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# Benefits of increasing the value of respondent incentives during the course of a longitudinal mixed-mode survey

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**ABSTRACT**

This paper explores the effects of increasing the value of survey incentives on response rates and fieldwork efforts using data from a large-scale randomised experiment embedded in wave 12 of a national probability-based longitudinal survey. We also investigate whether effects differ between previous-wave respondents, who were sent an unconditional incentive, and previous wave non-respondents, who were offered a conditional incentive. The treatment group received £20 incentives instead of the usual £10 received at previous waves and by the control group. The results show a positive effect of the increased incentive on response rates for previous wave non-respondents and that this effect is heterogeneous across certain subgroups. The positive effect on response rates could translate into reduced fieldwork efforts in a web and CAPI sequential design.

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Survey incentives; conditional incentives; unconditional incentives; panel surveys; sequential mixed-modes

## Introduction

Survey incentives have been an effective instrument for enhancing response rates and reducing dropouts in panel surveys (Booker et al., 2011; Laurie & Lynn, 2009). These studies tend to retain an unchanged incentive strategy over time. However, modifying the strategy could increase wave response rates, mitigate panel attrition, and reduce survey costs. This article explores one such modification: an increase in the value of conditional and unconditional incentives at wave 12 of a mixed-mode national probability-based longitudinal survey.

While substantial attention has been given to survey incentives (e.g. Abdelazeem et al., 2023; Mercer et al., 2015; Toepoel, 2012), certain aspects of their application in longitudinal surveys remain underexplored. Specifically, scant attention has been directed towards changing the value of an incentive previously offered to the same sample members (e.g. Laurie, 2007; Rodgers, 2011). This article presents findings from an experiment that sheds new light on the impact of increasing the value of conditional and unconditional incentives in a longitudinal survey. The focus is understanding how this change affects response rates and fieldwork efforts – a proxy indicator of survey costs. The findings presented here have the potential to inform decisions about whether to raise incentives in other longitudinal studies.

The experiment was embedded in wave 12 of *Understanding Society*, a household panel survey that seeks to interview all adult residents in the sample households and included the households where at least a person completed the individual questionnaire at the previous wave, an essential group to enhance the ability to conduct longitudinal analyses. Households were randomly allocated

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to the control group, where panel members received the same incentive amount as in previous waves (£10), whilst those allocated to the treatment groups received a raise in the incentive amount from £10 to £20. In both the control and treatment groups, the previous wave respondents received the incentive unconditionally, while the previous wave non-respondents were offered the incentive conditional on participation.

### Incentives in longitudinal studies

Prior research has shown that incentives are a valuable instrument to increase response rates and, in some instances, reduce fieldwork efforts, in cross-sectional and longitudinal studies (Abdelazeem et al., 2023; Singer & Ye, 2013; Toepoel, 2012). The available evidence about incentive effects on longitudinal studies, where sample members are asked to participate on more than one occasion, mostly aligns with those observed in cross-sectional surveys, with some exceptions (Booker et al., 2011). Cash incentives yield higher response rates than no incentive, but Booker et al. (2011), in a meta-analysis of retention methods in panel studies, found no clear distinction between the effect produced by cash and a gift of the same value. On the other hand, including respondents in lotteries has been shown to be less effective than cash in reducing dropouts in several experiments (Booker et al., 2011; Felderer et al., 2018; Henderson et al., 2010).

In terms of the value of monetary incentives, experiments show that larger incentives result in higher response rates (Bianchi & Biffignandi, 2019; Gaia, 2017; Westra et al., 2015), although there are some indications that the relationship between the value of the incentive and the response rate is non-linear, as it has been observed in cross-sectional surveys (Mercer et al., 2015). Regarding the conditionality of the incentive, there is mixed evidence. While some studies have found unconditional incentives to be more effective than conditional ones (e.g. Gaia, 2017; Jäckle & Lynn, 2008), in some instances, conditional incentives have outperformed unconditional ones (e.g. Castiglioni et al., 2008).

Also, an aspect to consider when using incentives in longitudinal surveys is the potential effect beyond the wave of implementation (Laurie & Lynn, 2009). Some experiments have shown that the effect of an incentive can endure for several waves, reducing panel attrition (Castiglioni et al., 2008; Mack et al., 1998), while in other cases, the effect on response rates did not carry over to the following waves (Booth et al., 2024; Jäckle & Lynn, 2008).

