

Promoting social distancing in a pandemic: Beyond the good intentions

Paolo Falco ¹ Sarah Zaccagni ^{1, 2}

¹ Department of Economics, University of Copenhagen

²CEBI, University of Copenhagen



CENTER FOR
ECONOMIC
BEHAVIOR &
INEQUALITY

EPRN conference - June 18, 2020



#STAY HOME



Motivation and Objectives

1 Test the effect of **reminders on social distancing**

- Some (very) recent studies find impacts, Everett et al. (2020), Utych and Fowler (2020), Jordan et al. (2020)), but the **existing evidence is largely on intentions to comply**.
- **Intention-to-action gaps** are well-documented across a range of fields (e.g., Chen et al. (2019), Abel et al. (2019)).

2 Investigate what are **the most effective messages**

We know that **pro-social behaviour** drives compliance with health recommendations (Vietri et al. (2012), Li et al. (2016), Zettler et al. (2020), Campos-Mercade et al. (2020)), but **who are the relevant others?**

Experimental Design

- We conduct a pre-registered **randomised controlled trial** with a representative sample of Danish residents aged 18-69.
- We expose different groups to different variations of a recommendation to **“stay home as much as possible”**.
- **Statistics Denmark** carried out the randomisation and distributed the treatment via e-Boks.
- We conducted our study **between March 25th and April 7th, 2020**, at a time when the most stringent measures were applied in Denmark.

Timeline

Experimental Design

- All subjects in the sample received a first email with the treatment. and a questionnaire
- 12,573 (42,2% of total) respondents who answered the first questionnaire received a second one in the coming days and approximately 50% of them responded.
- Final sample: balanced panel of 5,310 respondents (attrition is balanced across treatments **Attrition**).

Treatments

- We test **four alternative** ways of **framing** the recommendation, which differ in the **emotional proximity** of treated subjects to those who will bear the consequences of his/her behaviour:

You

Family

Others

Country

- For each of the four framed treatments two variations: **loss domain** and **gain domain**.
- In addition, a group received a generic reminder without any framing and a control group received no reminder.

Treatments message

IF YOU GO OUTSIDE AND
BECOME INFECTED,

**YOU MAY GET
VERY SERIOUS RESPIRATORY
PROBLEMS**

**STAY HOME AS
MUCH AS POSSIBLE**

HVIS DU GÅR UDEN FOR OG
BLIVER SMITTET,

**KAN DU FÅ
MEGET ALVORLIGE
VEJRTRÆKNINGSPROBLEMER**

**BLIV HJEMME
SÅ MEGET SOM
MULIGT**

Treatments

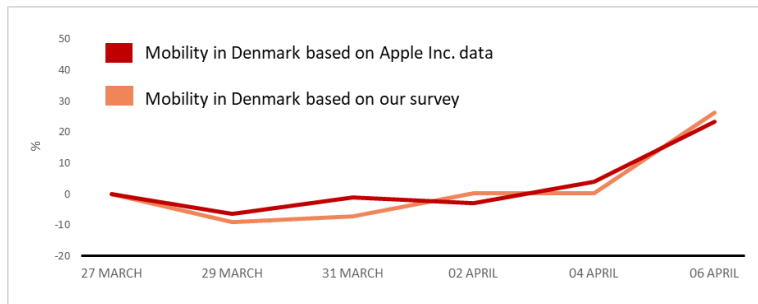
In total, 10 groups (9 treatment groups and 1 control group)

Frame	Domain	Reminder
You	Loss	<i>If you go outside and become infected, you may get very serious respiratory problems. Stay home as much as possible</i>
	Gain	<i>If you stay home, you protect yourself from the risk of getting very serious respiratory problems. Stay home as much as possible</i>
Family	Loss	<i>Think of your loved ones. If you go outside and become infected, you may infect them, and they may get very serious respiratory problems. Stay home as much as possible</i>
	Gain	<i>Think of your loved ones. If you stay home, you protect them from the risk of getting very serious respiratory problems. Stay home as much as possible</i>
Others	Loss	<i>If you go outside and become infected, you may infect others, who may get very serious respiratory problems. Stay home as much as possible</i>
	Gain	<i>If you stay home, you protect others from the risk of getting very serious respiratory problems. Stay home as much as possible</i>
Country	Loss	<i>If you go outside and become infected, you may contribute to an overloading of the Danish health care system. Stay home as much as possible</i>
	Gain	<i>If you stay home, you reduce the risk of an overloading of the Danish health care system. Stay home as much as possible</i>
Generic		<i>Stay home as much as possible</i>
Control		NO REMINDER

