

# The SOM Institute's Notes on Survey Methodology – 2026:3

## Reaching for the hard to reach: Using diversified incentives to increase survey response rates among the young and persons born outside the Nordics

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### ABSTRACT

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Diversified incentives have been suggested as a remedy for declining survey response rates and data quality among hard-to-reach populations like young and born outside the Nordics. Building on earlier experiments in 2021 and 2022, this report presents the results of two experiments conducted in two studies (Study 1 and Study 2) in 2023, which tested the effectiveness of different monetary incentives. Study 1 targeted young respondents using three different incentives: a grocery shop gift card worth 50 SEK, a grocery shop gift card worth 75 SEK, and a lottery scratch ticket. Results showed that the 75 SEK gift card raised response rates by approximately four percentage points compared with the other two incentives. Study 2 targeted individuals born outside the Nordics, employing a 75 SEK grocery gift card, a 100 SEK café gift card, and a lottery scratch ticket. The 75 SEK grocery gift card increased response rates by 4.2 points relative to the lottery ticket. The café gift card had no general effect, except amongst women and sample persons born outside Europe, for whom it generated higher response rates. Effects on data quality, defined as item nonresponse, were mixed. In Study 1, the 50 SEK grocery card was linked to lower quality compared to lottery tickets, whereas the 75 SEK card improved quality relative to the 50 SEK gift card. In Study 2, the café gift card showed marginally worse data quality than the grocery shop gift card, despite no overall response advantage. The findings confirm that higher-value, practical incentives can improve participation but may risk compromising data quality in some subgroups, and that there are nuances even in subgroups which should be taken into consideration when designing diversified incentives. Effective diversified incentive strategies must therefore balance value, type, and subgroup preferences to enhance response rates while minimizing detrimental effects on data quality.

## INTRODUCTION

Surveys have long faced challenges with decreasing response rates and the following risk of nonresponse bias (Groves, 2006). This decline in response rates, particularly among hard-to-reach segments within survey populations, can skew the data and insights derived from these surveys (Groves, 2006; Groves and Peytcheva, 2008; Groves and Couper, 2012). Offering incentives, monetary or otherwise, for survey participation has been recognized as an effective method to boost overall response rates (Singer and Ye, 2013), because highlighting participation benefits can lead to higher engagement (Dillman et al., 2014). Although incentives of larger values have been found to result in higher response rates, there is still a lack of knowledge to what degree varying incentive values influence response rates (Singer and Ye, 2013; Mercer et al., 2015), especially among hard-to-reach groups. It is further confirmed that response rates amongst young people and those born outside the Nordics have declined at a faster pace than for other groups in recent years, leading to a potential growth of nonresponse bias (SOM-institutet, 2023; Lundmark and Backström, 2023).

The two experiments presented in this study follow up on two previous studies conducted by the SOM-institute in 2021 and 2022, that used an incentive strategy aiming to increase response propensities among those aged 18-39 and those born outside the Nordics. The study in 2021 (Sandelin and Falk, 2023) found that increasing the incentive from a lottery scratch ticket (retail value 30 SEK) to a digital gift card valued 50 SEK reduced the response rate among those aged 18-39, and increasing the incentive to a digital gift card valued 99 SEK had no effect on the response rate among those born outside the Nordics. A follow up study (Sandelin and Falk, 2024) was conducted in 2022 that targeted the same two

subgroups as in the experiments in 2021, but offering different treatment incentives. That study concluded that cinema gift cards valued 150 SEK and grocery shop gift cards valued 75 SEK increased response rates compared to lottery scratch tickets among 18–39-year-olds, and that café gift cards increased response rates among respondents born outside the Nordics, mainly due to a strong effect on women. This positive effect on response rate was not at the expense of data quality, which was not significantly affected.

In this paper, we follow up and replicate the studies from 2021 and 2022, with the same general aim: to investigate cost-effective incentive strategies to boost response propensities and reduce nonresponse bias – while not compromising data quality – among two subgroups, known for difficulties in survey engagement (young people and persons born outside the Nordics).

