



# A wealth of behavioural insights 2023 edition

bin  
nl

[www.binnl.nl](http://www.binnl.nl)

# Publishing details

Original Dutch version published November 2023

This report is a joint publication of all the Dutch ministries, united in the Behavioural Insights Network Netherlands (BIN NL). It is published at BIN NL's own initiative and submitted to the Senate and the House of Representatives every two years.

BIN NL is a collaborative partnership uniting all Dutch ministries, focusing on the use of behavioural insights in policy, implementation, supervision and communication. The network was established to allow the ministries to exchange knowledge and experience.

The projects outlined in this report were carried out under the responsibility of the individual organisations. For more information about these projects, please contact the organisation in question; a list of contacts is provided.

The authors would like to express their gratitude to Jeanine Mies (editing), Xerox (layout and printing) and the co-authors of the thematic chapters: Thomas Dirkmaat (Ministry of Economic Affairs and Climate Policy), Amber van Druten (Ministry of Economic Affairs and Climate Policy), Mike Keesman (project leader on ability to act test), Gert-Jan de Maagd (Ministry of Infrastructure and Water Management) and Babs Westenberg (Tax and Customs Administration), as well as the members of the BIN NL Rijk aan Gedragsinzichten (A Wealth of Behavioural Insights) working group: Manoe Mesters (BIN NL), Maureen Turina-Tumewu (Scientific Research and Documentation Centre), Martine van Winkel (Employee Insurance Agency) and Wilte Zijlstra (Ministry of Foreign Affairs).

# Preface

This year (2024) marks [ten years](#) since the Behavioural Insights Network Netherlands (BIN NL) was founded. Ten years during which we have exchanged knowledge and experiences on the application of behavioural insights within (central) government. Ten years of driving that application and advancing its practical implementation. There is plenty to celebrate. For example, during the anniversary edition of our annual 'Dag van het Gedrag' (Behavioural Insights Day) conference, which will be held in November 2024.

As November 2024 is still some way off, we hope you enjoy this publication in the meantime. This fourth edition of 'A Wealth of Behavioural Insights' includes an [inspiring collection](#) of 34 issues for which behavioural insights have been harnessed to achieve more effective policies. You will find contributions from ministries, executive agencies, regulatory bodies, and local and regional authorities.

We present this publication with a sense of pride. The examples clearly show the [added value](#) of applying behavioural insights in policy-making, implementation, communication and supervision. We are enhancing SMEs' ability to defend against phishing, we are motivating people to get fitter and we are exploring solutions to the teacher shortage. The government's success in achieving its policy goals often depends on the behaviour of citizens and businesses. To better address this, it is important to know what works for whom, and why.

The focus in this publication, as in previous editions, is on the [impact of interventions on people's behaviour](#). However, the work of behavioural experts goes far beyond merely testing interventions. They advise in policy-making and on the choice of communication methods, for example, based on behavioural research and their expertise. They provide training. And they support organisations that want to test whether their policies or regulations are workable and enforceable; for instance, do they match citizens' ability to act as intended?<sup>1</sup> You can read more about their work on [binnl.nl](https://binnl.nl).

---

<sup>1</sup> People's ability to make plans, spring into action and persevere even in the face of setbacks. See Parliamentary Paper 34 775 VI, no. 88.

We are curious to hear what you think of the [34 projects](#). You are invited to share your views in the community on our website, for example. There, you will also find the names of [all the contact persons](#)<sup>II</sup> in the BIN NL network, listed by organisation, for you to exchange your ideas with. Together, we apply behavioural insights with the aim of increasing our effectiveness in addressing critical social challenges and solving people's problems. We hope this publication will provide extra encouragement for that purpose.

**Thomas Dirkmaat**

Chair, BIN NL

**Wilte Zijlstra**

Chair of the Wealth of Behavioural Insights 2023 working group

---

II <https://www.binnl.nl/home+-+en/about+bin+nl/contact+persons/default.aspx>.

# Table of contents

**Applying behavioural insights more frequently** 8

**3D application of behavioural insights - digitalisation, ability to act and sustainability** 12

**34 new projects** 23

## CLIMATE AND ENVIRONMENT

Buying second-hand clothes	25
Feel & act green	28
Energy savings achieved with energy consumption managers	31
Website Verbeterjehuis.nl helps homeowners choose the right sustainability measures	35
Micro-SMEs 'green' their business	39
Promising circular business models	43
Less waste placed next to underground containers	47
Safer road behaviour on N36 provincial road	50
Fewer dangerous situations for cyclists	53

## HEALTH AND WELFARE

Encouraging people to get fitter	57
Encouraging the wearing of face masks in hospitality venues	60
Instilling the habit of more frequent hand washing in office settings	64
Cleaner hands in indoor sports facilities	67
Walk-in vaccination without an appointment	70
Higher COVID-19 vaccination rates	74
Text messaging to spur vaccination take-up	78
Making sure that young people get vaccinated against HPV	81
Reduced calf mortality at dairy farms	84

<b>ON THE JOB AND DEVELOPMENT</b>	
More CVs on werk.nl	88
Broader job search	91
Helping social assistance recipients in finding work	95
Generating more enthusiasm for teacher training programmes	98
Working more hours to combat teacher shortages	102
Helping people get more out of language	105
<b>FINANCE AND CONSUMER AFFAIRS</b>	
Filing tax returns correctly and on time	108
Using savings to clear debit balances	111
More conscious student borrowing behaviour	117
New applicants for fiscal scheme to promote innovation	121
Full price information for consumers	125
<b>INFORMATION PROVISION AND CYBERSECURITY</b>	
Improved registration of development cooperation activities	128
Effective position of call-to-action	131
Enhanced cybersecurity of SMEs	135
Reporting fake emails	138
<b>About BIN NL and list of contact persons</b>	<b>141</b>
<b>List of abbreviations</b>	<b>148</b>

# About this publication

This A Wealth of Behavioural Insights 2023 edition features at its core the 34 projects described in Chapter 3. These projects are divided into [5 themes](#):

- Climate and Environment
- Health and Welfare
- On the job and Development
- Finance and Consumer affairs
- Information provision and Cybersecurity

Before we describe how these projects were implemented and what results were obtained with them, we will first show in Chapter 1 how behavioural insights can be applied more often. In Chapter 2, 3D application of behavioural insights, we explain what the efforts of behavioural experts have yielded in terms of usable results for major issues facing the government: [digitalisation, ability to act and sustainability](#).<sup>1</sup>

The names of contact persons for the behavioural insights projects that are described are listed at the end of this publication. The abbreviations used in the text are explained in the appendix. For more information on the projects, see the [online projects database](#)<sup>2</sup>. We will continue to add new projects to this resource.

---

<sup>1</sup> In Dutch all these three topics start with a D, hence the 3D.

<sup>2</sup> <https://www.binnl.nl/kennisbank/projectenbank> (only available in Dutch).

# 1

# Applying behavioural insights more frequently



**When does government apply behavioural insights? This can be done more frequently and in more phases within the policy cycle than is currently the case. This is explained below.**

### *Utilise behavioural analysis immediately*

This publication focuses on projects in which behavioural analysis was carried out and an intervention also was tested. Behavioural analyses can also be applied immediately and at the start in policy development or to adjust policies, without testing interventions. Such analyses give the government in-depth insight into how people behave and why they make certain choices, insight that is essential for developing policies that match **people's real needs and behaviours**. This allows the government to design policies that more effectively encourage the desired behaviour changes.

Insights from behavioural analyses that have not, as yet, led to tested interventions can also be informative for a wider audience. For this reason, BIN NL has since 2023 collected these behavioural analyses in an **online behavioural analysis database**<sup>3</sup>, similar to the projects in the online projects database.

### *Behaviour expertise during policy preparation*

At all stages of the policy cycle – from agenda-setting to policy evaluation – it helps to look at human behaviour through a **psychological lens**. Behavioural insights are currently applied chiefly in policy implementation and monitoring. However, it is also important to use behavioural experts early in the process of policy development, when the choice of policy instruments is still open, and there is still room to base that choice on realistic assumptions about human behaviour.<sup>4</sup> Too often, policymakers make the assumption that the individuals they are making policy for act in a perfectly rational manner. Behavioural insights therefore offer more policy opportunities than are currently being utilised. Recent positive developments, such as the policy compass, help in taking full advantage of these opportunities.

<sup>3</sup> <https://www.binnl.nl/kennisbank/gedragsanalyses>.

<sup>4</sup> [Gedragsinzichten bieden meer beleidskansen dan er nu worden benut - ESB](#).

### *Behavioural analysis is part of policy compass*

Early 2023 saw the introduction of the new policy compass<sup>5</sup>. This is now the central method for policymaking within central government, and the policy compass explicitly addresses the application of behavioural insights. The **five stages** of the policy development process also incorporate the key questions in a behavioural analysis, such as: what desired behaviour do you want each target group to express? Also, what factors obstruct or facilitate the attainment of that behavioural objective? Only after this analysis are steps taken to identify potential solutions. The government's requirement to take into account citizens', self-employed professionals' and small SMEs' ability to act is also part of the method elaborated in the policy compass<sup>6</sup>.

In addition, there is growing emphasis on behavioural insights in the analyses of interdepartmental policy studies (Dutch: *Interdepartementale Beleidsonderzoeken*, IBOs). IBOs are independent official studies of social or policy-related problems. Examples include the IBO on climate<sup>7</sup> and the IBO on simplifying social security<sup>8</sup>. See the example on page 22.

### *Increase in behaviourally-informed and tested policies*

Before the Dutch government started actively applying behavioural science-based insights, it made choices that, in retrospect, could be labelled as in line with existing behavioural insights. An example is the default option by which employees automatically save for their pension without having to actively choose to do so themselves. Since the government started applying behavioural insights more actively from 2014, there has been an increase in both *behaviourally-informed and behaviourally-tested policies*.

<sup>5</sup> In a letter of 20 October 2022, it was [announced that the policy compass will replace the Integrated Policy and Regulation Assessment Framework \(IAK\) from Spring 2023](#) (Parliamentary Paper 36200 VI, no. 10). See also: [www.beleidskompas.nl](http://www.beleidskompas.nl).

<sup>6</sup> Parliamentary Paper 34 775 VI, no. 113.

<sup>7</sup> [Scherpe doelen, scherpe keuzes: IBO aanvullend normerend en beprijzend nationaal klimaatbeleid voor 2030 en 2050 | Rapport | Rijksoverheid.nl](#).

<sup>8</sup> [IBO Vereenvoudiging Sociale Zekerheid - Moeilijk makkelijker maken | Rapport | Rijksoverheid.nl](#).

The European Commission's Joint Research Centre classifies three ways in which behavioural insights contribute to policy-making:

- **behaviourally-tested** policy initiatives are scaled out after explicit, initial experimental testing
- **behaviourally-informed** policy initiatives are designed after an explicit review of previously existing behavioural evidence and/or after behavioural analysis has been carried out
- **behaviourally-aligned** policy initiatives are initiatives that, at least a posteriori, can be found to be in line with previously existing behavioural insights (behavioural evidence)

### *Testing, including for new policies*

Behaviourally tested initiatives are mostly found in the implementation and monitoring phases of the policy cycle, and less so in the policy-development phase. This is partly explained by the fact that it is easier to test minor adjustments, such as changes in letters, emails, forms and websites, in the implementation and monitoring stages. By comparison, testing new initiatives is much more complex, although there are various ways to accomplish this. It is possible, for example, to conduct an online experiment in which various [policy options are presented](#) that match the relevant behavioural determinants, and then to consider which option is most likely to lead to the desired behaviour. Also, features of a new policy can be presented to study participants in a [vignette experiment](#) to assess the relative value that people attach to the various features.

### *Testing in real-life settings*

To thoroughly assess the effectiveness of a policy instrument, it is best to carry out a randomised study in real-life settings (Randomised Controlled Trial). This may make some policymakers and politicians slightly nervous, partly because different groups in society are not treated equally during the experiment: an intervention is presented to one group, but not to the other. A preprint of an interesting study<sup>9</sup> published in 2023 found that in most cases, [Dutch voters](#) have a preference for initial experimentation over the immediate implementation or non-implementation of a policy instrument. Hopefully, this finding will lead to more possibilities for conducting policy experiments in the future.

<sup>9</sup> Dur, R., Non, A., Prottung, P., & Ricci, B. (2023, May 5). Who's Afraid of Policy Experiments?. <https://osf.io/yshkt>.

# 2

## 3D application of behavioural insights - digitalisation, ability to act and sustainability

The government faces a series of major societal challenges, with digitalisation and sustainability amongst those at the forefront. In this context, it is tasked with developing and implementing policies that are understandable and practicable – in other words, doable. As behavioural experts, we think about and work together on these themes, carrying out analyses, providing advice and devising and conducting experiments. So what did we get out of our projects in terms of major issues related to digitalisation, ability to act and sustainability?

## Digitalisation

Smartphones, artificial intelligence, big data, personalised online marketing – digitalisation is an integral part of our everyday lives. Online tools and new technologies offer new opportunities as well as new threats. This also applies to behaviour change since, at the end of the day, it is people who will use new apps and gadgets and people who have to learn to deal with the dangers of the digital world. We illustrate how behavioural insights can help with digitalisation issues by highlighting three topics: digitalisation of processes, online consumer protection and cybersecurity.<sup>10</sup>

### *Digitalisation of processes*

Digitalisation enables us to improve the effectiveness and efficiency of processes. However, it is not without risks: some people may have difficulty [keeping up with these developments](#) due to a lack of digital skills or resources, for example, or they may not want to keep up, for fear of potential privacy violations. The application of behavioural insights can play an important role in capitalising on the opportunities created by digitalisation. On the next page we highlight three examples of how the desired behaviour can be facilitated.

---

<sup>10</sup> We are indebted in this regard to the publication [Gedragadviezen | Rapport | Rijksoverheid.nl](#) (February 2022).

### Three examples

- **Assisting working environment** - Behavioural analysis by the Employee Insurance Agency (UWV) indicates that the quality of the services provided is mainly determined by whether UWV employees are properly facilitated by the online working environment. The behavioural experts therefore recommend improving the online manuals and working environment to reduce the cognitive load on employees. This can be achieved by modifying the choice architecture, i.e. the way in which options are presented. The solution therefore should not be sought in more knowledge sharing and further training, but rather in making processes easier. See 'Verbeteren kwaliteitsgericht werken binnen UWV' (Improving quality-oriented work within UWV) in the online behavioural analysis database.
- **Development cooperation application** - The Ministry of Foreign Affairs has developed a digital application to enable more transparent reporting on development cooperation. The application supports employees who have to record their activities in compliance with international requirements. Greater transparency can contribute to the effectiveness of financial aid for areas that are considered vulnerable. See 'Improved registration of development cooperation activities' in this publication.
- **Real-time feedback on energy use** - Other examples in this publication show how digitalisation can help in meeting sustainability goals. Research by PBL Netherlands Environmental Assessment Agency, for example, indicates that personalised digital feedback helps to significantly reduce energy consumption by Dutch households. See 'Energy savings achieved with energy consumption managers'.

### Online consumer protection

Behavioural steering in digital environments is a useful tool, as can be seen in the examples above. However, we need to be extra cautious for any attempts at deception (dark patterns). The potential harm from dishonest use of behavioural techniques is much greater online than offline. The techniques can often be used more cheaply and on a larger scale online, and there is a wealth of data available about potential and current customers. Furthermore, merchants can learn what techniques work much faster and more efficiently online. If they continuously use A/B testing and experiments to modify their range of goods and/or services with the aim of increasing sales, customers' interests might be overlooked or forgotten. The Netherlands Authority for Consumers & Markets (ACM) is one of

the organisations that is therefore taking steps to enhance online consumer protection. While warnings and transparency obligations are, in theory, an obvious solution, increasingly behavioural research is showing that their effect is limited.<sup>11</sup> The ACM is calling for [digital consumer vulnerabilities](#) to be an integral consideration when shaping policy and legislation. The [Guidelines on the protection of the online consumer](#)<sup>12</sup> are a tool in the fight against misleading online persuasion. Unfair commercial practices in the digital environment are also a focus of attention at the European level.<sup>13</sup>

### Example

**Nudge for protection** - Using digital techniques, it is possible to steer the consumer choice process in the direction of what is in the interest of the individual filling in a form. An online experiment by the Dutch Authority for the Financial Markets (AFM), for example, has shown that pre-entering an amount of accessible savings (setting a default option) can lead to higher repayments to clear any debit balance. This gentle nudge in an online choice environment can ensure that people with savings minimise any overdraft situation, thereby saving them money. See 'Using savings to clear debit balances'.

### Cybersecurity

In addition to implementing technical adjustments, the arms race against cyber-criminals also requires users of apps and other digital resources to change their behaviours. Often, human behaviour is the weakest link – and cybercriminals are aware of this. Besides technical security measures, new and existing technologies should support users and [help them to defend themselves](#) against online dangers. Raising awareness about digital security does not seem sufficient by itself. A number of projects in this edition of A Wealth of Behavioural Insights, including those run by the Ministry of Economic Affairs and Climate Policy and the Ministry of Justice and Security, offer promising examples of how this can be achieved.

<sup>11</sup> See, for example, Disclosure: Why it shouldn't be the default; A joint report from the Australian Securities and Investments Commission (ASIC) and the Dutch Authority for the Financial Markets (AFM) (October 2019). [https://www.afm.nl/~/\\_profmedia/files/rap-porten/2019/afm-asic-disclosure-report.pdf](https://www.afm.nl/~/_profmedia/files/rap-porten/2019/afm-asic-disclosure-report.pdf) and [Onderzoeken naar verbetering online informatieverstrekking aan consumenten | ACM.nl](#) (2021).

<sup>12</sup> [Guidelines on the protection of the online consumer](#), updated March 2023.

<sup>13</sup> [Behavioural study on unfair commercial practices in the digital environment - Publications Office of the EU \(europa.eu\)](#), April 2022.

### Three examples

- **Fake phishing emails** - The Ministry of Economic Affairs has conducted experiments to teach employees of SMEs to recognise cyber threats using fake phishing emails. They experience for themselves how easy it is to click an unsafe link. This intervention has a short-term effect on employee cyber resilience. See 'Enhanced cybersecurity of SMEs'.
- **Report button** - This publication also includes a project about cybersecurity amongst SMEs from the Ministry of Justice and Security. A report button makes it easier to report online dangers. The intervention resulted in a tenfold increase in internal employee reports of suspicious emails. This simplified function is, at the same time, a good example of account being taken of employees' limited ability to act (see the next section). See also 'Reporting fake emails'.
- **Cybercrime** - A behavioural analysis performed by the Ministry of the Interior sought to identify the most promising behavioural interventions for combatting cybercriminals. The analysis found that a significant proportion of Dutch citizens have difficulty recognising fake webstores and phishing messages, even though they themselves believe they are good at doing just that. See 'Digitale vaardigheden van Nederlanders' (Dutch people's digital skills) in the behavioural analysis database.

Central government works for honest, enterprising and sustainable society. Yet citizens and businesses sometimes encounter difficulties navigating through policies, laws and regulations.<sup>14</sup> This happens even when they want to comply with the rules and they also have the basic skills needed to do so. The cause is then often to be found in unrealistic assumptions about human behaviour during policy development.<sup>15</sup> Citizen's ability to act should therefore be taken as a starting point in this context.

#### *Reduced capacity to act can affect anyone*

In the Netherlands, it is a quality requirement for policy makers to take into account citizens' ability to act as intended. This requirement encourages the consideration and generation of behavioural science evidence. The Netherlands'

<sup>14</sup> Staat van de Uitvoering, 2022. 'Complexiteit blijkt grootste knelpunt bij publieke dienstverlening'.

<sup>15</sup> Report by The Netherlands Scientific Council for Government Policy (WRR) 'Weten is nog geen doen' (Why knowing what to do is not enough), 2017.



Regulatory Impact assessment, known as the “Policy Compass”, includes this requirement and supports this with a series of supporting questions to stimulate policy makers to consider a behavioural science approach.<sup>16</sup> Ability to act is not about skills such as being able to read and write, but about springing into action, making a plan and persevering. Personal disposition is a factor in any reduced ability to act, but this capacity also comes under pressure as a result of life events such as having a child or losing a job. The group of people affected is large and variable. People experiencing major **life events** often have a lot to arrange, and at the same time need extra support and attention. The idea is that 'more doable' policies lead to fewer errors and improved compliance with regulations. Moreover, it will encourage people to make increased use of existing facilities, which may remain unused at the moment.

### Two examples

- **Easier application process** - Companies wanting to innovate can make use of the tax facilities available under the Research and Development (Promotion) Act (WBSO). This scheme was receiving fewer and fewer new applications. An online help tool allows companies to determine whether they are eligible for this scheme. The outcomes of a behavioural analysis and discussions with businesses enabled the Ministry of Economic Affairs (EZK) and the Netherlands Enterprise Agency (RVO) to modify the website to make it more practical, functional and usable. The click count for accessing the online help tool then increased by 50%. See 'New applicants for fiscal scheme to promote innovation'.
- **Avoiding fines** - Students who were late in cancelling their travel card incurred a EUR 97 fine for every two weeks after missing the cancellation deadline. Despite having good literacy, numeracy and digital skills, they still got into difficulties. Behavioural scientists developed an intervention to make cancellation easier, more practicable, and this had a positive effect. See 'Minder boetes voor studenten' (Fewer fines for students) in the online projects database.

<sup>16</sup> Parliamentary Papers II 2017/18, 34775 VI, nos. 188 and 113.

### *Analysing actability*

It is possible, at various moments, to evaluate whether proposed policies are 'actable'. This can be done prior to or during the development of policy (ex ante evaluation), during policy implementation by monitoring signals and identifying bottlenecks (ex durante evaluation) and after policy implementation, for example by means of an implementation test (ex post evaluation). This can be achieved by, for instance, involving target groups, consulting experiences and prior research, and by simulating or pre-testing policy options: do they work as intended?

### **Example**

**Simplifying Social Security** - Working with policy officers, behavioural scientists applied the test in the IBO on simplifying social security. The scientists were involved at three moments:

- Before policy options were formulated, they contributed insights and knowledge on the ability to act.
- Once the policy options had been formulated, they evaluated the 28 options based on readily available insights and knowledge on feasibility and human behaviour.
- They elaborated 2 policy options into a scenario, setting out how they would affect citizens. 20 citizens with profiles relevant to that policy were then interviewed about the feasibility and practicability of that scenario.

Fundamental adjustments are possible during policy formulation, when significant gains can still be achieved in terms of feasibility and practicability. The ability to act can also play a fundamental role in implementation processes. It is possible, for example, to profile and journey all the steps that citizens needs to take, and then to seek solutions to bottlenecks, such as by modifying forms, timing or interviews. Example: if benefit claimants are obliged to report changes in their situation on time, you can send them a reminder to do so.

## Example

**'Returning to employment? Don't forget about your benefits!'** - When you return to employment, it is important to be aware of the possible consequences for your benefits. The Employee Insurance Agency (UWV) and the Benefits Department (Dienst Toeslagen) performed a behavioural analysis on the notification obligation for benefit recipients. The analysis highlighted the impact of the limited ability to act on their part. Interviews with citizens revealed that the period covering the time they lost their job, the time when they were looking for a new job and finding a new job is stressful. About 30-40% of citizens experience stress or a lack of money. This makes it difficult to perform essential functions, such as planning and maintaining behaviour or action over time. See 'Reporting a change in income to Benefits Department'.

The final assessment is not the key objective of an ability to act test. It is about incorporating a realistic perspective regarding human behaviour, at the right time, with fewer assumptions about target groups. So, having a true understanding of what makes certain rules and processes 'doable', or what creates barriers. By explicitly identifying 'actability', this aspect can be better **weighed against other interests**, such as cost, privacy impact or feasibility and enforceability by agencies. In this way, we work together on what works for people.

## Sustainability

The government faces the major challenge of urging citizens and businesses to adopt sustainable behaviour. Does a better environment start with you? Despite the evidence indicating that this is not the case,<sup>17</sup> individual consumer behaviour does matter. Everyone can determine an estimate of their carbon footprint.<sup>18</sup>

Various editions of A Wealth of Behavioural Insights highlight studies in this field. Despite this, behavioural scientists indicate<sup>19</sup> that understanding of human behaviour continues to be insufficiently applied within the climate and energy transition. Where behavioural insights are applied then it is often done too late or only in relation to specific, isolated measures, they argue. They recommend

<sup>17</sup> Een beter milieu begint niet bij jezelf (2020), Jaap Tielbeke.

<sup>18</sup> Milieu Centraal <https://tools.milieucentraal.nl/CO2-voetafdruk>.

<sup>19</sup> [Syntheseverslag klimaatbeleid en gedragsinzichten | Rapport | Rijksoverheid.nl](#).

making undesirable behaviour more difficult and unattractive, and making sustainable alternatives more attractive, than at present.

### *Behaviour toolkit*

The following examples show that the issue of sustainability is ideal for illustrating the versatility of the behavioural experts' toolkit. Both as regards behavioural techniques as well as research techniques.

### Six examples

- **Less waste placed next to containers** - Bin liners and other bags containing residual and larger waste left next to underground containers remain a cause of annoyance for residents. The Municipality of Dordrecht wanted to break the social norm that had taken hold: it should become less normal to leave rubbish next to bins. The interventions proved successful. An interesting aspect of the method used is the role of gamification; neighbourhoods could compete for the honorary title of Cleanest Neighbourhood in Dordrecht. Although PBL Netherlands Environmental Assessment Agency calls for circularity to be addressed at an earlier stage, slightly higher on the so-called R ladder, this approach also remains important for the well-being of residents as well as for a pleasant living environment. See 'Less waste placed next to underground containers'.
- **Encouraging people to buy second-hand clothes** - At the Preloved Fashion Fair, which was held in Utrecht and Leiden, shoppers were enticed to buy second-hand clothes through a mix of interventions. Measurements in Leiden indicated a higher intention to choose second-hand over new items amongst shoppers. The large number of vox pop interviews (nearly 1,000) that were conducted is a particularly striking feature of this study. This is an example of a qualitative research method being used at such scale that it becomes a quantitative method. See 'Buying second-hand clothes'.
- **Energy displays generate savings** - The study shows that an average saving of 5% on household energy bills can be achieved by using in-home displays. No savings effects were established for app or email-based energy consumption managers. These findings are in line with previous studies showing that only direct feedback works. The RCT established to conduct this study ensured that no 'volunteer selection bias' was introduced through the control group. This bias exists when intrinsically motivated people who would

have liked to participate in the intervention are part of the control group. See 'Energy savings achieved with energy consumption managers'.

- **Verbeterjehuis.nl** - This online experiment tested various ways in which sustainability measures for homeowners are presented on the website [verbeterjehuis.nl](http://verbeterjehuis.nl). The variant emphasising that the sustainability measures are 'recommended for your personal situation' proved to be most effective. In the RCT experiment, the approach was modified to avoid a sequence effect: a form of bias where the order in which the questions are asked has an effect on the replies. See 'Verbeterjehuis.nl helps homeowners choose the right sustainability measures'.
- **Improved sustainability measures by SMEs** - Through the Improved Sustainability of SMEs Subsidy Programme (Subsidieregeling Verduurzaming MKB, 'SVM'), small businesses can get energy-saving advice from an energy consultant as well as support for energy-saving measures. This subsidy was not utilised as much as expected. The SVM website was updated with various behavioural techniques, including: clearly formulated target behaviour, a visual structure, step-by-step plan and simpler information. This did not lead to more applications, however. The study found that SMEs have little confidence in energy consultants and do not see the value of the advice they provide. This was instructive, and an example of a study with a different target group than citizens. See 'Micro-SMEs 'green' their business'.
- **Circular business models** - This 'discrete choice experiment' shows that consumers currently prefer linear business models: they buy new products and throw them away after use. Companies can change this, however, by offering discounts when a product is handed in, for example. This is an example of fundamental research, a bit higher on the previously mentioned R ladder, that is needed to initiate systemic change. See 'Promising circular business models'.

### *Climate behavioural scan*

The examples highlighted above illustrate the possibilities offered by behavioural insights, although there also remain many additional opportunities. The recommendations from the 2022 climate policy behavioural scan<sup>20</sup> offer starting points in this regard. One recommendation is to take steps to monitor behaviour more than happens at present. RIVM (National Institute for Public Health and the Environment) is currently exploring how the lessons from the its Behavioural Unit can be used to set up a monitor of relevant [behavioural determinants for climate-friendly behaviour](#).

We have already voiced the main recommendation for real behavioural change to benefit and/or protect the climate: make undesirable behaviour more difficult and unattractive, and make sustainable alternatives more attractive, than at present.

---

<sup>20</sup> [Syntheseverslag klimaatbeleid en gedragsinzichten | Rapport | Rijksoverheid.nl](#).

3

34 new projects

**This chapter presents an overview of 34 projects<sup>21</sup> in which the government has applied behavioural insights to achieve more effective policies. The projects were the result of close collaboration between ministries, executive agencies, regulatory bodies, municipalities, provinces, research institutes and behavioural science agencies.**

The projects are grouped according to **theme**:

- Climate and environment
- Health and welfare
- On the job and development
- Finance and consumer affairs
- Information provision and cybersecurity

The projects that we have collected comprise studies in which a **behaviour analysis** was performed beforehand and where ex-post **evaluation** of the impact on people's behaviour was conducted. In most cases, this evaluation concerned actually observed behaviour, although in certain cases it concerned intended behaviour or 'self-reported' behaviour (where individuals provide information about their own actions, experiences, habits or responses). At the very least, the projects had to involve a **baseline measurement as well as an impact measurement** of the intervention group, and in many cases, also of a comparable **control group** that did not undergo the behavioural intervention. Ideally, subjects were randomly allocated to the control and intervention groups.

