

# Do Interviewers moderate the effect of monetary incentives on response rates in household interview surveys?

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# Background and motivation

- Monetary incentives are known to increase response rates (Singer et al 1999)
- Some interviewers are more effective at eliciting cooperation than others (Durrant et al. 2010; Durrant, D'Arrigo, and Steele 2013)
- But little is known about whether & how interviewers differ in effectiveness of deploying incentives to promote survey response and cooperation
- How might this happen?
  - Interviewers 'tailor' deployment by highlighting incentives at addresses where they are most effective (Groves and Couper 1996 )
  - Interviewers vary in their beliefs about effectiveness of incentives (Singer et al 2000; Lynn 2001)

# Research Questions & empirical strategy

- RQ1: Do interviewers differentially influence the effectiveness of incentives in increasing survey participation?
- RQ2: Are interviewer characteristics associated with effectiveness of incentive deployment?
- ES1: face-to-face household surveys containing randomised incentive experiments
- ES2: Multi-level models predicting response outcome as function of incentive condition and covariates
- ES3: Interviewer level random coefficient for incentive condition



# Data

## Understanding Society Innovation Panel (IP Wave 1)

- wave 1 data consisting of three random experimental group:
  - Group 1: £5 per adult interviewed; Group 2: £10 per adult interviewed; Group 3: £5 per adult interviewed rising to £10 if all adults in household are interviewed
- Each household also received unconditional cash voucher
- Combined groups 2 and 3 into one incentive group

## National Survey for Wales –Field Experiment 2015 (NSW 2015)

- One randomly selected adult aged 16+ in a household
- Conditional incentive
- experimental groups: Group 1: £10 incentive Group 2: no incentive

## National Survey for Wales –Incentive Experiment 2016 (NSW 2015)

- One randomly selected adult aged 16+ in a household
- Conditional incentive
- experimental groups: Group 1: £5 incentive Group 2: no incentive

# Data

## National Survey for Wales – Incentive Experiment (NSW 2016)

- Each address on odd numbered quota offered a conditional £5, and addressed on even numbered offered no incentive
  - Experiment terminated earlier due to low response and a new £10 incentive offered onwards
- Number of households issued incentives grouped into incentive or no incentive

Survey	Incentive	Low (no) Incentive
IP	1,680	843 (£5 incentive)
NSW 2015	2,960	2,828
NSW 2016	3,640	3,467

# Data

## Incentives and fieldwork outcomes (before re-issuing) for the three surveys

	NSW2015		NSW2016		UKHLS-IP	
	£10	£0	£5	£0	£10	£5
Interviews	1,387	1,228	1,772	1,664	1,020	469
Refusals	640	670	954	961	459	233
Non-contact	285	289	265	250	65	50
Other nonresponse	285	273	230	233	50	44
Ineligible	368	370	383	359	256	135
Cooperation Rate	68%	65%	65%	63%	69%	67%
Response Rate	53%	50%	55%	54%	66%	62%
Total issued sample	2,965	2,830	3,604	3,467	1,850	931

# Data

## Explanatory and Response Variables

- Geographical and area variables: urban/rural and UK regional indicator(for IP only))
- Interviewer characteristics: Age, gender and experience
- Census aggregate variables: concentrated disadvantage, urbanicity, population mobility age and housing structure (only for IP data)
- Response Outcome: Original household response before re-issues

$$y_{i(j)} = \begin{cases} 1 & \text{Cooperation} \\ 0 & \text{Refusal} \end{cases} : \text{for household and interviewer}$$

- Gives the probability that contacted household and interviewed by interviewer will cooperate to a survey

# Data

## Definition of outcome

- Survey response (RR) based on AAPOR RR2

$$RR = \frac{(I + P)}{(I + P) + (R + NC + O) + (UE(NC) + UE)}$$

- Survey cooperation before

$$CR = \frac{(I + P)}{(I + P + R)}$$

RR=Response Rate, I = Interview,

P = Partial Interviews, R = Refusals,

NC = Non-Contacts , O = Other Unproductive,

UE(NC) = Unknown Eligibility (non-contacted), and UE = Unknown Eligibility



# Models

- Multilevel response propensity logistic models
  - Allows the variation in the response outcome to be partitioned into household and interviewer levels
  - Enables to vary incentives effects on survey response and cooperation across interviewers

Model form:

$$\log\left(\frac{\pi_{ij}}{1-\pi_{ij}}\right) = \beta_0 + \beta_1 x_{1ij} + \mathbf{z}'_j \boldsymbol{\alpha} + \mu_{0j} + \mu_{1j}$$

- $x_{1ij}$  is a dummy indicator of the incentive group and  $\mathbf{z}'_j$  is a vector of interviewer-level covariates
- $\mu_{0j}$  and  $\mu_{1j}$  represent intercept and slope (incentive) variances across interviewers with mean zero and constant variances:  $\mu_{0j} \sim N(0, \sigma_{\mu_0}^2)$ ,  $\mu_{1j} \sim N(0, \sigma_{\mu_1}^2)$ .

