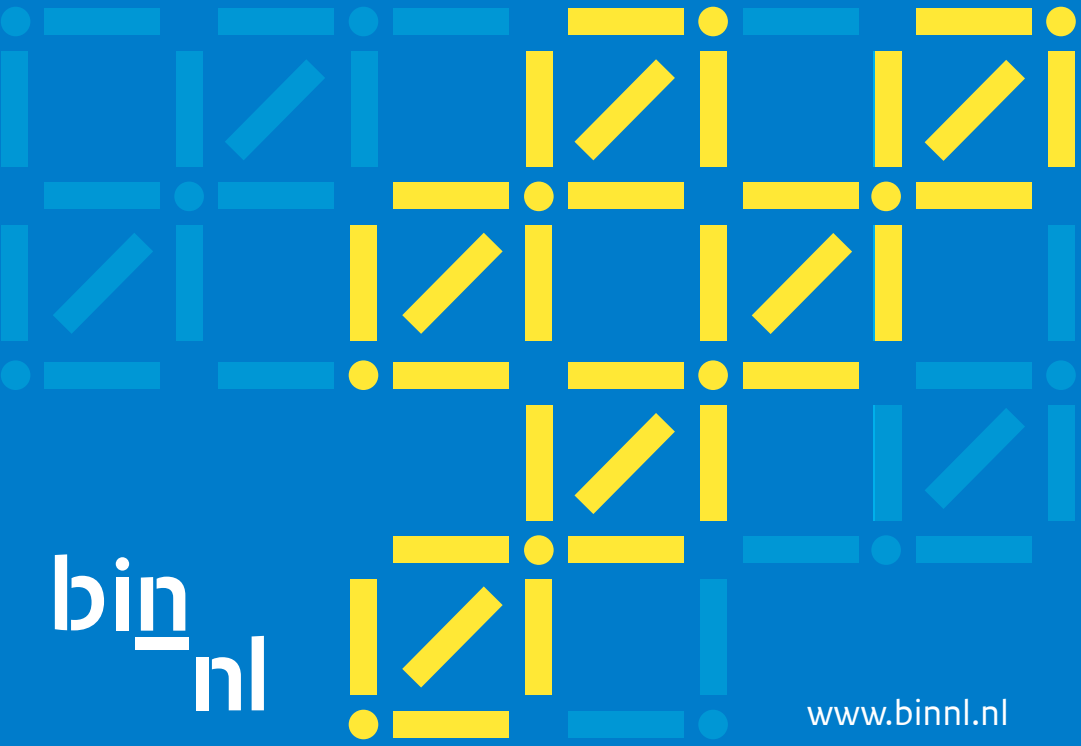
A Wealth of Behavioural Insights
2021 edition



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This report is a joint publication by all the Dutch ministries, united in the Behavioural Insights Network Netherlands (BIN NL) and is published at BIN NL's own initiative.

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 ministries and/or their executive agencies and regulatory agencies. For more information about these projects, please contact the organisation in question; a list of contacts is provided at the end of this report.

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Preface

Like most organisations, the Behavioural Insights Network Netherlands (BIN NL) saw many of its activities of the past two years affected by the coronavirus pandemic. When the pandemic first began, a great deal of knowledge was exchanged in posts made on the BIN NL forum. Partly thanks to the connections that already existed within BIN NL, the Corona Behaviour Unit was established later that year. It focused on behavioural interventions designed to increase compliance with the basic rules that had been imposed: keeping 1.5 meters distance from others, washing your hands and getting tested if you have any symptoms.

The coronavirus pandemic is the first major policy challenge in which behavioural insights have been used frequently. As a result, it has been an interesting experience, which has taught us some useful lessons for the future, so we are devoting one chapter of this third edition of A Wealth of Behavioural Insights to the use of behaviour expertise during the pandemic.

Within the government we see an increasing interest in the application of behavioural insights. For instance, last year, at an online edition of our annual Behavioural Insights Day, we had a thousand attendees, and by now approximately 2,000 people have created an account at binnl.nl. The website has been revamped this year, making it easier to find the information you are looking for. The growing interest in behavioural insights is gradually resulting in the establishment of more behavioural insights teams or behavioural insights networks at government agencies.

In this edition we will once again mainly report on the application of behavioural insights in specific projects. This time we have grouped the projects together by theme. The themes are as follows: health, work, education, finance and consumers, and sustainability. We will add the projects discussed in this edition to the online project database on the BIN NL website, which was launched last year. This site allows you to find projects in which you are interested by means of search queries, and also provides links to the underlying study reports related to the individual projects.

We hope that these projects will inspire you in the coming years to further promote the application of behavioural insights by government agencies. After all, there are many fruits (both low-hanging and not so low-hanging) still to be reaped.

Enjoy your reading!

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Chair, Behavioural Insights Network Netherlands

Marc van der Steeg
Deputy chair of the Behavioural Insights Network Netherlands and chair of the Wealth of Behavioural Insights 2021 working group

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Application of behavioural insights 2020-2021

In the past two years, the government's behavioural insights experts have been able to make substantial contributions to social issues such as the fight against the spread of the coronavirus, sustainability, safety and security, and financially responsible behaviour. In this edition of A Wealth of Behavioural Insights, we will explain how behavioural insights were applied.

Since 2014, all Dutch ministries exchange knowledge and experience about the application of behavioural insights in the interdepartmental Behavioural Insights Network Netherlands (BIN NL). This collaboration has intensified in recent years (see box). In the government's response to the 'Weten is nog geen doen' ('Knowing is not acting) report issued by the Scientific Council for Government Policy (WRR), it was stated that the House of Representatives would be updated periodically on the progress made in terms of the application of behavioural insights. This publication was written to do just that.

More interdepartmental collaboration

Ministries are increasingly collaborating in specific, cross-departmental behavioural insights-related projects, such as the study on the Green Home Improvements Savings Bonus outlined on p. 139, which was a joint project by the Ministries of the Interior and Kingdom Relations, Economic Affairs and Climate Policy and Finance. In addition, knowledge-sharing networks have been established that focus on specific major topics. For instance, the Ministries of the Interior and Kingdom Relations, Economic Affairs and Climate Policy, Infrastructure and Water Management, Agriculture, Nature and Food Safety, General Affairs and Finance are collaborating on the topic of climate change; they share studies and have joint brainstorming sessions on how to tackle certain projects. Furthermore, the Ministries of Finance, Social Affairs and Employment, Public Health, Welfare and Sport and several executive agencies such as the Employee Insurance Agency (UWV[1]) and the Tax and Customs Administration are collaborating on the topic of 'ability to act', i.e. people's and companies' ability to do what the government is asking them to do. For example, to what extent are they able to set goals, spring into action, persevere and deal with setbacks? The government is prone to overestimating this capacity, which is why some of its policies are insufficiently effective.

[1] The abbreviations used in the main body of the text are explained in the appendix.

For this reason, the Ministry of Finance launched the so-called 'ability to act scan' in 2021, which is designed to determine whether people and companies are actually able to comply with new fiscal laws, and if not, improve the laws in such a way that they can.
This focus on people's and companies' ability to act is reflected in this publication, as well. See, for instance, the projects carried out by the Ministry of Education, Culture and Science (starting from p. 86) to get more students to apply for supplementary grants.

Like the previous edition of A Wealth of Behavioural Insights, this edition will focus on projects involving behavioural interventions carried out by government agencies. We will describe 37 such projects in Chapter 3. For instance, we will describe several projects related to behavioural interventions in the field of sustainability, more of which are presented in this edition than in the previous edition. In addition, finance-related behaviour is a recurring theme in several projects, e.g. with regard to saving for a proper pension, paying tuition fees on time and taking out sensible loans. Companies, too, are gaining a greater insight into their employees' behaviour due to the application of behavioural insights – for instance, with regard to completing timesheets on time or working safely.

It shouldn't be a surprise that quite a few projects discussed in this edition are related to the fight against the coronavirus pandemic. In Chapter 2 we will discuss in greater detail how our understanding of human behaviour has been applied during the coronavirus crisis. The remainder of this first chapter we will use to put the developments of the last two years in perspective. What do we see when we look at the 37 behavioural insights projects? What trends can be discerned? Lastly, we will identify two points that require further development.

So what did we get out of the projects?

This edition, like its predecessor, is a collection of descriptions of projects that demonstrate the added value of applying behavioural insights. Firstly, using interventions based on behavioural insights techniques is cost-effective. Secondly, the projects featuring behavioural interventions use reliable

evaluation methods, such as randomised controlled trials (RCTs),[2] meaning the impact of behavioural insights techniques can be examined properly, and we can learn what works and what doesn't.

Needless to say, the projects presented here also led to behavioural change. These are some of the results obtained:

- People have become more willing to get tested for the coronavirus, thus making the virus less likely to spread.
- The number of students borrowing the maximum amount available to them has been reduced. As a result, fewer students will end up in a needlessly high student loan debt.
- Rush hours in supermarkets have become less busy, thus allowing customers to better keep their distance from others.
- More post-secondary vocational education students who had fallen behind in their tuition fee payments have paid their tuition fees, or entered into a payment arrangement, thereby preventing students to be confronted with bailiffs.
- Inland skippers leave fewer garbage bags next to bins in harbours and ports, which has resulted in less "plastic soup".
- More pupils have stopped leaving their chewing gum on and around school playgrounds, which has resulted in cleaner residential streets.
- Forklift truck drivers have learned to pay more attention in warehouses, which has made warehouses a safer place to be.
- Online shoppers have become more aware of which search query results are 'sponsored', which makes them less likely to be misled.
- Consumers choose to have the products they have ordered online delivered at different times or at different locations, thus helping reduce carbon dioxide emissions.

[2] This method is described in the BIN NL publication 'Hoe is gedrag te onderzoeken? Overzicht van 18 onderzoeksmethodieken voor effectiever beleid' ('How to investigate behaviour? An overview of 18 research methods') (2019).

Three trends that have been observed since the previous edition

1. The scopes and types of interventions have become more diverse

In the previous edition of A Wealth of Behavioural Insights the application of behavioural insights to policy development was limited to a few projects. At the time, the added value was most visible in applications in supervision and implementation. In this edition, we can see a clear increase in the number of projects where a behavioural insights are applied to policy development.

Another thing that can be observed, and which marks a change from the previous edition, is that experiments involving letters or emails are no longer the only way in which behavioural insights can be applied with proven effect. The range of interventional techniques has grown wider. For instance, they can be used cleverly on social media, specially developed websites or modified pre-existing websites. Alternatively, they can be used in certain types of boosting, e.g. making complex information easier to grasp by means of a decision tree. See, for instance, the 'Travellers declare cash to customs before departing' project, which is discussed on p. 133. Also changes are being made in the (online) choice architecture, e.g. with the 'More conscious student borrowing behaviour (I)' project (discussed on p. 79) and projects related to how people are supported when making decisions on their pension schemes (from p. 114 on.).

2. Increased application of online experiments

In some cases, it can be hard to test interventions in a real-life setting by means of a field experiment. Suppose, for instance, that you have come up with an idea for a completely new type of intervention, and you wish to get an idea of whether it might be successful, such as the Green Home Improvements Savings Bonus discussed on p. 139. In other cases, it can be impossible to conduct tests in real-life settings. Many government agency websites including the personalised online environments that people must log into do not yet offer the technology allowing for A/B testing. In such situations, online experiments may be a solution. The testing recommendation outlined on p. 38 is an example of such an experiment. It is not always easy to translate observations made in an online experiment to real-life situations. We hope to gain more experience of this in the coming years.

3. Greater focus on replication studies and meta-analysis

Since context has a large impact on the effectiveness of interventions, it continues to be vital that their effectiveness is established by means of ex-ante

experiments before scaling up. This is the method promoted by the behavioural scientists who work for the government. However, we often see that the situation is so urgent that there is no time to test the interventional techniques beforehand, and scientists can only issue recommendations on the basis of available literature. Thankfully, the quality of these recommendations is getting better, since the behavioural sciences are paying more attention to replication studies and meta-analyses.[3] BIN NL helps build such knowledge by providing access to projects in its project database on binnl.nl. Furthermore, a limited number of projects will be featured in academic journals.

Lessons learned

The Netherlands is facing many different types of transition, such as the climate transition and the digitalisation transition. All these transitions have one thing in common: a behaviour change will be required if we are to attain the policy targets. The same is true for major policy themes such as health, housing, transport and an inclusive society in which everyone is given opportunities. In other words, there is great scope for behavioural insights to be used in future.

Although behavioural insights have only been used sparingly in many areas of policy making, this has been different with regard to the coronavirus pandemic, which is the first policy topic to which the government has applied a relatively great amount of behavioural expertise. The lessons which can be learned from these projects are described in the next chapter. On the basis of these lessons and other experiences, we identified two points that need attention if we are to make the most of the potential of the behavioural science perspective in policy-making, implementation, supervision and communication.

Behaviour expertise merits better embedment in the government

Although legal, financial and economic experts are involved in decision-making procedures as a matter of course, this is not yet true for behavioural scientists. Behavioural scientists' analyses and recommendations are much more useful when the type and exact nature of a policy instrument to be deployed have not

[3] See: Implementationscience.biomedcentral.com/articles/10.1186/s13012-017-0641-5 and Eml. berkeley.edu/~sdellavi/wD/NudgeToScale2020-03-20.Ddf
Tip: these links are clickable in the online version of this publication. Refer to the PDF on binnl.nl

yet been determined. Gains can be realised by getting behavioural scientists involved in the policy-making process from the start. It should be noted here that at present, the government only employs a small number of behavioural scientists, meaning that not all projects can be accommodated.

Prerequisites for the testing of policy interventions

The reality in which policies are made is complex. It is hard to estimate beforehand how effective policy instruments will turn out to be. As mentioned above, evidence-based methods that provides insight into what works and what doesn't work, through learning and (controlled) experimenting, clearly have an added value. Evidence-based policy requires a certain level of support. Furthermore, the testing of policy interventions requires that other conditions be met, as well. For instance, the support for A/B testing by government agency websites and personalised environments on websites; establishing clear and uniform frameworks for the application of the General Data Protection Regulation in policy research; and pre-registering research designs.

2

Behavioural insights applied during the coronavirus pandemic

The coronavirus pandemic requires all Dutch people to change their lives in certain ways – sometimes fairly drastic ways. As a result, quite a few behavioural issues had to be discussed when decisions had to be made on the government's approach to the pandemic, ranging from how to minimise the spread of the virus and keep its impact manageable to how to encourage people to get vaccinated in the run-up to a more permanent solution.

This chapter outlines the way in which behavioural insights have been applied so far during the coronavirus pandemic, starting from the beginning of the crisis in March 2020 up to the present time (November 2021). Since many sections of the national government contributed, we will categorise the projects by organisation. We will hear from the National Institute for Public Health and the Environment Corona Behaviour Unit, the National Crisis Communication Core Team, the Corona Behaviour Unit and two policy departments. What kinds of projects did these organisations work on, what kinds of results did they obtain, and what lessons can be learned from them for the future?

The National Institute for Public Health and the Environment (RIVM) Corona Behaviour Unit: promoting physical, mental and social health

When it became obvious in March 2020 that human behaviour is a crucial factor in the spread of the coronavirus, the National Institute for Public Health and the Environment (RIVM) established a Corona Behaviour Unit at once. This unit generates knowledge and expertise of the behavioural sciences that are relevant to the pandemic and makes them accessible to others. In addition, it makes a genuine contribution to communications and policy-making during the crisis, and thus to the efficacy of our efforts to prevent the spread of the coronavirus. Its goal is to promote the physical, mental and social health of the Dutch people. The team is made up of behavioural scientists, communications officers and data analysts. The RIVM has established an independent Scientific Advisory Board for its Corona Behaviour Unit's work, consisting of 15 professors with expertise of behavioural and/or communication sciences. Moreover, several teams of experts focus on particular themes, such as vaccination. The teams share their knowledge on rivm.nl/gedragsonderzoek (partly in English: rivm.nl/en/coronavirus-covid-19/research/behaviour), and also in online sessions and webinars, newsletters such as Coronavirus & Behaviour, and social media. Since the RIVM values open science, it shares its data on data.rivm.nl.

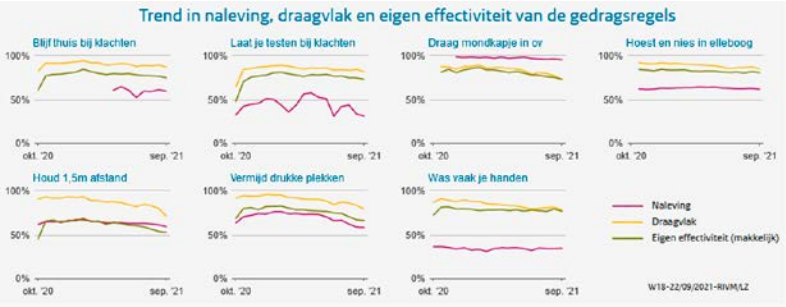
Conducting research that will inform the government's coronavirus policy

The RIVM Corona Behaviour Unit conducts several types of research to determine how people think about the government's coronavirus measures, what motivates them to comply with the measures or prevents them from complying with them, how well the rules are complied with, and how the pandemic and the associated measures are impacting people's health and well-being.

- *Surveys:* Since April 2020, the RIVM Corona Behaviour Unit, along with the 25 branches of the GGD (Municipal Public Health Service), has conducted extensive surveys (initially every three weeks; later every six weeks). Each time a survey is held, some 50,000 people complete a questionnaire, answering questions (many of which have been validated) on a wide range of coronavirus-related subjects. Some of these people regularly complete questionnaires; they form a cohort that is being followed for a longer period of time.
- *Trend analysis:* a short questionnaire about people's compliance with the coronavirus measures and level of support for the measures, held every three weeks. Each time, some 5,000 people, distributed evenly across the 25 security regions, take the survey. This is a nationally representative sample. The results are published on the Ministry of Health's Coronavirus Dashboard and on the RIVM's website.
- *Qualitative research:* in order to gain a better insight into particular themes, the RIVM Corona Behaviour Unit also regularly conducts interviews and conversations with focus groups. In this way, it gains a more in-depth understanding of the broader context in which people live, and which also affects their motives and motivations.
  By bringing up stories, the unit also shows how the pandemic is affecting everyday life. See Real-life examples[4] for stories about the pandemic's impact on organisations and people.
- *Literature review:* the teams constantly review literature so as to absorb the latest knowledge presented in national and international academic publications and be able to answer any questions that come up quickly.
- *Research conducted in association with partner organisations:* upon other parties' request, the teams also conducted several in-depth studies, e.g. on the effect face masks have on people's willingness to observe physical

[4] Rivm.nl/gedragsonderzoek/voorbeelden-uit-de-praktijk

distancing rules, and on the impact of interventional techniques designed to get more people tested. For more on this, also see the mass testing project outlined on p. 44.



An example of the results of a trend analysis performed by the RIVM Corona Behaviour Unit

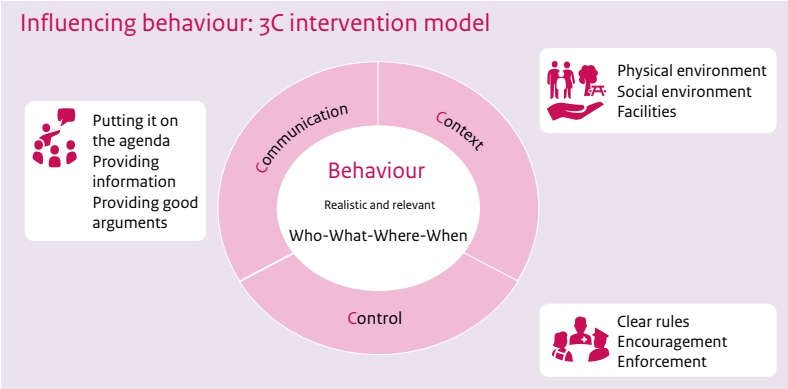
The research results have been collated in memos on particular themes, knowledge sessions and other knowledge products on topical subjects, such as Willingness to Get Vaccinated and Staying at Home, Getting Tested and Self-Isolating. In addition, at the request of the NCTV and the Ministry of Health, Welfare and Sport, the RIVM Corona Behaviour Unit regularly draws up so-called reflective behaviour reports, before each time the government makes a decision on changes to the present coronavirus measures.[5]

We will provide a few more examples below of behavioural insights which has been made available to policy makers and communications professionals.

Translating behavioural insights by means of the 3C intervention model

By introducing the 3C intervention model, the RIVM Corona Behaviour Unit has given us an easy-to-use model allowing us to effectively convert behavioural insights into instruments the government can use to fight the pandemic: Communication, Context and Control.

[5] These publications can be found on rivm.nl/gedragsonderzoek/publicaties



The 3C intervention model developed by the RIVM Corona Behaviour Unit

Scientific frameworks such as preventive behaviour and conversion into a step-by-step plan and interventions

The RIVM Corona Behaviour Unit has further detailed the scientific frameworks for understanding people's behaviour and well-being during the coronavirus pandemic. These frameworks have also been converted into a step-by-step plan[6] for the systematic, transparent and pragmatic detailing of the government's messages and behavioural interventions designed to prevent people from contracting COVID-19. For instance, this step-by-step plan was used by the Amsterdam Municipal Public Health Service when it developed its various campaign materials, which bore the motto Ik hou [afstand] van jou, which loosely translates as 'I'm showing you my love by keeping my distance from you'.

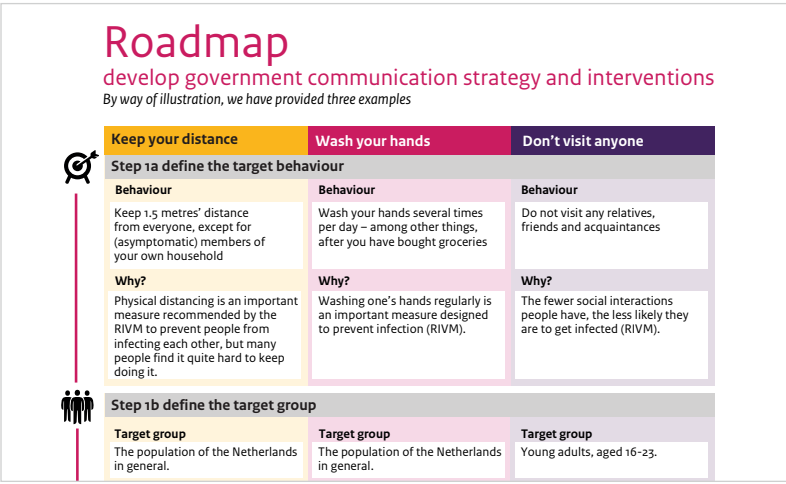
For specific methods designed to promote compliance with the coronavirus measures, refer to the 'Promotion of Compliance with Measures' overview of interventions and to the 'Communication Methods for Supporting Behaviour' document.[7] The 'Enjoying a Safe Holiday' memo outlines which factors described in the scientific framework are important to people's holiday-related decisions. The memo also includes associated communication and intervention methods outlined in the overview of interventions and the communication

[6] See rivm.nl/documenten/stappenplan-overheidscommunicatie-interventies

[7] This can be found on: rivm.nl/documenten/interventie-overzicht-bevordering-naleving-gedragsmaatregelen and rivm.nl/documenten/communicatiemethoden-ondersteunen-gedrag

methods document. The national government further developed this memo into a Travel Smartly visual.[8]

COVID-19 Preventive Behaviour sidebar, part of the Preventive Behaviour and Well-Being document



Detail from the Government Communication and Interventions Step-by-Step Plan developed by the RIVM Corona Behaviour Unit

[8] See rijksoverheid.nl/documenten/publicaties/2021/07/09/coronavirus-overzicht-reizen-per-10-juli-2021

National Crisis Communication Core Team: more powerful messages regarding the virus

The National Crisis Communication Core Team (NKC) of the government of the Netherlands was installed to support interdepartmental harmonisation with regard to the government's messages to the media and the public during the pandemic. This team is made up of communication specialists and emergency communication specialists, including a behaviour consultant from the Public Information and Communications Service (DPC)'s Behavioural Team. The NKC is a temporary organisation that is activated in times of crisis. During the pandemic it will help the government present more powerful communication on its coronavirus mitigation strategy. In so doing, the NKC will use its own research, recommendations issued by the RIVM Corona Behaviour Unit and the behavioural science projects established by the Corona Behaviour Unit, thus ensuring that behavioural insights are applied to the field of communication.[9] Also CASI[10], an instrument that helps to apply scientific insights about behaviour in communications , has been applied regularly as a campaign development tool and as a basis for recommendations.

In the government's messages to the public, the NKC has used certain behavioural techniques. We will provide a few examples of those below.

Hand-washing: efficacy and social norm

This hand-washing poster explains why we must all wash our hands. Washing one's hands is an effective way to reduce the spread of the virus.
Studies have shown that most people believe that hand-washing is effective. So the poster (see next page) confirms that people were right to believe that it is effective. However, this is not the only thing that is relevant in terms of compliance.

[9] rijksoverheid.nl/onderwerpen/coronavirus-covid-19/algemene-coronaregels/cijfers-en-onderzoeken-over-het-coronavirus/rapporten-onderzoeken

[10] communicatierijk.nl/vakkennis/casi

07 januari 2021

Rijksoverheid

Goed je handen wassen

Door regelmatig je handen te wassen, verklein je de kans dat jij of iemand in je omgeving het coronavirus krijgt.

Wanneer was je je handen?

- Als je handen vies zijn.
- Vlak voordat je gaat eten of eten klaar gaat maken.
- Nadat je naar de wc bent geweest.
- Nadat je je neus hebt gesnoten.
- Voordat je naar buiten gaat.
- Als je binnenkomt bij andere mensen thuis of op je werk.
- Als je thuiskomt.

Kijk voor meer informatie op
www.rivm.nl/hygiene/handen-wassen

Zo was je goed je handen:

1. Maak je handen goed nat.
2. Gebruik water en vloeibare zeep uit een pompje.
3. Wrijf de handen 20 seconden over elkaar.
4. Zorg dat de boven- en onderkant goed bedekt zijn met zeep.
5. Wrijf alle vingertoppen goed in.
6. Wrijf ook tussen de vingers.
7. Was ook je polsen, de binnenkant van je handen en je duimen.
8. Spoel de zeep zorgvuldig af met stromend water.
9. Droog je handen goed af met een schone doek of met papier. Ook tussen de vingers.

alleen samen krijgen we corona onder controle

It turns out that many people do not wash their hands thoroughly enough. Studies have shown that one reason why they don't is because they don't see other people do it, which then affects their own behaviour. One of the first

campaign commercials shown on TV showcased the importance of this social norm by showing many people who were washing their hands.

The holidays: how to celebrate Christmas and buy groceries

In late 2020, in association with the RIVM Corona Behaviour Unit, the NKC designed a social media post relating to the upcoming holidays (see next page), in which it showed people how to celebrate Christmas and New Year's Eve safely, without getting infected or infecting anyone else. This post presented a step-by-step guide on how to make the various decisions, as well as specific tips and recommendations. The social media post was shared by many people and attracted 9.5 million views.

Rijksoverheid

Tips om veilig de feestdagen te vieren in coronatijd

Er zijn veel coronabesmettingen in Nederland. Veel mensen krijgen corona van vrienden of familie, vaak zonder dat ze het weten. Wat kun je zelf doen om tijdens de feestdagen verspreiding te voorkomen en elkaar te beschermen?

1 Kies met wie

- Als je de feestdagen alleen met je eigen huishouden viert, bescherm je jezelf én je vrienden en familie tegen corona.
- Met hoe minder mensen je bent, hoe makkelijker het is om afstand te houden en besmett-ingen te voorkomen.
- Beperk je aantal contacten en ontvang max. 2 gasten per dag (excl. kinderen t/m 12 jaar). *Voor de periode 24 t/m 26 december geldt: ontvang max. 3 personen per dag.*
- Via videobellen kun je toch op afstand samen met anderen zijn.

