

To cooperate or not to cooperate?

A Framed Field Experiment in North Kalimantan



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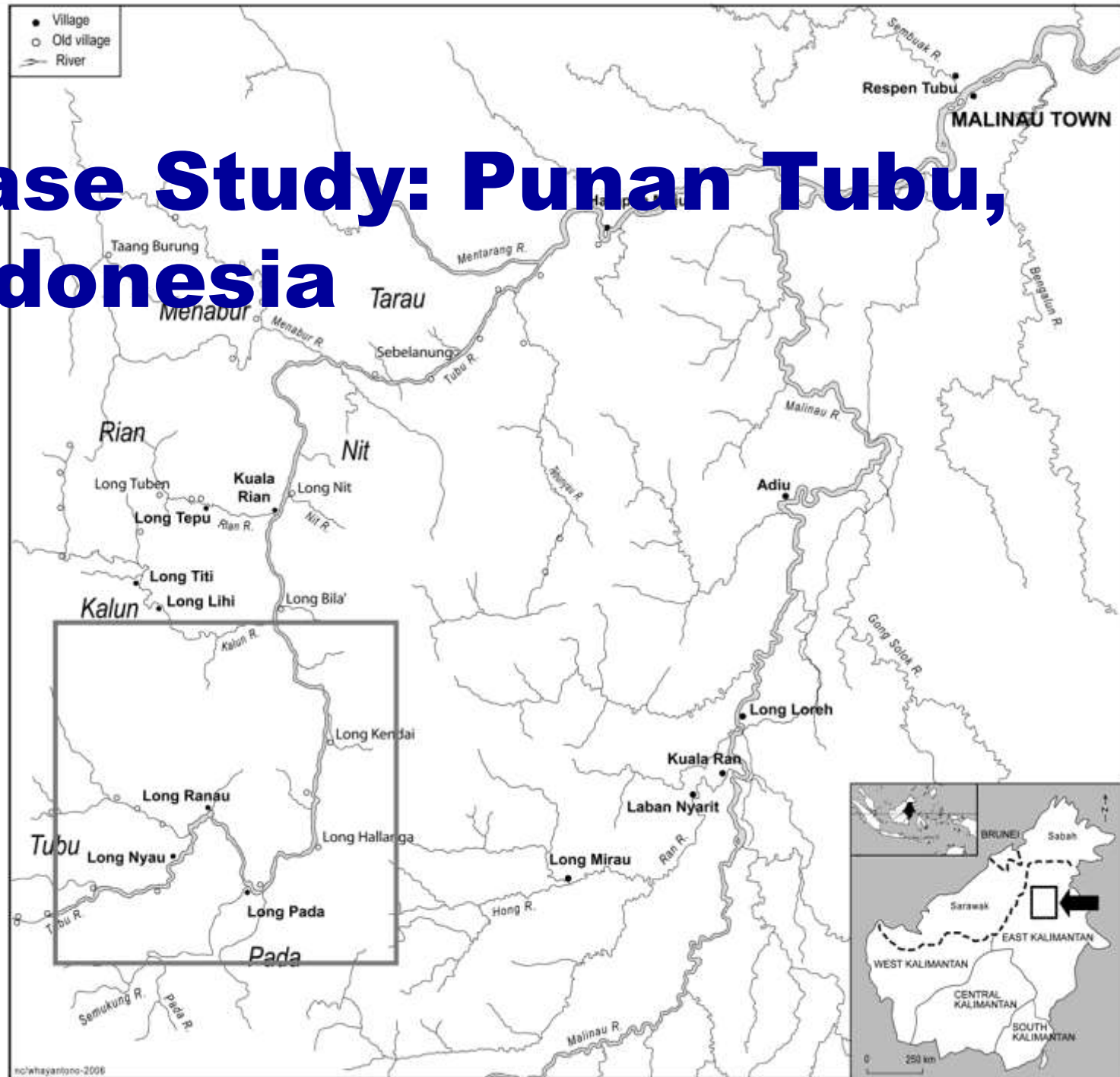
Introduction

- ***“...with welfare system today, the poor becomes client. They see themselves as people with special needs that can only be met by outsiders...”*** – J.P. Kretzmann & J.L. McKnight 1993
- Communities cooperate in collective action problem (Ostrom 1990, Cardenas 2000)
- Cooperation in human societies is based on social norm (Elster 1989, Lansing 2006).