# Models

## Specifications of the models fitted

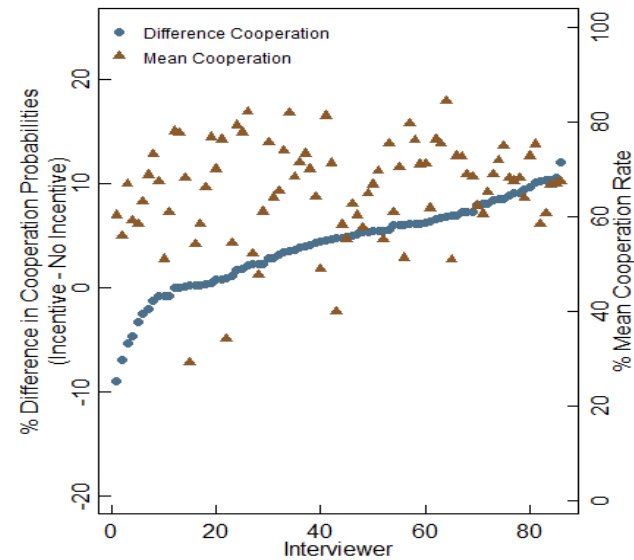
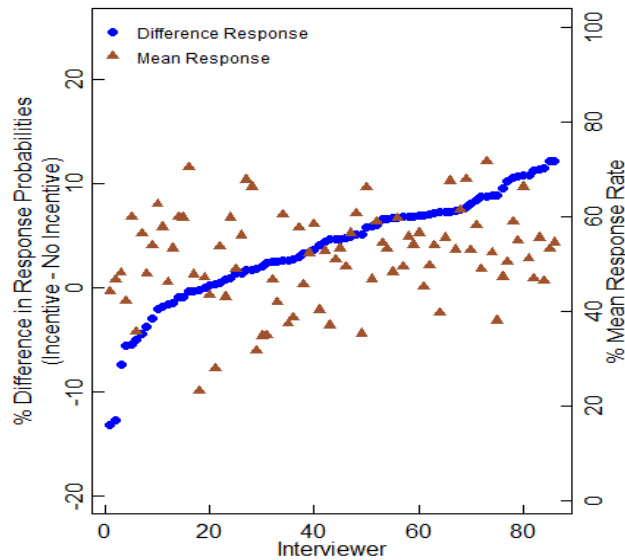
Model	Fixed and random components specified
1: model 1	Incentive
2: model 1 + area level variables	Model 1 + area level variables
3: Model 2 + Random intercept (interviewer)	Model 2 + significant area level variables from model 2 + random intercept across interviewers
4: Model 3 + Random coefficient (interviewer)	Model 3 + random coefficient for incentives across interviewers
5: model 4	Model 3 + significant area level variables from model 4 + interviewer characteristics
6: model 5	Model 5 + cross-level interactions for incentive and interviewer characteristics

## Results summary

- The DIC change between random intercept and random coefficient models for response and cooperation respectively indicate that incentives do vary significantly across interviewers for all surveys considered
- Size of effect reduced when controlling for area differences
- Positive covariance between random intercept & random slope (interviewer effect on incentives higher at higher response rates)
- None of the interviewer characteristics are significantly related to incentive effectiveness

