Do empowered individuals make healthier food choices?:
An experimental analysis of men's and women's food choices among smallholder farming households in Guatemala

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April 3, 2019

Objective

- Measure food choice decisions of men and women among small-scale farming households as:
  - Income varies (*what if*)
 - Nutritional information is provided (*treatment effect*)

Introduction to choice experiments

- Choice experiments analyze how people make decisions when faced with various alternatives
  - The influences leading to a decision can be identified and measured. For example:
    - What aspects of a product do consumers value?
    - How much are they willing to pay for certain characteristics?
- Traditional application in food industry, consumer goods, financial products and healthcare plans.

Rationale

- Why consider individual food choices?
  - Preferences/food choices important input in nutritional outcomes of the household
  - Understand the determinants of these choices for policy intervention
- Why food choice experiment?
  - Difficult to assess individual food choices in the household by simply considering consumption data

Food choice experiment in Guatemala
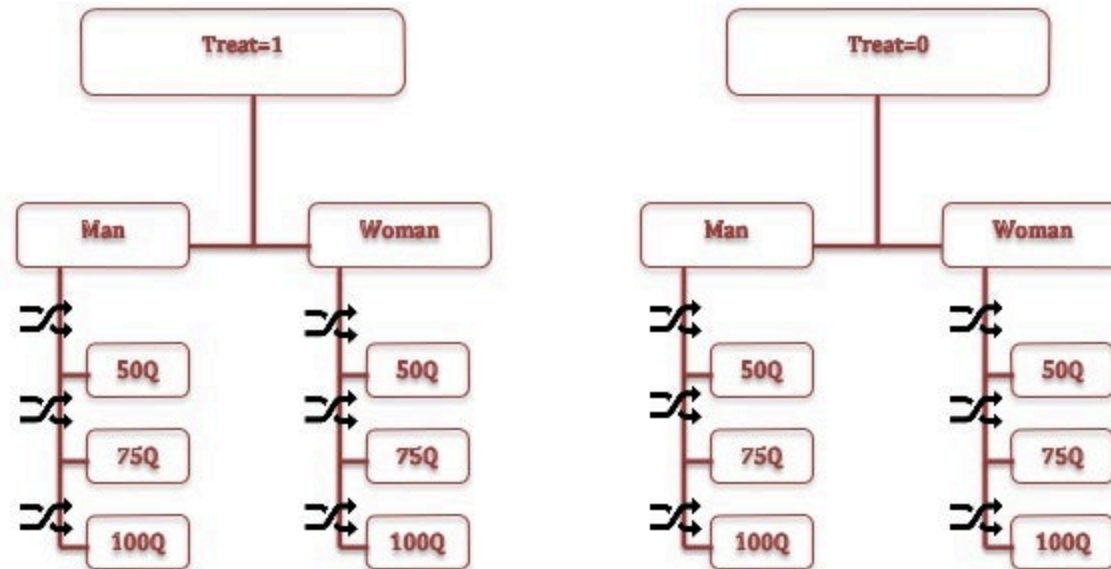
Data

- 250 small-scale farming households with couples randomly selected across 2 study sites in Guatemala

- WEAI module

- Household-level production and consumption data

- Food choice experiments with all the participants (N=500)

- Labor preference experiment with all the participants (N=500)

Scoring food choices - healthy and unhealthy food items

- Define healthy and unhealthy food choices using:
  - WHO nutrient profile classification for food groups
    - Certain food groups like chocolate and sugar confectionery, energy drinks etc. are straightforward *unhealthy* choices
    - For other food items like cereal, cheese etc., categorization accounts for sugar, sodium and fat contents in a standard portion size of 100 grams

Scoring food choices - members' nutritional status & per capita standardization

- Categorize all household members' nutritional status using body mass index (BMI) - undernourished, normal, overweight and obese.

- Using participant's age & BMI type to calculate adult femle equivalent (AFE):

  - E.g. a man in the age group of 30-39 years with normal BMI is 1.25 AFE, while an obese man in the same age group is 1.42 AFE.

- Household-level AFE - Sum of AFE's of the all the HH members

Scoring food choices

- For each food item and its quantity selected in the experiment - calculate the total quantity in grams to *grams per capita* (total QTY/ HH AFE)

- Standardize grams per capita of food choice to a 100 gram portion size → *final score of healthy and unhealthy food choices*

Descriptives of food choice score

Table: *Food choice scores of men and women by treatment effect (received or not nutritional information*

Income level	Treat=1			Treat=0		
	Men	Women	t-test	Men	Women	t-test
Food choice score for healthy items						
50	9.52	9.68		10.63	9.35	
75	13.84	13.44		15.02	12.78	**
100	16.64	17.33		18.2	17.39	
Food choice score for unhealthy items						
50	1.7	1.71		2.06	1.76	
75	2.26	2.56		2.57	2.66	
100	3.16	3.03		3.6	3.49	
Food choice score for healthy and unhealthy items						
50	7.82	7.97		8.56	7.58	
75	11.57	10.88		12.44	10.11	**
100	13.47	14.29		14.59	13.89	

Correlates of food choice scores

Independent variables	Women	Men
income=75Q	2.86***	3.64***
income=100Q	6.46***	5.74***
Treatment=1 (HH received nutritional information)	2.76***	0.41
WEAI indicators		
Ag decisions disempowerment	0.82	-8.03***
Asset ownership disempowerment	2.3*	3.36*
Credit access disempowerment	-0.87	2.72
Income use disempowerment	0.32	-1.17
Group membership disempowerment	1.06	-3.09**
Workload disempowerment	2.19	-1.45
Individual-level controls		
Age	-0.07**	-0.75***
Literacy	1.08**	0.14
Participation in nutritional workshop	1.68**	-0.9
Household-level controls		
HH size	-1.4***	-1.33***
HH food insecurity	-1.6**	-2.03***
Expenses in non-food items	-0.004***	-0.006*
Frequency of market visits(less than weekly)	-1.98**	-1.32*
Region dummy	-0.85	-.21

Summary of results

- In this experiment, choices are not discrete.
- Participants selected several food items from the choice set and different quantities of each item
- Food choice scores help to standardize the choices in one unit while taking into account nutrient content of food items
- We find strong treatment effect for women's food choices
- Income is strongly and positively correlated with healthier choices
- WEAI domain indicators are not highly significant for women's food choices
- For men adequate empowerment in agricultural decision-making and group membership is correlated with higher food choice scores
- The scores are also correlated with several socio-economic aspects of the individual and the household.

Next steps

- Consider the experiment rounds with a mix of food and non-food items

- Analyze individual choices in conjunction with joint choices conducted

- Explore random utility model (RUM) to analyze food choices by converting scores (continuous numbers) in discrete options

Thank you

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.

Photo: Neil Palmer/IWMI