

Supplementary Online Materials (SOM)

Predicting Survey Nonresponse with Registry Data in Sweden between 1993 to 2023:

Cohort Replacement or a Deteriorating Survey Climate?

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All parts of this supplement and their respective relevance are described in the main text of this manuscript.

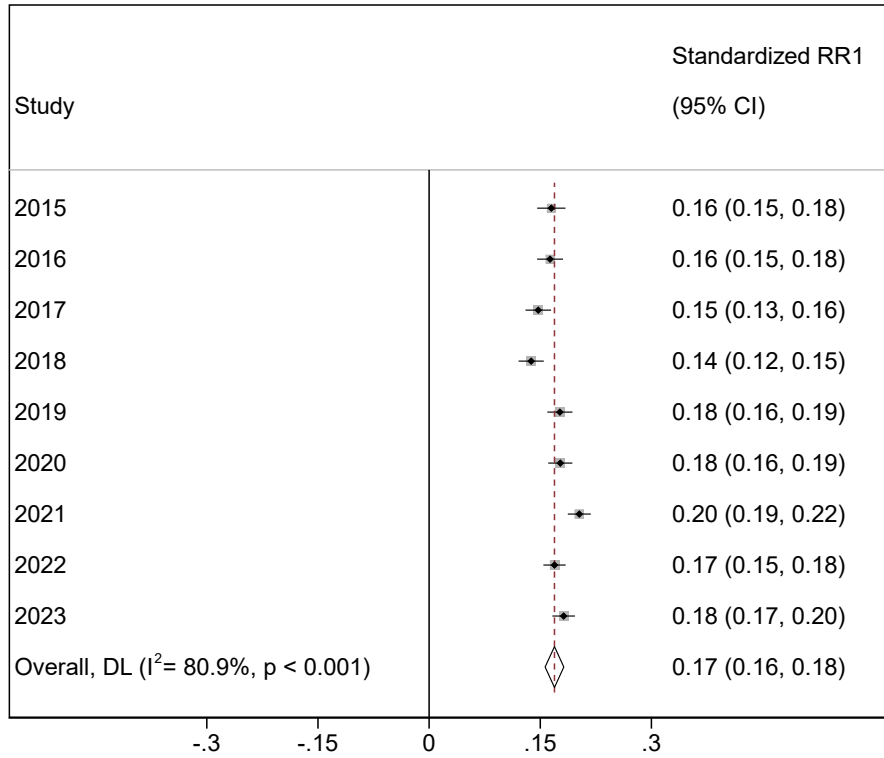
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S1. Full Meta-analytical Regressions Figures S1 and S2.

Figure S1.1.

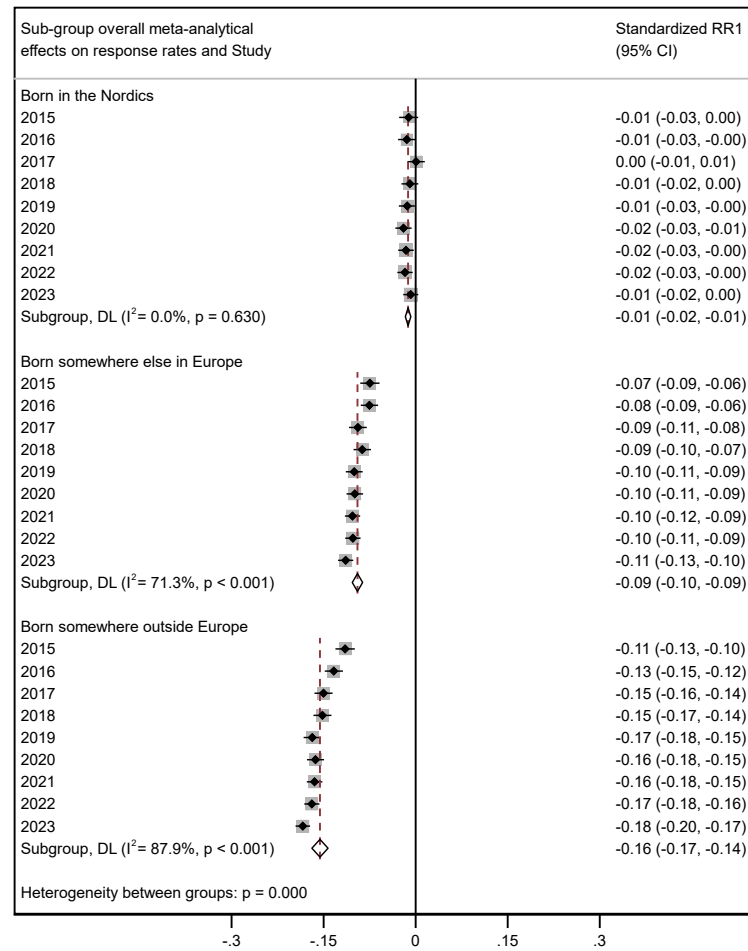
Summary predicted response propensities between the years 2015 to 2023, Sample 1 (age)