## **HYPOTHESES**

### **RESPONSE RATES**

H1a: Sample persons who are offered a gift card incentive at any value may produce higher response rate than sample persons who are offered a lottery scratch ticket.

H1b: Sample persons who are offered a grocery shop gift card incentive worth 75 SEK may produce higher response rate than sample persons who are offered a grocery shop gift card incentive worth 50 SEK.

H1c: Sample persons who are offered a café gift card incentive worth 100 SEK may be more likely to complete the questionnaire than sample persons who are offered a grocery shop gift card incentive worth 75 SEK.

## **DATA QUALITY**

Larger value grocery shop gift cards as incentives may make data quality worse as some sample persons might not be as thorough and rather prioritize sending in the questionnaire fast in order to receive the gift card more quickly. Therefore, we hypothesize that:

H2a: Sample persons who are offered a gift card incentive at any value may produce worse data quality than sample persons who are offered a lottery scratch ticket.

H2b: Sample persons who are offered the grocery shop gift card incentive worth 75 SEK may produce worse data quality than sample persons who are offered the grocery shop gift card incentive worth 50 SEK.

H2c: Sample persons who are offered a café gift card incentive worth 100 SEK may produce worse data quality than sample persons who are offered a grocery shop gift card incentive worth 75 SEK.

## **METHODS AND MATERIALS**

### **PREREGISTRATION**

The hypotheses, procedure, exclusion criteria, and analysis plan were preregistered before data collection had completed and prior to analyses. The preregistrations can be found at <https://osf.io/dv9w6> and <https://osf.io/udwjq>.

### **SAMPLE**

Two studies were conducted, hereafter referred to as Study 1 and Study 2, to which three different sub-samples were invited, all drawn on August 14, 2023, registered by the

Swedish Tax Authority as residing in three different regions in Sweden. Only individuals who were 16-90 years old were invited to participate. The first two sub-samples, participating in Study 1, were administered in the experiment targeting individuals aged 18-39.<sup>1</sup> The first sub-sample was a random sample of individuals registered residing in Sweden. This sub-sample survey consisted of seven different editions randomized among sample persons, and the total number of survey questions varied between 58 and 68. The second sub-sample was a random sample of individuals registered as residing in the West Region of Sweden. This sub-sample consisted of one edition of 73 survey questions. (See Table 1)

**Table 1. Overview of experimental groups in Study 1.**

		The National SOM survey, 2023	The West regional SOM survey, 2023
<b>Incentive types and amounts</b>	Conditional grocery gift card (retail value 50 SEK)	<i>n</i> = 3,020	<i>n</i> = 710
	Conditional grocery gift card (retail value 75 SEK)	<i>n</i> = 3,079	<i>n</i> = 704
	Conditional lottery scratcher (retail value 30 SEK)	<i>n</i> = 2,972	<i>n</i> = 719

The third sub-sample, participating in Study 2, were administered in the experiment targeting individuals born outside the Nordics, and consisted of 9,000 randomly selected individuals registered as residing in the city of Gothenburg. Among these, all sample persons born outside the Nordics and 18 years or older, and included in the experiment (See Table 2).<sup>2</sup>

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<sup>1</sup> Because Swedish law prohibits sending lottery scratcher tickets to citizens under 18 years, sample persons under the age of 18 were excluded from the experiment.

<sup>2</sup> Because Swedish law prohibits sending lottery scratcher tickets to citizens under 18 years, sample persons under the age of 18 were excluded from the experiment.

**Table 2. Overview of experimental groups in Study 2.**

		The Gothenburg SOM survey, 2023
<b>Incentive types and amounts</b>	Conditional grocery gift card (retail value 75 SEK)	<i>n</i> = 943
	Conditional café gift card (retail value 100 SEK)	<i>n</i> = 941
	Conditional lottery scratcher (retail value 30 SEK)	<i>n</i> = 988

## PROCEDURE

Prior to being invited to complete the questionnaire, all sample person aged 18-39 for Study 1, and born outside the Nordics and older than 18 for Study 2, were randomly assigned to one of three experimental groups. For Study 1, one group was offered a conditional grocery shop gift card incentive with a retail value worth 50 SEK (treatment group) at a grocery chain, one group as offered a conditional grocery shop gift card incentive with a retail value worth 75 SEK (treatment group) at a grocery chain, and one group was offered a conditional lottery scratcher incentive with a retail value of 30 SEK (control group).<sup>3</sup> The sample persons offered a grocery shop gift card incentive were be given a choice to select a gift card valid at either ICA, Coop, Willys, Hemköp or Lidl, which is the five largest grocery chains in Sweden (DLF & Delfi Marknadspartner, 2023). All incentives were sent to respondents by mail together with a thanking letter after sending in the questionnaire.

