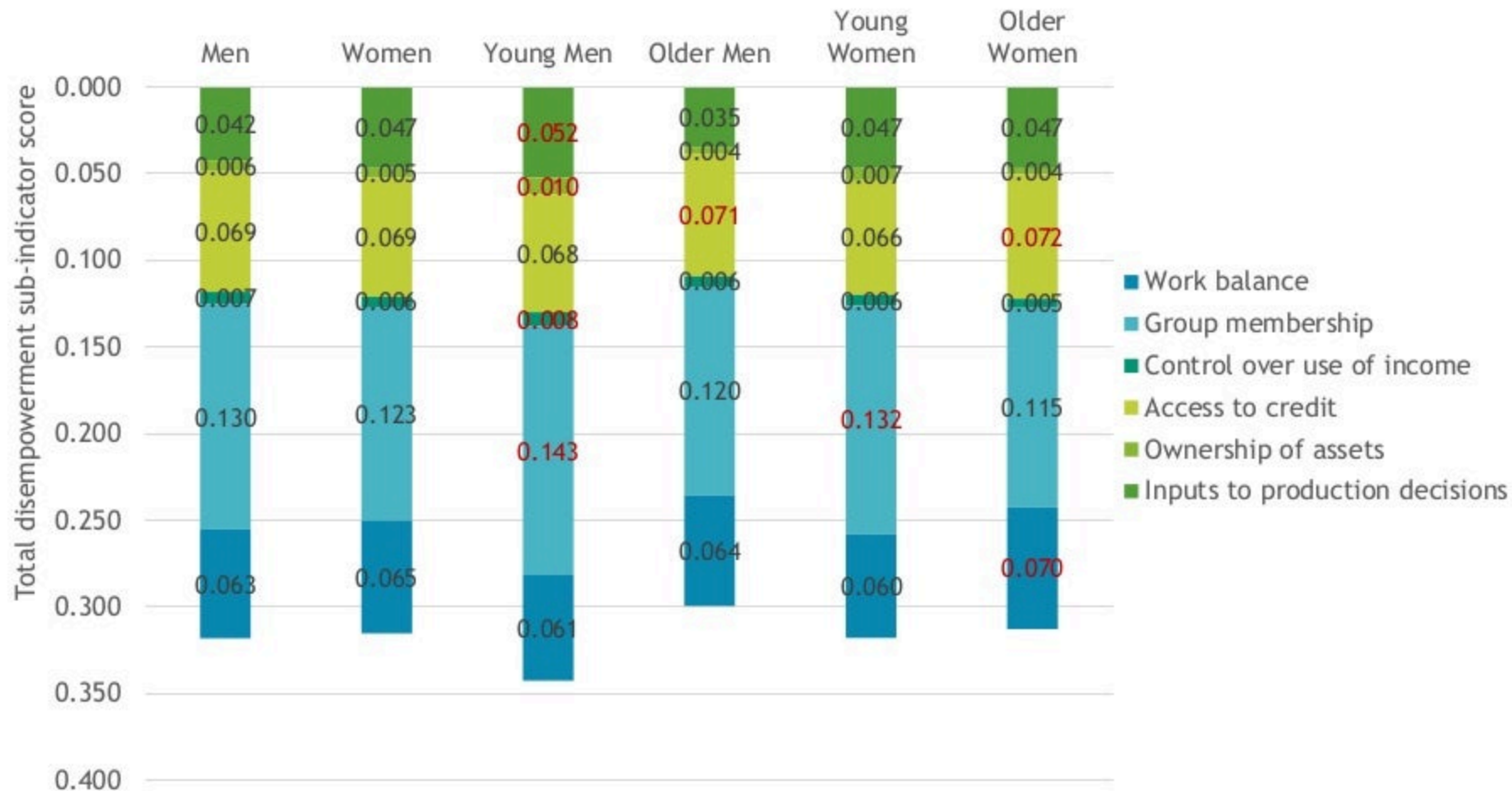
Panel a. % of respondents achieving adequacy by gender