### Changing the value of incentives during the study

A unique feature of the use of incentives in longitudinal studies is that the strategy can change over time, allowing sample members to be exposed to a multitude of incentives (Laurie & Lynn, 2009). Different changes can be introduced to the incentive strategy during the study: a new incentive might be introduced (e.g. Booth et al., 2024; Fomby et al., 2017; Zagorsky & Rhoton, 2008), extant incentives might be withdrawn (e.g. Friedel et al., 2022; Goldenberg et al., 2009), or the characteristics of the incentives (i.e. form, conditionality or value) might be modified (e.g. Calderwood et al., 2023; Ortenburger et al., 2022).

In longitudinal studies that span over several years, the real value of incentives might decrease due to inflation. In fact, some longitudinal studies such as the Panel Survey of Income Dynamics (PSID) in the US or the former British Household Panel Survey (BHPS), have implemented moderate increases to compensate for the inflation (Laurie, 2007; McGonagle, 2020). Moreover, increasing the value of an existing incentive can have a positive effect on response. The theories that explain the causal mechanism underlying the effect of incentives on response can also shed some light on how a change in the incentive value might affect sample members' response behaviour.

Giving sample members a higher-value incentive might further stimulate the logic of reciprocity that underlies the effect of unconditional incentives on response. In a recent work, Becker (2023) provides evidence that sample members with a preference for reciprocity are

more likely to promptly respond after receiving an unconditional incentive. This could also explain the increase in response propensities after panel members perceive an increase in the value of the incentive. This gesture might be seen as a kind act of cooperation by panel members and trigger survey response. In a similar vein, social exchange theory states that individuals' actions are motivated by the expected returns that the action may generate, which can be material, social or psychological (Dillman et al., 2014). In this theory, unconditional incentives, regardless of their value, would trigger a reciprocity mechanism that makes sample members more likely to participate. The main practical implication of these theories is that even small increases in the value of unconditional incentives are likely to translate into higher response propensities. In contrast, economic exchange theory focuses on the calculation component derived from weighing the costs and benefits of participating in the survey so that the incentive should compensate for participants' time and effort (Biner & Kidd, 1994). This theory gives more weight to the size of the increment, which should outweigh the inconvenience of participation to result in an increased response rate. In this case, survey response would not be triggered by the increase *per se* but by the magnitude of the increase.

In addition, the leverage-salience theory states that the characteristics of the survey design and contextual factors – including incentives – have a different influence on each individual when deciding whether to participate in a survey (Groves et al., 2000). This provides some ground to expect differential effects of the incentive strategy across population groups. For example, some experiments conducted on longitudinal surveys have found that incentives help foster participation among panel members less likely to cooperate (Laurie, 2007; McGonagle & Freedman, 2017), on a lower income, without a university degree or from an ethnic minority group (Felderer et al., 2018; Mack et al., 1998). We might expect a similar effect of the increase in the incentive value.

The few studies that have investigated the effect of increasing the value of incentives in a longitudinal study tend to show positive results. In wave 14 of the British Household Panel Survey, a relatively small rise in the value of the incentives, from £7 to £10 for adults and from £4 to £5 for children, led to slightly higher response rates (Laurie, 2007). The Health and Retirement Study (HRS) experimented with changing the value of incentives from $20 to $30 or $50. The results showed an increase in response rates only for those who received the $50 incentive, an effect which persisted over the subsequent four waves (Rodgers, 2011).

Other non-experimental studies also suggest a positive effect of increasing the value of the incentives on response rates. In wave 5 of the Innovation Panel of *Understanding Society*, increased incentives were offered to a subsample moved from a primarily face-to-face interview protocol to a web-first sequential mixed-modes design (Gaia, 2017). Although the analysis does not allow a direct evaluation of the effect of the change in the incentive value, participants receiving higher incentives in the mixed-mode condition had a higher response rate, closer to the one obtained in the face-to-face condition. Another non-experimental study was carried out in the PSID in 2015, where the usual conditional incentive of $70 USD was increased to $150 USD before the end of the fieldwork. The results suggest that the increase in the value of the incentive might have had a positive effect on response, which extended to the following wave (McGonagle, 2020).

