



# Incentives in surveys

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**Abstract:**

This FORS guide discusses the effect of incentives on survey completion/response rate, sample composition, and response quality. The guide particularly emphasizes the effects of different types of incentives – conditional vs. unconditional, monetary vs. non-monetary – for encouraging survey participation and reducing panel survey attrition in the Swiss context.

**Keywords:** survey design, unit nonresponse, response rates, sample composition, attrition

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**The FORS Guides to survey methods and data management**

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## 1. INTRODUCTION

To encourage people to participate in a survey, survey practitioners need to know why people take part in it. Generally, people respond to survey requests for three reasons: (1) they want to be helpful; (2) they are interested in the survey topic; or (3) they have a tangible benefit (Singer & Ye, 2013). While the survey invitation can influence the first two reasons (Groves, Cialdini, & Couper, 1992), these reasons partly depend on peoples' interest and characteristics.

When survey designers want to encourage people's survey participation with the help of tangible benefits, they mainly use incentives. Incentives can be any monetary, semi-monetary, or non-monetary gifts offered to sample members (Pforr, 2016; Singer & Ye, 2013). Besides appreciating respondent's time and effort, incentives aim to increase response rates (Groves & Couper, 1998), and to improve the representativeness of the respondent sample and the response quality. However, if survey designers are not careful in designing incentives, incentives can even be harmful for the sample composition (e.g., by attracting certain groups of people). Survey practitioners have to decide:

- a) whether they want to use incentives at all,
- b) which type of incentives they want to use,
- c) on the value of the incentives used.

In the following, we discuss in which situation survey designers may use incentives or not – followed by a description of different types of incentives and how to decide on the value of the incentive. Current research results about the effects of incentives on survey participation and response are then presented. This guide concludes with some examples of incentives in specific survey designs and with findings on incentive effects in surveys conducted either at FORS or in the Swiss context.

## 2. DECISION TO USE INCENTIVES

While incentives are an effective way to increase response rates, high response rates do not mean less bias (Groves, 2006). Furthermore, the impact of incentives can vary a lot, depending on the situation. Hence, several aspects need to be considered when introducing incentives.

There can be various reasons for not using incentives in a survey, including a lack of budget, a prominent and trustful sponsor (e.g., governmental surveys), a survey where response rates do not matter, or the fear of biased responses. Concerning the budget, incentives do not automatically increase costs. Incentives might reduce costs (interviewer time, postage) if smaller gross sample size and less effort in contacting individuals are needed. Moreover, the fieldwork period can be shorter, as the required response rates may be achieved earlier. Thus, all costs and benefits should be considered before making a decision.

Sometimes surveys with a prominent sponsor achieve high response rates with a balanced sample composition and high quality of responses, just because participants deem the

sponsor as trustful, and hence, they consider their participation as useful. In these cases, the cost/benefit ratio for adding an incentive can be less appealing. Finally, in some contexts, an incentive can be inappropriate, such as in government surveys.

If, however, incentives are an option, the impact of incentives on response rates, sample composition, and measurement quality should be considered carefully. It is also essential to think about their legitimacy. These questions are detailed below.

## 2.1 EFFECTS ON RESPONSE RATES

Incentives increase the motivation to participate through two mechanisms: activate the norm of reciprocity and compensate for barriers to participate (Ernst Stähli & Joye, 2016). The norm of reciprocity posits that sample members are encouraged to return the favor because keeping the reward without participating would lead to a discrepancy with the self-image of honesty (Gideon, 2012). Barriers include perceived costs, time, and burden associated with the survey (Diekmann & Jann, 2001; Dillman, 1978; Groves, Singer, & Corning, 2000).

Previous studies have shown that incentives affect response rates. For example, a meta-analysis of 114 computer-assisted telephone interview (CATI) surveys in the United States reports a 10% increase in response rates when using incentives (Holbrook, Krosnick, & Pfent, 2008). Another study indicates that incentives increased odds to respond by 20% in web surveys (Göriz, 2006). More generally, Pforr (2016) points out that incentives increase response rates in all survey modes, especially in postal surveys.

## 2.2 EFFECTS ON SAMPLE COMPOSITION

Providing incentives can impact the sample composition by modifying the selection process. This selection process can be explained by inter-individual variations in the reciprocity standard (Croson & Buchan, 1999) and different perceptions of opportunity costs (Narasimhan, 1984). Nevertheless, incentives may or may not encourage underrepresented groups to participate in greater extents.