Panel b. % of respondents achieving adequacy by gender and age group



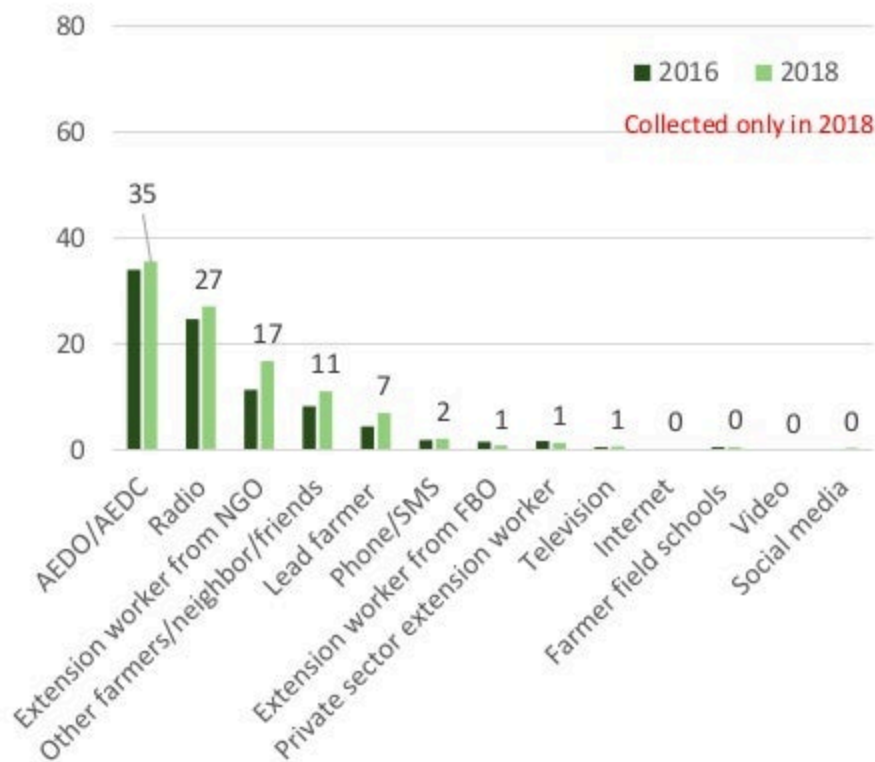
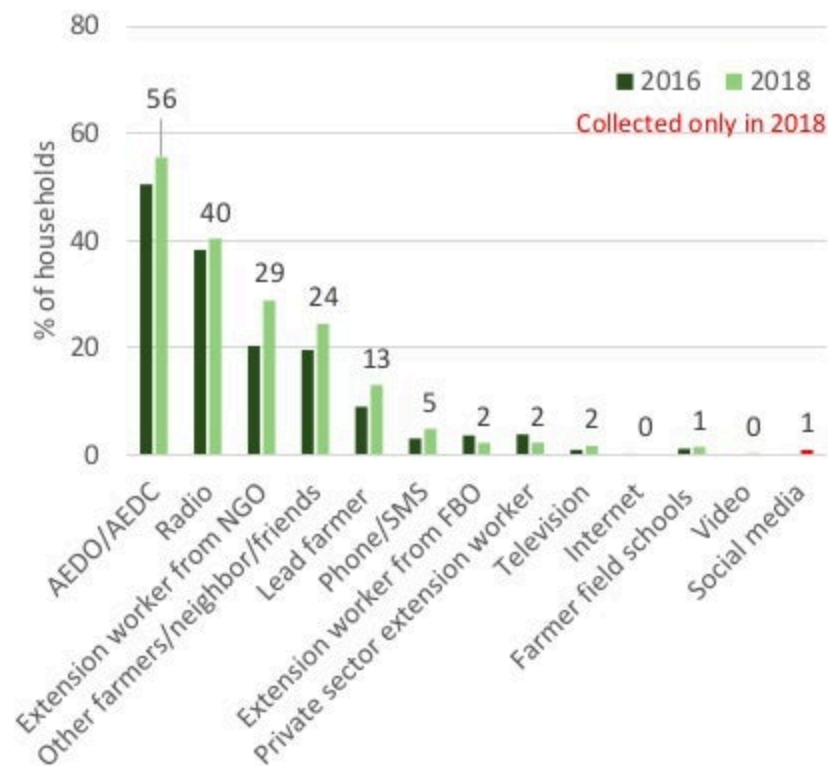
Contributors to disempowerment