Note. Continued on the next page.

Figure S1.1.

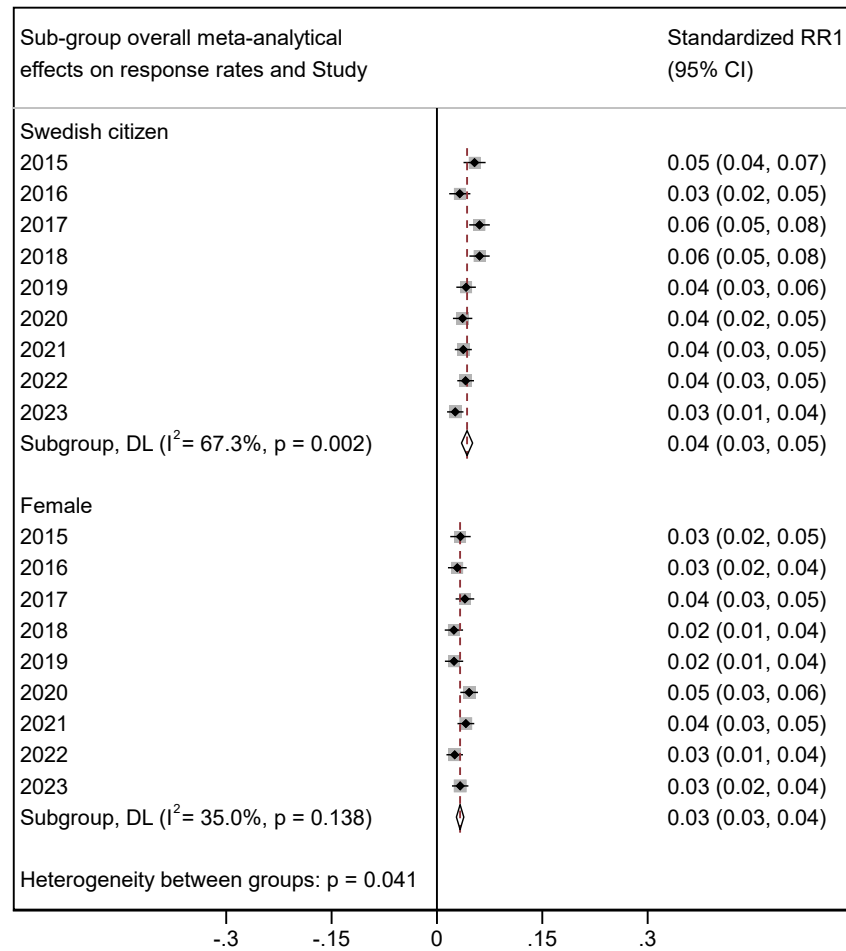
Continued (foreign-born)



Note. Continued on the next page.

Figure S1.1.