- But can cooperation be stimulated by a larger political entity, as the government?
 - Largely practiced the success of community based development is voluntary cooperation actively stimulated by the government
- *To what extent are people willing to cooperate?*
- *What factors explains cooperation with government stimulated programs?*

Case Study: Punan Tubu, Indonesia





Method

- **Sample Community**
 - 7 villages (upstream and resettlements)
 - 212 adults participants (>17 y.o.)
 - Part of LEK project (2012-2014)
 - <http://icta.uab.cat/etnoecologia/lek/>
- **Framed Field Experiment**
- **Survey (pre-experiment)**



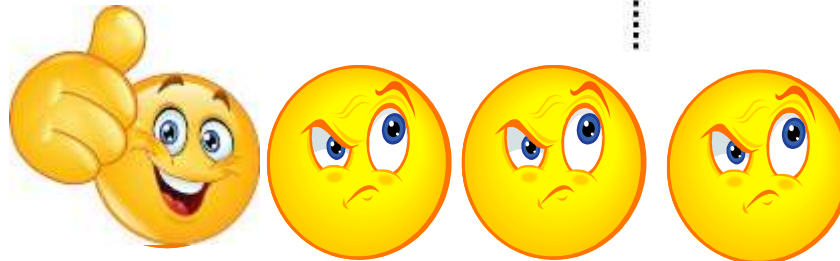
Frame Field Experiment

- *“When a norm works very smoothly, people will even sometimes deny that a norm is in use at all”*
(K. Binmore, 2010)
- Based on the Common Pool Resource Game
(Ostrom et. al. 1992)
- Framed in a House Building Activity



The Experiment

- 4 player share 20 token
- Each player can extract 0, 1, 2, 3, 4, 5
- Value of extracted token = 3000 rupiah ($\pm \text{€}0.20$)
- Threshold 10 token or else punished to 3 token
- 4 rounds, different winner of jackpot





The Experiment

- social optimum=20 token (a day wage) vs 14 token (self interest behavior)
- Repeated 4 times, feedback after each round
- Treatment: knowing when to win jackpot