## *Understanding Society*

The experiment presented in this paper was embedded in *Understanding Society*, the United Kingdom Household Longitudinal Study, a national probability-based survey that began data collection in 2009 and subsequently incorporated also the sample of the former British Household Panel Survey (BHPS) (University of Essex, 2023). *Understanding Society* aims to cover individuals of all ages residing in the United Kingdom (Lynn, 2009). Each year, sample members aged 16 or over (hereinafter referred to as adults) are invited to complete an individual questionnaire, as are all other current adult members of their households.

Children aged 10–15 years are invited to complete a self-completion questionnaire. The experiment presented in this paper focuses solely on the adults of the sample.

The data collection protocol of *Understanding Society* has evolved from a mainly face-to-face survey to a sequential mixed-mode design. From waves one to six, households were issued to Computer Assisted Personal Interviewing (CAPI), with just a few interviews completed on the phone during a mop-up period. The web mode was offered first at wave 7, but only to wave 6 non-respondents. Since wave 8, an increasing number of panel members have been allocated to a sequential mixed-mode design combining web, followed by CAPI for non-respondents. Before the COVID-19 pandemic, three fieldwork protocols coexisted in the survey: 1) a random subsample of 20% of households were issued to CAPI-only; 2) most other households (70% of the total) were subject to a sequential mixed-mode 'web-first' strategy; 3) households outside of the CAPI-only group but with a low predicted propensity to respond online, constituting 10% of the total, were allocated to a 'CAPI-first' mixed-mode design (Lynn, 2017).

Due to the COVID-19 pandemic and the suspension of face-to-face fieldwork in the UK in March 2020, *Understanding Society* moved to a sequential mixed-mode design that combined web-first and Computer Assisted Telephone Interviewing (CATI) (Burton et al., 2020). The web-only fieldwork lasted for five weeks, although individuals could still respond online until the end of the telephone fieldwork. The change in the mode design due to the pandemic affected most Wave 12 fieldwork and the experiment presented in this paper. The wave 12 cross-sectional response rate (AAPOR RR6) was 69.5%. Online Supplementary A provides more details about wave 12 response rate.

The study uses a targeted incentive strategy based on the previous wave outcome at household and individual levels. Previous wave respondents received a £10 unconditional incentive, while previous wave non-respondents living with them were offered a £10 conditional incentive. Members of households where no one completed the survey in the previous wave were offered a £20 conditional incentive. In addition, a £10 early-bird bonus was offered to all those completing the survey online during the first five weeks of the field period (see Online Supplementary B). The incentives had the form of a *love2shop* gift card valid in some of the most common retailers in the UK. The gift card was included in the invitation letter for those receiving the unconditional incentive and sent after survey completion for the recipients of the conditional incentive and the early-bird bonus.

## Research questions

The primary purpose of the experiment was to test the effect of increased unconditional and conditional incentives on survey response. In the context of a web and telephone sequential design, the increase in the incentive could prompt a faster response to the questionnaire. If a higher proportion of the sample responds during the web-only phase of the fieldwork, fieldwork efforts could be reduced at the more expensive telephone follow-up phase. Thus, the first research question addresses the effect of the higher value on the response rates at the end of the web-only stage:

**RQ 1.1)** Does the higher incentive increase individual response rates at the web-only phase of the fieldwork?

Likewise, increasing the value of the incentive could boost final response rates, which comprise responses during the web and telephone phases of the fieldwork.

**RQ 1.2)** Does the individual final response rate (after both web and telephone phases of fieldwork) increase for those receiving the higher incentive compared to the control group?

In addition, the effect of the higher value on the response rate during the web-only phase or on the final response rate could vary across population subgroups. The heterogeneous effect of the higher incentive could impact the sample profile. In line with the findings of other incentive experiments in longitudinal surveys, we would expect groups with a lower-than-average response rate to exhibit a more significant effect of the higher incentive. These subgroups include panel members on lower incomes, with lower educational attainment or from an ethnic minority background (Felderer et al., 2018; Laurie, 2007; Mack et al., 1998; McGonagle & Freedman, 2017). We also speculate that gender, age and previous survey participation could moderate the effect of the higher incentive. The following research question examines the effect of the higher incentives across population subgroups.

