"DEMAND" FOR HOUSE IMPROVEMENT IN RURAL GAMBIA: VERY PRELIMINARY RESULTS

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11th Spanish Stata Conference, October 2018

Imperial College London

MRC The Gambia Unit

KEMRI | Wellcome Trust

Durham University

ROOPFS CLUSTERED-RANDOMISED CONTROLLED TRIAL IN THE UPPER RIVER REGION - THE GAMBIA

Primary clinical endpoint:

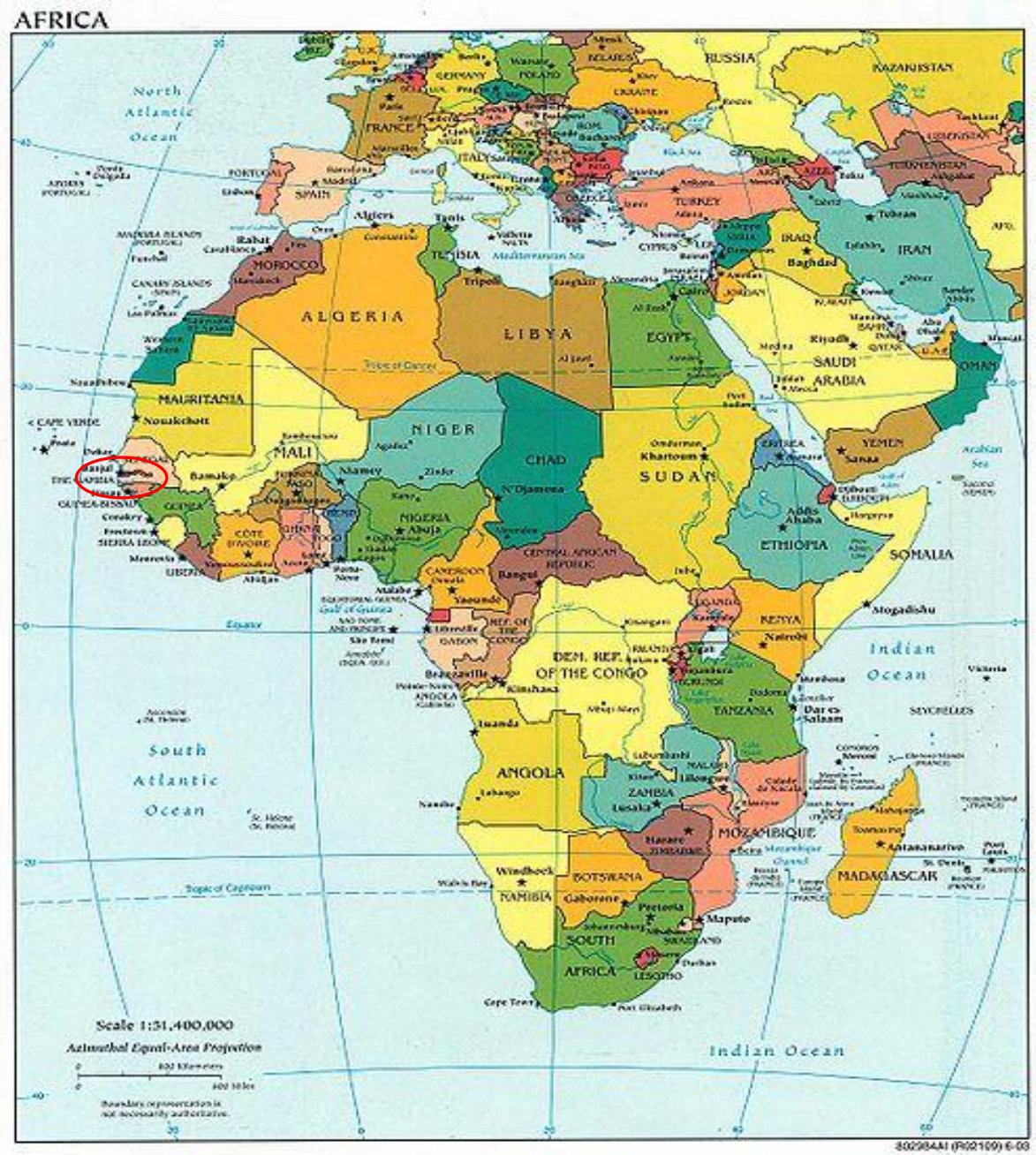
- Incidence of clinical malaria, which is determined by active case detection (ACD) and defined as a body (axillary) temperature of ≥ 37.5 °C, together with the presence of P. falciparum parasites detected by microscopy

Sample size:

- A total of 800 households (from 92 villages) enrolled received LLINs, and 400 will receive improved housing before clinical follow-up