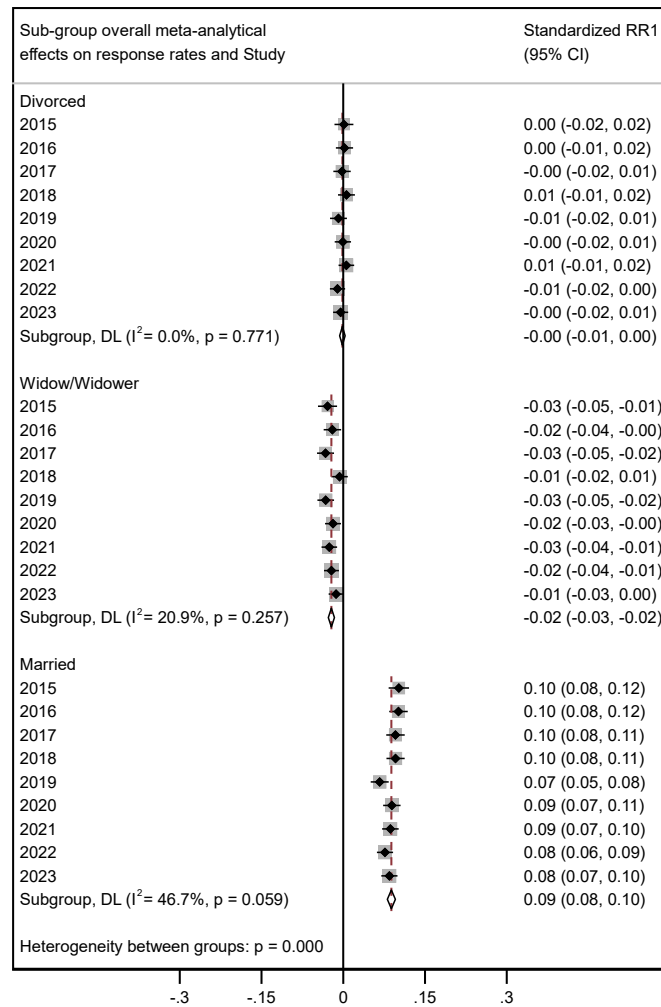
Continued (citizen and sex)



Note. Continued on the next page.

Figure S1.1.

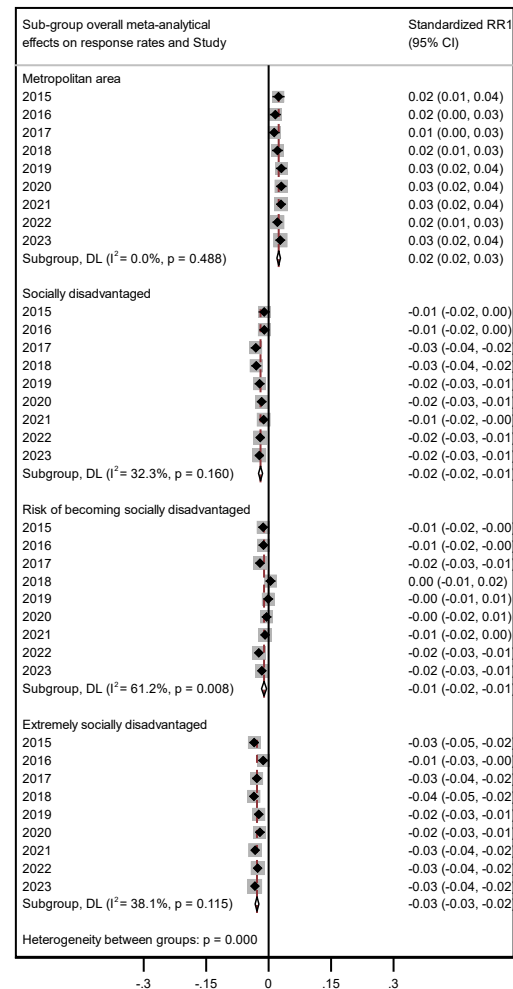
Continued (marital status)



Note. Continued on the next page.

Figure S1.1.