If you wish to learn more about these projects, you will find more extensive descriptions in BIN NL's [online projects database](#), which also contains references to available study reports. Furthermore, you may wish to refer to this publication's appendix, where you will find a list of the contact persons associated with these projects.

<sup>21</sup> The Dutch version of A wealth of behavioural insights contained 35 cases. One case was not included in the English version due to potential problems an English summary might cause in getting the study published academically.



## Buying second-hand clothes

*What is the impact of the Preloved Fashion Fair campaign?*

In 2022, the Preloved Fashion Fair was organised in Utrecht and Leiden, aimed at enticing shoppers to choose second-hand over new items. The campaign is a response by the Ministry of Infrastructure and Water Management to the growing chorus for a more sustainable way of life. In Leiden, the campaign resulted in an increased intention to buy second-hand clothes.

### ***Why this experiment was conducted: scepticism about second-hand clothes***

The clothing industry is a major polluter, and the second-hand market is an important alternative to new clothes. While more and more Dutch consumers are turning to pre-owned clothing, a large group remains sceptical. According to a target group study conducted in 2020, they wonder whether they will be able to find a suitable second-hand item, and whether it is hygienic. The best way to overcome this scepticism is to create positive experiences with second-hand clothing. With this purpose in mind, the Ministry of Infrastructure and Water Management initiated the Preloved Fashion Fair.

### ***Type of intervention: Preloved Fashion Fair campaign***

A campaign was developed and run in Utrecht and Leiden in 2022. The Preloved Fashion Fair consisted of the following elements:

- pop-up stores with second-hand clothes in city centres, at prominent locations to introduce the second-hand concept to new target groups
- existing second-hand clothes stores that are put in the spotlight
- influencers sharing about their second-hand clothes
- content on how hip, unique and sustainable second-hand clothes are
- reminders of desired behaviour when buying second-hand clothes
- a competition to reward the desired behaviour

**Image 1:** Pop-up store with second-hand clothes



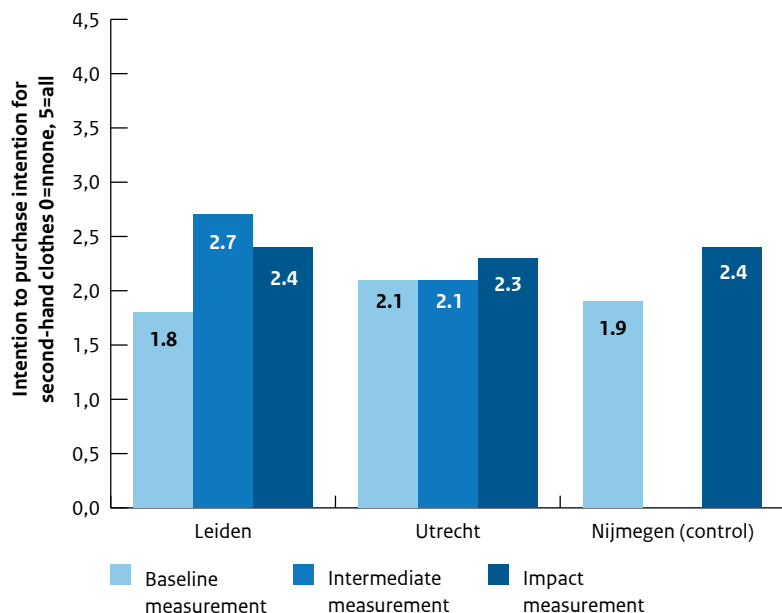
**Method used: baseline and impact measurements with vox pop interviews**

The campaign was evaluated by means of vox pop interviews in Utrecht and Leiden (the experimental cities) and in Nijmegen (the control city). The interviews were conducted before, during and after the campaign in the shopping area where the campaign was visible. A total of nearly 1,000 people were asked about the campaign, their behaviour, intention and attitude towards second-hand: 395 in Utrecht, 334 in Leiden and 245 in Nijmegen.

**Result obtained: positive impact on purchase intention, amongst other things**

In Leiden, Utrecht and Nijmegen, people's intention to buy second-hand clothes was significantly increased after the campaign. Only in Leiden does this increase appear attributable to the campaign; there, people's intention also increased during the Preloved Fashion Fair. The proportion of second-hand garments that people said they had bought also increased in that city.

In Utrecht, no significant effect was found during the campaign, possibly because the campaign was less noticeable in the large shopping area than in the compact centre of Leiden. The increase in Nijmegen (control city) may be attributable to other second-hand clothing campaigns run during the same period. See Figure 1.

**Figure 1:** Development of purchase intention for second-hand clothes in cities

There were also differences in attitude, although these cannot be directly attributed to the campaign. In all three cities, the degree to which respondents considered second-hand clothes as trendy increased. In Leiden and Nijmegen, the sustainability benefits of second-hand clothes were also rated higher at the time of the impact measurement than when the baseline measurement was taken. It is worth noting that the attitude was very positive, anyway. Most respondents think second-hand clothes are trendy, sustainable and easy to find. This represents an improvement, therefore, on the earlier target group study from 2020.

#### ***Impact: more targeted follow-up and contribution to climate***

This evaluation will allow the Ministry of Infrastructure and Water Management to make its 2023 campaign more effective, while new insights have been gained for promoting sustainable textile behaviour. It is now known that an intervention in a smaller city (Leiden) is more effective than in a large city (Utrecht). And that the campaign can focus less on how easy stores are to find or attitudes towards second-hand, as these no longer appear to be major barriers. In future, the focus can be placed on converting this positive attitude into actual behaviour. Cutting down on new clothing purchases is environmentally beneficial, since clothing production requires large amounts of water and energy.

## Feel & act green

*Can compliments about sustainable behaviour lead to the next sustainable choice?*

Rijkswaterstaat (the Directorate-General for Public Works and Water Management) wants to induce behavioural change in several areas. The circular economy is one example. A study examined whether consumers will make more sustainable choices if they have been complimented on their past actions or behaviour that were environmentally friendly or sustainable. This proved to be the case.

### **Why this experiment was conducted: additional incentive for sustainable behaviour**

Behavioural change is tailor-made. Every change to sustainable behaviour requires a different approach. Encouraging second-hand purchases involves a different approach than promoting electric vehicle adoption. Even within an individual theme, such as waste separation, different approaches are needed: separating plastic is complicated, and separating food waste is dirty. Is it nevertheless possible to encourage people to make multiple sustainable choices? That is what the Behavioural Interventions Team at Rijkswaterstaat's Circular Economy & Waste department wanted to investigate.

### **Type of intervention: affirmation of sustainable identity**

The team sought to determine whether people who already make a sustainable choice could be encouraged, through identity affirmation, to make another sustainable choice. Or specifically: if people choose a second-hand clothing voucher online, could they also be encouraged to choose a sustainable delivery option, based on the Change Mindset Model (Dijksterhuis and Van Baaren)?

There were three groups:

- sustainable identity affirmation: in this group, the online text read 'Way to Go! Did you know that buying pre-owned clothes means fewer new clothes have to be made, and therefore less CO<sub>2</sub> is emitted? Your choice of second-hand clothing voucher makes you a sustainable person who is doing good for the environment and the planet.'
- power identity affirmation, possibly with a reverse effect: in this group, the text read 'Way to Go! Did you know that by choosing pre-owned clothes, you can buy more designer and other clothing for the same amount of money? Second-hand clothes are often cheaper than new clothes. Your choice of second-hand clothing voucher makes you someone who gets the greatest value for their money.'
- control group: in this group, the text read 'Thank you for your choice. You now have the chance to win a voucher for second-hand clothes.'

**'Method used: online experiment**

Members of an online panel chose which reward to receive for their participation in the study in an online environment: a chance to win a voucher for new clothes or second-hand clothes from the same retailer. If participants chose the new clothes, they were thanked for their participation. If they chose second-hand clothing (680 respondents, about a quarter of all participants, did so), they were randomly shown one of the three texts. Next, they chose the delivery option: collect the voucher from the nearest pick-up point or have it delivered to their home by delivery service. The amount of CO<sub>2</sub> was shown to inform them of the more sustainable option. An analysis was undertaken to determine in which group subjects were more likely to choose this sustainable option.

**Image 2:** Timing of choice for pick-up point or home delivery

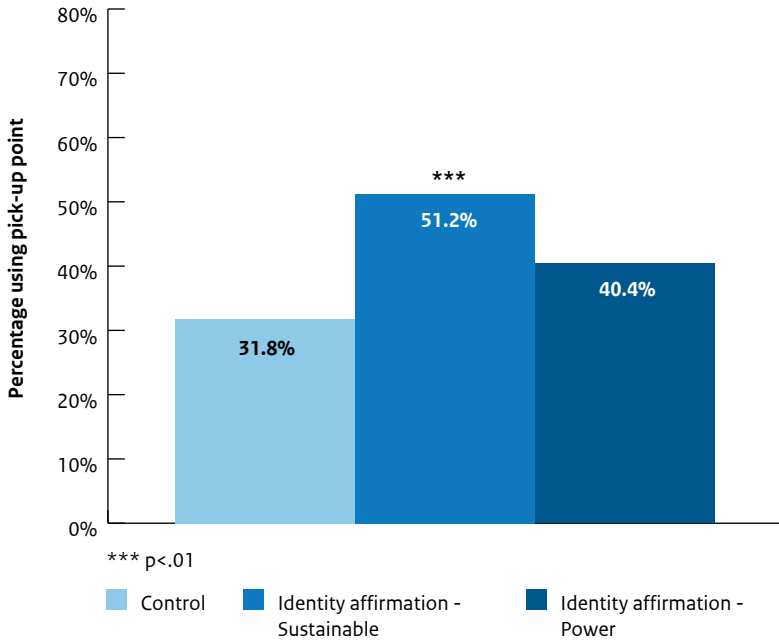
**Forwarding details if you won the voucher**

Bezorggegevens	Verzendmethode	Overzicht
<input type="text" value="Naam"/> <input type="text" value="Straatnaam"/> <input type="text" value="Huisnummer"/> <input type="text" value="Postcode"/> <input type="text" value="Woonplaats"/> <input type="text" value="E-mailadres"/> <input type="text" value="Telefoonnummer"/>	<input type="radio"/> Thuis geleverd: binnen 2 tot 3 dagen bezorgd (630 gram CO <sub>2</sub> - uitstoot) <input type="radio"/> Ophalen bij afhaalpunt: binnen 2 tot 3 dagen bezorgd (400 gram CO <sub>2</sub> - uitstoot)	<p><b>Je maakt kans op:</b></p>  <b>Zalando pre-owned bon</b> Waarde van bon €65,-  <input type="button" value="Volgende stap →"/>

**Result: compliment about sustainable behaviour works**

The study shows that a sustainable identity affirmation after selecting the second-hand clothing voucher leads to an increased likelihood that respondents will select the sustainable delivery option. 51% of respondents in this group opted for sustainable delivery, compared with a smaller proportion in the other groups (40% of respondents in the power condition and 32% in the control condition). So, there is evidence of a positive effect. The effect in the case of power identity confirmation is not significant. While the study does not show that the effect can be matched to a change in identity, it does show that complimenting sustainable behaviour has a direct effect on subsequent choices.

**Figure 2:** Effect of identity confirmation on delivery choice



***Impact: capable of wider application, but more research needed***

More research is needed to properly understand how people make multiple sustainable choices successively and how the government can encourage this behaviour. Complimenting a sustainable choice in a sequence of choices seems to be a promising intervention, however.

## Energy savings achieved with energy consumption managers

*What impacts does feedback have on household consumption?*

A series of controlled randomised experiments was conducted to examine the savings effects for households of three types of energy consumption managers tools: an email + web application, an app installed on a smartphone or tablet and an in-home display. Energy savings could only be established for the in-home display: almost 7% on natural gas and over 2% on electricity consumption.

### **Why this experiment was conducted: The Netherlands' climate targets**

Energy consumption by Dutch households accounts for 15-20% of the Netherlands' CO<sub>2</sub> emissions. That consumption has to come down to meet the Netherlands' climate targets. Household behaviour plays a crucial role in determining energy usage in the built environment. Energy consumption managers combined with smart meters can give impetus to energy saving by providing households with feedback on their energy usage. Having insights into their energy usage enables users to make better decisions. PBL Netherlands Environmental Assessment Agency examined the effectiveness of feedback on achieving energy savings.

### **Type of intervention: 3 types of energy consumption managers**

PBL Netherlands Environmental Assessment Agency, in collaboration with Tilburg University, examined three different energy consumption managers that provide households with insight into their energy consumption. They differed in terms of interface and how energy consumption is displayed:

- an email + web application: an email details how closely the advance utility payment matches actual usage (on one site, it was possible to adjust the advance payment amount)
- an app: energy usage during the previous day or earlier is displayed on a smartphone or tablet
- a simple in-home display: this display installed in the living room or kitchen is continuously visible and provides instant feedback on energy consumption

The first two energy consumption managers to be examined were offered free of charge by energy companies to their customers at the time of the study (2018-2019). The in-home display was on sale in the retail market.

**Figure 3:** In-home display used in the experiment



**Method used: 3 RCTs**

A Randomised Controlled Trial was conducted for all three experiments. Subjects were therefore randomly allocated to the control and intervention groups, without self-selection.

- For the in-home display, nearly 1,000 households were monitored for between 7 and 18 months.
- For the app experiment, over 139,000 households were monitored for 18 months.
- The email and web application intervention involved monitoring a total of 135,000 households for 15 months.

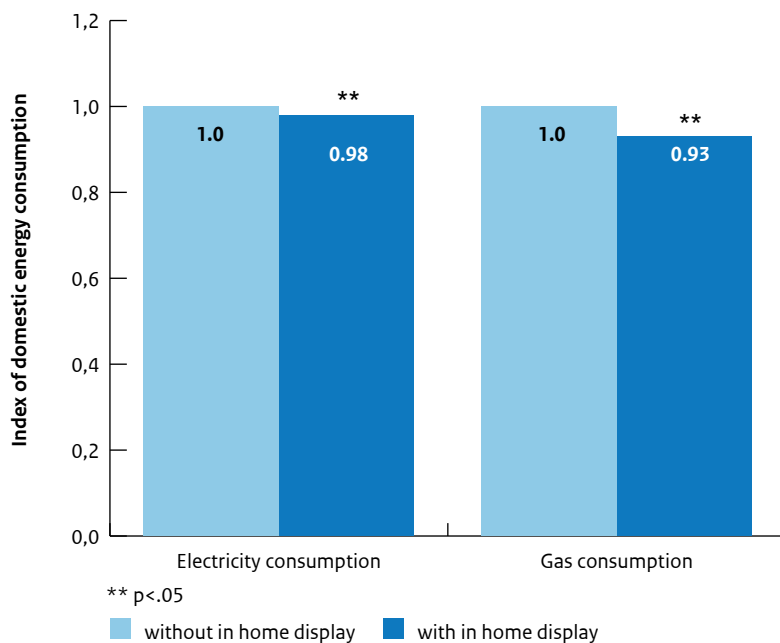
In all the groups, household energy consumption was measured by means of smart meters before and during the intervention to determine the impact of the feedback. All the households in the in-home-display experiment were also sent an online questionnaire on conclusion of the experiment. In the email + web application experiment, a proportion of households received a questionnaire. A questionnaire was not possible in the app experiment.



**Result obtained: In-home display resulted in 5% lower energy bills**

Households with an in-home display saved an average of 5% on their energy bills. The group that received the in-home display used 2.2% less electricity and 6.9% less gas than the control group. No energy savings effects could be established for app or email-based energy consumption managers. Although households are generally attracted to energy consumption managers, most of the households surveyed did not believe that the in-home display led to energy savings.<sup>22</sup>

**Figure 3:** Decrease in electricity and gas consumption with in-home display



<sup>22</sup> Vringer, Kees, Daan van Soest and Mirthe Boomsma (2022). [Effective energy saving policy requires causal evidence](#). Conference paper ECEEE summer studies, Hyeres, 6-11 June 2022.

***Impact: feedback leads to an annual saving of several petajoules***

Based on the study performed, PBL Netherlands Environmental Assessment Agency estimates that by the end of 2019, Dutch households saved a combined total of 4 petajoules per year thanks to the roll-out of the smart meter, the provision at regular intervals of a comprehensive consumption and cost overview and the use of in-home displays. Of this, two-thirds is attributable to the consumption and cost overview provided to the more than 7 million Dutch households fitted with a smart meter. The remaining one-third can be attributed to the 0.4 million in-home displays installed in the Netherlands. Providing feedback on energy consumption can help households save energy. Direct and continuous feedback, as provided by an in-home display, is most effective in this regard.

## Website Verbeterjehuis.nl helps homeowners choose the right sustainability measures

*Which presentation encourages homeowners to want to take measures?*

This online experiment tested various ways in which sustainability measures for homeowners are presented on the website [verbeterjehuis.nl](https://www.verbeterjehuis.nl), 'improve your home'. The variant emphasising that the sustainability measures are 'recommended for your personal situation' proved to be most effective. This addition acts as an incentive to homeowners to install roof insulation or adopt other sustainability measures.

### **Why this experiment was conducted: verbeterjehuis.nl website optimisation**

Homeowners can perform an online improvement check on [verbeterjehuis.nl](https://www.verbeterjehuis.nl) to find out about sustainability options for their home. This check consists of two parts. After entering various features and characteristics of their home, they will receive a QuickScan recommending measures that they can still take in their home, including the cost of and benefit they can expect from each measure. Next, they can enter more detailed information about their home for a more in-depth overview of sustainability measures. They are then sent three sustainability packages tailored to their situation (SmartTwin). In this study, the Ministry of the Interior and Kingdom Relations and the Ministry of Economic Affairs and Climate Policy sought to examine how the website can motivate homeowners to actively select these options.

### **Types of intervention: variants with behavioural techniques**

The behavioural study involved testing various interventions. In the case of the QuickScan, the following 5 intervention variants were tested:

- the control variant with the original version of the website
- a step-by-step plan on implementing the sustainability measure
- a tip on how to receive additional subsidy if they implement two sustainability measures
- information on cost savings after 5 years
- individually tailored information: 'recommended for your personal situation'. See image 4.

In the case of the SmartTwin tool, the following five intervention variants were tested:

- the control variant with the original version of the website
- package names and stars: Goed begin (a good start) \*, Goed op weg (well on

track) \*\* and Klaar voor de toekomst (ready for the future) \*\*\*

- expected energy label for the home after implementing the measures
- contribution to increased home value
- information on cost savings after 5 years

**Image 4:** Recommended improvement options for your home

Verbeterjehuis

### Aanbevolen verbeteropties voor jouw huis

Op basis van jouw situatie hebben we deze maatregelen op een rij gezet. Zij zijn voordelig voor je wooncomfort, portemonnee en het klimaat. Begin zo snel mogelijk met deze maatregelen dan heb je er het snelst de voordelen van.

Kies 2 of meer maatregelen en krijg per maatregel geen 15 maar 30% subsidie

### Gekozen verbeteringen

Dakisolatie schuin dak	€ 4806
<hr/>	
<b>Investering</b>	<b>€ 4806</b>
<b>Af: Subsidie (indicatie)</b>	<b>€ 849</b>
	<b>€ 3957</b>
<hr/>	
<b>Besparing per jaar</b>	<b>€ 522</b>
<hr/>	
CO2 uitstoot daalt	778 kilo ↓
Gasverbruik daalt	425 m3 ↓
Stroomverbruik daalt	57 kWh ↓
<hr/>	
<b>Toelichting op berekeningen</b>	
<a href="#" style="background-color: #00a651; color: white; padding: 5px 15px; border-radius: 10px; display: inline-block;">Bewaar dit verbeterplan →</a>	

**Gevelisolatie**

Huidig: Geen - 0 cm

Kies

**Vloerisolatie**

Huidig: Geen - 0 cm

Kies

**Dakisolatie schuin dak**

Huidig: Geen - 0 cm

Gekozen: Binnenkant dak met goede isolatie (Rc 4)

€ 4806

[Pas aan | Verwijderen](#)

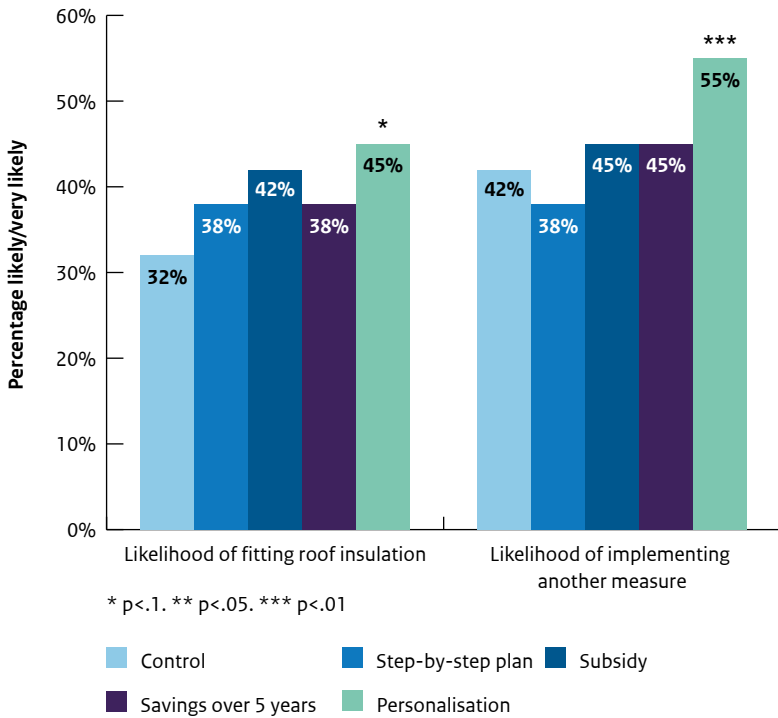
### Method used: RCT

Owners of homes built before 1993 were invited, through a panel agency, to fill in an online questionnaire. All the respondents (n=1276) were presented with a scenario involving a house with the potential for sustainability improvements, such as roof insulation. In part 1, they were presented randomly with one of the QuickScan variants. Next, they were asked how likely they were to fit roof insulation, or implement some other sustainability measure. This was followed by part 2, with one of the SmartTwin variants and the same question. In part 3, the respondents answered various background questions relating to sustainability measures that have already been taken, for example, or familiarity with the verbeterjehuis.nl website. Half of the respondents took part in reverse order, i.e. first the SmartTwin element and next the QuickScan, to rule out the possibility that the order might affect the results.

**Result obtained: personalisation has a positive impact**

The respondents who were presented with the personalised variant of the QuickScan were more likely to say they were likely or very likely to fit roof insulation than those presented with the control group variant (45% versus 32%). For this group, there was also a significant effect on the likelihood of them implementing other sustainability measures (55% versus 42%). The respondents also reported that having been presented with this personalised variant, they rated the information as more appealing and easy to comprehend. See figure 4. For the other variants of the QuickScan and the SmartTwin tool, there were no significant differences compared to the control variants.

**Figure 4:** Proportion likely to implement sustainability measures in the five QuickScan variants



***Impact: personalisation implemented on website***

The variant emphasising that the sustainability measures are 'recommended for your personal situation' proved to be most effective. This variant has now been implemented on the [verbeterjehuis.nl](https://www.verbeterjehuis.nl) website. Homeowners who previously implemented sustainability measures are more likely to take further measures. This underscores the importance of starting: once people start, they are more likely to go on to do more.

## Micro-SMEs 'green' their business

*How to increase the likelihood of micro-SMEs applying for subsidy under the Subsidy scheme Improving Sustainability of SMEs (SVM)*

An online experiment investigated how behavioural techniques could be used to increase the likelihood of companies with 2 to 10 employees applying for assistance under the Subsidy scheme Improving Sustainability of SMEs (SVM). The results show that an updated version of the website helps to clarify the subsidy. This effect is not reflected in the likelihood of these micro-SMEs actually applying for the subsidy.

### ***Why this experiment was conducted: SVM scheme not being fully utilised***

It is important that SMEs invest in sustainability to achieve the climate targets. Companies that are not subjected to the energy saving obligation can apply for the subsidy Improved Sustainability of SMEs (SVM). This subsidy entitles them to energy-saving advice from an energy consultant and supports in implementing energy-saving measures within their business. However, this subsidy was not being fully utilised.

### ***Type of intervention: SVM website updated with behavioural techniques***

The intervention consisted of changes to the Netherlands Enterprise Agency's website where the SVM subsidy can be applied for. The updated description of the information incorporated various behavioural techniques, such as clearly formulated target behaviour, a visual structure, step-by-step plan and simplified information. (see Figure 5).

**Image 5:** Part of updated website concerning subsidy scheme

**What do you need to do?**

1.  **Find an energy consultant that suits your business, e.g. through deb.nl**
2.  **Get tailor-made energy advice from a specialist consultant**
3.  **From the advice you're given, select the sustainability measure(s) you want to implement**
4.  **Find a specialist\* who can assist you in implementing the advice**  
 \*This could be your energy consultant, or alternatively an installer who assists you in implementing the measures or an accountant who can help you apply for the subsidy, for example.
5.  **Apply for the subsidy yourself or have your consultant or specialist do it for you through the E-Desk of the Netherlands Enterprise Agency**  
 You will need the following documents to complete your application:  
 1) The energy advice. 2) Invoice of the energy consultant. 3). The order, quotation or proof of payment for the measures from the energy advice that you intend to implement.

**Method used: RCT**

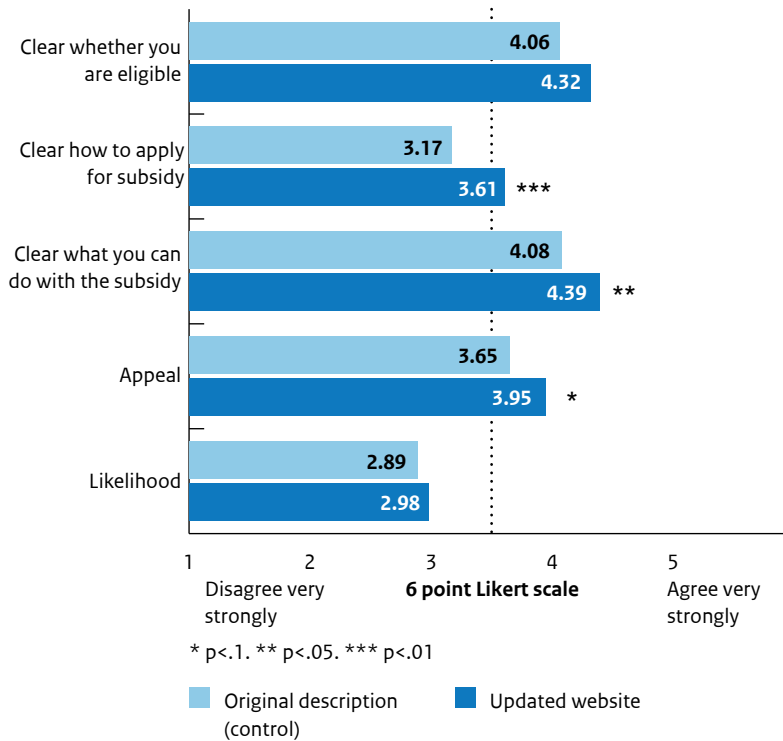
Micro-SMEs were invited to fill in an online questionnaire in collaboration with panel agencies. In this questionnaire, respondents (n=176) answered questions on drivers and obstacles to make their company more sustainable as well as on their familiarity with the SVM scheme. The questionnaire also included an experiment. Respondents were randomly assigned to one of two groups:

- in the control group, they were shown the original description of the SVM subsidy that appeared on the website of the Netherlands Enterprise Agency during the period of the study.
- in the experimental group, they were shown the updated version of the website incorporating the behavioural techniques

They then rated the clarity of the information, the appeal of the SVM subsidy and the likelihood of them applying for subsidy under the SVM scheme. They did this by indicating the extent to which they agreed or disagreed with various statements.



**Figure 5:** How respondents rated SVM programme descriptions



**Result obtained: updated website clearer and more appealing than original description**

The experiment showed that respondents who read the version of the website that incorporated behavioural techniques had a better understanding of how to utilise the SVM scheme compared to those who read the original description (86% versus 74%). They also felt it was easier for them to understand how to apply for the subsidy (94% versus 72%). In addition, they rated the updated version of the website as more appealing (79% versus 69%). However, this does not directly translate into an increased likelihood of them applying for the SVM subsidy. Indeed, respondents in the intervention group were not more likely to apply for the SVM subsidy than respondents in the control group (both 38%).

***Impact: understanding the barriers experienced by SMEs prompted modifications to the SVM scheme***

The experiment shows that behavioural techniques enhance the clarity and appeal of the SVM subsidy. These insights were partially incorporated into the SVM page on the website of the Netherlands Enterprise Agency. These results might also have relevance for communication regarding other subsidies. Insight was also gained about micro-SMEs' drivers and obstacles to make their business more sustainable. This revealed that respondents were positive about subsidies for pursuing sustainability initiatives. In contrast, the majority lacked trust in the energy advisor (52%) and were sceptical about the usefulness of the advice given (67%). These could be reasons for the lack of interest in the SVM subsidy. These insights contributed to modifications in the scheme, including stricter requirements for energy consultants. At the same time these modifications make it difficult to attribute any possible actual difference in subsidy applications to the changes on the website.

## Promising circular business models

*What options for a sustainable purchase are acceptable to consumers?*

**A circular business model promotes reuse of products and materials. A case in point is a model where consumers return their jeans to the manufacturer after use. Which circular business model characteristics are consumers willing to accept right now, and what do they refuse? Acceptance of these models seems to increase if companies offer effective or appealing option combinations, such as monthly payment schedules and discounted returns.**

### ***Why this experiment was conducted: to promote the circular economy***

Escalating consumption is hastening the depletion of raw material reserves and amplifying environmental and climate pressures in an unsustainable manner. A circular business model encourages producers to reuse products and materials so that they do not go to waste. However, many current business models are linear: production - use - discard. What can be done to change this? Rijkswaterstaat (Directorate-General for Public Works and Water Management) wants to know which sustainable business options consumers are receptive to when purchasing a product, so that manufacturers can respond accordingly.