**RQ 2.1)** Does the effect of the higher incentive on the web-only or final response rate vary across sample subgroups?

The experiment was conducted during the COVID-19 crisis and the suspension of face-to-face fieldwork in the United Kingdom. Consequently, a random subsample issued to CAPI-only in previous waves was moved to a sequential web-first and telephone design. Previous research has shown that higher incentives can compensate for the lower response rate obtained when transitioning from CAPI to a web-first design (Gaia, 2017). The analysis explores the effect of increased incentives for those transitioning from CAPI to a web and telephone mixed-mode design.

**RQ 2.2)** Does the higher incentive mitigate the difference in response rates between those transitioning from CAPI to a web-first mixed-mode design and the panel members already in a web-first design?

Finally, we explore the effect that the increased incentive could have on fieldwork efforts in a sequential mixed-mode design that combines web and CAPI, the main protocol of *Understanding Society* before and after the pandemic. In a household survey such as *Understanding Society*, where all persons aged 16 and older residents in the household are invited to participate, an important indicator of the cost of fieldwork efforts at the CAPI phase is the percentage of households with all individual interviews completed during the web-only phase. In a web-CAPI context, the cost saved would include travel time and expenses for field interviewers to visit respondent homes.

**RQ 3)** Does the full household response rate increase at the end of the web-only fieldwork phase due to the higher value of the incentive?

## Experimental design and methods

### *Experimental design*

The higher unconditional and conditional incentive experiment was embedded in wave 12 of the main study of *Understanding Society*, specifically in the random monthly samples[1] fielded from April to September 2020 during the COVID-19 crisis. Although the experiment was planned before the COVID-19 crisis, the research team deemed it appropriate to proceed in the changed circumstances. The experiment covered all individuals issued to the field at wave 12 who were part of wave 11 responding households, in which at least one individual interview and the household questionnaire were completed. The analysis excluded those new to the study at wave 12 who had not received the lower value incentive in the previous wave.

**Table 1.** Summary of the experimental design.

| | Control | | Higher incentive | |
|---|---|---|---|---|
| Previous wave interview outcome: | Respondents and rising 16 | Non-respondents | Respondents and rising 16 | Non-respondent |
| **Unconditional** incentive | £10 | None | **£20** | None |
| Incentive **conditional** on completing individual questionnaire | None | £10 | None | **£20** |
| **Early-bird incentive** conditional on completing web questionnaire during first 5 weeks of fieldwork | £10 | £10 | £10 | £10 |
| N (participants) | 2,887 | 406 | 2,897 | 457 |

The experiment is restricted to adults (sample members aged 16 or over) eligible for an individual interview who were in a responding household at wave 11. 'Rising 16' refers to panel members invited to the individual interview for the first time the year they become 16 years old.

For the experiment, previous wave responding households were randomly allocated to the control and higher incentive groups (Table 1). The panel members in the control group received the usual £10 unconditional or conditional incentive depending on their previous wave outcome. In the treatment group, 'higher incentive' (HI), previous wave respondents received an unconditional incentive of £20, double that of the control group, while the non-respondents that lived with them received a £20 conditional incentive, also double that for their counterparts in the control group. Sample members from households where no one participated in the survey at the previous wave were excluded from the experiment. All panel members eligible for an individual interview were offered the £10 early bird incentive conditional on responding online during the first five weeks of the fieldwork.

For those allocated to the treatment condition, the invitation letter and email referred to the increase in the incentive. The wording of the text regarding incentives in the letters sent to participants in the control and treatment conditions can be found in the Online Supplementary C.

## *Methods and variables*

The first two research questions (RQs 1.1 and 1.2) address the effect of the higher incentives on individual response rates. The response rates – web-only and final – presented in this paper were calculated based on the AAPOR RR6 (AAPOR, 2023) and represent the percentage of panel members eligible for an individual interview at wave 12 who completed the individual questionnaire. The web-only response rate covers the responses on the web during the first five weeks of the fieldwork, whereas the final response rate accounts for all web and telephone responses at any stage of the fieldwork. Differences in response rates between the control and treatment groups were tested by a z-test using a logistic regression model that included the experimental allocation flag as a predictor.