Continued (contextual factors)

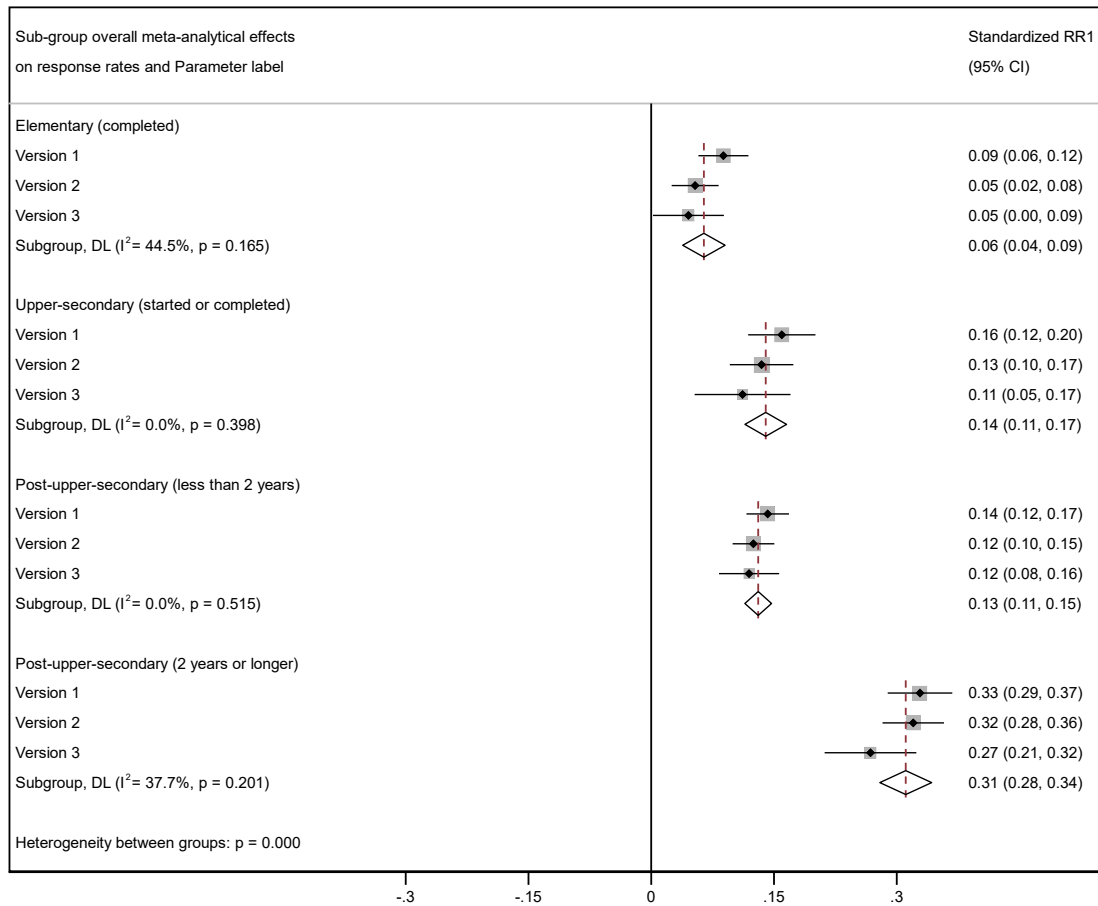


Note. The diamond represents the summary meta-analytical regression coefficients obtained from the parameters of eight independent OLS regression models, one model for each year between 2015 and 2023. The width of the diamond represents the 95% confidence intervals of the summary meta-analytical regression coefficients. Squares represent the standardized beta-coefficient extracted from the mode, and the lines through the squares show the 95% confidence intervals of the coefficient. No sampling weights were applied to any of the data collections.

Source: SOM (2024).

Figure S1.2.