Outcomes

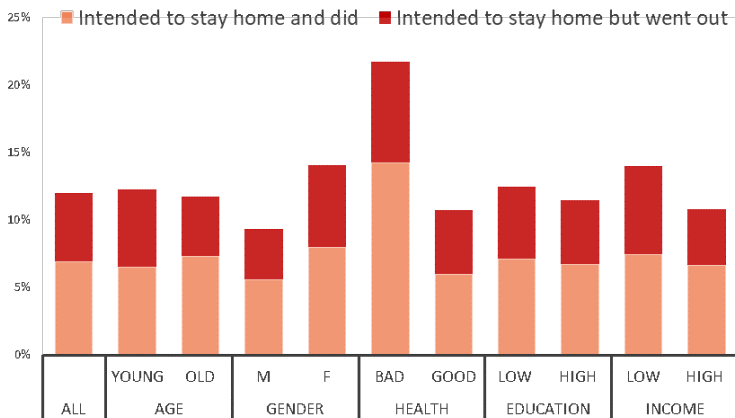
- **Intention** to stay home tomorrow
- Respondents' **actions** (i.e., stayed home yesterday)

Our data on respondents' mobility (self-reported) closely track widely used mobility measures based on mobile-phone data

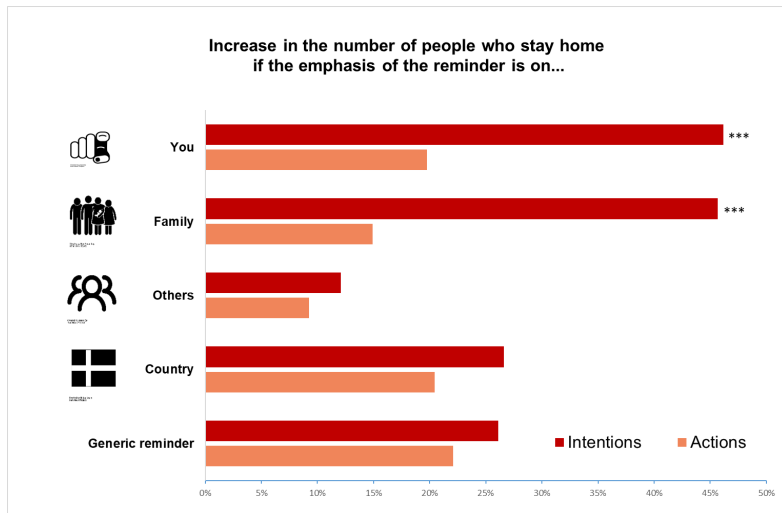


The gap between intentions and actions

In our sample, < 15% of respondents declare that they intend to stay home, but 42% of them do not follow their intentions



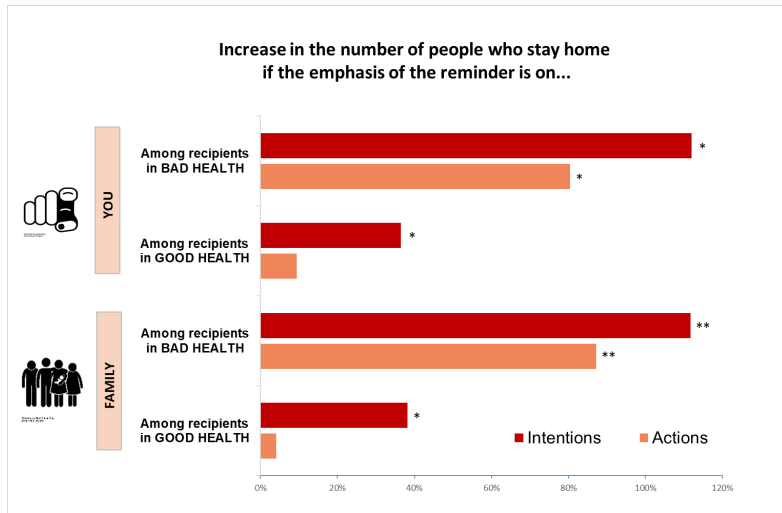
The effect of reminders on intentions and actions



Results of the treatments

Results of the subtreatments

Treatment effects by the health status of the respondent



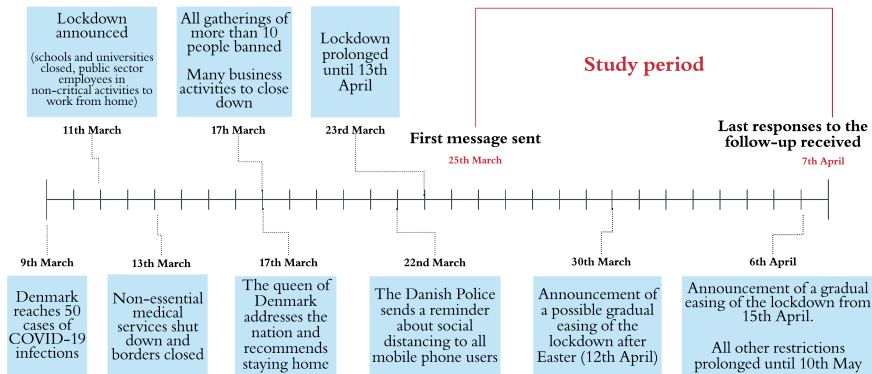
Results by health status

Conclusions

- We conduct a randomised controlled trial in Denmark to test the effects of reminders to stay home during the COVID-19 crisis.
- We find that reminders significantly increase people's intentions to comply, but only if they are framed with respect to the consequences for the subject and his/her family.
- We do not find significant impacts on behaviour, consistent with the existence of intention-to-action gaps.
- Reminders are most effective in changing the behaviour of people facing greater health risks, while they do not change the behaviour of those who are in better health but could spread the disease.