All sample persons in Study 1 were mailed a pre-notification postcard one week prior to the first invitation. In the first invitation, they were offered to complete the questionnaire

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<sup>3</sup> Although a lottery scratch ticket is indeed a conditional incentive, this group is considered the baseline control group because a lottery scratch ticket has been offered to all the SOM surveys' sample persons as a conditional incentive which since 2017.

either through the self-administered paper-and-pencil questionnaire or by the online self-administrated questionnaire. Nine days after the first invitation, all sample persons were mailed a postcard with an envelope in which the person was thanked for their participation or reminded to participate if not yet done so. Sample persons who had not submitted their questionnaire 23 days after the first invitation were mailed a reminder to complete the questionnaire either through the self-administered paper-and-pencil questionnaire or by the online self-administrated questionnaire. Sample persons who had not submitted their questionnaire 31 days after the first invitation were sent a reminding text message on their cell phone, including a link to the online questionnaire and login details. All contact methods included information about the incentives, the type of incentive, and the amount of the incentive.

Sample persons who had not submitted their questionnaire or had not refused to participate would receive four mailed reminders with an offer to complete the questionnaire either through a paper-and-pencil questionnaire or by the online questionnaire, and four text messages including a link to the online questionnaire and login details sent to their cell phone (i.e., nine reminders in total).

The procedure differed slightly for Study 2. One group was offered a conditional café gift card incentive with a retail value of 100 SEK (treatment group)<sup>4</sup>, one group was offered a conditional grocery shop gift card incentive with a retail value of 75 SEK (treatment group) for a grocery chain, and one group was offered a conditional lottery scratcher incentive (Trisslott) with a retail value of 30 SEK (control group). The café gift card was valid in the

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<sup>4</sup> Same type of grocery store gift card as in Study 1.

café chain Espresso House, with multiple franchises spread throughout Gothenburg city. All incentives were sent to respondents by mail with a letter thanking respondents for completing the questionnaire.

In the first invitation, sample persons in Study 2 were only invited to complete the questionnaire by an online self-administered questionnaire. Sample persons who had not completed the questionnaire 9 days after the first invitation were mailed a reminder to complete the questionnaire either through a self-administered paper-and-pencil questionnaire or by the online self-administrated questionnaire. In all other regards, the procedures for Study 1 and Study 2 were identical.

## **MEASURES AND ANALYSIS PLAN**

### **RESPONSE RATES**

To compare response rates between the groups, Response Rate 1 (RR1) was estimated according to the guidelines of the American Association for Public Opinion Research (AAPOR, 2023). To assess the response rates, the parameters of OLS regression models (equal to a t-test with robust standard errors in this design) projected the difference in RR1 between the treatment and control groups. Although the incentives in Study 1 and Study 2 were targeting two different hard-to-reach groups, there is a natural overlap between various hard-to-reach groups within the different studies. Some young sample persons in Study 1 are also born outside the Nordics and/or men, and some sample persons born outside the Nordics in Study 2 are young and/or men. Therefore, as exploratory analyses, OLS regression models predicting the response rate with the incentive variables in each

experiment, and the interactions between the subgroup independent variables and the incentive variables respectively.

For Study 1 (targeting young sample persons) the subgroups estimated were those aged 18-39 were sex, age cohort (18-24, 25-29, and 30-39), and immigrant status (born in the Nordics, born outside the Nordics but in Europe, and born outside Europe). In Study 2 (targeting sample persons born outside the Nordics) the same subgroups were estimated but with some different coding for age cohorts (18-29, 30-39, 40-49, 50-64, 65-74, and 75-90) and immigrant status (born outside the Nordics but in Europe, born outside Europe).