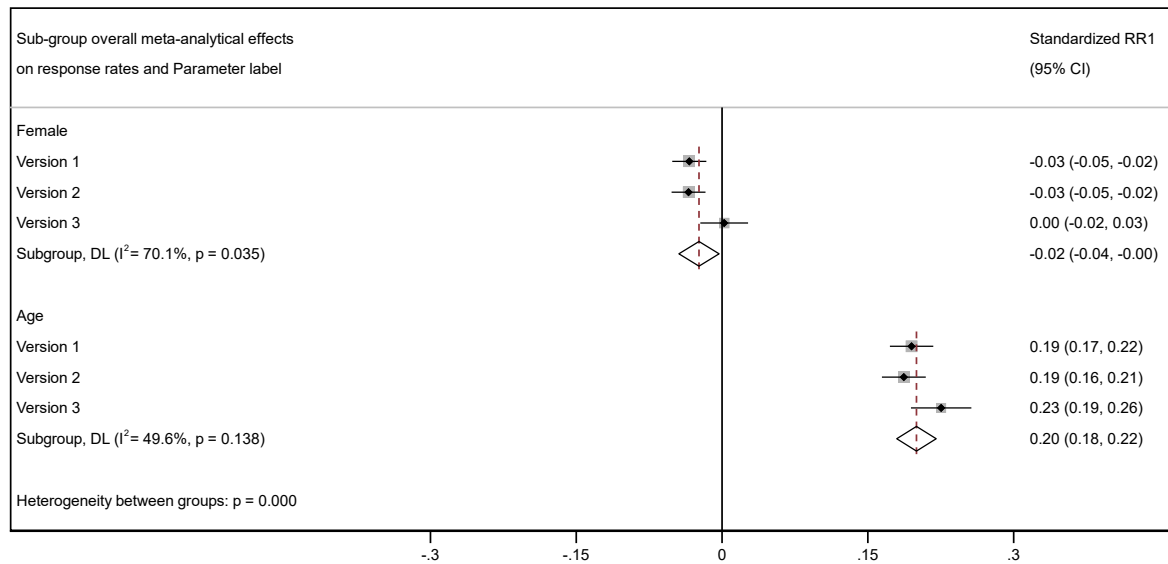
Summary predicted response propensities in 2022, Sample 2 (education)



Note. Continued on the next page.

Figure S1.2.

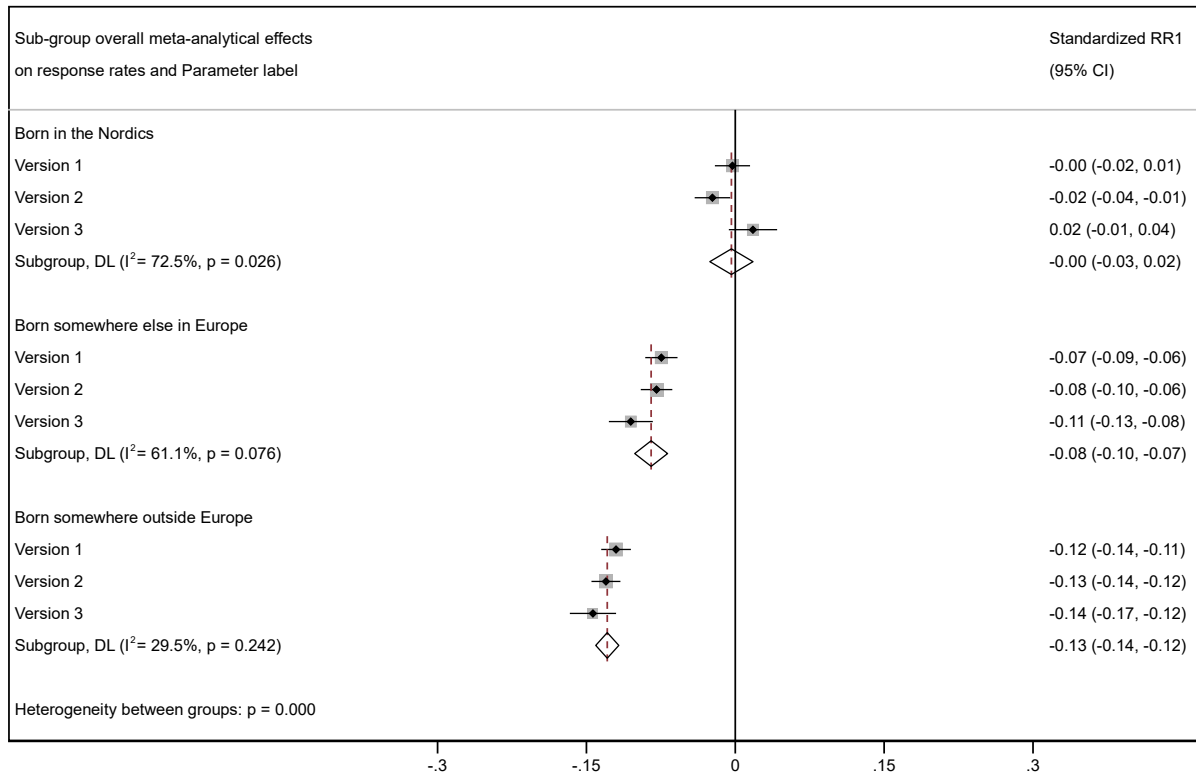
Continued (age and sex)