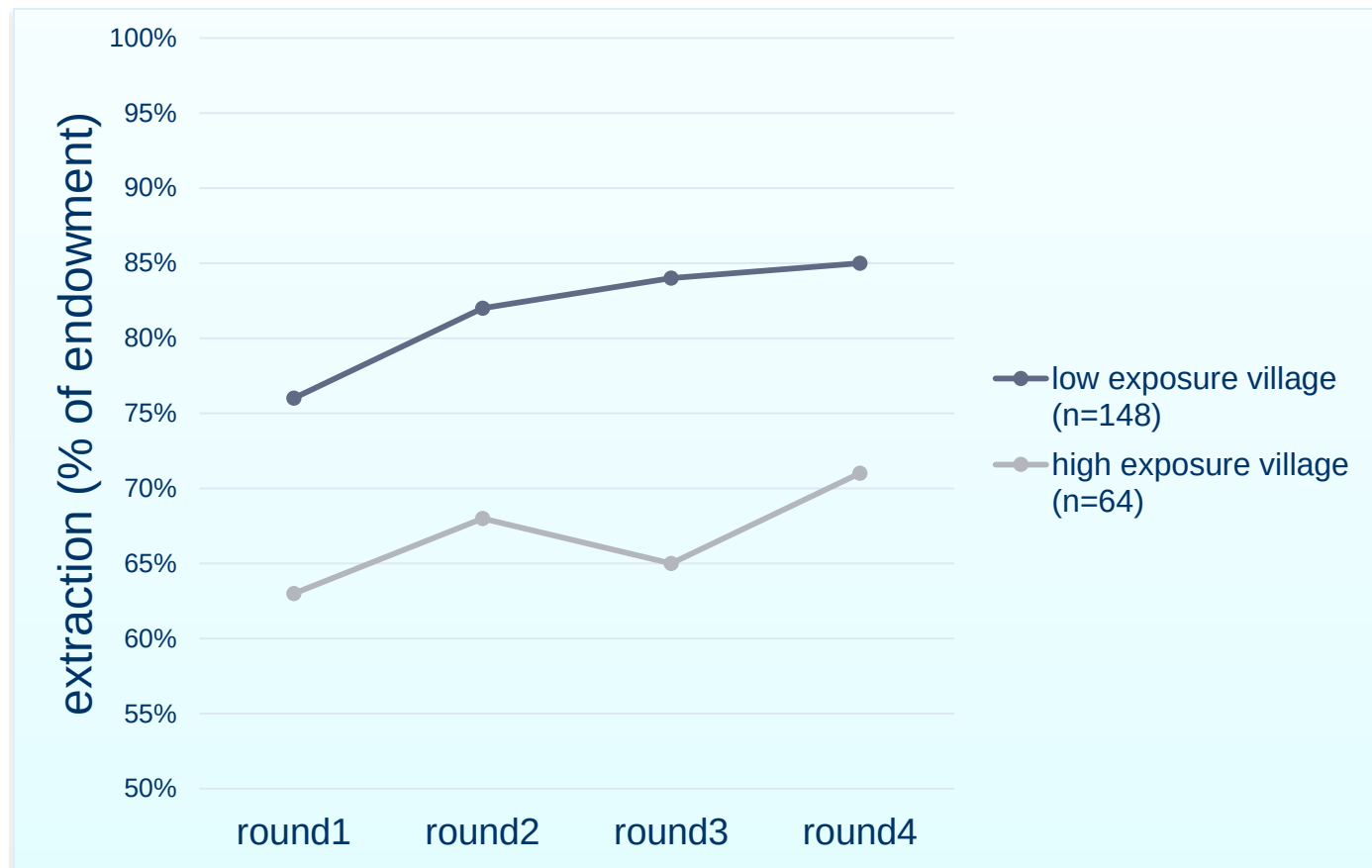
Results

Summary statistics of informant's socioeconomic characteristics, by village groups

	Pooled Sample	Low exposure villages	High exposure villages	p-value*
Average age participants (in years)	39.1 (15.59)	36 (13.5)	46 (17.8)	0.005
% female participants	54%	55%	53%	0.830
Average years in school	2.91 (3.55)	2.07 (3.13)	4.86 (3.70)	0.000
% participants with house by the government	58%	71%	30%	0.073
% participants with wage from government	23%	27%	16%	0.000
% trust fellow villagers	85%	96%	61%	0.000
No. of observations	212	148	64	^



Average extraction (%) in each round, by village groups





OLS regression explaining first round extractions

	Model 1: All observations	Model 2: Obs of low exposure villages
Low exposure village	0.249 (0.043)***	
Schooling (in yrs)	0.003 (0.003)	0.002 (0.005)
Government house	-0.125 (0.025)***	-0.130 (0.021)***
Government salary	0.006 (0.07)	-0.048 (0.077)
Trust in fellow villagers	-0.08(0.04)	-0.08 (0.028)
Age	0.003 (0.002)	0.002 (0.003)
Sex	-0.028 (0.022)	-0.02 (0.04)
Treatment	-0.028 (0.022)	-0.11(0.06)
Constant	0.42 (0.1) ***	11.9 (2.3)***
R-square	0.09	0.08
No. of observations	208	144



GLS regression

	Dependent variable: Multi-round Extraction		
	Model 1	Model 2	Model 3 [¥]
<i>time-invariant variable</i>			
Low exposure villages (yes=1)	0.156*** (0.026)	0.158*** (0.033)	^ ^
Schooling (in years)	-0.001 (0.003)	-0.000 (0.003)	0.002 (0.003)
Government house (yes=1)	-0.031 (0.021)	-0.030 (0.021)	-0.044* (0.024)
Government salary (yes=1)	-0.012 (0.023)	-0.017 (0.023)	-0.038 (0.025)
Trust in fellow villagers (yes=1)	^	-0.005 (0.026)	-0.028 (0.030)
Age	0.003*** (0.000)	0.003*** (0.000)	0.002** (0.000)
Male (yes=1)	-0.047** (0.020)	-0.045** (0.021)	-0.024 (0.023)
Treatment (yes=1)	0.026 (0.018)	0.025 (0.018)	0.014 (0.020)
Cooperative group (yes=1)	-0.174*** (0.030)	-0.184*** (0.030)	-0.356*** (0.047)
<i>time-variant variable</i>			
Round 2	0.061** (0.025)	0.062** (0.025)	0.069** (0.027)
Round 3	0.060** (0.025)	0.061** (0.025)	0.081*** (0.027)
Round 4	0.086*** (0.025)	0.085*** (0.025)	0.089*** (0.027)
Constant	0.549*** (0.049)	0.545*** (0.050)	0.750*** (0.050)
Log likelihood	-57.31	-59.83	18.36
Wald Chi2	141.67	141.37	95.97
N	848	832	576



Discussion

- Village effect, low exposure village more extractive:
 - Introduction of private benefit (Fuster&Meier 2010)
 - Cultural context of cooperation e.g., reciprocal altruism, demand sharing
- Most proxies of individual level of exposure are not associated to cooperative behavior



- across rounds extraction increases or cooperators reduces
 - Conditional cooperator have different tolerance to free-rider

Terima kasih! Thank you!

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