2 Kies waar

Kies het huis met de grootste kamer, een ruimte die goed kan luchten en waar de minste mensen voor hoeven te reizen.

3 Doe veilig je boodschappen

- Klachten die wijzen op corona? Blijf thuis en vraag iemand anders zonder klachten om hulp.
- Check voordat je gaat online of het druk is in de winkel.
- Doe je boodschappen met een lijstje en zoveel mogelijk in één keer.
- Ga doordeweeks of in de ochtend en doe je boodschappen zoveel mogelijk bij jou in de buurt.
- Ga alleen.
- Toch druk? Kom later terug. Hoe drukker het is, hoe moeilijker het is om afstand te houden.

4 Maak afspraken

- Spreek van tevoren af dat je afstand houdt.
- Spreek van tevoren met elkaar af dat je niet komt als je klachten hebt, zelfs bij twijfel over één milde klacht.
- Blijf thuis als je klachten hebt en laat je testen. Maak een afspraak via **coronatest.nl** of bel **0800-1202**.

5 Veilig bij elkaar op bezoek

- Geef iedereen een zitplaats op 1,5 meter afstand en zet de stoelen alvast klaar.
- Was vaak je handen, ook als je ergens binnenkomt, voor je gaat koken en voor het eten.
- Zet een raam open.
- Eet van je eigen bord en drink uit je eigen glas.
- Herinner elkaar aan de basisregels, zoals afstand houden en in je elleboog niezen.

alleen samen krijgen we corona onder controle

How to avoid crowds when doing your Christmas shopping? The post provided specific courses of action to help people do so: buy your groceries when there aren't many people in the shop, go to shops in your own neighbourhood and decide beforehand what you want to buy. By following these steps, people learned to trust that they could prepare for the holidays safely. The campaigners reminded people of their self-efficacy, and provided them with a method for change whose efficacy has been proven: action planning. They did so in a social media post, as well as in a commercial shown on TV.[11]

Icons showing the basic corona rules: to be used in the roadmap to easing the measures and press conferences

In late April 2021, the government presented its road map, which outlined the various steps along which the measures would be eased. A nation-wide campaign was set up to provide information on the easing of the measures, along with the basic corona rules that must be followed. This campaign used gain framing that focused on the positive outcome: if we all follow the basic rules, we can do this and this and this, and if we all keep following the rules together, we will be able to do more and more. The basic rules were reduced to a more streamlined and compact trinity – wash your hands, keep your distance, get tested – supported by icons, which had been around for a while. Later a fourth basic rule was introduced: provide plenty of fresh air. The icons were used on and near speakers' lecterns whenever the ministers gave their press conferences, and so became more prominent.

[11] Youtube.com/watch?v=w9elSG-bGaY

Speeches and interviews: activating social norms, acknowledging those who disagree

A social environment that is supportive of the desired behaviour is crucial to get people to comply with the rules, which became increasingly important as the pandemic progressed. Social norms played a major part in this: if others follow the rules and believe it is important to do so, you are more likely to follow the rules and care about compliance yourself. This was one of the behavioural insights that the NKC and the RIVM Corona Behaviour Unit shared with the government in their recommendations for things to include in press conferences and interviews. It was used in something the Minister of Justice and Security, Ferd Grapperhaus, said about the New Year's Eve celebrations: 'The vast majority of people behaved really, really well.' Speeches also included dynamic norms ('more and more people…'). For instance, this is what the Minister for Health, Hugo de Jonge, said during his press conference of 20 January 2021: 'In addition, more and more people are now willing to get vaccinated.'

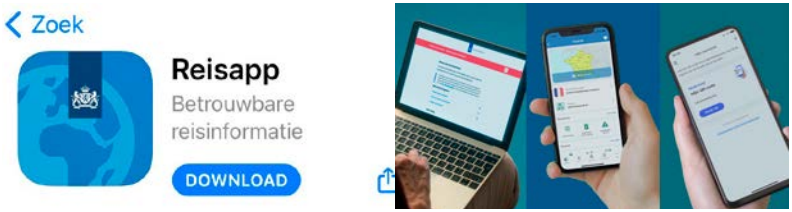
If people are having a rough time of it physically and mentally due to ongoing stress or fatigue, they are less able to adjust or control their behaviour, which may make them more likely to oppose the measures. It is important to acknowledge that the measures are taking their toll and that complying with the rules can be hard. In a press conference he gave on 12 January 2021, Prime Minister Mark Rutte said: 'So our decision won't come as a surprise, but obviously, it will really disappoint many people, and many people will seriously struggle with it. (…) We can all see it around us, and we may even have

experienced it ourselves – a sense of powerlessness, frustration and hopelessness. It's increasingly hard to stomach, and that is very understandable.' These words went some way to acknowledging his audience's feelings.

Going on holiday and travelling: building blocks for campaign and travel app, e.g. gain framing

In the summer of 2021, being prepared was crucial to going on holiday. People were allowed to go abroad again, but the requirements differed from country to country. Moreover, situations fluctuated and could change quickly, and as late as early August, measures associated with re-entering the Netherlands were revised. This required frequent and thorough communication with both Dutch and foreign travellers, as well as with the media. Building blocks for a behaviour strategy were developed, based on several studies and a CASI procedure by the DPC's behavioural team, in association with the departments involved.

The main objectives the government sought to achieve were getting people to consult the government's travel recommendations and download and use the coronavirus travel app. The existing 'Travel Smartly' slogan and campaign were re-purposed to achieve this. The teams behind the campaign mainly used gain framing, as well as associations and emotions such as carefreeness and convenience: 'Download the travel app so that you will be able to enjoy a carefree holiday', as well as 'Allow push notifications to make sure you're always up to date on the latest developments'. The campaigners also made the most of the national government's reputation as a reliable partner by clearly presenting the government as the creator of the app, so as to encourage people to download it. In the months leading up to the start of the summer holidays, an additional 1 million people downloaded the travel app.



Corona Behaviour Unit: promoting compliance with the measures by means of behavioural interventions

The Corona Behaviour Unit was established to develop, test and apply behavioural interventions to promote compliance with the coronavirus measures, based on behavioural insights such as the results gained from the RIVM's behaviour studies. The team often collaborates with the NKC, the RIVM Corona Behaviour Unit and agencies that specialise in behaviour change. This edition of A Wealth of Behavioural Insights outlines four projects carried out by this team, namely: Distance-measuring devices designed to help people understand how far 1.5 metres is, increasing people's willingness to undergo testing if they had any symptoms, staying at home after undergoing testing and ensuring a more even distribution of people buying groceries at supermarkets (see p. 38 et seq.).

Furthermore, the Corona Behaviour Unit provided several industries with tailored instructions as to how to deal with certain types of behaviour. For instance, the team developed a course of action for people working in restaurants and cafés, telling them how to deal with people who responded aggressively to the coronavirus measures. For people working in the travel industry, it drew up a checklist they could pass on to their travellers, listing everything they must arrange to be able to travel during the pandemic. In addition, the team designed a flyer on the benefits of vaccination for people from a migrant background with low socio-economic status, advised people working in education on how to encourage the use of at-home testing kits by students, tutors and employees, and talked to the Dutch Olympic Committee (NOC*NSF) about using the right communication methods in the sporting world.

Dutch reports on all the pilot studies and behaviour studies carried out by the Corona Behaviour Unit can be found on rijksoverheid.nl, under the heading of *Reports on Compliance with the Coronavirus Measures*.[12]

COVID Behavioural Challenge: inviting the best ideas and rewarding the winner

In late 2020, the government organised a competition, the COVID Behavioural Challenge, in which they asked behavioural scientists and experts to reflect on three

[12] Rijksoverheid.nl/onderwerpen/coronavirus-covid-19/algemene-coronaregels/cijfers-en-onderzoeken-over-het-coronavirus/rapporten-onderzoeken

themes: Staying at home and undergoing testing in the event of symptoms; getting the coronavirus vaccine; and the coronavirus and mental health. The purpose of the competition was to obtain creative ideas from the entire Dutch behavioural science community for the application of behavioural insights with regard to these themes in a short time span.[13] In all, 184 ideas were submitted, and nine people were awarded prizes. The winning ideas were then used in the further development of interventional techniques to be applied by the Corona Behaviour Unit. One of the ideas that was submitted concerned an isolation challenge. On the basis of this idea, a scratch card was designed, which was tested by the GGD's coronavirus testing sites. However, the scratch card was found not to be significantly more likely to get people to stay at home. As a result, the card was not further distributed after the initial test.

Remote-work conference: increasing self-efficacy and strengthening social norms

On 29 April 2021, a remote-work conference ('Working from Home, Now and In the Future' inspiration session) was organised for employers. The keynote speaker was Ben Tiggelaar. The conference was organised in response to the results of the behavioural study[14] conducted at the initiative of the Ministry of Social Affairs and

[13] Covidbehaviouralchallenge.nl

[14] Rijksoverheid.nl/documenten/publicaties/2021/02/18 onderzoek-thuiswerken-in-coronatijd

Employment and the Corona Behaviour Unit. That study showed that two factors were decisive in employers' decision-making as to whether or not to allow their employees to work from home. These factors were:

- *self-efficacy:* do I, in my capacity as an employer, feel capable of being a good employer to my employees when I'm working from home?
- *social norm:* do other employers that are similar to my company also allow their employees to work from home?

The remote-work conference touched on both these factors. Employers' sense of self-efficacy was boosted by the detailed tips, tricks and suggestions provided by Ben Tiggelaar, which were designed to help them be good managers from their own homes. The idea of a social norm was promoted during the conference by sharing the examples of four organisations that had been awarded prizes for being good employers to their staff working from home. Moreover, the attendees entered into a conversation in the afternoon so as to be able to share their experiences. All in all, the conference was attended by 200 representatives of various organisations from all over the Netherlands.

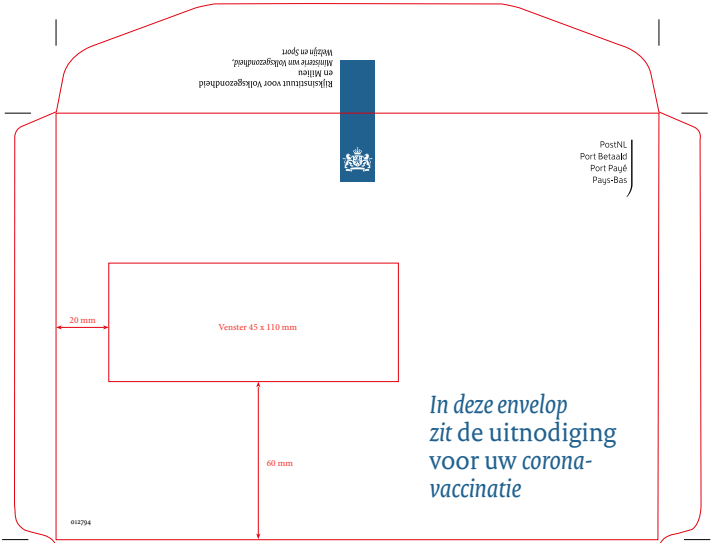
Vaccination invitation letter: personalised call to get vaccinated

In association with the RIVM Corona Behaviour Unit also took a look at the letter sent to Dutch people to invite them to schedule an appointment for vaccination. Having reviewed some literature on the subject, the team suggested the following revisions to the text:

- The envelope bore the legend 'This envelope contains your vaccination invitation'. By adding this sentence, the government hoped to stop the envelope from looking like a tax-related letter or similar official correspondence from the government with a possible negative association. In addition, it hoped the sentence would encourage people to open the letter at once, if they had been waiting for their invitation.
- The opening line of the invitation letter was as follows: 'A coronavirus vaccine has been reserved for you.' In two large-scale foreign experiments involving flu jab invitations,[15] such a reference to psychological ownership resulted in higher vaccination rates.

[15] See Milkman et al., 2021, https://www.pnas.org/content/118/20/e2101165118, in which a combination of two text messages (the first being 'A flu vaccine is available for you' and the second being 'a flu vaccine has been reserved for your appointment') was found to be the most successful in terms of impact, and Milkman et al., 2021b, see https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3780356, in which various types of text message were tested and

- The invitation letter was given a personal touch by adding the addressee's surname.
- A visually arresting (salient) step-by-step plan was included in the letter for either way to book an appointment.
- The letter had a clear call to action: 'Be sure to schedule your appointment right now, so that you'll know at once when it will be your turn.'



The envelope that contained the coronavirus vaccination invitation

the text message that had the greatest impact was a reminder message saying 'a vaccine is waiting for you'. In a later study by Dai et al (2021), too, see https://www.nature.com/articles/s41586-021-03843-2, which was specifically about coronavirus vaccines, it was found that adding words that encourage a sense of psychological ownership ('the vaccine has just been made available to you') results in higher vaccination rates.

Policy departments: behavioural insights applied to policy-making

Policy departments, too, have used behavioural techniques during the coronavirus pandemic to either design or implement pandemic-related policies. We will provide a few examples below of techniques used by the Ministry of Education, Culture and Science and the Ministry of Social Affairs and Employment.

Behaviour change in secondary schools: prompts, fun and other techniques

How can we get more secondary school pupils to comply with the coronavirus measures in force in and around schools? The Ministry of Education had a behaviour analysis performed to try and answer this question. Based on a literature review and quick scan of lessons learned in real-life settings, interviews with experts, teachers and school janitors, and a survey taken by pupils, a few promising behaviour strategies were drawn up.

- For instance, prompts (such as a sticker that says 'leave four steps open between yourself and others') and floor signs (see photo on the next page) may remind pupils to observe physical distancing rules.

- A fun factor may encourage pupils to wash their hands for 20 seconds. For instance, schools could install a digital hourglass near the wash basins that plays a 20-second animated video showing various patterns. Highly visible and eye-catching disinfectant dispensers may encourage proper hand hygiene.
- Reminding pupils of why wearing a face mask is relevant to them may encourage pupils to wear face masks. Reminding pupils to put on their face masks by means of prompts (e.g. smiley faces that are wearing a face mask) helps, too, as does having a word with pupils who are not wearing masks.
- A clear message and conveying the social norm may encourage pupils to stay at home when they have a cold.

The Ministry of Education shared the results of the behaviour analysis with many of its partner organisations and secondary schools in the Netherlands.[16]

Inspectors used a different approach: 'stealing thunder' and more

Since in-person inspections were off the cards for quite a while, the Netherlands Labour Authority and Employment had to revise its procedures and perform many of its inspections remotely. Behavioural scientists helped draw up discussion guidelines for inspections to be carried out by phone and video calls, in such a way that they would be more or less acceptable to the recipients of the calls. For instance, at the start of each conversation, the importance of healthy, safe and honest working conditions (particularly during a pandemic) was

[16] Lesopafstand.nl/app/uploads/Eindrapportage-naleving-coronamaatregelen-vo-scholen.pdf

emphasised. In addition, techniques such as 'stealing thunder' and acknowledging the other party's aversion were deployed (see sidebar).

You may find yourself thinking: why do you wish to inspect my company now of all times, precisely *during these economically tricky times / now that my company is closed or partly closed / other*.

I can understand why you might be a little surprised. The reason why we wish to perform our inspection even now, during this pandemic, is because *[insert reason here – e.g.:]* employees (particularly vulnerable people) tend to be under a great deal of pressure precisely when the going gets tough.

The inspectors also performed more inspections remotely, e.g. by asking companies to submit risk identification and evaluation reports by email. Behavioural scientists drew up a letter that called employers to action, as employers are not technically obliged to submit such documents. The letter emphasised the added value of collaboration for employers, presented a clear step-by-step plan employers should follow to submit the documents correctly, and provided an easily understandable summary of the relevant legal requirements.

The Ministry of Social Affairs and Employment and its Labour Authority have also applied behavioural techniques to other projects, e.g. in information on the arrangements made pursuant to the Temporary Emergency Bridging Measure for Sustained Employment and in campaigns designed to get more people to work from home.

Lessons learned

During this pandemic, greater attention has been paid to behavioural insights than ever before. The national government's behavioural scientists active on the various teams have demonstrated the added value of this scientific discipline. For example, the RIVM Corona Behaviour Unit used research results to demonstrate that there was fairly substantial popular support for the coronavirus measures during the pandemic, although the media would have you believe otherwise. At the same time, the studies showed that support for the

measures does not necessarily equal actual behaviour, as in complying with the measures.

The NKC used its understanding of human behaviour to design information materials, such as a letter about self-testing kits sent to all Dutch households in the summer of 2021, with positive results. This letter resulted in 3.4 million at-home testing kits being ordered.

Lastly, the Corona Behaviour Unit studied previously developed interventional techniques, and in so doing found that they do not always have the intended impact.
For instance, this proved to be the case in the study on distance-measuring devices (see p. 51). However, other interventional techniques did prove to be effective, such as posters and stickers designed to encourage office workers to wash their hands. These information materials caused use of soap to increase by 61%.

All these teams put the application of behavioural insights on the government's map in their own ways. Working with behavioural insights during the pandemic taught us a few process-related lessons, of which we will outline two below:

- *Embedment and being granted authority* - If behavioural insights are to be properly included in the entire process from decision-making to implementation, behavioural scientists must be represented at the right tables at an early stage. It helps if human behaviour experts are present on many project teams and policy-making departments, and if clear goals have been set by the directors responsible for those teams. Being embedded means that teams must not only have enough behavioural scientists, but must allow these behavioural scientists to take part in the decision-making process.
- *Room for evidence-based methods* - The success of a behavioural intervention is always determined by the context in which it is applied, so, where possible, scientists must be given the opportunity to perform proper analyses and conduct experiments, e.g. in the form of A/B testing of information provided on the government's website. This will allow teams to determine the effects of the behavioural interventions that have been developed more effectively and more quickly, expand successful interventions and stop or modify less successful interventions as necessary.

3

37 new projects

This chapter presents an overview of 37 projects involving behavioural techniques carried out by the national government. The projects cover the full breadth of the field in the past two years. The following themes will be discussed: health, work, education, finance and consumers, and sustainability. The projects were the result of close collaboration between ministries, executive agencies, regulatory bodies, research institutes and behavioural science agencies.

The projects are characterised by a behaviour analysis performed beforehand. This behaviour analysis ensures that the behavioural interventions thus developed are in line with people's actual motives, rather than their assumed motives. In order to be included in this publication, projects had to be evaluated for their impact on people's behaviour. In most cases, this evaluation concerned observed behaviour, but in certain cases it concerned intended behaviour or self-reported behaviour. 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 project database, which also contains references to underlying 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.

Staying at home after undergoing coronavirus testing

Does commitment help people comply with the 'stay-at-home-after-undergoing-a-coronavirus-test' rule?

The corona rules stipulated that people who have just undergone testing must stay at home until they are told they have tested negative. Can the psychological principle of commitment steer people to comply with that rule? The Corona Behaviour Unit and the Regional Public Health Service (GGD) conducted a field experiment in which visitors of a test station committed to complying with the stay-at-home rule. This intervention resulted in a significant increase in self-reported stay-at-home percentages.

Why this experiment was conducted: *many people did not comply with the stay-at-home rule*
In mid-November 2020, a survey conducted by the RIVM showed that many people failed to self-isolate. For instance, 27% of people who had tested positive and 66% of people who had a cold did leave the house – for instance, to go and get groceries. Behaviour analysis has demonstrated that commitment – a procedure in which people express an intention or make a promise to do something or refrain from doing something – can be an effective way to get people to behave in a certain way. See Baca-Motes et al. (2012).[17] The Coronavirus Behavioural Interventions Team wanted to determine whether this technique could be applied to promote compliance with the stay-at-home rule among people who visit the GGD's testing stations.

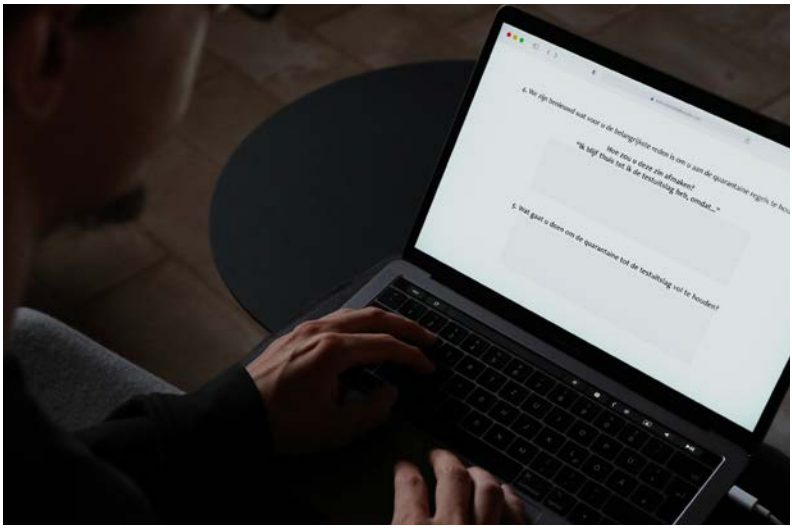
Type of intervention: *a commitment-activating questionnaire*
People who visited the Noord- en Oost-Gelderland GGD testing station were handed an additional flyer after undergoing testing. This flyer called on them to take part in a study by scanning a QR code or visiting a website. The link took the reader to one of two (randomly assigned) online surveys: a control group questionnaire with general questions about customer satisfaction and an intervention group questionnaire which, on top of these general questions, contained an interventional technique designed to generate active commitment in the reader. Two open-ended questions were used to activate commitment:

- Please complete the following sentence: 'I will stay at home until I have received my test result because...'

[17] Baca-Motes, K., Brown, A., Gneezy, A., Keenan, E. A., & Nelson, L. D. (2013). Commitment and Behavior Change: Evidence from the Field. *Journal of Consumer Research, 39* (5), 1070-1084

- What do you plan to do to ensure that you can keep self-isolating until you receive your test result?

Image 1: Activating commitment by means of an online survey



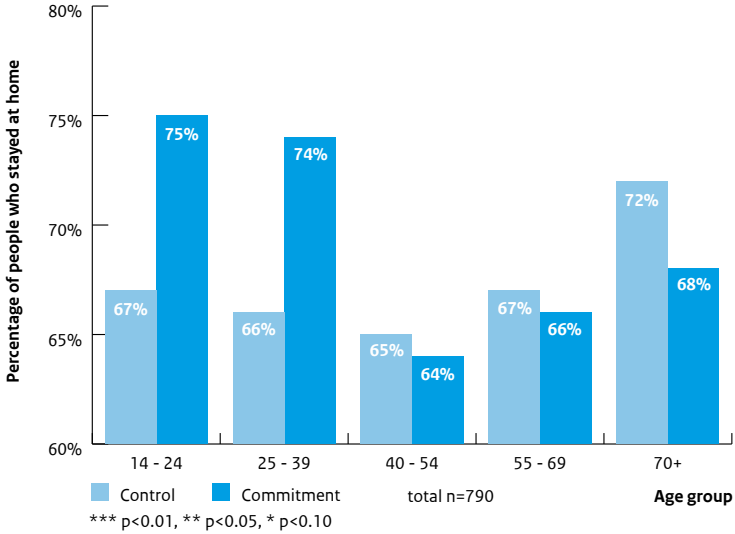
The rationale for this experiment was that completing the sentences would result in people (further) persuading themselves of the relevance of the stay-at-home rules, and in their personally committing to complying with them.

Method used: *field experiment*
The Coronavirus Behavioural Interventions Team conducted a field experiment, in association with the Regional Public Health Service (GGD) and a behavioural science agency. Approximately 50,000 people who visited a testing station between 17 December 2020 and 4 January 2021 were invited by means of a flyer to take a customer satisfaction survey. About 10% of them participated in the survey. A few days later, the respondents received a second survey asking them whether they had indeed stayed at home in the preceding days. About 80% also participated in that second survey. Because this study is based on self-reported data from a self-selected sample of respondents, caution is warranted when interpreting the results.

Result obtained: *more people claimed to have stayed at home*
The intervention had a statistically significant effect on self-reported compliance with the stay-at-home rule in respondents aged 39 or younger: 66% of the control group indicated that they had stayed at home in the preceding days, versus 74% of the intervention group. The intervention did not have a significant effect in people aged 40 and older.

The study did not provide any clues as to why the intervention only seemed to have an impact on younger people.

Figure 1: Differences in self-reported compliance with stay-at-home rule by age category between the commitment condition and the control condition



Impact: *clues as to how to achieve higher compliance rates*
This project gave us some clues as to how to increase compliance with rules of conduct in future (either with new waves of the coronavirus pandemic or a different pandemic).

Increase willingness for testing in case of coronavirus-related symptoms

Does a personalised recommendation have a positive impact on people's intention to make an appointment?

How can more people with coronavirus-related symptoms be persuaded to test for the coronavirus? An online self-diagnosis tool combined with a personalised recommendation resulted in a 17% increase in people's intention to make an appointment for a coronavirus test, compared to the website as it was at the time of the study.

Why this experiment was conducted: *increase people's willingness for coronavirus testing*
A behaviour analysis performed by the RIVM showed that by February 2021, compliance with the 'get-tested-in-the-event-of-symptoms' rule had dropped to 36%.[18] In order to combat the spread of the coronavirus, it is vital that people who have coronavirus-related symptoms or have been in the company of someone who has tested positive undergo testing. Various types of behavioural interventions may make people more willing to get tested.

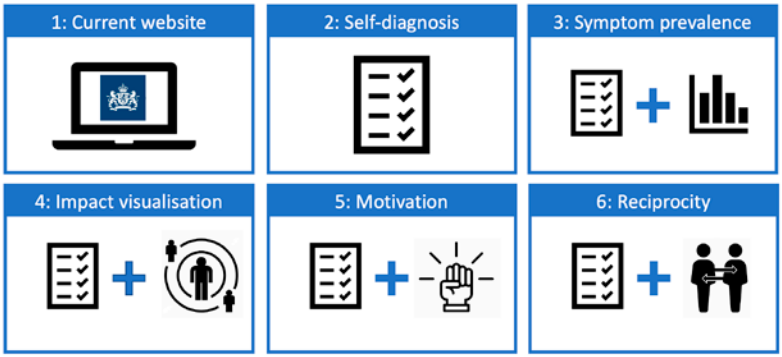
Type of intervention: *a self-diagnosis tool, possibly combined with behavioural techniques*
The interventions analysed in this study consisted of a self-diagnosis tool, sometimes combined with several behavioural techniques:

- *National government's website (control group):* study subjects were shown the text shown on the government's website at the time of the study.
- *Self-diagnosis tool:* study subjects read a scenario of a person having mild coronavirus-related symptoms and completed a self-diagnosis for the person in the scenario. After they completed the diagnosis, they were given the recommendation to get tested.
- *Self-diagnosis tool + symptom prevalence:* study subjects completed the self-diagnosis for the person in the scenario and were given the recommendation to get tested. They were also shown how many people with the same symptoms had tested positive in the past year.
- *Self-diagnosis tool + impact visualisation:* study subjects completed the self-diagnosis for the person in the scenario and were given the recommendation to get tested. They were also shown a map of the city where the person in the scenario was living, in which the speed of spreading of the virus was visualised.

[18] See https://www.rivm.nl/gedragsonderzoek/trendonderzoek/naleving-van-en-draagvlak-voor-basis-gedragsregels

- *Self-diagnosis tool + motivation:* study subjects completed the self-diagnosis for the person in the scenario and were given the recommendation to get tested. They were also shown an image providing them with several reasons why they should get tested.
- *Self-diagnosis tool + reciprocity:* study subjects completed the self-diagnosis for the person in the scenario and were given the recommendation to get tested. They were also presented with the following text: 'If a friend of yours has symptoms that are consistent with the coronavirus, would you want him or her to get tested just to be sure? Increase each other's safety by getting tested. You can schedule your appointment here.'