Note. Continued on the next page.

Figure S1.2.

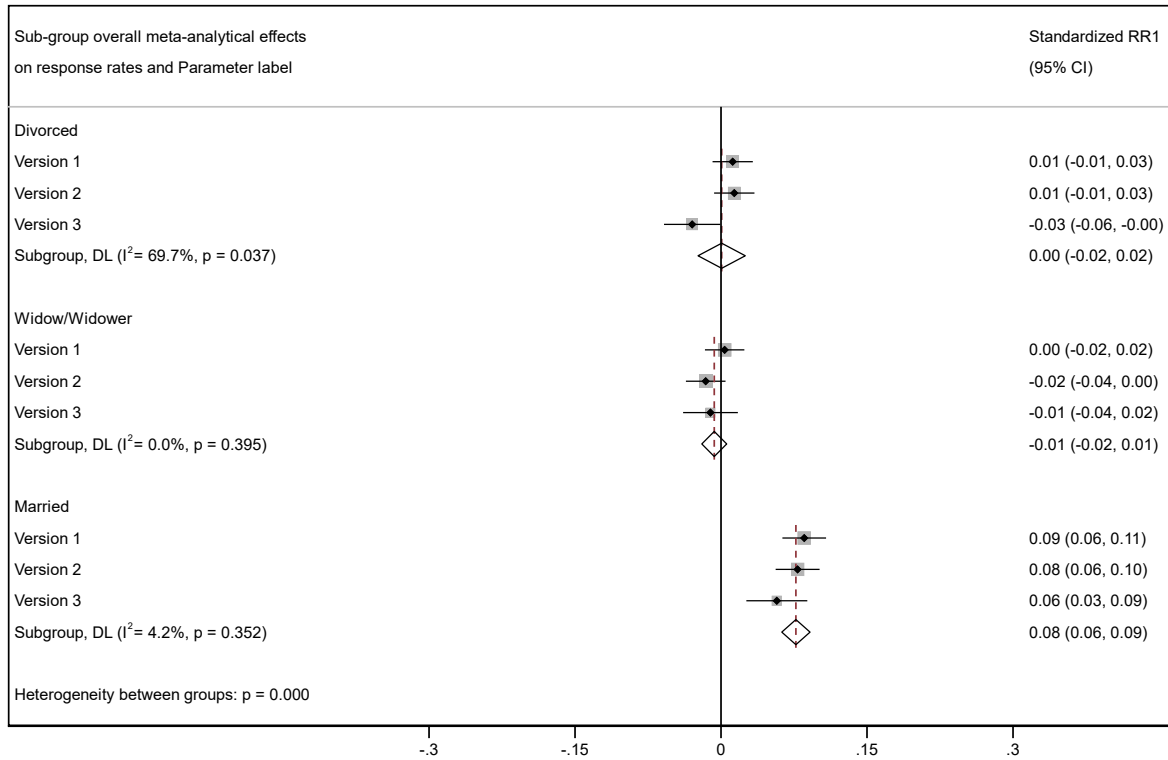
Continued (migrant status)



Note. Continued on the next page.

Figure S1.2.

