

# The effect of survey mode on data quality

Evidence from a survey experiment in Nigeria

Joint with Pauline Castaing, Ivette Contreras, Yannick Markhof, Akiko Sagesaka, and Philip Wollburg

Amparo Palacios-López

The Pulse of Progress: Harnessing High-Frequency Survey Data for Development Research in the Polycrisis Era

December 17/18, 2024



# Overview



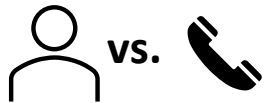
- Since COVID-19 pandemic phone surveys have become commonplace in LMICs and are now often used for development economics research



- Have a number of attractive properties for empirical researchers and policymakers
  - Low cost
  - Quickly deployable
  - Allow to survey remote and hard-to-reach areas
  - Viable even in the face of safety issues etc. on the ground
  - Suitable for longitudinal and high-frequency data collection



- Moving from traditional in-person data collection to mixed-mode data collection requires a firm grasp of the challenges and biases that come with alternative data collection modes

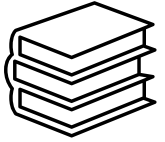


- Key issues: Uneven coverage (sampling errors) and **potential mode effects (non-sampling errors)**
  - Sampling due to limited phone coverage (Ambel et al. 2021; Brubaker et al. 2021)
  - Mode effects = Differences in measured outcomes resulting from data collection mode (e.g., in-person vs. over-the-phone)



- This study: survey experiment to identify survey mode effects across a broad range of outcome variables relevant to policymakers and researchers in LMICs

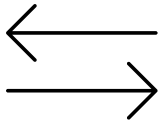
# Limited evidence on pure mode effects in LMICs



- Our work fits in with recent contributions to literature on phone survey methods
  - Glazerman et al. (2023) JDE; Abate et al. (2023) JDE, Markhof et al. (2023), Ambler et al. (2021) JDE; Gourlay et al. (2021) Food Policy; Greenleaf et al. (2020) PLOS ONE, Brubaker et al. (2021) PLOS ONE, Garlick et al. (2020) WBER



- Consensus that mode effects important but limited evidence on pure mode effects: often unable to isolate effect of mode from that of respondent selection, timing, anchoring, etc.



- Mode effects likely vary depending on the topic and type of outcome measured: need for evidence base on broad range of outcomes

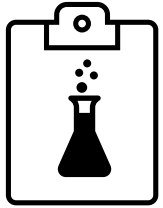
## Research questions

- Do measured outcomes differ depending on which survey mode is used for data collection?



- Do mode effects differ in different variables?
- What mechanisms could explain differences between survey modes?
- Implications for survey implementation and data analysis?

# Experimental design



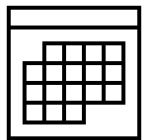
- Survey experiment as part of Nigeria GHS-Panel 2023/24
- Distribute phones to 937 households across 106 randomly selected agricultural EAs
- Randomly assign respondents to answer identical questions in-person and over the phone across time



- **Coverage errors:** Distribute phones across randomly selected EAs for experiment



- **Respondent selection effects:** Target same respondent in both interviews (in-person & over phone)

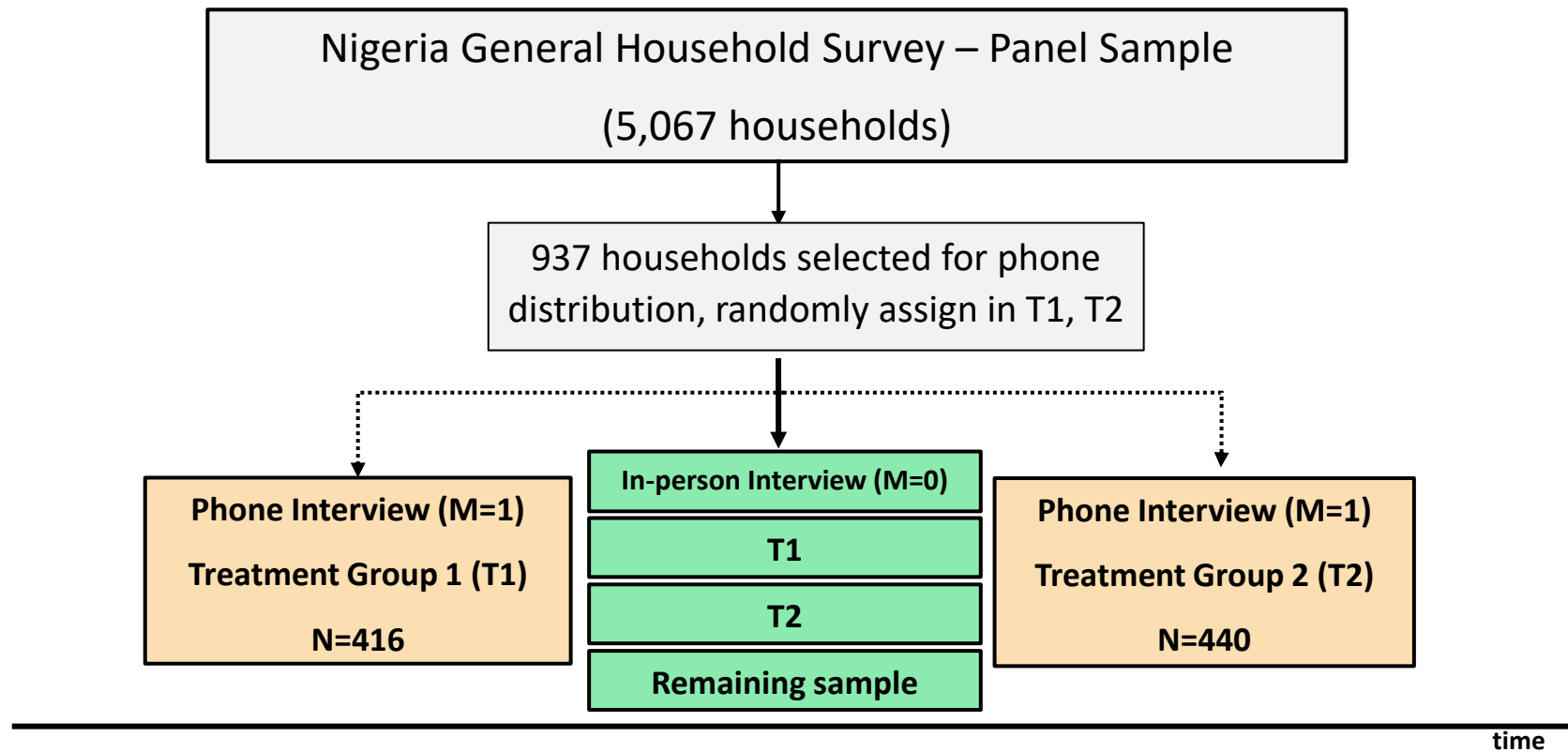


- **Timing effects:** Conduct phone and in-person interview at most one week apart



- **Anchoring/participation effects:** Randomly vary the order of the in-person and phone interview: One group starts with phone interview, the other group starts with in-person interview → restrict comparison between survey modes to first-time respondents

# Experimental Design



- 856 households interviewed successfully across both arms (~91%)
- Two respondents surveyed in 67% of households
- 48% women; 53% men

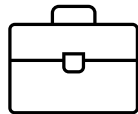
# Variables of interest



Health



Service access



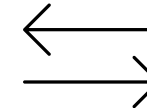
Labor



Food security



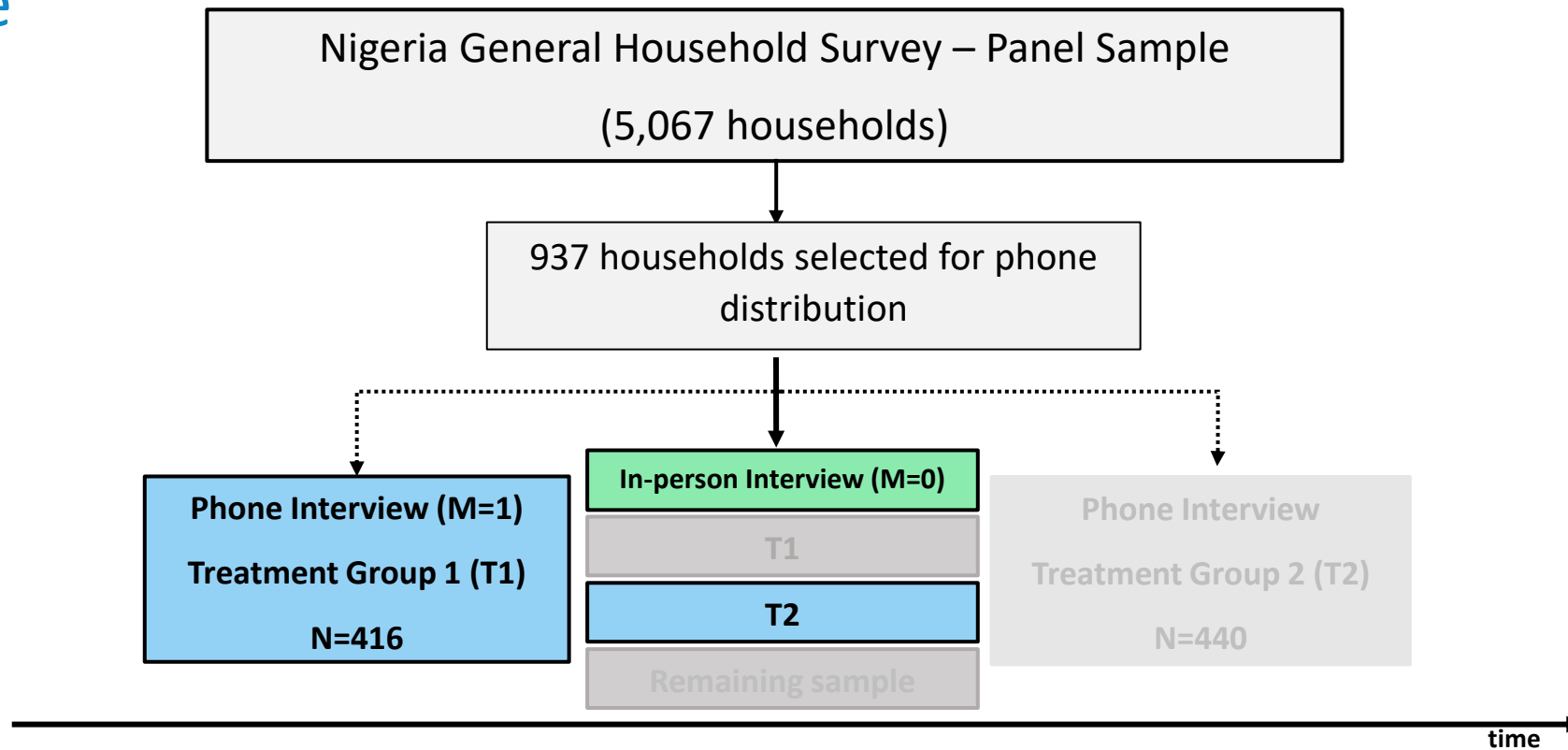
Subjective wellbeing



Migration intentions

	Household-level	Individual-level
<b>Binary</b>		<ul style="list-style-type: none"> <li>• Health episodes/illnesses</li> <li>• Health service access</li> <li>• Migration intentions</li> <li>• Labor</li> </ul>
<b>Continuous</b>	<ul style="list-style-type: none"> <li>• Health expenditure (6 or 12-month recall)</li> </ul>	<ul style="list-style-type: none"> <li>• Hours worked in household agricultural activities</li> </ul>
<b>Count</b>	<ul style="list-style-type: none"> <li>• Food consumption score</li> <li>• Dietary Diversity Score</li> </ul>	
<b>Categorical</b>	<ul style="list-style-type: none"> <li>• Subjective wellbeing (scale)</li> <li>• Climate change perceptions</li> </ul>	<ul style="list-style-type: none"> <li>• Subjective wellbeing (happiness)</li> <li>• Locus of control</li> </ul>

