



# Evaluating the impact of an informational postcard campaign on telephone scams targeting the elderly

Niklas Jakobsson

Researcher, Department of Criminology, Malmö University and Professor, Karlstad Business School, Karlstad University  
[niklas.jakobsson@kau.se](mailto:niklas.jakobsson@kau.se)

Manne Gerell

Associate professor, Department of Criminology, Malmö University  
[manne.gerell@mau.se](mailto:manne.gerell@mau.se)

## Abstract

To combat the increasing incidence of telephone scams targeting the elderly, the Swedish Police initiated an informational campaign in 2023. This campaign involved distributing educational postcards to households with at least one resident aged 70 or older. We assess the effectiveness of the postcard intervention by comparing the change in the outcome variable (number of plaintiffs) among individuals aged 70 and above to those below 70. Despite the campaign's aim to increase awareness and offer practical advice for avoiding scams, our analysis reveals no impact on the number of plaintiffs exposed to fraud. Our study did not identify any significant effects, adding to the existing body of literature on the effectiveness of information in influencing crime-related behaviors, where findings have been inconclusive.

## Keywords

fraud, vishing, information campaign, crime prevention, crimes against the elderly

## 1. Introduction

To address the rise in telephone scams targeting the elderly (Fjelkegård & Horgby, 2023), the Swedish Police launched a three-week information campaign in 2023, including social media, newspaper ads in local and national outlets, posters, and postcards. Postcards were sent to all 1.2 million Swedish households with at least one resident aged 70 or older. The primary objective of these postcards was to heighten awareness about the perils of telephone scams and to offer pragmatic advice on how to avoid becoming a victim. This initiative is a component of a more comprehensive strategy aimed at mitigating the escalating financial and emotional toll of telephone fraud, which accounted for losses amounting to 52 million euros in 2022 alone (1 SEK = 0.084 EUR). By zeroing in on a demographic especially susceptible to such scams, those 70 years old or above, the intervention aspired to equip older citizens with the essential knowledge to defend themselves against fraudulent activities (The Swedish Police Authority, 2023), something that has been highlighted as important (Fjelkegård & Horgby, 2023). An evaluation concluded that the campaign had been successful in the sense that people from the target group had appreciated the information,

while noting that an evaluation of any impact on police reported crime was needed as well (Tornberg et al., 2023). We aim to assess the effectiveness of the postcard intervention by comparing the change in the outcome variable (number of plaintiffs) among individuals aged 70 and above to those below 70. This is not the only aim of the police campaign, but reducing crime is a crucial responsibility of the police, and if the postcard campaign would have such an effect, it is of great importance. It may also be the case that the general awareness campaigns regarding fraud affected all, irrespective of age, but that is not something that we can credibly evaluate.

Improving knowledge and changing behaviors has been a long-standing focus in academic research and public policy (Herbert & Sheatsley, 1947; Mendelsohn, 1973). While numerous studies have highlighted the potential effectiveness of health-focused campaigns in improving public knowledge, attitudes, and behaviors, the results are mixed. These campaigns cover a broad spectrum, from emergency medical services and mental health to promoting healthier lifestyles among older adults and reducing risky behaviors. Despite well-executed campaigns, the impact across various health domains remains inconsistent (Meischke et al., 1994; Dietrich et al., 2010; Reger et al., 2002; Berry et al., 2009; Yzer et al., 2000; Johnston et al., 2018). In the context of safety and crime prevention, the effectiveness of various campaigns is similarly ambiguous. While O’Keefe (1985) observed positive shifts in attitudes and behaviors related to crime following a public information campaign in an uncontrolled pretest-posttest study, Solymosi et al. (2017) found that, although highly recognized, an information campaign did not significantly increase the reporting of unwanted sexual harassment. Publicity campaigns focusing on specific issues like burglary and bicycle theft have also yielded inconsistent results (Johnson & Bowers 2003; Sidebottom et al. 2009). Thus, the landscape of informational campaigns in crime prevention presents a complex picture, with some initiatives achieving their intended outcomes while others fall short. Our study aims to evaluate the effectiveness of the current postcard campaign, contributing to the specific issue at hand by providing credible quasi-experimental evidence on the effectiveness of informational campaigns to reduce crime. These findings can potentially inform and refine criminological theories of crime prevention and public awareness, serving a broader societal purpose.