Results of incentive effects on sample composition are inconclusive and depend on the context and type of incentive. Three studies, which were included in a meta-analysis, show that otherwise, under-represented respondent groups were more involved when an incentive was offered (Singer, Van Hoewyk, Gebler, Raghunathan, & McGonagle, 1999). In five other studies, the incentive did not change the sample composition (Singer, Van Hoewyk et al., 1999). On the one hand, Simmons and Wilmot (2004) report that incentives increase the involvement of specific groups. On the other hand, Singer and Bossarte (2006) find that incentives may raise response rates without decreasing nonresponse bias because they motivate individuals who were already more predisposed to respond. In a meta-analysis, Singer and Ye (2013) conclude that most studies find no or small effects on sample composition and that effects of incentives on sample composition are inconclusive. Incentives could be particularly crucial in surveys that focus on populations that tend to respond less to surveys such as young people, ethnic minorities, or groups with low education and income levels.

## 2.3 EFFECTS ON RESPONSE QUALITY

Incentives may impact response behaviour because the attention dedicated to the task may increase with an incentive. This increase in attention may reduce errors or the number of missed items. Furthermore, incentives could impact the mood of respondents, which, according to the feelings-as-information hypothesis (Schwarz, 2011), influence decision outcomes. However, in their meta-analysis, Singer and Ye (2013) find only weak indications of these two possible effects. In addition, providing an incentive could encourage respondents to provide favourable responses in a desire to please. However, a study on self-reporting about delinquency finds that incentives do not lead to sponsorship effects and thus do not encourage delinquency reports (Becker & Mehlkop, 2011). Finally, in the meta-analysis from Singer, Van Hoewyk et al. (1999), 13 studies had some information about the impact of incentives on data quality. Among the studies used in this meta-analysis, no difference was found in seven studies, whereas in six other studies, an improved response quality was found (Singer, Van Hoewyk et al., 1999).

## 2.4 LEGITIMACY OF INCENTIVES

Incentives can raise criticisms. Firstly, some researchers are raising concerns about the long-term effect of the widespread use of incentives on sample members' expectations (Singer, Van Hoewyk, & Maher, 1998). They suspect that in the long run, incentives may lead sample members to believe that any participation in a study should be remunerated and thus decrease the participation in non-incentivized surveys. More money will need to be spent on incentives (Pforr, 2016). However, despite scarce research, no decrease in participation in non-incentivized surveys has been observed (Pforr & Rammstedt, 2016).

Another aspect is that when incentives are given, the survey participation becomes a paid activity and no longer relies on the volunteering principle (Grant, 2011; Singer & Couper, 2008). This perception is particularly problematic when different groups receive different incentives or when incentives are only used when following-up persons who are particularly hard to reach.

Survey designers must also be aware that some people consider incentives as a waste of public funds, which can lead to a negative perception of the incentive. For example, in official government surveys where high response rates and a balanced sample composition can be reached due to the sponsor of the survey, the added value of an incentive may be smaller.

# 3. TYPES OF INCENTIVES AND DELIVERY METHOD

Once survey designers have decided to use an incentive, decisions on the type, the timing, and the delivery method of the incentive need to be made.

## 3.1 TYPES OF INCENTIVES

Incentives may be given to sample members as monetary, semi-monetary, or non-monetary gifts (Singer, 2002; Singer & Ye, 2013). There are many possible non-monetary or semi-monetary incentives, ranging from material gifts (e.g., pens) to vouchers and donations to

associations. Monetary incentives include cash but also cash-like forms such as prepaid token incentives (e.g., cheques).

Next, survey designers will have to decide whether the incentives are given up-front or at the end of a survey. Unconditional (prepaid) incentives are provided before survey participation, regardless of whether the person participated in the study or not. Conditional incentives, in turn, are given to sample members only once they have participated in the survey. Furthermore, a mix of both incentive types is possible, e.g., people are receiving an unconditional incentive, and they are promised an additional incentive for participating. Additional, conditional incentives are often used to reward for additional survey tasks or for regularly participating in panel surveys.