Source: Pinder et al, Trials (2016) 17:275

THE GAMBIA


AFRICA
North Atlantic Ocean
South Atlantic Ocean
Indian Ocean
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KAZAKHSTAN
FRANCE
SPAIN
PORTUGAL
ITALY
GREECE
TURKEY
CYPRUS
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Baghdad
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MOROCCO
Rabat
Algiers
Tunis
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LIBYA
EGYPT
Cairo
SAUDI ARABIA
Riyadh
OMAN
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Nouakchott
CAPE VERDE
MALI
Bamako
NIGER
CHAD
N'Djamena
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Khartoum
ERITREA
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Sanaa
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SIERRA LEONE
LIBERIA
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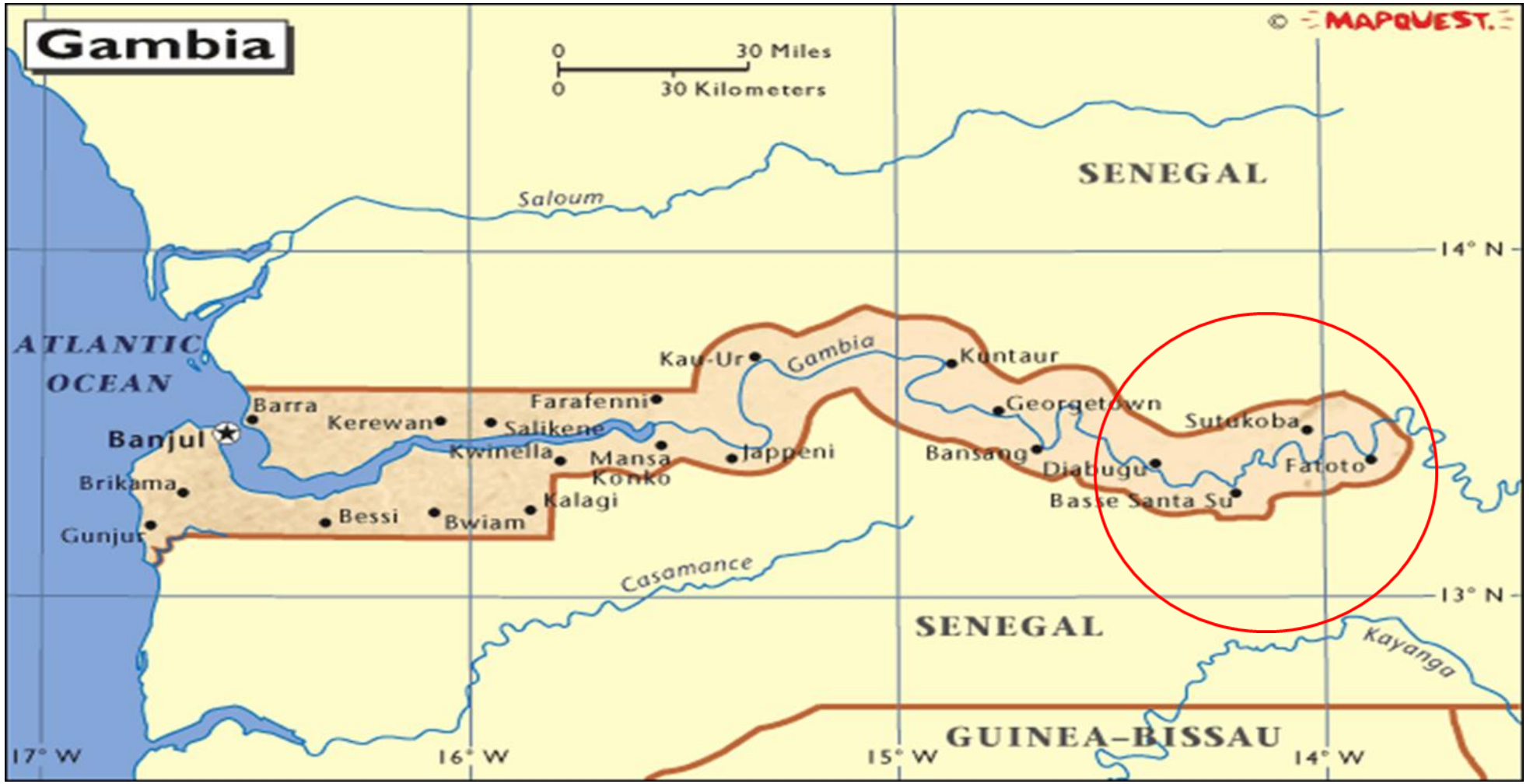
MOZAMBIQUE
Maputo
ZIMBABWE
Harare
BOTSWANA
Gaborone
NAMIBIA
Windhoek
SOUTH AFRICA
Pretoria
Cape Town
LESOTHO
SWAZILAND
MADAGASCAR
Antananarivo
Scale 1:31,400,000
Azimuthal Equal-Area Projection

TRIAL LOCATION



RooPfs study design

800 houses traditional
mud-walled thatched houses recruited

400 traditional
mud-walled thatched houses

400 ventilated
metal-roofed houses

RooPfs house: Ventilated roof

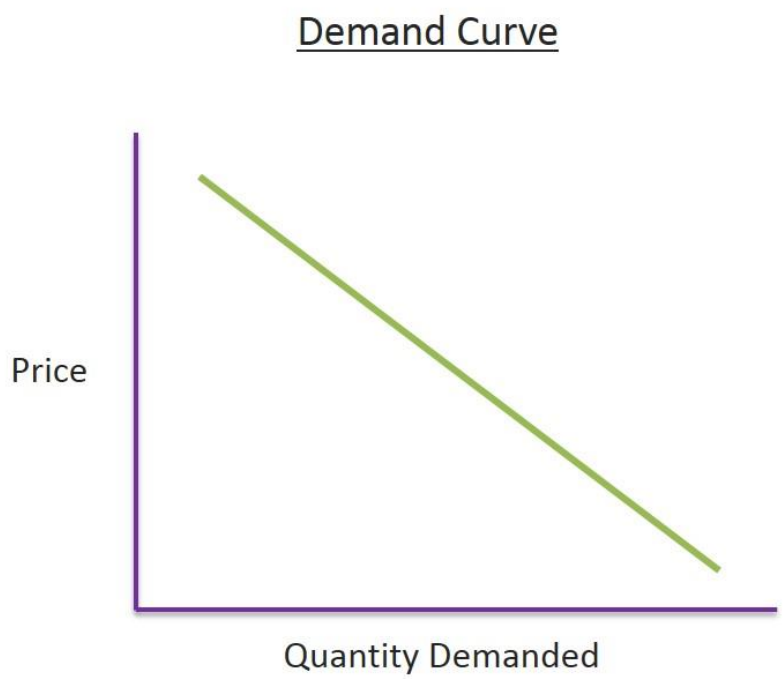
RooPfs house: Ventilated front door

Credit: Ben Kassan

ECONOMIC COMPONENT: EXPLORING DEMAND FOR HOUSE IMPROVEMENT

1. Willingness to pay for the intervention (demand based on stated preferences)
2. Household expenditure for house improvement (demand based on revealed preferences)
3. Satisfaction with housing (demand based on ι

Specific Aim: analysing the role of **seasonality**



LONGITUDINAL STUDY "HOUSE SPEND"

- Approx 1 year follow up of a subset of 15 Roo*Pf*s villages (out of 92 total villages)