### ***Types of intervention: options for a circular business model***

This study seeks to identify the behavioural factors involved in the purchase of three different products: jeans, phones and couches. Will consumers buy the product if they are presented with different choices? The influence of the following seven characteristics was investigated:

- price: higher or lower
- payment method: one-time payment or in monthly instalments (with the incentive for the seller to supply robust products)
- terms of use: a deposit that you get back if the product is returned after use, a discount on your next purchase if you return the product, or a penalty if the product is not returned (in good condition)
- the condition of the product when purchased: new, used, refurbished or recycled
- the lifespan of the product: shorter or longer service life
- repair options: how the product can be repaired if it breaks
- what happens to the product after use: incineration, re-use, repair or recycle

**Method used: online choice experiments**

A series of discrete choice experiments (DCE), in which the relative importance of characteristics can be determined, were carried out. Participating consumers were asked to imagine they were going to buy a product and had a choice between two options. See image 6 for an example involving the purchase of a pair of jeans. Which option would they choose? The data were analysed using the so-called multinomial logit model.<sup>23</sup> 750 consumers took part in the choice experiment.

**Image 6:** Example of options when purchasing jeans

Characteristic	Level 1	Level 2	Level 3	Level 4
<b>Price</b>	€ 60	€ 70	€ 80	
<b>Payment method</b>	You pay the amount in full on purchasing the jeans	You pay the amount in monthly instalments spread over one year		
<b>Terms of use</b>	You can return the jeans to the store after use, but will not receive anything back	You pay a € 20 deposit at the time of purchase. This amount is refunded if you return the jeans in good condition after use	You receive a € 20 discount on another pair of jeans if you return the jeans in good condition after use	You pay a € 20 penalty if you do not return the jeans in good condition after use
<b>What condition are the jeans in at the time of purchase?</b>	The jeans are completely new	The jeans have been previously used and are offered second-hand in perfect condition	The jeans are made from fabric from previously used jeans and are in perfect condition	The jeans are made from recycled textiles and are in perfect condition

**Result obtained: linear is the favoured choice, but there are possibilities for circular**

Consumers still seem to prefer linear business models where products are purchased new, without additional terms of use. The results also show, however, that companies can adopt certain characteristics of circular business models

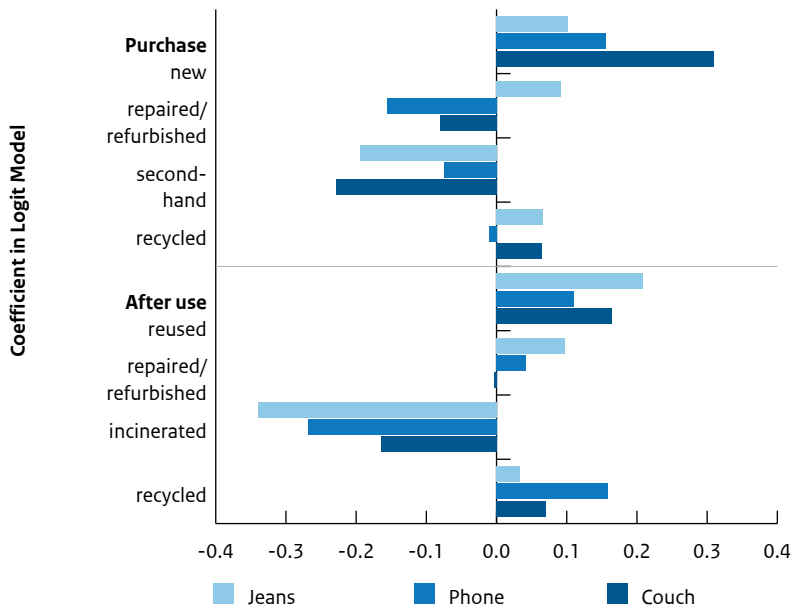
<sup>23</sup> The multinomial logit model is a popular method for modelling categorical outcomes that have no natural order.

with relative ease. As an example: to encourage consumers to return a product after use, companies might consider introducing a deposit. This does not have any significant adverse impact on buying behaviour.

Monthly instalments, on the other hand, represent a potentially negative effect, since the average consumer prefers to pay the full price in a single payment. However, this negative effect can be compensated for – at least in part – by extending the lifetime of a pair of jeans by two years and offering a € 20 discount on return.

Figure 6 shows some of the preferences. The higher the score, the more the characteristic contributes to the product purchase decision. Participants in the experiments prefer to buy jeans, phones and couches new. Furthermore, they hold negative to strongly negative views on product incineration: they would prefer to see the product reused.

**Figure 6:** Influence of characteristics on product purchase



***Impact: points of departure for entrepreneurs and policymakers***

The report was shared with the CIRCONNECT circular design platform and is being used by entrepreneurs to successfully market their circular business models. The study, and the insights obtained from it, can also be used for policy interventions aimed at promoting circular business models.

## Less waste placed next to underground containers

*Is there a reduction in the amount of waste left next to bins when good behaviour is made visible to the public?*

The Municipality of Dordrecht organised a competition titled **The Cleanest Neighbourhood in Dordrecht**. The aim was to get residents to place less rubbish next to underground waste containers. As a result of the experiment, the amount of waste left next to bins decreased and a new social norm was established.

### **Why this experiment was conducted: rubbish left next to waste containers**

Bin liners and other bags containing residual and larger waste left next to underground containers rank amongst the greatest causes of annoyance to residents. The sight of rubbish on the ground often invites even more waste. In Dordrecht, 'crash trucks' drive past the waste containers every other day to clean up any added rubbish, but even that is not enough. The Municipality therefore resolved to break the social norm: people should consider it less normal to leave rubbish next to underground containers.

### **Type of intervention: The Cleanest Neighbourhood in Dordrecht**

The Municipality teamed up with a behavioural consultancy to devise a competition. Over a period of eight weeks, five neighbourhoods competed for the title of cleanest neighbourhood in Dordrecht. The neighbourhood with the most number of days without any bin liners or bulky waste dumped next to underground containers was the winner. The central objective of the intervention is to break routine behaviours and the social norm, thereby reinforcing residents' intrinsic motivation directed towards a clean neighbourhood.

A waste counter was placed next to the container that kept track of the number of days without dumped waste (see image 7). This ensured the behaviour was made visible to the public, thereby providing daily feedback on the amount of rubbish left next to the container. A long period without any waste left next to the container reinforces the social norm that most people do not dump rubbish next to bins.

**Image 7:** Container with sticker and waste counter



**Method used: baseline and impact measurements and perception survey**

A baseline measurement was performed over a period of two weeks to keep count of the amount of waste left next to bins. The same count was kept during an impact measurement that was performed over the course of the eight weeks that the waste counters were placed next to the containers. A score was calculated to quantify the degree of seriousness in waste dumping: for example, five bin liners left next to the waste container on one occasion is less serious than a single bin liner left next to the container for five days. Also, in a perception survey residents were asked about the impact of the competition, such as whether the neighbourhood is cleaner and whether they are now committed to doing more to keep it that way. This was performed in door-to-door surveys (N=148).

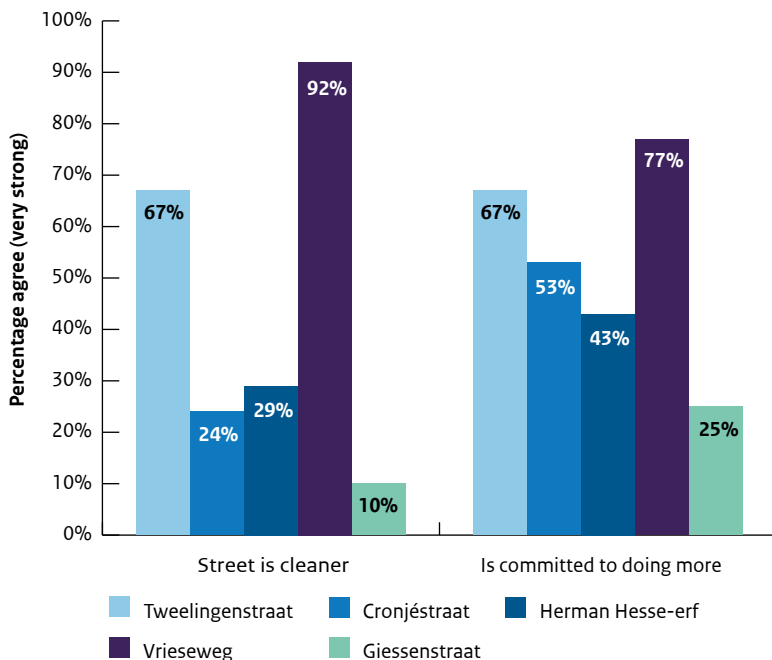
**Result obtained: reduction in the amount of waste left next to bins**

The competition had a positive impact. Compared to the baseline measurement, the waste dumping score decreased significantly in the first four weeks in all neighbourhoods. This score remained low in neighbourhoods where little waste was left next to containers during the same weeks. A new social norm was established there. The perception survey showed that residents of these



neighbourhoods also perceived their neighbourhood as cleaner. They indicated that they are now committed to doing more to keep their neighbourhood clean. See Figure 7. This confirmed the new social norm.

**Figure 7:** Opinion on street and personal commitment, by neighbourhood



### **Impact: liveable neighbourhoods and recycling**

The Cleanest Neighbourhood in Dordrecht has reinforced the right social norm for disposing of waste. This improves both the living conditions and quality of life as well as sustainability in a neighbourhood. By placing less waste next to underground containers, local residents prevent litter and stench that attract vermin. Moreover, waste they dispose of properly can be used as raw material for compost, recycled plastic and paper, glassware and much more. The response from local media has been enthusiastic.

## Safer road behaviour on N36 provincial road

*How can a campaign targeting road users prevent accidents?*

Rijkswaterstaat conducted a behavioural campaign aimed at urging drivers on the N36 provincial road in Overijssel to keep a safe distance, to be calm and relaxed while driving and to pay attention to the road. The campaign achieved a reduction in distractions, less irritation and an overall improved driving experience.

### **Why this experiment was conducted: many serious accidents on N36**

The spotlight has been on the N36 between Hardenberg/Ommen and Almelo/Wierden for some time due to the frequent, serious accidents that occur on the road. Rijkswaterstaat is implementing various infrastructural measures, but the behaviour of road users also plays a crucial role in road safety. A lot of heavy goods vehicles that are limited to 80 km/h use the N36, while a maximum speed limit of 100 km/h applies to large sections of the road. When motorists and motorcyclists end up behind a row of trucks, they are unable to drive at their own speed. This leads to frustration, boredom and distraction as well as them not keeping enough distance to the next vehicle.

### **Type of intervention: N36 behavioural campaign**

In 2021, Rijkswaterstaat launched a pilot behavioural campaign combining various elements:

- roadside message signs reminding road users of the desired behaviour, with the wordings 'N36= je aandacht erbij houden' (stay focused and alert) and 'N36= gewoon wat afstand houden' (keep your distance)
- social media posts highlighting a positive perception of the N36, for example 'N36= de weg naar mijn familie' (the road taking me to my family)
- a website featuring, amongst other things, testimonials from road users that win over resistance, provide an action framework for the desired behaviour and demonstrate the social norm
- supported by posters, free cards, giveaways such as an ice scraper and a car air freshener, to remind drivers of the desired behaviour, and promotion teams at local weekly markets

**Image 8:** Example of a roadside message sign



***Method used: repeated measurements with questionnaires***

Ahead of the behavioural campaign, an online survey was conducted via a citizens' panel and an open link on the socials of surrounding municipalities. People who had never driven on the N36 were excluded from the survey. The survey was repeated twice during the course of the campaign to specifically address themes highlighted in the campaign, e.g. keeping your distance. A final measurement was taken after the campaign ended. The four surveys had a total of over 4,000 respondents. Actual behaviour was not measured in this project.

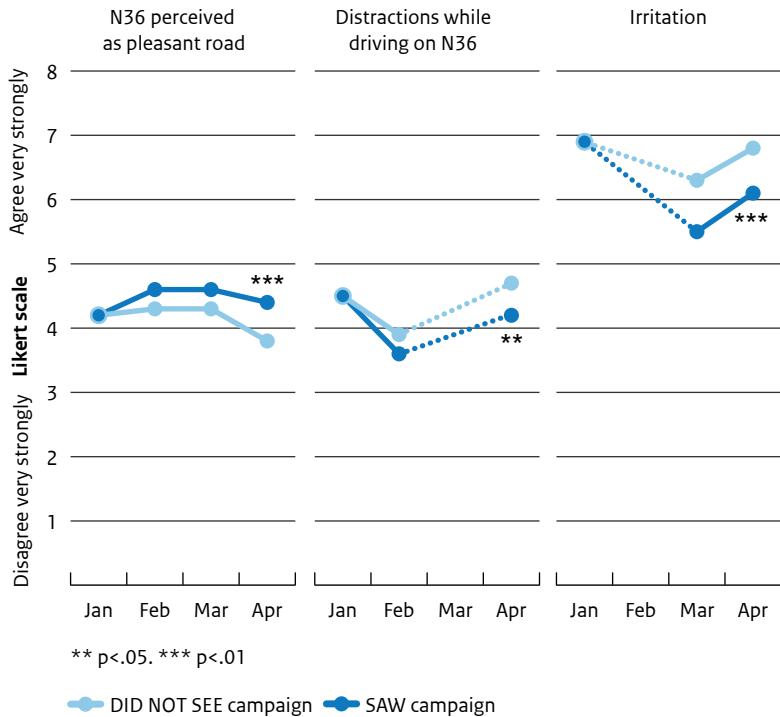
***Result obtained: reduction in distractions reported***

Judging by the self-reported behaviour, the campaign has had a positive impact. The perception monitor shows that road users were aware of and valued the campaign. The communication messages received a wider reach in a short time. Road users who have seen the campaign say they are less distracted while driving on the N36 than those who have not seen the campaign. The other results are also positive:

- they are more aware of risk-taking behaviours on the N36, such as not keeping your distance
- they are less likely to become irritated when driving behind slower traffic
- they feel less uneasy when they know they are going to take the N36
- they are less likely to take a different route to avoid the N36

- they have an overall improved driving experience: for example, they have a slightly increased perception of the N36 as a pleasant road to drive on

**Figure 8** Difference in perception of the N36 between people who have seen the campaign and those who haven't



**Impact: awareness of safety risks**

It is unrealistic to expect measurable improvements in drivers' behaviour on the road within a short period of time. However, road users did become more aware of risk-taking behaviours on the N36 as a result of the campaign. Moreover, they say they now concentrate more on the road while driving and feel less inclined to avoid the N36 because of any perceived unsafety and unease. These are favourable developments for safety and driving experience.

## Fewer dangerous situations for cyclists

*How to promote safe cycling in cities in Noord-Brabant?*

Five large cities in Noord-Brabant and the provincial authorities investigated how to improve cycling safety through behavioural interventions. They placed signs and markings along cycle routes in 's-Hertogenbosch, Breda, Eindhoven, Helmond and Tilburg. Half of the interventions had an effect; the number of dangerous situations decreased.

### **Why this experiment was conducted: redesigning road layouts is not always possible**

Six locations in towns and cities in Noord-Brabant were identified as unsafe for cyclists. A disproportionately high number of accidents and near accidents occur at these spots. As there were no feasible or practical options to significantly alter the road layouts there (e.g. by adding traffic lights or speed humps), the Province of Noord-Brabant decided to explore potential behavioural interventions.

### **Types of intervention: signs and markings**

It was decided to execute the following behavioural interventions at the six locations:

- a sign was put up at a set of traffic lights to prevent schoolchildren from cycling through red lights (Breda)
- signs were placed at the spot where a cycle through-route crosses a 50 km/h road, to get motorists to appreciate how cyclists perceive the road and traffic (Eindhoven)
- a silhouette of a cyclist was put up at the spot where a cycle through-route crosses a 50 km/h road, to make motorists aware of cyclists (Eindhoven)
- signs were erected along a cycle through-route, to encourage cyclists to make contact with motorists and reduce speed (Helmond) (see image 9)
- signs and markings were placed on the road to encourage cyclists to make hand signals at a roundabout ('s-Hertogenbosch)
- signs and markings were placed on the road to encourage cyclists to cross a 50 km/h road safely, by first stopping ('s-Hertogenbosch)

### **Method used: baseline and impact measurements and follow-up**

A baseline measurement was performed at all the locations, followed by an impact measurement after 1-2 weeks, and a follow-up measurement after 2-3 months. At these locations, cyclists' and motorists' behaviour was regularly observed: did cyclists stop at red lights or before crossing, did they make hand signals at the roundabout, and/or did conflict situations occur between cyclists

and motorists? A conflict refers to a situation where a motorist does not immediately give right of way to a cyclist, for example, if a cyclist brakes hard or too late, if a cyclist passes just in front of a car or vice versa, or if there is an accident, such as a collision or a fall.

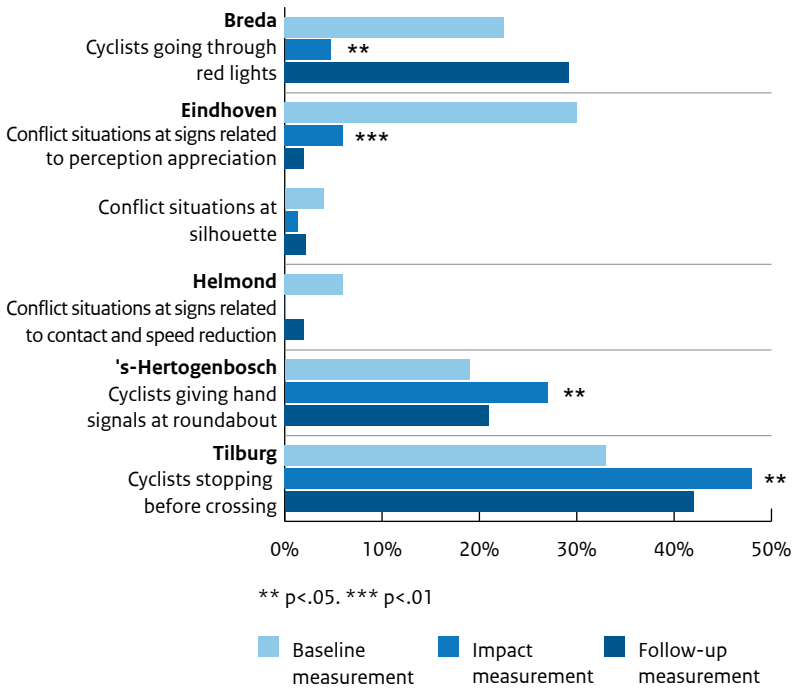
**Image 9:** Sign in Helmond to encourage cyclists to make contact with motorists



**Result obtained: half of interventions were effective**

In the case of four of the six interventions, the incidence of observed unsafe conditions decreased significantly in the impact measurement. See Figure 9. In the case of three of these interventions, that effect persisted longer, i.e. even during the follow-up two months later. The effect is especially large in the case of the signs that get motorists to appreciate how cyclists perceive the road and traffic.

**Figure 9:** Development in cycling safety



In Breda notably, the effect was eliminated during the follow-up measurement, even though the sign was still in place. It is possible that the effect has waned because pupils pass it daily on their way to and from school. In Tilburg, the study specifically examined situations involving an approaching car. The findings were: in the baseline measurement, 55% of cyclists stopped; in the impact measurement, 60% of cyclists stopped; and in the follow-up measurement, 76% of cyclists stopped. In addition, fewer near-accidents were observed: 10, 7 and 1 times, respectively.

***Impact: promising interventions. including for other locations***

The test provides insight into ways in which the Province can improve cycling safety. Also, more insight was gained into the long-term impacts and the duration of the effect of behavioural interventions. The signs and markings remained in place after the experiment ended. Three interventions displayed potential for application elsewhere, in particular the signs that get motorists to appreciate how cyclists perceive the road and traffic.



## Encouraging people to get fitter

*How can you give overweight people concrete guidance on adopting a healthy lifestyle?*

The 'Fit op jouw manier' (Fit your way) campaign aims to encourage overweight individuals to get fitter. The campaign successfully reaches the target audience, motivating them with tips that they then practice. For example, more people now regularly take the stairs instead of the lift or escalator.

### **Why this experiment was conducted: combating overweight and obesity**

The Prevention Agreement aims to reduce the proportion of overweight adults from 50% in 2018 to 38% by 2040. A healthy lifestyle helps prevent various health problems, including cardiovascular disease and type 2 diabetes. Besides having an effect on physical fitness, a healthy lifestyle also has a positive impact on people's mental well-being. This prompted the Ministry of Health, Welfare and Sport to develop a campaign focused on lifestyle and demonstrating numerous easy-to-follow ways to improve fitness. The first flight of this campaign generated enthusiasm, but otherwise had little impact, giving rise to the question: could this potential be better exploited?

### **Type of intervention: optimised 'Fit op jouw manier' campaign**

Behavioural insights were used to systematically hone the existing campaign concept, aimed at making it more efficient and effective. Messaging and website were updated and the focus was redirected to highlight a more limited number of tips. See image 10. The campaign recognises the potential resistance to behavioural change and offers a range of possibilities for people to try something that suits them. By showing what can be achieved with the tips, the campaign inspires people to take small fitness strides. Moreover, this gives individuals confidence that they will succeed, with actions that people can stick with because they are 'fun' or 'easy'. The campaign consists of TV and radio spots, digital outdoor advertising and online ads, including on social media.

### **Method used: baseline and impact measurements**

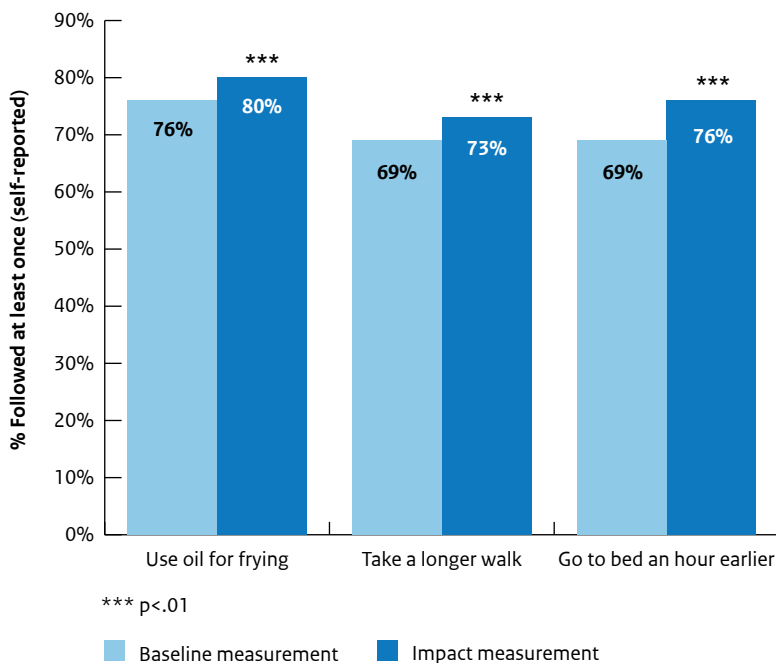
Baseline and impact measurements were performed to assess the effectiveness of the campaign, with independent sampling amongst more than 1,100 adults aged 30-65 years with moderate to extreme overweight and low to intermediate education level. Cross-media analyses were conducted to determine the extent to which effects can be directly attributed to specific media (combinations).

Image 10: Examples of online messaging

**Result obtained: fitness tips are being followed**

After the campaign, more overweight people feel inspired to improve their fitness. They are more confident that they can take the first step – which they then do. The target group is more likely to think there is always something suitable for them and individuals feel they have more control over getting fitter. After the campaign, for example, more people said they went to bed an hour earlier (7% more), took a longer walk or used oil instead of butter to fry their food (4% up in both cases). Also, more people reported that they regularly take the stairs instead of the lift or escalator (4% more). These are all tips from the campaign.

Besides effects on behaviour, there has also been a rise in behavioural intention and information searches. Analyses show that most developments can indeed be attributed to the campaign. Overall, online ads in particular contribute to the achievement of the campaign goals. These effects are enhanced by the use of TV, radio and outdoor advertising.

**Figure 10:** Behavioural changes to improve fitness***Impact: contribution to integrated approach to a healthy lifestyle***

The social importance of a healthy lifestyle is laid down, for example, in the National Prevention Agreement and the National Sports Agreement. The 'Fit op jouw manier' campaign stems from this. Breaking unhealthy eating, exercise and sleep patterns requires a multi-year communication approach that pairs seamlessly with intervention packages including concrete, local measures. The positive campaign impacts were important in further developing this integrated approach.

## Encouraging the wearing of face masks in hospitality venues

*How to ensure guests wear face masks in hospitality venues?*

Due to the COVID-19 pandemic, guests were required to wear face masks on entering and while moving inside hospitality venues. To promote this behaviour, self-persuasion and salience techniques were used in this experiment - with notable success. Following the announced relaxation of face mask requirements, there was a decrease in face mask usage, although this was significantly less in hospitality venues that saw interventions than in venues that did not experience interventions.

### ***Why this experiment was conducted: face mask compliance could be improved with some encouragement***

After being closed for months due to the COVID-19 pandemic, operators of hospitality venues were allowed to fully reopen their businesses in early June 2021, subject to observance of a number of basic measures. For example, everyone had to maintain a distance of 1.5 metres and wear a face mask on entering and while moving inside establishments. That presented a challenge, since after living with restrictions for over a year, we increasingly yearned to return to a sense of normalcy. How was everyone in the hospitality industry going to comply with the pandemic-related measures? This study focused specifically on the face mask mandate. The concrete target behaviour was: guests wear a face mask on entering and while moving inside hospitality establishments.

### ***Types of intervention: self-persuasion and salience***

For the two interventions, the psychological principles of 'self-persuasion' and 'salience' were moulded into a concept that would appeal to hospitality establishments:

- Self-persuasion was employed through the use of a sign bearing the statement: 'Ik draag een mondkapje omdat...' (I wear a face mask because...) plus 5 reasons. Through stickers, guests were invited to choose their own argument. A course of action was also added: '#Zetmop' (Put it on).
- Salience featured prominently on beer mats and through the interactive 'Kapje op, kapje af' (Mask on, mask off) playing cards scattered on the tables. This ensured that the reminder to wear a face mask was given at just the right time, as people were getting up from the table. The game was an interactive and positive reminder and stimulus. To avoid resistance, a personable approach was

taken, for example by subtly addressing them in a friendly manner: "Dear guest". Guests were given specific instructions: 'opstaan = opdoen' (get up = put on) and 'binnen = mondkapje op' (when inside = wear face mask). In this way, the requested behaviour required less mental effort.

**Image 11:** Argument board, beer mats and game instructions



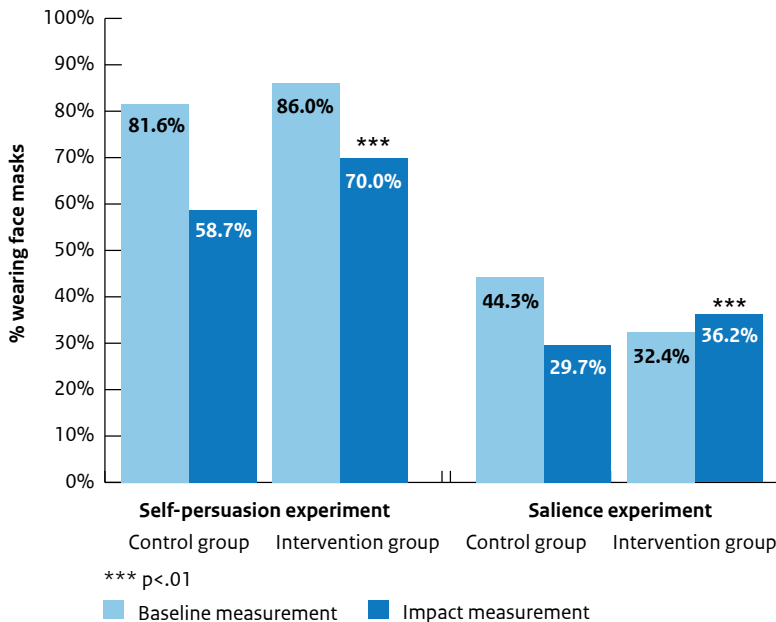
**Method used: baseline and impact measurements with control group**

The experiment was conducted in June 2021, just as the requirement to wear face masks in hospitality venues was about to be lifted. Observers, unobtrusively blending in, counted the number of times guests put on their face masks when moving around the establishment. There were two experimental conditions and a control condition, with baseline and impact measurements being performed. A total of six hospitality establishments took part in the tests in real-life settings.

**Result obtained: a significant reduction in face mask usage was prevented**

Following the announcement of the easing of pandemic-related rules, it was anticipated that face mask usage in the hospitality industry would significantly decrease. The interventions that were made mitigated the extent of that decrease. A significant effect was noted even in the weekend of the announcement that the face mask mandate was to be lifted. In the establishment where the self persuasion technique was applied, the decrease in face mask usage was 16 percentage points lower than the baseline measurement. In the control condition (without intervention), the decrease was 22.9 percentage points. The salience technique using beer mats and the interactive game also significantly mitigated the anticipated decrease. Face mask usage even increased slightly, by 3.8 percentage points. In the control condition, face mask usage decreased by 14.6 percentage points. It was also found that guests were significantly more likely to wear face masks in establishments where that was common practice amongst staff (62% versus 36%). This can be attributed to the strength of the social norm.