In general, unconditional monetary incentives have been proven to be most efficient (Ernst Stähli & Joye, 2016). Following Dillman, Smyth, and Christian (2014 and personal communication), the lowest value of an unconditional incentive is better than any conditional incentive, as the effort of respondents is acknowledged in the form of social exchange. Conditional incentives in the form of a lottery or a prize drawing are often not found to increase response rates (Porter & Whitcomb, 2003). Pekari (2017), however, found that an unconditional incentive combined with a lottery can be more effective than an additional monetary prize.

### 3.2 DELIVERY METHOD

Web surveys that only use e-mail contacts and telephone surveys with no advance letter raise problems for delivering prepaid financial incentives. In this context, survey designers have experimented with electronic gift cards, or money through online payment systems (e.g., PayPal; see Birnholtz, Horn, Finholt, & Bae, 2004). If cash incentives are sent via postal mail, one must keep in mind that some people throw away envelopes without opening them. Although this might happen unintentionally, throwing away money raises ethical concerns. Therefore, it is recommended to use any monetary token, such as cheques, although cheques and vouchers are generally less effective than cash (Ernst Stähli & Joye, 2016).

### 3.3 EFFECTS OF THE TYPE OF INCENTIVES ON RESPONSE RATES

Many studies have investigated effects on response rates by experimentally varying types of incentives and survey modes. This guide compares effects on response rates of monetary and non-monetary incentives, as well as of conditional and unconditional incentives.

#### **Monetary and non-monetary incentives by survey mode**

In a meta-analysis, participation in mail surveys increased with monetary and non-monetary incentives, by 19 and eight percentage points respectively, compared to no incentives (Church, 1993). The monetary incentives were thus more effective than the non-monetary incentives. Similar results were found in another meta-analysis focusing on 292 paper-and-pencil surveys (Edwards et al., 2002) with odds ratios that were much higher when monetary incentives were given (OR=2.0) compared to non-monetary incentives (OR=1.2). In a meta-analysis of 39 CAPI and CATI surveys, Singer, Van Hoewyk et al. (1999) found that monetary incentives yielded a four percentage points higher response rate than non-monetary incentives. Finally, Göritz (2004) found a greater increase in online survey participation with bonus points than with gifts and cash lotteries.

## Conditional and unconditional incentives by survey mode

Edwards et al. (2002) found that unconditional incentives increased the odds of participation by 71% compared to conditional incentives in paper-and-pencil surveys. This effect of unconditional incentives on response rates can also be found in telephone surveys (Sánchez-Fernández, Muñoz-Leiva, Montoro-Ríos, & Ibáñez-Zapata, 2010) and in web surveys, where sample members were recruited by mail (Alexander et al., 2008). Prepaid incentives also had better participation rates. Göritz (2005) found in five experimental studies, conducted in online panels, that the odds of participation with conditional incentives were lower than with unconditional incentives (OR =0.81).

To conclude, after controlling for other survey characteristics, cash incentives and prepaid incentives have a more positive impact on the response rates than non-monetary and conditional incentives (see Ernst Stähli & Joye, 2016; Pforr, 2016; Pforr et al., 2015).

### 3.4 EFFECTS OF THE TYPE OF INCENTIVES ON SAMPLE COMPOSITION

Little research has been conducted on the impact of different types of incentives on the sample composition. Some results tend to show that it can affect the representativeness. Parsons and Manierre (2014) found that prepaid token incentives may result in a less representative sample composition than no incentives, particularly in terms of gender. Indeed, women are generally more likely to participate in surveys (Porter & Whitcomb, 2003), and this is, even more, the case with prepaid incentives. Teisl, Roe, and Vayda (2006) showed that different incentive conditions yield different responses across some experimental conditions, even when response rates are the same, and demographic compositions are controlled for. They conclude that different incentives draw different kinds of respondents.

### 3.5 EFFECTS OF THE TYPE OF INCENTIVES ON RESPONSE QUALITY

Several authors seem to conclude that both conditional and unconditional incentives increase data quality, including by increasing accuracy and reducing item non-response (Singer, Groves, & Corning, 1999; Singer et al., 1998; Laurie & Lynn, 2009).

## 4. VALUE OF INCENTIVES

There is no ideal value or amount for survey incentives, as this depends on the target population, the survey mode, topic, tasks, and length. However, considering the budget, target population, and cost-efficiency help to determine the value of incentives.