# Empirical strategy - Exploiting random allocation of households into survey mode

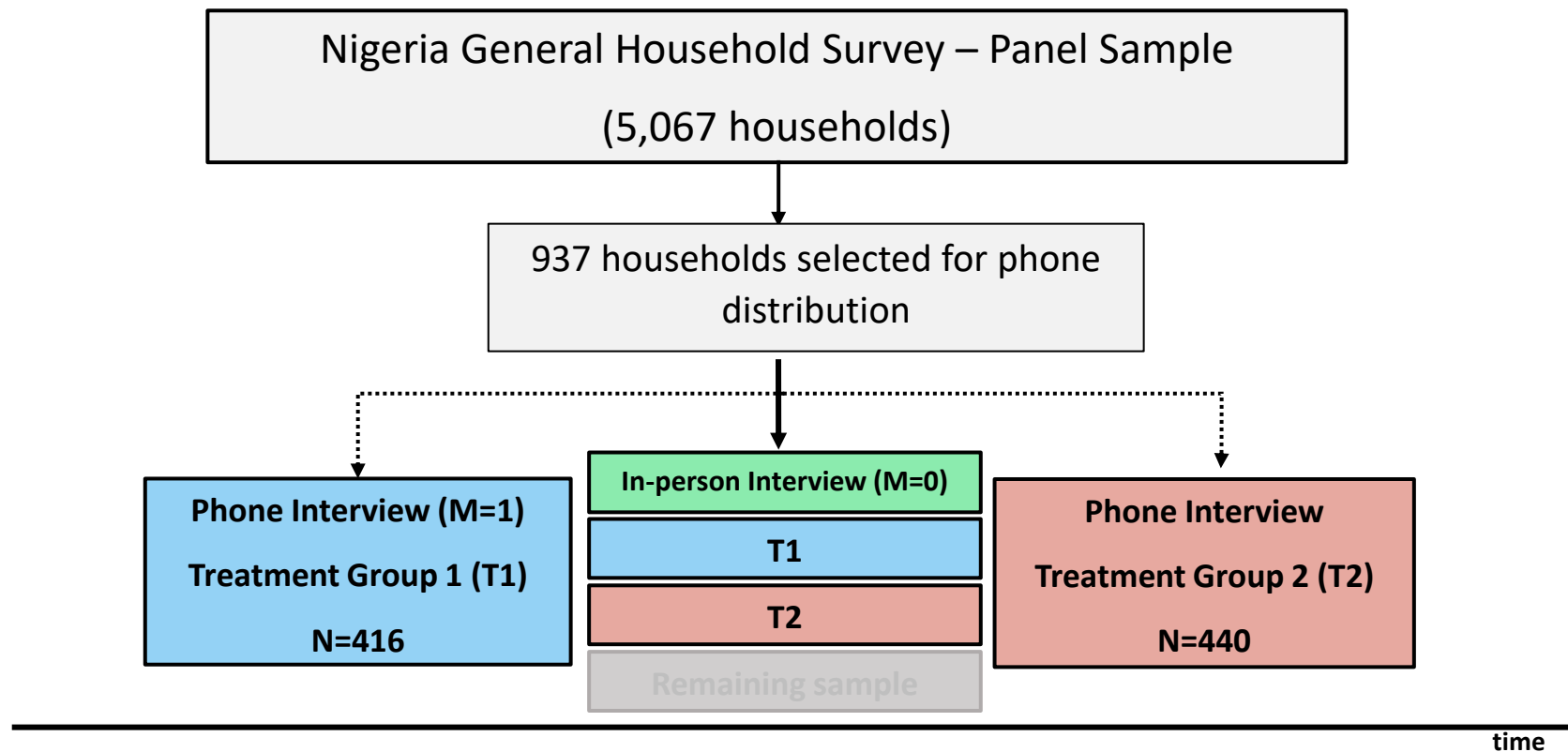


- Comparing the **phone interview of Treatment Group 1** to the **in-person interview of Treatment Group 2** provides a clean estimate of the survey mode effect (between design)

$$Y_{ih} = \beta_0 + \beta_1 M_{ih} + \varepsilon_{ih}$$

- Use sample of household main respondents for balance
- For ease of presentation, we standardize all outcome variables as follows:  $\tilde{y}_{ih} = (y_{ih} - \bar{y}) / \bar{\sigma}$ , where  $\bar{y}$  and  $\bar{\sigma}$  are the mean and standard deviation in the in-person group.

# Empirical strategy - Exploiting within-respondent variation



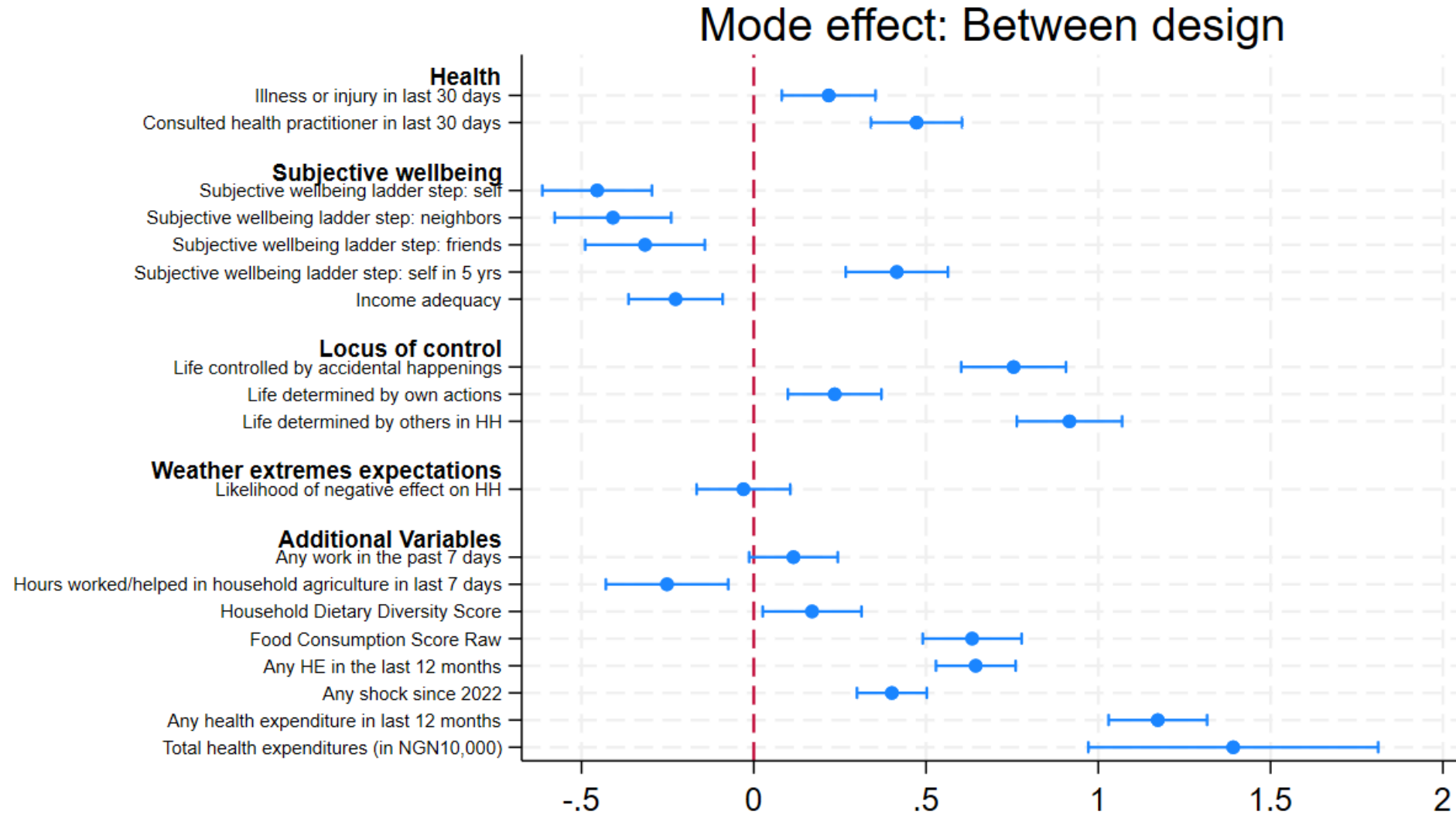
- Comparing the **phone interview of Treatment Group 1** to the **in-person interview of Treatment Group 1** and the **in-person interview of Treatment Group 2** to the **phone interview of Treatment group 2** provides an alternative estimate of the survey mode effect (*within design*)

$$Y_{ihr} = \delta_0 + \delta_1 M_{ihr} + \varepsilon_{ihr}$$

- No concern about respondent selection effects since it's the same person, but concern of **anchoring effects**
- For ease of presentation, we also standardize all outcome variables.



# Mode effects: Between design (first-time respondents)



Note: Standardized outcomes. Sample: First-time respondents.

# Mode effects: Between design (first-time respondents)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Illness in last 30 days	Consulted health practitioner	Wellbeing (self)	Wellbeing (neighbors)	Wellbeing (friends)	Wellbeing (in 5y)	Income adequacy	Life controlled by accidental happenings	Life determined by own actions	Life determined by others in HH	Weather extremes likelihood
Phone interview	0.218*** (0.0693)	0.473*** (0.0673)	-0.455*** (0.0810)	-0.409*** (0.0861)	-0.316*** (0.0884)	0.415*** (0.0755)	-0.227*** (0.0696)	0.754*** (0.0775)	0.235*** (0.0691)	0.916*** (0.0778)	-0.0298 (0.0692)
Constant	5.52e-09 (0.0481)	6.21e-09 (0.0481)	9.24e-09 (0.0481)	2.55e-09 (0.0481)	-5.83e-09 (0.0481)	7.62e-09 (0.0481)	-2.10e-08 (0.0481)	-1.10e-09 (0.0481)	1.49e-08 (0.0481)	2.33e-08 (0.0481)	-3.38e-09 (0.0486)
Observations	852	852	848	835	837	843	850	850	850	850	822

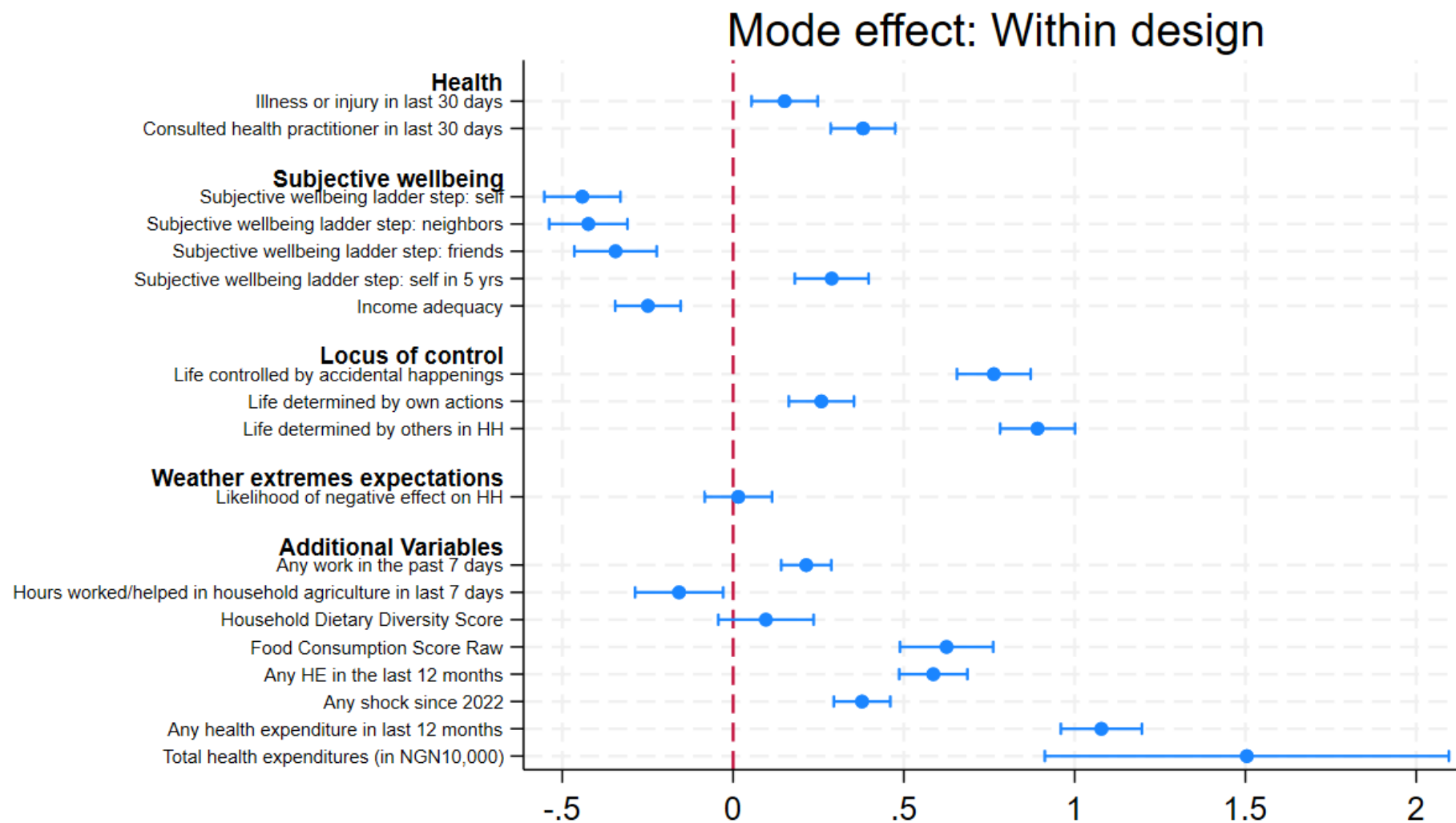
Note: OLS regressions of various standardized outcomes on a dummy for the survey mode of the interview. Sample: First-time respondents. Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