**Figure 11:** Face mask usage with the two interventions



***Impact: insights also applied in other sectors***

In the course of the COVID-19 pandemic, adherence to guidelines and rules gradually waned, while resistance to them grew. The hospitality sector in particular proved to be a challenging setting for the face mask mandate in indoor spaces. The tests conducted in real-life settings contributed to insights on how to inspire compliance with face mask guidelines. As the requirement to wear face masks in hospitality settings was lifted, the lessons learned were later utilised in sectors where the requirement was in place for a longer period, such as public transport.

## Instilling the habit of more frequent hand washing in office settings

*How to encourage proper and frequent hand washing with soap in office environments?*

Washing your hands regularly with soap and water is an effective and easy way of reducing the risk of people falling ill with COVID-19, influenza or a cold, or contracting other viral illnesses. Stickers and posters were developed focusing on reframing, nudging and habit stacking. Displaying the posters in the office environment led to an increase in handwashing amongst employees. Soap consumption went up.

### ***Why this experiment was conducted: improved hygiene standards in the workplace is the goal***

Following the lifting of COVID-19 restrictions, office work has resumed with increased regularity. Good hygiene practices are essential in safeguarding individuals from contracting viral illnesses, including coronavirus, influenza and the common cold. Washing your hands with soap and water is an effective and easy way of reducing the risk of falling ill. Research shows that over 80% of Dutch citizens have a positive perception of handwashing. The percentage of people that actually wash their hands sufficiently is much lower. The Ministry of Justice and Security and the Ministry of Health, Welfare and Sport joined with RIVM to launch an experiment aimed at promoting this practice.

### ***Types of intervention: posters in the building, stickers in the pantry and near the toilets***

Three types of intervention were developed:

- stickers in the pantry aimed at 'habit stacking': this involves linking the existing habit of getting something to drink with a new habit of handwashing. This makes it easier to adopt this new habit;
- stickers near the door to the toilets, aimed at nudging. See image 12;
- a poster campaign on one floor of the office building, aimed at encouraging and mentally facilitating. Handwashing was reframed and linked to positive existing behaviours and associations such as: at long last, we can get back to working together in the office and having lunch together. See image 12.



**Image 12:** Examples of stickers and posters

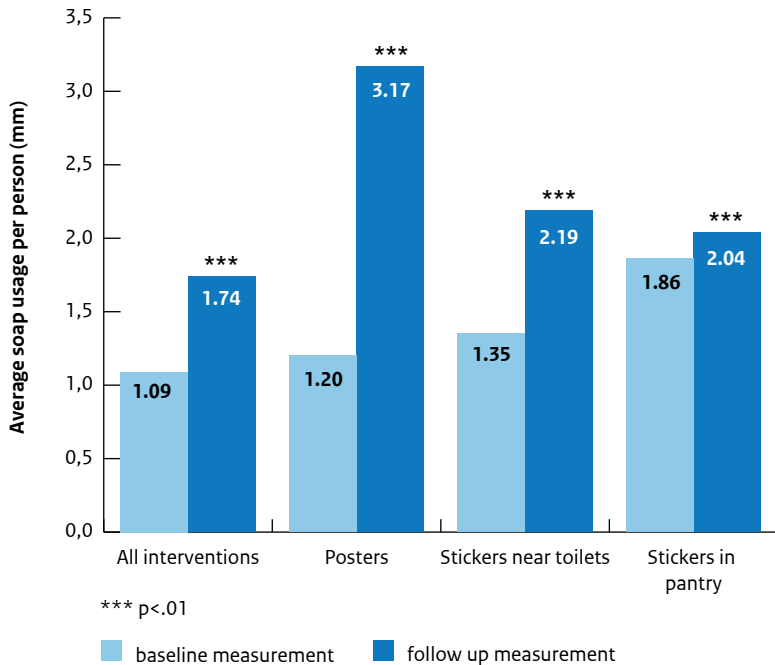


**Method used: baseline measurement and follow-up measurement**

The research design included four test conditions: three with the three intervention types separately and one with the three intervention types simultaneously. These were applied in an office building in four different departments with minimal traffic between them. Next, soap consumption was measured. The follow-up measurement was preceded by a baseline measurement. Both measurements were performed on the same three weekdays during two consecutive weeks, with similar office occupancy. Employees were also asked to fill in a questionnaire so as to gain qualitative insight into their perceptions of the interventions.

**Result obtained: soap usage increased by two-thirds**

Soap usage increased the most in the condition where only posters were used: over 1.5 times increased soap usage per person (+165%). Soap usage also increased significantly in the condition including the stickers near the toilets (+62%, similar to the condition with all interventions). The increase was smallest in the case of stickers in the pantry (+9.9%). See figure 12. Average soap usage per person increased by 66.5% after the interventions were implemented (not shown in the figure).

**Figure 12:** Average soap usage per person (in mm)**Impact: rapid effect**

The project demonstrates that reframing, nudging and habit stacking can lead to a significant increase in handwashing with soap and water in the office environment. Based on the results, it is recommended that the posters and nudging stickers be used near toilets. The behavioural effect is quick to materialise. It remains unclear how long the behavioural effect lasts, since this has not been studied. The interventions would thus seem to be an effective tool to achieve significant behavioural change within a short timeframe. These interventions have yet to be applied more widely in central government buildings and other official buildings and offices, although there is considerable potential for doing so. Furthermore, it seems appropriate to execute them at times when pathogens are more widespread or active, such as in the autumn.

## Cleaner hands in indoor sports facilities

*How can people be encouraged to improve hand hygiene?*

Improved hand hygiene can mitigate the spread of viruses. This experiment aims to identify ways in which proper hand hygiene can be promoted in indoor sports facilities. At key places and moments, visitors and users of indoor sports facilities were encouraged to use soap or hand sanitizer, amongst other things by communicating the social norm. This proved successful in getting them to wash their hands with soap more often.

### **Why this experiment was conducted: proper hand hygiene is essential**

Proper hand hygiene became more important with the relaxation of COVID-19 measures to prevent infection. The interministerial programme 'DG Samenleving en Covid-19' previously commissioned a study in an office environment aimed at promoting hand hygiene. In this study, the best results were achieved by linking the desired behaviour (handwashing for 20 seconds) to specific situations, so-called key moments, for example with a poster like this: 'Samen bakkie doen? Fijner met schone handen' (Having coffee together? It's nicer with clean hands). The Ministry of Justice and Security wanted to investigate whether these insights could also be leveraged to promote hand hygiene in indoor sports facilities.

### **Type of intervention: promoting clean hands during key moments**

Key moments at an indoor sports facility, such as entrance to the sports hall, were selected. Hand sanitizer dispensers or washbasins with soap were placed at these spots. Banners, posters and stickers communicated the desired behaviour. The following five behavioural techniques were used:

- breaking routine behaviours: a large banner is immediately noticeable and makes it clear that something different is 'going on', disrupting the old routine (of walking in without cleaning hands), see image 13
- social norms: the wording 'Wij sporten met schone handen' (We play sports with clean hands) emphasises that others also do this
- implementation intention: in all the messaging, the desired behaviour is linked to the situation, such as the image of a hand being sprayed at the hand sanitizer dispensers and a sign requesting people to wash their hands with soap for 20 seconds displayed at the washbasins
- prompting: the messaging reminds people of the desired behaviour
- sympathy: the way in which the raccoon is depicted on the materials reinforces sympathy for the message

**Image 13:** Clean hands behavioural intervention banner



**Method used: baseline and impact measurements and perception survey**

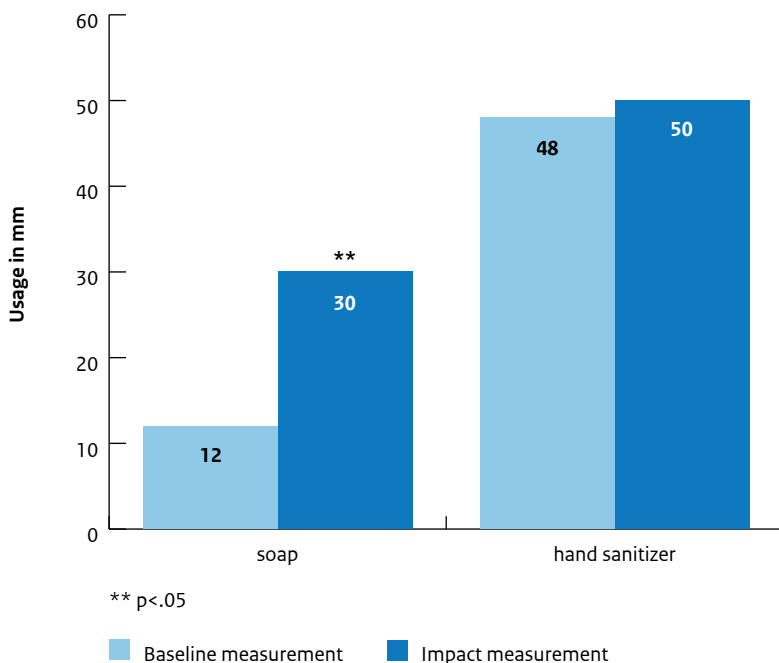
All the hand sanitizer dispensers and soap dispensers in a sports hall were fitted with a measuring device to measure usage. The baseline measurement was performed over four days. Next, the banners, posters and stickers were put up, after which the impact measurement was performed (also four days). Observations were also conducted and a perception survey was carried out amongst 42 students and teachers from schools that use the sports hall. This was done with structured interviews and a selection of open questions. In this way, information was obtained about how visitors perceive the behavioural intervention and their attitude towards proper hand hygiene in sports halls.

**Result obtained: Three-fold increase in soap usage due to intervention**

People washed their hands with soap more often during the impact measurement than during the baseline measurement. Three times more soap was used. See figure 13. There is no difference in hand sanitizer usage. This might be attributable to the fact that all the soap dispensers were installed in the toilet blocks, where few people can see what you are doing. By contrast, the hand sanitizer dispensers were all located at public areas in the corridor or hall, where everyone can see what you are doing. Most young people entered the sports complex in groups and it is known that generally young people are easily influenced by what their friends do or approve of (social norm).

The difference between soap and hand sanitizer usage could thus be partly explained by negative social norms amongst young people.

**Figure 13:** Soap and hand sanitizer usage during baseline and impact measurements (in mm)



The perception survey revealed strong support for the behavioural intervention. Respondents noted that the intervention effectively raised awareness of the need for clean hands. This is especially true in a sports hall, where there is a lot of contact and people frequently touch sports equipment.

***Impact: risk of infection can be reduced***

The intervention resulted in more frequent handwashing, reducing the risk of viral infection. As COVID-19 restrictions were already being lifted, no further steps were taken to apply the results of the experiment.

## Walk-in vaccination without an appointment

*Does the absence of the need to schedule a vaccination appointment result in higher coronavirus vaccination rates?*

Could we expect a higher vaccine uptake if vaccination appointments are no longer necessary? A campaign in neighbourhoods where vaccination rates were lagging sought to test whether emphasising convenience led to an increase in the number of administered vaccinations, by offering walk-in vaccination without an appointment. This indeed proved to be the case. Furthermore, getting a COVID-19 vaccine on a walk-in basis has become popular, along with the platform PrikkenZonderAfspraak.

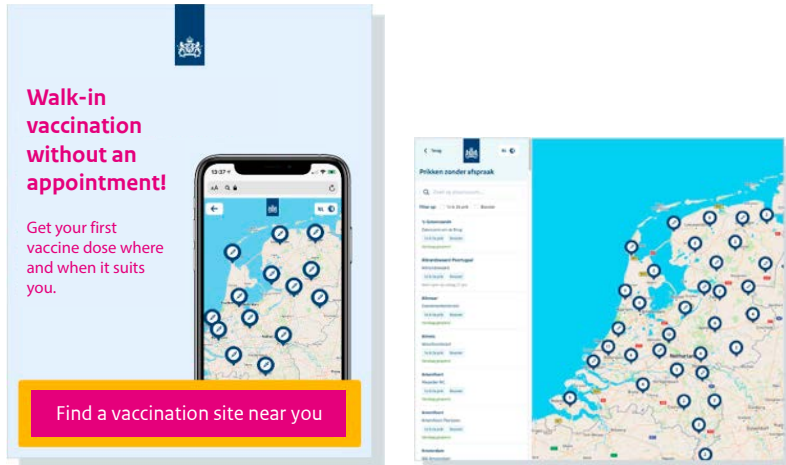
### **Why this experiment was conducted: sub-optimal vaccine uptake**

In June 2021, COVID-19 vaccines were available to everyone. Although vaccination invitations had been sent to all age cohorts, vaccination rates remained too low to handle the surge in infections that was anticipated in the autumn of that year. This was despite the fact that vaccine acceptance in society was greater than the actual number of administered vaccinations. Generative research by UX researchers and behavioural research carried out by the Behavioural Unit of the National Institute for Public Health and the Environment (RIVM) showed that there were barriers to receiving the vaccine, including the need to make an appointment or travel to a vaccination sites of the Regional Public Health Services (GGDs).

### **Type of intervention: Walk-in vaccination without an appointment**

The Ministry of Health, Welfare and Sport, the RIVM and several GGDs decided to offer the opportunity to receive a COVID-19 vaccine without the need to schedule an appointment. The narrative that was conveyed was that every jab counted, and the PrikkenZonderAfspraak platform was launched. The platform brought together all the GGDs' vaccination sites. See image 14.

**Image 14:** PrikkenZonderAfspraak banner and website showing GGD vaccination sites



**Method used: intervention/control design**

To test the effectiveness of providing COVID-19 vaccinations without an appointment, research was conducted in the 400 postcode areas in the Netherlands with the lowest vaccination uptake at the time of testing. These areas were divided into two groups: the intervention group, which received the campaign materials, and the control group, which received no campaign materials. The intervention group consisted of 200 postcode areas with the very lowest vaccination uptake, while the control group included the remaining 200 postcode areas. Measurements were performed to evaluate whether more vaccinations were administered in the intervention group than in the control group.

**Result obtained: more vaccinations administered**

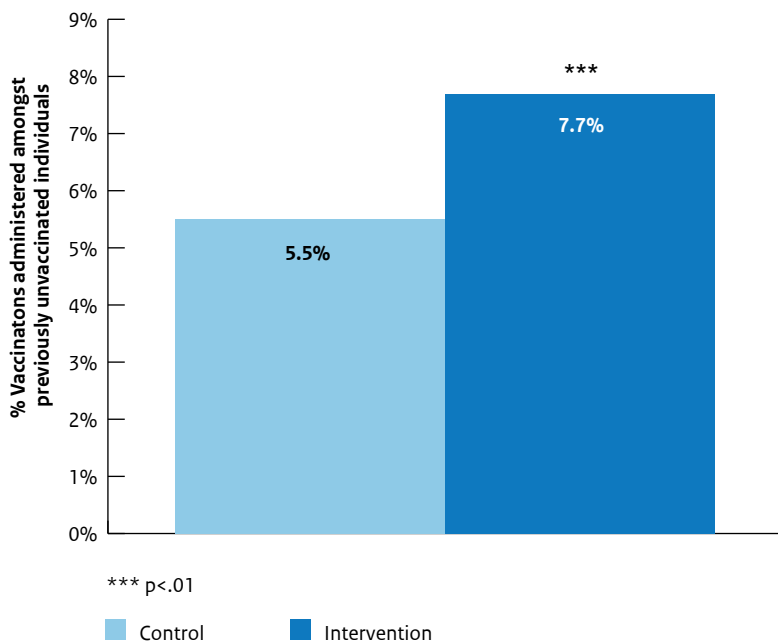
In the areas covered by the campaign, more people were vaccinated and the proportion of individuals who were previously unvaccinated and who now received a vaccine without an appointment was relatively high. See figures 14 and 15. Removing the barrier of making an appointment proved to be an effective intervention. This can be seen in the percentages of previously unvaccinated individuals who received a vaccine without an appointment: 2.4% for the intervention group, compared to 2.0% for the control group. The differences are relatively small, but even small percentages can make a difference, particularly in the context of a health crisis and in the acute phase of

the pandemic that was being experienced at the time. Being vaccinated against COVID-19 greatly reduced the risk of becoming seriously ill. Also, the number of hospital admissions affected the burden on healthcare resources, and hence the measures that were needed on a nationwide scale.

**Figure 14:** PrikkenZonderAfspraak test campaign data

	Control group	Intervention group
No. of postcode areas	200	200
No. of residents	1,048,000	1,262,000
No. of unvaccinated individuals	611,000	625,800
Average vaccination rate before campaign	58.3%	49.6%
No. of appointments made for 1st vaccination	21,500	33,600
No. of walk-in 1st vaccinations	12,100	14,800
Total no. of 1st vaccinations	33,600	48,400
Walk-in 1st vaccinations as % of previously unvaccinated individuals	2.0%	2.4%
Total no. of 1st vaccinations as % of previously unvaccinated individuals	5.5%	7.7%



**Figure 15:** Vaccinations administered**Impact: more people reached, walk-in vaccination without an appointment popular**

The campaign had the effect of encouraging more people to get vaccinated. In light of this positive effect, the campaign was extended to 800 postcode areas, where a similar effect was also recorded. Moreover, an increasing number of GGD sites joined the platform and the popularity of walk-in vaccination without an appointment rose, including in the subsequent booster and repeat vaccination dose campaigns. Over 50% of people received a booster vaccination without an appointment when this option was offered. The campaign's strategy of making it easier to get vaccinated has proved successful. It should be noted that there were other neighbourhood-oriented interventions and national approaches taking place at the same time, including vaccination buses, role models and a multilingual campaign. As a result, the identified effects cannot be attributed solely to the campaign.

## Higher COVID-19 vaccination rates

*Did mobile vaccination units result in an increase in the number of vaccinations?*

In an effort to boost COVID-19 vaccination rates, mobile vaccination units were rolled out in late 2021. This strategy proved successful: the number of vaccinations administered was between 1.1 and 14.5 times higher in neighbourhoods on the days they were visited by mobile units. The units were more effective in rural areas than in urban settings. In addition, they proved to be more effective than average in neighbourhoods with a higher proportion of SGP voters and still effective, although to a lesser extent, in neighbourhoods that are home to more people with a migration background.

### **Why this experiment was conducted: lower vaccination rates in some neighbourhoods**

Vaccination is an intervention that has been demonstrated to effectively mitigate the adverse effects of the COVID-19 virus; it lowers the risk of serious illness and death. Despite the majority of the population receiving at least one COVID vaccination by summer 2021, certain neighbourhoods still had comparatively low vaccination rates. These were mainly neighbourhoods with a higher percentage of people with a lower level of education, with a migration background or people who vote SGP.

### **Type of intervention: mobile vaccination units**

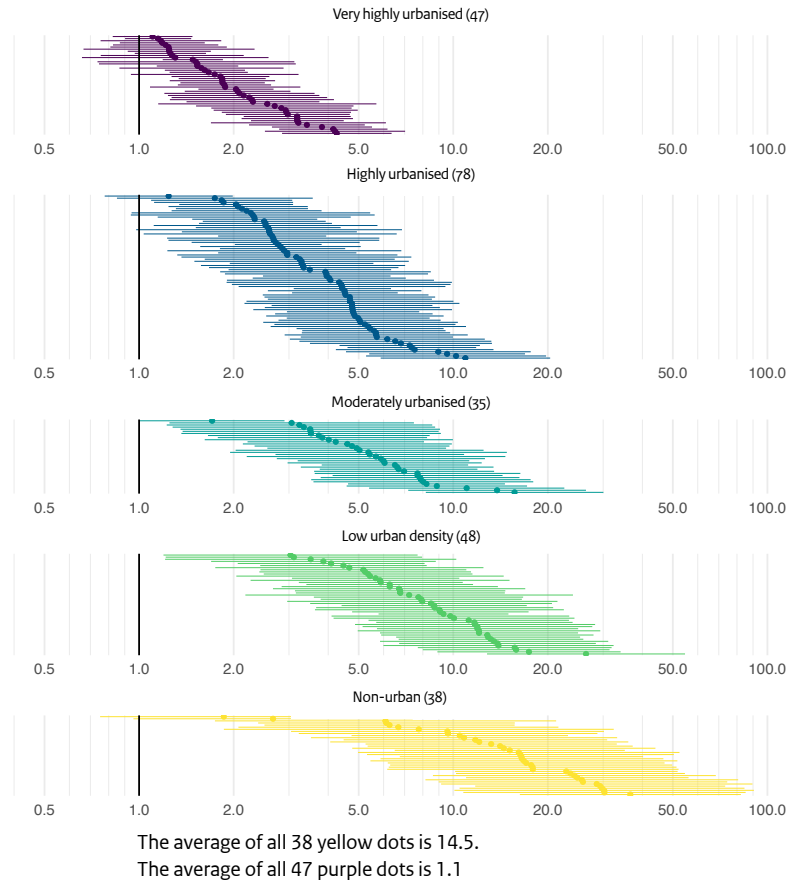
In an effort to reach as many people as possible, GGDs implemented a high-coverage vaccination programme in 2021: mobile vaccination units (COVID vaccination buses and pop-up locations) were used in neighbourhoods with low vaccination rates to make vaccination as easy as possible. The GGDs decided themselves when and where to deploy the buses in each neighbourhood. In addition, vaccination was made more accessible through personalised information delivered on site by key figures, posters across the neighbourhood or by handing out leaflets. Mobile vaccination units were deployed in 253 neighbourhoods, and were also available to administer vaccinations to residents of 890 adjoining neighbourhoods. An evaluation was conducted for the period September to December 2021 with the aim of assessing whether the units resulted in increased vaccination rates.

***Method used: secondary analyses of registrations***

A total of 973 unique neighbourhoods were included in the study, as certain neighbourhoods overlapped. The study period covered 91 days, meaning that the total dataset to be analysed consisted of 88,543 neighbourhood days.

A regression model was used to examine whether the number of vaccinations administered increased on days when mobile vaccination units were deployed in neighbourhoods. National vaccination data were used for this purpose (from the COVID vaccination Information and Monitoring System) as well as the registration data from mobile units of 16 GGD regions of sector organisation GGD-GHOR. The model took into account differences between neighbourhoods and differences over time.

**Figure 16:** Relative increase in the number of vaccinations administered per neighbourhood, by level of urbanisation



**Result obtained: vaccination rates increased**

The mobile vaccination units were deployed during 7.7% of the 88,543 district days that were analysed. During their use, the average daily number of vaccinations administered in the targeted neighbourhoods increased by a factor of 1.1 in urbanised neighbourhoods and a factor of 14.5 in rural neighbourhoods. See figure 16. The effects were greater in neighbourhoods with a higher proportion of SGP voters and less pronounced in neighbourhoods with more people with a migration background.

The absolute increase in vaccination rates throughout the intervention period in all the neighbourhoods concerned ranged from 0.22 percentage points in the most urbanised neighbourhoods to 0.33 percentage points in rural neighbourhoods. This is a consequence of the limited duration of the use of the mobile units, also relative to the overall duration of the vaccination campaign.

***Impact: mobile vaccination units successful in reaching target groups***

The use of mobile vaccination units proved to be a successful strategy for reaching groups that were initially not as effectively reached during the mass campaign. The units therefore contributed to increased vaccination rates in neighbourhoods that were lagging. The relative impact in many neighbourhoods was considerable. The absolute impact is small, however, since the mobile vaccination units were used at a limited number of locations compared to the mass campaign. The results give reason to assume that vaccination sites closer to where people live are a good alternative for people who are not reached with large, national campaigns. The mobile vaccination units therefore contribute to overall public health in the Netherlands.

## Text messaging to spur vaccination take-up

*Which type of communication is most effective?*

In early 2022, various kinds of text messages were sent to over 100,000 residents of Brabant-Zuidoost who had not yet received a booster jab from the GGD. The results show that the most effective variant – in the 6 days after receiving the text message – led to a 3.2% increase in the number of vaccinations administered. This was the text message saying 'Jouw boosterprik ligt voor je klaar' (You can now book your booster vaccination) plus a randomly allocated date, time and location.

### **Why this experiment was conducted: more bookings needed for booster vaccinations**

The repeat dose restores protection against the COVID-19 virus. This booster vaccination provides 97% protection against hospitalisation due to the virus. To increase the number of bookings for booster vaccinations in early 2022, the GGD conducted a pilot study using text messaging reminders.

### **Type of intervention: Six different text messages**

Six different text messages were sent. See image 15:

- The text messages of 25 January 2022 used ownership ('Jouw boosterprik ligt voor je klaar') or effectiveness ('Een boosterprik beschermt voor 97% tegen ziekenhuisopname' (A booster vaccination provides 97% protection against hospitalisation)). The third text message contained basic information.
- In the text messages of 1 February 2022, ownership was repeatedly emphasised. Information was also added about the opening hours of the GGD site, or even giving a specific time when the vaccine could be administered (e.g. 'Je bent op 05-02-2022 tussen 16:00 en 17:00 uur welkom op Haverdijk 11 in Helmond' (You are welcome between 16.00 and 17.00 on 5 February 2022 at Haverdijk 11 in Helmond)).

### **Method used: RCT**

In an experiment, text messages were randomly sent on 25 January and 1 February to 30,000 and 75,000 residents of Brabant-Zuidoost, respectively, who had not yet received a booster vaccination from the GGD. On 25 January, this involved three groups each consisting of 10,000 residents. In addition, there was a control group of 10,000 residents who did not receive text messages. On 1 February, there were three groups each consisting of 25,000 residents, and once again a control group consisting of 25,000 residents. For all eight groups, vaccination take-up was measured six days after the text messages were sent.

**Image 15:** Six different text messages to spur vaccination take-up

**Text messages used in first targeted transmission to 30,000 residents on 25-01-2022**

**Variant 1**

Dear Mr Jansen.  
You are eligible for a booster vaccination. You are welcome to receive your COVID-19 booster at the GGD vaccination site in Eindhoven or Helmond (...)  
Kind regards, GGD Brabant Zuidoost

**Variant 2**

Dear Mr Jansen.  
Your booster shot is reserved for you. You are welcome to receive your COVID-19 booster at the GGD vaccination site in Eindhoven or Helmond (...).  
Kind regards,  
GGD Brabant Zuidoost

**Variant 3**

Dear Mr Jansen.  
A booster vaccination provides 97% protection against hospitalisation. Be sure to get your booster vaccination. You are welcome to receive your COVID-19 booster, without booking an appointment, at the GGD vaccination site in Eindhoven or Helmond (...).

**Text messages used in second targeted transmission to 75,000 residents on-01-02 2022**

**Variant 4**

Dear Mr Jansen.  
You are eligible for a booster vaccination. You are welcome to receive your COVID-19 booster at the GGD vaccination site in Eindhoven or Helmond (...)  
Kind regards, GGD Brabant Zuidoost

**Variant 5**

Dear Mr Jansen.  
You are eligible for a booster vaccination. You are welcome to receive your COVID-19 booster at the GGD vaccination site in Eindhoven or Helmond (...)  
Kind regards, GGD Brabant Zuidoost

**Variant 6**

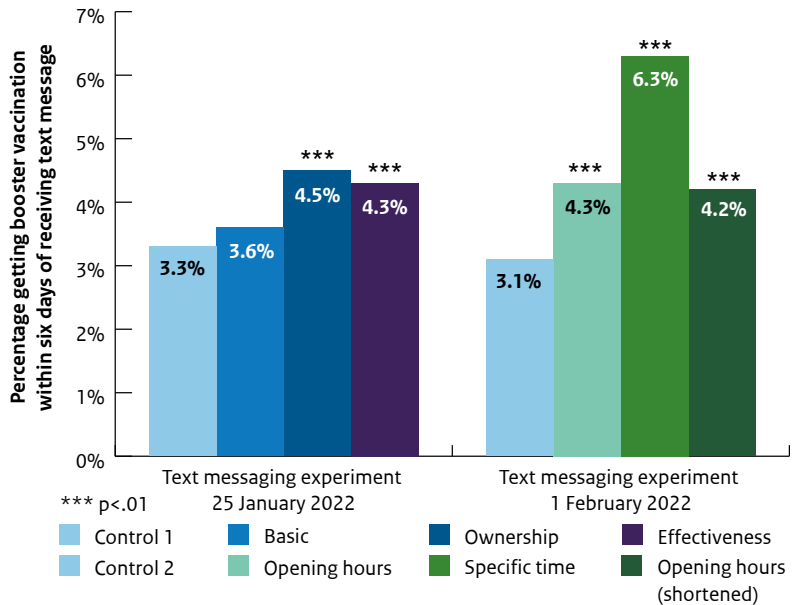
Dear Mr Jansen.  
You are eligible for a booster vaccination. You are welcome to receive your COVID-19 booster at the GGD vaccination site in Eindhoven or Helmond (...)  
Kind regards, GGD Brabant Zuidoost

**Result obtained: behavioural techniques led to more COVID boosters**

Residents who received a text message using ownership framing were significantly more likely to receive a booster vaccination (4.5%, a significant increase of 1.2%). The text message stressing the effectiveness of the booster vaccination also led to significantly more COVID boosters being administered (+1%). See figure 17. In the control group, 3.3% received a COVID booster six days after the text messages sent on 25 January. In the group that received the basic text message, 3.6% did so, meaning there was no significant difference between these two groups.

Of all the text messages, the most effective one was the variant of 1 February giving a specific date, time and location, combined with ownership framing. This text message resulted in 3.2% more booster vaccinations being administered in the six days after the message was received (6.3% versus 3.1% for the control group not receiving a text message). Text messages using ownership framing and containing information about opening hours also led to significantly more (+1.0 to +1.2%) booster vaccinations being administered. The overall impact of this text messaging campaign was a rise of roughly 1.6 percentage points in the vaccination rate.

**Figure 17:** Impact of text messages on booster vaccination rate



**Impact: contribution to public health in the Netherlands**

A text message campaign is a relatively cheap and easy intervention that can significantly increase the number of booster vaccinations. It was also found that the wording of the text message can make a difference. There are also drawbacks to a large-scale text message campaign. Seven complaints were received from residents saying that the message was not appreciated by them, for example. In addition, roughly twenty responses were received from people reporting that the addressee had since died.