Image 2: Visualisation of testing recommendations

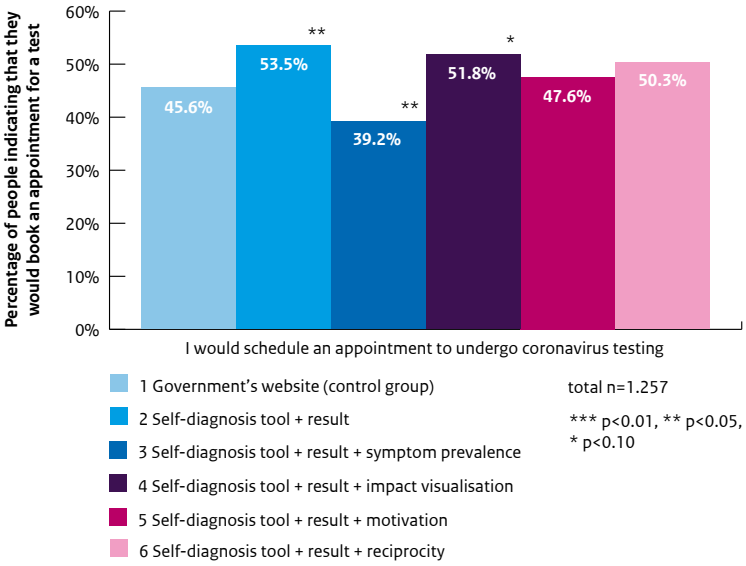


Method used: *RCT*
These interventions were tested in a randomised controlled trial. In an online experiment, all study subjects (n=1,257) were presented with a scenario about a person with mild coronavirus symptoms. The subjects were then randomly assigned to one of the six aforementioned conditions.

Result obtained: *the self-diagnosis tool makes people 17% more likely to get tested*
While looking at the government's website (condition 1), 46% of study subjects intended to book an appointment for a coronavirus test. When they were completing the self-diagnosis form (condition 2), 54% intended to book an appointment, which was a significant larger percentage ($p<0.05$). This constituted a 17% increase (8 percentage points). In addition, the researchers looked at the self-diagnosis form, combined with the other behavioural techniques (conditions 3, 4, 5 and 6). The results showed that the 'impact visualisation' (52%), 'reciprocity'

(50%) and 'motivation' (48%) techniques made people significantly more likely to book an appointment than 'symptom prevalence' (39%). No significant difference was demonstrated between one of these three behavioural techniques versus the government's website (control) or the self-diagnosis alone (condition 2). In other words, adding an extra behavioural technique to the self-diagnosis did not make people more willing to get tested. In fact, adding the 'symptom prevalence' condition actually decreased the likelihood to book an appointment compared to the government's website (control) or the self-diagnosis (condition 2).

Figure 2: Percentage of people indicating that they would book an appointment for a test after reading the scenario



Impact: *increase in willingness to get tested, even in the event of inconclusive symptoms*
This study gave insight into the impact of personalised recommendations (based on the self-diagnosis) on people's intention to book an appointment for a coronavirus test. On the basis of these results, a tool was developed and placed on the government's website, where people could indicate their symptoms, and were provided with a personalised recommendation for testing.

In six weeks' time – from mid-June to late July – this tool was used more than 100,000 times. After using the tool, some 24,000 people proceeded to schedule an appointment for a coronavirus test.

Willingness to participate in mass community testing

Do proximity to the testing facility and information on the risks that the coronavirus poses increase test uptake?

In two pilot studies on mass community testing, researchers sought to determine if testing would increase, both in number of people and number of tests per person, if the testing facility was closer to home and if the invitation letters contained additional information on the risks associated with coronavirus infection and the spread of the virus. Closer proximity to the test facility resulted in a substantial increase in the number of people getting tested. No effects were found for the manipulation of the invitation letters.

Why this experiment was conducted: *research on willingness to participate in mass community testing – without COVID-19 symptoms.*

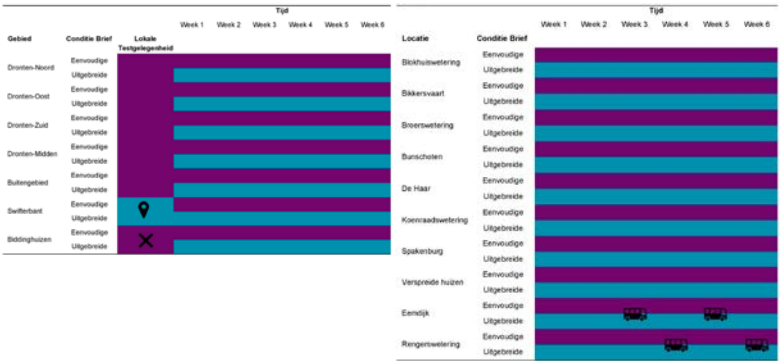
Mass community testing is designed to allow for the quick and frequent testing of large groups of people with and without COVID-related symptoms. Due to the expectation that test intention would be lower for frequent asymptomatic testing than it would be for testing with COVID-related symptoms (ECDC, 2020), researchers sought interventions to increase test uptake. Researchers conducted two pilot studies involving mass community testing (in the municipalities of Dronten and Bunschoten) in which they analysed factors that might increase test uptake, so that potentially infectious individuals could quarantine or self-isolate from an early stage and prevent others from getting infected.

Type of intervention: *placing testing facilities closer to home and providing information on the risks of COVID-19*

Previous studies suggest that two factors contribute in people's willingness to get tested: risk perception and a facilitating physical environment. In this study, these two factors were examined in two municipalities:

- Easy access: In the municipality of Dronten, an additional testing facility was erected in one village (Swifterbant) but not in another village (Biddinghuizen), thus causing inhabitants of the second village to have to go to Dronten to get tested. In the municipality of Bunschoten, a mobile test bus switched locations between a site in Eemdijk and a site in Rengerswetering every week.
- Information on the risks associated with the virus: two different types of invitation and reminder letters were sent. One with additional information on the risks associated with coronavirus infection and with the spread of the virus, and one without such additional information.

Image 3: Study design: Dronten (left) and Bunschoten (right)



Method used: *field study*

The invitation and reminder letters with, and without additional focus on risks associated with the virus were sent to local households at random (Dronten: n=36,489; Bunschoten: n=18,404), after which the researchers analysed the difference in test uptake during the pilot between these conditions. To measure the effect of proximity of the test facility, the number of people who got tested in the municipality of Dronten before and during the pilot study was compared for the inhabitants of two villages: people from Swifterbant (who lived 600 metres from the testing facility – intervention group) and people from Biddinghuizen (who lived 10.4km from the testing station – control group). Total n=10,625. In the municipality of Bunschoten researchers compared the number of people who got tested when the mobile testing facility was present with the number of people got tested when it was not (n=1,655). In Eemdijk, having the mobile testing facility present meant an average distance of 200m to the testing facility versus the usual 3.9km. In Rengerswetering the average difference in distance was 1km versus 2.4km.

Result obtained: *more people got tested when the testing facility was nearby; additional information on risks did not affect test uptake*

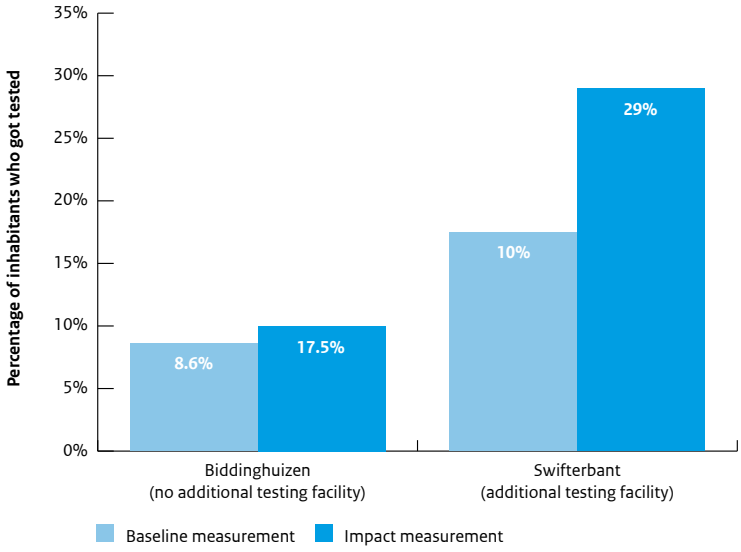
A reduction in the distance to the testing facility resulted in a substantial increase in the number of people who got tested. The additional information on risks associated with the virus in the invitation letters did not affect test uptake.

- Easy access in the municipality of Dronten: In Biddinghuizen (long distance), 17.5% of people got tested (versus 8.6% prior to the pilot study). In Swifterbant (short distance), 29.0% of people got tested (versus 10.0% prior

to the pilot study). In Swifterbant, the number of people who get tested tripled, whereas in Biddinghuizen it doubled.

- Easy access in Bunschoten: the number of people who got tested when the mobile testing facility was present was significantly larger – roughly 1.3 times as many. This effect can be attributed almost entirely to the presence of the mobile testing facility in Eemdijk (where the distance was reduced from 3.9km to 200m), and it was not observed in Rengerswetering (where the distance was reduced from 2.4km to 1km). In other words, a reduction of the distance to the testing facility seems to be effective at least when the distance was reduced from an average of 3.9km to 200m.
- Information on the risks associated with the virus: there was no statistically significant difference between the two versions of the letter. In Dronten, 28.6% of recipients that got the letter without additional information on the risks associated with the virus got tested, versus 27.9% of recipients that did receive the additional risk information. In Bunschoten, the numbers were 38.6% versus 39.1%.

Figure 3: Percentage of tested residents in the municipality of Dronten for the village with an additional test facility (Swifterbant) and without an additional test facility (Biddinghuizen).



Impact: *more people getting tested may lead to slowing down the spread of the virus*
Giving people easy access to a testing facility results in a substantial increase in the number of coronavirus tests performed. After this pilot study, the idea of providing people with care close to their homes was incorporated into the country's vaccination strategy as well, with more local vaccination facilities in order to increase the vaccine uptake rate.

Spreading crowds in supermarkets

How to motivate people to buy their groceries during the quiet times?

If we can get more people to buy their groceries during the quiet times, it will be easier for them to keep their distance from others while shopping. A certain behavioural intervention, the busy-and-quiet-times timetable, was found to be effective: more people do their shopping during the quiet times, and fewer people do it during the busy times.

Why this experiment was conducted: *keeping one's distance from others while shopping can be a bit of a challenge*

A study conducted by the RIVM's Coronavirus Behavioural Interventions Unit showed that it is hard to follow physical distancing rules while buying groceries. Therefore, the Corona Behaviour Unit wanted to develop and test some promising behavioural interventions that would make it easier for people to follow physical distancing rules in supermarkets. The focus was on avoiding busy times and keeping one's distance while buying groceries. Initially, a pilot study was conducted at one single supermarket.

Type of intervention: *a busy-and-quiet-times timetable plus a course of action*

The team developed the following materials for the pilot study: an informational flyer, a meal planner with an accompanying list of groceries to be purchased, a banner pen, a quiet time raffle and a poster. All the materials listed the busy times and quiet times at the supermarket. Using the meal planner and list of groceries, customers were able to buy groceries for several days, and the list was drawn up in such a way that customers would be able to get around the supermarket quickly.

After a successful pilot study, the study was expanded to 11 supermarkets. The materials associated with the intervention were given a slight make-over and were rendered easier to use. Other than that, the method remained identical to the one used in the pilot study.

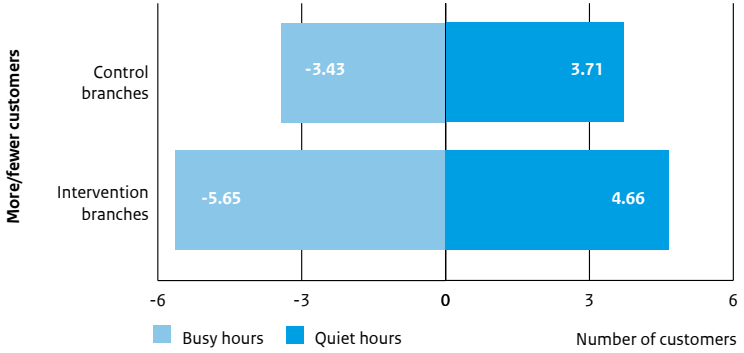
Image 4: 'Spring poster' announcing a more even distribution of people in the supermarket

Method used: *baseline and impact measurements*
Baseline and impact measurements of the number of customers per hour were performed at supermarkets both with and without the intervention. In the experimental condition, the baseline measurement was performed, after which the intervention took place: the informational flyer, meal planner with associated grocery list and banner pen were distributed, the quiet times raffle was announced, and the posters were put up. In the control condition, the (otherwise comparable) supermarkets were not subjected to any intervention.

Result obtained: *the shop was quieter during the busy times and more crowded during the quiet times*
When the pilot study was reviewed, it was found that the supermarket in the experimental condition had indeed been more crowded during the quiet times and quieter during the busy hours, meaning that the number of customers had indeed been distributed more evenly. In the control condition, no difference was observed between the baseline and impact measurements. In the follow-up study, the impact measurements showed that both types of supermarkets (both with and without the intervention) were more crowded during the quiet times than they had been in the baseline measurements. Also, both types of supermarkets were quieter at the busiest times in the impact measurements than they had been in the baseline measurements. Perhaps this was because the coronavirus restrictions had been relaxed in the meantime. However, the reduced number of customers during the busiest hours and increased number of customers during the quietest hours were more pronounced in the experimental condition. Two supermarket branches in the experimental condition removed

the intervention materials prematurely. If these two branches are excluded from the study results, the impact of the intervention is even more pronounced.

Figure 4: Behavioural intervention results in a significant shift from buying groceries during the busy hours to buying them during the quiet hours



Impact: *reduced likelihood of infection*

Because some customers started buying their groceries during the quiet hours rather than the busy hours, supermarkets were less crowded, meaning it was easier for customers to keep their distance from each other. As a result, they were considerably less likely to get infected.

Distance-measuring devices for distance awareness

Do devices help people comply with physical distancing rules?

A combination of pilot studies and interviews showed that the use of distance-measuring devices provide people with a better awareness of distance. However, the devices only have a limited impact on whether people actually keep 1.5 metres distance from each other. Moreover, the distance-measuring devices seem to make the people wearing them feel less safe.

Why this experiment was conducted: *development of distance-measuring devices*
Devices were being used to measure the distance between people and give a signal when that distance is less than 1.5 metres. These are small devices that can be worn on a key cord or can be attached to a belt. These distance-measuring devices seem a promising way to raise people's awareness of interpersonal distances; users are provided with immediate feedback on their behaviour. The Ministry of Health conducted on a few studies designed to determine whether such devices help people comply to the physical distancing rules.

Type of intervention: *use of these devices by Ministry of Health employees and adult daycare centres*
Pilot studies with distance-measuring devices were conducted in an office environment and in day-care centers. In April-June 2021, two Ministry of Health directorates used the devices for two weeks each, and then three daycare centres used them for one week each. They were provided with instructions for using the devices prior to the study.

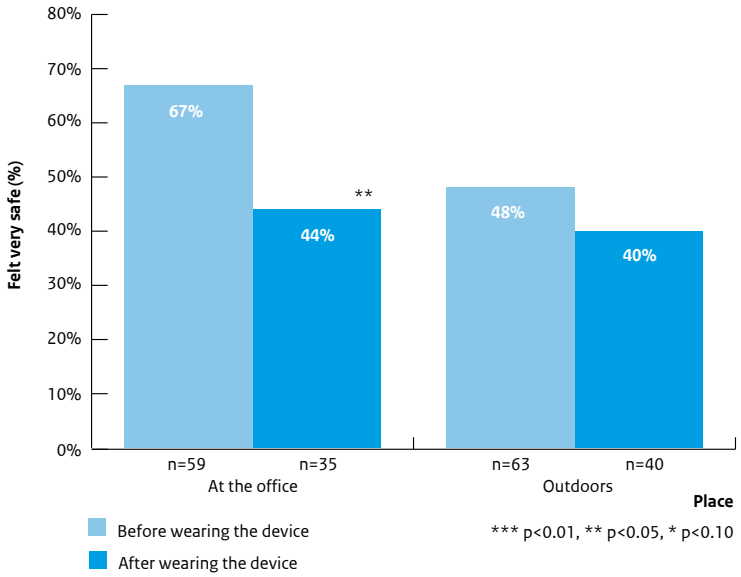
- At the Ministry of Health, the devices were used by employees who came to the office. They were allowed to take part in the pilot study for a week and a half. Participation was voluntarily and anonymous. Fifty devices were available, with each directorate receiving a different brand.
- At the daycare centres 2 to 5 employees and 8 to 16 clients wore the device. However, one of the daytime activity centres had to stop the experiment after two days because the device was causing its clients to experience anxiety.

In addition to these pilot studies, existing users of the device working at companies were contacted through suppliers of the devices in late May. These experienced users had been using these devices for 3-6 months.

Method used: *test with online survey, diary and qualitative user survey*
The Ministry of Health employees completed an online survey before and after using the device to check how often they had used the device, whether it had helped them keep their distance and whether it had made them feel safe. At the daycare centres, employees kept an online diary every day, in which they indicated their experiences with wearing the device that day, and whether the devices aided in keeping distance.
The experienced users of these devices (n=12) were subjected to a 40-minute online interview in late May. They were asked to indicate the pros and cons of using the device.

Result obtained: *devices help people understand distance but also make them feel less safe*
Use of the device had a significant impact on wearers' awareness of what constitutes 1.5 metres' distance. However, the devices only had a limited impact on whether people actually kept 1.5 metres distance. The inaccuracy of the device probably contributed to this; some people indicated it gave off a warning signal at the wrong distance. As a result, they got the impression that the device was unreliable, which caused them to modify their own behaviour, trusting their own sense of distance rather than the signal given by the device. This made them feel less motivated to wear the device.

Figure 5: Perceived safety before and after wearing the distance-measuring device



In addition, the device seems to make people feel less safe (which is to say, the number of people who feel 'very safe' is reduced – p = 0.05) in situations where it is worn, which will stop certain people from using it. If the device is not worn, people do not feel less safe (p = 0.68).

Impact: *better understanding of conditions to be met*
The study does not recommend the use of such devices in the circumstances analysed in the study. However, in certain conditions, the device may serve as a tool that helps people keep their distance from others. Judging from the study results, these conditions should be as follows:

- it must be obvious at a glance whether the device is on and has sufficient battery life;
- the device must not provide a signal instantaneously, in order to prevent providing a signal when people merely pass each other;
- the device must not provide a signal unless the distance is less than 1.5 metres;
- the device must not be the only tool being provided to help people keep a safe distance from each other;
- the device must be worn by all persons present.

In addition, the device should perhaps be able to reward people for good behaviour, rather than only signalling bad behaviour as this may have a more positive impact on people's behaviour.

Local support to improve self-isolation or quarantine compliance during the pandemic

How does one refer people to a local aid organisation?

People who have been exposed to the coronavirus and are under quarantine or self-isolating can receive support from a local aid organisation. Such organisations can offer help by delivering groceries, walking the dog or other activities. It seems that active referral (people receive a call) is more effective than passive referral (people call the local aid organisation themselves).

Why this experiment was conducted: *it is vital that people stay at home in the event of (possible) coronavirus infection*

To prevent the spread of the virus, it is vital that people who have (possibly) been infected with the virus self-isolate or quarantine.

Of the people who tested positive in the spring of 2021, 76% did not go outside, and 99% did not receive any visitors (RIVM, 2021). The easier or more effective people find the quarantine rules, the more likely they are to stay at home. How can the government improve support for people who are self-isolating or quarantining? First and foremost, by putting them in touch with locals who can provide assistance. The team sought to determine whether active referral is more effective in this respect than passive referral.

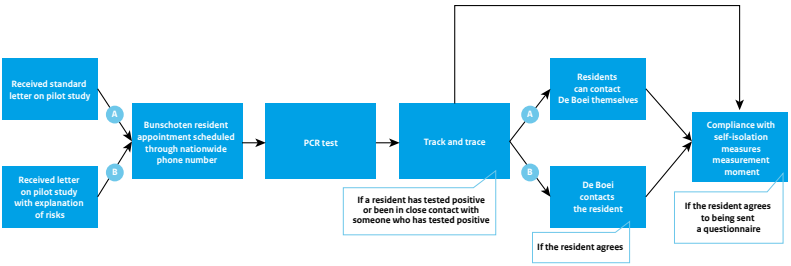
Type of intervention: *active referral to a local aid organisation*

In the municipality of Bunschoten, two ways of putting people in touch with a local aid organisation were compared:

- active referral by the GGD (Regional Public Health Service), with the aid organisation contacting the person in isolation. The GGD first asked permission to share the person's contact details with the aid organisation.
- passive referral (care as usual) by the GGD, in which the GGD gave its client the aid organisation's contact details so the client could contact the organisation themselves.

The aid organisation could offer support in practical matters such as walking the dog or buying groceries. Furthermore, it had some rooms at its disposal where people could self-isolate and was able to lend a listening ear. We compared the scenario in which the aid organisation called the client with the scenario in which it was up to the client to call the aid organisation.

Image 5: Description of the intervention procedure

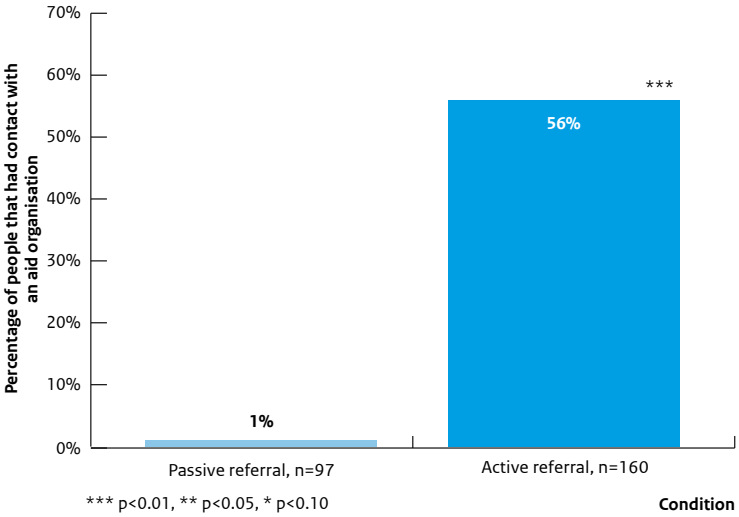


Method used: *RCT and questionnaire*
Inhabitants of the municipality of Bunschoten who had been asked to self-isolate or quarantine were allocated to either the active or the passive referral scenario at random.

In all, the GGD referred 267 persons to the aid organisation, either actively or passively. We compared the two scenarios for the number of support calls made by the aid organisation. Additionally, clients were asked to complete a questionnaire.

Result obtained: *active referrals result in more requests for assistance*
In the active referral scenario, about half the number of clients (52.5%) allowed their contact details to be shared with the aid organisation, enabling the aid organisation to contact them. The aid organisation conducted support calls with 90 people who had been referred actively, versus only one person who had been referred passively. The results of the questionnaire also showed that active referrals were more effective.

Figure 6: Active referrals result in substantially more contact with the aid organisation than passive referrals.



Impact: *potentially improved compliance with self-isolation or quarantine recommendations*

If support from an aid organisation promotes compliance with self-isolation and quarantine rules, it is useful to ask people for permission to be contacted directly by an aid organisation as part of the test-and-trace alert calls. This will result in more people having contact with the aid organisation. Active referral may also be useful in other situations where people require care and support.

'Provident' distribution of iodine tablets

When the tablets and informational letter were sent, how were they received by the people living around nuclear power plants?

In the autumn of 2017, iodine tablets were distributed among parents of children aged under 18 who lived in a wide ring around nuclear power plants. How did the recipients respond to this dispatch? Almost 90% of them found the information provided in the letter that came with the tablets clear, and 70% still knew one year later where they had put the tablets. However, only 40% were able to remember the instructions one year later. Concerns about the dangers posed by nuclear power plants were somewhat alleviated during the course of that year.

Why this experiment was conducted: *iodine tablets had to be distributed in a wider radius around the plants*

When accidents happen at nuclear power plants, radioactive iodine can be released. When humans inhale this substance, it can enter the body, and in young people this may cause thyroid cancer at a later age. The chances of such an accident occurring are very slim, but if it happens, it is very useful when there are iodine tablets on hand for immediate ingestion. By taking the tablets, we ensure that our thyroids absorb less radioactive iodine. For this reason, between 2010 and 2015, tablets were distributed to people living in a small, 20km radius around a nuclear power plant. In Belgium and Germany such tablets are distributed to people living in a wider radius. Therefore, the Dutch government decided to distribute tablets in a wider radius, as well.

Type of intervention: *tablets and informational letter distributed in a 100km radius around nuclear power plants*

In late 2017, iodine tablets were distributed in a wider radius around nuclear power plants, namely parts of the Netherlands that are within a 20-to-100km radius of the power plants of Borssele, Doel, Tihange and Emsland. In addition to the iodine tablets, parents of children aged 18 or younger received a letter explaining why the tablets were being distributed and providing instructions on what to do in the event of a nuclear accident. Furthermore, the government launched a public information campaign to raise more awareness. When the iodine distribution campaign was organised and the informational letter was drawn up, insights gleaned from a previous study conducted by the RIVM (2016) regarding communications on the risks associated with radiation were applied. A recommendation was issued to the effect that it would be useful if (1) more

information was provided on radiation's impact on one's health, and (2) a letter with a personal touch were to be added for personal relevance. Moreover, the letter should contain a call to action ('put them away safely!').

Image 6: Letterbox-friendly package

Method used: *surveys taken by addressees and non-addressees immediately after the distribution of the tablets and one year later*

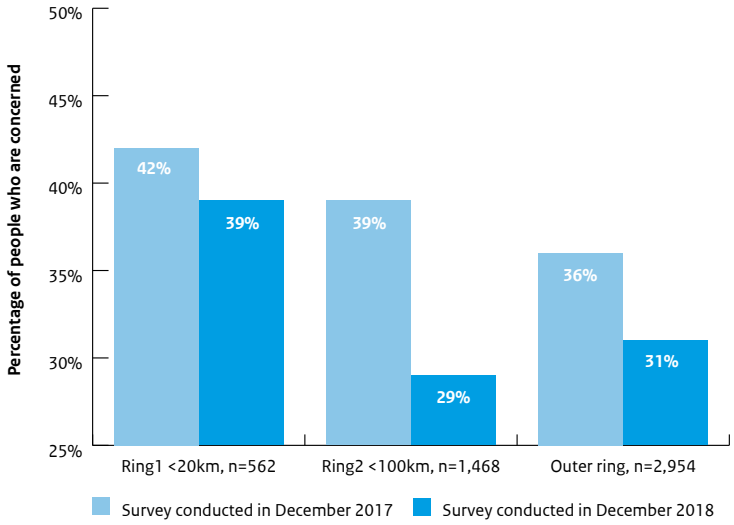
Two online surveys were conducted through a research agency's panel. The first survey was conducted immediately following distribution, in December 2017. The second was conducted a year later, in December 2018. Three groups were polled separately.

- ring 1 (n=562): people aged 40 or younger, living in a 20km radius of a nuclear power plant. Many of the people living in this ring did not receive a new supply of tablets as they had received tablets previously.
- ring 2 (n=1,468): parents of children aged 17 or younger living in a 20-100km radius of a nuclear power plant. People living in this ring were first-time recipients of tablets and informational letters.
- other (n=2,954): people who were not eligible for tablets because of their age or because they did not have any children aged 17 or younger, or because they lived outside the distribution radius.

Respondents were asked if they had received any tablets, and if so, where they had put them, how they felt about the information with which they had been provided, how concerned they were about the dangers posed by nuclear power plants and what they intended to do in the event of a nuclear accident. Researchers examined the differences between the two different survey dates and the differences between the various groups. There was no real control group to speak of. However, there was one 'other' group that could be compared against the intervention groups.

Result obtained: *the information provided in the letter was clear; people were less concerned*
Just over 20% of the target group said they had not received any tablets. Of those who had received the tablets, 90% felt that the informational letter provided clear information, and 70% remembered a year later where they had put the tablets. Only 40% were able to remember the instructions a year later. The percentage of people who were very concerned about the dangers posed by nuclear power plants decreased in all rings between December 2017 and December 2018. The most significant decrease (-25%) occurred in the new zone (20-100km from a nuclear power plant).