We present response rates for the control and treatment groups, both for previous wave respondents (who received an unconditional incentive) and for previous wave non-respondents from responding households (who were offered a conditional incentive). While the effect of the higher incentives is of interest for those receiving the conditional incentives and those receiving the unconditional incentives, any comparison of the two groups will confound the effect of the conditionality of the incentive with the effect of previous wave response behaviour, as panel members were not randomly allocated to the conditional and unconditional incentives. Therefore, it is impossible to identify whether any differences in effect are due to the conditionality of the incentive or the previous wave response propensity. Also, our findings relate to the household context where the effect of an increased incentive on an individual could be influenced by the reaction of other household members to the change in the value of the incentive.

Research questions RQ 2.1 and 2.2 address the effect of the higher incentives for subgroups defined by a set of demographic and previous participation moderators. To explore these

heterogeneous effects, we fitted two sets of logistic regression models: 1) simple models, which only included the moderator, the experimental allocation flag and the interaction between the two; 2) multivariate models, which included all the moderators and the interaction terms with the experimental flag. In both sets of models, the dependent variables were response at the end of the 5-week web-only phase of the fieldwork and the final response. These models were fitted for two sample subgroups: 1) the last wave respondents, who received the unconditional incentive, and 2) the last wave non-respondents from responding households, who were offered the conditional incentive. The average treatment effect estimates predicted from the simple logistic regression models (Mize, 2019) are presented in the results section, while the estimates from the multivariate models are in Online Supplementary F.

The reason for producing both sets of models – simple and multivariate – is the level of missingness in some of the moderators. In principle, we would prefer to present the controlled estimates of the treatment effects because they control for the other moderators. However, for some of the moderators, such as individual income or education, we do not have information for all sample members; specifically, we are more likely to lack that information for previous wave non-respondents, an essential subgroup in the analysis. This has the potential to bias the coefficient estimates.

In this analysis, we have used moderators that might help explain the relationship between the change in the incentive value and the response propensities. These moderators include demographic characteristics and variables reflecting previous participation in the study. Regarding the demographic moderators, we included gender (male and female), age in groups (16–29, 30–44, 45–64, 65+), individual income in quartiles and the number of adults in the household. The previous response pattern (regular respondent and irregular respondent) and previous wave fieldwork protocol[2] variables were also tested as moderators of the higher incentives. Regular respondents are those responding to at least two-thirds of the waves to which they were invited. To minimise the impact of missing data, for the individuals with missing information at wave 11, we imputed the most recent value available from previous waves.

The final research question (RQ3) examines the effect of a higher incentive on fieldwork efforts as a proxy of its impact on survey costs. We present the full household response rate at the end of the web-only phase of the fieldwork period, indicating the percentage of eligible households where all adults completed their individual interviews. We used a logistic regression model with the experimental allocation flag to test the differences between the experimental groups.

All estimates presented in the results section are weighted to account for selection probabilities and non-response. Furthermore, the statistical tests are one-sided, aligning with the theoretical expectation of only a positive (or null) effect resulting from the higher incentive. A table presenting the variables included in the analysis can be found in the Online Supplementary E. A table presenting the mode in which the individual interview was completed, and the sample composition of each group can be found in Online Supplementary F.

## Results

### *Individual response rates*

Table 2 presents the individual web-only and final response rates for the control and higher incentives groups. The response rate for the group receiving a higher incentive was 1.2 p.p. higher at the end of the web-only phase and 2.3 p.p. higher at the end of the fieldwork. However, neither difference was statistically significant at the 95% level.

The higher incentive helped increase the response rate at the end of the fieldwork for the previous wave non-respondents from responding households. This subgroup was offered a higher conditional incentive, and their response rate increased by 7.7 p.p. compared to the control

**Table 2.** Individual response rates for the experimental groups.

| | Web-only | | | Final response (Web + CATI) | | | |
|---|---|---|---|---|---|---|---|
| | Control | Higher incentive | Dif. | Control | Higher incentive | Dif. | N |
| **Individuals in previous wave responding households** | 59.7 | 60.9 | 1.2 | 79.0 | 81.3 | 2.3 | 6,647 |
| | (1.3) | (1.3) | (1.8) | (1.1) | (1.1) | (1.5) | |
| **Previous wave individual response** | | | | | | | |
| **Respondents** (Unconditional incentive) | 65.0 | 66.1 | 1.1 | 85.8 | 87.8 | 2.1 | 5,784 |
| | (1.3) | (1.3) | (1.8) | (0.9) | (0.9) | (1.3) | |
| **Non-respondents** (Conditional incentive) | 15.6 | 20.5 | 4.9 | 23.3 | 31.0 | 7.7* | 863 |
| | (2.1) | (2.3) | (3.1) | (2.6) | (2.8) | (3.8) | |