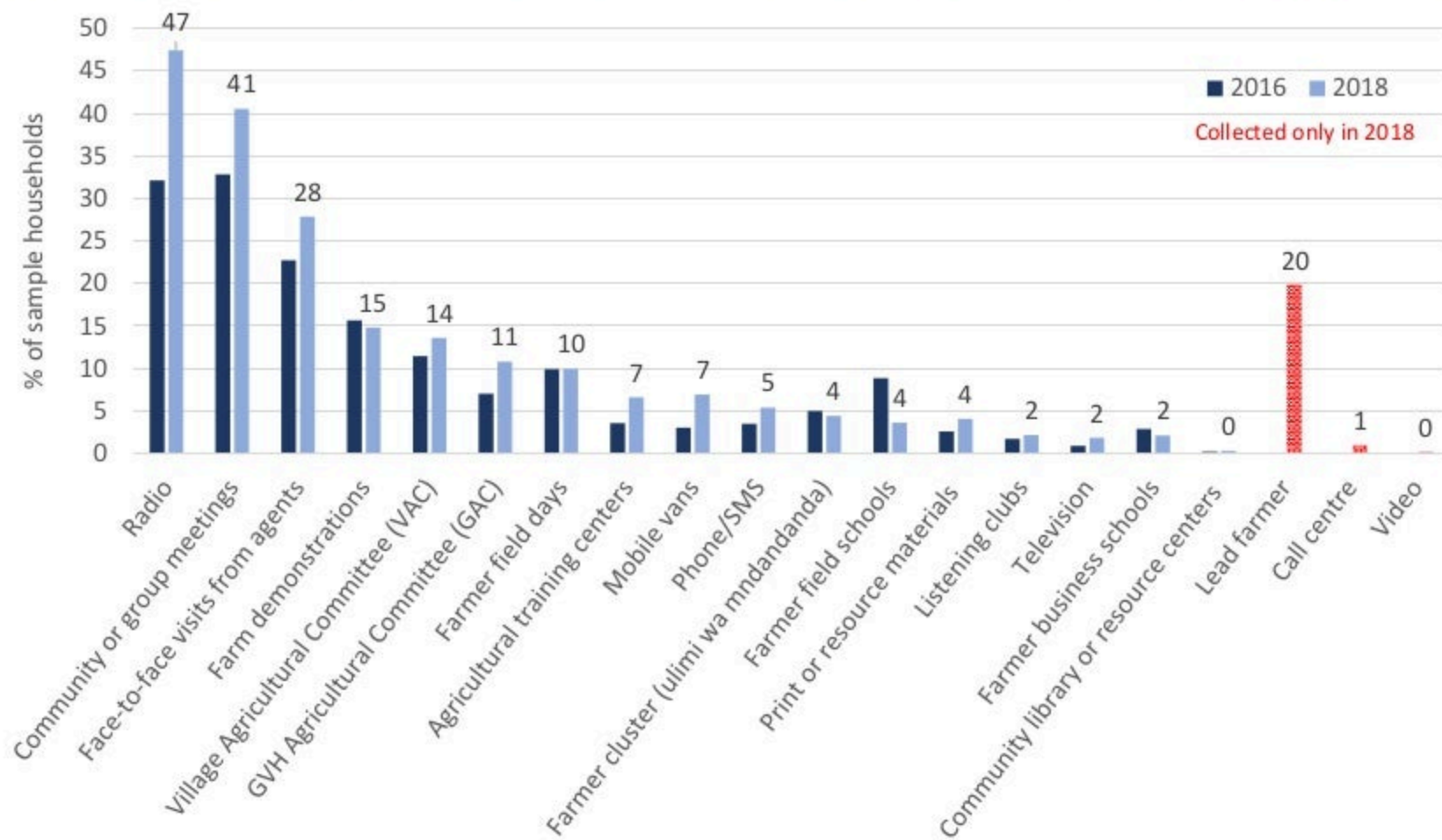
Access of agriculture advice, by source

a. In the last 2 years

b. In the last 12 months



Access to extension services, by method/approach



1. Men have greater access to almost all sources of agricultural advice

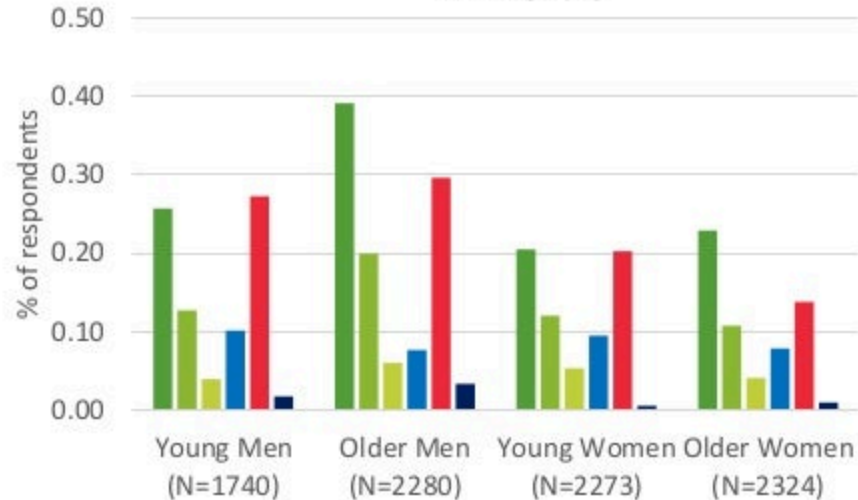
2. Older men have greatest access to almost sources of agricultural advice