Figure 7: Percentage of people concerned about the dangers posed by nuclear power plants shows greatest decrease in the ring where iodine tablets and informational letters were distributed.



Impact: *new clues as to how to communicate with people*
The evaluation demonstrated that mass distribution of iodine tablets combined with clear information does not cause people to feel more concerned, as feared. In addition, the results provided the team with clear ideas as to how to improve communications in any future distribution projects it may undertake.

Working safely with forklift trucks

Can nudges get forklift truck drivers to perform their duties safely?

Two field studies were conducted in supermarket warehouses to determine whether nudges could get forklift drivers to refrain from two unsafe behaviours. The study showed that nudges may be a valuable interventional technique to promote safe work habits in cases where certain habits cause problems.

Why this experiment was conducted: *many occupational accidents are caused by human error.* An analysis of forklift truck drivers working in a supermarket warehouse showed that human behaviour was to blame for two types of unsafe working conditions: the way drivers fail to look sideways when approaching a crossing and the fact that drivers are in motion when they lift or lower the fork of their trucks to move loads. Nudges tend to focus on automatic behaviour, meaning they may potentially be an effective interventional technique. However, little research has been conducted on how nudging may promote safe work habits. At the behest of the Ministry of Social Affairs and Employment, the RIVM examined what nudging may achieve in potentially unsafe working conditions.

Types of intervention: *nudges designed to make it easier for forklift drivers to engage in safe behaviours. Interventions were developed for two different types of situations:*

- An experimental behavioural intervention for crossings: a LED board featuring moving eyes to remind forklift drivers that they must look left and right when approaching a crossing before entering the through road from an aisle. The LED board was installed at the end of the aisle, and a sensor was installed a few metres before the end of the aisle. As soon as a driver passed the sensor, the LED board would switch on and the driver would see the eyes move from left to right and back. LED boards were installed in three aisles.
- Experimental behavioural intervention for drivers who were driving and lifting/lowering their fork at the same time: a red-and-green light was installed inside the forklift truck, with the light turning green once the fork of the forklift is 2.5 metres or lower above the ground, and turning red as soon as the fork is higher than 2.5 metres above the ground. The red light served as a reminder that the driver must come to a halt, thus preventing the load from falling or being knocked over. A total of four forklift trucks were equipped with the light. In addition to this nudge, an existing rule was simplified and converted into an if-A-then-B type of rule. The old rule: 'Where possible, do not lift or lower your fork while at the same time driving or turning.' The new rule: 'Do not move the truck if you are lifting or lowering a load more than 2.5 above the ground.'

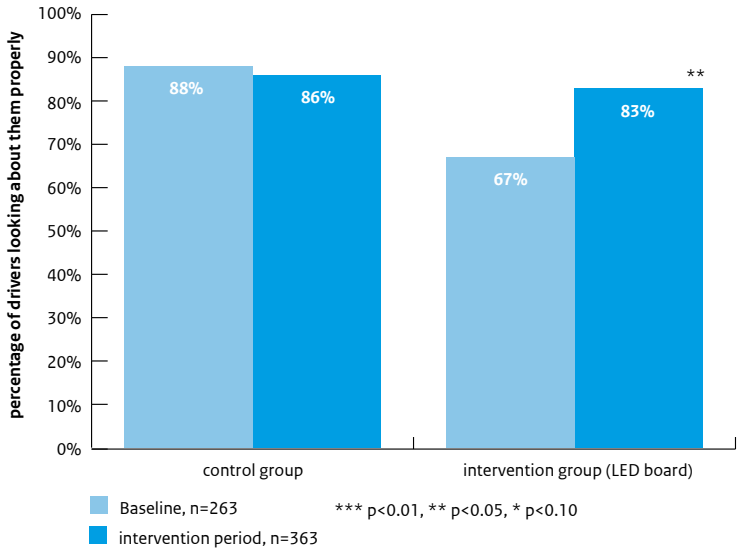
Image 7: A red-and-green light inside the forklift truck serves as a reminder for the driver

Method used: *two field studies*
Two field studies were conducted, featuring a baseline measurement and an impact measurement. Furthermore, some intervention aisles (with nudges) and control aisles (without nudges) were randomly allocated. The impact of the LED board was measured by comparing the percentage of cases in which drivers looked to the left and right in these different situations. The impact of the light was measured by comparing the percentage of manoeuvres in which drivers did two things at once in the various different situations (the new rule applied in the entire warehouse). The impact of the new rule was measured by comparing the baseline percentage of manoeuvres in which forklift drivers did two things at once with the percentage found in the impact measurement, in control aisles only. The drivers' behaviour was measured by means of cameras. For both experiments, 280 hours' worth of video footage was analysed. In the crossing experiment, 641 eye movement moments were given a score. In the doing-two-things-at-once experiment, 2,943 movements were given a score.

Result obtained: *16% difference in eye movements; the light did not have an added impact (op top of the new rule) on whether or not drivers did two things at once.*
In the baseline measurement, without the LED boards, forklift drivers looked both ways properly when approaching a crossing in 67% of movements monitored. After the LED boards had been installed, this percentage rose to 83%. In the control aisles, the percentage of movements in which drivers looked around them properly was stable, which is to say that there was no difference between the baseline and impact measurements. In other words, a LED board

with moving eyes is an effective nudge in promoting proper scanning of the surroundings at crossings. The rule revision resulted in a 16% reduction of situations in which drivers did two things at once. The nudge inside the forklift truck (the light) did not add to that result.

Figure 8: Drivers look about them properly more often after the installation of a LED board



Impact: *a safer warehouse*

The experiment improved safety conditions on the work floor in a supermarket's warehouse. Since forklift drivers looked around them better at crossings, the chance of collisions with others was reduced. And by coming to a standstill before lifting or lowering their forks, the drivers reduced the chance of loads falling off the forks. The study results were presented at several meetings, including the Day of the Safe Warehouse (March 2021) and the RIVM's Occupational Health and Safety Networking Day (June 2021), thus introducing many other health and safety professionals to the concept of nudging.

Request for submission of data on hazardous substances used by companies

Which is more effective: a letter designed to appeal to intrinsic or extrinsic motivation?

The Netherlands Labour Authority (NLA) conducted an experiment to investigate the effectiveness of two different types of letters for uploading information of hazardous substances companies work with. One letter was designed to appeal to extrinsic motivation (legal requirement), while the other was designed to appeal to intrinsic motivation (the employees' health and safety). A control letter was written up as well. The impact measurement showed that the different types of letter did not garner a significantly different response. This raises the question as to what impact the sender, the NLA, has on the recipient.

Why this experiment was conducted: *request for online submission of information on hazardous substances*

The NLA wished to gain additional insight into the amount and different kinds of hazardous substances companies work with, and which companies pose the greatest risk of exposure. To gain this information, the NLA set up a 'Questions on Substances' pilot study in which it asked companies to provide information through an online upload page on the hazardous substances held on the premises and how the company deals with them. With this information the NLA is better prepared towards ensuring employees' health and safety through protection of acute and/or long-term exposure to hazardous substances.

Type of intervention: *letters designed to appeal to intrinsic or extrinsic motivation*

Three types of letters were sent, with two of these featuring behavioural change techniques:

- one letter that appealed to employers' intrinsic motivation: 'Protect your employees: tell us about your hazardous substances.' Various behavioural change techniques were included.
- one letter that appealed to employers' extrinsic motivation: 'Legal requirement: record your hazardous substances.' Various behavioural change techniques were included.
- One control letter in which no specific motivational paradigm was activated. Behavioural techniques were not included.

Behavioural change techniques that were included in the letters that appealed to motivation consisted of: minimising the request, acknowledging resistance, call to action, loss framing (extrinsic motivation letter), gain framing (intrinsic motivation letter), evoking freedom, and an implementation intention.

Furthermore, both letters were sent in an envelope on which a post-it had been printed for added visibility. The post-it listed the date by which the information on the hazardous substances with which the company works had to be submitted (to evoke a stronger sense of urgency). In order to be able to measure the impact of the behavioural change techniques, the control letter was sent.as well. This letter did not differ from letters that the NLA normally sends to companies. This letter did remind the business that reporting one's substances is a legal requirement, but did not feature any behavioural change techniques. This control letter was sent in a 'regular' envelope, without a post-it printed on it.

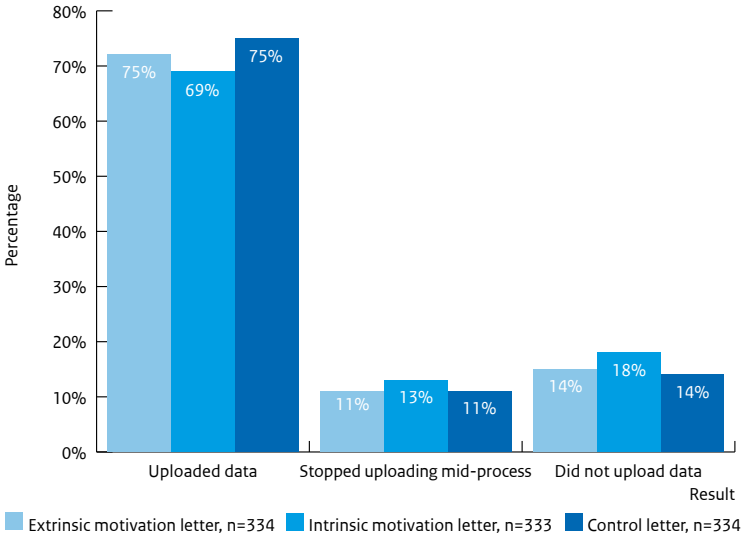
Image 8: Envelope with a post-it printed on it

Method used: *response measurement and survey*
Researchers measured which behaviour-influencing method (appeal to intrinsic motivation versus appeal to extrinsic motivation) garnered the highest response rate. In addition, a small qualitative study was conducted in which companies were called and questions were asked about the letter they had received. The researchers believed that the intrinsic motivation letter would garner the highest response rate, followed by the extrinsic motivation letter and finally the control letter.

Result obtained: *no difference in response rates*
No significant difference in response rates between the three types of letters was observed. 231 companies responded to the intrinsic motivation letter,

250 responded to the extrinsic motivation letter, and 241 responded to the control letter. The response rate was high in all three cases. In total, 72.2% of all companies which received a letter responded. One possible explanation for the lack of a significant difference is the fact that the name of 'Netherlands Labour Authority' evokes a sense of authority which triggers to extrinsic motives for compliance in and of itself.. Because of this sense of authority and/or a fear of sanctions, recipients might have been extrinsically motivated to honour the request for information, regardless of how the request is formulated or what kind of behavioural change techniques are applied.

Figure 9: Type of letter (intrinsic motivation versus extrinsic motivation versus control letter) did not impact whether or not companies uploaded data on the hazardous substances used on their premises



Impact: *increased awareness of hazardous substances and occupational health and safety*
Those companies that did respond to the letter took a good look at the hazardous substances with which they work, and in so doing paid conscious attention to the health and safety of their employees. In addition, several trade associations indicated that they would like to be involved in requests for the submission of data on hazardous substances in the future, thus assuming some more responsibility.

Health and safety awareness at metal-working companies

How can knowledge of human behaviour make inspection visits more effective?

In order to reduce the number of breaches of obligations at metal-working companies, the Netherlands Labour Authority and Employment sought to determine whether the efficacy of its inspection visits could be improved by means of behavioural techniques. Such techniques (e.g. self-persuasion, small steps and reminders) were found to have a positive effect on the company's safety culture. Their impact on the number of breaches of obligations could not be determined in the study, because both in the experimental group and in the control group, all the causes of the breaches had been eliminated during the re-inspection visits.

Why this experiment was conducted: *insufficient compliance with the Working Conditions Act in the metal-working industry*

Between 2009 and 2015, the Netherlands Labour Authority and Employment inspected more than 4,600 metal-working companies. The inspectors found that more than 80% of the companies they inspected did not properly comply with the provisions of the Working Conditions Act. Non-compliance with rules may pose considerable risks to employees' health and safety – for instance, when working with hazardous substances and machines. For this reason, the Labour Authority aspires to reduce the number of breaches of obligations in the metal-working industry by applying behavioural insights to the inspections. In association with a consulting firm, the Labour Authority examined the effect of such insights on the number of breaches and on companies' safety culture.

Type of intervention: *psychological techniques applied before, during and after the inspection*

In this experiment, the inspections featured psychological techniques.

These interventional techniques were deployed at three moments:

- in the period leading up to the inspection: the companies were sent a letter announcing the inspection, a questionnaire featuring self-persuasion techniques, and information on '5xbeter' ('five times better'), a collaborative partnership between social partners that dispense assistance and information on occupational health and safety.
- during the inspection visit: the inspectors took a different approach. They encouraged people to take notes, identified things that were being done

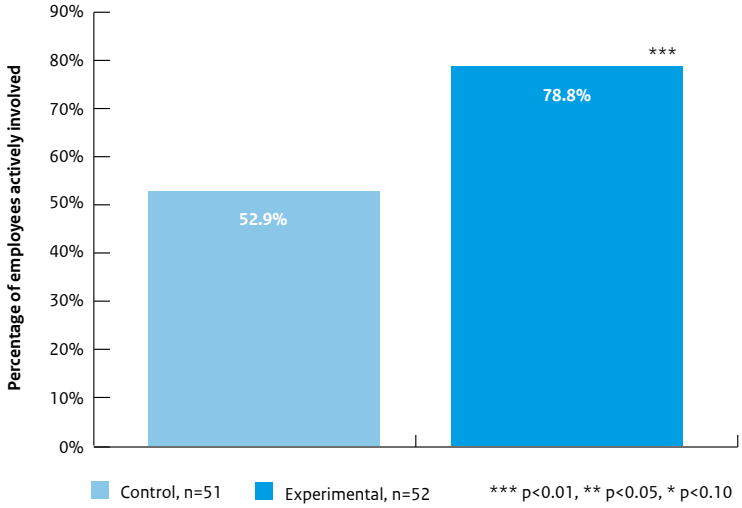
well, avoided scary messages and 'many businesses do this wrong', set the right example in the form of a story, made the number of accidents as close as possible, presented the changes the company would have to make in small steps, discussed how much an accident would end up costing, drew up goals, referred people to 5xbeter, got people to agree to stay in touch and used reminders and prompts, such as stickers in the workplace.
- in the period following the inspection visit: the inspectors stayed in touch with a representative of the company and the inspection letter was revised so as to include a quote by an employee of the company: 'During our visit, we spoke to [name]. Over the course of the inspection, we found that [he/she] greatly values the safety of the employees and feels strongly responsible for ensuring they are safe.'

Method used: *field study*
The impact of this revised inspection method was tested in a field study. Seventy-three metal-working companies were inspected in accordance with the new method. The control group was made up of 66 comparable metal-working companies that were inspected in the usual way. The researchers measured the impact of the interventions on the number of breaches of obligations, the companies' awareness of 5xbeter and their safety culture. They did so at three moments: at the initial inspection, at the re-inspection and at the end of the entire inspection procedure.

Result obtained: *the companies in the experimental group implemented a better safety culture*
The interventional techniques had an impact on companies' safety culture. The companies in the experimental group started paying more attention to the subject of safety.
- 21% more employees were involved in efforts to promote safety
- conversations on safety increased by 10%
- employees were asked to give feedback or share ideas on safety-related issues 23% more often
- employees scored 8% higher on a standardised measure of safety culture.

However, the impact of the interventional techniques could not be determined in this experiment because nearly all the re-inspected metal-working companies implemented the requested measures. Almost all the companies (be they in the experimental group or in the control group) took action to prevent being fined.

Figure 10: Percentage of employees involved in the re-inspection



In addition, the new inspection method raised the profile of 5xbeter. Companies in the experimental group were 18% more familiar with 5xbeter than companies in the control group. However, this effect did not translate into more companies availing themselves of 5xbeter's services (coaching, identifying things that could be improved).

Impact: *contribution to safer and healthier working conditions in the Netherlands*
Safe working conditions largely depend on human behaviour – not just the employer's or employees' behaviour, but the behaviour of occupational health and safety professionals, too. By paying attention to people's behaviour, the Netherlands Labour Authority, employers and employees can contribute to safer and healthier working conditions, and thus to employees' good health and safety.

Familiarising recent graduates with work placement rules

What kinds of advertisements attract more clicks and more visits to the website?

An online campaign was launched to raise recent graduates' awareness of the rules regarding post-graduate work placements, and also of the option of reporting underpayment. In all, six different advertisements were launched, featuring different behavioural techniques. A control advertisement without any behavioural techniques was launched, as well. The advertisements featuring behavioural techniques were clicked significantly more often than the advertisement without any behavioural techniques. The website of the Netherlands Labour Authority and Employment was visited by more recent graduates.

Why this experiment was conducted: *recent graduates are insufficiently aware of the rules regarding post-graduate work placements*

A study conducted by the Netherlands Labour Authority showed that recent graduates are insufficiently aware of the rules regarding post-graduate work placements. As a result, they may be underpaid, and they don't fight for their own interests and/or fail to report the potential underpayment to the Netherlands Labour Authority.

Type of intervention: *advertisements featuring behavioural techniques, posted on social media*

A LinkedIn, Facebook and Instagram campaign was developed to inform recent graduates of the rules regarding post-graduate work placements. Advertisements with and without behavioural techniques referred graduates to more information on the rules and also told them that they could report underpayment on the Netherlands Labour Authority's website. The following behavioural techniques were applied:

- eye-catching ads: the ads addressed the target group in an easy-going and informal way ('Hey intern!') and featured a playful image, which made the message more eye-catching. After all, people only have limited mental capacity to devote to advertisements.
- reciprocity: the advertisement showed that the team had made an effort to help the target group ('We've compiled a list of rules that may help you'). The idea behind this technique is that if someone has done something for you, you're more likely to do something in return.
- easily understandable phrasing: jargon was minimised and the text was written in B1-level wording so as to make it easy for the target group to read and understand the text.

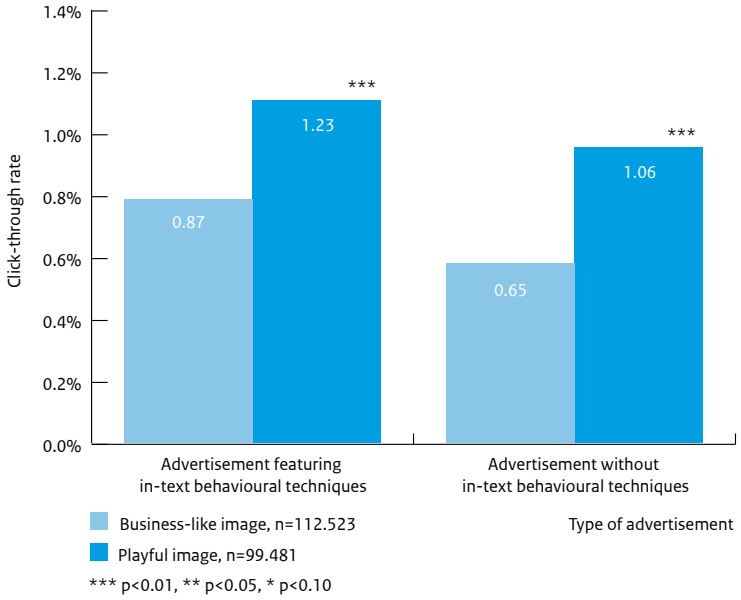
Image 9: Playful social media advertisement for interns

Method used: *field study with intervention and control groups*
Six different targeted advertisements were placed on LinkedIn, Facebook and Instagram. The ads were targeted to particular age groups and to young people working in industries where exploitation of interns is common. The ads were shown randomly within this target group, with the same frequency and at the same time. The target group populations were similar. Three different texts were used: one featuring several behavioural techniques, one featuring fewer behavioural techniques and one that did not feature any behavioural techniques at all. Two different images were used, as well: one business-like one and one playful one. The percentage of people who clicked the links to the website in the various ads was calculated by means of the PIWIK web analytics programme.

Result obtained: *the links in the ads featuring behavioural techniques attracted a higher click-through percentage*

The analysis showed that the application of behavioural techniques to both the texts of the ads and the images was effective. More recent graduates visited the website. The links in the advertisements with texts featuring behavioural techniques had significantly higher click-through rates than the advertisements with texts into which no behavioural techniques had been incorporated. Furthermore, the advertisement with the playful image had a significantly higher click-through rate than the advertisement with the more business-like appearance (they both featured a text into which behavioural techniques had been incorporated). This confirmed our hypothesis that the ad with the text featuring behavioural techniques and the playful image would get the highest click-through rate.

Figure 11: Differences in click-through rates in advertisements geared towards recent graduates



Impact: *more recent graduates are now aware of the rules governing work placements; less exploitation*

If more graduates become familiar with the rules, they will be better able to stand up for their own rights and/or report potential underpayment to the Netherlands Labour Authority and Employment, which will make them less likely to be exploited in post-graduate work placements and will stop companies from treating them unfairly.

Getting more employees to complete their timesheets on time

How do you get your employees to record the hours they have worked soon afterwards?

Many employees forget to complete their timesheets, or put off doing so. The Dutch Emissions Authority (NEa) conducted a study on this phenomenon. A carefully timed reminder email with a motivational message and a button with a direct link to the time-tracking tool may help employees do it in a timely fashion.

Why this experiment was conducted: *lazy timesheet completion continues to be an area of concern*

The NEa has drawn up several internal procedures to ensure that its accountability requirements are being met. One of those requirements is a weekly deadline for the recording of hours worked. Studies have shown that employees are well aware of why proper timesheet completion is important and that they really do intend to do it in a timely fashion. However, they sometimes forget to do so.

Type of intervention: *carefully timed and motivational reminder emails containing links*

Early every Monday morning, employees received a reminder email ('prompt') carrying a new, motivational message. The idea was for this email to be as close to the top of new emails in employees' inboxes as possible at the start of the new work week. The beginning of a new work week gives one fresh energy and is a good time to do the things one intended to do (timing). The email told the readers how many employees submitted their timesheets on time last week (social norm), and also complimented them on it, or encouraged people to be more mindful of it, depending on how many employees submitted their timesheets on time the previous week. Moreover, completing one's timesheet was presented in the email as an 'easy transition from the weekend to the work week' (framing), and readers were encouraged to do it at once, which would allow them to tick the first box on their weekly to-do list. To make the job a little easier, there was a call-to-action button at the bottom of the email, which was a direct link to the time-tracking tool (fluency).

Image 10: Reminder email containing a link allowing the employee to complete his/her timesheet early

<Wisselend onderwerp van de mail:

1. *Door nu gelijk te starten met tijdschrijven is de kans minder groot dat je het vergeet!*
2. *Start je werkweek met tijdschrijven, dan kan je die klus alvast afvinken!*
3. *Een nieuwe werkweek; maak een goede start door eerst je uren in SAP te registreren!*
4. *Heb jij je uren nog niet in SAP geregistreerd? Doe het nu gelijk even, dan ben je er vanaf!>*

Goedemorgen,

Vorige week was in de afdeling *<afdelingsnaam>* *<XX>* **% op tijd (= vóór** *<deadline>***) met tijdschrijven.**
<Bijpassend compliment / motivator toevoegen, bijvoorbeeld:

- *Dat is mooi, maar kunnen we beter!*
- *Heel mooie score, laten we dat volhouden!*
- *Wie helpt ons aan die laatste paar procenten?*
- *Een dipje ten opzichte van vorige week. Kan gebeuren. Laten we ons weer herpakken.>*

Tijdschrijven aan het begin van de werkweek blijkt de meest succesvolle routine te zijn.
Door hier mee te starten, creëer je tevens een ontspannen overgang van het weekend naar de werkweek.
Wil jij dat ook? Vul dan gelijk [redacted] even in, dan kan je je eerste klus van deze week alvast afvinken.

Naar [redacted]

Zie de bijlagen voor werkinstructies en tijdschrijfcodes. *<bijlagen toevoegen>*

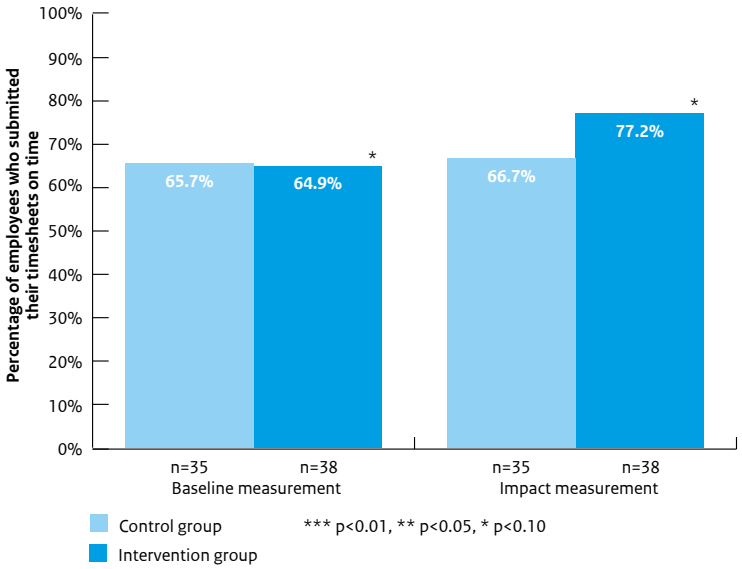
Dankjewel en een fijne werkweek gewenst!
Groeten, *<afzender>*

Method used: *field study involving one intervention group and one control group, with baseline and impact measurements*
All NEa employees were manually assigned to either group: the control group (n=35) and the intervention group (n=38). A baseline measurement was performed over the course of the three weeks before the experiment. The interventional technique was then deployed for three weeks in the intervention group, after which both groups' scores were analysed (impact measurement). The researchers compared the number of employees who recorded their hours before the weekly deadline set by the NEa in its regulations.

Result obtained: *there was a noticeable improvement, but there were too few experimental subjects to statistically demonstrate the impact.*
With such a small number of subjects, the impact cannot be statistically demonstrated. However, the analysis shows that during the three weeks the

interventional technique was used, the number of employees submitting their timesheets on time rose by 12%. In the control group, the number rose by 1%. A chi-squared test was carried out to compare the differences between the control and intervention groups. Although the impact was not significant ($p>0.05$), a trend could be discerned ($p<0.1$). Moreover, 20% of the intervention group indicated, without any prompting, that the reminder emails helped them.

Figure 12: Percentage of employees who submitted their timesheets on time



Impact: *other organisations may benefit from a similar approach*

Many organisations struggle to get their employees to record their hours properly. If inertia, procrastination and the extent to which employees are reminded play an important part in employees' failure to submit their timesheets, organisations may find it useful to send reminder emails like the ones used in this experiment. Given the positive results garnered in this experiment, this interventional technique is now used at other NEa departments, as well. A follow-up study will be required to statistically demonstrate the efficacy of the technique.

Choosing a degree programme with good job prospects

How does information on the job market affect the expectations and preferences of pupils in pre-vocational education?

A large online platform for career development and career counselling provided pupils who were attending pre-vocational colleges with information on the career prospects of professions in which they are interested. This information resulted in pupils revising their expectations, and made them more likely to aim for jobs with better career prospects.