*Sig.* *$p < .05$, **$p < .01$, ***$p < .001$. Web-only response rate refers to adults completing the individual questionnaire online during the first five weeks of the fieldwork (web-only phase).

group. In contrast, the higher unconditional incentive sent to the previous wave respondents did not achieve a significantly higher response rate, though the estimated effect size was 2.1 p.p. at the end of the fieldwork.

Table 3 presents the marginal effects of the higher incentive for sample subgroups. These results are presented for two sub-populations: the previous wave respondents, who received the higher unconditional incentive and the previous wave non-respondents, who were offered the higher conditional incentive. Among the previous wave respondents, only those aged 30–44 showed a statistically significant higher response propensity (8.9 p.p.) at the end of the web-only phase of the fieldwork. After the telephone fieldwork, males (3.0 p.p.), white British (2.5 p.p.) and those living with another adult in the household (3.1 p.p.) presented a higher response rate after receiving the higher incentive.

The heterogeneous effect of the higher incentive was more pronounced for those who did not participate in the previous wave and were offered a conditional incentive at wave 12. The positive effect of the higher incentive after the conclusion of the web-only phase of the fieldwork was significant for females (14.0 p.p.), panel members aged 45–64 (9.3 p.p.), those on the second quartile of personal income (10.9 p.p.), and those living with another adult (8.6 p.p.). At the end of the fieldwork, females (16.3 p.p.), participants aged 45–64 (16.2 p.p.), those living in households with four or more adults (17.0 p.p.), and regular respondents (18.0 p.p.) who were offered the higher incentive exhibited higher response rates than the control group. Regarding the moderating effect of the previous wave fieldwork protocol, we found a positive effect of the higher incentive at the end of the web-only phase of the fieldwork for the group that had previously been allocated to a web-first protocol (6.9 p.p.) but not for the group previously CAPI-only (HWP). However, the latter group had a response rate 19.7 p.p. higher at the end of the fieldwork after receiving the higher incentive.

### *Household response and fieldwork efforts*

The full household response rate (all individuals in the household having completed an individual interview) at the end of the web-only fieldwork phase was 45.6% ($SE = 1.4$) for the control group and 49.3% ($SE = 1.4$) for the higher incentive group. The 3.6 p.p. ($SE = 2.0$, $p = .033$) difference between these two groups was statistically significant.

## Discussion

Overall, increasing the value of the unconditional and conditional incentives did not produce a substantial change in response rates at the end of the web-only fieldwork phase (RQ 1.1) or

**Table 3.** Heterogeneous effects of the higher incentive by moderators for previous wave respondents and previous wave non-only phase of the fieldwork? respondents from responding households.