# Mode effects: Between design (first-time respondents)

	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
	Worked in the past 7 days	Hours worked/helped in household agriculture in last 7 days	Household Dietary Diversity Score (7 day)	Food consumption score Raw	HE in the last 12 months	Any shock since 2022	Any health expenditure in last 12 months	Total health expenditures in the last 12 months in NGN10000
Phone interview	0.115*	-0.252***	0.169**	0.634***	0.644***	0.401***	1.173***	1.392***
	(0.0656)	(0.0904)	(0.0730)	(0.0731)	(0.0589)	(0.0517)	(0.0729)	(0.214)
Constant	-8.28e-09	1.77e-09	8.97e-09	-1.21e-10	-1.49e-08	-1.61e-08	8.28e-09	-4.23e-09
	(0.0481)	(0.0651)	(0.0481)	(0.0481)	(0.0481)	(0.0481)	(0.0481)	(0.103)
Observations	849	486	848	848	849	849	849	381

Note: OLS regressions of various standardized outcomes on a dummy for the survey mode of the interview. Sample: First-time respondents. Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

# Mode effects: Within design (same respondents)



Note: Standardized outcomes. Sample: Identical respondents.

# Mode effects: Within design (same respondents)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Illness in last 30 days	Consulted health practitioner	Wellbeing (self)	Wellbeing (neighbors)	Wellbeing (friends)	Wellbeing (in 5y)	Income adequacy	Life controlled by accidental happenings	Life determined by own actions	Life determined by others in HH	Weather extremes likelihood
Phone interview	0.151*** (0.0493)	0.381*** (0.0481)	-0.441*** (0.0569)	-0.424*** (0.0585)	-0.344*** (0.0615)	0.289*** (0.0550)	-0.249*** (0.0488)	0.763*** (0.0552)	0.259*** (0.0487)	0.891*** (0.0558)	0.0154 (0.0502)
Nbr of days between interviews	-0.00151 (0.00264)	-0.00228 (0.00261)	-0.00468** (0.00206)	-0.00441* (0.00266)	0.00182 (0.00368)	-5.96e-05 (0.00300)	0.00167 (0.00261)	-0.0101*** (0.00238)	0.00331** (0.00162)	-0.000565 (0.00333)	-0.00204 (0.00324)
Constant	6.58e-09 (0.0346)	8.58e-09 (0.0346)	-1.64e-08 (0.0348)	4.42e-09 (0.0352)	-5.37e-09 (0.0351)	-7.56e-09 (0.0349)	-1.22e-09 (0.0347)	2.08e-09 (0.0347)	-1.59e-08 (0.0347)	-0 (0.0347)	-1.36e-08 (0.0362)
Observations	1,668	1,668	1,654	1,618	1,620	1,638	1,660	1,660	1,660	1,660	1,530

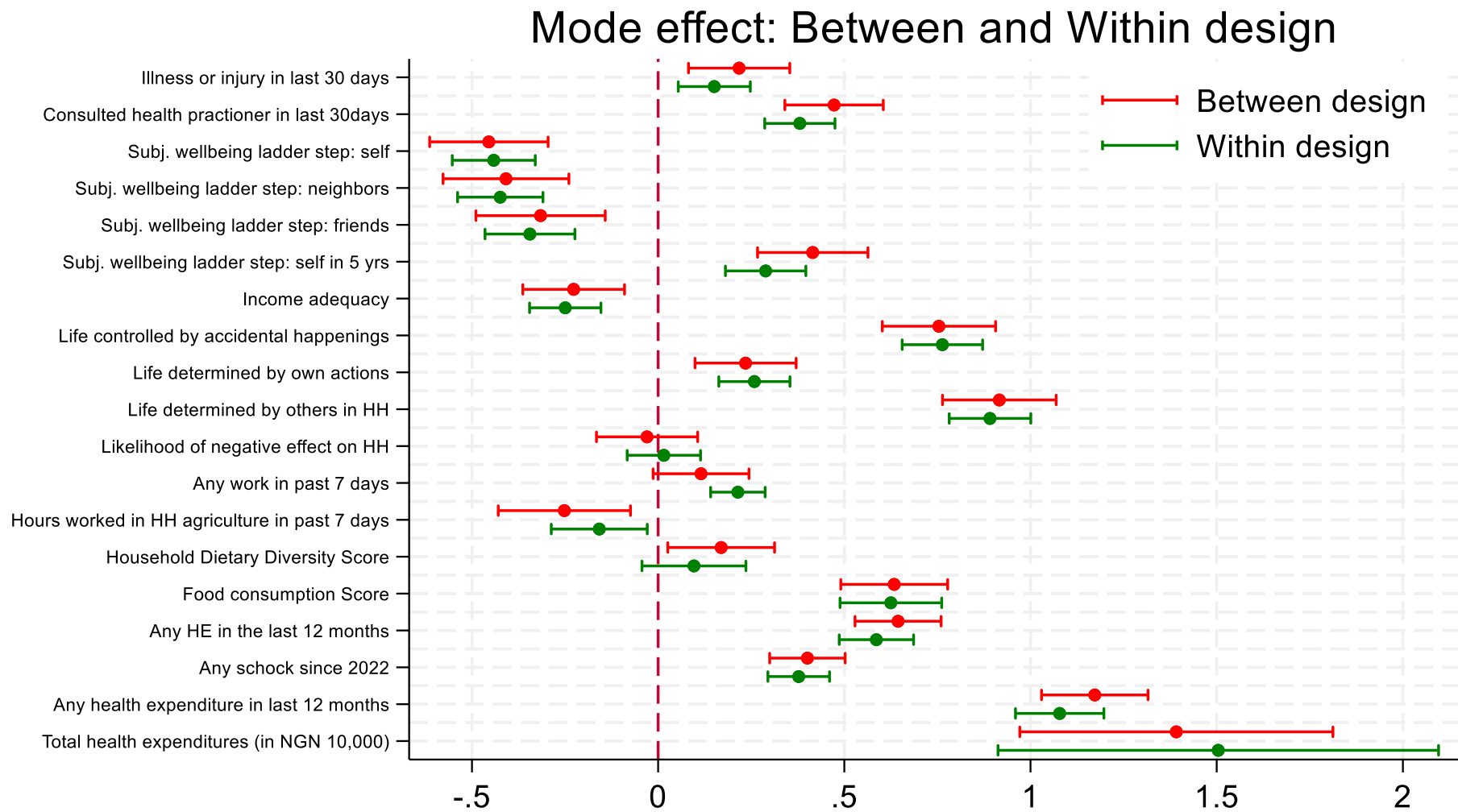
Note: OLS regressions of various standardized outcomes on a dummy for the survey mode of the interview. Sample: Identical respondents interviewed via phone or face-to-face in random order. Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

# Mode effects: Within design (same respondents)

	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
	Being employed	Hours worked/helped in household agriculture in last 7 days	Household Dietary Diversity Score	Food Consumption Score Raw	Operated an NFE in the past 12 months	Affected by a shock since January 2022	Paid for health expenditures in the last 12 months	Total health expenditures in the last 12 months in NGN10000
Phone interview	0.214*** (0.0374)	-0.158** (0.0657)	0.0962 (0.0712)	0.625*** (0.0695)	0.586*** (0.0509)	0.378*** (0.0422)	1.078*** (0.0605)	1.504*** (0.299)
Nbr of days between interviews	0.00186 (0.00298)	0.00356 (0.00392)	0.00810*** (0.00305)	0.00290 (0.00248)	-0.00322 (0.00365)	0.000268 (0.00190)	5.64e-05 (0.00380)	-0.00277 (0.00467)
Constant	0.00186 (0.00298)	6.52e-09 (0.0468)	1.95e-08 (0.0453)	-1.67e-10 (0.0453)	9.75e-09 (0.0409)	-0 (0.0393)	2.70e-09 (0.0418)	-9.40e-10 (0.0971)
Observations	2,474	912	974	974	1,198	1,292	1,146	212

Note: OLS regressions of various standardized outcomes on a dummy for the survey mode of the interview. Sample: Identical respondents interviewed via phone or face-to-face in random order. Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

# Mode effects: Both design



Note: Standardized outcomes.

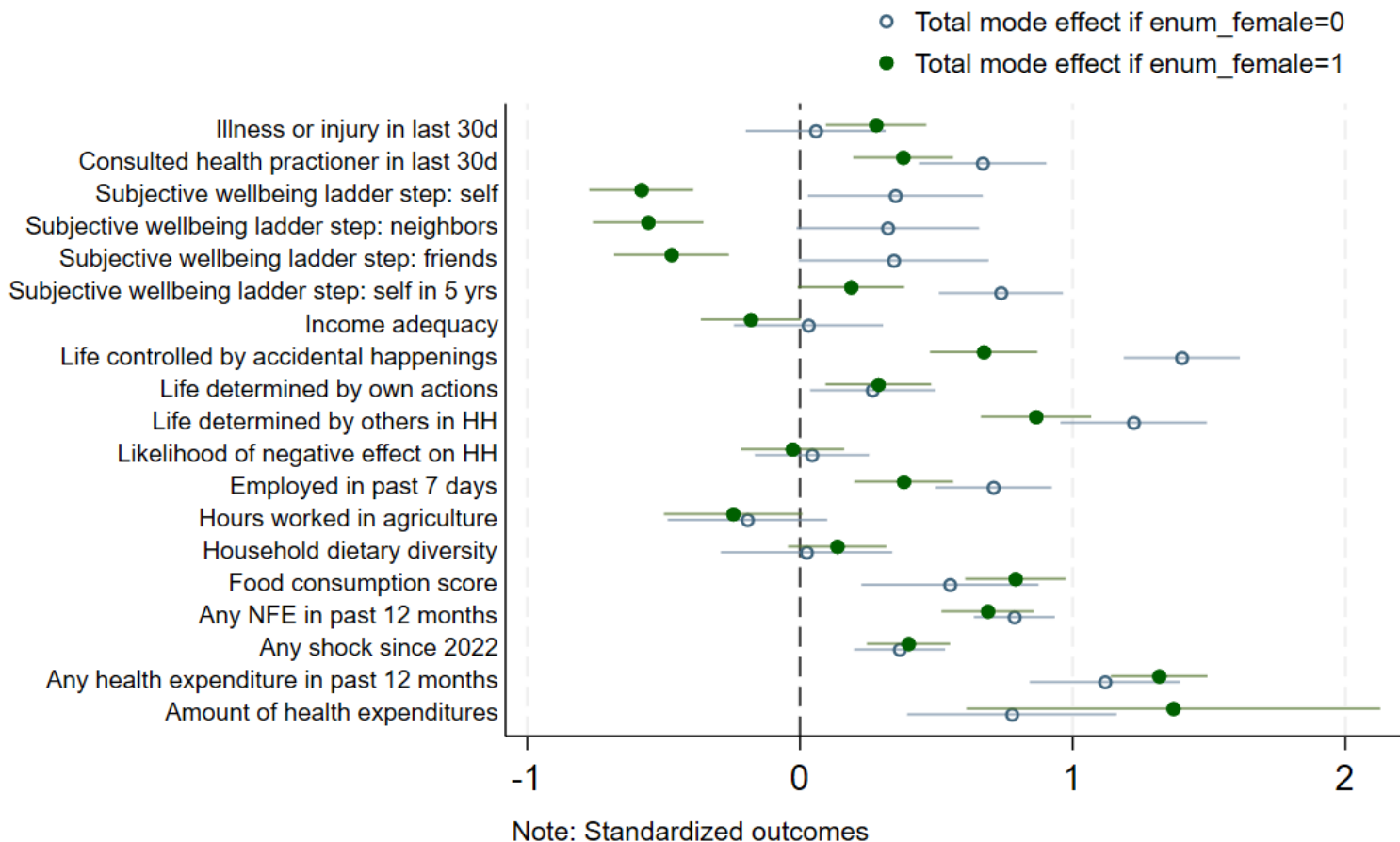
# Empirical strategy – Heterogeneity in survey mode effects