Thank you

The COVID-19 crisis in Denmark



Back

Attrition

<i>Reminder</i>	Attrition
You	0.008 (0.017)
Family	0.027 (0.017)
Others	-0.019 (0.017)
Country	0.011 (0.017)
Generic	0.005 (0.019)
Controls	Yes
Observations	12,573
R-squared	0.028

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Back

Results - Treatments

<i>Reminder</i>	Intentions	Actions
You	0.044*** (0.016)	0.0288 (0.0188)
Family	0.044*** (0.016)	0.0217 (0.0189)
Others	0.012 (0.016)	0.0135 (0.0185)
Country	0.025 (0.016)	0.0298 (0.0188)
Generic	0.025 (0.019)	0.0322 (0.0223)
Controls	Yes	Yes
Observations	5,310	5,310

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Back

Results - Subtreatments

<i>Reminder</i>	Intentions	Actions
You (loss domain)	0.045** (0.020)	0.0273 (0.0223)
You (gain domain)	0.043** (0.019)	0.0302 (0.0221)
Family (loss domain)	0.047** (0.020)	0.0251 (0.0223)
Family (gain domain)	0.040** (0.020)	0.0183 (0.0223)
Others (loss domain)	0.004 (0.018)	-0.000453 (0.0214)
Others (gain domain)	0.018 (0.018)	0.0260 (0.0216)
Country (loss domain)	0.027 (0.019)	0.0171 (0.0215)
Country (gain domain)	0.024 (0.019)	0.0436* (0.0227)
Generic	0.025 (0.019)	0.0322 (0.0224)
Controls	Yes	Yes
Observations	5,310	5,310

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

[Back](#)

Results - by health status

<i>Reminder</i>	Good Health		Bad Health	
	Intentions	Actions	Intentions	Actions
You (loss domain)	0.033* (0.020)	0.0131 (0.0227)	0.157* (0.0804)	0.161* (0.0877)
You (gain domain)	0.044** (0.020)	0.0270 (0.0229)	0.0410 (0.0666)	0.0557 (0.0762)
Family (loss domain)	0.034* (0.020)	0.00574 (0.0226)	0.156** (0.0742)	0.174** (0.0821)
Family (gain domain)	0.039* (0.020)	0.0158 (0.0232)	0.0490 (0.0689)	0.0386 (0.0775)
Generic	0.017 (0.019)	0.0230 (0.0231)	0.0747 (0.0683)	0.0922 (0.0755)
Controls	Yes	Yes	Yes	Yes
Observations	4,704	4,704	603	603

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Back

References I

- Martin Abel, Rulof Burger, Eliana Carranza, and Patrizio Piraino. Bridging the intention-behavior gap? the effect of plan-making prompts on job search and employment. *American Economic Journal: Applied Economics*, 11(2):284–301, 2019.
- Pol Campos-Mercade, Armando Meier, Florian Schneider, and Erik Wengström. Prosociality predicts health behaviors during the covid-19 pandemic. *University of Zurich, Department of Economics, Working Paper*, (346), 2020.
- Jianjiu Chen, Sai Yin Ho, Lok Tung Leung, Man Ping Wang, and Tai Hing Lam. School-level electronic cigarette use prevalence and student-level tobacco use intention and behaviours. *Scientific reports*, 9(1):1–7, 2019.
- Jim AC Everett, Clara Colombatto, Vladimir Chituc, William J Brady, and Molly Crockett. The effectiveness of moral messages on public health behavioral intentions during the covid-19 pandemic. 2020.

References II

- Jillian Jordan, Erez Yoeli, and David Rand. Don't get it or don't spread it? comparing self-interested versus prosocially framed covid-19 prevention messaging. 2020.
- Meng Li, Eric G Taylor, Katherine E Atkins, Gretchen B Chapman, and Alison P Galvani. Stimulating influenza vaccination via prosocial motives. *PloS one*, 11(7), 2016.
- Stephen M Utych and Luke Fowler. Age-based messaging strategies for communication about covid-19. *Journal of Behavioral Public Administration*, 3(1), 2020.
- Jeffrey T Vietri, Meng Li, Alison P Galvani, and Gretchen B Chapman. Vaccinating to help ourselves and others. *Medical Decision Making*, 32(3):447–458, 2012.

Ingo Zettler, Christoph Schild, Lau Lilleholt, and Robert Böhm. Individual differences in accepting personal restrictions to fight the covid-19 pandemic: Results from a danish adult sample. 2020.