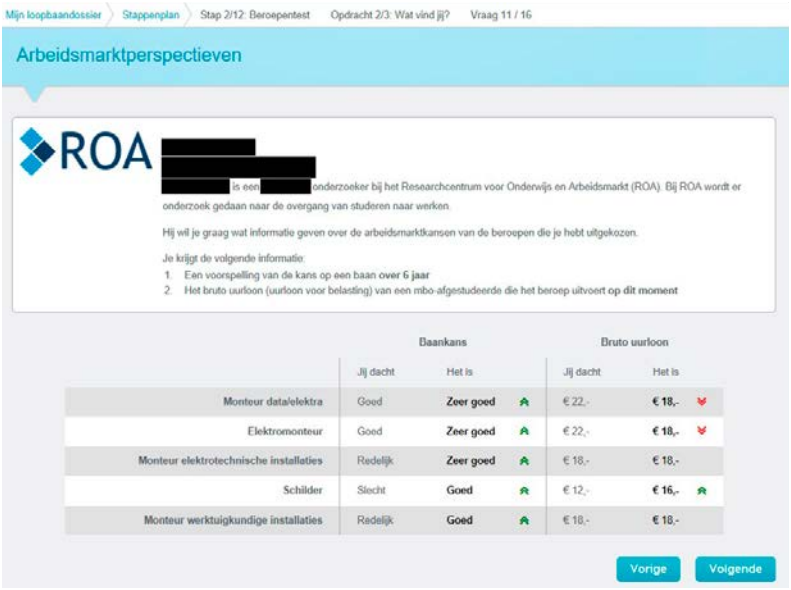
Why this experiment was conducted: *many pupils do not know much about the career prospects of graduates of particular degree programmes.*
Several academic studies have shown that pupils are badly informed about the career prospects provided by the various degree programmes and professions, notably how much they will be earning or how likely they are to find a job. Career counsellors tend to focus on pupils' skills and interests, but don't provide them with information on their career prospects. Without this kind of information, young adults cannot properly weigh the pros and cons of the degree programmes or professions they are considering.

Type of intervention: *information on the career prospects for various professions*
The purpose of the intervention was to give pupils attending pre-vocational colleges relevant information on the career prospects associated with the kinds of jobs they were interested in. Prior to the intervention, the pupils were asked the following questions:

- in which five types of jobs they were most interested
- in what order they would put these jobs, in order of preference
- what they expected their future job prospects to be like, and how much they expected to earn per hour.

Afterwards the pupils in the intervention group were given feedback regarding their expectations, telling them whether they had underestimated or overestimated their job prospects or hourly wages. (see figure 11) The information on their job prospects was taken from the labour market forecasts performed by the Education and Labour Market Research Centre. The information on the hourly wages was calculated on the basis of a Labour Force and Administrative Data Survey performed by Statistics Netherlands (CBS).

Image 11: Feedback on estimated job prospects and hourly wages

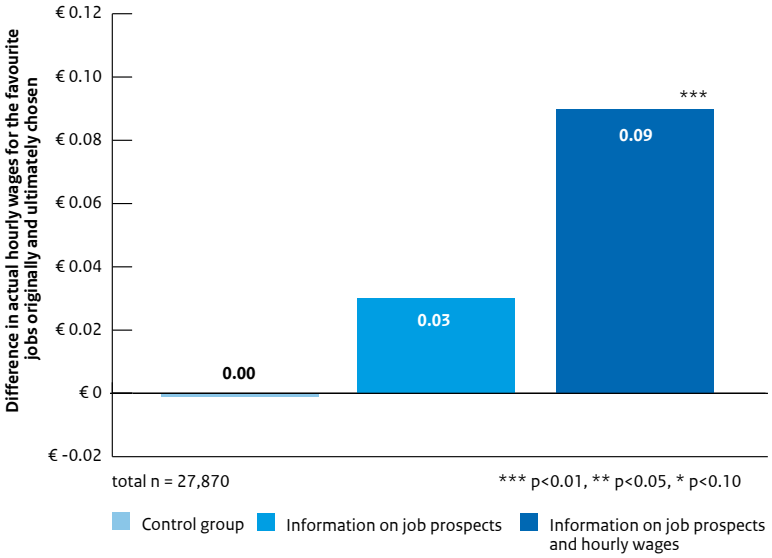


Method used: *RCT*
28,267 pupils attending pre-vocational colleges that are part of the Career Development and Career Counselling Platform were randomly allocated to three groups within their own schools: one control group and two intervention groups. The pupils in the control group were not given any information. The pupils in the first intervention group were only given information on their job prospects. The pupils in the second intervention group were given information on both their job prospects and their expected hourly wages.

Result obtained: *the pupils had more accurate expectations and their ranking of preferred professions changed*
After the intervention, the pupils were shown a short video, and they were asked once again to rank their top five preferred future professions and indicate what they thought their job prospects and hourly wages would be like in these jobs. The answers showed that the intervention was effective. Pupils who had received information on hourly wages on average were 89 cents closer to guessing the actual hourly wages for their chosen professions than pupils who had not received this type of information.

As Figure 13 shows, the intervention also affected pupils' preferences. The estimated hourly wages in the profession that ended up being the pupil's favourite were 9 cents higher in the intervention group than in the control group.

Figure 13: Difference in actual hourly wages for the favourite jobs originally and ultimately chosen



Impact: *information on career prospects of graduates from various degree programmes included in new method*

This intervention seemed to make the participating pupils of pre-vocational colleges more likely to take career prospects into account when choosing the degree programme they would do from a set of professions suited to their interests and skills. The intervention once again reminded the party that supplies the LOB platform that it is vital that relevant information on the labour market be provided. The supplier has included the regional job prospects for graduates of the various degree programmes in its revamped course guide. In addition, options are being explored for providing similar information to pupils attending secondary schools that prepare pupils for universities and universities of applied sciences.

More conscious student borrowing behaviour (I)

How does showing or not showing the maximum amount students are eligible to borrow affect students' borrowing decisions?

Does showing or not showing the maximum amount students can borrow from DUO affect new borrowers' decisions on loans? These are the questions the researchers sought to answer in this project. Outcome: if the maximum amount students are eligible to borrow is not mentioned, fewer students will opt for the maximum amount, which in turn also results in a lower average loan amount.

Why this experiment was conducted: *it appears that the way in which information is presented on the student loan application page matters*
A previous study showed that removing the tickable option 'borrow maximum amount' in 2014 from the loan application page resulted in the number of new students borrowing the maximum amount available to them being halved. Furthermore, the average amount borrowed fell by 9%. However, in 2019, the maximum amount that could be borrowed was still indicated next to the field in which new borrowers could enter the amount they wished to borrow. The researchers' hypothesis was that this might serve as an anchor and possibly encourage students to borrow greater amounts than they would have opted for if they had not been presented with that maximum amount. The Education Executive Agency (DUO) wanted a study to be conducted on this hypothesis.

Type of intervention: *the maximum amount for which the student is eligible is no longer mentioned next to the field in which the student enters the amount he/she wishes to borrow*
Figure 12 shows what the section of the loan application page used to look like. To the right of the field in which the amount is to be entered, the maximum amount for which the student is eligible is mentioned. The researchers chose not to specify this maximum amount on the loan application page for three intermittent three-week periods. If the loan applicant entered a monthly amount that exceeded the maximum amount for which he/she was eligible, this amount would automatically be replaced with the maximum amount. Outside the three periods during which the experiment was conducted, the maximum amount was mentioned on the loan application page.

Image 12: Student loan application page specifying the maximum amount for which the student is eligible

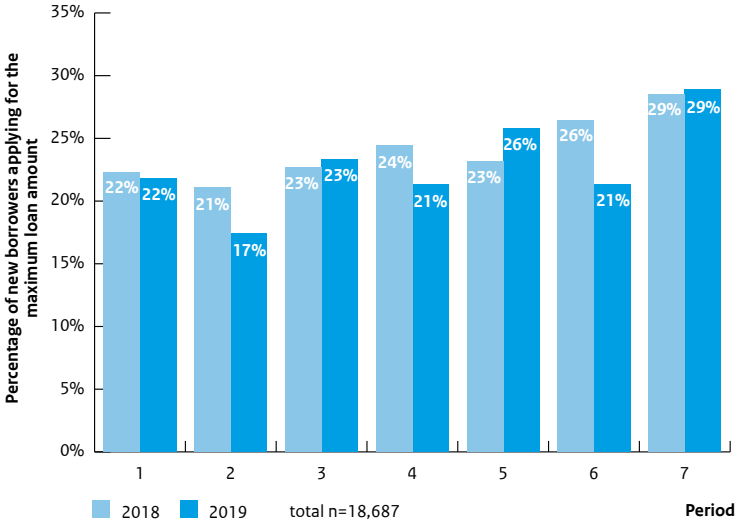
Method used: *quasi-experiment*
Since the MijnDUO environment does not allow for A/B testing, the team opted for a quasi-experimental research design. The impact of the intervention was measured using a so-called difference-in-difference regression method,[19]in which the periods with and without the information on the maximum amount students were eligible to borrow were compared with similar periods a year earlier.

Result obtained: *the percentage of students who borrowed the maximum amount was reduced, as was the average amount borrowed*
In situations where the maximum amount that could be borrowed was not indicated next to the field in which students could enter the amount they wished to borrow, the average amount students applied for fell by 5%. The loan amount was reduced by more than 20 euros per month. The percentage of students who borrowed the maximum amount fell from 23% to 19%, a relative reduction of 16%. Figure 14 clearly shows that the percentage of students who applied for the maximum amount was lower in 2019 than a year before in those weeks in which the maximum amount that could be borrowed was not specified (Periods 2, 4 and 6), while this was not the case in the weeks in which the maximum amount that could be borrowed was specified (Periods 1, 3, 5 and 7). The impact on the amount of the loan slightly decreased in the following months, but on average, there was still a 4% decrease in the loan amount applied for in the first three months. For reference, a 4% reduction in a €25,000 student loan debt means

[19] More information on the difference-in-difference technique can be found in 'Hoe is gedrag te onderzoeken? Overzicht van 18 onderzoeksmethodieken voor effectiever beleid', published by BIN NL (2019).

that the debt is reduced by €1000. The impact is most pronounced in the loans applied for by male students and students attending universities of applied sciences.

Figure 14: The percentage of students applying for the maximum loan amount decreased in 2019 periods during which the maximum loan amount was not specified (Periods 2, 4 and 6).



Impact: *the loan application page was revised*

The project showed, once again, that the online environment in which students make their decisions affects their financial behaviour. The study results prompted DUO in the summer of 2020 to stop specifying the maximum loan amount on the student loan application page, thus preventing an undesirable anchoring effect on students' decisions regarding their loans.

More conscious student borrowing behaviour (II)

Does information on the long-term consequences of student loans help students make more conscious decisions?

The Education Executive Agency (DUO) sent students three different versions of one letter containing information on the consequences of their current borrowing behaviour. The letter featuring the most extensive information (overall debt amount upon graduation, monthly repayment amount and the age until which students will be repaying) resulted in the greatest (downward) adjustment of the amount borrowed.

Why this experiment was conducted: *there were reasons to believe that students were not making conscious decisions with regard to their loans*

Previous studies suggested that some students were not very conscious of the consequences of their borrowing behaviour. For instance, 36% of students indicated that they would be OK with a smaller loan, 31% indicated that they had taken a look at the maximum amount they would be able to borrow and decided to borrow that amount, and 12% indicated that they rarely stop to consider the long-term financial consequences of their loan (Nibud Student Survey, 2017). DUO and the Ministry of Education, Culture and Science wished to further examine the impact an understanding of the consequences of borrowing might have on students' borrowing behaviour.

Type of intervention: *three different letters and an email sent to students who were borrowing money*

This project was targeted at students who are borrowing money as part of the current student loan system. Four different types of interventions were developed:

- Email: an email without personalized information
- Letter No 1: a letter without personalized information
- Letter No 2: a letter in which students received information on their current student loan debt amount and their estimated student loan debt amount upon graduation
- Letter No 3: a letter in which students received information on their current student loan debt amount and their estimated student loan debt amount upon graduation, the monthly amount to be repaid and the age at which they are expected to have repaid the full loan amount (see Figure 13).

Figure 13: Letter No 3, which contained the most extensive information on the consequences of students' loans

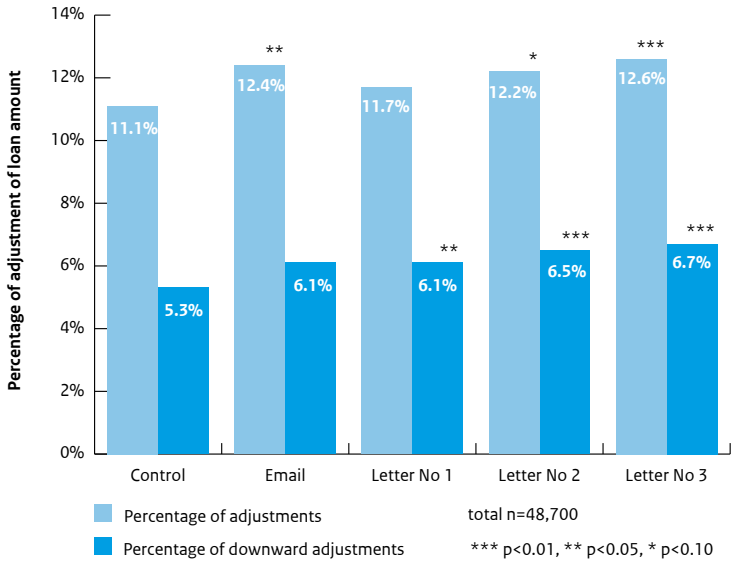
In addition, the email and all three versions of the letter contained a link to a calculation tool on DUO's website, as well as a four-step plan showing how quickly and easily students would be able to adjust their monthly loan amount. The calculation tool (see Figure 14) would show students at a glance what kind of consequences an adjustment of their monthly loan amount or repayment period would have for their eventual student loan debt amount and the amount to be repaid each month.

Image 14: Impression of the calculation tool showing the consequences of an adjustment of a student's loan

Method used: *RCT*
The various types of interventions were tested in a randomised controlled trial. A total of 48,700 students were randomly allocated to the five conditions: no message (control group), email or one of the three types of letters (intervention groups).

Result obtained: *14% more loan amount adjustments, and 26% more downward adjustments*
Letter No 3 had the greatest impact on students' borrowing behaviour. This letter resulted in 14% more adjustments (12.6% versus 11.7%) and 26% more downward adjustments (6.7% versus 5.3%), compared to a situation in which there were no communications on the subject. In other words, students decided to borrow less money. On average, letter No 3 resulted in the monthly loan amount being reduced by €4.50 more than in the control condition (-€7.16 versus -€2.71). The online calculation tool was used most often by the group of students who received the email. The researchers also found that the more information was provided in the letter, the less likely students were to use the calculation tool.

Figure 15: Difference in percentage of adjustments and percentage of downward adjustments of the loan amount between conditions



Impact: *students are more aware now of how much they are borrowing*
The results of this project suggest that giving students an understanding of the consequences of their borrowing behaviour causes them to borrow money more consciously. The extent to which the interventions impact students' eventual loan debt amount (and possibly the likelihood of their successfully completing their degree programmes) is as yet unknown. At the time of writing (November 2021), no follow-up study had yet been conducted.

Reducing the number of students who do not apply for a supplementary grant (I)

How can behavioural techniques result in more students applying for a supplementary grant?

A quarter of students who are entitled to a supplementary grant fail to apply for one. To what extent can we get potentially eligible students to apply for such grants by sending students in their final year of secondary school emails featuring different types of behavioural techniques?
The researchers found that a 'cocktail intervention' was most effective: providing basic information as well as information to reduce fear of borrowing and fear of the perceived complexity of the procedure.

Why this experiment was conducted: *many eligible students fail to apply for a supplementary grant*
A study conducted by the Netherlands Bureau for Economic Policy Analysis (CPB) in 2020 showed that approximately one quarter of first-year students attending higher education institutions had not applied for a supplementary grant even though they were eligible for one. Moreover, the study showed that some 40% of the students who had not applied for a supplementary grant did have a student loan. This suggests that these students are missing out on something good. After all, supplementary grants are a conditional loan they must only repay if they fail to graduate within ten years, whereas a student loan must always be repaid, regardless of whether the student successfully completes his or her degree programme. In this project, the Education Executive Agency (DUO) and the Ministry of Education, Culture and Science examined which behavioural techniques are most effective in getting eligible students to apply for a supplementary grant.

Type of intervention: *four different emails to students in their final year of secondary school*
Judging from a literature review, the three main reasons why people fail to available themselves of special arrangements are the following: lack of knowledge, perceived complexity of the application procedure, and psychological 'costs' such as stigma and perceived risks. The researchers drew up four different emails designed to address one or several of these main arguments:

- basic information email: an email presenting pupils with basic information on supplementary grants, thus providing them with some knowledge of the subject, and several behavioural interventions, such as adding a personal touch to the email ('dear [first name]'), adding some salience (a visually

striking step-by-step plan) and making the students an attractive offer (mentioning the maximum amount of the supplementary grant).
- reducing pupils' fear of borrowing money: a combination of the basic information email and a passage designed to reduce the perceived risk of having to repay the supplementary grant. 'Like the pre-paid public transport chip card all students receive, supplementary grants are performance-based grants, meaning that you don't have to repay the money if you graduate within 10 years. The vast majority of students manage to do that. If you don't manage to graduate within 10 years, you will only be held to repay the amount if your income allows you to do so.'
- reducing fear of a complex procedure: a combination of the basic information email and a sentence designed to reduce fear of the perceived complexity of the application procedure. 'If you are having difficulty estimating whether you're entitled to a supplementary grant, then by all means apply for one. Once you have applied, DUO will check your eligibility for you.'
- cocktail: a combination of the basic information email and the techniques designed to reduce both the fear of borrowing and the fear of the perceived complexity of the application procedure.

Image 15: Five conditions of the behavioural experiment designed to get students to apply for a supplementary grant

Condition	Information presented in the email / behavioural techniques used	Total n=22,558
No email (control group)	not applicable	4,832
Email containing basic information and basic techniques ('basic information email')	• Student addressed by name at start and end of email • Emphasis on the existence of the scheme • Emphasis on the maximum amount in a visually striking way • Information on the percentage of students eligible for a grant • Emphasis on the fact that some eligible students fail to apply • Eye-catching step-by-step plan	4,430
Basic information email + fear of borrowing	• 'The vast majority of students manage to graduate within 10 years.' • 'If you don't manage to graduate within 10 years, you will only be held to repay the amount if your income allows you to do so.'	4,430
Basic information email + fear of complex procedure	• 'If you are having difficulty estimating whether you're entitled to a supplementary grant, then by all means apply for one.' • 'Once you have applied, DUO will check whether you are eligible.'	4,441
Basic information email + fear of borrowing + fear of complex procedure ('cocktail')	Combination of all the aforementioned interventions	4,425

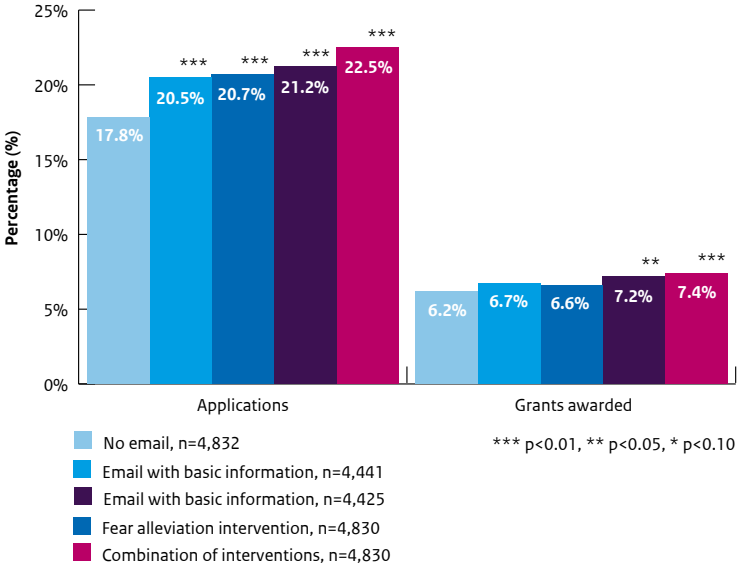
Method used: *RCT*
The team designed a randomised experiment with five conditions: no (additional) email and the four different emails The population consisted of all students in their final year of secondary schoolstudents who had not yet applied for a supplementary grant by early May 2020 and who were known to DUO because they had applied for a grant for students in their final year of secondary school aged 18 and over. The prospective students were randomly assigned to the five conditions. After two months, the following things were determined for each condition:

- whether the students had applied for a supplementary grant
- whether the application had been granted, and if so, how much the pupils would be receiving
- whether the students had applied for a student loan, and if so, the monthly loan amount they applied for
- the loan amount DUO had awarded

The impact of the various types of interventions was estimated by means of regression analyses, controlling for differences in students' background characteristics.

Result obtained: *the number of grant applications rose by 25%, and the number of grants awarded rose by 20%*
Two months after the intervention, the combination of the basic information email and the interventions designed to alleviate both the fear of borrowing and the fear of the complexity of the application procedure was found to be most effective. This 'cocktail' increased the number of applications for a supplementary grant as well as the number of grants awarded. The chances of high school students applying for a grant rose by 25% compared to the group that did not receive an email, and by 10% compared to the group that only received the basic information email. As far as grant awards are concerned, the cocktail made students 20% more likely to be awarded a grant than students who did not receive an email, and 16% more likely than students who only received the basic information email.

Figure 16: Impact of various behavioural techniques incorporated into an email on the percentage of supplementary grant applications and the percentage of supplementary grants awarded



Moreover, the cocktail reduced the likelihood of pupils applying for a loan by 6%, which will probably positively affect the amount they will have to repay after their degree programme.

Impact: *realisation that more students who have not applied for a supplementary grant can be reached*

As a follow-up to this successful experiment, DUO decided to apply the cocktail intervention to a much larger group of current students who have not applied for a supplementary grant. See the follow-up experiment (II).

Reducing the number of students who do not apply for a supplementary grant (II)

What is the best way to apply the behavioural techniques: by email or by a physical mail?

Some students who are entitled to a supplementary grant fail to apply for one. A previous study showed that behavioural techniques can help us get prospective students to apply for a grant. Is the same thing true for current students? And if so, which method is more effective: an email or a regular letter? We found that a letter was more than twice as effective as an email, and that even students who are already attending a university were more likely to apply for a supplementary grant.

Why this experiment was conducted: *too few students are applying for a supplementary grant*

A previously conducted study showed that approximately one quarter of first-year students attending higher education institutions had not applied for a supplementary grant even though they were eligible for one (Netherlands Bureau for Economic Policy Analysis (CPB), 2020). Moreover, the CPB's figures showed that some 40% of the students who have not applied for a supplementary grant do have a student loan. This suggests that these students may be missing out on something good, because loans always have to be repaid, whereas supplementary grants only have to be repaid if a student fails to graduate within 10 years. A previous experiment involving behavioural insights applied to prospective students (see I above) showed that an email featuring a cocktail of behavioural techniques could reduce the number of students who fail to apply for a supplementary grant. In this follow-up project, the researchers examined whether such a cocktail might also prove effective with current students, and whether a different communication method (physical mail rather than email) would make a difference.

Type of intervention: *a letter or email containing the same behavioural techniques*

A letter and email featuring behavioural techniques were drawn up. They are identical content-wise to a successful email that was sent to prospective students in a previous project and build on that email. That email contained several fundamental techniques, as well as a few lines designed to alleviate students' fear of borrowing and fear of the perceived complexity of the application procedure. The following techniques were added:

- loss aversion: 'One in four students who are entitled to a supplementary grant fail to apply for it'
- a small clock symbol saying 2-3 minutes (which also qualifies as reducing the perceived complexity of the procedure)
- addressing the (possibly incorrect) idea students may have that they are not eligible for a supplementary grant or will only be awarded a small supplementary grant: 'Even if your parents earn a relatively high income, you may still be eligible for a supplementary grant' and 'The more siblings you have who are in school, the higher the amount of your supplementary grant'

Image 16: illustration of the opening paragraph of the email featuring behavioural techniques


Beste <%[attr:First Name]|student%>,

Een op de vier studenten met recht op een aanvullende beurs, laat deze liggen. Misschien heb jij er ook recht op en hoef je daardoor minder te lenen. Zorg dat je geen geld misloopt en vraag de aanvullende beurs vandaag nog aan. Wij berekenen dan of je er recht op hebt.

De aanvullende beurs in het kort:

- De aanvullende beurs is, net zoals je studentenreisproduct en basisbeurs, een prestatiebeurs. Als je binnen 10 jaar je diploma haalt, wordt het een gift. Bij ruim 8 van de 10 studenten lukt dit. Als je niet op tijd je diploma haalt, dan betaal je alleen terug als je inkomen hoog genoeg is.
- De aanvullende beurs kan wel € 381,- per maand zijn.
- Je hebt sowieso recht op het maximale bedrag als je ouders minder dan € 37.583 per jaar verdienen. Hebben je ouders een hoger inkomen, dan kun je misschien toch nog een gedeeltelijke aanvullende beurs krijgen.
- Hoe meer schoolgaande broers of zussen, hoe hoger je aanvullende beurs.

Method used: *RCT*

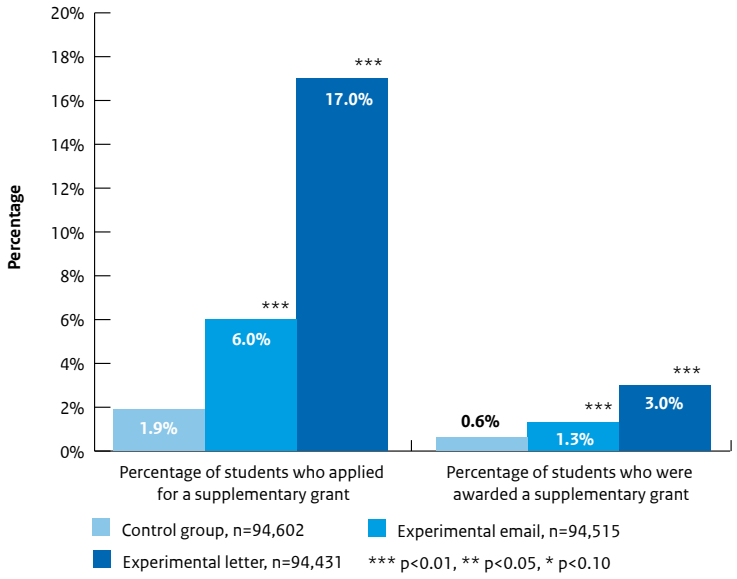
The various types of interventions were tested in a randomised controlled trial. As part of this experiment, 283,552 students were selected who might be entitled to a supplementary grant, but had not applied for one. The experiment targeted students attending both post-secondary intermediate vocational education and higher education institutions. The students were randomly allocated to one of three conditions: control group (no message), email featuring behavioural techniques or letter featuring behavioural techniques.

Result obtained: *nearly three thousand additional grants awarded; the letter proved more than twice as effective as the email*

In all, the action prompted more than 18,000 additional students to apply for a supplementary grant, and 2,830 additional applications were honoured. On average, the students who saw their applications honoured were awarded an additional €200+ per month. The letters proved a great deal more effective than the emails: they generated 2.8 times more applications, as well as 2.3 times more grants awarded. This is clearly reflected in Figure 17. Compared to the control group, the letters generated 8.8 times more grant applications, and 4.6 times more grant awards, whereas the emails generated 3.1 times more grant applications and 2.1 times more grant awards (compared to the control group).

Furthermore, the amounts students were borrowing decreased for students who were already borrowing money and applied for and were awarded a supplementary grant due to the experimental email or letter they received. However, the amounts of the loans were reduced by a smaller amount than the amount of the supplementary grant. This resulted in the total amount of student finance these students were receiving rising by 10% (for students who received the letter) or 16% (for students who received the email), which may be due to inertia.

Figure 17: Impact on percentage of supplementary grant applications and percentage of supplementary grants awarded generated by the experimental letter and email, versus no additional communications on the subject



Impact: *more students applied for and were awarded a supplementary grant*

The project resulted in nearly 3,000 additional students being awarded a supplementary grant. It has been estimated that a letter featuring behavioural techniques may solve 15% of the total non-use of the supplementary grant by eligible higher education students, whereas the email may solve 5% of total non-use by eligible higher education students. DUO intends to send the email featuring behavioural techniques every autumn to all new students who have not applied for a supplementary grant. They are also considering sending the letter featuring behavioural techniques to all students at the end of the academic year. In addition, the information provided on the website and on the student finance application page has been revised, and a few behavioural techniques used in this experiment and its predecessor have been added.