It was estimated that nationwide there were about 3 million people who met the same criteria as this group. If all of them were to be sent the most successful text message variant by the GGD, it is estimated there would be a surge in the number of vaccinated residents by 96,000 over the six days following its receipt.



## **Making sure that young people get vaccinated against HPV**

*How do you encourage both boys and girls to get vaccinated against HPV?*

**A campaign was launched to encourage young people to get the catch-up vaccination against Human Papillomavirus (HPV). The campaign succeeded in promoting discussion and increased awareness of HPV as well as persuading young people to get vaccinated.**

***Why this experiment was conducted: provide boys and girls with a vaccine they might not have received***

In 2022 and 2023, boys were invited for the first time and girls were invited again to get vaccinated against the Human Papillomavirus (HPV). HPV vaccination protects not only against cervical cancer but also against a range of other diseases, including oral, throat and penile cancer. The vaccine is most effective when administered before individuals become sexually active. The HPV vaccine is therefore offered to children starting at age 9 years as part of the Dutch National Immunisation Programme. It is also important that as many young people aged 13 to 18 as possible take advantage of free catch-up vaccination. It is known that awareness of HPV is low amongst boys in particular, that HPV is seldom a topic of conversation amongst young people and that they are sceptical.

***Type of intervention: new campaign***

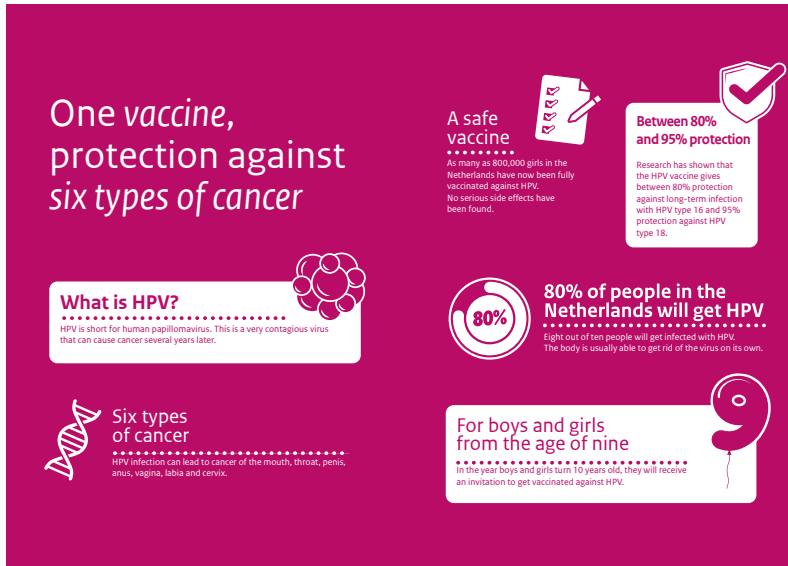
'Met 1 vaccin beschermd tegen 6 soorten kanker' (one vaccine protects against six types of cancer). This slogan aims to position HPV vaccination as a cancer prevention jab, to diminish any associations with cervical cancer. To avoid young people delaying vaccination and becoming opposed to it, the campaign emphasises that vaccination is free in 2023 only and that it is up to the individual to decide whether or not to get vaccinated. The campaign consists of 3 flights, including messages on social media and online videos in which young people and experts (doctors and a former patient) ask each other questions about the vaccine and the effects of HPV. In this messaging, misconceptions about the virus are dispelled, HPV is opened up for discussion and the importance of vaccination for yourself and others is stressed. Young people and their parents also received an invitation letter and brochure.

***Method used: baseline, intermediate and impact measurements***

A baseline measurement, two intermediate measurements and an impact measurement, with independent sampling amongst young people aged 13 to 18

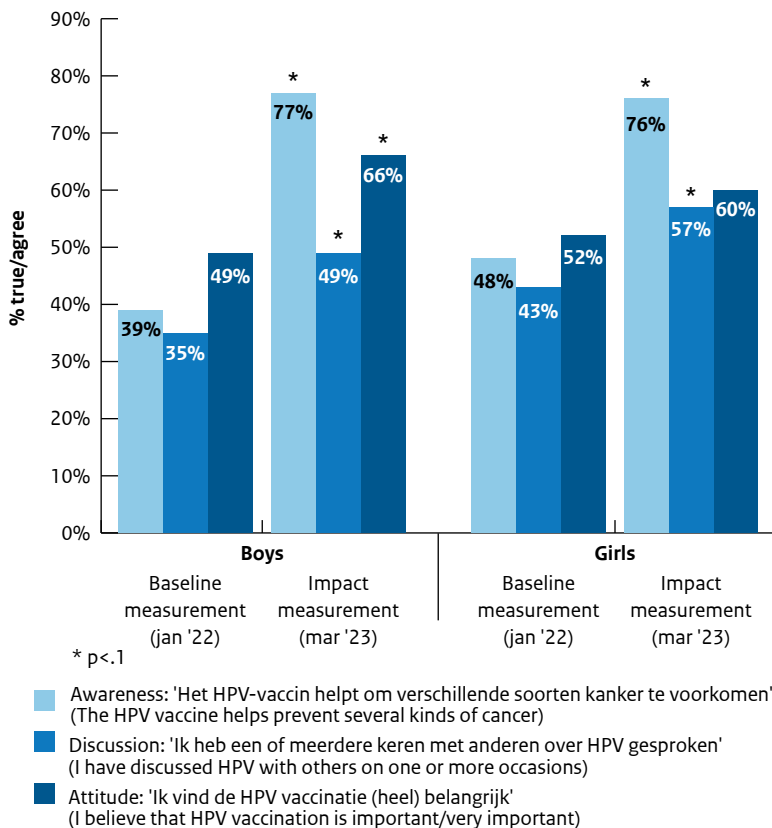
and parents of young people in this age group, were performed to investigate the effectiveness of the campaign. The samples were weighted by sex, age, parental education level and region.

**Image 16:** Campaign infographic



### **Result obtained: more people vaccinated**

During the campaign, young people showed a heightened interest in discussing the subject of HPV vaccination and there is now increased awareness amongst young people that the vaccine protects against various kinds of cancer. In addition, more boys say they consider vaccination to be important. See figure 18. Awareness of HPV and discussions about it have also increased amongst parents. Besides the campaign's effects on awareness, discussion and attitude, there is an observable shift in behaviour. The proportion of parents who say that their child has been vaccinated has risen from 51% to 69%. The official RIVM vaccination figures (provisional figures from 13 January 2023) show that on average 51.6% of boys and 68% of girls aged 13 to 18 have received their first vaccination. Before the campaign, boys did not have the opportunity to get vaccinated. The vaccination rate for girls up to age 13 in 2020 was 62%.

**Figure 18:** Change in HPV awareness, discussion and attitude amongst boys and girls**Impact: helping prevent cancer**

In the Netherlands, nearly 400 men and 1,100 women a year develop cancer following an HPV infection. In men, roughly 80% of these cases can be prevented by means of HPV vaccination, while the corresponding figure in women is roughly 75%. HPV is a highly contagious virus that is transmitted through sexual contact. Vaccination of both boys and girls therefore actively contributes to protecting the entire population by creating herd immunity. It is important to communicate this clearly and effectively to young people, as well as their parents, and encourage them to get vaccinated. The campaign 'Met 1 vaccin beschermd tegen 6 soorten kanker' is part of this effort.

## Reduced calf mortality at dairy farms

*How can dairy farmers be encouraged to take proper care of calves?*

To reduce calf mortality rates, the Netherlands Food and Consumer Product Safety Authority (NVWA) developed various letters for distribution amongst three subgroups of dairy farmers. The impact measurement shows that calf mortality decreased in the overall target group, although the letters did not produce any measurable outcomes.

### ***Why this experiment was conducted: calf rearing necessitates a significant amount of care***

Failure to ensure appropriate care for animals in dairy farming operations can have adverse consequences for animal welfare and animal health, and may even result in calf fatalities. In the years leading up to this project, many farms had high calf mortality rates, in excess of 15% amongst calves aged 0 to 14 days old. The Netherlands Food and Consumer Product Safety Authority (NVWA) conducted a target group study to examine the causes of these high mortality rates. Calf care is seemingly not a subject of discussion, workloads are high and with many dairy farmers suffering from business blindness, habits become ingrained. Added to this, farmers are unaware of the scale of the problem on their farms and across the industry as a whole.

### ***Type of intervention: individualised letters***

The NVWA created individualised letters for three subgroups of dairy farmers incorporating the most promising launch points from the target group analysis: rewards and risk awareness.

- Letter 1 was sent to dairy farmers with calf mortality rates at or below the national average of 3%. Each received positive feedback on the mortality rate at their farm. Green colours were used for the purpose of a visual comparison with the national average, accompanied by the text: 'Dit is positief' (This is positive) and 'Met uw inzet weet u de kalversterfte op uw bedrijf laag te houden. Hiermee draagt u positief bij aan het dierenwelzijn in Nederland' (Thanks to your actions, calf mortality is low on your farm. In this way, you are making a positive contribution to animal welfare in the Netherlands)
- Letter 2 was sent to dairy farmers with improved calf mortality, which was nonetheless too high. They each received positive feedback about the improved situation on their farms, including the message 'Dat is positief, maar u bent er nog niet' (That is positive, but you still have improvements to make) and a text urging them to continue this positive trend. The farm was compared to the sector average (see image 17) by means of red and yellow colouring.

- Letter 3 was sent to dairy farmers with high calf mortality rates (15% or more).

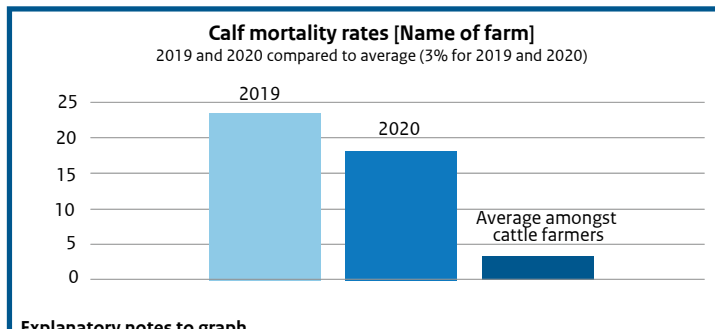
The letter included a comparison with the national average in predominantly shades of red, mentioned the possibility of an inspection and sought to lessen opposition (resistance) with the text 'De NVWA begrijpt dat u ook geen hoge kalversterfte wilt op uw bedrijf en mogelijk al maatregelen heeft getroffen om uw kalver- sterftecijfer terug te dringen' (The NVWA understands that you also don't want calf mortality to be high on your farm and may have already taken measures to reduce your calf mortality rate).

**Image 17:** Part of letter 2 with positive feedback on the improved situation and a text urging further progress

Dear Mr/Ms [surname],

The Netherlands Food and Consumer Product Safety Authority (NVWA) is sending you this letter to inform you about the outcome of a calculation of calf mortality in the age category 0-14 days. Based on the I&R data available to us, the NVWA has calculated the calf mortality rate on your farm. This calculation shows that calf mortality on your farm has decreased. That is positive, but you still have improvements to make.

The NVWA carries out risk-based inspections. This means that farms where there is a higher risk of non-compliance are inspected earlier than farms where there is a lower risk of non-compliance. Calf mortality is a factor in determining the risk of non-compliance.



#### Explanatory notes to graph

The graph shows calf mortality on your farm in 2019 and 2020 compared to average calf mortality amongst cattle farmers with 20 or more live births in 2019 and 2020. The NVWA calculated the calf mortality rate based on I&R data from the past two years.

In 2019, calf mortality on your farm was [20]% in the 0-14 day age group, and in 2020 it was [15]%. These results show that calf mortality has decreased on your farm.

**Method used: experiment**

In each subgroup, a selection of dairy farmers received the letter (intervention group) while others received no letter (control group), in April 2021. For these groups, calf mortality rates were compared one year before and one year after the letter was sent.

**Result obtained: the mortality rate decreased, although this is not attributable to the letters**

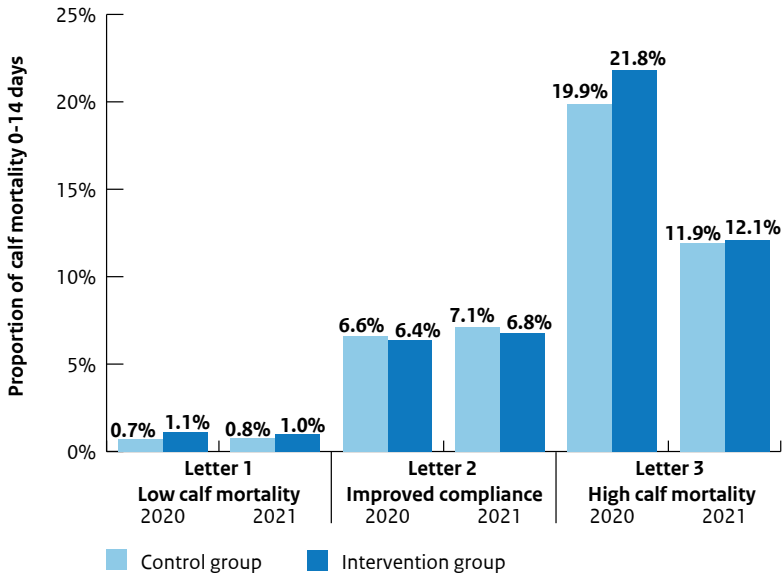
Across all the dairy farms, average calf mortality in the 0-14 day age group decreased by 1.06% between 2018 and 2021.

This is likely due to increased attention for the issue of calf mortality and various sector initiatives.

The proportion of farms with high calf mortality decreased from 2.8% to 1.1% during this period.

- Letter 1: the calf mortality rate in the intervention group with low calf mortality increased slightly. The rate in the control group seems to have increased more sharply, although calf mortality remains low in both groups. The letter is unlikely to have contributed to this result.
- Letter 2: calf mortality increased slightly in both the control and intervention groups of dairy farmers with improved calf mortality, which was nonetheless too high.
- Letter 3: calf mortality decreased in the group of dairy farmers with high calf mortality. This is a positive development, although no difference was measured between the control and intervention groups.

**Figure 19:** Difference in calf mortality in 2020 and 2021, with 3 letters being sent



**Impact: improved animal welfare**

The NVWA monitors the welfare of farmed animals, including in the dairy farming sector. Farms must, for example, ensure that animals are provided with appropriate nutrition and sufficient water, and medical care if needed. Investigating what motivates dairy farmers to comply with these welfare rules enables the NVWA to deploy the mix of enforcement tools more effectively.

## More CVs on werk.nl

*How can jobseekers be encouraged to post their CVs online?*

**Not all UWV clients who receive unemployment benefit post their CVs on werk.nl. This prevents them from being found or matched for a job. Would it help to send them a reminder to their personal Work Folder as well as a text message? Yes it would: this experiment shows that five times more clients are then prompted to put their CV online, compared to clients who are not sent a reminder.**

### ***Why this experiment was conducted: missing CVs***

25% of jobseekers on unemployment benefit who are asked to post their CVs online fail to do so. They can enter their CV details on werk.nl using an online format provided by UWV. Employers who are hiring view these CVs on the site and can contact suitable candidates directly. UWV consultants use the details in CVs on werk.nl to actively match jobseekers. With all the evidence pointing to CVs being instrumental in job hunting, we investigated how to encourage clients to put their information up on werk.nl.

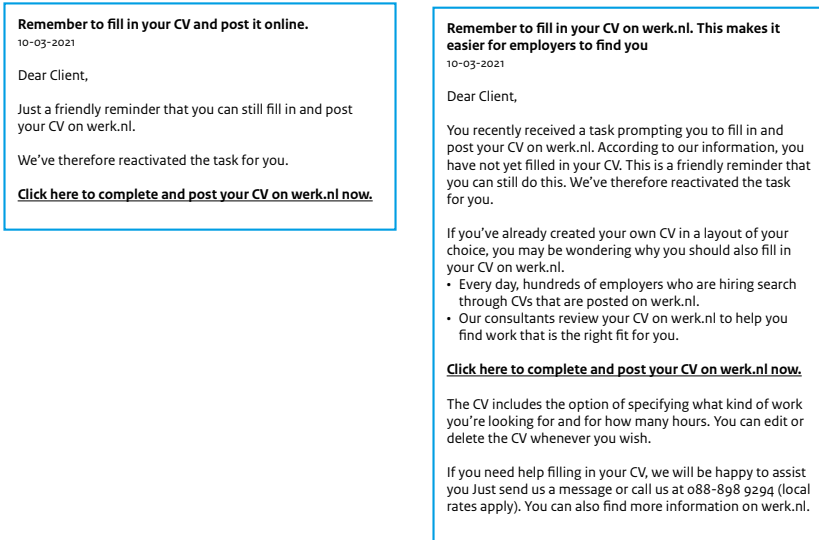
### ***Types of intervention: reminders via Work Folder and text messaging***

Clients on unemployment benefit receive a task in their personal Work Folder on werk.nl prompting them to post their CV online. The behavioural analysis showed that a significant group neglects this, despite their desire to do it. Also, there is a large group that is not sufficiently convinced there is any added value in doing this and that prefers to use their own CV layout instead of the UWV format. It was therefore decided to send the prompting task once more to clients who had not posted their CV online two weeks after the task had expired, in combination with a reminder in their Work Folder. The reminders were worded in two different ways:

- a neutral version, simply reminding the client to post their CV online
- a version accentuating the personal interest for the client in posting their CV online

As data indicates that people who fail to fill in their CV are, on average, less likely to log into their personal Work Folder, they were also sent a text message if their CV was still not active a week after receiving the reminder.



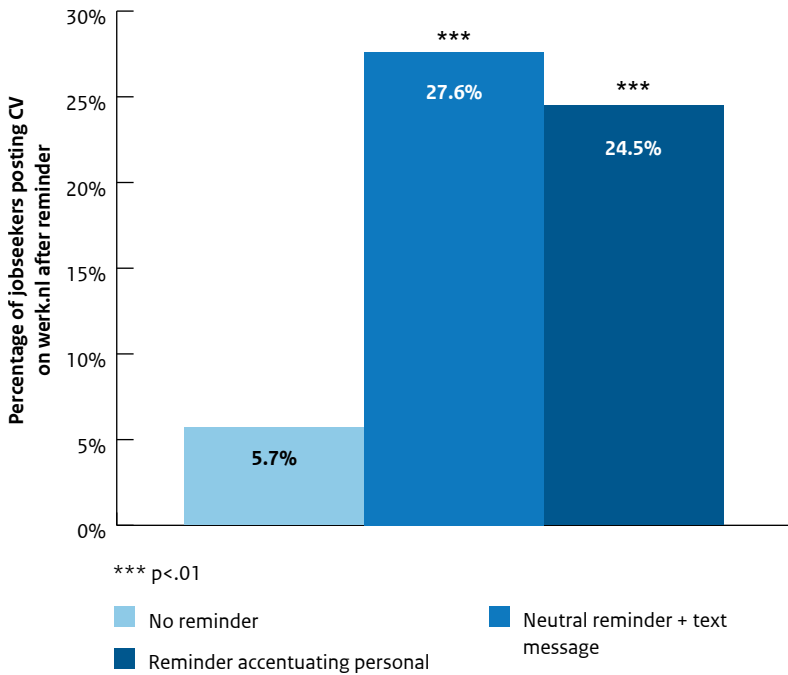
**Image 18:** Two versions of the reminder**Method used: RCT**

A randomised field experiment was conducted amongst 6,788 clients to measure the effectiveness of the reminders. Five distinct groups were employed:

- neutral reminder + text message
- neutral reminder + no text message
- reminder accentuating personal interest + text message
- reminder accentuating personal interest + no text message
- no reminder (control group)

**Result obtained: Five times as many CVs posted online**

The reminders led to nearly five times more active CVs being posted on werk.nl, as figure 20 shows. Two weeks after UWV sent a reminder, 26.1% of jobseekers posted a CV, averaged across the four versions. The corresponding figure without a reminder is 5.7%. This difference is significant. Jobseekers who received a neutral reminder plus text message a week later (if they had taken no action by then) were most likely to post their CV on werk.nl. They did so more often than those who received the message accentuating personal interest plus text message (27.6% vs. 24.5%). This difference too is significant.

**Figure 20:** Difference in proportion of jobseekers posting their CV with different reminders**Impact: increasing likelihood of finding work earlier**

Sending a reminder and text message can increase the total number of people who post their CV on werk.nl: from roughly 75% at the moment to approximately 80%.

This translates to an additional 2,500 people posting their CVs every month in response to the reminder, against a background of 36,500 new unemployment benefit claimants on average every month. It is expected that this will increase the likelihood of jobseekers finding work (sooner).

## Broader job search

*How can jobseekers be encouraged to explore fields and professions with better job prospects?*

Some jobseekers remain unemployed because they focus on professions and fields in which the job prospects are not favourable. What happens when they receive personalised labour market information about more promising professions and positions that match their knowledge and skills? Compared to people who do not receive that information, they are more likely to move into professions that are completely different from the profession with poor job outlooks that was their first preference.

### **Why this experiment was conducted: opportunity to improve employment prospects**

In 2021, more than 10% of unemployment benefit recipients were seeking employment in fields with poor job outlooks. These are fields attracting significant interest amongst jobseekers, but in which there are few vacancies. Research shows that jobseekers mainly focus on professions in which they have experience. That seems a safe bet, since they know what tasks and responsibilities are involved and they know they have the skills to perform them. However, this approach only serves to needlessly extend their period of joblessness. Instead, there are many professions with better job prospects, including professions that match their knowledge and skills.

### **Types of intervention: providing alternatives and personal experiences**

The UWV developed two types of intervention:

- an email with clear personalised information about relevant alternative professions. See image 19. In this email, the jobseeker's preferred profession (the one with poor job outlooks) was contrasted with more promising alternatives. To decide what these alternatives might be, the other professions into which people with the same preferred profession have moved were investigated. Next, the professions that offered the best employment prospects during the period of the study were selected.
- a video aimed at lowering the psychological barriers to applying for more promising professions. In this video, several individuals who have successfully switched to a different profession share their experiences.

**Method used: RCT**


A randomised field experiment was conducted with three conditions:

- 10,050 jobseekers received the email drawing attention to promising professions
- 10,075 jobseekers received the email drawing attention to promising professions + the video
- 10,004 jobseekers received no email and no video (the control group)

The impact of the interventions was evaluated by analysing the professions into which people moved, the number of hours worked and the benefit costs, amongst other things.

**Image 19:** Excerpt from sample email

[Bekijk online versie](#)


6 november 2020



**Bekijk andere beroepen en vind sneller een nieuwe baan**

Geachte heer/mevrouw,

Als werkzoekende is het niet altijd even gemakkelijk om een nieuwe baan te vinden. U zoekt bijvoorbeeld een baan als verkoopmedewerker voor mode. Op dit moment solliciteren veel mensen op deze functie, terwijl er maar weinig vacatures zijn. De kans dat u een baan vindt als verkoopmedewerker voor mode is daarom klein. Zelfs als u de perfecte kandidaat bent. Maar wist u dat u met uw ervaring nog veel meer kanten op kunt?

Hieronder ziet u een aantal beroepen staan. Dit zijn beroepen waarin veel andere werkzoekenden met ongeveer dezelfde opleiding en ervaring als u werk vonden. U heeft meer kans om een baan te vinden, als u ook solliciteert op vacatures voor deze beroepen.

Vergelijkbare beroepen met een grotere kans op werk

	<p><b>Ondersteunend medewerker op een kantoor/secretariaat</b></p> <p><b>Baankans: laag</b></p> <p><a href="#">Meer informatie</a></p>
	<p><b>Commercieel medewerker binnendienst</b></p> <p><b>Baankans: gemiddeld</b></p> <ul style="list-style-type: none"> <li>- Zorgvuldig kunnen werken</li> <li>- Gesprekken richting geven</li> </ul> <p><a href="#">Meer informatie</a></p>
	<p><b>Logistiek &amp; voorraad medewerker</b></p> <p><b>Baankans: gemiddeld</b></p>

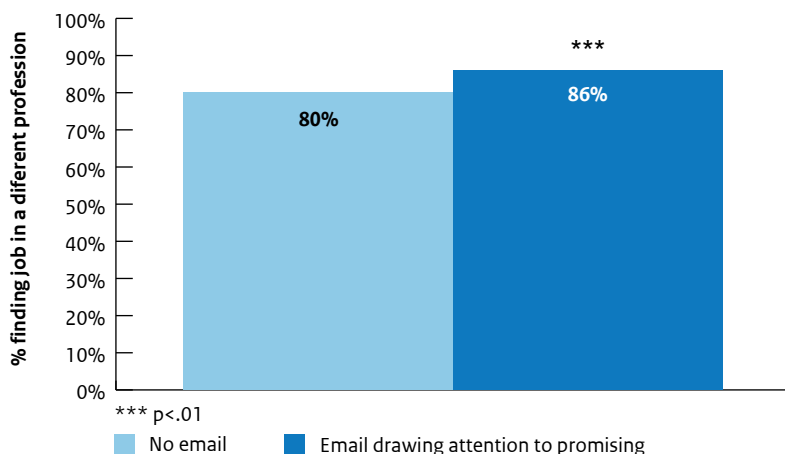
**Result obtained: more individuals opt for a change of profession**

The email campaign resulted in profession changes. Individuals who received personalised labour market information were more likely to move into professions that are completely different from the profession with poor job outlooks that was their first preference than individuals who did not receive that information. Of the jobseekers in the control group who found a job, 80% opted to change profession; in the experiment group, the corresponding figure was 86%. See figure 21.

This significant difference suggests that the emails achieved their purpose of persuading jobseekers to broaden their job search.

It was also found that jobseekers in the experiment group worked more hours after the email campaign than jobseekers in the control group. No difference was found between the groups in terms of benefit levels. The impact of the video could not be determined since it was watched by too few people. The experiment groups (with and without video) were therefore combined in the analyses.

**Figure 21:** Proportion of jobseekers broadening their job search



***Impact: broader outlook***

The results are promising for a relatively simple and short intervention. The emails prompted jobseekers to broaden their outlook and find other jobs. This shows the potential of information tailored to the individual. Research is being conducted to ascertain whether the jobseekers who switch jobs actually stay in work longer than the control group.

## Helping social assistance recipients in finding work

*Does a different approach lead to more people finding paid employment?*

In a series of field experiments, six municipalities investigated whether a different approach in social assistance could get more people into work. The study focused on the effects of an exemption from the obligation to seek work, more intensive counselling or higher earnings disregards for additional income. A different approach can increase the number of people finding jobs. More research is needed.

### **Why the experiments were conducted: increasing the effectiveness of the Participation Act**

Following the introduction of the Participation Act in 2015, various municipalities were keen to test new ways of supporting social assistance recipients in finding paid work or participating in society in other ways. The experimentation provision in the new law allowed for experiments with social assistance. In total, six municipalities – Deventer, Groningen, Nijmegen, Utrecht, Tilburg and Wageningen – conducted their own experiment in cooperation with local knowledge institutions. ZonMw supervised the experiments and CPB conducted an overarching assessment.

### **Types of intervention: exemption, more intensive counselling and higher earnings disregards**

Three different interventions were tested, sometimes combined:

- an exemption from obligations to reintegrate and work: this intervention focused on self-direction and intrinsic motivation. During the experiment, social assistance benefit recipients in this group were obligated to apply for jobs, accept suitable work and follow reintegration activities.
- more intensive, personalised counselling: benefit recipients received more attention from caseworkers, with more contact moments compared to regular guidance and assistance. Further, services were adapted to the recipient's needs and wishes. New reintegration tools were occasionally utilised.
- higher earnings disregards for income on top of benefits: a purely financial incentive. A maximum of 50% (instead of 25%) of earned income was exempt from deduction from benefit payments, up to a maximum of 200 euros per month.

### **Method used: Randomised Controlled Trial**

In each municipality, participants were randomly allocated to either a control group or one of the intervention groups. Participation was voluntary. Between

300 and 900 social assistance recipients took part, depending on the municipality. The duration of the experiment was between 17 and 27 months. Using CBS data, the employment rates of all participants and non-participants were tracked over that period. In addition, effects on reliance on the provisions of the Social Support Act, health and problematic debts were investigated – also referred to as broader welfare effects.

***Result obtained: intensive counselling and higher earnings disregards can lead to more individuals finding work; an exemption has no effect***

In Utrecht, more intensive counselling and the possibility of increased additional earnings during the experiments led to more benefit recipients finding work (for at least 12 hours a week). No clear effects were observed in the other municipalities. No effect of any kind, including a negative effect, on the number of individuals finding work could be observed from an exemption from obligations in any of the municipalities. In Utrecht, the interventions also had an effect on reliance on the provisions of the Social Support Act. The exemption group made greater use of the guidance available under the Act. Increased participation in daytime activities provided by the Act was observed amongst the counselling group and the group with greater opportunities to keep additional income. Greater reliance on the provisions of the Social Support Act means higher costs, but can also bring social benefits, which can ultimately contribute to greater participation in society. See figure 22.