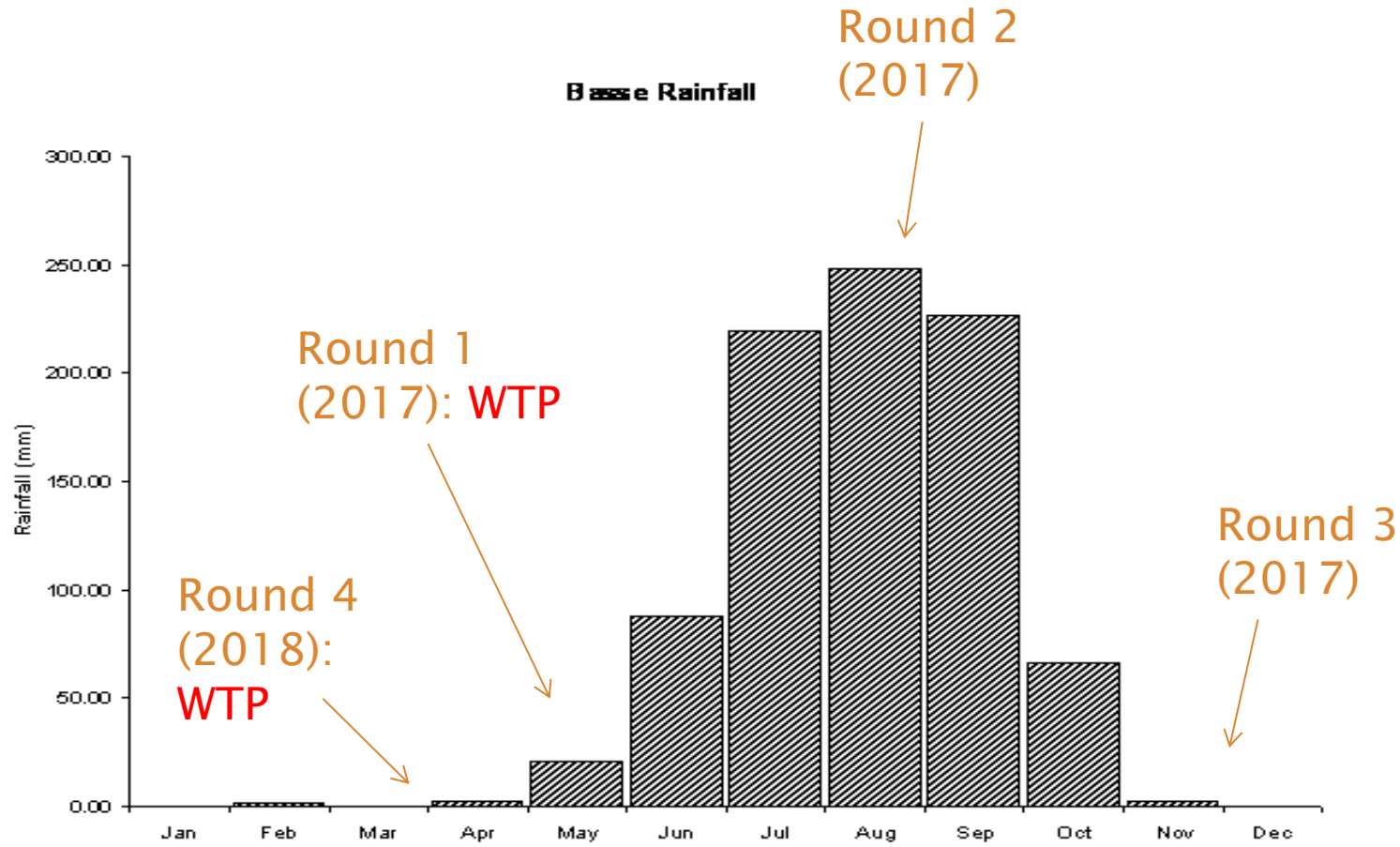
- 15 villages randomly selected stratifyed by:
  - (i) Village size; (ii) North/South bank; (iii) Ethnic group (Jagajari village purposely selected for being Sarahule)

- Intervention and control houses plus non-Roo*Pf*s houses

- 201 households included (67 intervention, 65 control, 69 non-Roo*Pf*s), **191 effective**

- 4 rounds:
  - Round 1 (9th May 2017- 25th May 2017)
  - Round 2 (2nd August 2017- 25th September 2017
  - Round 3 (November 2017 - anuary 2018)
  - Round 4 (March 2018-April 2018)

STUDY ROUNDS AND RAIN OVER A "TYPICAL" YEAR



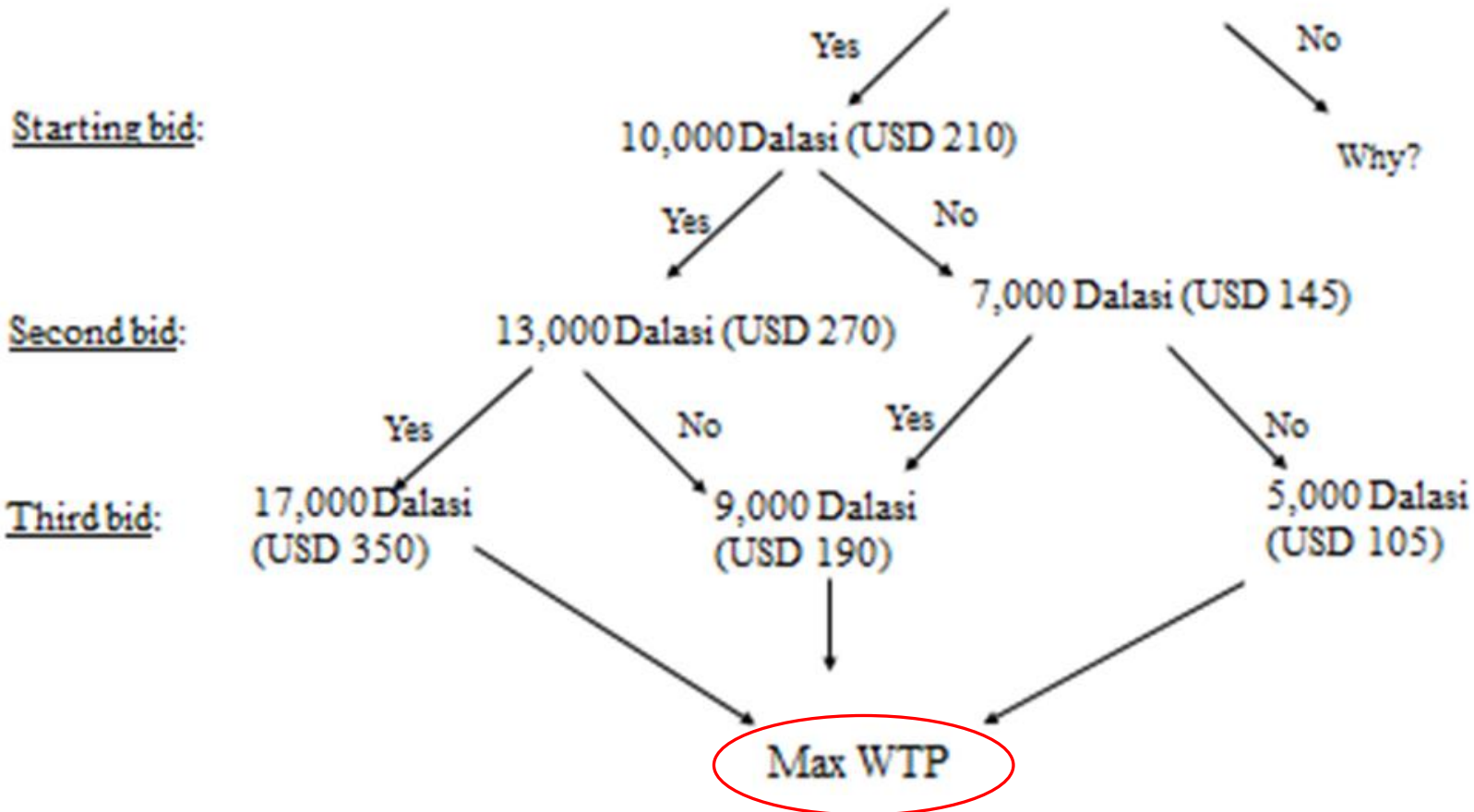
Source=NOOA

SAMPLE DESCRIPTION (INTERVIEWEE)

Variable	N (%)
Male	106 (44.5)
Female	85 (55.5)
Fula	117 (61.26)
Mandinka	66 (34.55)
Sarahule	8 (4.19)
18–30 years old	(11.52)
31–40 years old	(30.89)
41– onwards	(57.59)

WILLINGNESS TO PAY

WTP for a house improvement similar to the one provided through the RooPfs study (including corrugate roofs, metal screened doors and installation)?