### 4.1 BUDGET

For conditional monetary incentives, the cost of the incentive per sample member equals the incentive cost multiplied by the expected response rate (or the minimum and the maximum to get a range). If cheques are used, one must estimate rates of cashed cheques. Assumptions are needed about the expected response rate (RR), the expected rate of cashed incentives by respondents (cashR), and the expected rate of cashed incentives by non-respondents (cashNR). Costs of cheques equal their nominal value (NV) plus administration fees (AF).

$$\text{Approximated incentive costs per sample member} = RR * \text{cashR} * (NV + AF) + (1 - RR) * \text{cashNR} * (NV + AF)$$

*Approximated total costs = sample size \* Approximated incentive costs per sample member*

$$\text{Expected incentive cost per respondent} = \frac{\text{Approximated incentive costs per sample member}}{\text{Expected response rate}}$$

This calculation is exemplified, assuming a sample of 2,000 units, a nominal value (NV) of 20 Swiss francs (CHF), and an administrative fee (AF) of 4.20 CHF per cashed cheque. Under the assumption that 83% of the respondents and 13% of the non-respondents will cash the incentive (see Lipps & Pekari, 2016), overall, a minimum response rate of 30% and a maximum response rate of 50% is expected. Hence, the minimum incentive cost per sample member are 8.23 CHF ( $0.3 * 0.83 * 24.2 + 0.7 * 0.13 * 24.2$ ), and thus, the total costs are minimum 16,456 CHF. The maximum response rate costs are 11.62 CHF incentive costs per sample member ( $0.5 * 0.83 * 24.2 + 0.5 * 0.13 * 24.2$ ) and a total of 23,232 CHF.

## 4.2 TARGET POPULATION

It is vital to offer an incentive which the target population appreciates. As an example, assume that physicians are invited to complete a healthcare survey. Based on a cost-benefit evaluation, a high-value incentive is needed, since physicians often have a limited amount of time and have a relatively high income. In this example, however, one can assume a high intrinsic motivation to participate. As a consequence, a token of appreciation emphasizing the reciprocity principle would probably be a good alternative (Ernst Stähli & Joye, 2016; Groves et al., 1992).

## 4.3 COST-EFFICIENCY

Especially in general population surveys, or when a special population is targeted, incentives can save money. Incentives increase the likelihood that a “required” response rate is reached faster (Lipps & Pekari, 2016). Hence, due to incentives, fewer encouragements, such as reminders, might be needed, and the fieldwork period might be shortened. Incentives can, thus, also save money.

## 4.4 EFFECTS OF THE VALUE OF INCENTIVES ON RESPONSE RATES

In CAPI and CATI surveys, Singer, Van Hoewyk et al. (1999) found that response rates increased by a third of a percentage point per dollar of incentive paid (with a nonlinear effect). Another meta-analysis reports that in screening interviews, a small prepaid incentive (\$1-\$5) increases the response rate but modestly (Cantor, O’Hare, & O’Connor, 2008). For higher values (\$5-\$20), conditional incentives generally did not affect that phase. For the actual interview, conditional monetary incentives under \$10 had no benefit, while incentives between \$15 and \$35 increased response rates. Edwards, Cooper, Roberts, and Frost (2005) estimated that the increase of the response rates related to a \$0.01 increase is the highest under \$0.5 (about 1% increased odds) but even if the effect is smaller for more substantial values, it is still significant up to \$5. Generally, the higher the value of the incentive, the higher the response rate. However, this relationship is not linear and the slope slows down as the incentives increase which means that the motivation to participate has a limit (Goyder, 1982; Heberlein & Baumgartner, 1978; Linsky, 1975, pp. 96–98; Singer et al., 1998; Singer & Ye, 2013; Yammarino, Skinner, & Childers, 1991; Yu & Cooper, 1983).

## 5. INCENTIVES IN SPECIAL SURVEY DESIGNS

### 5.1 ADAPTIVE SURVEY DESIGN

Incentives are frequently discussed in connection with survey measures that are differentially tailored to different respondent groups (different incentives in adaptive designs; see Dillman, Smyth, & Christian, 2009). For example, if certain groups of people have a lower propensity to participate, a (potential) selective nonresponse can be countered by higher incentives for these groups of people. These people are then targeted with (higher value) incentives either in the first survey request or in later survey requests. Related concerns are that it is unknown how strongly these groups of people react to the offered incentives and that ethical issues arise when incentivising people differently.