***Impact: services modified and lessons learned for future experiments***

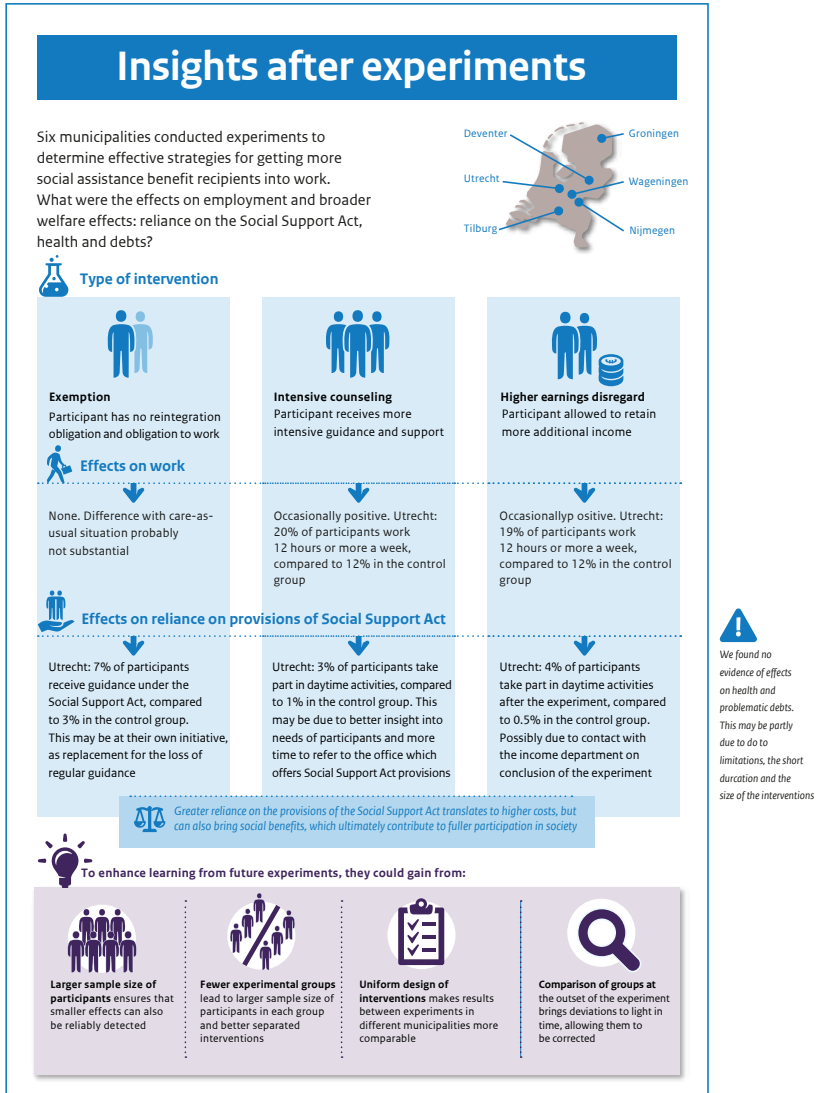
Some experimenting municipalities modified the services they provide based on the findings. Also, methodological lessons can be drawn for future policy experiments:

- a larger sample size of participants is needed for clearer findings and conclusions regarding effects of the experiment
- testing fewer interventions at a time increases the sample size and makes implementation easier
- uniformity of experiments across different municipalities may allow for data to be pooled and analysed together, rendering the results more useful and adding to their value
- ensuring a high level of comparability between the control and intervention groups at the outset of the experiment enhances the ability to establish a clear causal relationship between the intervention and the effects



For a more detailed discussion of these and other lessons, see the CPB publication 'Evaluatie experimenten Participatiewet: effecten op brede baten'.

Figure 22: Insights after social assistance benefit experiments



## Generating more enthusiasm for teacher training programmes

*How to get students more interested in teacher training open days*

In this experiment, various emails were sent to students in senior general secondary education (HAVO) and preuniversity education (VWO) to inform them about open days of teacher training programmes. The subject line that most caught their attention was 'Are you looking for job security, challenge and a wide range of career opportunities?' as well as a subject line in which a role model was introduced. Where emails mention teachers' starting salaries, students most often click links to more information. However, the different types of email were found to make no difference to the ultimate aim of enticing more school students to visit an open day.

### ***Why this experiment was conducted: increasing teacher shortages***

Teacher shortages have arisen due to various factors, including retired teachers leaving the profession, declining enrolment in teacher training courses and an improving labour market. One way to combat the shortage of teachers is increased enrolment in teacher training programmes. Several information campaigns have already been run aimed at enhancing the appeal of teacher training programmes. However, providing information alone is usually not enough to encourage behavioural change.

### ***Type of intervention: various emails employing different behavioural techniques***

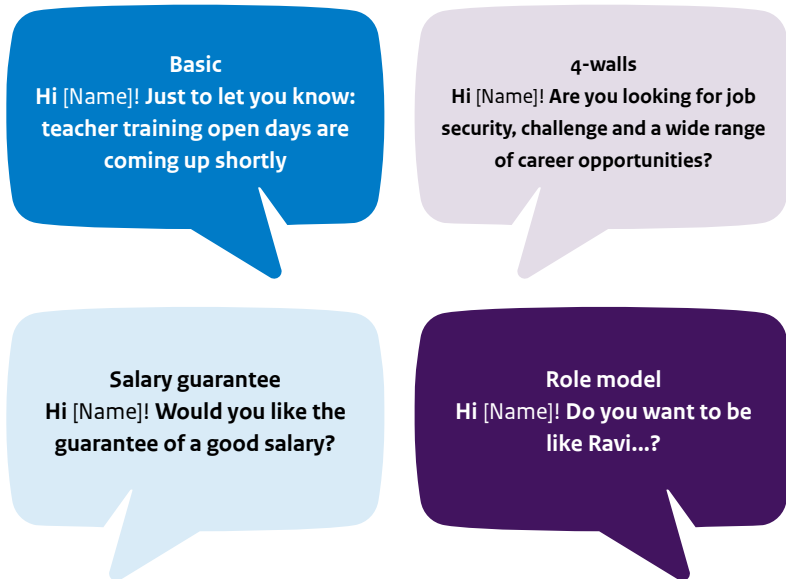
Research has shown that open days can play an important role in shaping the choice of study. The Ministry of Education, Culture and Science has therefore chosen to place the emphasis in this project on encouraging more school students to visit open days of teacher training colleges. Based on a behavioural analysis, it was decided to focus on three motivation factors in 3 different emails:

- career: addressing job security, challenge and broad career prospects in the teaching profession (the '4-walls condition' in the figure)
- salary guarantee: offering guarantees about the relatively high starting salary of teachers
- role model: include a quote from a young teacher talking about their experiences in the teaching profession

A basic information email was also drafted in order to check whether there is any impact of the three different behavioural emails compared to a basic

information email. This basic information email did not employ any behavioural techniques, but instead only contained information about the open days. In addition to featuring techniques in their body, all the emails also had subject lines and headers that aligned with the technique being employed. See image 20.

**Image 20:** Four subject lines



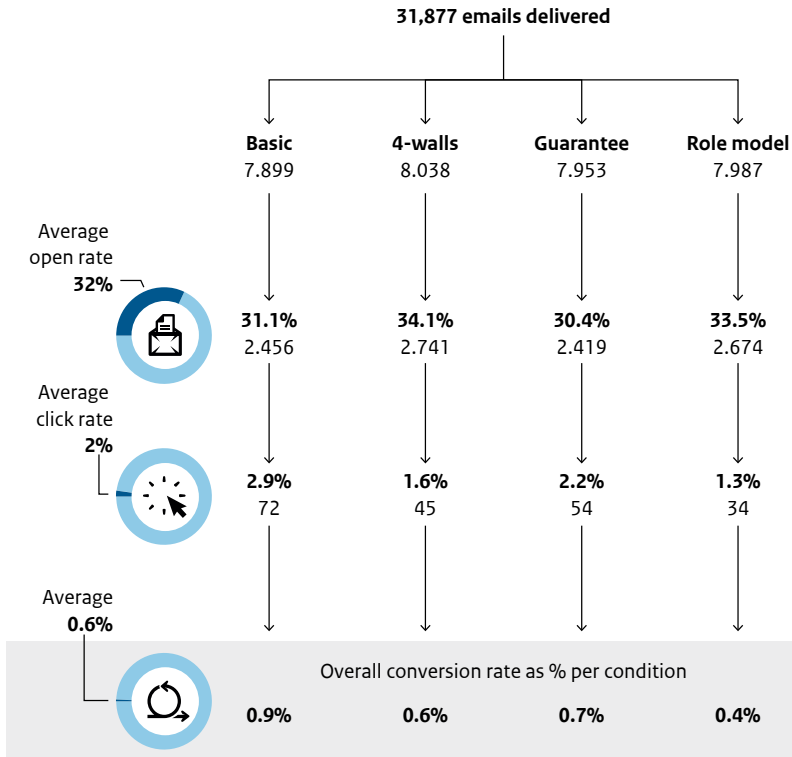
**Method used: RCT**

A Randomised Controlled Trial was conducted to examine the effects of the different emails. A total of 32,000 emails were sent to HAVO and VWO students. They were randomly allocated to the different conditions (besides the four emails, there was a control condition with no emails). Care was also taken to ensure that the groups were comparable, by school year (final examination year or the preceding year) and by profile. The open rates (% opening the email) and click rates (% clicking links in the email: one with additional information and one with an overview of open days) were analysed. In addition, a follow-up email was sent to the students asking them whether they had visited a teacher training college open day.

**Result obtained: differences were observed in open and click rates, but not in open day visits**

The career condition and the role model condition resulted in the highest open rates, as shown in figure 23. It is clear, therefore, that they attracted school students' attention. Next, the basic and salary guarantee conditions had the highest click rates. The overall conversion rate, i.e. the click rate as a percentage of the number of emails sent, is highest in the basic condition (0.9%). The basic condition therefore scores higher than the career and role model condition. In addition, the salary guarantee condition scores higher than the role model condition. The other differences are not significant.

**Figure 23:** Conversion rate in four email conditions



No significant difference was observed in the effect on visits to a teacher training college/programme open day between the conditions. The same also applies to the control condition: the randomised group of school students who did not receive an email. On average, 14% of respondents said they had been to an open day.

***Impact: more targeted interventions***

For school students, the decision to choose teacher training is complex and is unlikely to be made based on an email. More is needed to spark their interest in these open days. At the same time, the profile score that was developed (based on interest and competency tests) was found to be an accurate predictor of interest in teacher training programmes. This profile score could be used for more targeted interventions in the future.

## Working more hours to combat teacher shortages

*How can teachers be motivated to increase their work hours?*

In a vignette survey, teachers in primary, secondary and post-secondary vocational education were asked whether they would like to work more hours – with and without incentives. The survey shows that their willingness to do so can be increased to varying degrees by offering them bonuses, additional employee benefits and a combination of both.

### **Why this experiment was conducted: teacher shortages**

The government has identified significant staff shortages in primary and secondary education. It is prepared to do everything possible to reduce these shortages. One way to address this issue is to encourage teachers to work more hours by offering them a bonus. The Ministry of Education, Culture and Science wanted to find out relatively quickly which additional hours bonus options were expected to be more or less effective, including in terms of cost. And to what extent this relates to the effectiveness of certain additional employee benefits, or a combination of bonus plus employee benefits.

### **Types of intervention: bonuses, employee benefits and a combination of both**

Various additional hours bonus options were presented, both separately and in combination with one or more employee benefits (see image 21).

The interventions were as follows:

- a net bonus of 150, 250 or 400 euros per month for one extra day's work per week, on top of the additional salary that is normal for working more hours
- a bonus lasting for one, three or five years
- employee benefit 1: teachers can flexibly schedule the extra hours to suit their private needs and obligations, e.g. starting a little later or taking days off outside school holidays
- employee benefit 2: free childcare is available for the extra hours
- employee benefit 3: there is opportunity to use the extra hours for activities other than teaching-related duties, e.g. school development, coordination or fulfilling an expert role

**Image 21:** Example of a vignette presented to survey participant

Imagine you are offered a temporary bonus worth € <150 > <250> <400> net per month if you decide to work one extra day a week. This bonus is on top of your extra regular salary for working more hours.

The temporary bonus lasts for <1 year > <3 years > <5 years >.

<And <you can flexibly schedule the extra hours worked to suit your private needs and obligations (e.g. starting a little later or taking days off outside school holidays)><there is free childcare available for the extra hours worked><there is opportunity to use extra hours worked for something other than classroom teaching (e.g. time for school development, coordination or fulfilling an expert role)>>

**Question** Given the above options, how likely is it that you will decide to work one day more a week?

01            Definitely not  
02            Unlikely  
03            Likely  
04            Definitely will

**Question** Given the above options, how likely is it that you will decide to work half a day more a week (receiving half the bonus mentioned)?

01            Definitely not  
02            Unlikely  
03            Likely  
04            Definitely will

**Method used: vignette survey**

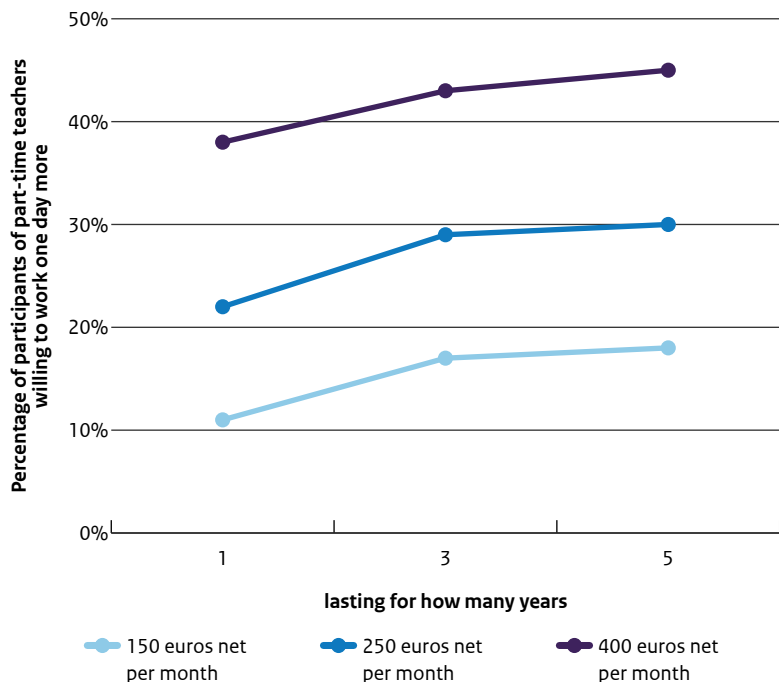
The survey asked 11,000 primary, secondary and post-secondary vocational education teachers about their intentions with regard to working more hours (the baseline condition). They were then presented with several vignettes asking: in this case, how likely is it that you would decide to work half a day or one day more? Each teacher was randomly presented with 6 out of a total of 40 different vignettes.

**Result obtained: additional hours bonus can significantly enhance the intention to work more hours**

A significant proportion of teachers are responsive to a bonus as an incentive to work more hours. The higher the bonus, the greater the intention to work additional hours. Bonuses have a significant effect in particular in the subgroup of teachers who initially do not show this intention (70.5% of all surveyed teachers working up to 4 days a week). If a bonus of 400 euros a month is offered, 33-40% of them are willing to work one day more a week; the exact percentage depends on how long the bonus lasts for (1, 3 or 5 years). If a 250 euro bonus is offered, the figure is between 18% and 26%. If a 150 euro bonus is

offered, the figure drops to between 7% and 14%. Therefore, the length of the bonus has less effect than the bonus amount. See figure 24. In terms of employee benefits, being able to flexibly schedule work to suit personal commitments has the greatest effect: 33% of teachers then are willing to work one day more. This is followed by the opportunity to perform non-teaching duties (27%) and free childcare (18%, since this only appeals to teachers caring for children). It can therefore be concluded that additional employee benefits are also effective in motivating teachers to work more hours.

**Figure 24:** Effect of bonus on intention to work more hours



**Impact: working document for schools**

The results of the vignette survey are included in a working document for schools/school boards wishing to experiment with an additional hours bonus. This is expected to be useful to them, enabling them to shape optimum policies, including in terms of cost, in line with the teacher shortage they are experiencing, the size of their budget and their level of support.



## Helping people get more out of language

*How can you help individuals with limited literacy skills gain proficiency?*

The 'Doe meer met taal' (Get more out of language) campaign was launched to reach out to individuals with limited literacy skills whose mother tongue is Dutch. At its conclusion, people in the target group said they felt more motivated to improve their language skills. They are also more inclined to take proactive steps, for example by engaging in language-related activities at home. 66,000 people visited the campaign website.

### **Why this experiment was conducted: everyone should be equipped with functional literacy skills**

The national Tel mee met Taal programme aims to prevent and reduce low literacy levels. Language information points (Taalhuizen) and language centres (Taalpunten) have been established to promote language skills. Practice shows, however, that these initiatives have difficulty reaching individuals with limited literacy skills whose mother tongue is Dutch. Moreover, this group does not always acknowledge or recognise that they have difficulties with language. Against this background, the Ministry of Social Affairs and Employment and the Ministry of Education, Culture and Science sought to run a campaign aimed at reaching out to these individuals and supporting local language initiatives.

### **Type of intervention: 'Doe meer met taal' campaign**

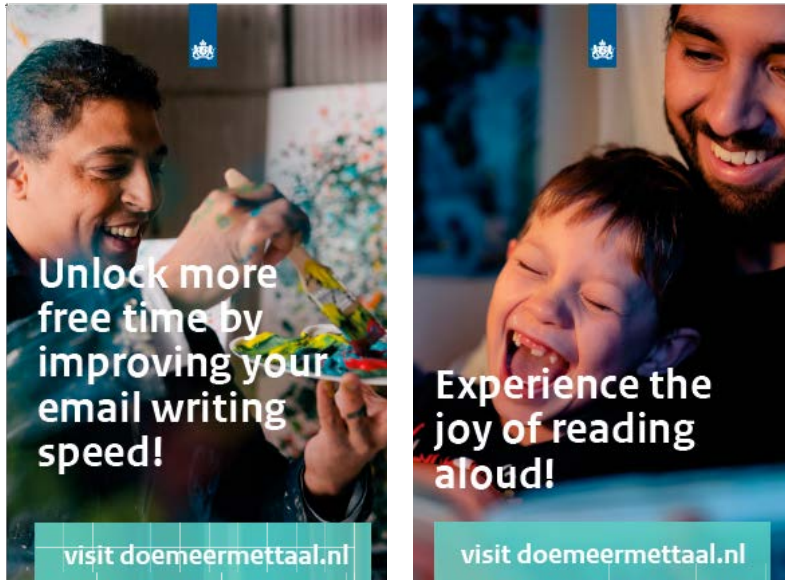
The 'Doe meer met taal' campaign was developed in collaboration with DPC. In it, language is presented as a means rather than a goal in itself: how can language benefit you? Linking language to the personal aspirations and motivations of individuals with limited literacy skills makes it more relevant for them to engage with language. The campaign aims to give people the confidence that they can improve their language skills and encourage them to take a first step. Radio spots, online commercials and outdoor advertising were used for this purpose. The website [doemeermettaal.nl](http://doemeermettaal.nl) gives individuals with limited literacy skills tips on how to deal with texts, reading and writing at work, online or in a family setting. Visitors are also pointed to free exercises on [oefenen.nl](http://oefenen.nl) and to training courses and programmes near to them.

### **Method used: baseline and impact measurements**

A study was conducted prior to and after the campaign, with independent sampling amongst people aged 20-49 with low socio-economic status and whose educational level is primary education, vmbo-bl/kl (vocationally oriented

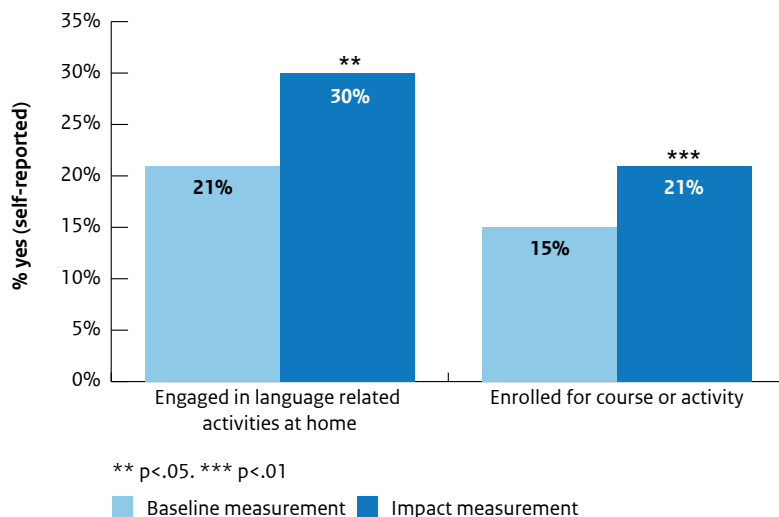
learning/middle-management vocational learning pathways), mbo-1 or vmbo-gl/tl (mixed learning/theoretical leaning pathways), to investigate the effectiveness of the campaign. Only native speakers of Dutch were included. The data were weighted by sex, age, socio-economic status and region.

**Image 22:** Campaign material examples



**Result obtained: 66,000 website visitors and more people engaging with language in the home setting**

The campaign attracted over 66,000 quality website visitors – people who stay long enough to read the information properly. This amply exceeded the target of 35,000 such visits. By far, most visits (90%) were generated by the online campaign. Despite the limited scope of sampling (N=241 in the baseline measurement and N=350 in the impact measurement), the impact study shows some significant differences between baseline and impact measurements. At the conclusion of the campaign, people placed heightened importance on writing non-official texts effectively and on writing for work purposes. Also, they were more likely to want to improve their language skills. They also said they were more inclined to take proactive steps, for example by engaging in language-related activities at home, and the proportion saying they have enrolled in a course or activity had risen slightly.

**Figure 25:** Proportion of people adapting their behaviour for increased language proficiency***Impact: contribution to reducing low literacy and increased self-reliance***

By encouraging people to take the first step towards improving their language skills, the campaign may contribute to reducing low literacy levels amongst adults over time. The campaign is being repeated in 2023. In addition, the campaign meets a need amongst municipalities and libraries, for example, to strengthen their communication with individuals with limited literacy skills. The short preparation time for the campaign meant that it was not possible to conduct a structured analysis to determine whether this was successful. Nonetheless, there are many examples of organisations that have used campaign messages in their own communications.

## Filing tax returns correctly and on time

*Is there value in expressing thanks to citizens and businesses?*

**Are people more likely to file their tax returns correctly if they receive a thank-you in advance or afterwards? Analyses show that thank-you messages have no effect on compliance behaviour.**

### **Why this experiment was conducted: positive alternative sought**

To encourage citizens' tax compliance (i.e., paying their taxes on time and correctly), it is occasional practice to emphasise the risk of checks and fines in case of non-compliance. One drawback of this deterrent method is that it can damage citizens' and businesses' trust in the authorities. It is important, therefore, to identify or develop friendlier methods of increasing tax compliance. According to research in psychology, showing gratitude for an expressed behaviour can be perceived as a reward and, in turn, can promote repetition of the behaviour. This was the theoretical background of the research that was commissioned by the Dutch Tax and Customs Administration on the effectiveness of thank-you messages on tax compliance.

### **Type of intervention: thank-you message, in advance or afterwards**

To investigate this, an experiment was conducted amongst UK citizens. The 198 participants in the experiment were presented with a task in which they allegedly earned income and were asked to file a tax return. Participants were thanked in advance, thanked afterwards, or not thanked for paying their tax, by using the messages 'Thank you in advance for paying your tax' and 'Thank you for paying your tax', or with no message. Following a norm of reciprocity, participants might be more willing to comply with the request or repeat the behaviour for which they were thanked.

### **Method used: RCT**

To measure the effect of a thank-you message on participants' tax compliance, the experiment consisted of several rounds. Four times, participants were given a task to perform and were paid for it (i.e. earned income). Subsequently, they filed four tax returns for the various incomes they had earned. After filing their tax returns, participants were also asked to evaluate the likelihood of being checked. Participants were randomly assigned to one of the following three conditions (procedure within brackets):

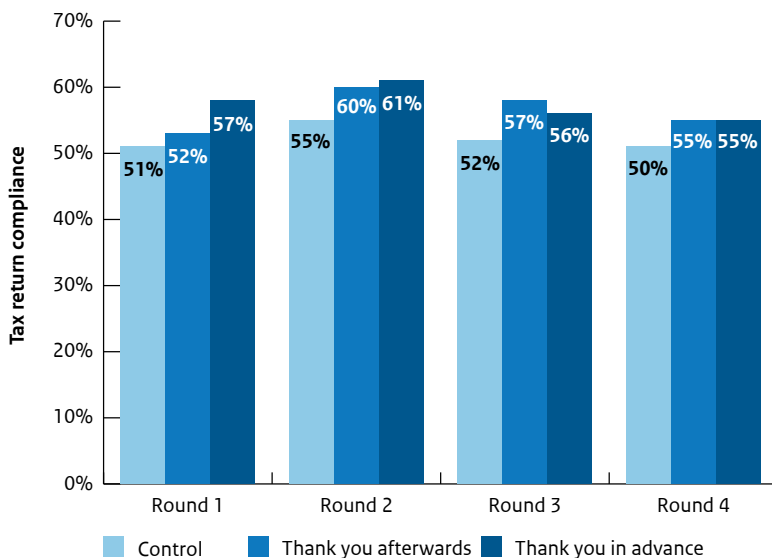
- No thanks (control) condition [tax return 1 → tax return 2 → tax return 3 → tax return 4]

- Thank you afterwards condition [tax return 1 → thank you for filing tax return 1 → tax return 2 → thank you for filing tax return 2 → tax return 3 → thank you for filing tax return 3 → tax return 4 → thank you for filing tax return 4]
- Thank you in advance condition [thank you for filing tax return 1 → tax return 1 → thank you for filing tax return 2 → tax return 2 → thank you for filing tax return 3 → tax return 3 → thank you for filing tax return 4 → tax return 4]

**Result obtained: no increased or decreased compliance**

Results showed no significant increase or decrease in tax compliance across the four tax returns (see Figure 26). In all four rounds, about the same percentage of participants filed their tax returns correctly. Moreover, results also showed no significant difference in tax compliance between participants in the three conditions. That is, participants who were thanked in advance or afterwards were, on average, just as compliant as those who received no thank-you message.

**Figure 26:** Tax compliance for each of the three conditions per round



\* **50%** compliance means that a participant filed a tax return for half the correct amount. Results did show that the perceived likelihood of being checked was positively related to tax compliance. That is, the higher participants perceived this likelihood, the higher their tax compliance.

***Impact: understanding what might work***

This study highlights possible contributors to tax compliance. It was not found that a thank-you message for paying taxes, either in advance or afterwards, had an effect on tax compliance. It could be that thank-you messages are effective in interpersonal settings, but not in an interaction between individuals and organisation, the context we used in this study. It was found, however, that the perceived likelihood of being checked was positively related to tax compliance. This finding corroborates findings from previous research (Asnawi, 2013; Hallsworth, 2014).

## Using savings to clear debit balances

*What is the impact of pre-entering a repayment amount and informing consumers about costs?*

**Saving while being overdrawn costs consumers money. The interest they have to pay is far more than the interest they receive. An experiment tested two interventions aimed at encouraging consumers to use their savings to clear any overdraft, by pre-entering a repayment amount and giving explicit information about costs. These interventions lead to better choices amongst many, although not yet all, consumers.**

### ***Why this experiment was conducted: saving while being overdrawn costs Dutch citizens money***

In late 2021, the major Dutch banks were charging 9.9% interest on overdrawn amounts, while those same banks paid 0% or 0.01% interest on instant access savings account balances. Yet consumer research by the AFM shows that 11.4% of Dutch citizens with savings have a debit balance at least once every quarter. The financial loss consumers incur as a result would seem to be primarily their own responsibility. Nonetheless, facilitating an easier balance by consumers between saving and borrowing enhances overall prosperity. How can consumers be encouraged to use savings to clear debit balances?

### ***Types of intervention: pre-entering a repayment amount and explicit information about costs***

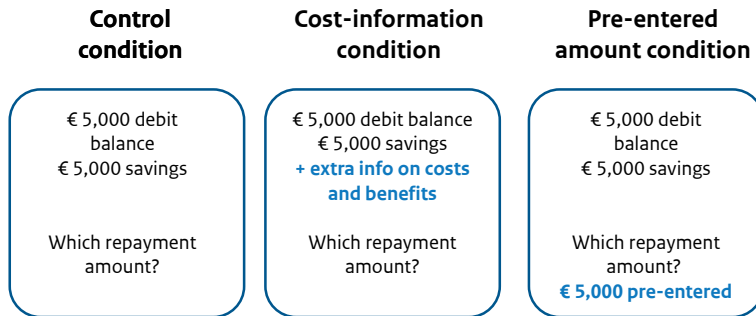
The AFM tested two potential interventions, based on the financial situation of a fictitious person, Mr Grein:

- pre-entering a repayment amount, in this case € 5,000, which would be enough to clear Mr Grein's debit balance in full
- setting out explicitly the costs and benefits, by including an additional sentence: 'With a 10% interest rate on negative balances, Mr Grein's debit balance costs him € 500 a year. With a 0.1% savings rate, a positive balance of € 5,000 yields him € 5 a year in interest.'

**Method used: online scenario experiment**

The experiment was conducted amongst 1,604 Dutch citizens in April 2021. This sample is representative of the Dutch population as a whole. All the respondents were asked the question: 'Mr Grein has a debit balance of € 5,000. He has € X in a savings account. He has no other savings apart from a pension, which he cannot access. How much of his € X in savings do you think Mr Grein should use to clear his € 5,000 debit balance?'

**Image 23:** Three conditions



**Result obtained: better choices amongst many, although not yet all, consumers**

Pre-entering the maximum possible repayment amount (N=321) resulted in more than half of the respondents (52%) using the € 5,000 savings to clear the total debit balance of € 5,000, compared to 36% in the control group (N=319) for whom no amount was pre-entered. On average, the respondents repay € 3,479 when the repayment amount of € 5,000 is pre-entered, compared to € 2,917 in the control group.