## 2. Data and methods

We utilize a comprehensive dataset that captures the number of plaintiffs exposed to various types of fraud in Sweden from January 2019 to July 2023 reported to the police. This dataset includes all the crime categories related to fraud using social manipulation against the elderly, which includes romance fraud, investment fraud, authority fraud, and other fraud using social manipulation against the elderly, with and without international connection.<sup>1</sup> Our study employs a differences-in-differences strategy, and for our primary analysis, we construct an outcome variable representing the weekly count of plaintiffs for those aged 70–74 and those aged 65–69, where the former constitutes the treated group and the latter the untreated control group. The identifying assumption is that the trend in the outcome variable would have been the same as the trend in the control without treatment. Because of the potential for treatment spillover within families or social circles, which could contaminate the control group, we conducted the primary analyses also excluding those 68–71 years old, implying that the treated group is 72–74, and the control group is 65–67 years old in these analyses. This should decrease spillover effects while keeping the treated and the controls as similar as possible in age. The informational postcards were disseminated over three weeks starting on February 20, 2023 (weeks 8–10), so the treatment period starts at this date.

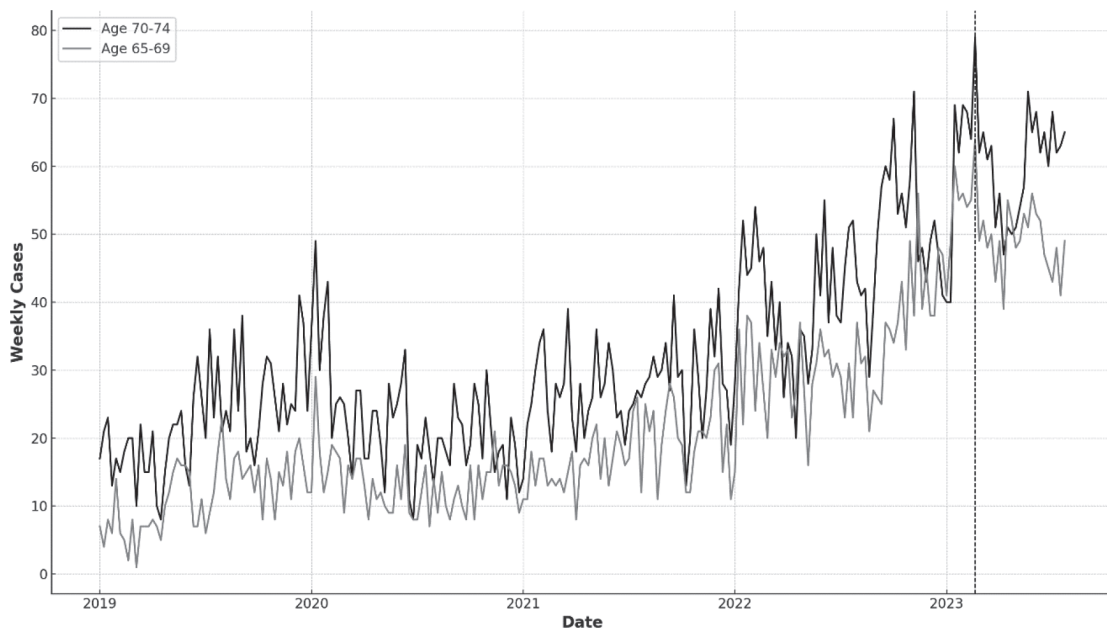
We specified a model of the following form:

$$Y_{it} = \beta_0 + \beta_1 Treated_i + \beta_2 Post_t + \beta_3 (Treated_i \times Post_t) + \epsilon_t, \tag{1}$$

where  $Y_{it}$  is the weekly number of plaintiffs exposed to fraud,  $\beta_0$  is the constant term,  $Treated_i$  is a dummy denoting treatment assignment (where 0 is the control group and 1 is the treatment group),  $Post_t$  is a dummy variable representing the post-intervention period (0 before the intervention, 1 from the intervention and onwards). The interaction term,  $Treated_i \times Post_t$ , is the impact of the intervention on the outcome measure, given the identifying assumption. We estimated the models with year, calendar-month, and week-fixed effects to account for potential seasonality. We performed the analysis in Stata (Version 18; StataCorp LLC, TX).