- To improve our understanding of the survey mode effects, we examine the effect of survey mode conditional on the following covariates:
  - **Respondent characteristics:** gender, household size, household head status, educational level, residential zones in Nigeria
  - **Enumerator characteristics:** gender, age, survey experience (number of surveys conducted in the past)
  - **Differences between respondent and enumerator** in gender, age, and educational level
  - **Interview characteristics:** main language of interview matches the respondent's spoken language, main language of interview matches the enumerator's spoken language
- We estimate the heterogeneity in mode effects as follows :  $Y_{ih} = \beta_0 + \beta_1 M_{ih} + \beta_2 X_{ih} + \beta_3 M_{ih} * X_{ih} + \varepsilon_{ih}$
- We conduct the heterogeneity analysis across both specifications (*between* and *within* designs) and all outcomes.
- $\beta_3$  provides an estimate of how the effect of survey mode changes with the covariate.  $\beta_1$  captures the effect of the mode effect on the outcome when the covariate is set to 0.  $\beta_1 + \beta_3$  represents the total mode effect when the binary covariate is set to 1.
- For ease of presentation, all outcomes have been standardized.

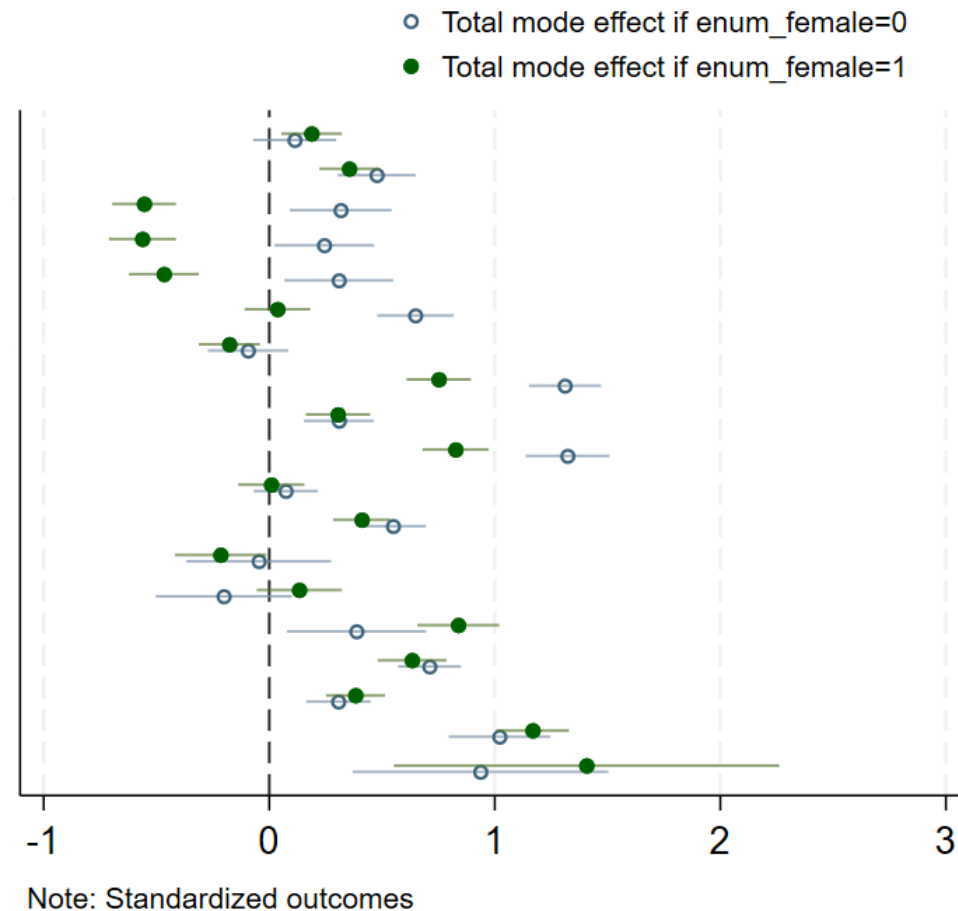


# The direction of mode effect on some wellbeing outcomes differs with the gender of enumerator

Heterogeneity of mode effects (between design)

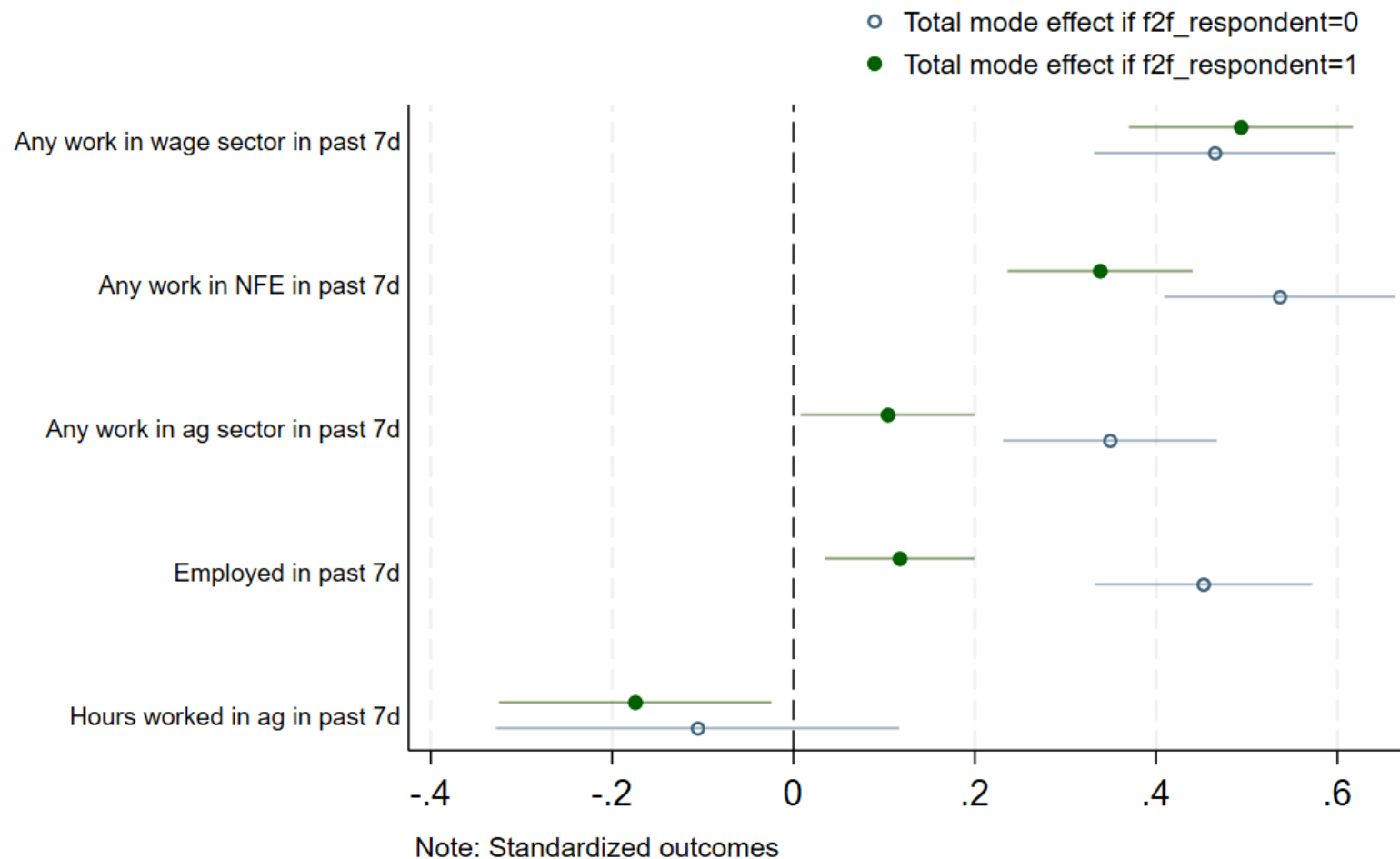


Heterogeneity of mode effects (within design)



# Mode effects on household enterprise and agricultural labor participation are smaller for main respondents... but remain present

## Heterogeneity of mode effects (within design)



# Overview of results from the heterogeneity analysis

	Health	Health	Wellbeing	Wellbeing	Wellbeing	Wellbeing	Wellbeing	LOC	LOC	LOC	Weather
Female enumerator	○	○	▬	▬	▬	▬	○	▬	▬	○	○
Age of enumerator	○	○	▬	▬	○	○	▬	▬	○	○	▬
Enumerator experience	○	○	○	○	▬	○	○	○	○	+	▬
Female respondent	○	○	○	○	○	○	○	▬	○	▬	○
Respondent hh size	▬	○	○	○	○	○	○	+	○	+	○
HH head respondent	○	○	○	○	○	○	▬	○	○	○	○
Age of respondent	○	○	○	○	○	○	○	○	○	○	○
Education of respondent	○	○	○	○	○	○	○	○	▬	○	○
Resp/enum same gender	+	+	○	○	○	+	○	○	○	○	○
Age enum – Age resp	▬	○	▬	▬	○	○	▬	+	○	○	○
Educ enum – educ resp	○	○	○	○	○	○	○	○	▬	+	○
Interview conducted in a language spoken at home by respondent	○	○	▬	○	○	○	○	○	○	○	○
Interview conducted in a language spoken by enumerator	○	○	▬	○	○	○	○	○	▬	▬	▬

▬ Decreases the mode effect

+

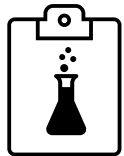
Increases the mode effect

○ Neutral

# Overview of results from the heterogeneity analysis

	Employed	Hours in ag	HDDS	FCS	Any NFE	Any shock	Any health Exp
Female enumerator	○	○	○	○	○	○	○
Age of enumerator	○	○	○	○	▬	○	○
Enumerator experience	▬	○	▬	▬	▬	▬	○
Female respondent	○	○	○	○	○	○	○
Respondent hh size	○	○	○	▬	○	○	+
HH head respondent	○	○	○	○	○	○	○
Age of respondent	○	○	○	○	○	○	○
Education of respondent	○	○	○	○	○	○	○
Resp/enum same gender	○	○	○	○	○	○	○
Age enum – Age resp	○	○	○	○	○	▬	○
Educ enum – educ resp	○	○	○	○	○	○	○
Interview conducted in a language spoken at home by respondent	○	○	○	○	○	+	○
Interview conducted in a language spoken by enumerator	▬	○	○	○	○	○	○

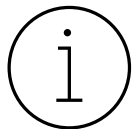
# Summary and conclusions



- Design survey experiment to measure pure mode effects between phone and in-person interviewing across wide range of outcomes



- Control for a number of possible threats to identification
- Findings suggest significant and economically important mode effects across both specifications and across all question types



- No/limited evidence of anchoring effects
- Some evidence that the magnitude and direction of mode effects is influenced by enumerator covariates



Additional analysis planned on

- Endowment effects / incentives
- Length of interviews / placement in the questionnaire
- Response patterns (bias towards yes or no)

What may explain the mode effects? Hypotheses?