3. Compared to other sources (e.g., govt), radio is the top source for young men and women

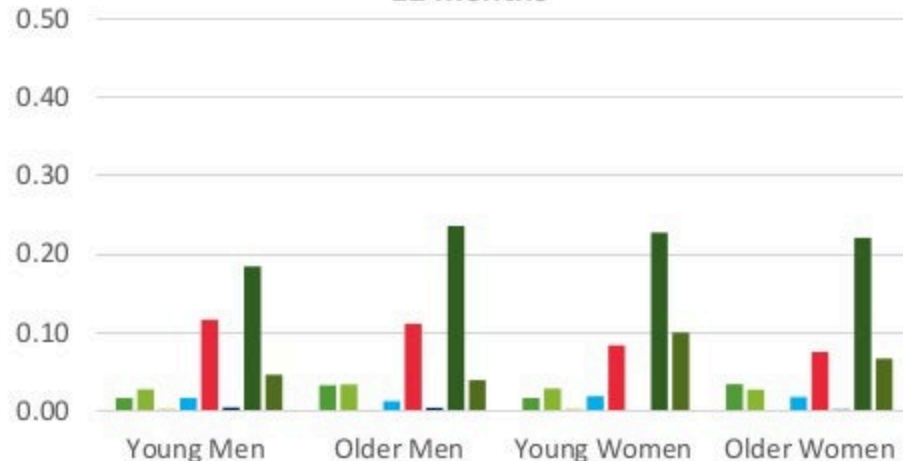
4. Women have greater access to most sources of nutrition advice

5. Men (both young and older) have greater access to nutrition advice from radio compared to other sources and compared to women

Panel a. Source of agricultural advice in the last 12 months



Panel b. Sources of nutrition education in the last 12 months



Government extension
Lead farmer
Radio

NGO extension
Other farmers
Mobile apps

Government extension
Lead farmer
Radio
Health workers

NGO extension
Other farmers
Mobile apps
Hospitals/clinics

Results of regression analysis

- Access to radio programming is associated with 4% greater empowerment score of women and men
 - Relative to other sources, access to radio had greater effect on improving empowerment of women than men
- Hard to explain variations in intrahousehold equality scores (W-M) → almost all explanatory variables were not statistically significant
 - 60% of households achieved intrahousehold equality (e.g., woman is at least as empowered as man)
 - Men's access to nutrition advice from radio reduces the gap between women and men empowerment scores
- Positive impact of access to radio programming on increased crop diversification and legume harvested area
 - Access to radio by woman and by man improved crop diversification and legume harvested area
- Positive impact of access to radio programming on improved household dietary diversity scores (HDDS)
 - Access to radio by woman and man improved HDDS
- Contribution of listening club and mobile platform? Households in focus districts (Kasungu, Dedza, Mchinji, and Ntchisi) have higher treatment effects of radio access than comparable districts in most models estimated

Some Reflections

- Radio is the top source of agricultural and nutrition advice
 - 60% of households reported listening to radio at least once a week and 41% listens to radio at least once daily
 - More than half of women (52%) reported listening to radio at least once a week.
 - Younger women and men used radio more than other sources for their agricultural information needs
 - Younger and older men used radio more than other sources for nutrition education
 - Radio seems to be a critical delivery platform for nutrition education for men, circumventing strong gender norms on women's role on domestic work and nutrition while men are usually teased and laughed at when attending meetings/trainings related to nutrition
- Our results also show significant effect of interactive radio programming on both women's and men's empowerment scores
 - Relative to other sources, access to radio had greater effect on improving empowerment of women than men
- Mechanisms for this gendered outcome come from lower time burden and awareness campaigns and messages on gender equality

Some Reflections

- Radio programming has been demand-driven at group- and community-level
- At national level, at least yearly review and harmonization of agricultural radio messaging
- Farmers have to option of which agricultural radio station to listen to
 - Reason why certain radio station was selected: The issues discussed are relevant to my needs
- Types of contents farmers like to have in agricultural radio programs:
 - Interviews with farmers
 - Experts talking
 - Experts answering questions
 - Farmers answering questions
 - Agricultural news
 - Drama, music
 - Weather forecast
 - Market prices

Some Reflections

- Other sources of advice (government and NGO extension) also have effects on the outcome variables → combining radio messaging and other sources matters
 - Beaman et al. (2015) indicate that technology diffusion and behavior change are characterized by a complex contagion learning environment in which most farmers need to learn from multiple people and sources before they adopt themselves
- Listening clubs linked to the radio program seem to be useful platforms that strengthen social capital and cooperation among listeners.
- Call centers and mobile platform, in which anyone can call or text for free, may have helped in greater responsiveness of service provision to farmer's demands

We would like to acknowledge all CGIAR Research Programs and Centers for supporting the participation of their gender scientists to the *Seeds of Change* conference.



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