SATISFACTION (UTILITY) AND ACTUAL EXPENDITURE (REVEALED PREFERENCES)

– How satisfied are you with your house overall?

1. Not at all satisfied
2. Not satisfied
3. Neither
4. Satisfied
5. Very satisfied

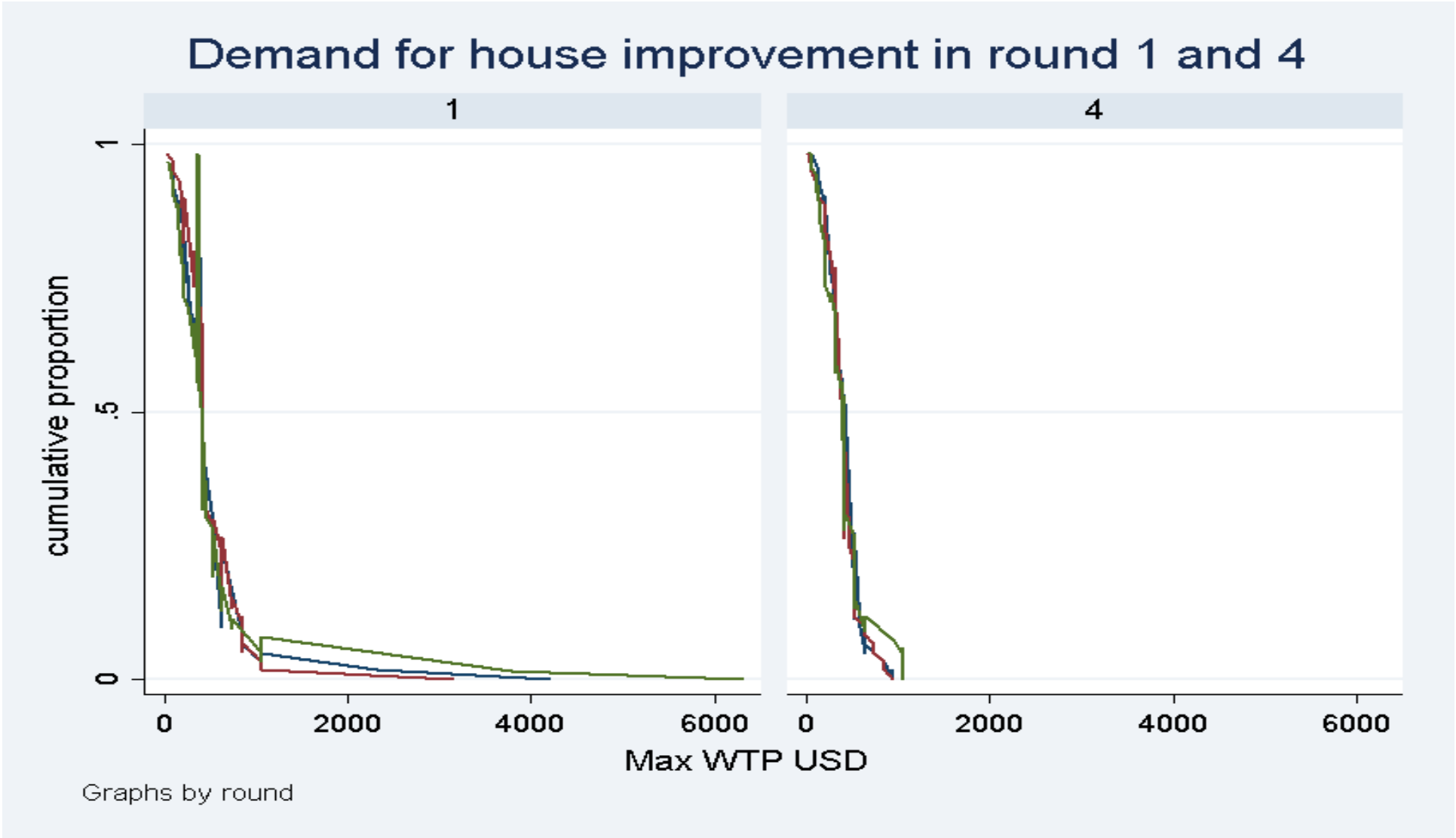
– Have you or someone else carried out work (improvement/repair/renovation) on one of your buildings during the last 3 months?

0. No
1. Yes

– Can you estimate how much money was spent on these works:

$$$$$$

DEMAND ACCORDING TO WTP



DEMAND ACCORDING TO WTP: ZOOM IN

DETERMINANTS OF WTP, RE

xtreg log_MaxWTP i.round i.village i.group, re robust

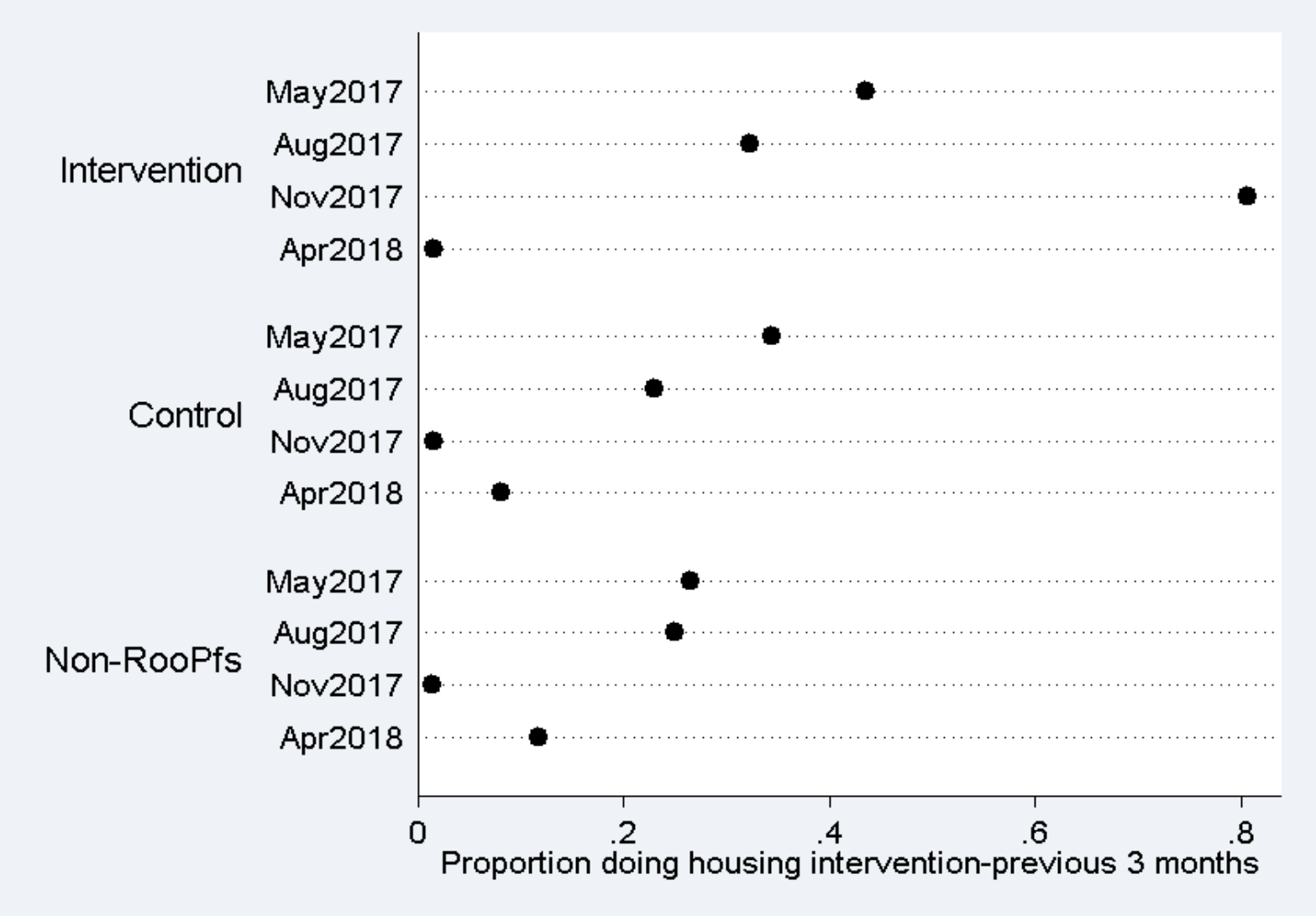
Variable	Coefficient	Robust SD
Round	.0106238	.0106238
Control	-.0079074	.1100982
Non-RooPfs	-.2302502	.1314717*
Constant	6.229471	.2083096***
N=382; Controlled by village; *sign at 10%, **sign at 5%, ***sign at 1%		