Reducing the number of unnecessary phone calls to DUO

How can we motivate students to take care of their affairs themselves or use online channels?

Many post-secondary intermediate vocational education (MBO) students call DUO whenever they have a question because they have a psychological need to talk to a real person. How can we reduce the number of unnecessary phone calls DUO receives? This project was established to test three different nudges on DUO's website, on the page that provides information on tuition fees. These nudges resulted in the number of visits to DUO's contact page being reduced by 50 to 70%.

Why this experiment was conducted: *MBO students tend to make relatively many phone calls to DUO*

An analysis of DUO's figures showed that MBO students call DUO more often than students in university and higher vocational education. Further behavioural analysis in the form of a survey taken by 1,510 respondents showed that MBO students are more likely than higher education students not to understand information when they look for it themselves, and more likely to doubt that the information they have found on MijnDUO is correct. The two main behavioural factors causing MBO students to call DUO relatively often are low self-efficacy (faith in one's own ability) and a high need for closure, a psychological concept that denotes a need for certainty. These factors were identified in an extensive behavioural analysis based on conversations with employees working at DUO's customer contact centre. Furthermore, the researchers listened in on conversations and analysed the answers to the aforementioned survey.

Type of intervention: *three different nudges on the tuition fee information page on DUO's website The behavioural factors were addressed in three different 'nudges' on the tuition fee page for MBO students , which were incorporated into eye-catching sidebars:*

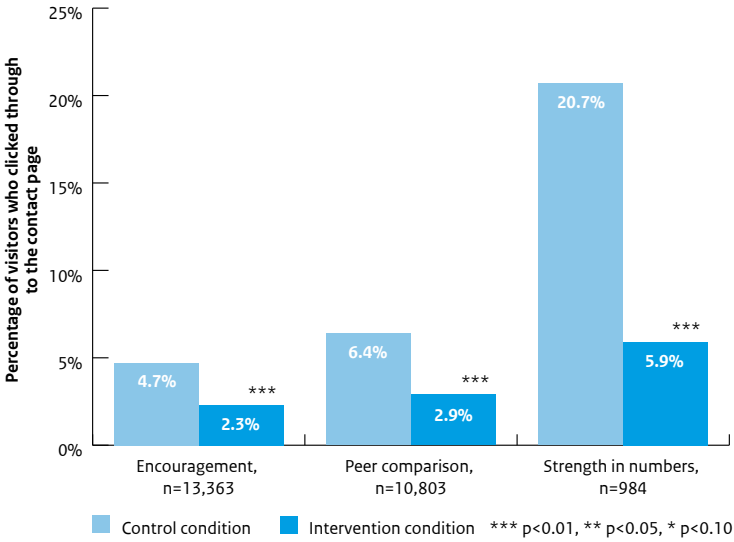
- encouragement: 'It's great that you're taking the time to read this! You will find all the information you need on tuition fees on these pages.'
- a look at how their peers fared: 'I found all the information I needed on tuition fees here. It's great to know that I can arrange everything myself now.' – Carlissa
- strength in numbers: 'This information applies to 90 per cent of MBO students.'

Image 17: Nudge presented on the tuition fee information page for MBO students (see eye-catching green sidebar)

Method used: *A/B testing*
The three nudges were tested consecutively by means of three consecutive A/B tests carried out in three different periods. During each one-week period, visitors of the tuition fee page were randomly assigned to a nudge group or the control group. Students assigned to the control group were shown the regular web page, whereas students assigned to the nudge group were shown the page with the one intervention for that week. In all, 25,150 people visited the tuition fee information page over the course of the three tests. The researchers compared the number of visits to the number of people who visited DUO's contact page.

Result obtained: *Number of visits to DUO's contact page reduced by 50 to 70%*
The nudges resulted in the number of visits to DUO's contact page being reduced by 50 to 70%. In the encouragement condition, the number of page visits was reduced by 51%, in the peer comparison condition by 54%, and in the strength-in-numbers condition by 71%. On average, the three nudges resulted in a 65% reduction in the number of page visits.

Figure 18: Different behavioural interventions reduced the click-through rate from the tuition fee information page to DUO's contact page.



Percentage of visitors who clicked through to the contact page

Impact: *number of phone calls could not be measured*

The project resulted in the number of visits to the contact page on DUO's website being substantially reduced. Unfortunately, the impact on the percentage of customers who opted for the 'phone call' contact option on the contact page and on the percentage of customers who actually rang DUO could not be determined because of technical measurement issues.

Getting students to pay their tuition fees on time

How do we encourage students attending post-secondary intermediate vocational education to pay their tuition fees on time?

Two behavioural experiments show that letters and emails featuring behavioural techniques are highly effective in encouraging post-secondary vocational education (MBO) students to pay their tuition fees in a timely manner. The first behavioural experiment resulted in the number of on-time payments increasing by 8%, while the second behavioural experiment later on in the process resulted in the number of students who arranged for the payment of their tuition fees increasing more than five-fold.

Why this experiment was conducted: *many MBO students fall behind in the payment of their tuition fees*

In the 2017-2018 academic year, 18% of MBO students did not pay the tuition fees they owed on time. This amounts to approximately 40,000 students. Despite several payment reminders, about 7% (i.e. 16,000 students) had to be contacted by a debt collection agency. DUO would like to prevent students from falling behind in their payments, as well as avoid the fees charged by the debt collection agency. Behavioural analysis shows that MBO students' payment behaviour is affected by several factors: procrastination due to obstacles in the payment process (e.g. logging into MijnDUO), the fact that messages are hard to understand, their attitude towards paying bills, lack of funds and lack of a course of action when funds are low.

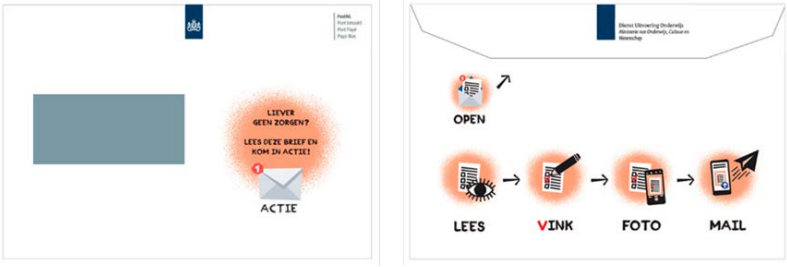
Types of interventions: *emails, letters and an envelope featuring behavioural techniques*

The team developed interventional techniques to be used in two experiments:

- In the *timely payment* experiment: an email featuring behavioural techniques and a reminder nudge. The email sought to prevent procrastination by creating a sense of urgency in the text: 'Make arrangements right now!' Furthermore, some obstacles in the payment process were removed, e.g. logging into MijnDUO, and the email was given a personal touch and made easier to read, more relevant and more eye-catching. The reminder nudge was sent by way of reminder a week before the payment was due.
- In the '*Prevention of debts being passed on to debt collection agency*' experiment: a letter and envelope, both featuring behavioural techniques. The letter presented information on tailor-made solutions and a course of action in the event of a lack of funds, with three types of payment arrangements, two of which involved a reduced monthly repayment amount. In addition, the letter

was sympathetic to the recipient: 'Would you rather not have any worries about your tuition fees?' and 'We'll be very happy to help you'. Furthermore, it was made very easy for students to apply for a payment arrangement. Other techniques used: anchoring, making messages eye-catching, giving messages a personal touch, loss aversion, scarcity and reciprocity.

Image 18: Front and back of an envelope featuring behavioural techniques



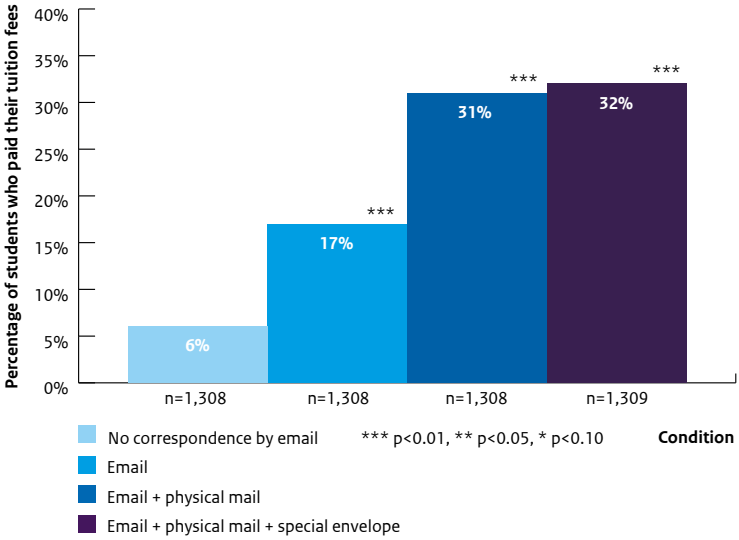
Method used: *RCT*
We set up a randomised controlled trial for both experiments. In both experiments, students were randomly assigned to either the control group or to one of three intervention groups.

Result obtained: *more timely tuition fee payments; the number of students who caught up on their payments increased five-fold*
Timely payment experiment: students who received the email featuring behavioural techniques took the necessary steps to pay their tuition fees more quickly than students who received the regular email. In the first week following receipt of the email, 25% and 22% of the students who had been targeted, respectively, made the necessary arrangements. In the long run, the email featuring the behavioural techniques did not result in more students making their payments before the due date. However, the reminder nudge did result in more timely tuition fee payments (67%) compared to the condition in which the students did not receive a reminder nudge (62%).

Prevention of debts being passed on to debt collection agency experiment: the letter featuring behavioural techniques was highly effective in getting students to pay outstanding tuition fee amounts that really should be collected by the Central Judicial Debt Collection Agency (CJIB). Compared to the no-letter condition, the letter (sent by email) resulted in a tripling of the number of students who

arranged for the payment of their tuition fees (which is to say they either paid the outstanding amount in full or entered into a payment arrangement): 17% versus 6%. If the letter was sent by both physical mail and email, the number of students who arranged for their tuition fees to be paid after all more than quintupled, both with a letter sent in a regular envelope (31%) and with a letter sent in an envelope featuring behavioural techniques (32%).

Figure 19: Difference in percentage of MBO students who arranged for the payment of their tuition fees (i.e. paid the outstanding amount in full or entered into a payment arrangement)



Impact: *fewer debts passed on to debt collection agency CJIB*

In order to prevent students from falling behind in their payments, the reminder nudge will from now on be emailed to all students who have not arranged for the payment of their tuition fees one week before the due date. In addition, the tuition fee payment procedure has been simplified. For instance, students are now allowed to pay their tuition fee directly by making use of the electronic payment platform iDEAL. The messages have been simplified, as well, and a greater sense of urgency is created in the body of the message.

Furthermore, DUO will from now on send (by email and by post) the letter featuring the behavioural techniques to all students whose outstanding debts should really be passed on to the CJIB. In all, the experiment prevented 1,115 debts from being passed on to the CJIB, 811 of which were prevented from being passed on to the debt collection agency because of the behavioural intervention. Without the behavioural intervention, nearly 6% of the outstanding debts were paid, after all; with the intervention, this number rose to over 26%, which is almost 4.5 times as much. In other words, the intervention prevented a lot of debts from having to be collected by a debt collection agency.

Getting people who are repaying a student loan to notify that they have a partner

How can we get people making use of a reduction of their monthly student debt repayment amount to tell the student loan provider that they have a partner?

People with a student loan debt that are making use of reduced monthly repayment on the basis of their income must notify DUO if they have a partner. A letter and email featuring multiple behavioural techniques caused the number of debtors who did so to rise by 16%-34 percentage points, compared to debtors who did not receive the letter and email. As a result, substantially fewer debtors were wrongfully on a reduced repayment plan and monthly repayment amounts were increased.

Why this experiment was conducted: *some people misuse the reduced repayment plan*
In 2018, the Education Executive Agency (DUO) performed a spot check which showed that some debtors who are on a reduced repayment plan and have a partner fail to notify DUO of their partner and their partner's income. In such cases, DUO is unable to include the partner's income in the calculation of the debtor's overall income, meaning that debtors are often repaying less than they should be repaying. Behavioural analysis presented several psychological characteristics that may explain why people fail to report their partner:

- students have cognitive limitations due to inertia and lack of funds
- the target behaviour requires several steps to be taken
- DUO's messages are not reaching the debtors
- debtors find themselves in a situation where they can easily fail to report their partner
- default messages that are clearly automated, unspecific and unclear.

Type of intervention: *letter and email featuring multiple behavioural techniques*
The intervention consisted of a letter and email in which the debtor was asked to supply information about his/her partner and the income of his/her partner, provided the debtor had a partner. These letters and emails were sent to debtors who were suspected of being very likely to have a partner. The behavioural techniques used included the following:

- easily scanned headlines and an activating title
- an explanation of the definition of a 'partner' and the reason why debtors are required to pass on the names of their partners
- a specific, visualised course of action with an indication of the amount of time needed to report the partner and the partner's income.

Image 19: illustration of the first page of the letter featuring behavioural techniques

Datum: 27 mei 2019
Betreft: We missen belangrijke gegevens van u.

Geachte heer [achternaam],

Op basis van onze gegevens hebben we geconstateerd dat u met iemand samenwoont. U heeft daardoor mogelijk een partner. Het hebben van een partner kan invloed hebben op het bedrag dat u maandelijks af moet lossen op uw studielening. Afhankelijk van het inkomen van uw partner kan dit bedrag hoger of lager zijn. Dit is een van de redenen waarom u altijd uw partner moet doorgeven aan DUO.

Iemand met wie u samenwoont is uw partner als:
- U getrouwd bent of geregistreerd partner
- U samen een koophuis hebt waarin u samen woont
- U een samenlevingscontract hebt
- U samen een kind hebt, of een kind van de ander hebt erkend
- Op uw adres een minderjarig kind woont van wie een van u de ouder is
- U elkaars pensioenpartner of fiscale partner bent

In afwijking van bovenstaande bent u géén partner als u met één van uw ouders woont en jonger bent dan 27 jaar óf als u alleen met uw kind woont en uw kind jonger is dan 27 jaar.

Heeft u een partner?
Geef dit vóór 15 juni 2019 door via Mijn DUO. Als u geen partner heeft hoeft u niets te doen.

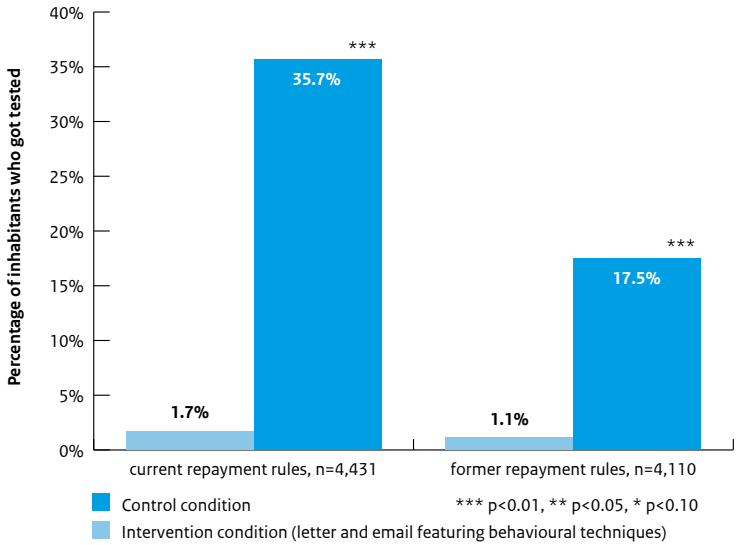
Heeft u nu geen tijd om actie te ondernemen? Prik dan een moment in uw agenda voor later vandaag of morgen.

Method used: *RCT*

The experiment was conducted by means of a randomised controlled trial in which two groups of students participated: debtors who were subject to the former repayment rules (they were allowed to decide for themselves whether their partner's income should count towards their repayment amount) and debtors who were subject to the current repayment rules (whose partner's income always counts towards the repayment amount, from the moment they report being in a relationship). In each sub-group, the selected debtors were randomly allocated to either the control condition (neither letter nor email) or the intervention condition (both letter and email). A total of 8,541 debtors were included in the behavioural experiment. Three months after the intervention, the relationship statuses they had reported were compared.

Result obtained: *the number of reports of a partner increased by 16 to 34 percentage points*
The behavioural techniques proved effective. For the group that was subject to the former repayment rules, the number of reports rose by 16 percentage points. For the group that was subject to the current rules, the effect was more than twice as large (34 percentage points increase).

Figure 20: Differences in the percentages of students who reported their partners between the intervention group (letter and email featuring behavioural techniques) and the control group (neither letter nor email)



Impact: *number of people on reduced repayment plan reduced*
The intervention caused more partners to be reported and the partners' income to count towards the repayment amount more often. As a result, fewer people are now on a reduced repayment plan. In students subject to the current rules, the decrease amounted to 24%, whereas in students subject to the former rules, the decrease amounted to 4%. This resulted in higher monthly repayment amounts: 36% higher (current rules) and 9% higher (former rules). As a result, it has become far less likely that debts of former students (particularly those subject to the current rules) will be waived at the end of their repayment period.

Ensuring that fewer parents are required to repay the childcare benefit they have received

How can parents be encouraged to report changes to their income or childcare hours?

In order to ensure that parents report relevant changes in a timely manner, an intervention was developed following an extensive behavioural analysis, consisting of a leaflet and an accompanying letter. This intervention was supposed to make it easier for parents to follow the steps they were supposed to take. It was effective: those parents who had received the letter and leaflet were more likely to log into the 'Mijn Toeslagen' (My benefits) portal than other parents. Moreover, they were more likely to report changes to their income or childcare hours.

Why this experiment was conducted: *parents were obliged to repay the childcare benefit they had received*

In the current benefit system, a substantial number of parents who receive a childcare benefit are required to repay some of that amount at the end of the year. In many cases, the amounts they are ordered to repay are quite high – up to several thousands of euros. The amount of benefits they receive depends on several factors, including their income and the number of hours their child spends at a childcare centre ('childcare hours'). This being the case, it is vital that parents report changes to their income or to the number of hours their child is expected to spend at the childcare centre in a timely manner. If they fail to do so, the benefit the government pays them will be too high, meaning they will have to repay some of it later.

Type of intervention: *leaflet and cover letter*

In association with a behavioural science agency, the Benefits Department developed an intervention based on an extensive behavioural analysis. For instance, parents may experience cognitive scarcity – in general, but particularly when there are significant changes to their circumstances. This may make actions that might seem simple to most of us, such as understanding an instruction or finding additional information, even more challenging. If the system for reporting changes is unclear, too, this may cause them to refrain from taking action. In the event of changes to their income, people may be unsure what exactly their income for the childcare benefit is (a complex calculation), and they may also be unsure as to how much they will earn in the next year. The intervention addressed this type of uncertainty.

A leaflet and accompanying letter were sent to provide parents with correct information. They explained how parents could check the information on record for them, and how they could change it if necessary. Visual elements were added to make the information more readable and more readily understood. In addition, an extensive step-by-step plan was included to make it easier for parents to take action.

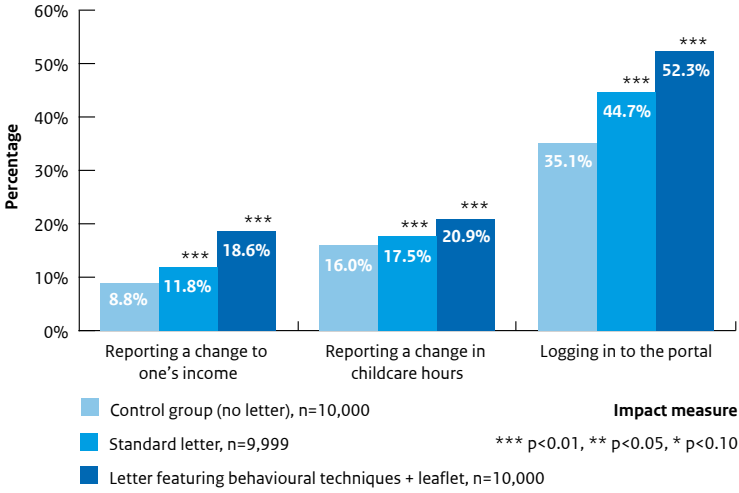
Image 20: Leaflet on how to check the data on record with regard to the childcare benefit

Method used: *RCT*
A randomised controlled trial was performed to determine the impact of the intervention. As part of the trial, the effect of the leaflet and cover letter (n=10,000) was compared with the effect of a standard letter (n=9,999) and a control group consisting of parents who did not receive a letter featuring an intervention (n=10,000). The parents were randomly assigned to the various conditions. The Dutch Tax and Customs Administration's systems then told the team whether the parents had logged into the Mijn Toeslagen ('My benefits') portal, and whether they had changed their income and/or childcare hours.

Result obtained: *more changes were reported*
Parents who had received a letter containing information on how to report changes were more likely to log into the Mijn Toeslagen portal (standard letter: 44.7%; cover letter and leaflet: 52.3%) than parents assigned to the control

condition (35.1%). They were also more likely to report changes to their income (standard letter: 11.8%; cover letter + leaflet 18.6%; control condition: 8.8% and childcare hours (standard letter: 17.6%; cover letter + leaflet: 20.9%; control condition: 16.0%). In other words, both letters had an impact, but the impact was particularly pronounced with the combination of the cover letter with behavioural techniques and the leaflet.

Figure 21: Increase in target behaviour due to a combination of a leaflet and a letter featuring behavioural techniques versus no letter and a standard letter



Impact: *recovery of overpaid benefits prevented, and possibly debts, too*

Since the Benefits unit pays benefits in advance, it is vital that each relevant change to one's circumstances be reported, since it affects the amount of benefit one is entitled to. People are requested to report many changes, which makes it easy for them to forget or miscalculate things. This project helped people estimate the amount of their benefit in such a way that no overpaid amounts need be recovered, or, if an overpaid amount had to be recovered, it is only a small amount. In the end, the project can prevent the recovery of overpaid sums, and may also prevent people from falling into debt.

Responsible mortgage amounts

Does the indication of people's borrowing capacity unintentionally determine the choices consumers make, and if so, how do we stop this from happening?

When consumers can see the maximum amount they are allowed to borrow for a mortgage, they may be encouraged to borrow a greater amount than strictly responsible. This study showed that indications of people's borrowing capacity do indeed serve as an anchor. The interventional techniques studied only went a short way to combatting this anchoring effect.

Why this experiment was conducted: *it was unclear whether indications of people's borrowing capacity were encouraging them to borrow more*

Consumers who are looking for information on how much money banks will be willing to lend them for a mortgage will at some point be shown their borrowing capacity (i.e. the maximum amount they are *allowed* to borrow) – for instance, when they use an online mortgage calculation tool. When looking for a place they can buy, consumers may be guided by this maximum borrowing amount, and may take out a higher mortgage than responsible in their circumstances (for instance, because they may wish to reduce their work hour down the track). Does borrowing capacity indeed have such an anchoring effect, and if so, is there a way we can stop it from being a deciding factor?

Type of intervention: *appropriate amount, explanation on the risks associated with borrowing too much, or information provided by a consultant*

The existence of an anchoring effect was studied by comparing the choices made by people who only received information on a suitable mortgage amount to the choices made by people who had also received information on the maximum amount they were allowed to borrow for a mortgage. Interventional techniques that may be able to counteract the anchoring effect included the following:

- explanation: the researchers sought to determine whether consumers are more likely to opt for a more suitable mortgage amount if they receive additional information as to why the maximum borrowing amount might be too high for their particular circumstances.
- financial consultant: the researchers also sought to determine the effect of a financial consultant (rather than an online mortgage calculation tool) providing information on a more suitable mortgage amount.

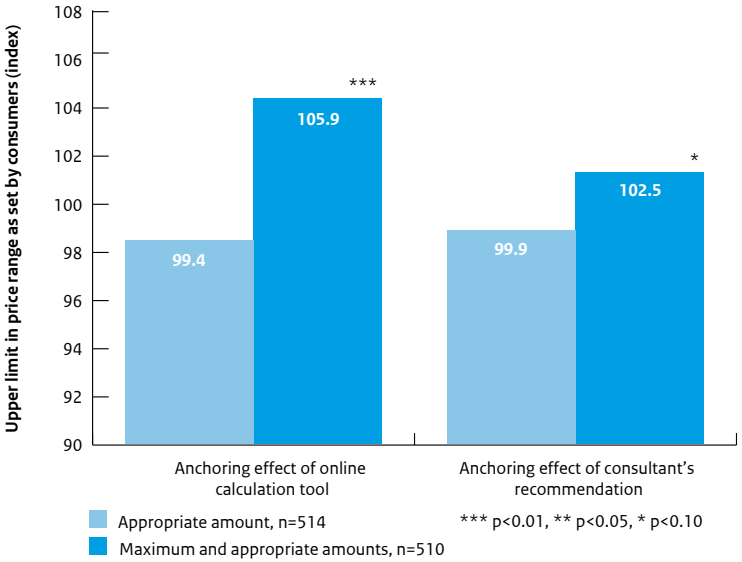
Image 21: Indication of maximum borrowing amount

Method used: *experiment*
An online experiment (n=1,533) was conducted as part of a larger project. Prospective home buyers were asked to imagine that they had received certain information on the maximum and/or most appropriate mortgage amount they could borrow, either from an online mortgage calculation tool or from a financial consultant. The researchers then looked at the price range the subjects selected for the homes they wished to look at on a mock real estate website, and at the prices of the homes they wished to inspect in person.

Result obtained: *indication of maximum borrowing amount gets people to look at higher mortgage amounts*
Exposure to the maximum borrowing amount appears to have an anchoring effect: compared to consumers who had only been exposed to an appropriate mortgage amount, consumers who had been exposed to the maximum borrowing amount seemed more likely to opt for a higher mortgage amount. The anchoring effect was observed at all stages of the mortgage choice process included in the experiment. For instance, it caused subjects to set a higher price range for the home they were looking for, and also made them more likely to wish to inspect homes that cost more than the appropriate mortgage amount. The interventional techniques were only marginally effective in counteracting this anchoring effect. The intervention that seemed most effective was for a financial consultant (rather than an online mortgage calculation tool) to recommend a more appropriate amount. In cases where such a recommendation was issued, the maximum borrowing amount seemed to have less of an impact on the price range in which

subjects went looking for homes. The strongest anchoring and intervention effects were observed in lower-income households.

Figure 22: Indication of a maximum borrowing amount raises the upper limit of the price range in which people look for homes



Impact: *home buyers may be able to be prevented from getting themselves into financial difficulties*

The results suggest that indications of maximum borrowing amounts guide consumers towards higher mortgage amounts. This seems particularly true for vulnerable people (lower-income households). In this way, the anchoring effect may increase the likelihood of consumers taking out a mortgage they will later regret, or even ending up in financial difficulties. Moreover, it may be an added reason why prices are rising in the housing market. To counteract the anchoring effect, we may wish to raise financial consultants' awareness of the anchoring effect and train them in how to deal with it properly. Perhaps a follow-up study could focus on what such a training programme might look like.

A letter about these study results was sent to the Lower House in early 2021. This letter also called on relevant parties (e.g. mortgage consultants and credit

issuers) to explore whether knowledge of the anchoring effect might be given a more prominent position in the consultancy process and whether further experiments might be helpful.

Financial service providers compared more often

Is the new financial service provider Comparative factsheet more effective than the existing Financial Services Document?

The newly developed financial service provider Comparative Factsheet gets more consumers to compare financial service providers than the existing Financial Services Document. The name change alone – from 'Financial Services Document' to 'Comparative Factsheet' – got more consumers to take a look at the information provided.