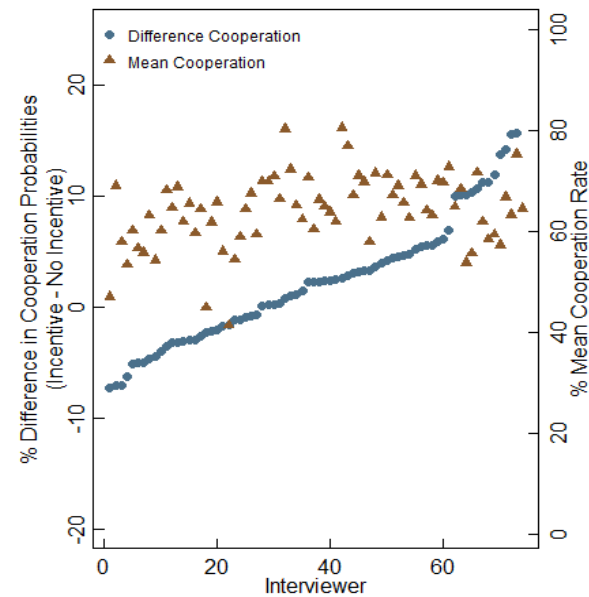
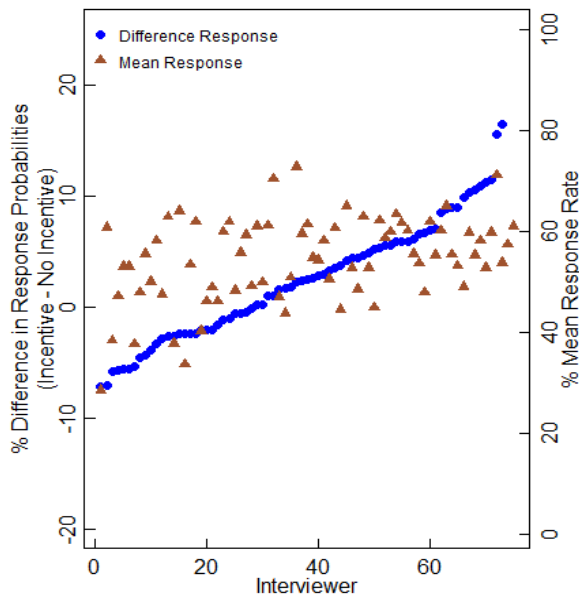
# Results

**Percentage difference (Incentive – No Incentive) and mean of predicted probabilities for survey response (left panel) and survey cooperation (right panel) for NSW 2015**



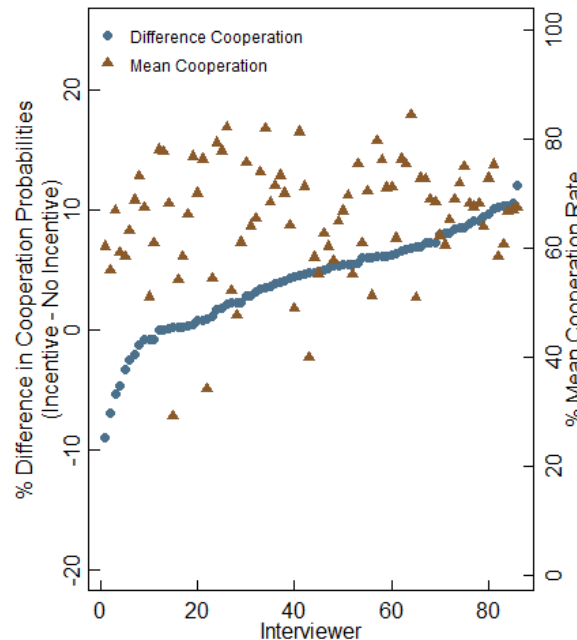
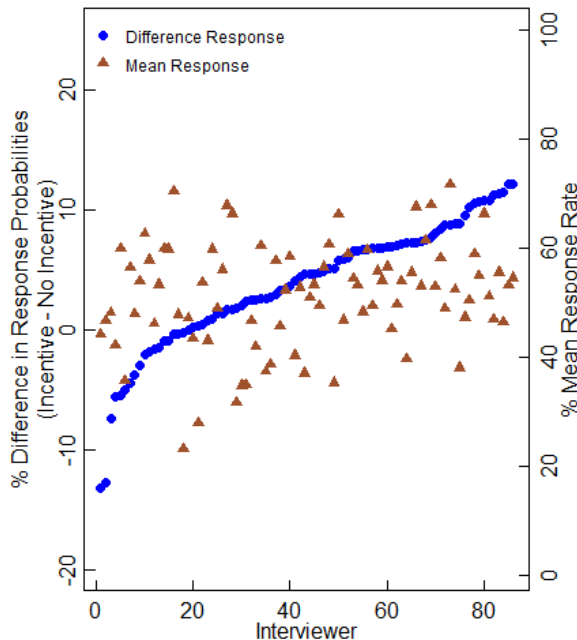
# Results

**Percentage difference (Incentive – No Incentive) and mean of predicted probabilities for survey response (left panel) and survey cooperation (right panel) for NSW 2016**



# Results

**Percentage difference (Incentive – No Incentive) and mean of predicted probabilities for survey response (left panel) and survey cooperation (right panel) for IP (Wave 1)**



## Conclusions

- Incentive effect on response and cooperation varies across interviewers
- This is reduced when differences in area composition are controlled for
- Interviewers who obtain higher response rates without incentives get ‘more bang from the incentive buck’
- Interviewer characteristics unrelated to deployment effectiveness
- Possible that other interviewer characteristics (attitudes, beliefs) might be more influential