DETERMINANTS OF WTP, FE

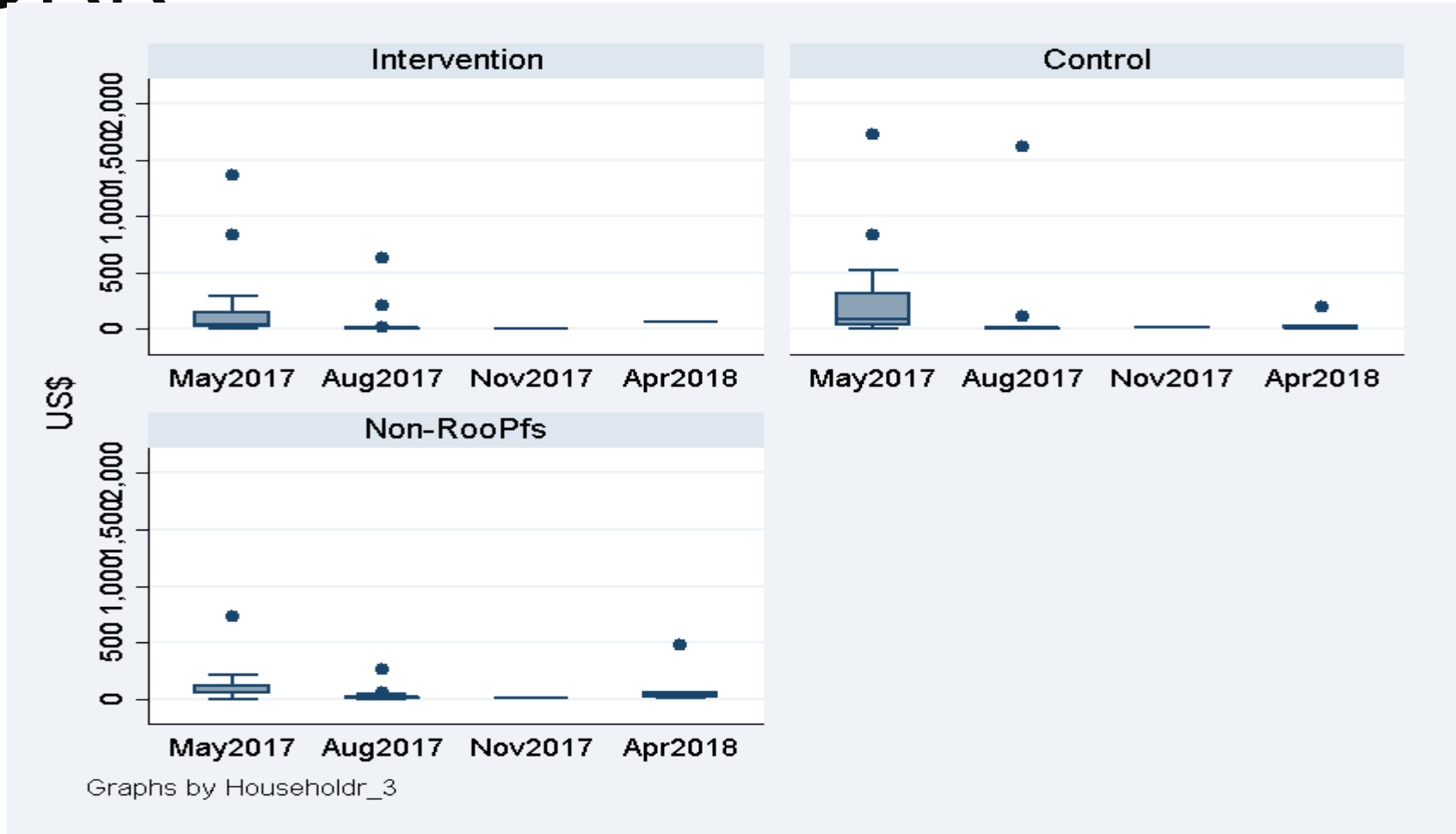
xtreg log_MaxWTP i.round, fe vce(cluster village)

Variable	Coefficient	Robust SD
Round	0106238	.0887125
Constant	5.817821	.0443563***
N=382; Controlled by village; *sign at 10%, **sign at 5%, ***sign at 1%		