| | Previous wave respondents (Unconditional incentive) | | | | | Previous wave non-respondents (Conditional incentive) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Web-only | | Final response (Web+CATI) | | | Web-only | | Final response (Web+CATI) | | |
| | Est. | SE | Est. | SE | N | Est. | SE | Est. | SE | N |
| **Gender** | | | | | | | | | | |
| Male | 0.029 | (0.022) | 0.030* | (0.018) | 2,560 | −0.013 | (0.034) | 0.018 | (0.044) | 526 |
| Female | −0.004 | (0.020) | 0.013 | (0.013) | 3,222 | 0.140** | (0.056) | 0.163** | (0.063) | 337 |
| **Age** | | | | | | | | | | |
| 16–29 | 0.018 | (0.046) | −0.003 | (0.041) | 925 | 0.034 | (0.049) | 0.065 | (0.058) | 391 |
| 30–44 | 0.089* | (0.039) | 0.042 | (0.030) | 1,096 | 0.011 | (0.082) | −0.006 | (0.087) | 144 |
| 45–64 | −0.009 | (0.025) | 0.019 | (0.016) | 2,035 | 0.093* | (0.054) | 0.162** | (0.064) | 229 |
| 65+ | −0.003 | (0.029) | 0.025 | (0.021) | 1,728 | 0.057 | (0.071) | 0.030 | (0.086) | 96 |
| **Education** | | | | | | | | | | |
| No degree | 0.013 | (0.056) | 0.026 | (0.016) | 4,154 | 0.045 | (0.050) | 0.066 | (0.048) | 473 |
| Degree | 0.000 | (0.029) | −0.001 | (0.017) | 1,609 | 0.022 | (0.061) | 0.068 | (0.070) | 136 |
| **Ethnic background** | | | | | | | | | | |
| Ethnic minority | −0.001 | (0.056) | −0.007 | (0.047) | 824 | 0.055 | (0.050) | 0.106 | (0.066) | 299 |
| White British | 0.013 | (0.018) | 0.025* | (0.012) | 4,960 | 0.045 | (0.037) | 0.066 | (0.044) | 564 |
| **Individual income** | | | | | | | | | | |
| Q1 (Bottom) | −0.005 | (0.034) | 0.010 | (0.027) | 1,372 | −0.004 | (0.051) | 0.046 | (0.063) | 236 |
| Q2 | 0.030 | (0.031) | 0.021 | (0.022) | 1,418 | 0.109* | (0.062) | 0.068 | (0.078) | 133 |
| Q3 | 0.000 | (0.030) | 0.025 | (0.022) | 1,515 | 0.040 | (0.071) | 0.141 | (0.092) | 120 |
| Q4 (Top) | 0.017 | (0.026) | 0.024 | (0.018) | 1,479 | 0.065 | (0.086) | 0.060 | (0.091) | 133 |
| **Household size (adults)** | | | | | | | | | | |
| 1 | 0.017 | (0.031) | 0.024 | (0.021) | 1,239 | 0.031 | (0.062) | 0.075 | (0.102) | 44 |
| 2 | 0.016 | (0.024) | 0.031* | (0.016) | 2,864 | 0.086* | (0.051) | 0.088 | (0.058) | 332 |
| 3 | −0.012 | (0.049) | 0.019 | (0.034) | 873 | −0.014 | (0.067) | −0.028 | (0.078) | 214 |
| 4 or more | 0.000 | (0.060) | −0.017 | (0.046) | 808 | 0.077 | (0.050) | 0.170** | (0.069) | 273 |
| **Response pattern** | | | | | | | | | | |
| Irregular respondent | 0.016 | (0.060) | 0.039 | (0.066) | 411 | 0.027 | (0.029) | 0.042 | (0.035) | 663 |
| Regular respondent | 0.009 | (0.017) | 0.017 | (0.011) | 5,373 | 0.114 | (0.080) | 0.180* | (0.081) | 200 |
| **Previous wave fieldwork**[1] | | | | | | | | | | |
| Web-first (HWP) | 0.025 | (0.020) | 0.018 | (0.014) | 4,152 | 0.069* | (0.036) | 0.073 | (0.045) | 611 |
| CAPI-only (HWP) | −0.033 | (0.043) | 0.046 | (0.028) | 863 | 0.040 | (0.098) | 0.197* | (0.105) | 126 |
| CAPI-first (LWP) | 0.061 | (0.061) | 0.029 | (0.054) | 599 | −0.133 | (0.083) | −0.101 | (0.098) | 90 |
| CAPI-only (LWP) | 0.089 | (0.119) | 0.028 | (0.050) | 170 | 0.180 | (0.130) | 0.165 | (0.174) | 36 |

Sig. *$p < .05$, **$p < .01$, ***$p < .001$. These estimates are marginal effects expressed as proportions. Web-only response rate refers to adults completing the individual questionnaire online during the first five weeks of the fieldwork (web-only phase). [1] Previous wave CAPI-only sample members were divided into those with a high response propensity on the web (HWP), who are comparable to the (previously) web-first group (HWP), and those with a low web propensity (LWP), who are comparable to the (previously) CAPI-first group (LWP).

at the end of the fieldwork (Web + CATI) (RQ 1.2). However, previous wave non-respondents being offered the increased conditional incentive exhibited a higher response rate (7.7 p.p.) at the end of the fieldwork. The slight to null effect of the higher unconditional incentive among cooperative panel members can be interpreted in the light of the leverage-salience theory (Groves et al., 2000). The increase in the incentive value might not be salient to panel members who were already motivated to participate. In contrast, the change in the value of the conditional incentive played a role in fostering response among the previous wave non-respondents. This is consistent with findings from other experiments that increased the value of incentives in a longitudinal survey (Laurie, 2007; Rodgers, 2011), although in this experiment, the conditionality of the incentive was different for previous wave respondents (unconditional) and non-respondents (conditional).

