How Economic Preferences Change Food Consumption Patterns

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Introduction

Consumption of sufficient calories and of a diverse diet is dependent on various social, economic and political factors. Individual preferences and motivation are often neglected but also affect nutrition choices. Core concepts of behavioral economics – ***altruism, risk and time preferences*** – can impact food and nutrition security of individuals and of dependent household members such as children. Yet, empirical evidence is scarce.

This study fills the research gap and explores the linkages between behavioral preferences and dietary intake in India.

The research is part of a PhD project that aims to identify the observable and unobservable determinants of micronutrient nutrition of vulnerable groups over time and in risky environments.

Objective

The research objective is

to estimate the effects of individual economic preferences on nutrition behavior of household members in risky environments.

A sub-question of this particular study is:

• How do altruism, risk preference, time preference, and reciprocity affect food and nutrition security over time?

Study Design

The study uses household-level surveys from India. The surveys are carried out in rural areas of Jharkhand and West Bengal. The study site selection criteria include incidence of high poverty rates, predominance of agriculture-based livelihoods, and the proneness to shocks. The Jharkhand site suffers from frequent droughts, whereas the West Bengal site suffers from floods. 994 households were surveyed in 84 villages, each household having at least 1 child below 2 years. The data was collected from January to May 2017.

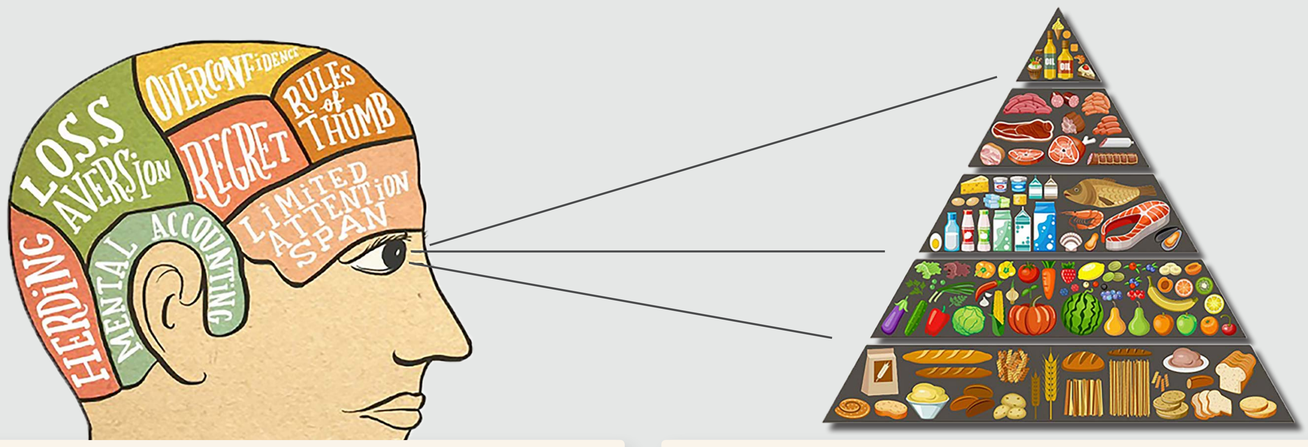
The survey tool is designed as an interdisciplinary quantitative questionnaire. In addition to general socioeconomic and agricultural information, the survey collects data on food and nutrition security indicators. Hypothetical games are played with the male and female respondents to elicit their individual preferences.

Methods

The analysis is based on mixed multivariate regressions, the exact specification depends on the response variable. Let i be adults or children, h households, v villages and r regions, then the basic set-up is:

$$Y_{ihvr} = Risk_{ihv}\beta_1 + Altruism_{ihv}\beta_2 + X_{ihvr}\beta_3 + \varepsilon_{ihvr}$$

with Y_{ihvr} representing nutrition intake or outcomes variables, $Risk_{ihv}$ is the z-score of the risk taking elicitation, $Altruism_{ihv}$ is the z-score of altruism elicitation, X_{ihvr} is a vector of explanatory variables and a set of control variables, β are vectors with corresponding regression coefficients, and ε_{ihvr} is the residual.