### 3. Results

The graph in Figure 1 displays the number of weekly cases for two different age groups: individuals aged 70–74 who received treatment and those aged 65–69 who did not. The data spans the period between January 2019 and July 2023. Both groups show similar trends, with cases increasing since 2021 and reaching a peak in early 2023. If anything, the untreated group displayed a somewhat more pronounced decrease following the treatment administered in Week 8 of 2023. However, a potential issue arises due to the possibility of significant contamination between the treated and untreated groups, as they might share households. To address this concern, we have eliminated individuals aged 68–71 from the analysis (not shown in the figure). It is important to note that even after this adjustment, there is still no apparent divergence between the two groups after treatment.



**Figure 1.** Weekly cases of fraud through social manipulation for treated (aged 70–74) and untreated (aged 65–69) individuals. The vertical line indicates the start of the treatment period.

To formally assess whether there is an effect of the treatment on the treated group, as compared to the control group, we conduct analyses following equation (1), reported in Table 1. In column 1 we present analyses for those aged 70–74, and 65–69, where the former

constitutes the treated group and the latter the untreated control group. In column 2, we exclude those 68–71 years old, implying that the treated group is 72–74, and the control group is 65–67 years old in these analyses. First, we corroborate what we see in Figure 1, that the treated group has a somewhat higher number of cases before treatment (Treated). There is a small and not statistically significant difference in the intercept at treatment (Treated  $\times$  Post). We have thoroughly analyzed the data and found no significant impact of the postcards on the number of plaintiffs exposed to fraud. This conclusion holds across various specifications, as we have conducted additional analyses, not shown. These supplementary analyses mostly support the conclusion that the treatment group remained unaffected by the postcards, although some specifications do identify an effect.<sup>2</sup>

**Table 1.** Effect estimates of the postcard campaign on the number of plaintiffs exposed to fraud

	(1)	(2)
	65–69 and 70–74	65–67 and 72–74
Treated	10.219*** (0.628)	8.935*** (0.451)
Post	–0.036 (2.419)	–1.315 (1.675)
Treated $\times$ Post	1.086 (1.809)	0.500 (1.559)
Constant	–2.745 (2.400)	–2.351** (0.978)

Dummies for year, week, and month are included in all specifications. Heteroscedasticity robust standard errors in parentheses  
\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

## 4. Discussion

Our analysis indicates that the postcard intervention had no discernible impact on the primary outcome variable: the number of plaintiffs. This adds to the existing body of literature on the effectiveness of information in influencing health and crime-related behaviors, where findings have been inconclusive (Herbert & Sheatsley, 1947; Mendelsohn, 1973; O’Keefe, 1985; Solymosi et al., 2017). Difficulties in reaching those most in need of information to prevent fraud, and uncertainty as to the effects even if the information reaches the designated targets, have been raised as concerns when it comes to fraud prevention through information campaigns (Fjelkegård & Horgby, 2023). One limitation of our study is the potential for treatment spillover within families or social circles, which could contaminate the control group. However, our data show minimal changes in the outcome variable in the treated group during the post-intervention period. Supplementary analyses were also conducted to mitigate the impact of such spillovers, making it unlikely that our null findings can be solely attributed to this factor. It may also be the case that the general awareness campaigns regarding fraud affected all, irrespective of age, something we cannot credibly assess due to the lack of a credible control group. However, the postcard campaign did not appear to have any additional effects on those aged 70 and above.

A more nuanced challenge arises when evaluating the effectiveness of the intervention. The design and execution of the campaign may be important in determining its impact. For instance, even if the postcard campaign successfully increases awareness and reduces

instances of successful fraud, this heightened awareness could paradoxically skew our outcome measure. Specifically, a rise in awareness could lead to more victims reporting fraud to the police, affecting the number of plaintiffs. We do not have access to data showing how large the losses have been, but for future studies it may be feasible to test such a hypothesis by considering whether there is a bigger change in low-value frauds than in high-value frauds which we expect would be reported either way.

## Disclosure statement

The authors reported no potential conflict of interest.

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## Notes

1. In the main analysis we include offence codes: 0942, 0943, 0946, 0947, 0950, 0951, 0954, 0955.
2. Data and replication files can be downloaded here: <https://doi.org/10.7910/DVN/OCHHSE>

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