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December 17/18, 2024



# Appendix 1: Balance tables

		(1)		(2)	t-test
		F2F interview		Phone interview	Difference
Variable	N/[Clusters]	Mean/SE	N/[Clusters]	Mean/SE	(1)-(2)
Female	432	0.289	420	0.290	-0.001
	[432]	[0.022]	[420]	[0.022]	
Age	432	49.514	420	49.026	0.488
	[432]	[0.717]	[420]	[0.739]	
Respondent is household head	432	0.824	420	0.812	0.012
	[432]	[0.018]	[420]	[0.019]	
Household size	432	5.731	420	5.576	0.155
	[432]	[0.165]	[420]	[0.172]	
Dependency ratio	432	1.001	420	0.900	0.100*
	[432]	[0.041]	[420]	[0.034]	

		(1)		(2)	t-test
		F2F first		Phone first	Difference
Variable	N/[Clusters]	Mean/SE	N/[Clusters]	Mean/SE	(1)-(2)
Household size	875	5.723	836	5.562	0.161
	[443]	[0.164]	[424]	[0.170]	
Dependency ratio	875	0.997	836	0.900	0.097*
	[443]	[0.041]	[424]	[0.034]	
Female household head	875	0.239	836	0.221	0.018
	[443]	[0.020]	[424]	[0.020]	
Age of household head	875	53.133	836	52.931	0.202
	[443]	[0.695]	[424]	[0.696]	



## Appendix 2: Survey questions

- During the last 4 weeks, did you suffer from an illness or injury?
- During the past 4 weeks have you consulted a health practitioner or dentist or traditional healer or a Patient Medicine Vendor or visited a health centre?
- I would now like to know about your general wellbeing. Imagine ten steps, at the top of the ladder are the people who are the best off, those who have the most money, most education, and best jobs. At the bottom are the people who are the worst off, those who have the least money, least education, worst jobs, or no job.
  - A. On which step are you today?      B. On which step are most of your neighbors today?
  - C. On which step are most of your friends today?      D. On which step do you expect to be in 5 years?
- Considering the level of your current household income, would you say that you are living...well...fairly well...fairly...with difficulty
- Please indicate the degree to which you agree with each of the following statements. Disagree/ Neither Agree nor disagree/ Agree.
  - A. To a great extent, my life is controlled by accidental happenings      B. My life is determined by my own actions.
  - C. I feel like what happens in my life is mostly determined by others in my household.
- How likely is it that extreme weather events will negatively affect you and your household financially during the next 12 months?

# Appendix 2: Survey questions

- **Labor:**
  - In the last seven days, did you do any work for someone who is not a member of this household for payment in cash or in-kind?
  - In the last seven days, did you work in a non-farm household business that you operate, for one or more hours?
  - In the last seven days, did you work on household farming, raising livestock, fishing or forestry activities, for one or more hours?
  - How many hours did you work or help on a household farming, raising livestock, fishing or forestry activities in the last seven days?
- **FCS/HDDS:**
  - Over the past 7 days, how many days did you or others in your household consume any [...]? Grains and Flours; Starchy roots tubers and plantains; pulses, nuts and seeds; etc.
- **Health expenditure:**
  - Over the past 12 months, did the household purchase or pay for any health expenditure?
  - In total, how much did the household spend on health expenditure in the past 12 months?
- **NFE:** During the past 12 months, has anyone in your household... YES/NO for 8 categories
- **Shock:** Since January 2022, has your household been affected by...? YES/NO for 28 categories

## Appendix 3: Additional information on the experimental setting

- 937 phones and sim cards distributed to households during the post-planting visit
- Incentive : 1,500 Naira Credit (~ \$1) per respondent; up to 3,000 Naira per household
- Target of 5 days between the in-person survey and the phone survey
- 4 previous rounds were administered before mm5
  - The targeted main respondent for mm5 was the household member that answered most of the previous phone interviews.
- Household Response rate for the phone survey was 93%



# Implementation of treatment status on the field

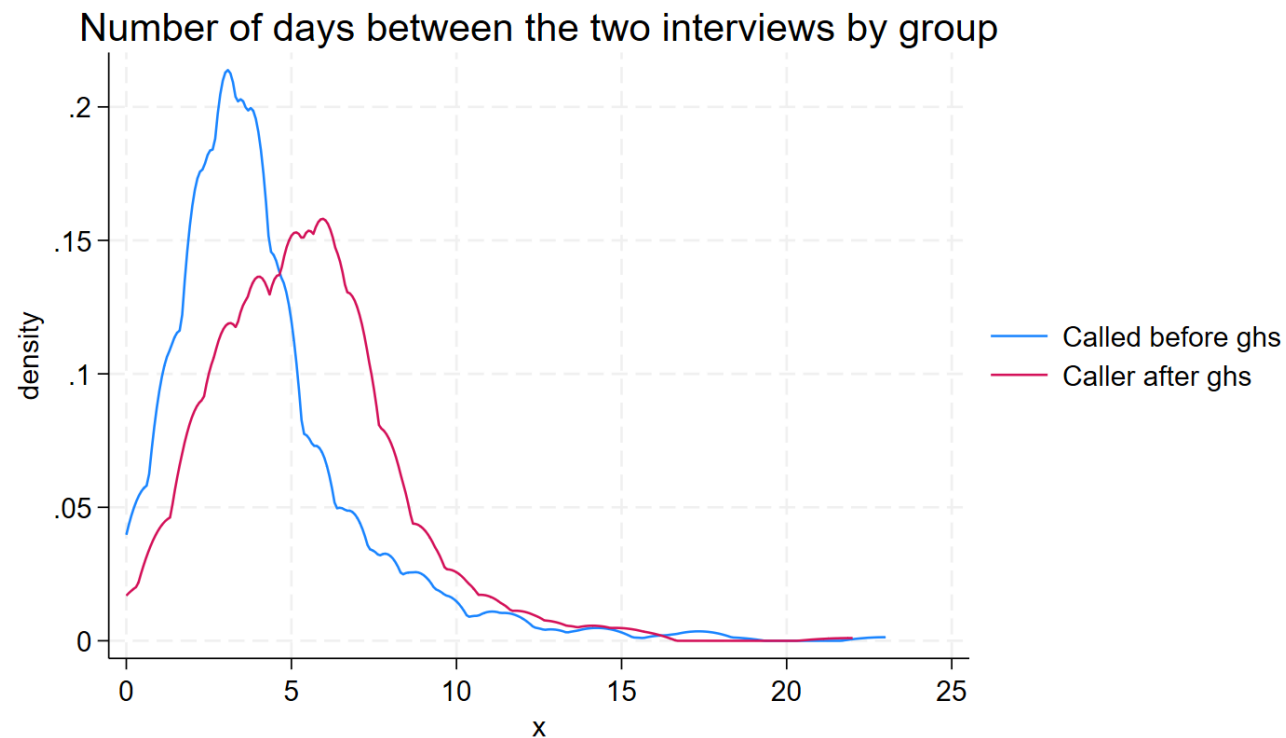
- Longer time interval for the households that were called after
  - +1 day on average
  - The delay is mainly explained because the synchronization issues from the GHS-Panel, some teams didn't have access to good internet
  - Our models should control by this variable

-> typehh\_tot2 = BEFORE

Variable	Obs	Mean	Std. dev.	Min	Max
diff_days	416	4.125	2.941805	0	23

-> typehh\_tot2 = AFTER

Variable	Obs	Mean	Std. dev.	Min	Max
diff_days	440	5.418182	2.789116	0	22



# Number and profile of respondents in MM5

- 280 households with one respondent and 576 households with two respondents

- Profile of the respondents:

- 53% are heads of household
- 27% are spouses
- 48% are women

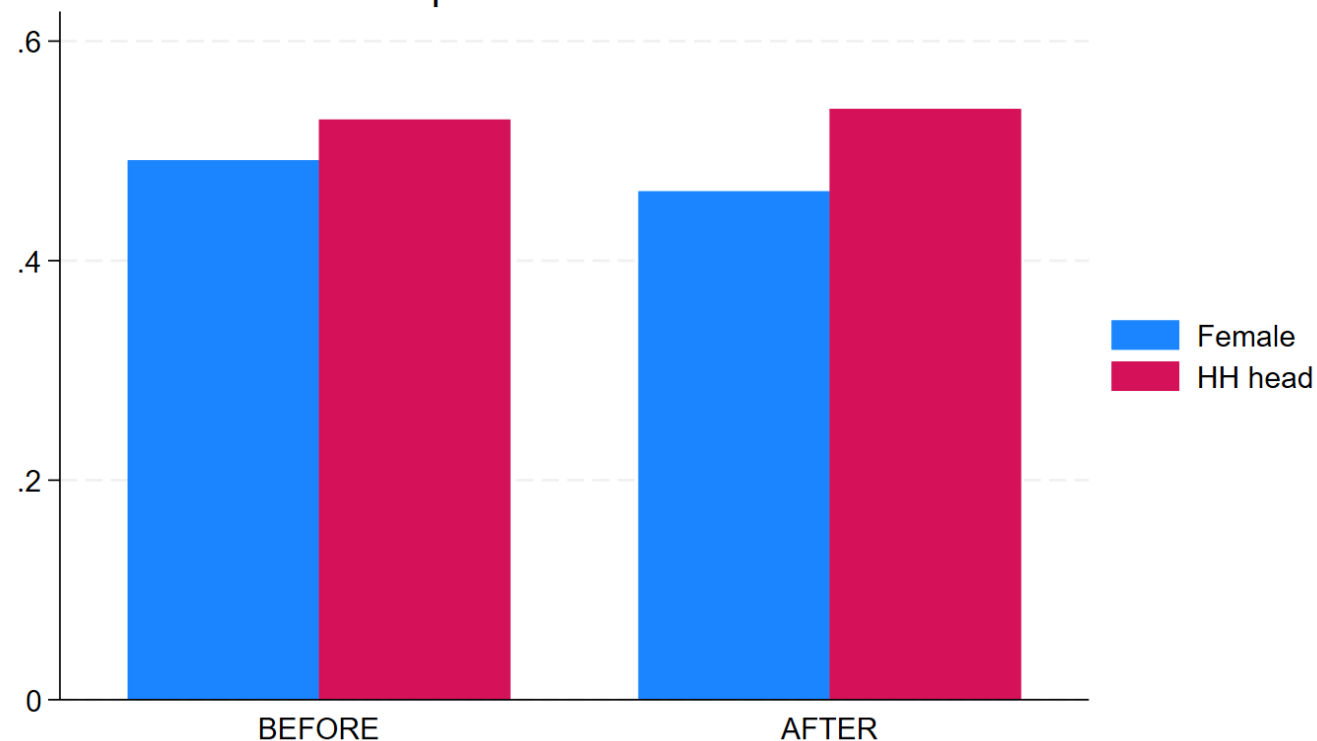
- Profile of the main respondents:

- 81% are heads of household
- 9% are spouses
- 29% are women

- Profile of the second respondents:

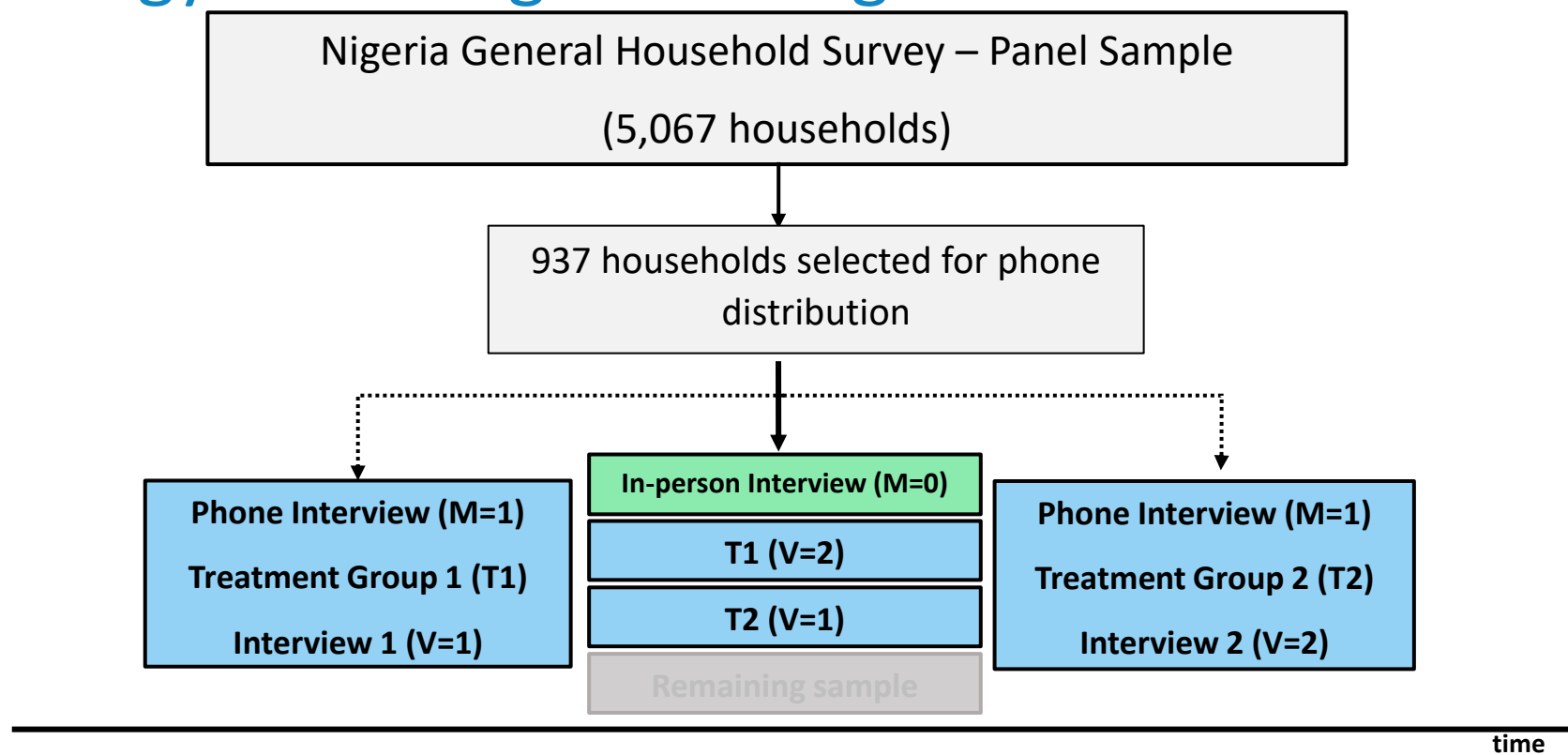
- 13% are heads of household
- 54% are spouses
- 75% are women

Profile of respondents across TOT status



→ Administering the questionnaire to a second respondent increased the representation of women in data collection

# Empirical strategy – Tackling anchoring effects



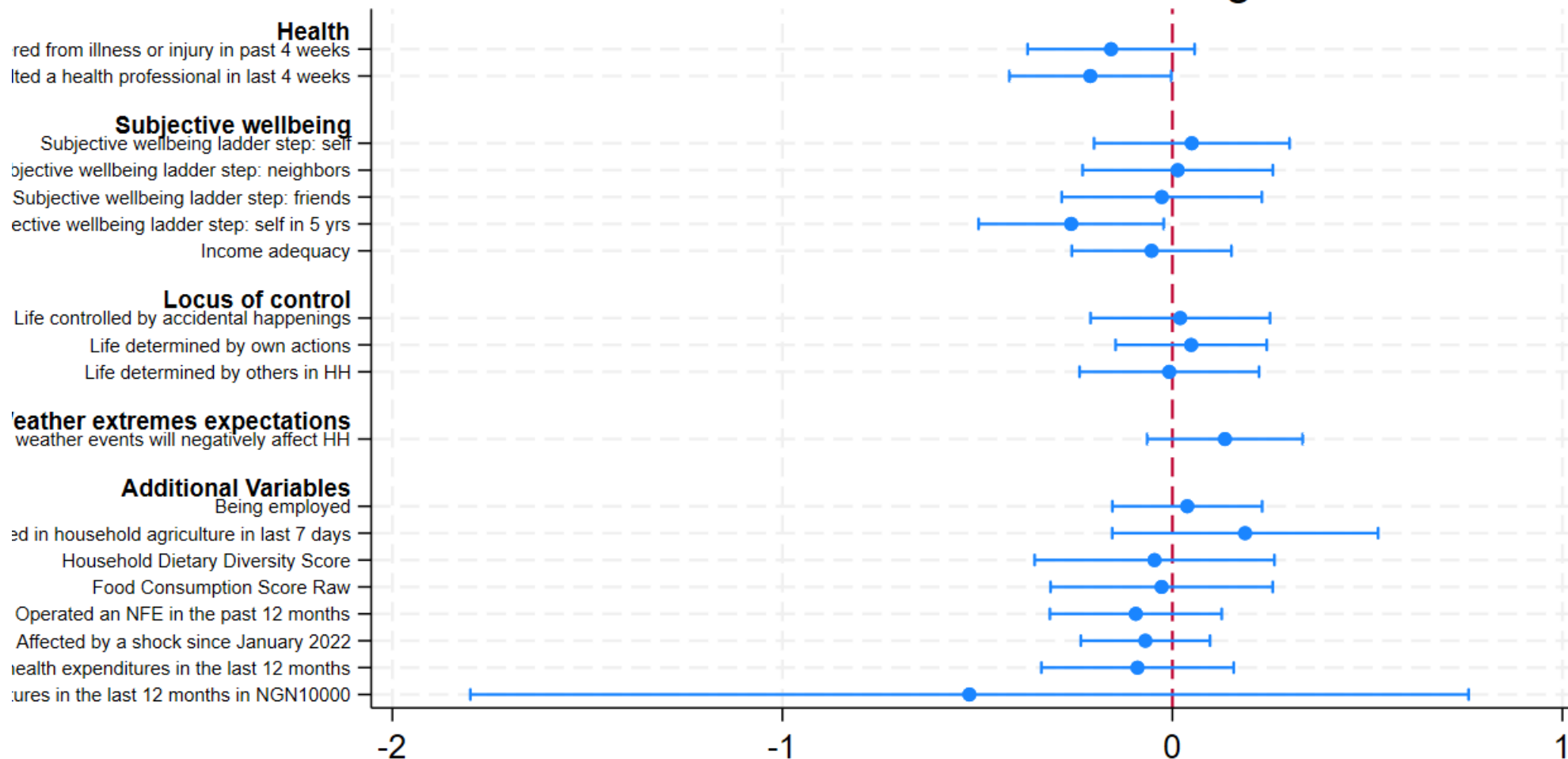
- Difference-in-differences estimation

$$Y_{ihr} = \delta_0 + \delta_1 M_{ihr} + \delta_2 V_{ihr} + \delta_3 M_{ihr} \times V_{ihr} + \varepsilon_{ihr}$$

- Interaction term captures anchoring effects

# Anchoring effects: Difference in differences

## Mode effect: Between design



Note: OLS regressions of various outcomes on a dummy for the survey mode of the interview, fully interacted (either over the phone or in person). Sample: Identical respondents interviewed via phone or face-to-face interview.

# Anchoring effects: difference in differences

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Illness in last 30 days	Consulted health practitioner	Wellbeing (self)	Wellbeing (neighbors)	Wellbeing (friends)	Wellbeing (in 5y)	Income adequacy	Life controlled by accidental happenings	Life determined by own actions	Life determined by others in HH	Weather extremes likelihood
Phone interview × Respondent previously interviewed	-0.157 (0.109)	-0.210** (0.106)	0.0499 (0.128)	0.0138 (0.124)	-0.0271 (0.131)	-0.259** (0.121)	-0.0533 (0.104)	0.0202 (0.117)	0.0482 (0.0988)	-0.00789 (0.117)	0.135 (0.102)
Phone interview	0.230*** (0.0696)	0.485*** (0.0673)	-0.467*** (0.0814)	-0.432*** (0.0855)	-0.331*** (0.0886)	0.419*** (0.0780)	-0.223*** (0.0689)	0.753*** (0.0777)	0.233*** (0.0698)	0.896*** (0.0785)	-0.0535 (0.0714)
Respondent previously interviewed (F2F or over phone)	0.0655 (0.0693)	0.126* (0.0692)	0.0183 (0.0696)	0.0415 (0.0704)	0.00715 (0.0704)	0.128* (0.0697)	0.0510 (0.0695)	-0.00907 (0.0695)	0.0220 (0.0695)	-0.0445 (0.0695)	0.00446 (0.0724)
Constant	-0.0321 (0.0482)	-0.0616 (0.0481)	-0.00896 (0.0487)	-0.0201 (0.0487)	-0.00347 (0.0485)	-0.0622 (0.0499)	-0.0250 (0.0476)	0.00444 (0.0480)	-0.0108 (0.0485)	0.0218 (0.0485)	-0.00218 (0.0503)
Observations	1,668	1,668	1,654	1,618	1,620	1,638	1,660	1,660	1,660	1,660	1,530

Note: OLS regressions of various outcomes on a dummy for the survey mode of the interview, fully interacted with a dummy for whether the respondent had been previously interviewed (either over the phone or in person). Sample: Identical respondents interviewed via phone or face-to-face in random order. Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

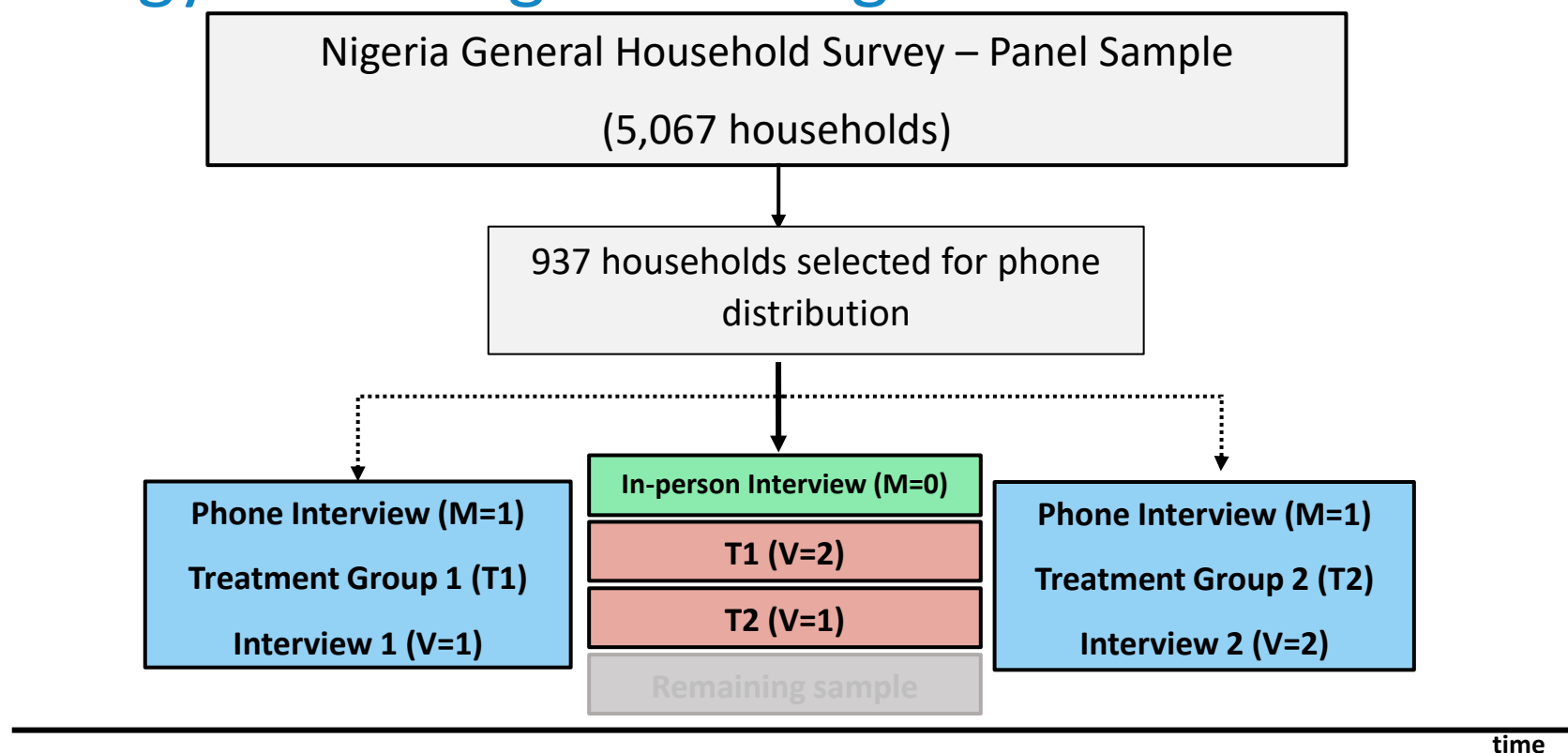


# Anchoring effects: difference in differences

	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
	Being employed	Hours worked/help ed in household agriculture in last 7 days	Household Dietary Diversity Score	Food Consumption Score Raw	Operated an NFE in the past 12 months	Affected by a shock since January 2022	Paid for health expenditures in the last 12 months	Total health expenditures in the last 12 months in NGN10000
Phone interview × Respondent previously interviewed	0.0381 (0.0978)	0.187 (0.173)	-0.0458 (0.156)	-0.0275 (0.145)	-0.0938 (0.112)	-0.0692 (0.0843)	-0.0893 (0.126)	-0.520 (0.645)
Phone interview	0.102 (0.0626)	-0.271** (0.108)	0.117 (0.100)	0.636*** (0.0991)	0.633*** (0.0708)	0.411*** (0.0604)	1.121*** (0.0848)	1.730*** (0.418)
Respondent previously interviewed (F2F or over phone)	0.00322 (0.0654)	-0.0534 (0.112)	0.0637 (0.0910)	0.0725 (0.0909)	0.0364 (0.0818)	0.0634 (0.0786)	0.0825 (0.0838)	-0.109 (0.207)
Constant	0.121*** (0.0457)	0.0964 (0.0773)	-0.0301 (0.0618)	-0.0342 (0.0622)	-0.0176 (0.0569)	-0.0309 (0.0566)	-0.0395 (0.0565)	0.0596 (0.188)
Observations	1,602	670	974	974	1,198	1,292	1,146	212