## **DATA QUALITY**

Data quality was assessed based on item nonresponse. This indicator measured the proportion of questions a sample person chose not to answer. An answer was considered missing if a specific question was left without a response. Sample persons who responded to at least one question were included in the estimations. The parameters of OLS regression equations predicted item nonresponse with each incentive variable. The same exploratory analyses as explained above using full interaction terms for Response rates were conducted.

## **RESULTS**

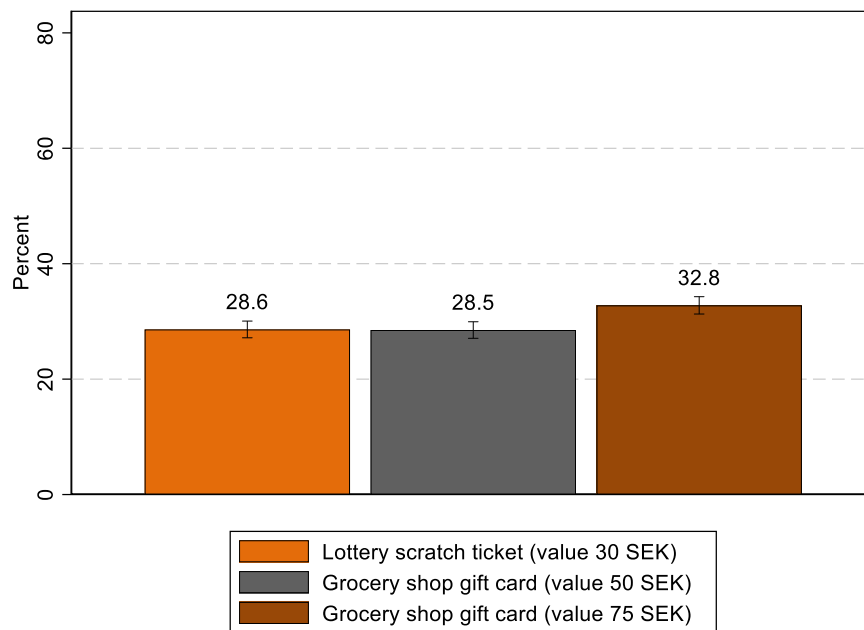
### **RESPONSE RATES**

#### **RESPONSE RATES – STUDY 1 AND 2**

For Study 1, the response rate of the group offered a gift card grocery shop gift card worth 50 SEK (RR1 = 28.5 percent) was not significantly different from the group offered a

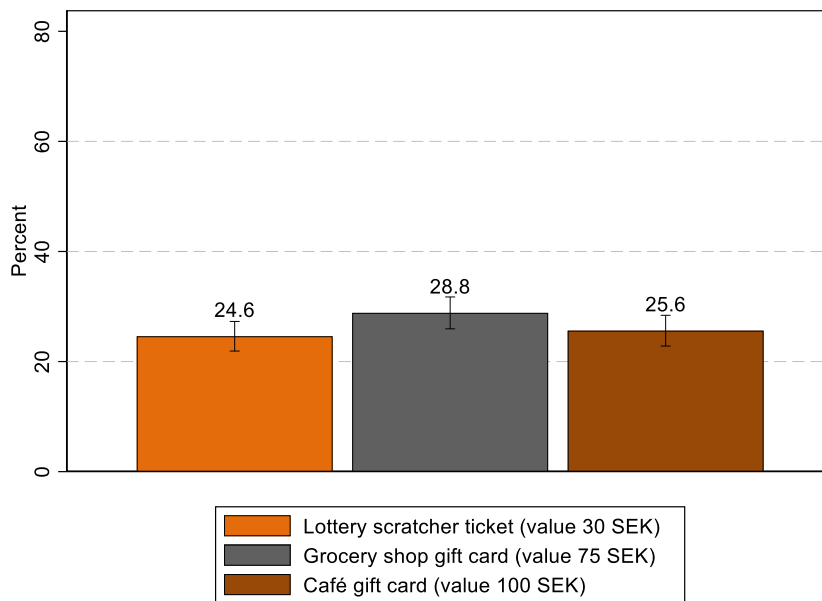
lottery scratch ticket (28.6 percent) ( $b = -.00, SE = .01, p = .923$ ). However, the group offered a grocery shop gift card valued 75 SEK had a significantly higher response rate (32.8 percent) compared to both the lottery scratch ticket group ( $b = .04, SE = .01, p = .000$ ) and the lower valued grocery shop gift card group ( $b = .04, SE = .01, p = .000$ ) (Figure 1).