Why this experiment was conducted: *not many people use the current financial service provider comparative information*

When it comes to complex and impactful financial products such as mortgages and permanent health insurance (income protection insurance), financial service providers are required to issue a Financial Services Document before actually providing the service concerned. This is a standard document presenting information on the nature, scope and costs of the services to be provided. The purpose of the document is to allow and encourage people to draw easy comparisons between financial service providers, and so to help them make better informed choices. However, previous studies have shown that not many consumers use the existing Financial Services Document for this purpose, which is why a new type of informational document was developed.

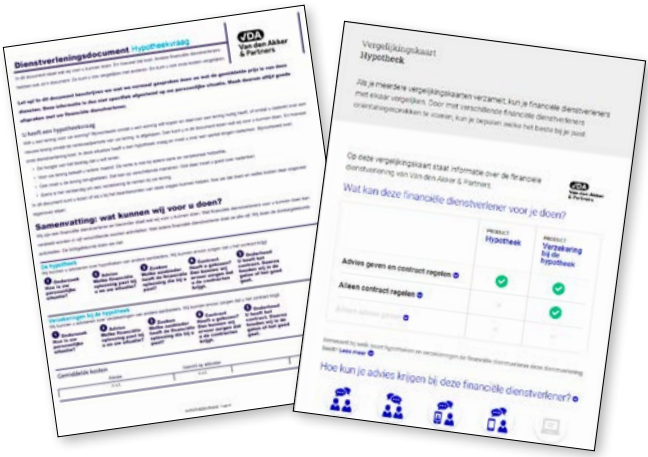
Type of intervention: *a new online financial service provider Comparative Factsheet*

The Ministry of Finance has developed a new draft informational document, based on behavioural insights and input provided by parties working in the financial sector, communication experts and behavioural scientists. This document is called the financial service provider Comparative Factsheet.

- Unlike the existing 'hard-copy' Financial Services Document, the Comparative Factsheet is an interactive online decision aid tool.
- The information provided on the chart has been simplified and rendered easier to use. For instance, there are different layers of information. People get to see the most important information at a glance, and can then click a link that will take them to more detailed information if they want to know more.
- The developers tried to come up with a nice-sounding name that would show at a glance what people can do with the information provided.
- Furthermore, the information is presented in a more visual manner, with illustrations rather than merely text.

The Comparative Factsheet was then further developed, based on the results of a qualitative online consumer survey.

Image 22: Intervention: online Comparative Factsheet



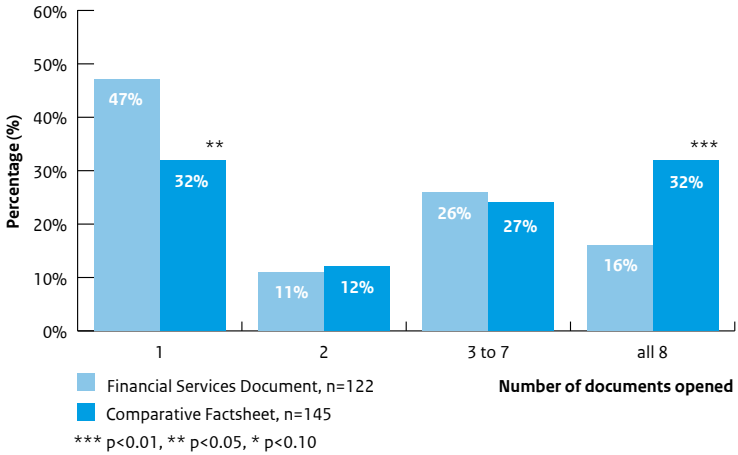
Method used: *online experiment*
The researchers used an online panel to find consumers who were planning to take out a mortgage within the next five years. In all, 802 such consumers took part in an online experiment. As part of the experiment, they had to choose between non-existent financial service providers, which had provided either their current Financial Services Documents (control group) or the new Comparative Factsheets (intervention group). The consumers' clicking behaviour was then monitored to check how many documents they were opening. The participants in the experiment were randomly allocated to either of the two conditions.

Result obtained: *the new Comparative Factsheet encourages people to perform searches and compare service providers*
Although the study confirmed that the provision of information is not a cure-all, it is clear that the Comparative Factsheet constitutes a considerable improvement. The new tool encourages people to compare financial service providers more than the existing Financial Services Document does. The name change, in particular, proved effective: those consumers who were issued with

'Comparative Factsheets' were more likely to inspect the information than those who were issued with 'Financial Services Documents' (55% versus 62%; p=0.06).

They also inspected more Comparative Factsheets. The share of consumers who inspected the information provided by all service providers actually doubled (from 16% to 32%; p <0.02; see Figure 23). Moreover, those consumers who inspected Comparative Factsheets were more likely to say that they had analysed the information very thoroughly in order to compare service providers (44% versus 27%), and they also found it easier to compare service providers than consumers who analysed Financial Services Documents.

Figure 23: Comparative Factsheet encourages people to compare service providers



Impact: *the usefulness of the study results is still being determined.*
In association with the Centerdata Foundation and Zinoniem, the Netherlands Authority for the Financial Markets (AFM) is seeking to determine how the conclusions drawn in the report can be translated to real-life scenarios.

Getting people to act on their good intentions with regard to their pension

How can we help people act on their good intentions with regard to building a pension pot?

During the Pensioen3daagse ('three-day pension event') organised by Wijzer in Geldzaken in November 2020, people were able to send their future self (living in January 2021) a reminder to look into their pension arrangements. This postcard from the past prompted more people to find their way to www.mijnpensioenoverzicht.nl in the new year.

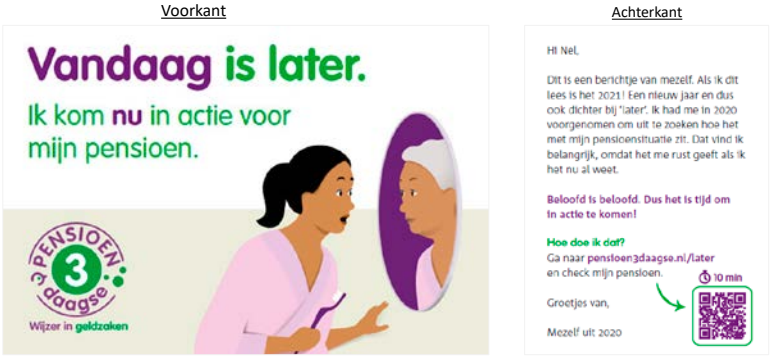
Why this experiment was conducted: *to close the intention-behaviour gap*
Although 61% of people aged between 30 and 55 feel it is important that they learn more about their pension arrangements sooner rather than later, only a few per cent of them could recently be bothered to log into their pension scheme overview on www.mijnpensioenoverzicht.nl (source: Wijzer in Geldzaken, 2020). Why is there such an intention-behaviour gap when it comes to pensions? We have a tendency to look at our future (and our future self) through overly rose-coloured glasses. Want to find out what your pension savings are like?

Now is not a good time to do so, but we will definitely look into it next year. Unfortunately, we still tend to bring up this argument when 'later' has already become the present. We always put off looking into our pensions until later.

Type of intervention: *a reminder sent to people's 'future selves', designed to generate commitment*
The intervention appealed to people's good intentions (new Year's resolutions) with regard to their pensions. During the Pensioen3daagse ('three-day pension event') organised by Wijzer in Geldzaken in November 2020, people were invited on social media to complete a short pension-related survey to find out how much they knew about their pension savings. They were then encouraged to log into www.mijnpensioenoverzicht.nl. Some of the people who did not have time at the time to do so were offered the option of sending a reminder to their future selves, which would be delivered in January 2021. Timing was of the essence in all of this. Psychologists call it the 'fresh start effect'. Many people are more motivated to do better in some regard at the start of a new year. The postcard carried a reminder ('Today is later' at the front; 'You did promise' on the back), which was used to appeal to the principles of commitment and

consistency. After all, in for a penny, in for a pound. The participants in the experiment were also asked to convince their future selves of why it would be a good idea for them to act on their good intentions (New Year's resolutions) with regard to their pension savings.

Image 23: Reminder for future self

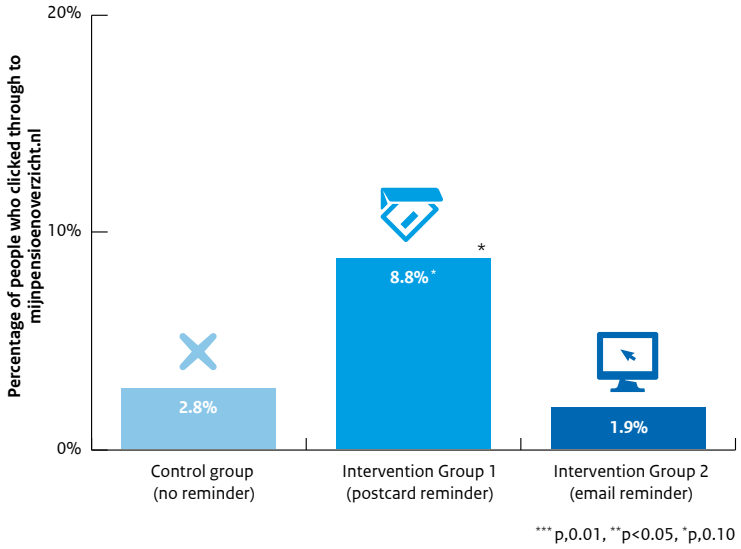


Method used: *field study*
A small-scale field study was set up to test how many people actually bothered to take the next step in looking into their pension arrangements. The control group (n=47,791) was asked in November 2020 to log into www.mijnpensioenoverzicht.nl ('my pension savings'), and two experimental groups were encouraged to do so in January by means of a reminder they had sent themselves (1. reminder postcard (n=68); 2. reminder email (n=104)).

Result obtained: *a reminder sent by snail mail proved more effective than a reminder sent by email*
An indicative difference was observed between the control group (no reminder) and Intervention Group 1 (who received a postcard reminder): 2.8% versus 8.8% ($p<0.10$). The email reminder was found not to be particularly effective in motivating people to take the next step. While some of the people who received the email did take the trouble of opening it, they did not click the link and take the next step. Apparently, a postcard from the past that actually arrives on your doormat leaves a bit more of an impression. People who received the postcard

were relatively likely to make an effort to learn more about their pension savings by scanning the QR code on the card or visiting the website.

Figure 24: Differences in pension overview click-through rates between the various conditions



Impact: *a follow-up study may be conducted later in the form of a larger-scale experiment*
This was only a small-scale experiment, so we must we careful drawing any conclusions. Nevertheless, the results seem to suggest that a clever reminder sent at the right time may triple the number of people who take the next step in looking into their pension arrangements. A follow-up experiment carried out during the next Pensioen3daagse may show us if a large-scale intervention might be a good idea.

Proper guidance in decisions regarding pension schemes (I)

How do the order in which options are presented and default answers affect people's decisions as to whether to contribute more or less money to their pension scheme?

In the new pension system, people who have an employee pension scheme will be given more freedom to make their own choices. What impact do nudges in an online environment have on people's contributions to their own pension scheme? This experiment showed that people are more likely to choose the first option presented, or the default (pre-selected) option, regardless of which option was the default. In other words, the order in which options are presented and the default settings make a difference.

Why this experiment was conducted: *to improve decision-making guidance in the new pension system*

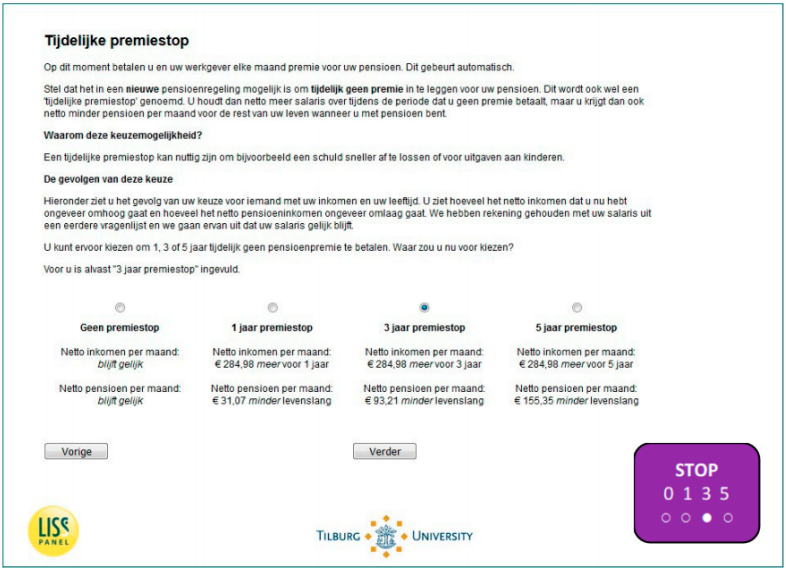
When the new pension system is implemented over the next few years, employees who enter a pension scheme arranged by their employer will be given more freedom to make their own choices. Because of this freedom of choice, people will bear greater responsibility, which may be daunting, as pension schemes can be quite complicated. It is crucial that people receive proper guidance when they are making pension-related choices. People's decisions may be swayed by the choice architecture and context in which they are asked to make decisions. The Netherlands Authority for the Financial Markets (AFM) explored how nudges affect pension decisions .

Type of intervention: *options placed in a particular order, pre-selected answers*

In an experiment conducted online, the researchers experimented with the choice architecture via pre-selected answers (default options) and via the order in which options were presented .

- order: in an online survey, some respondents were first presented with the (hypothetical) option of temporarily making a greater contribution to their own pension scheme, while others were first presented with the option of temporarily contributing less to their own pension scheme
- default setting: for some respondents, a particular choice (be it contributing more or less to their pension scheme) had already been pre-selected. In other words, the checkbox looked like this rather than like this . However, it was very easy for the respondents to select a different option.

Image 24: Example of a screen shown to a respondent in the experimental group, where 'stop paying premium for three years' has been pre-selected

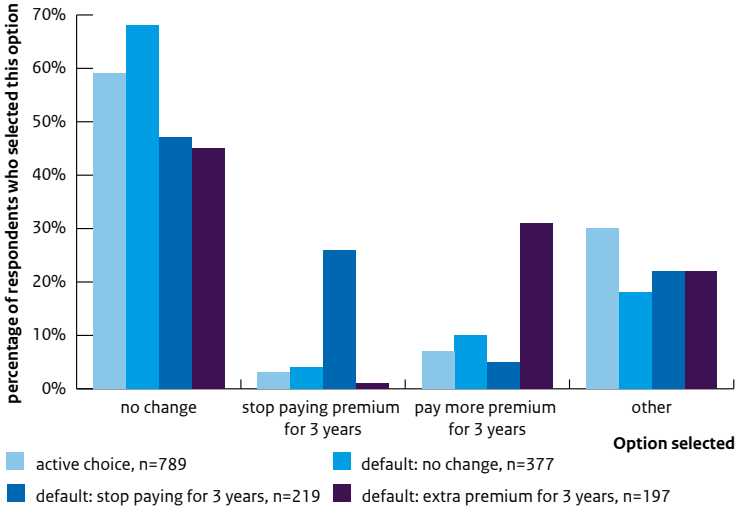


Method used: *RCT*
A hypothetical randomised controlled trial was conducted with 1,583 respondents, aged between 24-66, employed and on a pension scheme arranged by their employer. Their net household income exceeded €800 per month. The respondents were selected from the LISS panel (*Langlopende Internet Studies voor de Sociale wetenschappen*), which is made up of people from all strata of Dutch society and who regularly take online surveys. The respondents were randomly assigned to the six conditions. The researchers then measured the options the respondents selected in the hypothetical scenarios with which they were presented.

Result obtained: *people tend to select the first option with which they are presented, and also particularly the pre-selected option*
The first option with which people are presented is 10 percentage points more likely to be selected, whatever it is. Financially literate people (respondents who provided the right answers to three knowledge questions) were less guided by the order in which options were presented than others. Pre-selected answers

had an even more significant impact: people were up to 22 percentage points more likely to select 'temporarily pay more/less premium', whichever was the default option. Default options have a significant impact on decisions, even in a choice environment where people can easily make a pick of their own (and will generally do so quickly).

Figure 25: Effect of pre-selected answers versus non-pre-selected answers (active choice) on decisions made with regard to pension savings.



Impact: *pension funds must pay greater attention to how people are guided in their decision-making process*

The key message for pension funds, based on these results: there appears to be considerable interest in paying more premium or temporarily stopping paying premium, but people don't necessarily make the right decisions of their own accord. The decisions by plan participants regarding paying more/less premium are not related to their previously accrued pension entitlements, savings and the value of their home. In an online environment, default answers and the order in which options are presented can help guide people in the right direction. Proper personalised recommendations will be required to present the right target group with the right default option, because even people for whom the default option might not be the most suitable, tend to pick that option.

Proper guidance in decisions regarding pension schemes (II)

How are people guided by pre-selected answers in pension scheme surveys?

Even seemingly small differences in how choices are presented may clearly steer people in a particular direction, as researchers found previously in an experiment related to pension savings (see I). In this follow-up experiment, the AFM examined the nudge provided by a pre-selected checkbox. Nearly half the respondents made a different choice regarding their pension fund's course of action, depending on which option had been pre-selected. Moreover, pre-selected answers on pension schemes were found to have an even greater impact on the decisions made by people with lower financial literacy.

Why this experiment was conducted: *to improve decision-making guidance in new pension system*

When the new pension system is implemented over the next few years, employees who sign up for a pension scheme arranged by their employer will be given more freedom to make their own decisions. Because of this freedom of choice, people will bear greater responsibility, which may be daunting, as pension schemes can be quite complicated. It is crucial that people receive proper guidance when they are choosing the right pension plan for them. People's decisions may be swayed by the manner and environment in which they are asked to make decisions. The AFM wished to further examine the impact of default settings.

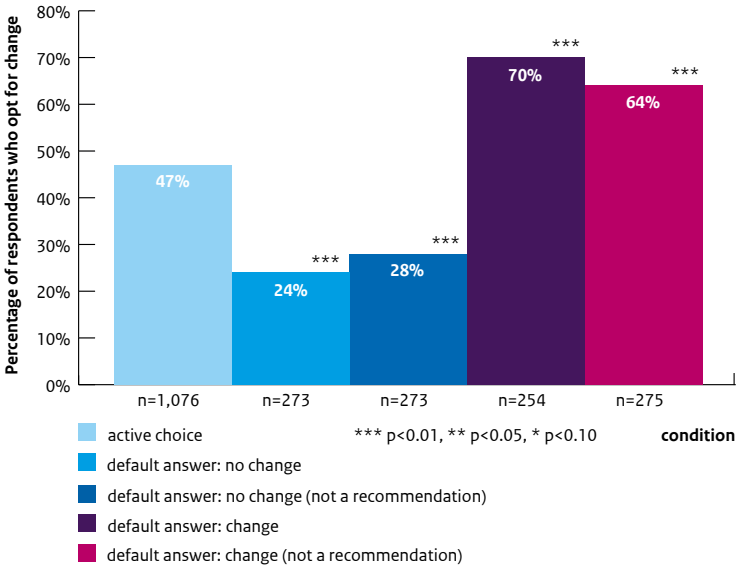
Type of intervention: *experiment with default settings*

In an experiment conducted online, the researchers experimented with pre-selected answers in choice architecture. In these so-called default answers, the checkbox had already been selected, meaning it looked like this ● rather than like this ○. Some respondents of an online survey were first given the (hypothetical) choice of having their collective pension fund either invest in more sustainable companies or to hedge more interest rate risk. Other respondents were sent a survey in which leaving the pension fund's policy unchanged was the default setting. Some respondents were explicitly told that the pre-selected answer should not be construed as a recommendation or personal advice, so as to counteract that particular effect of default settings.

Method used: *RCT*
A randomised controlled trial was held in an experimental setting, with a sample of n=1,076 respondents. This trial was conducted as part of the AFM's Consumer Monitor Survey (www.afm.nl/cm), a half-yearly consumer survey. Respondents answered questions in an online survey, and in one hypothetical example they were asked to choose whether their pension fund should invest more in sustainable companies or do more to hedge interest rate risk. Five experimental groups were established for either context (investing in sustainable companies or hedging interest rate risk): one group was the 'don't change the policy' default setting, one group was the 'change the policy' default setting (both with and without the added comment that the default setting should not be construed as a recommendation), and a control group who were not presented with a default setting (active choice). Respondents were randomly assigned to these groups

Result obtained: *default settings have a significant impact*
Nearly half the respondents made a different choice regarding the pension fund's course of action, depending on which option had been pre-selected. Without a pre-selected option, nearly half (47%) opted to change the policy. In situations where change was the default answer, 70% opted for change. In situations where keeping the same policy was the default answer, 24% opted for change. In both situations, respondents were 23 percentage points more likely to opt for the pre-selected answer than respondents who had to make an active choice. Even when they had been told that the default answer had been chosen completely randomly and should not be construed as a recommendation, significantly more respondents still opted for the default answer, compared to situations in which no answer had been pre-selected. Respondents with a greater understanding of finance (who had given more correct answers to three standard questions asked to measure financial literacy) seemed less susceptible to the effects of defaults.

Figure 26: Difference in percentage of respondents who opt for a changed course of action between conditions



Impact: *pension funds can steer their customers in the direction of their choice*

Pension funds would do well to apply behavioural insights when they design the choice environment for people who have joined their pension schemes, particularly now that a new pension system will be introduced soon. Collective decisions on the pension fund's assets concern all participants who have joined the scheme. It is vital that the fund's directors, when they make such collective decisions, take into account the voices and interests of the people who have joined their pension schemes.

Getting more people to read and properly understand shops' general terms and conditions

How can we ensure that consumers are better informed of their rights before making a purchase?

Online shops are required to notify consumers of the conditions that apply to their purchases, e.g. the return policy. The researchers found that using icons helps, as they help consumers understand the conditions that apply. If the payment page emphasises the urgency of reading the conditions ('last chance to read the terms and conditions before you place the order!'), more consumers will read this information.

Why this experiment was conducted: *consumers aren't always aware of the conditions that apply to their purchases*

When people purchase things online, companies are required to present them with certain information in a clear and easily understandable manner prior to the moment they place their order. For instance, they must provide information on the time frame within which buyers must return an object, and on the costs associated with such a return. If consumers are unaware of important terms and conditions, both parties may be negatively affected. For example, consumers may incur unexpected costs, while companies must spend more time and manpower addressing people's complaints or answering people's questions.

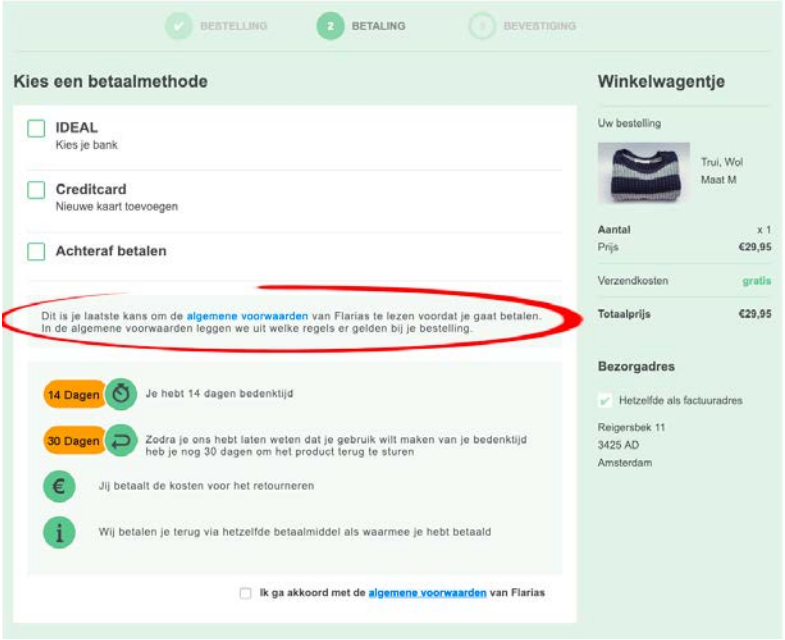
Type of intervention: *icons and urgency cue on payment page*

In this experiment, icons and urgency cues were incorporated into an online shop's payment page. The Netherlands Authority for Consumers and Markets (ACM) wanted to know whether such techniques would increase consumers' understanding of and engagement with important conditions applicable to their purchases. Subjects were randomly assigned to one of the following four conditions:

1. control condition: in order to be able to place an order, subjects had to click a button to indicate that they had read the general terms and conditions; there was also a link they could click to read the general terms and conditions
2. quick summary of certain terms and conditions in the form of visual icons incorporated into the payment page. The idea was that such icons would be more likely to catch the eye and also be more easily understandable

3. urgency cue on the payment page. The cue indicated that this was the last time the consumer would be able to read the general terms and conditions before placing the order
4. combination of conditions 2 and 3: icons as well as an urgency cue.

Image 25: urgency cue on the payment page



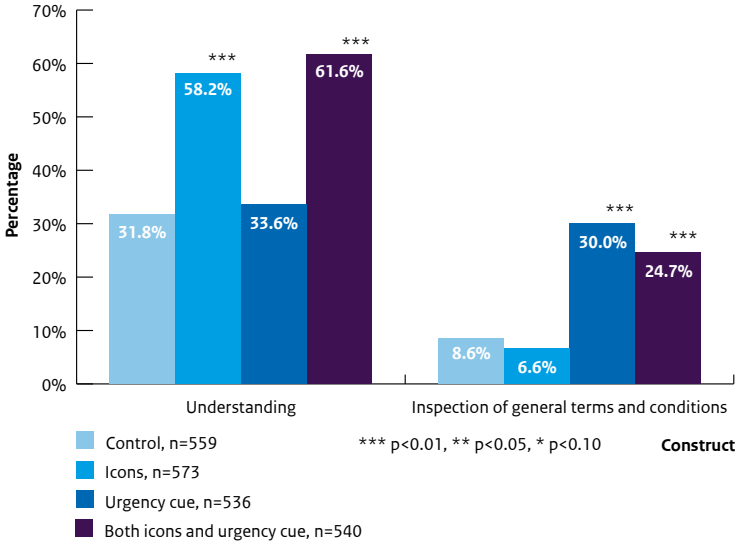
Method used: *RCT*

The 2,208 subjects who took part in the online experiment were told to imagine that they were going to purchase something from a non-existent online shop (some persons were going to buy a laptop, others a jumper). They were then taken to the payment page of the online shop that sold their particular item.

The subjects were randomly assigned to one of the four different payment pages. After they had viewed the payment page, the subjects were presented with eight questions designed to test their understanding of certain terms and conditions. The researchers also monitored whether they had clicked the link.

Result obtained: *icons increase understanding, while the urgency cue increases engagement*
Subjects who had been presented with a payment page featuring icons had a better understanding (45% correct answers) of the main terms and conditions than subjects assigned to the control condition (32%). This percentage was slightly higher (47%) for subjects who had been presented with a payment page that featured both icons and an urgency cue. The urgency cue caused subjects to be much more likely to inspect the general terms and conditions (30%) than subjects assigned to the control group (9%). Subjects assigned to the combined intervention were also more likely to do so (25%), albeit less so than those assigned to the urgency cue only. The researchers also looked at the effect on people's faith and interest in the non-existent online shop, and found that there were no differences in this regard between the four scenarios. Nor did they observe any differences with regard to the type of product (laptop or jumper).

Figure 27: Differences in understanding and inspection of general terms and conditions between conditions



Impact: *follow-up study to allow us to provide online businesses with better guidance*
The study results prompted the ACM to conduct a follow-up study investigating how consumers process the information they find online. For the purpose of this study, the ACM seeks to collaborate with companies that provide products and services online. By gaining an insight into what does and doesn't work in providing consumers with information, the ACM will be better able to explain to online shops what kind of rules they must abide by: what are they not or no longer allowed to do, and how can they provide consumers with proper information?

Clarity on paid rankings

What kind of tag would best show consumers that a company paid to get a higher ranking in the search results?

Many platforms use a 'sponsored' tag to indicate a paid search ranking. Many consumers do not understand this tag. A 'paid ranking' tag provides consumers with greater clarity. The fact that a ranking has been paid for can be conveyed more clearly by using an eye-catching colour or placing the tag in a prominent position.