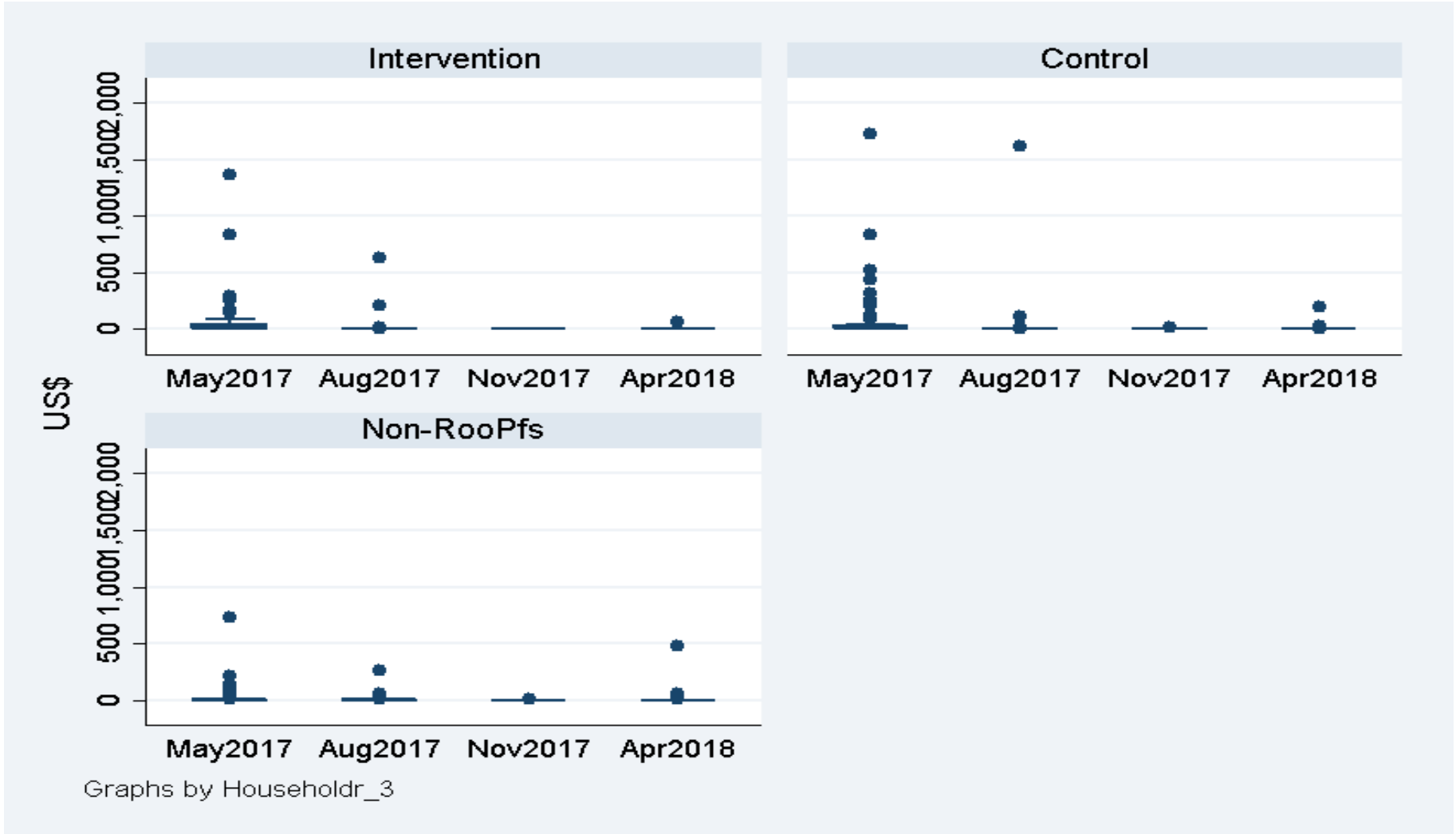
REVEALED PREFERENCES: ANY WORK DONE DURING LAST 3 MONTHS TO ONE OF YOUR BUILDINGS?



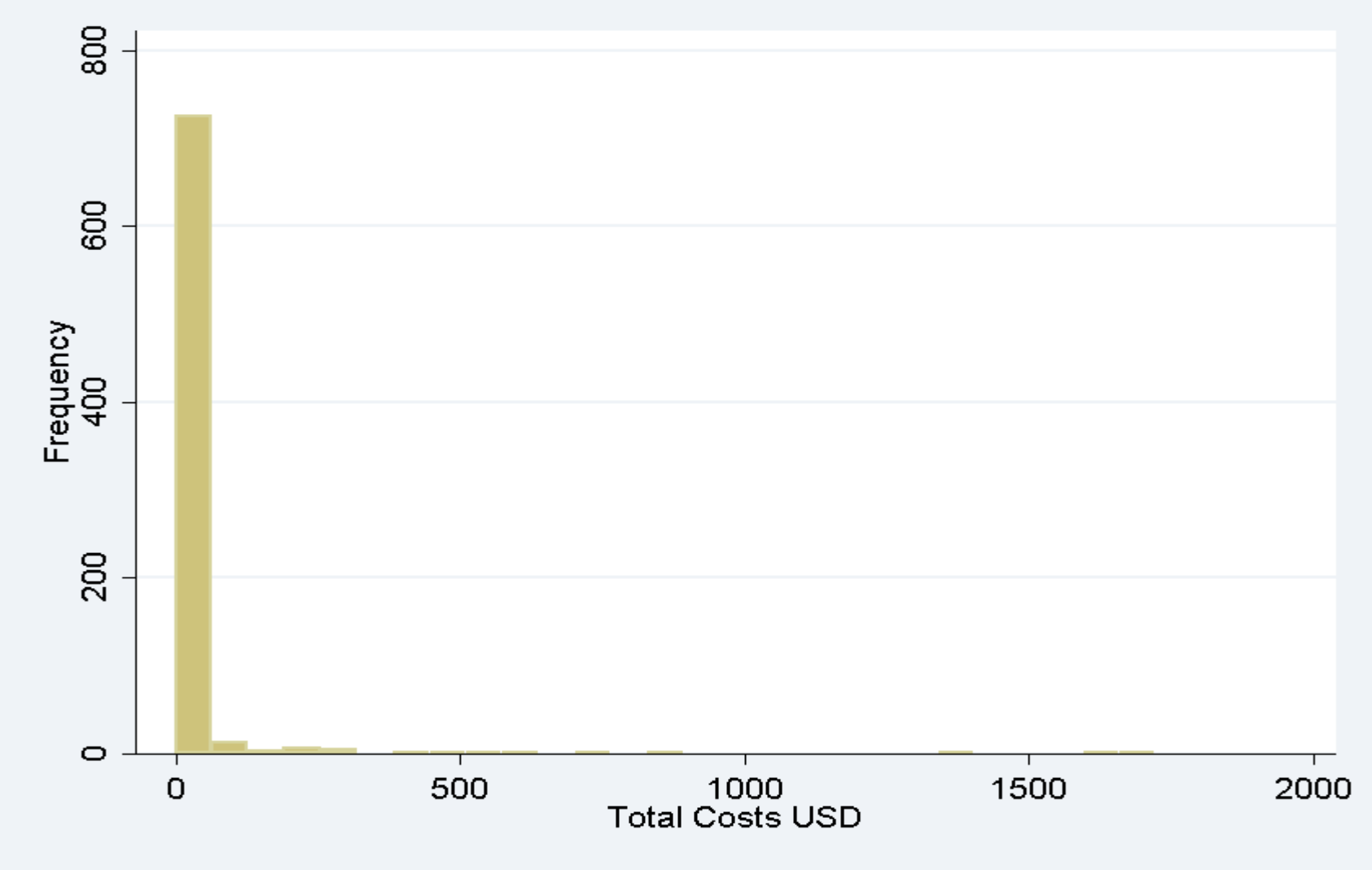
TOTAL COSTS INCURRED BY THOSE THAT DID SOME TYPE OF WORK



