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Multidimensional Poverty of Farm and Herder Households in Tibetan Areas of Gansu Province, China

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1. Introduction

- Tibetan ethnic people in many pockets of China are in abject poverty
- It is important to find what factors impact poverty of Tibetan ethnic people for the policy purpose
- We calculate multidimensional poverty index to find important indicators affecting poverty

2. Methods

- multidimensional poverty index (MPI)
 - 3 dimensions and 12 indicators

Dimensions	Indicators					
	Self-health assessment (x_1)					
nealth	Labor availability (x_2)					
Education	Adult family members received formal education (x_3)					
	School-age children drop out (x_4)					
	Per capita housing area (x_5)					
	Housing quality (x_6)					
	Home toilet type (x_7)					
Living	Animal shed is within the house where people live (x_8)					
standard	Sources of drinking water (x_9)					
	Household electricity supply (x_{10})					
	Household fuel supply(x_{11})					
	Number of consumer durable (x_{12})					

- AF method (Alkire and Foster, 2011)
 - We use six different methods to assign the weight:
 - the analytic hierarchy process (AHP)
 - equal weight to indicators (IEW)
 - equal weight to dimensions (DEW)
 - the entropy method (EM)
 - the principal component analysis (PCA)
 - the factor analysis (FA)

3. Study area and data collection



Gansu Province, China

- The data used in this paper are from the interview survey conducted by the authors in July-August of 2016.
- The stratified random sampling methods have been adopted to select samples.
- In total, 559 household heads were interviewed which make up the sample of this study.

4. Results



MPI calculated by six weighting methods

Contribution of each indicator to MPI when K=30%

Dimensions	Indicators	AHP	IEW	DEW	EM	РСА	FA	Mean	Ranking of Mean
Health	x ₁	0.173	0.069	0.128	0.053	0.137	0.131	0.115	4
	x ₂	0.053	0.122	0.265	0.124	0.264	0.121	0.158	2
Education	x ₃	0.195	0.2	0.333	0.241	0.044	0.287	0.217	1
	x ₄	0.388	0.027	0.05	0.017	0.015	0.038	0.089	5
Living standards	x ₅	0.008	0.095	0.038	0.09	0.052	0.113	0.066	7
	x ₆	0.028	0.033	0.012	0.022	0.111	0.025	0.039	10
	X ₇	0.04	0.192	0.078	0.233	0.164	0.093	0.133	3
	x ₈	0.041	0.051	0.021	0.04	0.084	0.001	0.040	9
	Х ₉	0.042	0.085	0.028	0.077	0.015	0.072	0.053	8
	x ₁₀	0.006	0.019	0.007	0.012	0.038	0.009	0.015	11
	x ₁₁	0.023	0.098	0.036	0.087	0.062	0.103	0.068	6
	x ₁₂	0.002	0.011	0.004	0.005	0.014	0.008	0.007	12

5 Conclusions

- 1) Single indicator poverty: the adult family members with formal education (x_3) , the home toilet type (x_7) , and the labor availability (x_2) show a higher incidence of poverty.
- 2) Multidimensional poverty: many farm and herder households (FHH) in the Tibetan areas of the Gansu Province are facing multidimensional poverty but the proportion of extreme poverty is very small.
- 3) By contribution rate: the adult family members received formal education (x₃), the labor availability (x₂), the home toilet type (x₇), the self-health assessment (x₁), and the school-age children drop out (x₄) occupied the top five place.

Thanks for your attention!