**Figure 1. RR1 for experimental groups in Study 1 (age 18-39).**



In Study 2, the response rate of the group which was offered a gift card grocery shop gift card worth 75 SEK (RR1 = 28.8 percent) was significantly higher than the group which received a lottery scratch ticket (24.6 percent) ( $b = .04, SE = .02, p = .034$ ). However, the group offered a café gift card valued 100 SEK was not significantly different in response rate (25.6 percent) compared to the lottery scratch ticket group ( $b = .01, SE = .02, p = .612$ ) or from the lower valued grocery shop gift card group ( $b = -.03, SE = .02, p = .115$ ) (Figure 2).

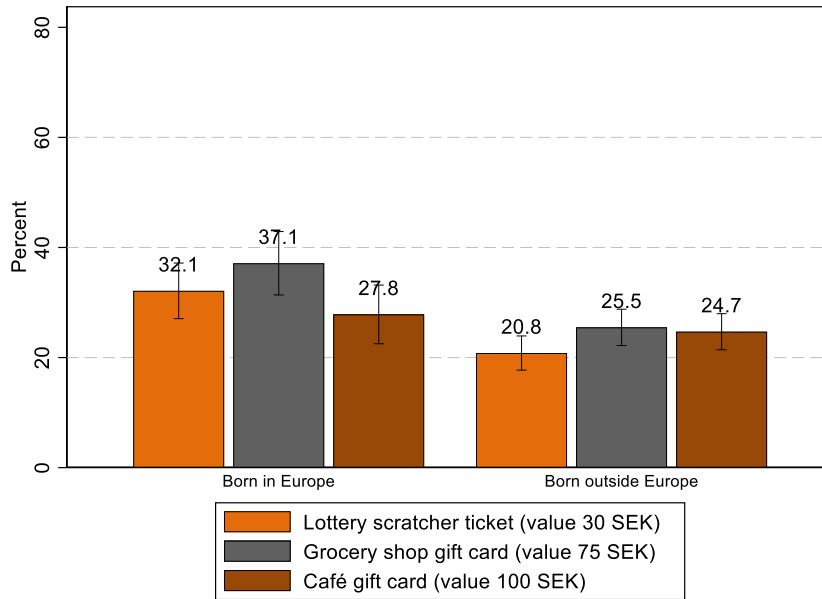
**Figure 2. RR1 for experimental groups in Study 2 (born outside the Nordics).**



## **RESPONSE RATES – EXPLORATORY INTERACTION ANALYSES**

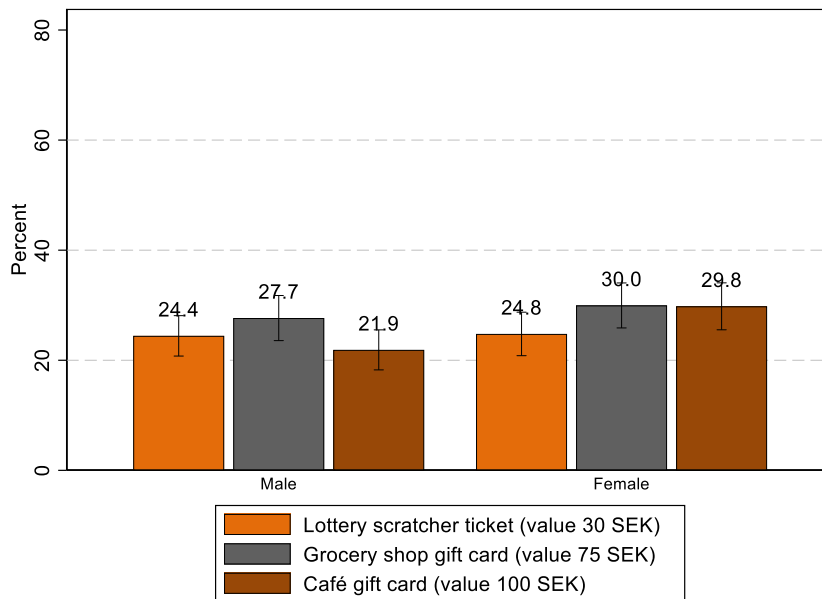
No significant interaction effects could be found on response rate in Study 1. However, in Study 2, the effect of offering a café gift card valued 100 SEK on response rates was marginally significantly stronger for sample persons born outside Europe, both compared to the lottery scratch ticket ( $b_{incentive * immigrant} = .08, SE = .04, p = .059$ ) and the grocery shop gift card ( $b_{incentive * immigrant} = .09, SE = .05, p = .059$ ) (Figure 3).