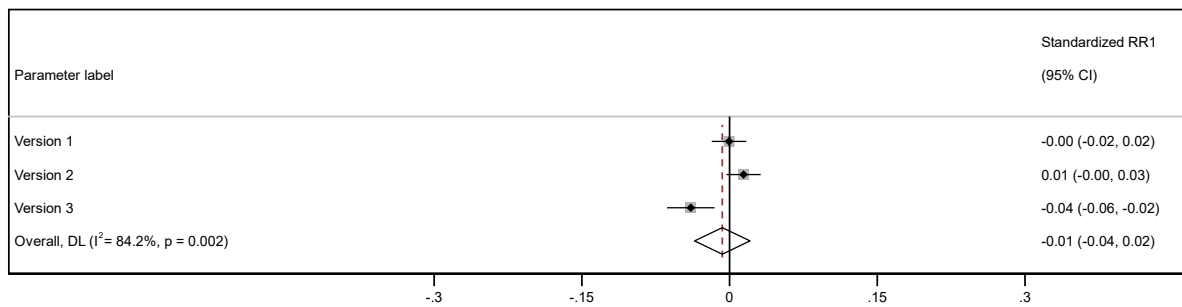
Continued (marital status)



Note. Continued on the next page.

Figure S1.2.

Continued (contextual factors)



Note. Diamonds represent the summary meta-analytical regression coefficients obtained from the parameters of three independent OLS regression models, one model for each version of the questionnaire. The widths of the diamonds represent the 95% confidence intervals of the summary meta-analytical regression coefficients. A diamond to the left of the horizontal line over zero meant that the predictor decreased response propensities, and a diamond to the right indicates that the predictor increased response propensities. No sampling weights were applied to any of the data collections.

Source: SNES (2023).

S2. Robustness Checks

S2.1. Multilevel Regression Analysis

A multi-level model where we added a predictor for when the survey protocol changed by the addition of incentives was estimated. This model nested observations within years of data collection. This alternative model yielded identical conclusions as the meta-analytical regression (see Table S2.1.).

Table S2.1.
Multilevel Regression Results

	Submitted the questionnaire
Survey protocol changes	
<u>Added incentive</u>	
Incentives 2017 and onwards	0.02 (0.02)
Individual characteristics	
<u>Sex</u>	
Female	0.03*** (0.00)
<u>Age</u>	
age	0.00*** (0.00)
<u>Marital status</u>	
Divorced	-0.00 (0.00)
Widow/Widower	-0.06*** (0.01)
Married	0.09*** (0.00)
<u>Country of birth</u>	
Born in the Nordics	-0.04*** (0.01)
Born somewhere else in Europe	-0.18*** (0.00)
<u>Citizenship</u>	
Swedish citizen	0.07*** (0.00)
Contextual variables	
<u>Metropolitan or not</u>	
Metropolitan area	0.03*** (0.00)
<u>Socially impoverished area</u>	
Socially impoverished	-0.06*** (0.01)
Risk of becoming socially impoverished	-0.06*** (0.01)
Extremely socially impoverished	-0.11*** (0.01)
Born somewhere outside Europe	-0.24*** (0.00)
Constant	0.15*** (0.02)
lnsl_1_1	
Constant	-3.82*** (0.24)
lnsig_e	
Constant	-0.75*** (0.00)

Notes. $N = 197,536$. Nine groups. Observations per group: Minimum = 17,000; Maximum = 25,612; Average = 21,948.4. Entries are unstandardized regression coefficients. Standard errors in parentheses.

+ $p < .1$. * $p < .05$. ** $p < .01$. *** $p < .001$.

The amended survey protocol allowing mixed-mode was implemented in 2012, prior to the years used for the predictor models, and was, therefore, not included.