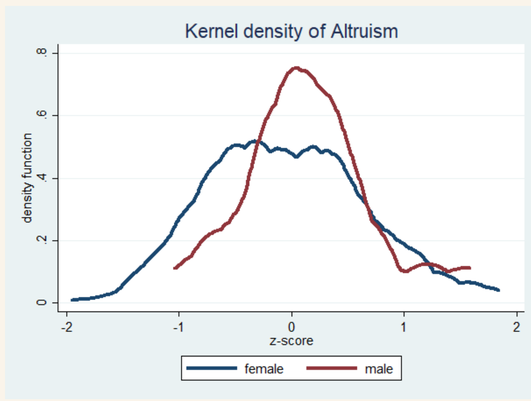
Preliminary Results

Descriptive statistics confirm initial assumptions for choosing the study sites: high malnutrition rates, multidimensional poverty and marginalized communities. A few characteristics of the study sites are shown in the table below:

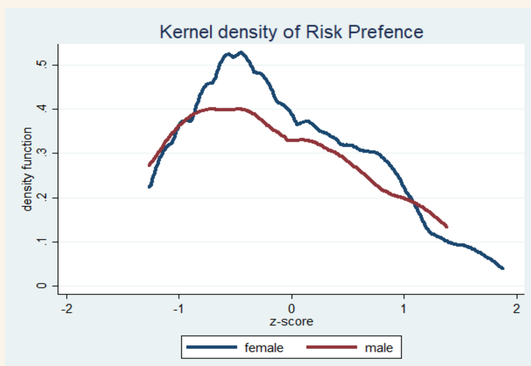
Region	Jharkhand	West Bengal
N of households	531	402
Avg. household size	5.8	4.4
Religion (% of households)	91% Hindu 9% Muslim	14% Hindu 86% Muslim
Income (per capita per month)	9.9 USD	15.7 USD
Individual Dietary Diversity Score (10-point scale)	2.7	2.97
Food Insecurity Experience Scale (8-point scale)	3.6	3.7
Appropriate feeding (% of households)	84%	64%

Economic preferences are calculated in standardized z-values. Initial results show differences between genders; exemplarily altruism and risk preference distributions are displayed.

Altruism



Risk Preference



Study sites in India

Preliminary Results

The following table gives an outlook on analytical results by estimating the effect of altruism and risk preference on two response variables. Yet, at this stage of the analysis, no comprehensive statement on the causality between economic preferences and food and nutrition security can be made.

	(1)	(2)
Estimation	OLS	Probit
Dep. Variable	Food Insecurity Experience Scale	Sugar consumption of household
Altruism	-0.482***	
	(0.13)	
Risk preference		0.057***
		(0.017)
Log(income pc)	-0.447***	0.074***
	(0.16)	(0.024)
Education	-0.095***	0.005
	(0.023)	(0.004)
Religion (Muslim)		
Hindu	-0.521*	-0.018
	(0.29)	(0.044)
Region (Jharkhand)		
West Bengal	0.404	-0.220***
	(0.306)	(0.043)
N	884	913
Adj. R-squared	0.057	
Pseudo R-squared		0.065

Standard errors in parentheses; *p<0.1, **p<0.05, ***p<0.01
ß-coefficients are given for OLS, marginal effects at means for Probit.

The Food Insecurity Experience Scale is measured from 0 to 8, the lower the more food secure a household. Sugar consumption is a binary variable, sugar is consumed or not in the past 24 hours. Income is calculated per capita on expenditure basis in Indian Rupees (64 INR are equivalent to 1 USD). Education is years of formal education.

Conclusion

The following can be said: First, the innovative survey design was successfully implemented and the descriptive statistics indicate reasonable results in line with expected intervals. Second, very early analysis results show that ***economic preferences do have significant effects on certain food and nutrition security variables.***

The next step is to advance in the regression analysis by estimating other dependent food and nutrition security variables and by including additional factors such as geographical observations, time-variant information and shocks. Final results will be available by 2018.

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