**Figure 3. RR1 for experimental groups in Study 2 (born outside the Nordics), interaction effect for birth region.**



Similarly, results from an interaction analysis using for sex indicated that the positive effect of offering a café gift card valued 100 SEK on response rates was marginally significantly stronger for women ( $b_{\text{incentive} * \text{sex}} = .08$ ,  $SE = .04$ ,  $p = .060$ ) (Figure 4).

**Figure 4. RR1 for experimental groups in Study 2 (born outside the Nordics), interaction effect for sex.**



## DATA QUALITY

### DATA QUALITY – STUDY 1 AND 2

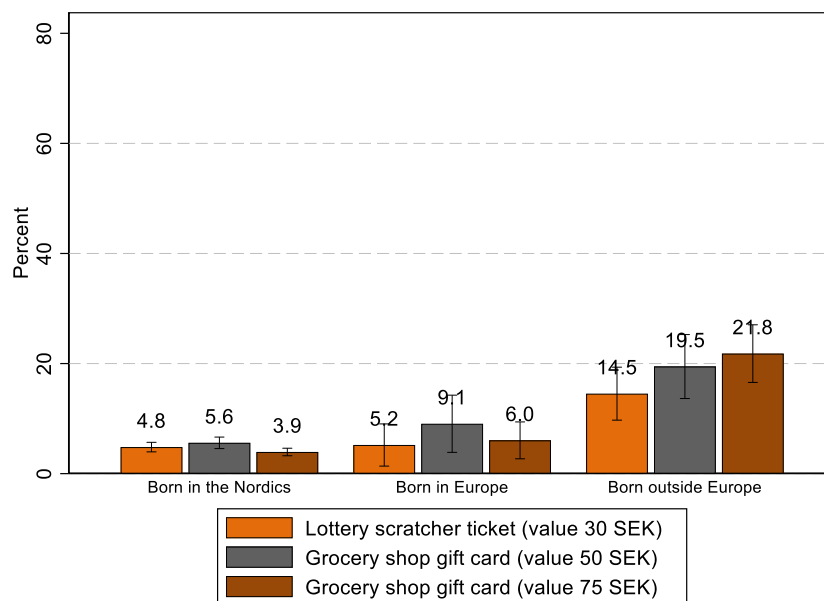
For Study 1, the share of item nonresponse for the group offered a grocery shop gift card worth 50 SEK was significantly higher than for the group offered a lottery scratch ticket ( $b = .02$ ,  $SE = .01$ ,  $p = .023$ ). However, the group offered a grocery shop gift card valued 75 SEK was not different from the lottery scratch ticket group ( $b = .06$ ,  $SE = .01$ ,  $p = .642$ ) but had marginally significant lower share of item nonresponse than the lower valued grocery shop gift card group ( $b = -.01$ ,  $SE = .01$ ,  $p = .072$ ).

For Study 2, the share of item nonresponse of the group which were offered a gift card grocery shop gift card worth 75 SEK was not significantly different from the group offered a lottery scratch ticket ( $b = -.03$ ,  $SE = .02$ ,  $p = .133$ ). The group offered a café gift card valued 100 SEK was not different from the lottery scratch ticket group either ( $b = .00$ ,  $SE = .02$ ,  $p = .838$ ) but had marginally significant higher share of item nonresponse than the lower valued grocery shop gift card group ( $b = .03$ ,  $SE = .08$ ,  $p = .085$ ).