Note: OLS regressions of various outcomes on a dummy for the survey mode of the interview, fully interacted with a dummy for whether the respondent had been previously interviewed (either over the phone or in person). Sample: Identical respondents interviewed via phone or face-to-face in random order. Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

# Empirical strategy – Tackling anchoring effects



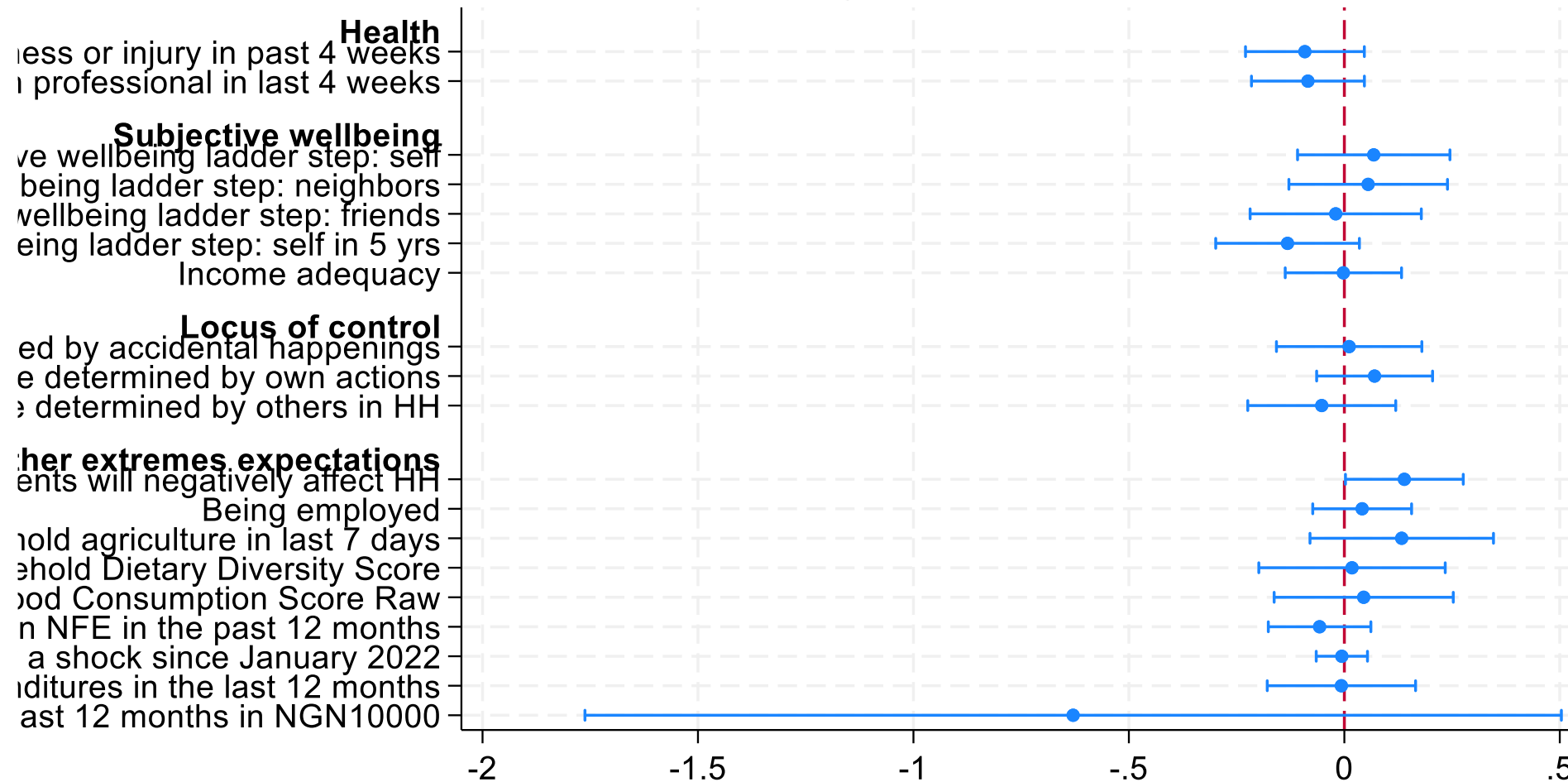
- Anchoring effects: answer in previous round determines answer in current survey round
- Strategy 1: compare within mode across treatment groups, controlling for the first or second interview

**All phone interviews:**  $Y_{ihr} = \delta_0 + \delta_1 V_{ihr} + \varepsilon_{ihr}$

**All in – person interviews:**  $Y_{ihr} = \delta_0 + \delta_1 V_{ihr} + \varepsilon_{ihr}$

# Anchoring effects: phone interviews

## Anchoring effects: Phone interviews



Note: OLS regressions of various standardized outcomes on a dummy for whether the respondent was interviewed by phone.

# Anchoring effects: phone interviews

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Illness in last 30 days	Consulted health practitioner	Wellbeing (self)	Wellbeing (neighbors)	Wellbeing (friends)	Wellbeing (in 5y)	Income adequacy	Life controlled by accidental happenings	Life determined by own actions	Life determined by others in HH	Weather extremes likelihood
Respondent was previously interviewed in-person	-0.0915 (0.0703)	-0.0845 (0.0668)	0.0682 (0.0901)	0.0553 (0.0938)	-0.0200 (0.101)	-0.132 (0.0849)	-0.00224 (0.0688)	0.0112 (0.0860)	0.0702 (0.0685)	-0.0524 (0.0875)	0.139** (0.0696)
Constant	0.198*** (0.0503)	0.424*** (0.0471)	-0.476*** (0.0652)	-0.453*** (0.0702)	-0.334*** (0.0741)	0.356*** (0.0599)	-0.248*** (0.0498)	0.758*** (0.0611)	0.223*** (0.0502)	0.918*** (0.0617)	-0.0557 (0.0507)
Observations	834	834	827	809	810	819	830	830	830	830	765

Note: OLS regressions of various outcomes on a dummy for whether the respondent had been previously interviewed (in person). Sample: Phone interviews of respondents interviewed in-person and over the phone. Robust standard errors in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

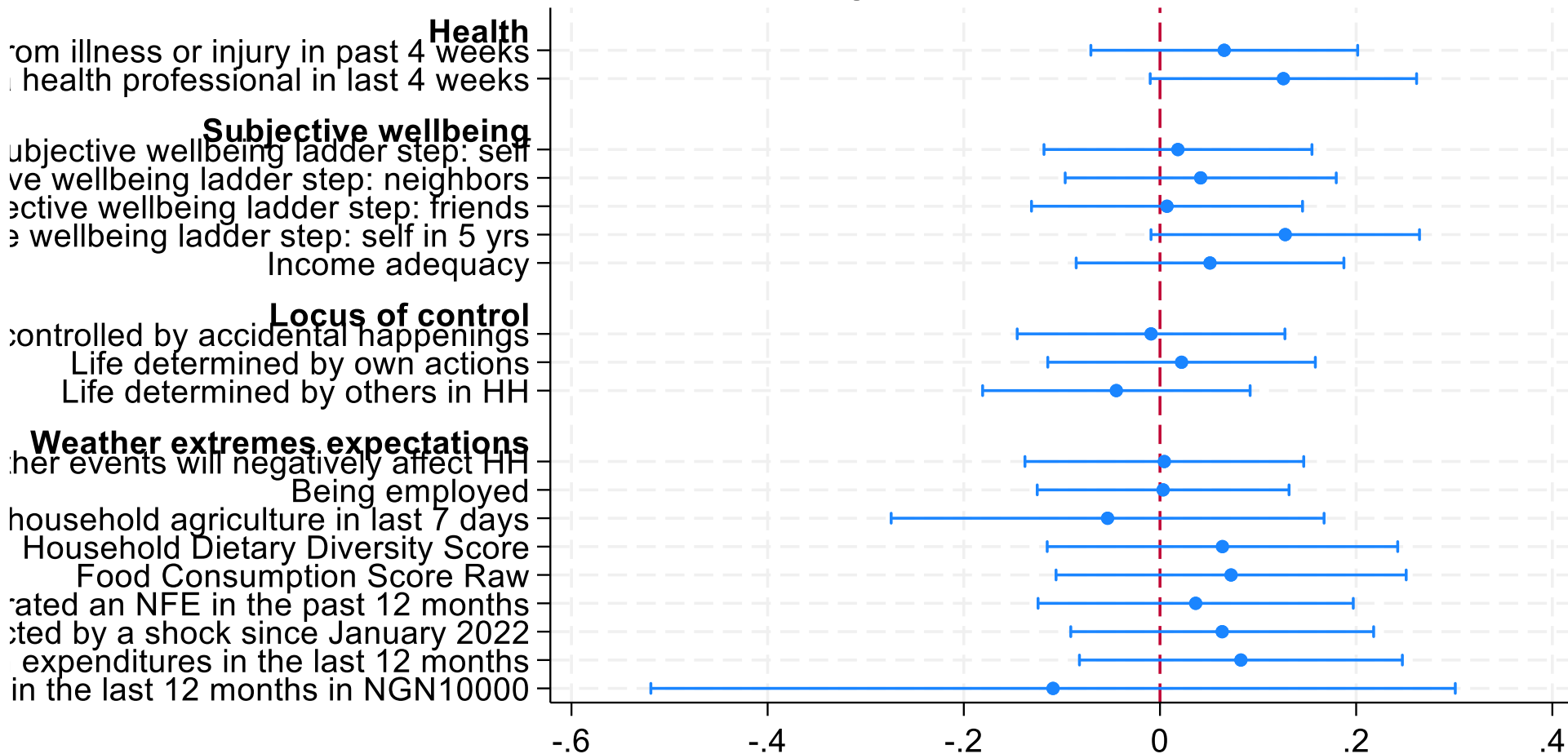
# Anchoring effects: phone interviews

	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
	Being employed	Hours worked/help ed in household agriculture in last 7 days	Household Dietary Diversity Score	Food Consumption Score Raw	Operated an NFE in the past 12 months	Affected by a shock since January 2022	Paid for health expenditures in the last 12 months	Total health expenditures in the last 12 months in NGN10000
Respondent was previously interviewed in-person	0.0413 (0.0584)	0.133 (0.108)	0.0179 (0.110)	0.0450 (0.106)	-0.0574 (0.0606)	-0.00576 (0.0303)	-0.00684 (0.0876)	-0.629 (0.571)
Constant	0.223*** (0.0428)	-0.175** (0.0759)	0.0867 (0.0791)	0.601*** (0.0771)	0.616*** (0.0421)	0.380*** (0.0211)	1.082*** (0.0632)	1.789*** (0.372)
Observations	801	335	487	487	599	646	573	106

Note: OLS regressions of various outcomes on a dummy for whether the respondent had been previously interviewed (in person). Sample: Phone interviews of respondents interviewed in-person and over the phone. Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

# Anchoring effects: in-person interviews

## Anchoring effects: In-person interviews



Note: OLS regressions of various standardized outcomes on a dummy for whether the respondent was interviewed in-person and over the phone.