### 5.2 INCENTIVES IN MOBILE WEB SURVEYS

Depending on the design, mobile web surveys require different survey tasks, such as installing a survey application or collecting passive data (Herzing, 2019). These tasks or the structure of the survey can be considered in the incentivisation. As research is sparse on this specific topic, this guide presents three examples of incentivisation.

First, the innovation sample of the Cohort & Longitudinal Studies Enhancement Resources (CLOSER) was rewarded with vouchers from an online shop at the end of the project (Jäckle, Gaia, & Benzeval, 2018). Respondents received £2 or £6 for downloading the survey application (experimental conditions had the same effects on response rate), £0.5 per day for using the application; a bonus of £10 for using the application for 30 consecutive days; and, £3 for filling out a short questionnaire at the end of the project.

Second, in the IAB-SMART study (Haas, Kreuter, Keusch, Trappmann, & Bähr, 2018) respondents received an Amazon voucher for installing the survey application (10€ or 20€), for activating data collection functions (1€ for each function activated for 30 days, and for one experimental condition additional 5€ if all functions were activated for 30 consecutive days), and for answering survey questions (up to 20€), summing up to incentives between 60€ to 100€ see (Haas et al., 2018). An effect of the overall promised incentive on the participation rate was found, indicating between 60€ to 70€ as additional motivation to participate (Haas et al., 2018).

Third, in a survey on migrants, no differences were found between a conditional incentive of 30€ for having the survey application installed for full three months versus no incentive (the no incentive group also received an incentive at the end of the study; see Keusch, Leonard, Sajons, & Steiner, 2019).

### 5.3 INCENTIVES IN PANEL STUDIES

Since participating in a panel study is more burdensome, and it is more difficult for survey designers to maintain a sufficient sample size, incentives are particularly crucial (Laurie & Lynn, 2009). Because not only the response rate in the first wave, but rather the longitudinal response rate matters, incentives should act in the long run. Pforr et al. (2015) could not confirm that incentives increased response rates in later waves. In the context of the Swiss Election Study 2015, Pekari (2017) found that combining an unconditional incentive in the first wave with a conditional incentive for participating in subsequent waves increased retention rates. Surprisingly, the lottery for a high-value item (raffle of three iPads) was just

as effective as a cash prize while being more cost-efficient (Pekari, 2017). Both conditional incentives were effective at improving representativeness in terms of target variables, whereas only small effects were found on sample composition (Pekari, 2017).

Scherpenzeel and Toepoel (2012) tested the effects of different incentives on the recruitment of 5'000 households for the Longitudinal Internet Studies for the Social sciences (LISS) panel. Unconditional incentives were more efficient than promised incentives in this phase. They found no differences between the three unconditional incentives (10, 20, or 50 €). With all values, the acceptance rate was 15% percentage points higher than without incentives. While this led them to choose the prepaid 10€ incentive, they were losing many respondents at the third phase of recruitment – the registration phase –. As a result, an additional incentive was added then.

Recent approaches use information from previous panel waves to adopt incentives in future waves. However, there are few findings regarding effects of differential incentive strategies.

## 6. INCENTIVES IN THE SWISS CONTEXT

Lipps and Pekari (2016) find in a Swiss election web survey (Selects 2011) that an unconditional 20 CHF postal cheque strongly increased completion rates of all groups of people, except people without Internet access or limited computer literacy. Sample composition bias was higher in the unincentivised survey sample. In addition, using postal cheques resulted in cost savings: 1) not all sample members cashed the cheques, and 2) costs were reduced due to a high response rate at the beginning of the field period which necessitated fewer and reminder letters 3) incentives themselves increased the costs only by about a sixth of the overall costs. Regarding substantive outcomes, the web-with-incentive design comes closer to the official voting results regarding turnout and party choice compared to the web without incentive or CATI.

Lipps (2010) investigated effects from one prepaid cash-equivalent (stamps worth 12 CHF), and two promised nonmonetary incentives in the CATI Swiss Household Panel (SHP). There were small positive cooperation effects of the prepaid incentive on both the household and the individual level, especially in larger households. Incentives tend to save fieldwork time and partially the number of contacts needed at the individual level.