### DATA QUALITY – EXPLORATORY INTERACTION ANALYSES

No interaction effect could be found in Study 2. However, in Study 1, there was a significant interactive effect indicating that the share of item nonresponse was significantly higher when offering sample persons born outside of Europe a grocery shop gift card, both when the value of the gift card was 50 SEK ( $b_{incitement * immigrant} = .04$ ,  $SE = .02$ ,  $p = .085$ ) and 75 SEK ( $b_{incitement * immigrant} = .08$ ,  $SE = .02$ ,  $p = .000$ ), compared to the lottery scratch ticket (Figure 5).

**Figure 5. Item nonresponse for experimental groups in Study 1 (age 18-39), interaction effect for birth region.**



## CONCLUSION

Offering higher value monetary incentives to hard-to-reach subgroups increased response rates to some extent compared to offering lottery scratch tickets. In the experiment targeting those aged 18-39, a grocery shop gift card valued 50 SEK did not have a significant effect on response rates. However, when the value was increased to 75 SEK, there was a significant increase by approximately 4 percentage points compared to both the lottery scratch ticket and the grocery shop gift card valued 50 SEK. Apparently, it is possible to increase response rates by offering higher value incentives, but the sample persons apparently know to put a value on their time and effort required to participate in the questionnaire and will not settle for a too low monetary value.

For the other hard-to-reach group, namely sample persons born outside the Nordics, the results were similar. Offering a grocery shop gift card valued 75 SEK significantly increased

response rate by 4.2 percentage points compared to when offering a lottery scratch ticket. However, the results indicate that not only the value of the incentive matter, but also the type of incentive. When increasing the value to 100 SEK but altering the type of store in which the gift card can be used from a grocery shop to a café, the results show that the response rate was not significantly different from the lottery scratch ticket – other than for sample persons born outside Europe, and women. These groups responded at a significantly higher rate when offered a café gift card valued 100 SEK compared to when offered a lottery scratch ticket. For sample persons born outside Europe, the café gift card also had a significantly higher effect on response rates compared to the grocery shop gift card valued 75 SEK. These findings indicate that there are nuances within the hard-to-reach groups that need to be considered if aiming to increase response rates by offering diversified incentives.

Regarding data quality, the share of item nonresponse for young sample persons in Study 1 offered a grocery shop gift card valued 50 SEK was significantly higher than when offered a lottery scratch ticket. When the same group was offered a grocery shop gift card valued 75 SEK there was no significant effect on data quality compared to the lottery scratch ticket, but there was a significantly higher share of item nonresponse compared to the group which were offered a grocery shop gift card valued 50 SEK. This highlights how offering an incentive that the sample persons find too low valued may not only have a weak to no effect on response rate but risk worsen the data quality. Perhaps the questionnaire is not taken seriously if the price they receive for participating is considered too poor.

The group offered the café gift card valued 100 SEK, generated significantly lower share of item nonresponse than when offering a grocery shop gift card valued 75 SEK, despite

there not being any significant difference in regard to response rate. There was a significant interactive effect in Study 1, which indicated that offering young sample persons born outside the Nordics a grocery shop gift card was significantly worsening item nonresponse. For this specific group, the higher the value of the grocery shop gift card, the higher the share of item nonresponse. This is aligned with the theory suggesting that larger value grocery shop gift cards as incentives may make data quality worse as some sample persons might not be as thorough, and rather prioritize sending in the questionnaire fast in order to receive the gift card more quickly. The increased response rate overall was thus at the expense of the data quality of another hard-to-reach sample group.

These two studies, combined with the previous studies, indicates the possibility of increasing response rates in specific hard-to-reach groups using diversified incentives, and that offering incentives which are of relatively high value, usable, and easy to assess are better. However, when offering conditional incentives in surveys' there is a risk of reducing data quality as sample persons may become too eager to send in the questionnaire and thereby complete it with less diligence.

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