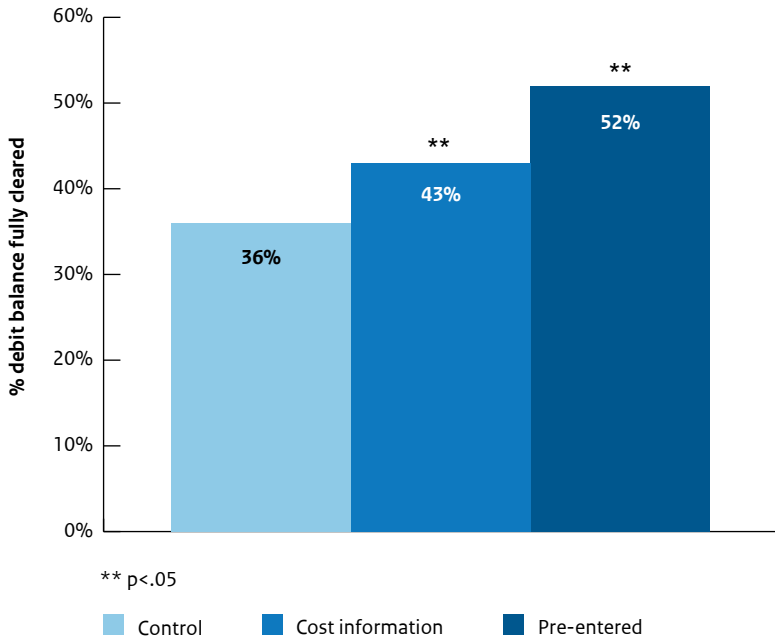
In the group receiving explicit information about the costs of borrowing and the benefits of saving (N=318), 43% of respondents choose to clear the total debit balance, compared to 36% in the control group. Respondents who receive additional information repay an average amount of € 3,042, compared to € 2,917 in the control group. As an additional control, a group (N=236) was presented with a self-scenario: the same situation as the control group, but with 'you' being inserted in place of 'Mr Grein'. This made no difference.



**Impact: possibilities for banks to help consumers**

Almost all Dutch banks send their customers alerts: a signal to notify the customer that they are now overdrawn. This may allow consumers to make a more well-considered choice of whether to save or borrow. Banks could help their customers even more, for example by offering the option of automatically clearing any negative balance in a current account using funds from a linked savings account. This would prevent customers from saving while being overdrawn without them having to take any action, and is one way for banks to prioritise their customers' interests.

**Figure 27:** Proportion of individuals using savings to clear debit balance



## Reporting a change in income to Benefits Unit

*How to ensure that more people comply with their notification obligation in good time*

**'Returning to employment? Don't forget about your benefits!' When individuals receiving benefits return to employment having been registered as unemployed, it is important that they report the change in their income to the Benefits Unit on time, to avoid repayment demands. Why do individuals not comply with this notification requirement? And what interventions could improve compliance? A revised letter from the UWV Employee Insurance Agency and an additional page on the Benefits Unit website failed to significantly change this behaviour.**

### **Why this experiment was conducted: unnecessary repayment demands**

Unemployment benefit recipients who return to employment and who also receive additional benefit must report the change in their situation to the Benefits Unit in good time, since this may affect the amount of benefits they are entitled to. Not all individuals comply with this notification obligation, meaning they may have to repay overpaid amounts later. An extensive behavioural analysis revealed, amongst other things, that only 50% of citizens know that it is their responsibility to report any change in their income to the Benefits Unit. Added to that, 60% have difficulty estimating their annual income, making it more complicated for them to report the change.

### **Types of intervention: revised letter and additional webpage**

Based on a behavioural analysis, it was decided to focus the intervention on the factors *knowledge* and *capability*:

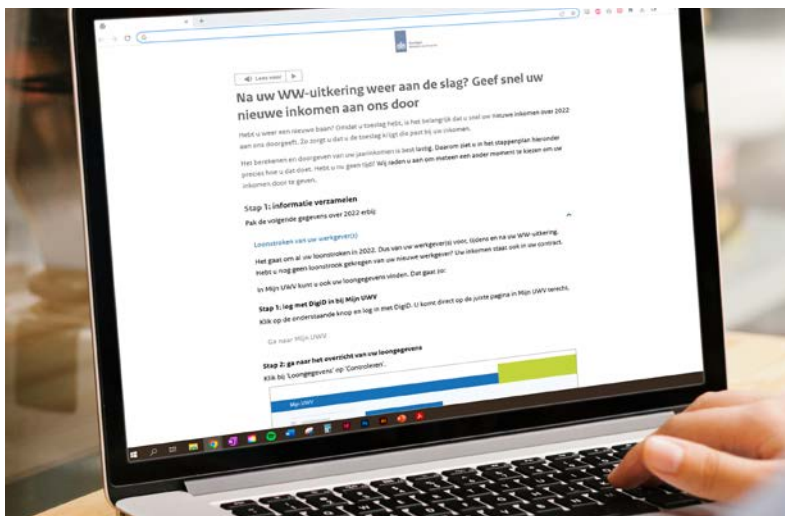
- revised letter on termination of unemployment benefit: UWV sent individuals receiving unemployment benefit a digital termination letter when it is established that their earnings have exceeded a threshold amount. In this letter, UWV included a section about the importance of notifying the Benefits Unit of any change in income, where individuals received benefit (see image 24)
- new webpage: The Benefits Unit created a new webpage to help people report their new income correctly. This webpage included a detailed step-by-step plan, designed to enable individuals to calculate whether their income had altered so much that they needed to report a change (see image 25)

**Image 24:** The section in the new unemployment benefit termination letter sent by the UWV

**Make sure you report your new income to the Tax and Customs Administration/ Benefits Unit**

With your return to employment, you can expect a change in your income. If you receive housing allowance, healthcare allowance, childcare benefit or child-related budget, you must report your new income through [toeslagen.nl](https://toeslagen.nl). This will help you avoid receiving too much benefit and having to repay it later. [Toeslagen.nl/weerwerken](https://toeslagen.nl/weerwerken) includes a detailed guide on how to report your new income.

**Image 25:** New Benefits Unit webpage with detailed guide



**Method used: impact measurement**

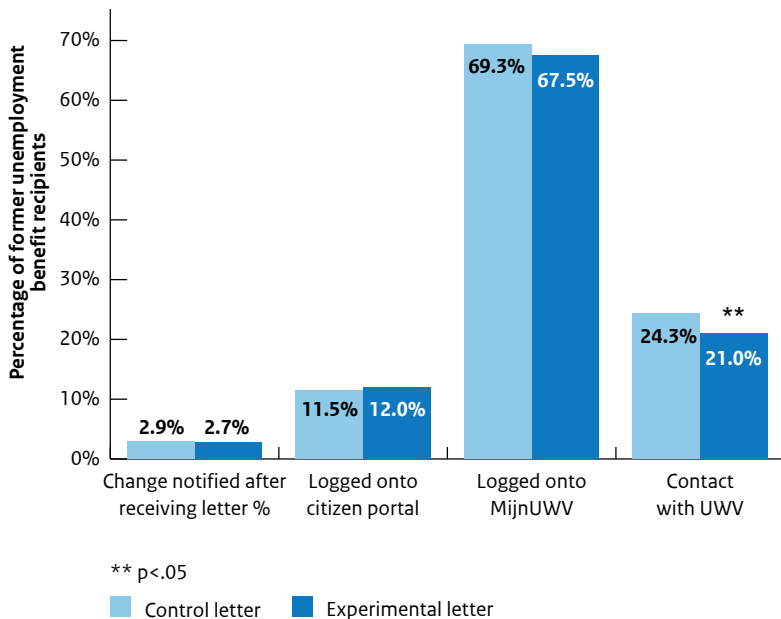
Part of the UWV offices sent the intervention letter with the added section and a link to the new webpage (N=3,885); another part sent the regular termination letter, i.e. without the added section and link (N=7,533). The impact in these 2 groups was compared: how many individuals notified a change to the Benefits Unit and how many visited the webpage?

**Result obtained: no discernible difference**

The intervention did not result in more people reporting a change to the Benefits Unit. It made no difference whether they received the intervention

letter or the regular letter. Very few people in the intervention group visited the dedicated webpage created by the Benefits Unit. Also, they did not log onto their personal pages on the UWV and Benefits Unit websites more often. The only significant impact measured is that individuals in the intervention group contacted the UWV less often than individuals in the control group.

**Figure 28:** Proportion of individuals taking action in control group and intervention group



**Impact: lessons learned**

Although the intervention itself did not reveal any significant differences, the insights from the study are highly relevant for the Benefits Unit as well as the UWV, enabling them, for example, to make improvements to the termination letter and the explanation on the Benefits Unit webpage. The advice that emerges from this study is that more joint studies should be conducted, since they enable agencies to discover how to design their processes to minimise the requests they make of people. This prevents errors and subsequent repayment demands. Ideally, people should no longer need to report changes that another official agency, body or point of contact is already aware of.

## More conscious student borrowing behaviour

*How can excessive loan amounts be avoided after the award of a supplementary grant?*

**Are there ways to limit the accrual of excessive loan amounts by students?**

**A letter sent to students with student loans who have received a supplementary grant increases the likelihood of them reducing their loan amounts. This increased likelihood translates to an annual average decrease of over € 150 in loan amounts for students receiving both a supplementary grant and a loan.**

***Why this experiment was conducted: award of supplementary grant sometimes has little or no impact on loan amount***

Previous nudge projects carried out by the Ministry of Education, Culture and Science and DUO aimed at reducing the number of students who fail to apply for a supplementary grant have shown that a proportion of students do not adjust their loans on being awarded a supplementary grant, or they do so by a lower amount than the amount of the supplementary grant. As a result, these students may accumulate more student debt than is necessary. What steps can be taken to change this situation?

***Type of intervention: letter featuring behavioural techniques***

The intervention concerned a letter urging students to consider whether their student loan was still a good fit for them. See image 26. The letter incorporated various behavioural techniques, including:

- personalise: e.g. opening with 'Dear Kees' and mentioning concrete amounts for that student
- make it easy: including a step-by-step plan
- add deadline: 'Make sure you do this by December 31 at the latest!'
- appeal to aversion to loss: 'Reducing your loan amount now means you'll have less student debt and have to pay back less later'

**Image 26:** Example of letter featuring behavioural techniques sent to students

[illegible]

K vd Boer  
 Testraat 1 A  
 1234 AV 'S-HERTOGENBOSCH

**More information**  
 duo.nl

Date            December 2021  
 Subject        Is your loan amount in 2022 still appropriate for your circumstances? Do the check now!

Dear Kees,


In 2021, you were awarded a supplementary grant of €359.23 per month. As a result, you might now consider borrowing less and reducing your student loan amount.

**Do the check: are you possibly borrowing too much in 2022?**

In 2022, you are set to receive a supplementary grant of €362.50 on top of your student loan of €192.76 every month. So, now is a good moment to do the check: is the amount that you borrow, by way of student loan, in the new year appropriate for your circumstances? Reducing your loan amount now means you'll have less student debt and have to pay back less later.

**If you want to reduce your loan, make sure you do so by 31 December at the latest!**

If you reduce your loan by 31 December this year, you will start receiving less from next January. Here's how to adjust your loan in four easy steps:

 to duo.nl, click 'Inloggen Mijn DUO' and log in using your DigiD

Step 2 Click 'Details' under 'Mijn Producten'

**2 minutes** Step 3: Select 'Lening' and then 'Wijzigen'

Step 1 Go Step 4 Enter the details, click 'Verder' and 'Bevestigen'

To find out how much your loan needs to be, determine a budget quickly and easily using the calculation tool student finance on duo.nl/rekenhulp. If you recently adjusted your loan amount, you can skip this step.

Kind regards,  
 Willem Schutte  
 Director Student Affairs  
 Education Executive Agency (DUO)

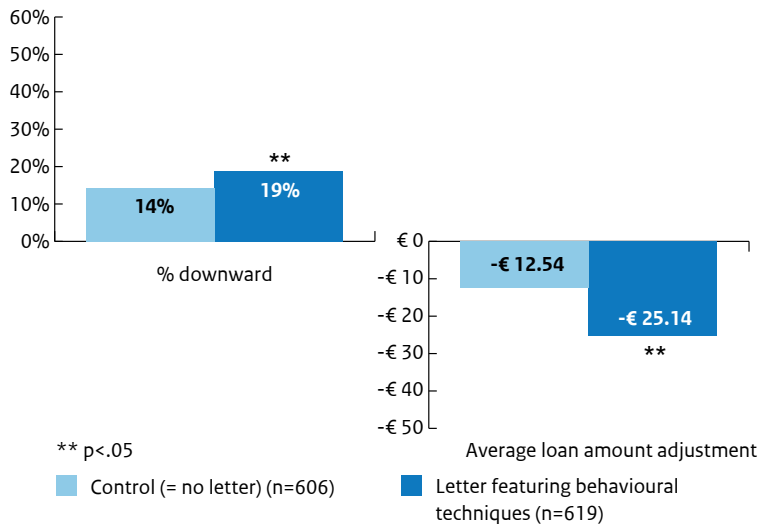
**Method used: RCT**

A Randomised Controlled Trial was conducted to examine the impact. In this trial, half of the target group received the letter featuring behavioural techniques while the other half did not receive any letter (the control group). The participants in the trial were randomly allocated to one of the two groups. A total of 1,331 students who received a supplementary grant for the first time in 2021 and who have interest-bearing student loans took part in this experiment.

**Result obtained: one-third rise in student loan reductions**

The letter resulted in significantly more downward adjustments of the interest-bearing loan: 18.9% vs. 14.2% in the control group. This is shown in figure 29. Adjusted for minor differences in background characteristics, this represents a 4.6 percentage points increased likelihood of a downward adjustment. Relative to the control group, this represents a 33% increased probability of such an adjustment.

**Figure 29:** Loan adjustments for letter featuring behavioural techniques (intervention group) vs. no letter (control group)



The average adjustment of the monthly loan amount is € 13 higher in the letter group than in the control group. This is a statistically significant difference, even after adjustment for differences in background characteristics. In relative terms, the adjustment in the loan amount is twice as high in the letter group than in the control group: -€ 25.14 vs. -€ 12.54. This difference is not attributable to larger downward adjustments (which are the same in both groups), but because students in the letter group are more likely to adjust their loan amounts downward than students in the control group. On an annual basis, this would equate to over € 150 less being borrowed as a result of the letter intervention.

***Impact: more conscious borrowing behaviour through relatively low-cost intervention***

This nudge project shows that a relatively low-cost intervention can be effective. The letter resulted in more downward adjustments of the interest-bearing loan for new recipients of the supplementary grant, and hence to reduced student debt. The intervention therefore seems to encourage more conscious borrowing behaviour.



## New applicants for fiscal scheme to promote innovation

*Will website changes lead to more entrepreneurs exploring the possibilities presented by the WBSO scheme?*

**This experiment involved making the information on the WBSO website clearer and more personally relevant to entrepreneurs. The visibility of the call-to-action was also enhanced. The study showed that entrepreneurs were prompted to spend more time exploring the possibilities offered by the Research and Development (Promotion) Act (WBSO) and that they read the information more carefully.**

### **Why this experiment was conducted: number of new applications below expectations**

The Research and Development (Promotion) Act (WBSO) is a key fiscal scheme to promote innovation amongst businesses. Behavioural teams from the Ministry of Economic Affairs and Climate Policy and the Netherlands Enterprise Agency (RVO) performed a behavioural analysis to address the issue of a declining number of new applicants. Their analysis revealed that many entrepreneurs are uncertain whether they qualify for the WBSO and what financial benefit they might expect to gain. Entrepreneurs had a perception that the application process involved a lot of hassle and were sceptical of the time investment. The website did not help in this regard: information for different target audiences was mixed up, and the WBSO webpage contained lots of links but not much content. This hindered entrepreneurs from promptly accessing the information relevant to them.

### **Types of intervention: visible call-to-action, simpler information and greater personal relevance**

Several behavioural interventions were applied to the website:

- The call-to-action to fill in the online help tool (regelhulp) was made more visible and engaging. Entrepreneurs can use the online help tool to get an indication, having first answered a few questions, of whether they are eligible for the WBSO scheme and how this might benefit them. The existing website included a link to the online help tool embedded within a complex sentence. On the test site, this link in the sentence was replaced by a large button accompanied by the eye-catching wording 'Bereken uw WBSO-voordeel' (Calculate your WBSO tax benefit).
- Information was made simpler and more personally relevant. All the texts on the landing page and additional pages linked from the landing page were rewritten for this purpose. Actions were divided into small steps and focused

on the various target groups. To provide visitors with a quick overview of the WBSO scheme, a brief explanation was placed at the top of the landing page with the main calls-to-action (online help tool and link for submit now). Visitors could also find more concise content without having to click links. To enhance personal relevance, examples illustrating the WBSO scheme's benefits and personal stories from other applicants were added.

**Method used: A/B test and baseline and impact measurements**

An A/B test was performed to measure the effect of the call-to-action button. Over a period of four weeks, visitors to the WBSO landing page (N=5150) were randomly directed to one of the two versions of the website: the control version and the test version. The number of times the online help tool was clicked was measured in both versions. Baseline and impact measurements were performed to assess the other changes: web statistics during a three- month period following the changes were compared with those of the same period a year earlier. See figure 31.

**Figure 31:** Effect of website changes (baseline and impact measurements)

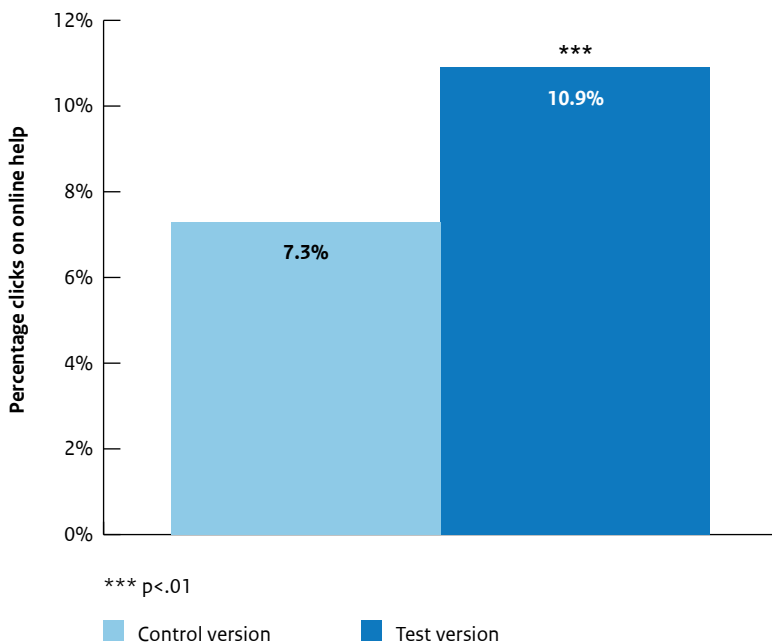
What was measured?	Baseline	Impact	Explanation
Time spent on landing page	1 minute	2.26 minutes	Visitors stay significantly longer on the landing page ( $p < .05$ ). Visitors also stay longer on all the linked pages (all $p < .05$ )
Visitors completing online help tool (measured as % of landing page views)	3.6%	7.2%	There are significantly more visitors starting and completing the online help tool ( $p < .01$ )
Visitors leaving the landing page after visiting (measured as % last page in session vs. first page)	32.0%	47.3%	Visitors are more likely to leave the RVO website after visiting the landing page ( $p < .01$ ). This may be because there is more basic information on the landing page and/or because there are fewer links to additional pages on the landing page.

**Result obtained: 50% more clicks on online help tool**

The test site including the 'Bereken uw voordeel' (calculate your benefit') button led to significantly more clicks on the online help tool than the existing site with the link. The proportion of visitors who clicked significantly increased from 7.3% to 10.9%. Simpler and more personally relevant information on the website also had an effect.

Visitors stay longer on the landing page, as well as on the linked pages. Combined with the shorter texts, this suggests that the information is read more attentively. In addition, more visitors used the online help tool.

**Figure 32:** Proportion of entrepreneurs clicking online help tool



***Impact: more entrepreneurs exploring the possibilities presented by the WBSO scheme, promotion of innovation***

Since there were no other major changes during the period in which the baseline and impact measurements were performed, it is plausible that the interventions help entrepreneurs to explore the possibilities offered by the WBSO scheme.

The number of completed WBSO applications in the period following the website changes is higher than before (7,004 versus 6,940), as is the number of applications from new applicants (335 vs. 287). However, these two increases cannot be directly linked to the improvements made to stimulate entrepreneurs to explore the WBSO, due to lack of data.

## Full price information for consumers

*What effect does the way prices are displayed have on online booking behaviour for holiday homes?*

**The Netherlands Authority for Consumers & Markets (ACM) conducted an experiment to investigate the effect of incomplete prices when booking a holiday home. Websites that display incomplete prices cause greater uncertainty, make choosing more difficult, undermine trust and give the feeling of deception compared to websites displaying transparent prices.**

### ***Why this experiment was conducted: unclear picture of actual costs***

In 2021, the ACM conducted a study into effective transparency. The aim was to determine the most effective means of providing consumers with complete and also clear information. It was known that certain websites displayed incomplete prices, listing additional costs, for example, behind an 'i' icon or on a different page, in a practice known as 'drip pricing'. As a result, consumers have an unclear picture of the total price of a holiday, for example, due to the incremental additions during the booking process. This prompted the ACM to investigate the effect of displaying transparent prices versus incomplete prices on comprehensibility and the choices made by consumers.

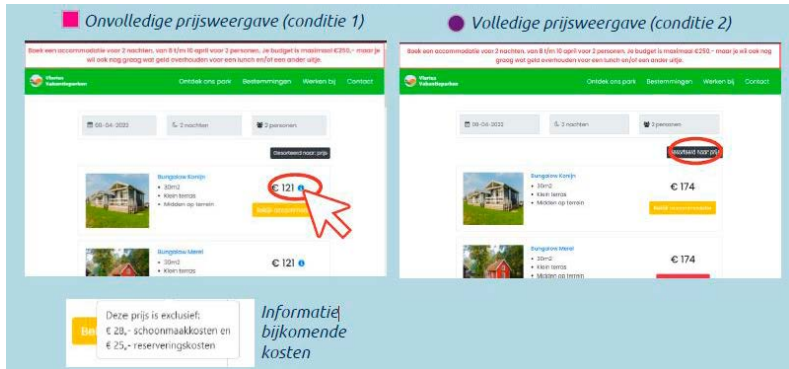
### ***Type of intervention: full pricing information vs. incomplete pricing***

In the study, two versions of a fictitious website were developed: one with full price disclosure and one in which additional costs were listed behind an 'i' icon. Additional costs were cleaning charges and reservation fees. Both versions of the website included links to navigate to different pages or sections or external content. See image 28.

### ***Method used: online experiment***

An online experiment was conducted that involved asking 1,000 people to book a holiday on a limited budget. Participants were randomly allocated to one of the two versions of the website: full pricing information and hidden extra costs. Next, they filled in a questionnaire about their experience. Both websites were compared in terms of: clarity of pricing and the search process, trust in the holiday home provider, behaviour (intention to book) and satisfaction with the choice made. Participants allocated to the incomplete pricing version were also asked how visible the icon and underlying price were. The study was conducted in collaboration with the Motivaction research agency.

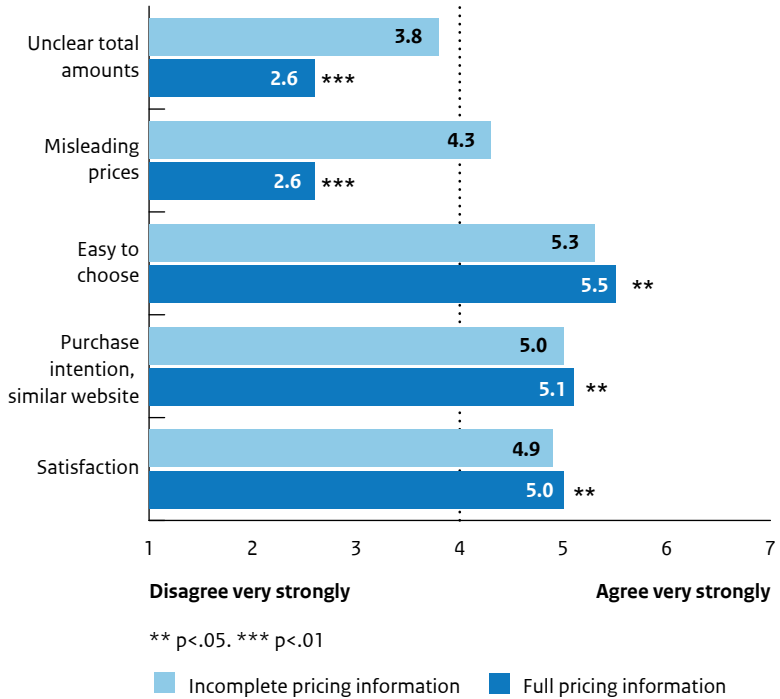
**Image 28:** Example of both website versions: full pricing information vs. incomplete pricing for holiday home (fictitious)



**Result obtained: full pricing information rated superior in every aspect**

Less than half (45%) of the respondents said they had seen the 'i' icon with the additional costs. However, only 15% actually clicked this symbol. As a result, the additional costs were only visible later in the process. The website with incomplete pricing came across as less clear and less transparent to participants. They were also more likely to find the website version with incomplete pricing misleading, implausible and hence less reliable. Although participants who viewed the version of the website with incomplete pricing considered more expensive options, they did not go on to select more expensive options. They were more likely to be dissatisfied with their choice and less likely to book on a similar website than participants who were given full pricing information. The website version with full pricing information was rated superior in every aspect.

**Figure 33:** Assessment of two sites with full or incomplete pricing information



**Impact: holiday home providers adjust their pricing information**

This study showed that pricing transparency helps consumers make better choices. Incomplete pricing information hinders clarity and requires greater investment in the search process. In addition, transparency contributes to website reliability. These findings provided input for the ACM's enforcement strategy focused on holiday parks. Eight holiday home providers changed their pricing information after being contacted by the ACM. They now show complete pricing information, including mandatory additional costs.

## Improved registration of development cooperation activities

*How can an application ensure correct registration and accountability?*

In a move aimed at improving how it registers its development cooperation activities, the Ministry of Foreign Affairs developed an application: IMPACT. This was successful in enabling budget holders to report activities more correctly: activities now have shorter names and are reported in English more often than previously. However, budget holders continue to use non-standard abbreviations.

### **Why this experiment was conducted: reports do not always comply with appropriate standards**

The Ministry of Foreign Affairs reports on its activities to the Organisation for Economic Cooperation and Development (OECD), amongst others. In these reports, the Ministry sets out how much Official Development Assistance (ODA) the Netherlands provides. The reports do not always meet OECD standards, however. Many different Word forms are used, the names of activities are too long and they are often not worded in English. Moreover, the Ministry uses abbreviations that are not readily understood by an external audience. IGG, for example, is the name of a directorate within the Ministry.

### **Type of intervention: IMPACT application**

The Ministry of Foreign Affairs developed an application – IMPACT – which staff can use, instead of the multitude of Word forms, to report on their activities. The application also has other benefits, including enhanced control of the activity cycle. This study focused on three interventions for registering activities to ensure that OECD requirements are met:

- length of activity names: the description field allows up to 150 characters
- the language: the entry fields in IMPACT are worded in English, so users are more likely to use English themselves
- abbreviations: IMPACT includes the warning 'must be readable for external stakeholders' to encourage users to use only standard abbreviations, such as UNICEF or WHO

### **Method used: comparison of registration with and without application**

Every policy department and overseas post with its own budget for meeting policy objectives is a budget holder. From May 2022, participants in the pilot study (15 out of 120 budget holders) were able to register their activities using IMPACT. The impact of the application was tested by comparing activity names

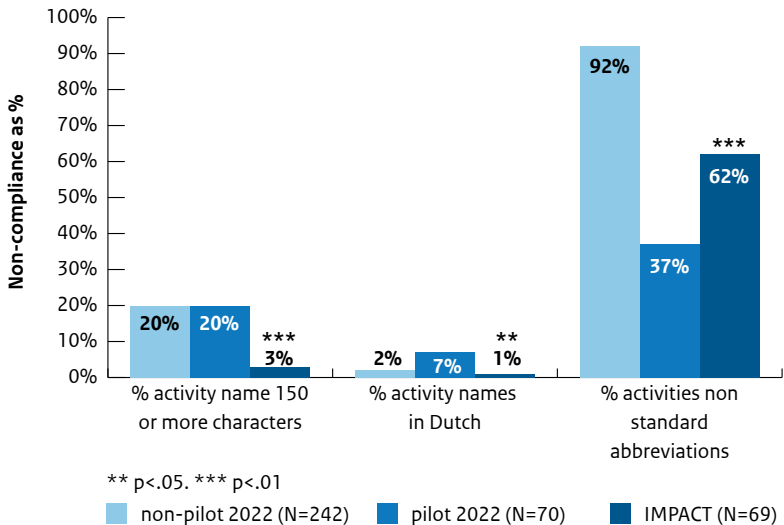


registered in the old way and using the new application. The analysis focused on effects that are readily quantifiable: length of names, chosen language and abbreviations. This does not necessarily mean that these are the main intended effects of IMPACT.

**Result obtained: improved reports**

In 2022, 20% of activity names under the old method were 150 characters or longer. This applies to both participants in the pilot study and non-participants. Using the new method, only 3% of activity names were too long. Using IMPACT, therefore, the descriptions are significantly more likely to be of the correct length. The character limit forces people to use shorter names. The reason that longer names still appear is because they are sometimes copied (or cut off half-way) from another file.

**Figure 34:** Proportion incorrectly describing development cooperation activities



Moreover, the descriptions are more often worded in English. 1% of the names pilot study participants gave to ODA activities in 2022 were in Dutch. This compares with 7% for the activities they entered using the old method – a statistically significant difference. This percentage is higher than amongst the non-participants in the pilot study (2% of the names they gave were in Dutch). This is probably because the pilot group includes a relatively large number of

departments based in the Hague, and few overseas posts, where the working language is more likely not to be Dutch.