Different mechanisms can explain the positive effect of conditional incentives on previous wave non-respondents. It could be that the higher value of the conditional incentive,

which increased from £10 to £20, i.e. 100% in relative terms, impacted the benefit-cost calculation of taking the survey (Biner & Kidd, 1994). We cannot ignore the possible influence of other household members who received the higher incentive and might have urged the previous wave non-respondents to cooperate this time. The results show that the incentive was more effective on non-cooperative panel members living in large households of four or more adults. This suggests that the combined household incentive and the pressure of other household members might have contributed to the increase in response rates. Also, the fact that regular respondents reacted better to the higher conditional incentive suggests the reduced effect that these increases might have on those with the lowest response propensities.

Research questions RQ 2.1 and RQ 2.2 investigated the effect of the increased value of the incentive on different sample subgroups. We only observed a slight positive effect of the unconditional incentive on three sample subgroups: males, white British, and those living with another adult. These effect sizes were all relatively small and reinforced the idea that the level of intrinsic motivation might better explain the effect of the higher incentive compared to the demographic characteristics. Regarding the conditional incentive, as pointed out above, the effect concentrated on groups that are associated with higher response rates: females, middle-aged (45–64), and regular respondents, somehow contradicting our expectations from other studies where people on lower income or from ethnic minority backgrounds reacted better to the use of incentives (Mack et al., 1998). Also, the higher conditional incentive effectively boosted participation among sample members that transitioned from a CAPI-only to a web-first mixed-mode design in the wave where the incentive value was raised – though it appears to have done this by encouraging them to respond by telephone rather than web. This aligns with previous research that identified higher incentives beneficial role in facilitating the transition to a mixed-mode design (Gaia, 2017).

We also examined whether higher incentives could encourage sample members to respond more promptly to the extent that fieldwork efforts and costs could be saved in a sequential mixed-mode design that combines web-first and an interviewer-administered mode. In a web and telephone sequential design, the savings come from the individual interviews completed during the web-only period. We looked at whether the higher incentive increased the response rate at the end of the web-only phase but did not find this effect except for the panel members aged 30–44 who received the unconditional incentive, and females, those aged 45–65 and those living with another adult, among the previous wave non-respondents being offered the conditional incentive.

A different scenario of interest to some household studies is the sequential combination of web and CAPI (RQ 3). In household surveys, where all adults in the household are invited to participate, substantial cost savings are achieved only if all household members participate online before the interviewer-administered phase begins. The experiment shows that the change in the incentive value slightly increased the full household response rate at the end of web-only phase of the fieldwork (3.6 p.p.). However, the consequent cost savings in CAPI fieldwork might not compensate for the additional cost of the higher incentives and their implementation.

This experiment has limitations. First, the experiment was carried out during the COVID-19 pandemic. This might have conditioned the results. To identify a possible effect of the pandemic, we have compared the response rate and sample composition of the control group to the previous and subsequent monthly samples (Online Supplementary G). We did not find evidence that the pandemic affected these outcomes, and therefore, we cannot rule out that the effects we report in this paper could be observed outside of pandemic times. Second, we were not able to disentangle the effects of the incentive conditionality from the effects of past response behaviour. The conclusions are limited to the effects of increasing the value of incentives in the context of offering unconditional incentives to previous wave respondents and conditional incentives to previous wave non-respondents.

## Notes

1. *Understanding Society* main study sample is randomly split into 24 monthly samples. The fieldwork of each monthly sample lasts for up to six months. More information about the sample design of the study can be found in Online Supplementary A.
2. In order to enable the comparison of the web-first and the CAPI-only subgroups, we split the CAPI-only group into high web propensity (HWP) households – comparable to the web-first (HWP) group – and low web propensity (LWP) households – comparable to the CAPI-first (LWP).

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