# Anchoring effects: in-person interviews

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Illness in last 30 days	Consulted health practitioner	Wellbeing (self)	Wellbeing (nghbors)	Wellbeing (friends)	Wellbeing (in 5y)	Income adequacy	Life controlled by accidental happenings	Life determined by own actions	Life determined by others in HH	Weather extremes likelihood
Respondent was previously interviewed over the phone	0.0655 (0.0693)	0.126* (0.0692)	0.0183 (0.0696)	0.0415 (0.0704)	0.00715 (0.0704)	0.128* (0.0697)	0.0510 (0.0695)	-0.00907 (0.0695)	0.0220 (0.0695)	-0.0445 (0.0695)	0.00446 (0.0724)
Constant	-0.0321 (0.0482)	-0.0616 (0.0481)	-0.00896 (0.0487)	-0.0201 (0.0487)	-0.00347 (0.0485)	-0.0622 (0.0499)	-0.0250 (0.0476)	0.00444 (0.0480)	-0.0108 (0.0485)	0.0218 (0.0485)	-0.00218 (0.0503)
Observations	834	834	827	809	810	819	830	830	830	830	765

Note: OLS regressions of various outcomes on a dummy for whether the respondent had been previously interviewed (over the phone). Sample: In-person interviews of respondents interviewed in-person and over the phone. Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

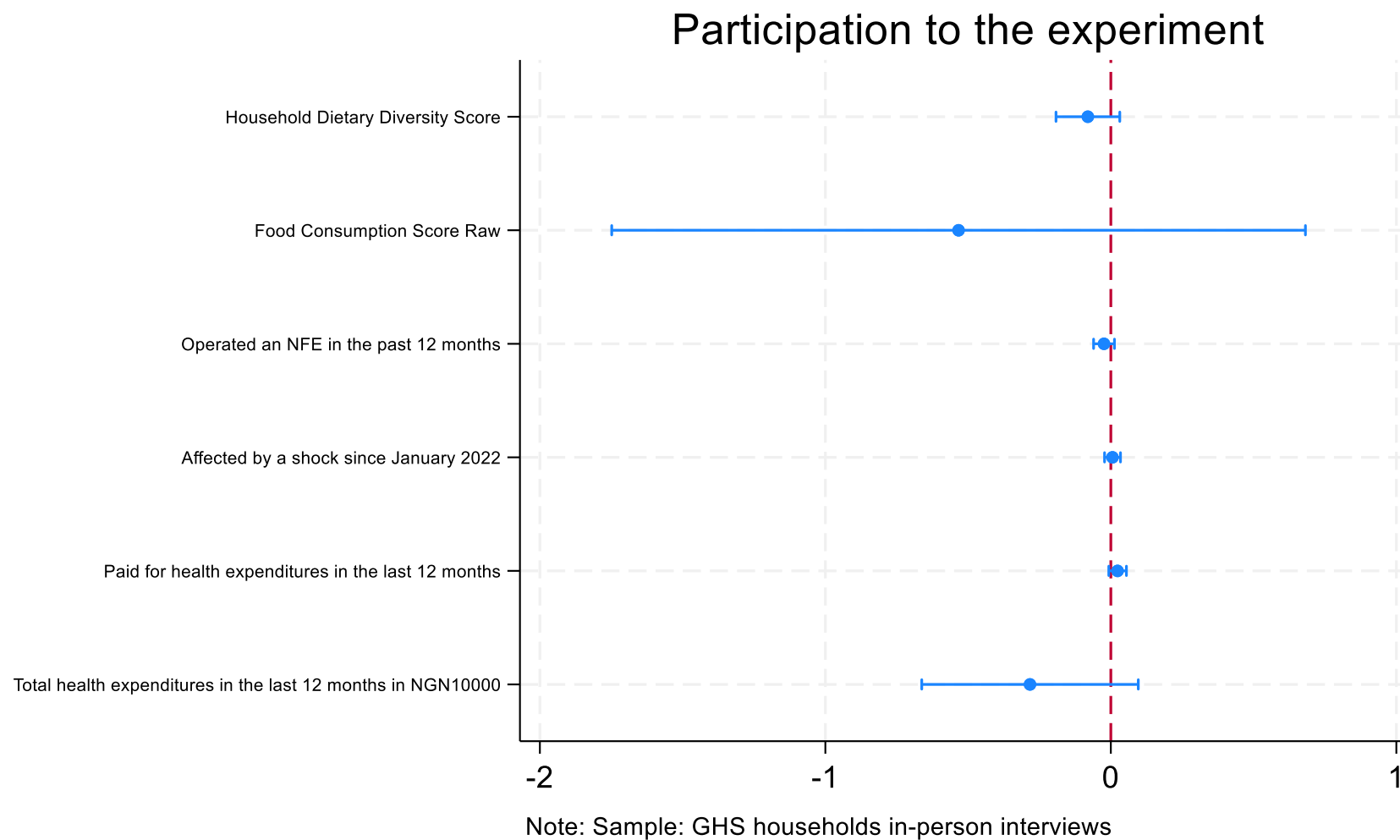
# Anchoring effects: in-person interviews

	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
	Being employed	Hours worked/helped in household agriculture in last 7 days	Household Dietary Diversity Score	Food Consumption Score Raw	Operated an NFE in the past 12 months	Affected by a shock since January 2022	Paid for health expenditures in the last 12 months	Total health expenditures in the last 12 months in NGN10000
Respondent was previously interviewed over the phone	0.00322 (0.0654)	-0.0534 (0.112)	0.0637 (0.0909)	0.0725 (0.0908)	0.0364 (0.0818)	0.0634 (0.0786)	0.0825 (0.0838)	-0.109 (0.207)
Constant	0.121*** (0.0457)	0.0964 (0.0772)	-0.0301 (0.0618)	-0.0342 (0.0622)	-0.0176 (0.0569)	-0.0309 (0.0566)	-0.0395 (0.0565)	0.0596 (0.187)
Observations	801	335	487	487	599	646	573	106

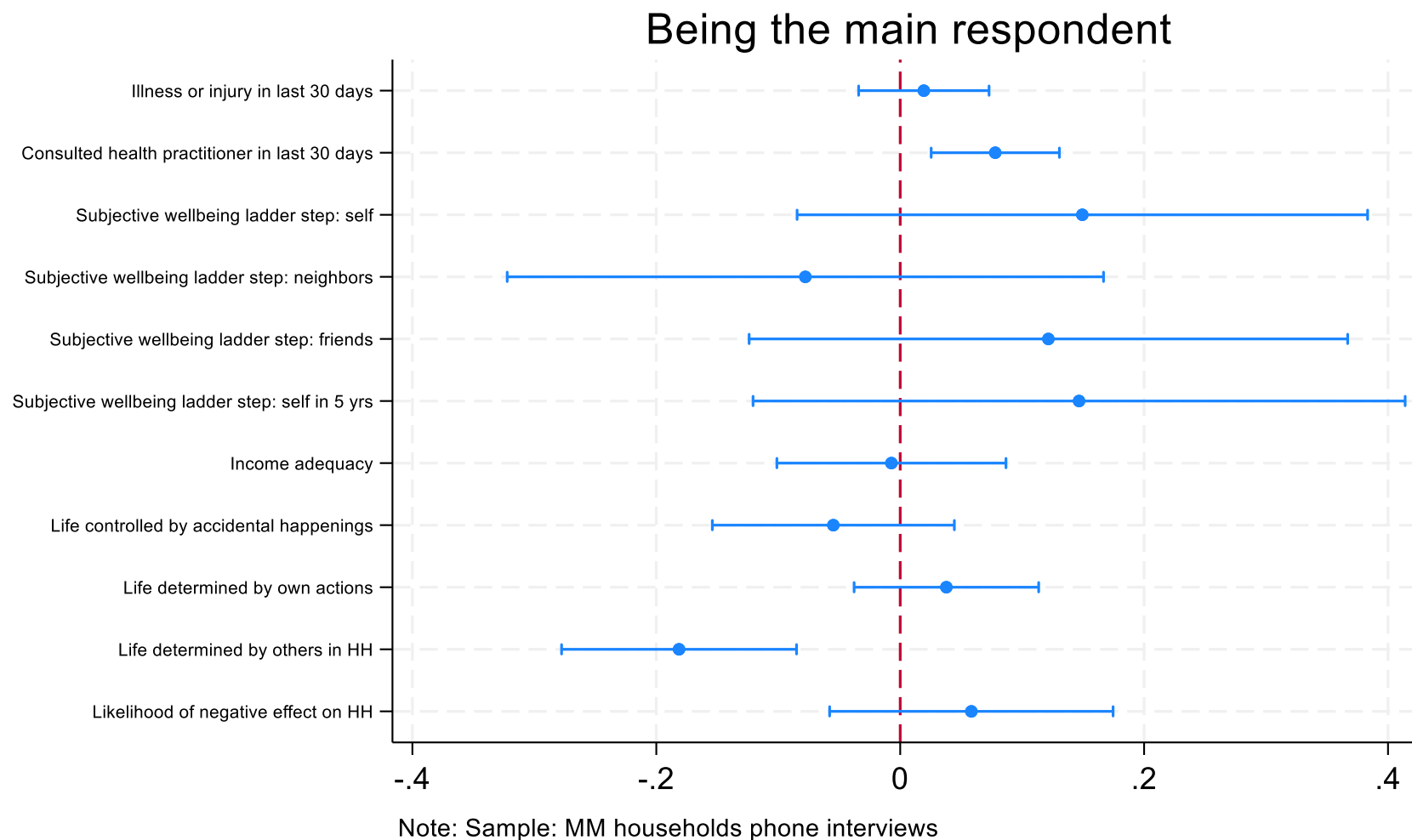
Note: OLS regressions of various outcomes on a dummy for whether the respondent had been previously interviewed (over the phone). Sample: In-person interviews of respondents interviewed in-person and over the phone. Robust standard errors in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .



# In-person outcomes contaminated by the experiment ?



# Any observed differences between main and second respondents?



# Standardized vs non-standardized outcomes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Illness in last 30 days	Consulted health practitioner	Wellbeing (self)	Wellbeing (neighbors)	Wellbeing (friends)	Wellbeing (in 5y)	Income adequacy	Life controlled by accidental happenings	Life determined by own actions	Life determined by others in HH	Weather extremes likelihood
<b>Non Standardized</b>											
Phone interview	0.107*** (0.0339)	0.233*** (0.0333)	-0.797*** (0.142)	-0.674*** (0.142)	-0.510*** (0.143)	0.863*** (0.157)	-0.197*** (0.0606)	0.561*** (0.0577)	0.163*** (0.0480)	0.680*** (0.0577)	-0.0327 (0.0758)
Constant	0.398*** (0.0236)	0.419*** (0.0238)	4.475*** (0.0843)	4.396*** (0.0793)	4.648*** (0.0777)	6.833*** (0.1000)	2.248*** (0.0419)	1.688*** (0.0358)	2.514*** (0.0334)	1.581*** (0.0357)	3.165*** (0.0533)
Observations	852	852	848	835	837	843	850	850	850	850	822
	Illness in last 30 days	Consulted health practitioner	Wellbeing (self)	Wellbeing (neighbors)	Wellbeing (friends)	Wellbeing (in 5y)	Income adequacy	Life controlled by accidental happenings	Life determined by own actions	Life determined by others in HH	Weather extremes likelihood
<b>Standardized</b>											
Phone interview	0.218*** (0.0693)	0.473*** (0.0673)	-0.455*** (0.0810)	-0.409*** (0.0861)	-0.316*** (0.0884)	0.415*** (0.0755)	-0.227*** (0.0696)	0.754*** (0.0775)	0.235*** (0.0691)	0.916*** (0.0778)	-0.0298 (0.0692)
Constant	5.52e-09 (0.0481)	6.21e-09 (0.0481)	9.24e-09 (0.0481)	2.55e-09 (0.0481)	-5.83e-09 (0.0481)	7.62e-09 (0.0481)	-2.10e-08 (0.0481)	-1.10e-09 (0.0481)	1.49e-08 (0.0481)	2.33e-08 (0.0481)	-3.38e-09 (0.0486)
Observations	852	852	848	835	837	843	850	850	850	850	822