The proportion of non-standard abbreviations in activity names is not lower following the introduction of IMPACT; in fact, it is significantly higher (62%), and was 37% amongst the pilot group using the old method. It is, however, substantially lower than for the non-pilot group (92%). The warning in IMPACT is inadequate in this regard, therefore. This might be because it used to be convenient to use a three-letter abbreviation common within the Ministry to filter by department or post. This is no longer necessary with IMPACT.

***Impact: clearer and more transparent***

Using the application, the Ministry of Foreign Affairs reports in English more frequently and using shorter texts. The use of non-standard abbreviations remains a focal point. Better naming leads to greater transparency about development cooperation results, for citizens, policymakers, partners and other donors.

## Effective position of call-to-action

*Is the response rate higher if the call-to-action appears the top of a letter?*

How can response rates to questionnaires be increased? In the first quarter of 2023, some of the participants in a CBS survey received a letter in which the call-to-action appeared as far as possible at the top of the letter.

The other participants received standard letters.

The analyses showed that the standard letters produced a significantly higher response rate than the letters in which the call-to-action was placed at the top.

### **Why this experiment was conducted: high response rate is preferable**

Statistics Netherlands (CBS) collects information for its statistics partly by sending questionnaires to a section of the population of the Netherlands. These questionnaires can be about multiple topics, such as work situation, health or living environment. A sample of the population will receive a letter asking them to take part in the survey. For results to be as representative as possible, it is important that as many Dutch citizens as possible actually complete the questionnaire. CBS conducted an experiment to test whether the order of certain paragraphs in letters has an effect on respondent behaviour.

### **Type of intervention: call-to-action moved to the top of the letter**

Experiments with invitation and reminder letters were carried out in the Dutch Labour Force Survey (LFS). The purpose of this survey, which is conducted by CBS, is to examine labour market developments in the Netherlands. Information is sought on a variety of topics, including the number of jobseekers, the reasons why individuals opt to work less or the proportion of young people holding down a part-time job alongside studying. Two types of invitation and reminder letters were sent:

- Standard letters: these started with two paragraphs about CBS and the specific research being conducted. This was followed by a paragraph on the incentives that could be won, such as an iPad or a VVV gift card. Next, there was a paragraph explaining how people could take part in the survey, with website and login details.
- Experimental letters: here, the paragraph on how to take part was moved right to the top of the letter. Specific information on the research being conducted appeared later in the letter.

**Method used: field experiment**

Between January and March 2023, 10% of the sample group received the experimental letter (N=5,031) and 90% received the standard letter (N=45,292). Via the website on which individuals filled in the questionnaire, CBS was recording for each invited person whether they opened the questionnaire (login), whether they broke off filling in the questionnaire before completing it (survey dropout), or whether they completed the entire questionnaire (response).

**Image 29:** The two versions of the letter, with the paragraph on how to take part at the top or bottom

**Standard letter**

Dear Ms A. de Beer,

Statistics Netherlands (CBS) invites you to take part in a survey about work. Regardless of your status – working, studying or retired – you are equally important to us. Your answers help ministries and companies make decisions, improve training options and increase the chances of finding the right job.

To gather information for this survey, CBS is inviting a selected group of people to complete a questionnaire. You are one of that group. You are representative of many other residents in the Netherlands. It is therefore important that you take part in this survey.

As a token of our thanks, you'll have the chance to **win one of the 25 iPads or VVV gift cards worth €400** that we're giving away.<sup>1</sup> After completing the questionnaire, you'll immediately learn if you've been chosen for one of these giveaways. You can then choose which one you want to receive.

*How to take part*

You can fill in the questionnaire online: To protect the data, we use a secure connection. You can access the questionnaire as follows:

Website: <https://antwoofd.cbs.nl>

User name: **7525925**

Password: **QY7U9T**

If you don't have internet access, a CBS employee may call or visit you in a few weeks, if the questionnaire has not been completed by then.

**Experimental letter**

Dear Ms A. de Beer,

Statistics Netherlands (CBS) invites you to take part in a survey about work.

*How to take part*

You can fill in the questionnaire online: To protect the data, we use a secure connection. You can access the questionnaire as follows:

Website: <https://antwoofd.cbs.nl>

User name: **7525925**

Password: **QY7UJT**

If you don't have internet access, a CBS employee may call or visit you in a few weeks, if the questionnaire has not been completed by then.

As a token of our thanks, you'll have the chance to **win one of the 25 iPads or VVV gift cards worth €400 that we're giving away**. After completing the questionnaire, you'll immediately learn if you've been chosen for one of these giveaways. You can then choose which one you want to receive.

*Why taking part is important*

To gather information for this survey, CBS is inviting a selected group of people to complete a questionnaire about work. You are one of that group. Regardless of your status – working, studying or retired – you are equally important to us. You are representative of many other residents in the Netherlands.

Your answers help ministries and companies make decisions, improve training options and increase the chances of finding the right job.

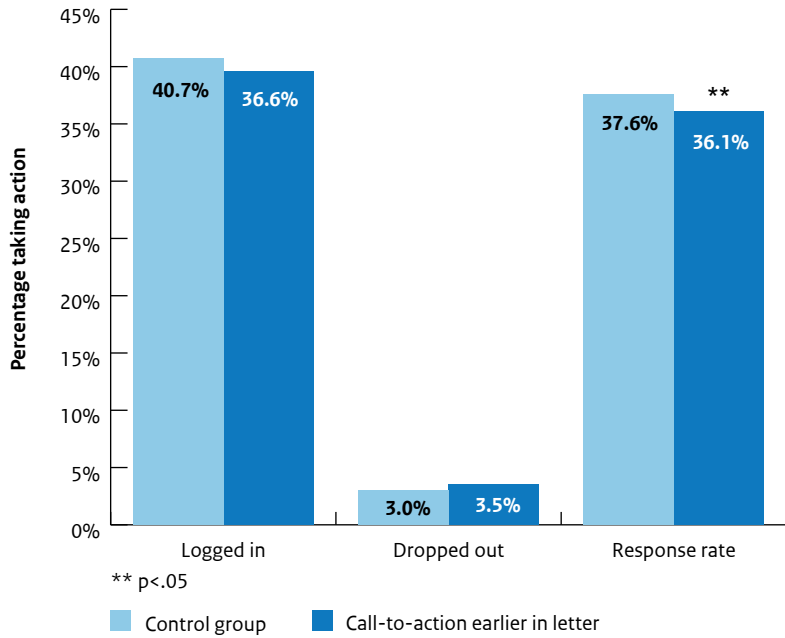
**Result obtained: standard letter position of call-to-action is most effective**

The standard letters produce a significantly higher response rate (37.6% of recipients) than the letters where the call-to-action is positioned earlier in the text (36.1%). This is a significant difference. For a sample size of roughly 50,000 people, a 1.5% increased response rate results in 750 more completed questionnaires.

It was also found that in the experimental group, fewer people made a login attempt compared to the control group (39.6% vs. 40.7%) and that they are more likely to drop out (i.e. discontinue before reaching the end) once logged in (3.5% vs. 3.0%). However, these differences are not significant.

In certain age groups, the difference in response rates between the letters is relatively large. In the age group up to 40 years old, 33.2% of those invited to take part in the survey completed the entire questionnaire when given the standard letter, compared to 30.7% of respondents shown the experimental letter – a significant difference. By contrast, the age group over 65 years old seems to respond better to the experimental letter (53.9% vs. 52.4% for the standard letter), although this difference was not found to be significant.

**Figure 35:** Proportion of letter recipients logging in, dropping out and completing the entire questionnaire (response rate)



**Impact: improved statistics**

A more effective invitation letter leads to significantly more questionnaire responses, and hence more reliable results. This enables CBS to enhance the accuracy of its statistical overview of the Dutch population. Moreover, this intervention is low-cost: one letter is no more expensive than the other.

## Enhanced cybersecurity of SMEs

*Can a phishing test make companies less vulnerable to cyberattacks?*

**Small and Medium-sized Enterprises are particularly vulnerable to cyberattacks. A large-scale field experiment amongst SME employees showed that a phishing test is effective in the short term, but not in the medium or long term.**

### ***Why this experiment was conducted: SMEs are vulnerable to cyberattacks***

Phishing is one of the most common types of cybercrime and is frequently the precursor to additional cyber threats, including malware and ransomware attacks. SMEs are vulnerable, with many of them not having the appropriate knowledge and resources to protect themselves against cyberattacks. Moreover, the vulnerability of one SME can quickly affect an entire chain of businesses. Is a phishing test amongst employees an effective method to enhance the cybersecurity of SMEs? And is this effect dependent on the time interval between phishing tests? These questions were addressed in the SME Phishing Test, a collaboration between the Regional Platform of Crime Control North-Holland and the Ministry of Economic Affairs and Climate Policy.

### ***Type of intervention: phishing test***

In an imitation phishing email, SME employees were induced to click on a suspicious link. Upon clicking on the link, they were directed to a feedback page containing information on how they could have recognised the phishing email; see image 30. This is intended to educate them, reducing the likelihood that they will click on such a link again in the future. The number of clicks was also a way of measuring the effectiveness of the intervention. After carrying out the phishing test, the SMEs were sent a report containing their company's anonymous test results and a detailed explanation of how they could (further) enhance their company's resilience against cyberattacks.

### ***Method used: RCT and questionnaires***

A Randomised Controlled Trial was conducted in which 667 companies were randomly divided into four groups based on similar characteristics (number of employees, sector, IT outsourcing). The 33,016 employees of these companies each received two different phishing emails. The time intervals between the emails varied between the groups: roughly 1 month, 2.5 months or 3.5 months. The effect was measured by comparing the click rates between a group that had previously received another phishing email and a group that had not received a

phishing email. By varying the time interval between emails, it was possible to investigate whether receiving a phishing mail a shorter or longer time ago might influence the click behaviour on a subsequent phishing email. In addition, a range of questionnaires was employed to gain insight into characteristics of both companies and their employees.

**Image 30:** Sample feedback page with information on phishing email



**1. Incorrect or non-existent sender email address**

Always ask yourself: Who is the sender? Do you trust emails received from this sender? Is the email address correct? Does this company exist?

**2. Email that begins with generic terms or greetings**

Generic openings may indicate a phishing email. Remain vigilant, however: even if the email opens with a personalised greeting, there is still a risk of deception.

**3. Email urging immediate action**

An email urging you to take immediate action is often a sign of phishing. This is usually accompanied by a threatening message.

**4. Suspicious URL in the link**

You can usually tell if a link leads to a suspicious website by moving your mouse over the link (do not click!) Clicking on links in suspicious emails can lead to malware or ransomware being installed on your device or system, for example.

**5. Too good to be true**

Does an offer sound too good to be true? Then it probably is.

Tomorrow, you will receive an email from the sender invitation@survio.com asking you to anonymously complete a short questionnaire.

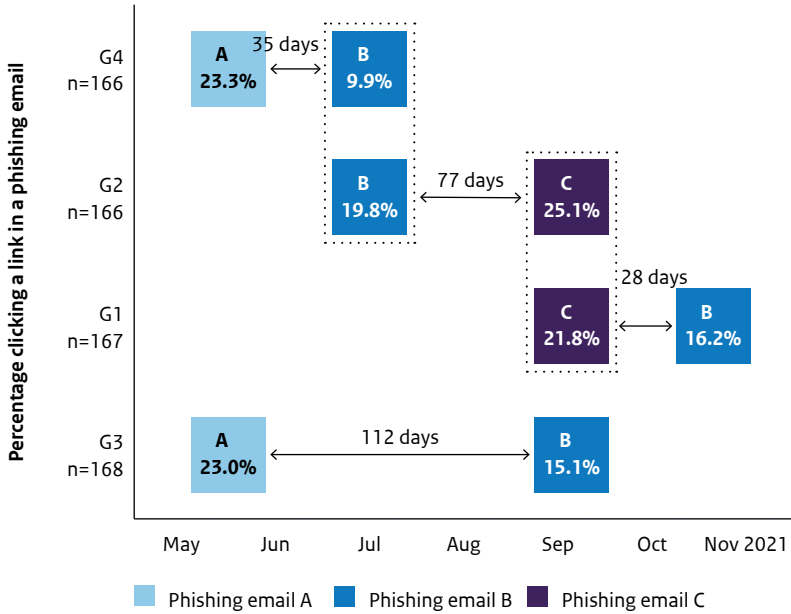
**Result obtained: click rate halved when second email is sent in the short term**

- Over one in five SME employees (22%) on average clicked a suspicious link in the first phishing email.
- There are indications of a short-term effect of a phishing email, but no indications of a medium or long-term effect. Employees who had received a phishing email roughly a month earlier were significantly less likely to click a second email than those who were yet to receive the first email (9.9% vs. 19.8%). No significant effect was measured where the time interval between emails was 2.5 or 3.5 months.
- People with a risk-taking attitude benefit most from a phishing test.

In a questionnaire amongst the participating companies (303 respondents) at the end of the experiment, 72% of companies said they planned to take measures to enhance their resilience against cyberattacks. One year later (47 respondents), companies were asked whether they had actually taken these measures: 51% said they had implemented these measures, and 23% said they still planned to do so.



Figure 36: Overview of average click rates per phishing test



**Impact: enhanced resilience against cyberattacks**

This study had impact in three ways:

- It provided insights into the resilience of SMEs against cyberattacks. The results confirmed the urgency of enhancing cybersecurity.
- The results showed that an imitation phishing email can be effective in the short term in making employees less likely to click the next phishing email they receive.
- This study and the experience with the imitation phishing email and feedback have in themselves led to enhanced awareness about SME resilience against cyberattacks. This was also reflected in the follow-up study conducted a year later.

## Reporting fake emails

*How do you promote cyber-safe behaviour amongst SME employees?*

The Ministry of Justice and Security developed a behavioural intervention aimed at inspiring individuals to adopt safe cyber practices: 'Valse email? Meld het via de meldknop' (Fake email? Report it using the report button). Thanks to this behavioural intervention, employees are ten times more likely to report suspicious emails internally. Moreover, click rates on links in suspicious emails have significantly decreased.

### **Why this experiment was conducted: One in five SMEs have been victims of cybercrime**

One of the biggest cybersecurity vulnerabilities in SMEs is employee behaviour: all it takes is one mistaken click of a mouse for the company to fall victim to cyber attacks. The pilot study conducted by the Ministry of Justice and Security was aimed at reducing the risk of falling victim. The study was focused on metal company employees. The intended behaviour was that employees should report suspicious emails to an internal reporting centre, and that they should not click on any links in those emails.

### **Type of intervention: 'Valse email? Meld het via de meldknop'**

The 'Valse email? Meld het via de meldknop' intervention was developed, based on behavioural insights:

- Companies set up an internal cyber reporting centre and installed a report button in their email software. This allowed employees to forward any suspicious email to the reporting centre easily and securely.
- In the interest of visibility, posters were put up throughout the companies (see image 31) and all employees received a digital flyer incorporating various behavioural techniques, such as: promoting knowledge and awareness, inducing anticipated regret, providing an action framework, communicating a social norm, creating urgency and altercasting – a technique involving assigning roles to individuals to influence their behaviour.
- 3D stickers were placed on monitors to remind employees of the desired behaviour at the right time.
- All managers received a guide including tips on how to stimulate discussion about cybersecurity in their team, to create a positive social norm.

**Image 31:** Poster drawing attention to the report button



**Method used: baseline and impact measurements**

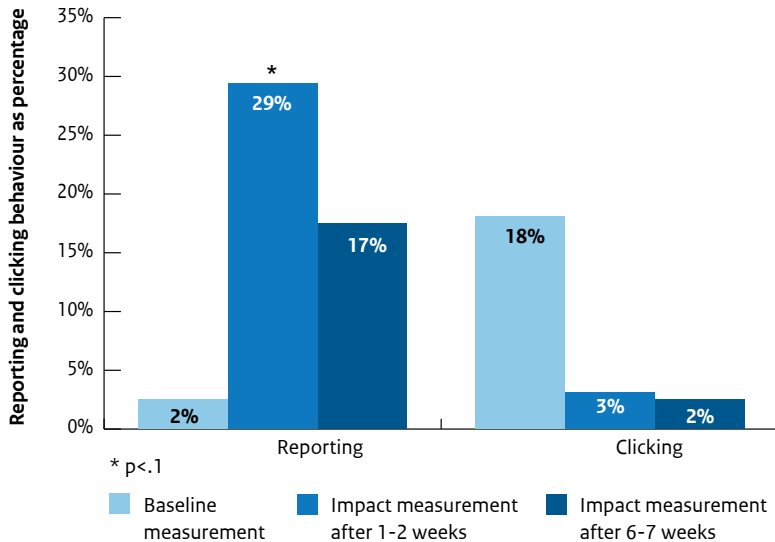
A field trial was conducted to test how frequently employees internally report suspicious emails and how often they click suspicious links. For this purpose, three fake emails were sent to all employees of the SME metal firms taking part in the study: one prior to the behavioural intervention and two following the behavioural intervention.

Data from four companies with a total of 160 employees were analysed.

A perception survey was also conducted amongst employees.

**Result obtained: more than tenfold increase in internal reports of suspicious emails**

Roughly one to two weeks after the behavioural intervention was applied, a more than tenfold increase in internal reports of the fake email was recorded compared to the period prior to application of the behavioural intervention: from almost 3% to nearly 30% of employees. Approximately six to seven weeks after the behavioural intervention was applied, this figure was 18%. After the behavioural intervention, there was a noticeable decrease in the number of clicks on links in the fake emails; by contrast, nearly one in five fake email recipients did so prior to the behavioural intervention (2.5-3% afterwards vs. 18% before). See figure 37.

**Figure 37:** Reporting and clicking behaviour for fake emails

In the perception survey, almost 80% of respondents said that the behavioural intervention had made them more aware of fake emails. Respondents also reported finding it easier to internally report suspicious emails using the report button. 60% of employees who internally reported a fake email did so using the report button. As such, the report button is the predominant method for reporting fake emails.

#### ***Impact: lower risk of falling victim to cybercrime***

The pilot study showed that smart application of behavioural insights helps to raise alertness, awareness and cyber-safe behaviour amongst SME employees. Internal reporting of suspicious emails reduces the risk of falling victim to cybercrime, since it makes it possible for suspicious emails to be investigated, action to be taken and other employees possibly to be alerted. This acts preventively, but also repressively: the company can take action if someone accidentally clicked a link anyway. The behavioural intervention was tested in SME metal firms, but could also be applied more widely amongst SMEs in other sectors.

# About BIN NL and list of contact persons

**The Behavioural Insights Network Netherlands (BIN NL) is a collaborative partnership of all Dutch ministries, dedicated to the application of behavioural insights to policymaking, policy implementation, monitoring and communication. It was established to allow the ministries to exchange knowledge and experience.**

BIN NL organises all sorts of activities that focus on building and sharing knowledge and facilitate collaboration, such as the annual 'Dag van het gedrag' conference, the online community hosted on [www.binnl.nl](http://www.binnl.nl), the monthly lectures, the release of this publication and peer group sessions for behavioural scientists employed by the government. The table below is a list of all these activities and what was gained from them. This is followed by the names of the contact persons for the 34 projects that are described, listed in alphabetical order by project.

## Overview of BIN NL activities carried out in 2021-2023

Type of activity	Purpose	Reach
Behavioural Insights Day annual conference	Sharing knowledge, giving people new insights and perspectives on behavioural science, strengthening the various ministries' network and allowing people to enter into new collaborative partnerships	2021: 863 attendees of this online meeting 2022: 645 attendees in the Fokker Terminal in The Hague
Monthly lunch-time lectures	Sharing knowledge and going more in depth	On average: 80 attendees
Meetings for behavioural scientists employed by the government	Informal meetings for exchanging knowledge and experience	May 2022 BIN NL Spring lecture August 2022 BIN NL meeting with coordinators of Behaviour Units May 2023 BIN NL meeting: Meet your colleague Since 2023 Peer group sessions: twice a year
Online platform: <a href="http://www.binnl.nl">www.binnl.nl</a>	<i>Forum</i> : discussions on different disciplines; sharing articles and knowledge <i>Who is who</i> : a landing page for questions and networks <i>Website</i> : with 'Wat werkt wel en wat werkt niet?' (What works and what doesn't?) interventions, behaviour analyses, and overviews of relevant job advertisements and training courses	Over 3,250 forum members 85,500 visitors since launch in late 2019
A Wealth of Behavioural Insights	Sharing knowledge of the gains made in projects with departments, regulatory bodies and executive agencies. BIN NL shares the lessons it has learned	2021 print quantity: 900 Downloads: 3,984 2023 print quantity: 900 (November 2023)
Behavioural recommendations	Online report looking at 5 social issues from a behavioural science perspective: climate, digitalisation, equal opportunities in education, housing and failure to use available services	February 2022 Downloads: 3,674

Type of activity	Purpose	Reach
<p>Series of interviews under the title 'Gedragswetenschap en beleid: waar staan we nu?' (Behavioural science and policy: where are we now?)</p>	<p>In this series of successive interviews, behavioural scientists and other experts give their views on the government's application of behavioural insights. What is going well? What could be improved?                      Will Tiemeijer (WRR/EUR)                      Marijn de Bruin (RIVM/Radboud university medical center)                      Karien Stronks (Amsterdam UMC)                      Denise de Ridder (UU/Self-Regulation Lab)                      Rick van Baaren (RUN/D&amp;B)                      Ben Tiggelaar                      Felix Kreier (OLVG/Haus of Hamster)                      Naomi Ellemers (UU)</p>	<p>2023:                      These interviews reached a wide audience. A highlight was the interview with Ben Tiggelaar, which had over 97,550 views</p>
<p>Elective module/course incorporated into the training programmes offered to trainees</p>	<p>Introduction to behavioural insights for government trainees and financial trainees</p>	<p>120 trainees annually</p>



## Contact persons for the various individual projects

Project	Organisation(s) involved	Contact person	Email address
More conscious student borrowing behaviour	OCW, DUO	Marc van der Steeg	marc.vandersteeg@minocw.nl
Helping social assistance recipients in finding work	CPB, SZW, municipalities, ZonMw, universities	Alice Zulkarnain	a.zulkarnain@cpb.nl
Broader job search	UWV, Maastricht University, ROA, Vrije Universiteit Amsterdam, Cornell University, University of Edinburgh, Erasmus University Rotterdam	Yvonne Engels	yvonne.engels@uwv.nl
Filing tax returns correctly and on time	Ministry of Finance, Dutch Tax and Customs Administration, KCPEG	Sjoerd Goslinga	s.goslinga@belastingdienst.nl
Enhanced cybersecurity of SMEs	EZK, Digital Trust Center, Noord-Holland Crime Control Regional Platform, Erasmus University Rotterdam	Amber van Druten	a.e.a.vandruten@minezk.nl
Effective position of call-to-action	CBS	Michelle Creemers	mijg.creemers@cbs.nl
Energy savings achieved with energy consumption managers	PBL, Tilburg University	Kees Vringer	kees.vringer@pbl.nl
Increased work hours in the classroom	OCW, ResearchNed	Marc van der Steeg	marc.vandersteeg@minocw.nl
Feel & act green	RWS, D&B	Lisanne van Geffen	Lisanne.van.geffen@rws.nl
Hogere COVID-19-vaccinatiegraad	RIVM, GGD GHOR, GGDs	Mattijs Lambooij	mattijs.lambooij@rivm.nl
Reporting a change in income to Benefits Unit	Benefits unit, UWV, SZW, D&B	Michelle van Laethem	m.van.laethem@toeslagen.nl

Project	Organisation(s) involved	Contact person	Email address
Making sure that young people get vaccinated against HPV	DPC, RIVM, DVJ Insights	Roos van den Wijngaard	r.vandenwijngaard@minaz.nl
Promising circular business models	RWS, Populytics	Lisanne van Geffen	lisanne.van.geffen@rws.nl
Buying second-hand clothes	IenW, D&B	Danielle Broeze	danielle.broeze@minienw.nl
More CVs on werk.nl	UWV	Yvonne Engels	yvonne.engels@uwv.nl
Generating more enthusiasm for teacher training programmes	OCW, Duwtje	Marc van der Steeg	marc.vandersteeg@minocw.nl
Helping people get more out of language	DPC, BZK, SZW, OCW, VWS, DVJ Insights	Joost Loef	j.loef@minaz.nl
Encouraging people to get fitter	DPC, VWS, DVJ Insights	Joost Loef	j.loef@minaz.nl
Micro-SMEs 'green' their business	EZK, D&B	Amber van Druuten	a.e.a.vandruuten@minezk.nl
Less waste placed next to underground containers	Municipality of Dordrecht, Behavioral Insight	Pieter Fokkens	jp.fokkens@dordrecht.nl
Fewer dangerous situations for cyclists	Province of Noord Brabant, Shift	Marvin Brust	mbrust@brabant.nl
Reduced calf mortality at dairy farms	Netherlands Food and Consumer Product Safety Authority (NVWA)	Laurie Jansen	l.jansen@nvwa.nl
Encouraging the wearing of face masks in hospitality venues	DPC, DG Samenleving en Covid-19, Duwtje	Rita Timmerman	r.timmerman@minaz.nl
New applicants for fiscal scheme to promote innovation	EZK, RVO	Evelien van de Veer	e.vandever@minezk.nl
Improved registration of development cooperation activities	BZ	Wilte Zijlstra	wilte.zijlstra@minbuza.nl
Walk-in vaccination without an appointment	VWS, DPC, RIVM, GGD'en	Freek Smit	f.smit@minvws.nl
Using savings to clear debit balances	AFM	Job Krijnen	job.krijnen@afm.nl

Project	Organisation(s) involved	Contact person	Email address
Cleaner hands in indoor sports facilities	DG Samenleving en Covid-19, Inspire to Act, Novi Mores, Måke	Maureen Turina	m.turina@wodc.nl
Text messaging to spur vaccination take-up	GGD Brabant-Zuidoost, GGD GHOR Nederland	Arne Meeldijk	a.meeldijk@ggdbzo.nl
Instilling the habit of more frequent hand washing in office settings	DPC, DG Samenleving en Covid-19, Municipality of Rotterdam, SUE	Rita Timmerman	r.timmerman@minaz.nl
Reporting fake emails	JenV, Digital Trust Center, MKB Nederland, Koninklijke Metaalunie, The Hague University of Applied Sciences, Inspire to Act	Jonas Wachner	j.wachner@minjenv.nl
Website Verbeterjehuis.nl helps homeowners choose the right sustainability measures	BZK, EZK, Milieu Centraal, De Twee Snoeken, Motivaction	Melissa Degen	melissa.degen@minbzk.nl
Safer road behaviour on N36 provincial road	RWS, Inspire to Act	Reinoud Nagele	reinoud.nagele@rws.nl
Full price information for consumers	ACM, Motivaction	Loet van Stekelenburg	loet.van.stekelenburg@acm.nl

## List of abbreviations

<b>ACM</b>	Netherlands Authority for Consumers & Markets
<b>AFM</b>	Dutch Authority for the Financial Markets
<b>BZ</b>	Ministry of Foreign Affairs
<b>BZK</b>	Ministry of the Interior and Kingdom Relations
<b>CBS</b>	Statistics Netherlands
<b>CPB</b>	Netherlands Bureau for Economic Policy Analysis
<b>D&amp;B</b>	Dijksterhuis & van Baaren
<b>DG</b>	Directorate-General
<b>DPC</b>	Public Communication Department
<b>DUO</b>	Education Executive Agency
<b>EZK</b>	Ministry of Economic Affairs and Climate Policy
<b>GGD</b>	Regional Public Health Service
<b>GHOR</b>	Regional Medical Assistance Organisation
<b>HPV</b>	Human Papillomavirus
<b>IBO</b>	Interdepartmental policy study
<b>IenW</b>	Ministry of Infrastructure and Water Management
<b>JenV</b>	Ministry of Justice and Security
<b>KCEPEG</b>	Knowledge Centre Psychology and Economic Behaviour
<b>MBO</b>	Post-secondary intermediate vocational education
<b>SME</b>	Small and Medium-sized Enterprises
<b>OCW</b>	Ministry of Education, Culture and Science
<b>PBL</b>	Netherlands Environmental Assessment Agency
<b>RCT</b>	Randomised Controlled Trial
<b>RIVM</b>	National Institute for Public Health and the Environment
<b>ROA</b>	Research Centre for Education and the Labour Market
<b>RUN</b>	Radboud University Nijmegen
<b>RVO</b>	Netherlands Enterprise Agency
<b>RWS</b>	Directorate-General for Public Works and Water Management
<b>SVM</b>	Improved Sustainability of SMEs Subsidy Programme
<b>SZW</b>	Ministry of Social Affairs and Employment
<b>UMC</b>	University Medical Centre
<b>UNICEF</b>	United Nations children's rights organisation
<b>UU</b>	Utrecht University
<b>UWV</b>	Employee Insurance Agency
<b>vmbo</b>	Pre-vocational secondary education
<b>VWS</b>	Ministry of Health, Welfare and Sport
<b>WBSO</b>	Research and Development (Promotion) Act

<b>WHO</b>	World Health Organization
<b>Wmo</b>	Social Support Act
<b>WODC</b>	Scientific Research and Documentation Centre
<b>WRR</b>	Netherlands Scientific Council for Government Policy
<b>WW</b>	Unemployment Insurance Act
<b>ZonMw</b>	Netherlands Organisation for Health Research and Development; autonomous administrative authority in the field of health, care and welfare
<b>Zzp</b>	self-employed professional without employees



This document was published by the  
**Ministry of Economic Affairs and Climate Policy**

PO Box 20401 | 2500 EK | The Hague  
Email address:

April 2024  
publicatienr. 23404168