S2.2. Nonparametric Regression

A growing consensus has emerged that estimating linear regression equations is preferable over nonparametric regression equations like logistic or probit regression even when dealing with binary outcomes (e.g., Hellevik, 2009; Gomila, 2021). However, we acknowledge that results may sometimes differ between nonparametric and linear regression. To that end, each of the regression equations of binary outcomes presented in the main text of the manuscript were estimated again using a probit regression equation. These alternative regression equations revealed that, in line with the arguments by Hellevik (2009) and Gomila (2021), interpretations of significance and which predictors predict response propensities did not differ across the two estimation strategies (see Figure S2.1. and Figure S2.2.). The strongest predictors remained country of birth and age, followed by marital status, citizenship, sex, education, and impoverished areas. Similarly, being divorced did not predict response propensity in either of the regression techniques.

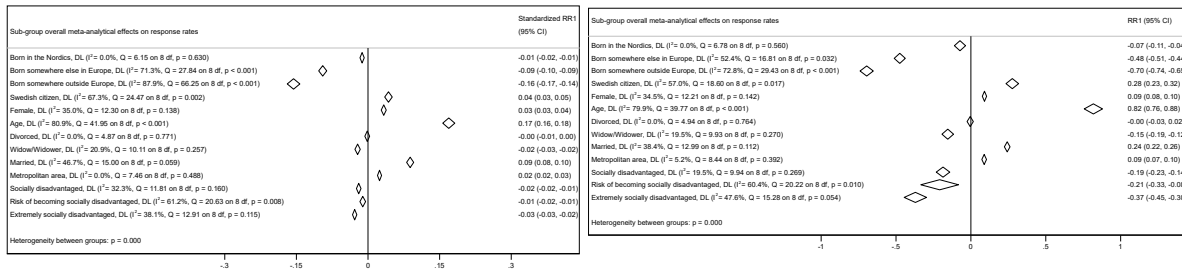
Figure S2.1.

Meta-analytic Regressions using Linear Regression (Panel A) or Probit Regression (Panel B)

for Sample 1

Panel A

Panel B



Note. Diamonds represent the summary meta-analytical regression coefficients obtained from the parameters of nine independent regression models (OLS regression in Panel A and Probit regression in Panel B), one model for each year between 2015 and 2023. The widths of the diamonds represent the 95% confidence intervals of the summary meta-analytical regression coefficients. A diamond to the left of the horizontal line over zero meant that the predictor decreased response propensities, and a diamond to the right indicated that the predictor increased response propensities. No sampling weights were applied to any of the data collections.

Source: SOM (2024).

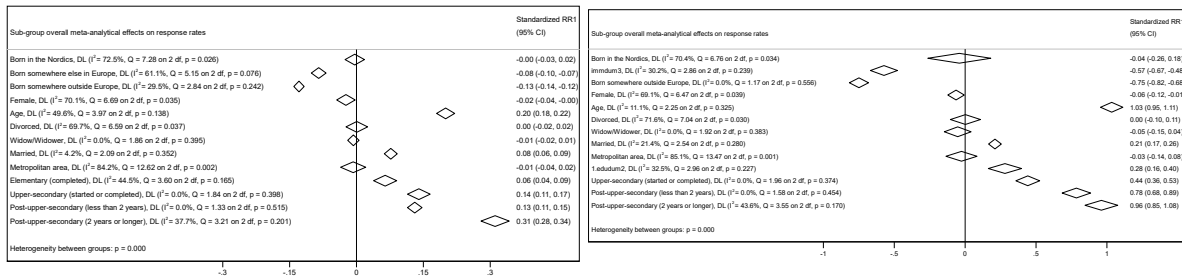
Figure S2.1.

Meta-analytic Regressions using Linear Regression (Panel A) or Probit Regression (Panel B)

for Sample 2

Panel A

Panel B



Note. Diamonds represent the summary meta-analytical regression coefficients obtained from the parameters of eight independent regression models (OLS regression in Panel A and Probit regression in Panel B), one model for each year between 2015 and 2023. The widths of the diamonds represent the 95% confidence intervals of the summary meta-analytical regression coefficients. A diamond to the left of the horizontal line over zero meant that the predictor decreased response propensities, and a diamond to the right indicated that the predictor increased response propensities. No sampling weights were applied to any of the data collections.

Source: SOM (SNES 2023).