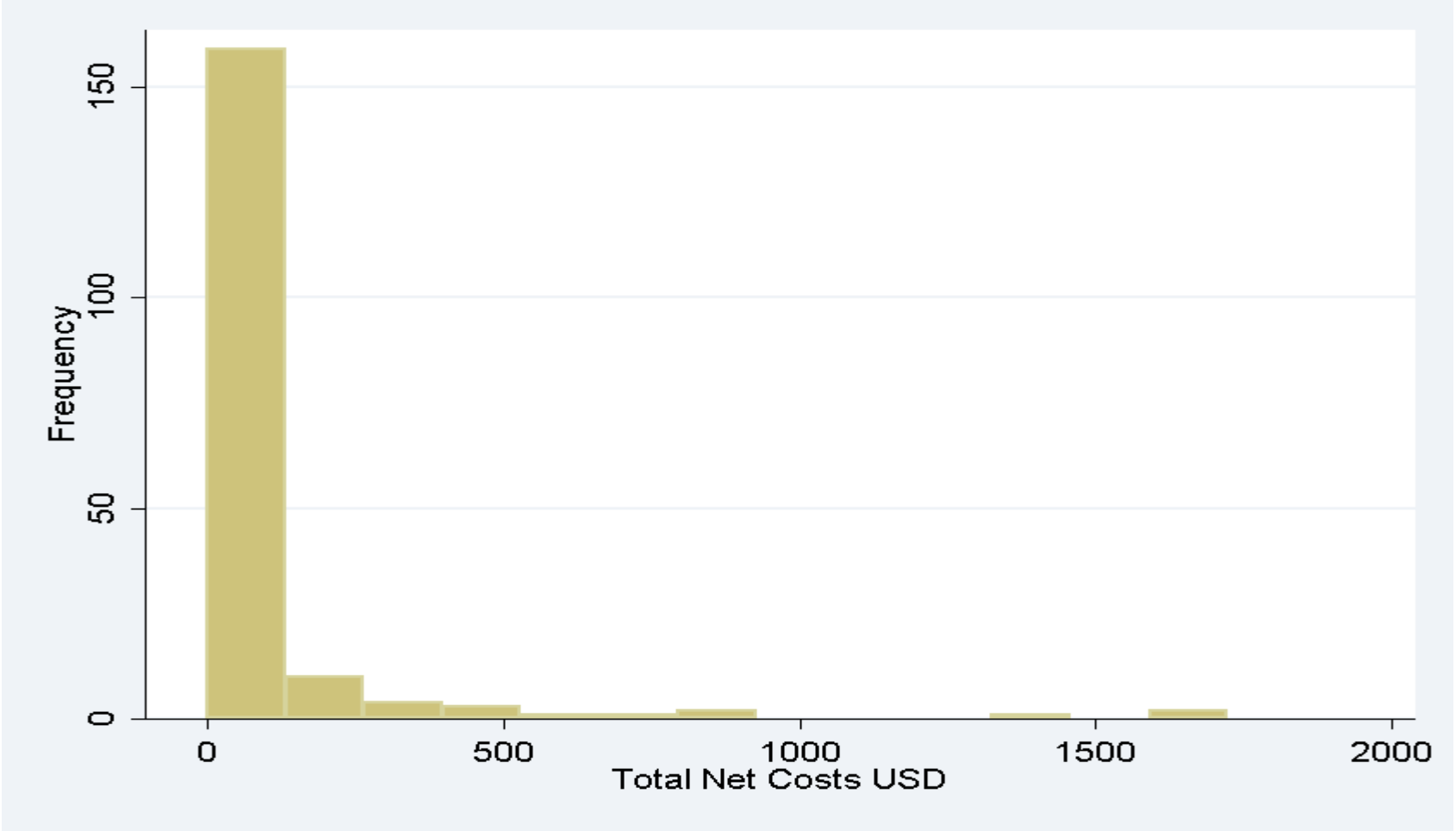
COSTS AMONG EVERYONE



DISTRIBUTION OF COSTS (EVERYONE)