Becker and Glauser (2018) evaluated the short- and long-term effects of a prepaid incentive (Migros-supermarket cash card of 10 CHF) on students' cooperation and response rate in the fourth and fifth wave of the DAB (Determinanten der Ausbildungswahl und der Berufsbildungschancen) panel study. The monetary incentive had a positive effect on the response rate in the fourth but not in the subsequent wave, notably because of the effect that the incentive fades over time. No interaction, however, could be shown between reminders and the prepaid incentive in terms of strengthening reciprocity.

In the first round of the Swiss part of the face-to-face European Social Survey (ESS 2002, Jowell, & the Central Co-ordinating Team, 2003), low response rates (34%) led to the introduction of a cash incentive of 30 CHF promised in the announcement letter (alternatively a donation) in the consecutive rounds. In the second round of the ESS, the response rate increased to 47% (see documentation Joye, Schöbi, & Wälti, 2007). The ESS 2010 experiment compared a promised with a prepaid 30 CHF incentive (Joye, Pollien,

Sapin, & Ernst Stähli, 2010; Roberts, Vandenplas, & Ernst Stähli, 2014) with response rates of 52% and 58%, respectively. To test the amount of the incentive, the ESS 2012 experiment compared a promised 30 CHF with a prepaid 10 CHF incentive with response rates of 55% and 49%, respectively. An experiment realized within the Family Times Survey showed a slightly higher response rate with 10 CHF unconditional cash incentive than with a conditional 20 CHF cash incentive (Joye, Kessler, & Ernst Stähli, 2013). It seems that as long as a "reasonable" incentive value is used, unconditional incentives outperform conditional incentives.

To reduce some sample members' reactions about the misuse of public money, MOSAiCH 2013 tested postal cheques (nominal value 20 CHF) against 10 CHF cash. Cash resulted in higher response rates (response rate of 54% versus 50%, documentation of Ernst Stähli et al., 2014).

Regarding the representation of socio-demographic categories between experimental conditions, Joye et al. (2013) found no significant differences regarding nationality, age, and civil status. However, they found a slightly higher response rate for the unconditional incentive in urban areas. Thus, unconditional incentives seem to help to overcome specific contact difficulties of face-to-face interviews in cities.

Diekmann and Jann (2001) studied the effect of conditional versus unconditional incentives (phone card of a value of 10 CHF) in a mail survey, including a control group with no incentive. The conditional incentive did not change the response rate, while the unconditional incentive group showed a ten percentage points higher response rate. Becker, Imhof, and Mehlkop (2007) found in a paper and pencil survey that a conditional 10 CHF cash provided higher response rates than an unconditional 10 CHF cash incentive or no incentive (63%, 34%, and 39%). Using the same survey, Becker and Mehlkop (2011) found no effect on sample composition, selective sample responses, or of over-reporting of delinquency or refusing to answer questions.

## 7. IMPLICATIONS FOR SURVEY PRACTITIONERS

Based on this evidence, we provide some recommendations, which mainly apply to the Swiss context.

*Recommendation 1* – When deciding for or against incentives, consider previous research, which suggests that incentives increase data quality in general population surveys in most survey modes.

*Recommendation 2* – Different types of incentives are differently effective. In general, prepaid monetary incentives are recommended, but even small incentives can increase response rates.

*Recommendation 3* – Think about delivery methods. Incentives should be easy to deliver and redeem for people.

*Recommendation 4* – Think about your budget. Estimate a conservative and a liberal response rate (e.g., from surveys with similar characteristics). Then approximate potential expenses for incentives in your survey so that you do not inadvertently exceed your budget.

*Recommendation 5* – Think about the appropriateness of the incentive for your target population. Do not offer incentives that are relatively valueless for your target population.

*Recommendation 6* – Take different survey modes and survey designs into account to define the value of your incentives. For example, in large-scale face-to-face surveys, an unconditional monetary incentive of 10 CHF is currently considered an adequate incentive value in Switzerland.

## 8. FURTHER READINGS

One of the introductory books to help you get started with the incentivisation is from Dillman et al. (2014, pp. 30 ff., 330 ff., 368 ff.). Furthermore, there is more literature on the evaluation of incentives from Castiglioni, Pforr, and Krieger (2008); Ernst Stähli and Joye (2016); Guo, Kopec, Cibere, Li, and Goldsmith (2016); and Roberts et al. (2014). One can find more explanation on the topic of incentive effects and costs for the Swiss case in Lipps and Pekari (2016).

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