DISTRIBUTION OF COSTS AMONG THOSE THAT DID SOME TYPE OF WORK



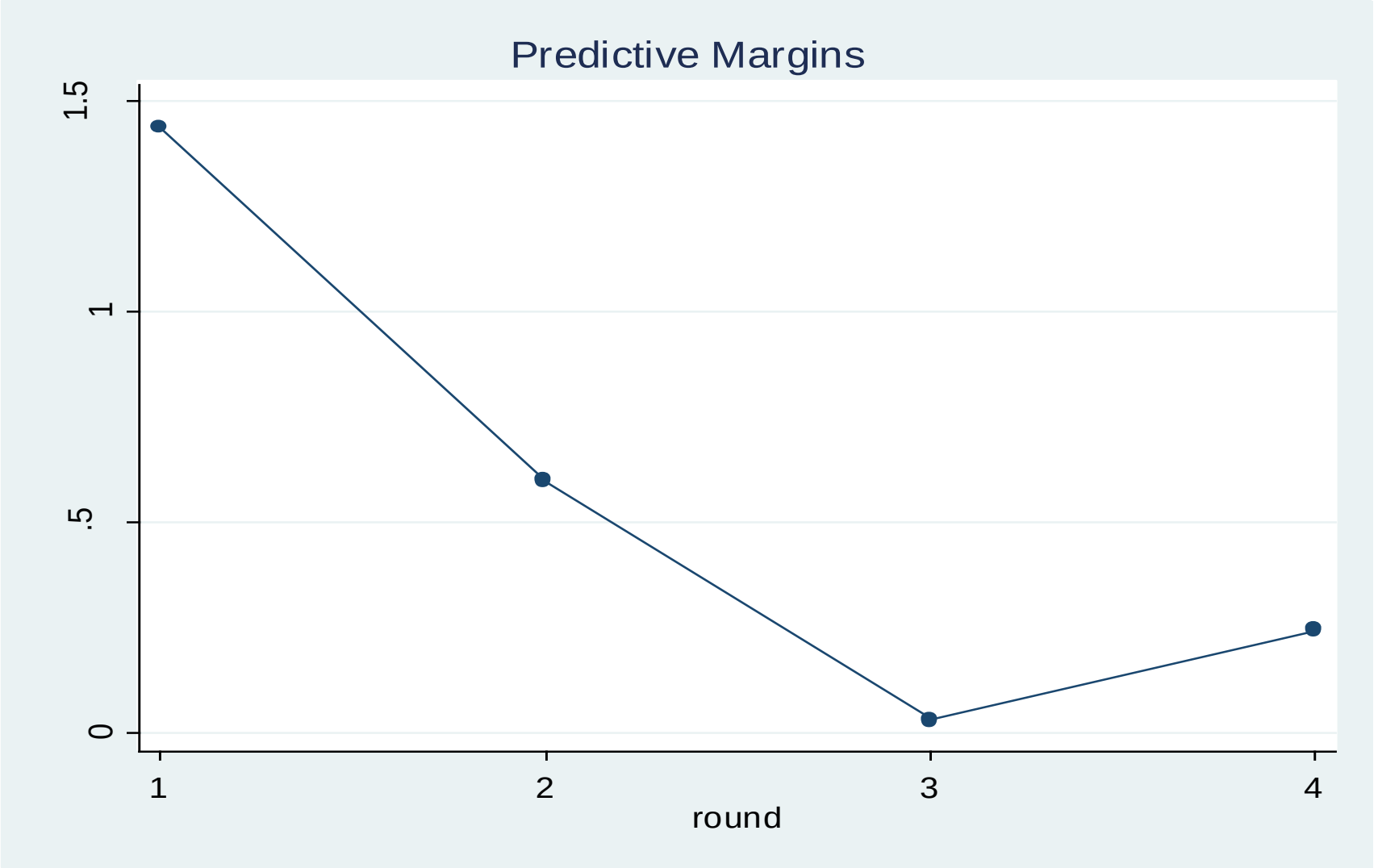
TWO TYPE OF ZEROS…BUT "TWO PART MODELS" NOT AVAILABLE FOR PANEL DATA

xtnbreg total_cost_us i.round i.villagenum_5 i.Householdr_3, re

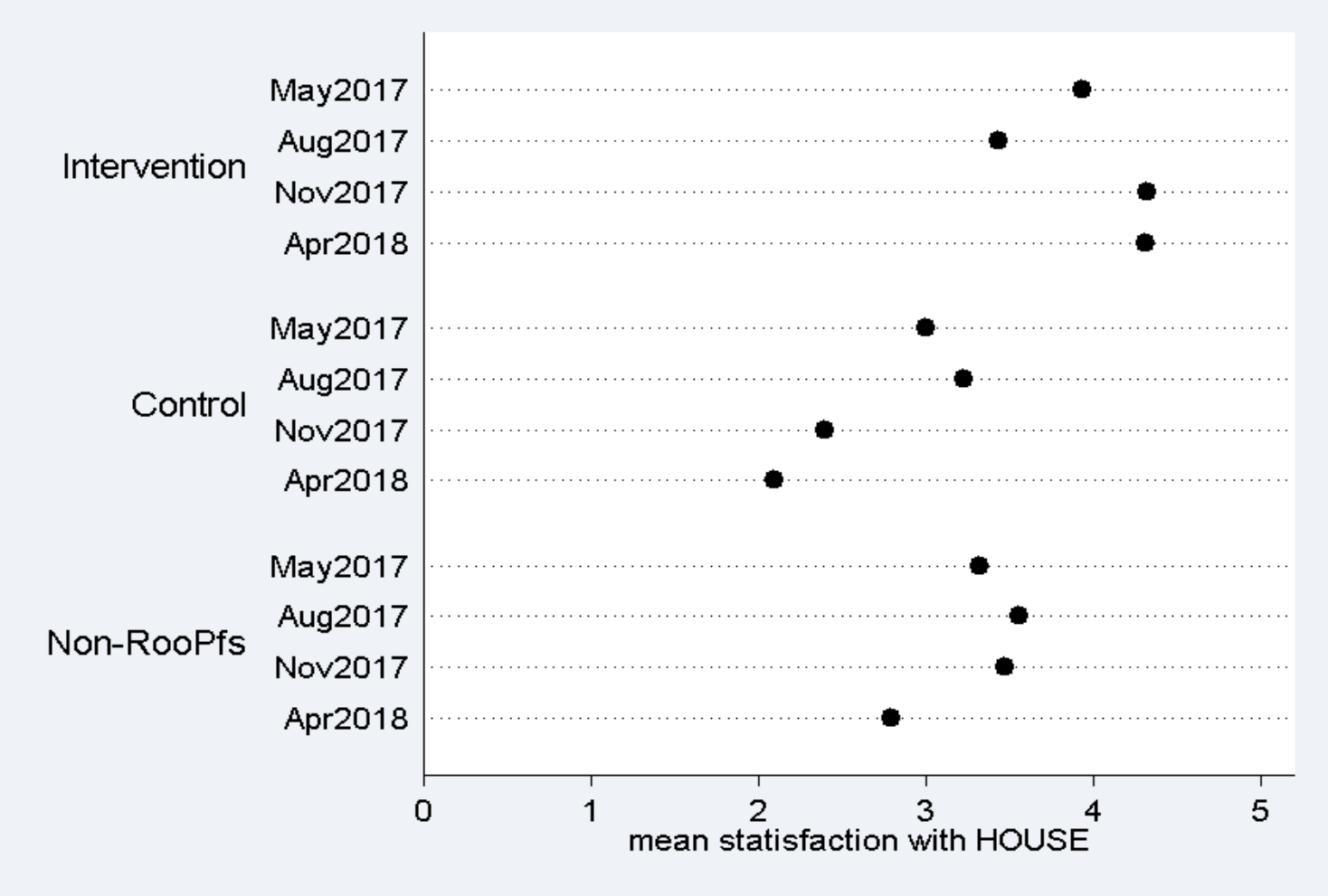
xtreg log_total_cost_us i.round i.village i.group, re robust

Variable	Coefficient	Robust SD
Round 2	-.8404244	.1734077 ***
Round 3	-1.407342	.1609791***
Round 4	-1.193152	.1753757 ***
Control	.0749423	.1164061
Non-RooPfs	.0069537	.1181277
Constant	.9575255	.1969352***
N=763; Controlled by village; *sign at 10%, **sign at 5%, ***sign at 1%		

PREDICTION



SATISFACTION WITH HOUSE, BY GROUP



1=not at all satisfied; 2=not satisfied; 3=neither; 4=satisfied; 5=very satisfied

DETERMINANTS OF SATISFACTION

xtoprobit howsatisfi i.round i.village i.group, vce (cluster village)

Variable	Coefficient	Robust SD
Round 2	.0469357	.1239696
Round 3	.1596272	.1986371
Round 4	-.3106774	.120835***
Control	-1.709926	.1187732***
Non-RooPfs	-.9735	.1584928***
N=762; Controlled by village; *sign at 10%, **sign at 5%, ***sign at 1%		

CONCLUSIONS

- Seasonality seems to play a significant role in the demand for house improvement

- Trial group also is associated with the demand for house improvement

- This has policy implications in terms of when it is the best timing for intervening

- Any comment is extremely welcome: HELP!

AKNOWLEGEMENTS

Study Participants

Steve W. Lindsay
Margaret Pinder
David Jeffries
John Bradley
Caroline Jones
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Bunja Daabo
Aji Matty
Umberto D'Alessandro

This study is supported by the Global Health Trials funded by the MRC-DfID-Wellcome Trust