Why this experiment was conducted: *misleading rankings*

Consumers may be misled if it is unclear to them that the order in which search results are presented is affected by paid advertisements. Many companies use the 'sponsored' tag to indicate that they paid to get a higher position in the search result ranking. The ACM wished to determine whether this tag is an effective way to notify consumers that a high ranking was paid for.

Figure 26: An example of online trickery: an unfair search ranking

Type of intervention: *clearer phrasing and eye-catching design*
The studies conducted by the Netherlands Authority for Consumers and Markets (ACM) involved a copy of a website run by an online platform on which several companies offer their services. Study No 1 was conducted to examine how visible, clear and understandable the 'sponsored' tag is to consumers. Study No 2 was conducted to determine the effect of different phrasing ('paid ranking') and of changes to the design and position of this tag.

Method used: *RCT*
Study subjects were randomly allocated to one of five versions of the specially devised website:

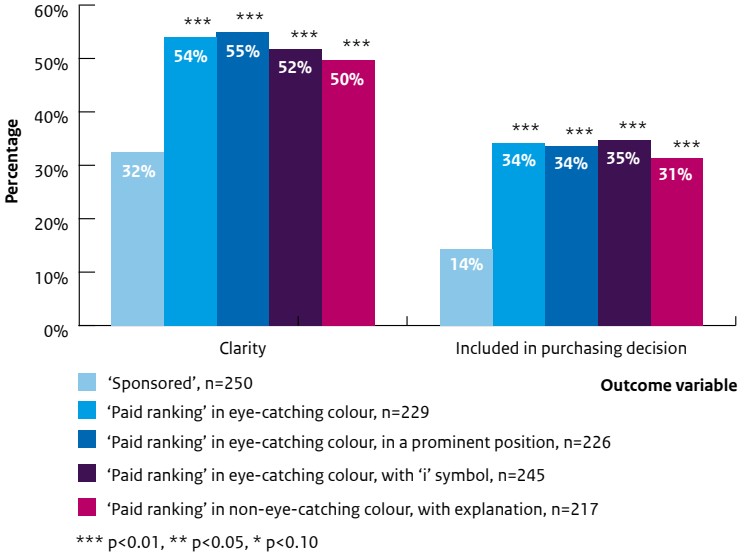
- former situation: 'sponsored' tag (the tag is identical to the one used in Study No 1)
- 'paid ranking' tag, eye-catching colour
- 'paid ranking' tag, eye-catching colour and prominent position
- 'paid ranking' tag, eye-catching colour and little 'i' symbol providing information on what 'paid ranking' means
- 'paid ranking' tag, eye-catching colour and explanation of what 'paid ranking' means at the top of the page.

Study subjects were told to purchase something from one of the service providers presented on this website. Afterwards they completed a survey. The questions asked in the survey related to things such as the information presented on the platform and their opinion on paid rankings.

Result obtained: *the 'paid ranking' tag was found to be much clearer than the 'sponsored' tag, and eye-catching design tripled visibility*
31% of the study subjects gave a correct answer to the question as to what 'sponsored' means. Those who were shown the 'paid ranking' tag gave more correct answers to the question: 50-55%. Only 9% of the study subjects noticed the 'sponsored' tag in the way it is currently being used by a popular online platform. Visibility increased to 31% in those versions of the website where the tag was given an eye-catching colour and/or prominent position.

The phrasing of the tag affected the extent to which the study subjects included the paid search results in their decision-making. When the tag said 'sponsored', only 14% of study subjects included that search result in their decision-making. When the tag said 'paid ranking', this percentage ranged from 31% to 35%. The way in which the site indicated which rankings were paid for did not seem to affect consumers' faith in the platform.

Figure 28: Difference in clarity and the degree to which paid search results were included in the purchasing decision



Impact: *a follow-up study will be conducted to determine how best to inform consumers*
The knowledge gained in this experiment helps us explain to online businesses what they are not or no longer allowed to do and how to properly inform consumers. The study results prompted the ACM to conduct a follow-up study investigating how consumers process the information they find online. For the purpose of this study, the ACM seeks to collaborate with companies that provide products and services online.

Effective communication on additional costs

Are consumers aware of any additional costs they will incur if said costs are hidden behind an 'i' symbol or in a clickable text?

Businesses have several different ways of notifying consumers of any additional costs they will be required to pay for a product or service. This study showed that most consumers tend not to click an 'i' symbol or clickable text to obtain more information on such additional costs. If the additional costs are hidden behind an 'i' symbol, considerably fewer consumers will see them than if they are specified in a clickable text or shown immediately under the base price of the product or service.

Why this experiment was conducted: *businesses all have their own ways of informing their clients of additional costs*

Companies must provide their clients with clear information on the overall price of a product or service, including all the additional costs they may incur. They must do so from the first moment they offer something at a particular price. Additional costs that cannot be included in the overall price must be clearly listed alongside the price. For instance, if a travel agency advertises a trip at a particular price per person, it must include the booking fee up front. In practice, companies use different ways to list these additional fees. Which way is the clearest?

Figure 27: An example of online trickery: the listed price is incomplete

Type of intervention: *additional costs are shown up front, hidden behind an 'i' symbol or hidden in a clickable text*
The ACM examined three different ways in which additional costs can be presented on a website:

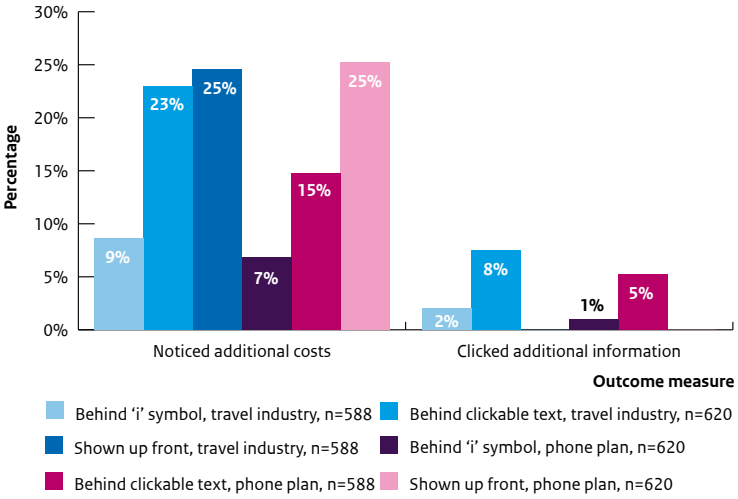
- shown up front, under the price
- hidden behind a clickable 'i' symbol
- hidden in a clickable text, such as 'not including booking fee and surcharges' (travel industry) or 'not including one-off connection fee' (telecommunications industry).

Method used: *RCT*
Study subjects were asked to imagine that they were looking for a holiday they could book, or for a new mobile phone plan. They were then taken to a specially created website where they saw an overview page listing either holiday packages or different types of phone plans, including mobile phone plans. They were randomly allocated to one of the three ways in which additional costs were presented, and their clicking behaviour was monitored. Afterwards, they were asked questions about the visibility and clarity of additional costs, about how much faith they had in the supplier and whether they would consider buying the product.

Result obtained: *additional costs hidden behind an 'i' symbol were found to be poorly visible and unclear*
Did the consumers notice the additional costs while browsing the website? The number of consumers who claimed to have seen the costs hidden behind an 'i' symbol (trip: 8.6%; phone plan: 6.8%) was considerably lower than the number of consumers who indicated they had noticed the costs when they were shown up front (trip: 24.6%; phone plan: 25.2%) or hidden behind a text link that said 'not including booking fee and surcharges' (trip: 23%) or 'not including one-off connection fee' (phone plan: 14.8%). Monitoring of the subjects' clicking behaviour showed that only very few people had bothered to click the 'i' symbol or the text link (2.45%). In other words, even some of the people who claimed to have noticed the additional costs did not actually click. The study also showed that people are more likely to click a text link than an 'i' symbol.

Consumers also indicated that they found additional costs hidden behind an 'i' symbol less clear than additional costs listed up front, along with the price. The various ways in which prices were listed did not affect the study subjects' decisions about whether or not to make the purchase or trust the supplier.

Figure 29: Effect of varying degrees of noticeability of additional costs



Impact: *a follow-up study will be conducted on how to present consumers with better information*

The ACM will conduct a follow-up study to ensure that companies properly provide their online customers with information. In order to do so, the ACM seeks to collaborate with companies who provide their products or services online. The study results present online shops with guidance as to how to modify their websites in such a way that, rather than misleading their customers, they provide them with proper information, which is what they are required to do pursuant to the Protection of Online Consumers Guideline.

Travellers declare cash to customs before departing

How to encourage people travelling to Turkey to declare large cash amounts to customs before departing?

If you are travelling to a country outside the EU and carry cash in the amount of €10,000 or more, you must declare the currency to customs before departing. This study of the cash-carrying behaviour of people travelling to Turkey showed that people can be encouraged to declare their cash by capitalising on people's self-image as law-abiding citizens and by providing them with targeted information. As a result, more people travelling to Turkey intend to declare cash of €10,000 or more.

Why this experiment was conducted: *violations of the duty to declare large amounts of cash when travelling*

Travellers who leave the EU from an airport often carry €10,000 or more in cash which they have not declared to customs, although they are required by law to do so. This particularly happens with people travelling to Turkey, Morocco, China, Iran or Thailand. Customs officers at Schiphol Airport draw up hundreds of reports of such violations each year. When people are found breaching the requirement, a hefty fine is imposed on them (at least €1,000). The Dutch Customs Authority has to assign considerable manpower to processing these violations. By conducting behavioural experiments, the Customs Authority hopes to encourage travellers to follow the rules.

Type of intervention: *online video with social modelling, infographic and decision tree*

This intervention was targeted at people travelling to Turkey, and more particularly two types of people travelling to Turkey: older travellers with a personal reason for visiting Turkey and business travellers. These types of travellers were shown an online video and an infographic about declaring money to customs.

- In the online video, two travellers tell the viewers that it goes without saying that travellers should declare large amounts of cash, and that it is important to do so. They also show what steps they took to declare their cash. The video had Turkish subtitles so as to make sure it could be understood perfectly by the target group.
- The infographic the subjects were shown features a decision tree that helps travellers determine whether they should declare their cash in their particular situation, and if so, how to go about it.

Image 28: Decision tree for people travelling to Turkey about whether or not to declare cash to customs

REIST U MET VEEL GELD NAAR TURKIJE?

Check of u dit moet melden.

Als u op reis gaat, bereidt u zich goed voor. U houdt zich natuurlijk aan de regels. In onderstaand stappenplan leest u welke regels gelden voor het meenemen van contant geld.

1. Wilt u 10.000 euro of meer meenemen?

Dit bedrag is de totale waarde, inclusief contant geld in andere valuta, en geldt per persoon.

Ja.
Dat mag. U moet dit wel melden bij de Douane met een aangifteformulier.
Dit kost u geen geld en u voorkomt hiermee een boete van tenminste 1.000 euro.

Nee.
U hoeft geen melding te maken.

2. Waar wilt u het formulier invullen?

***Tip:** neem hiervoor rustig de tijd.*

Thuis

Download het formulier van Douane.nl en vul het in.

Schiphol

Haal het formulier op bij het Douaneloket in vertrekhal 3 en vul het in.

3. Lever het ingevulde formulier in.

Dit doet u bij het Douaneloket in vertrekhal 3, voordat u door de paspoort- en beveiligingscontrole gaat.

Fijne reis

Kijk op Douane.nl voor meer informatie en het aangifteformulier. Voor vragen zijn we ook bereikbaar via Twitter, Facebook en Instagram.

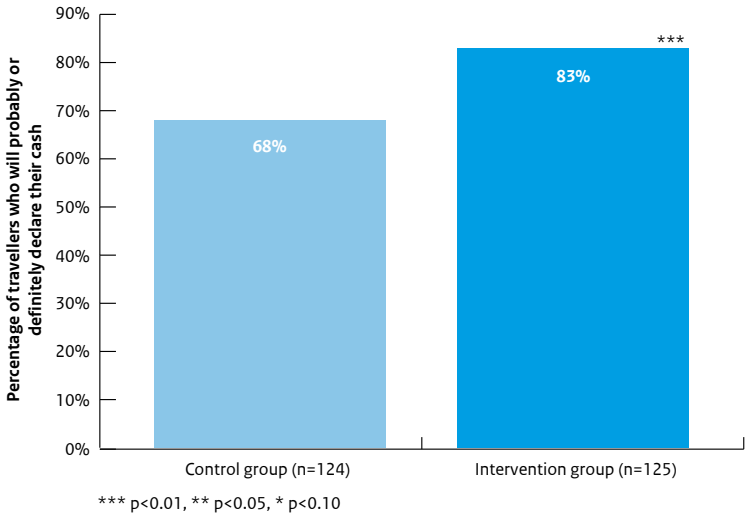
Method used: *RCT*

A randomised controlled trial was used to conduct this study. Due to the pandemic and the associated travel restrictions, the study was conducted with an online panel. In all, 249 travellers who had flown to Turkey in the last two years either for business or for personal reasons took part in the study. Travellers allocated to the intervention condition were shown both the video and the infographic before taking the survey. Travellers allocated to the control condition were not shown

anything beforehand. Because of the small sample size, the results for business travellers and people who travelled for personal reasons were analysed together.

Result obtained: *more travellers intend to declare their cash*
Travellers who watched the video and saw the infographic had a stronger intention to declare sums of €10,000 or more than travellers assigned to the control group. In addition, after watching the video and seeing the infographic, these travellers had a more positive attitude towards the rule, were more likely to indicate that they wanted to prevent being fined, and were more confident that they would manage to declare their cash to customs.

Figure 30: The combination of an online video and an infographic makes people more inclined to declare the cash they are carrying.



Impact: *this experiment provided input for a communication strategy and will result in an experiment carried out in a real-life setting*
The behavioural analysis and the interventions that were developed constitute input for a follow-up experiment to be carried out in a real-life setting once the pandemic-related travel restrictions have been eased somewhat. In addition, the recommendations, video and infographic can be incorporated into the Customs Authority's overall communication strategy. Finally, this project boosted the Customs Authority's interest in working with behavioural insights.

Replacing international business trips with online alternatives

Can conveying a social norm make people more willing to opt for online meetings rather than in-person meetings?

Due to the coronavirus pandemic, people have increasingly been using online alternatives for international business trips. How can we get them to continue this new habit of meeting online (to some extent) after the pandemic? It was found that conveying a social norm has a significant positive impact on people's attitude and intention to replace international business trips with online alternatives more often.

Why this experiment was conducted: *a reduction in the number of international business trips due to the coronavirus pandemic*

Due to the coronavirus pandemic, nearly all foreign business trips have been cancelled or postponed since March 2020. Staff had to make a quick switch to online alternatives, such as video calls, webinars or online platforms. This new habit of meeting online instead of in-person creates a good opportunity to determine whether we can get people to keep doing so after the pandemic, thus reducing the number of business trips that could be replaced with other communication methods. This will reduce our carbon emissions and results in cost savings.

Type of intervention: *conveying a social norm*

The experiment focused on whether conveying a social norm ('normative framing') could serve as an effective intervention to reduce the number of international business trips after the pandemic. The intervention involved showing subjects a news article, in which some major Dutch corporations spoke about the expected reduction in the number of business trips (see Figure 29). This actual news article had been published by a well-known Dutch newspaper on 9 July 2020, a month before the experiment was conducted.

Figure 29: News article featuring quotations by other companies

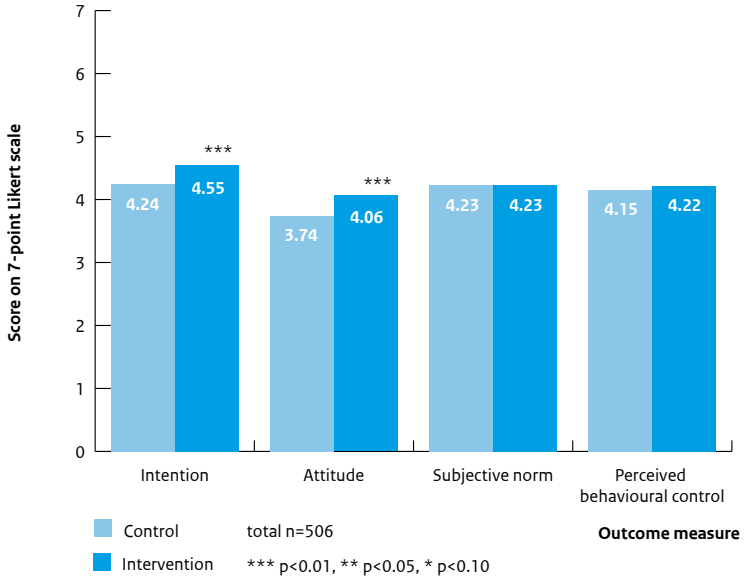
"Grote Nederlandse bedrijven, verenigd in de Coalitie Anders Reizen, verwachten dat de coronacrisis een blijvend effect heeft op het vlieggedrag van hun medewerkers. De ervaringen met videoconferenties en webinars sterken hen in het idee dat ze aanzienlijk kunnen besparen op hun zakelijke vluchten. (...) Ingenieurs- en adviesbedrijf Arcadis (27.000 medewerkers) zet in op een structurele teruggang tot ongeveer een derde ten opzichte van vorig jaar, zegt Yoeri Schenau.

Bron: https://fd.nl/ondernemen/1350491/bedrijven-grijpen-corona-aan-om-structureel-minder-te-vliegen

Method used: *RCT*

The effect of the intervention was examined in a randomised controlled trial. Civil servants working for the Ministry of Economic Affairs and Climate Policy and the Ministry of Agriculture, Nature and Food. Employees who had been on an international business trip at least once in 2019 were sent an email inviting them to take part in an online survey. Half of the respondents were presented with the news article, while the other half of the respondents did not (control group). To encourage the respondents to actually read the news story, the button allowing them to move on to the next page did not appear on screen until after 30 seconds. Respondents were randomly assigned to the control group (n=253) or the intervention group (n=253).

Figure 31: Impact of conveying the social norm on people's intentions, attitude, subjective norms and perceived control with regard to replacing business trips with online alternatives



Result obtained: *conveying a social norm has a positive effect on people's intentions and attitude*

The intervention had a significant positive effect on respondents' intention to replace business trips with online alternatives more often after the pandemic. Furthermore, the effect of the intervention on the behavioural factors

underlying this intention was measured using the 'Theory of Planned Behaviour'. The researchers found that there was a positive effect on respondents' attitude, but no significant effect on the subjective norm (the degree to which people experience any social pressure to conform) or perceived behavioural control (the degree to which people believe themselves capable of acting in line with their intentions). In addition, the results showed that some types of business trips (meetings, presentations, sharing knowledge) are better suited to online alternatives than other types of business trips (guiding a minister, working visit or state visit).

Impact: *points of departure for future travel policy*
In other words, conveying a social norm appears to have a positive effect on people's intention to use online alternatives for international business trips more often. A follow-up study could tell us whether and how this intention translates into actual behaviour and what role social norms play in this. Saying that something constitutes a social norm when someone books an international business trip might be a good idea for an intervention. In addition, each of the organisation's units could draw up a carbon emissions budget for international business trips, and the managers could be contacted if their units were exceeding the carbon emissions norm.

A reduction in the number of international business trips will result in reduced carbon emissions, which will help us to achieve the carbon emissions reduction targets specified in the Paris Climate Agreement and by the Anders Reizen ('Travelling Differently') coalition. The results of this study will be used in drawing up future travel policies of the Ministry of Economic Affairs and Climate Policy and the Ministry of Agriculture, Nature and Food Quality.

Green home improvements with a savings bonus

How do home owners feel about this financing tool, which allows them to make green home improvements?

Leiden University conducted a study to determine whether home owners like the idea of a 'Green Home Improvements Savings Bonus' as a way to finance the greening of their own homes, and if so, what kind of savings bonus they would like to see implemented. The vast majority of respondents (65%-70%) indicated that they would prefer to use their current savings to make green improvements to their homes. Their second most popular (28%) and likely (17%) choice was the savings bonus. The respondents indicated that their preferred type of savings bonus would be the one where they get 10% up front and 10% after saving the remaining 80% of the investment.

Why this experiment was conducted: *home owners who wish to green their homes incur a lot of costs*

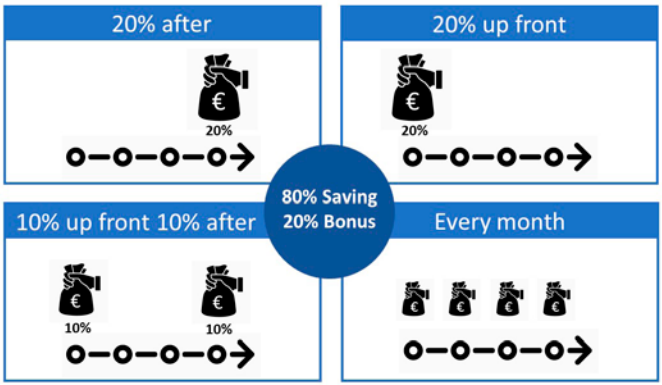
By 2050, about 7 million homes in the Netherlands must have been made more sustainable. The estimated costs of green home improvements range from €10,000 to €50,000 per household, which is a significant expenditure for individual home owners. The current subsidy schemes are targeted at home owners who already have the financial resources. Others do not yet have the resources and would rather save than borrow money to fund their green home improvements. This being the case, the idea of a savings instrument was explored in 2020.

Type of intervention: *various types of green home improvements savings bonuses*

The Green Home Improvement Savings Bonus is a proposed savings scheme under which home owners need only save up 80% of the amount they need to make green improvements to their homes. They will receive the remaining 20% of the amount as a bonus, in the form of a subsidy. The researchers looked at four versions of the savings bonus:

- 20% bonus after
- 20% up front
- 10% up front and 10% bonus after
- a small percentage of the bonus every month

Image 30: Four versions of the savings bonus



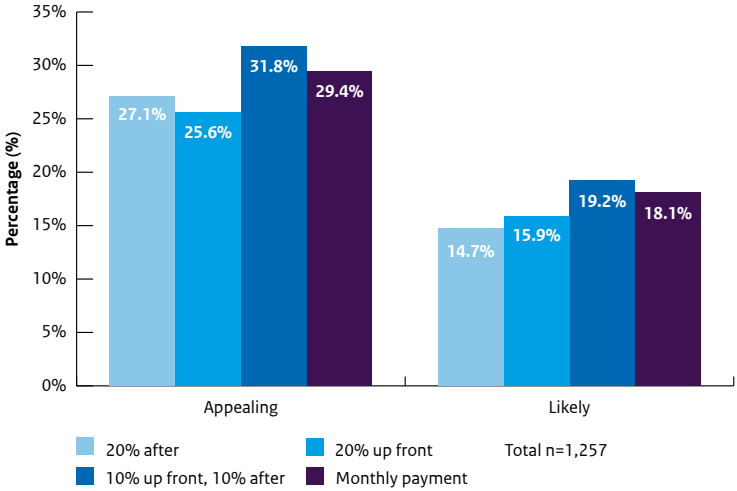
Method used: *online experiment*
A total of 2,256 home owners whose homes have been granted a Grade C to G energy efficiency label took part in the study. In the online experiment, respondents were able to select a type of green home improvement they wished to make, after which they were asked how they felt about the various financing options, and how likely they were (on a 7-point Likert scale) to use each option. The options were as follows: the home owners' own savings, an Energy Conservation Loan (a personal loan with favourable conditions), remortgaging the house, and one of the four versions (randomly assigned) of the Green Home Improvements Savings Bonus.

Result obtained: *the savings bonus looks promising; the 10% up front and 10% after version is the most popular*
The vast majority (65%-70%) of participants said they would prefer using their current savings to make green improvements to their homes. Their second most appealing (28%) and likely (17%) choice was the Green Home Improvements Savings Bonus. This option proved to be significantly more popular than the Energy Conservation Loan or remortgaging the house. The choice of the financing instrument was largely determined by the costs of the green improvements. For home improvements costing up to €10,000, current savings were the most popular option, but for more costly home improvements costing €25,000 or €50,000, remortgaging the house was the most popular option. The savings bonus appears to be most promising for amounts between €5,000 and

€10,000. This is the range where approximately 9% of participants say they would opt for the Green Home Improvements Savings Bonus.

The researchers also looked at different versions of the savings bonus. The version with a 10% bonus up front and a 10% bonus after turned out to be the most appealing (32%) and likely (19%) option for the participants. This is a significant difference from the other variants.

Figure 32: The version of the Green Home Improvements Savings Bonus in which 10% are granted up front and 10% after appeared to be the most appealing to the participants and was most likely to be chosen.



Impact: *potential savings instrument for home owners*

The study results have led to talks with various stakeholders (e.g. policymakers and banks) about a possible implementation of the savings bonus. This would give home owners who wish to green their homes, but do not (yet) have the financial resources, the opportunity to do so. Based on the study results, we estimate that this group will constitute between 9% and 17% of all households whose houses (no flats or apartments) have been granted the Grade C to G energy efficiency label.

Energy-conserving consumers

Can the new Energy Consumption Overview with added monthly feedback encourage people to save energy?

This study showed that improved and more frequent feedback on consumers' energy consumption does not necessarily prompt consumers to save even more energy. However, the households included in the study did look at the new Energy Consumption Overview more often and rated it more positively than the old-style Energy Consumption and Costs Overview.

Why this experiment was conducted: *to meet the energy conservation target from the Energy Agreement.*
In 2017, four trade associations (NVDE, Netbeheer Nederland, Techniek Nederland and Energie Nederland) signed a covenant with the Ministers for Economic Affairs and Climate Policy and for the Interior and Kingdom Relations, in order to stimulate consumers to conserve 10 PJ (petajoule)'s worth of energy. The actions initiated by the parties of the covenant focused on owner-occupants, home-owners associations, tenants and small businesses. They hypothesised that if these parties had a better understanding of how they were using power, they would be more likely to save energy.

Type of intervention: *frequent visual feedback as well as tips on how to save energy*
The energy suppliers have been working on something that could replace the Energy Consumption and Costs Overview, which provides consumers with indirect feedback on their energy consumption. The Behavioural Insights Team of the Ministries of Economic Affairs and Climate Policy and of Agriculture, Nature and Food Safety provided input on the interventions, such as more direct feedback. These are a few of the things that were modified:

- The new Energy Consumption Overview was released monthly, as opposed to once every two months (the former Energy Consumption and Costs Overview)
- The new Energy Consumption Overview stated that the overview was designed to help the clients conserve energy
- Clients were given visual feedback on their energy consumption, which showed them clearly whether their energy consumption had gone up or down in the last year. This was done by means of graphics: smiley faces, small flags and the colours red and green
- Clients' energy consumption level was compared visually with comparable households' consumption level, in the form of bar charts. Gas consumption

was compared with average gas consumption in similar types of homes in the Netherlands (apartment, terraced house, corner house, detached house), and electricity consumption was compared with electricity consumption in similarly-sized households.

- Every month, clients were given energy saving tips that were appropriate for the season – for instance, tips on how to insulate their home, replace lightbulbs or to not leave devices in standby mode. Furthermore, clients were referred to a consumer website for more information on energy conservation.

Method used: *RCT and survey*

The study was conducted in the form of a randomised controlled trial. The four energy suppliers which took part in the study – that supply 80% of the market between them – each established a control group consisting of 6,100 clients who kept receiving the old-style Energy Consumption and Costs Overview. All their other clients received the new and improved Energy Consumption Overview. Each energy supplier selected 6,100 of these clients, who formed the intervention group. Therefore, this experiment had a total sample of 48,800 clients, whose data were measured between 1 August 2018 and 31 July 2019. During this 11-month period, the energy consumption (gas and electricity) of the intervention group and the control group were compared. Furthermore, the clients included in the experiment took part in a survey in June 2019. The researchers conducted the survey to gain a better understanding of the factors that might explain the study results.

Result obtained: *the Energy Consumption Overview was read, but did not lead to a change in behaviour*

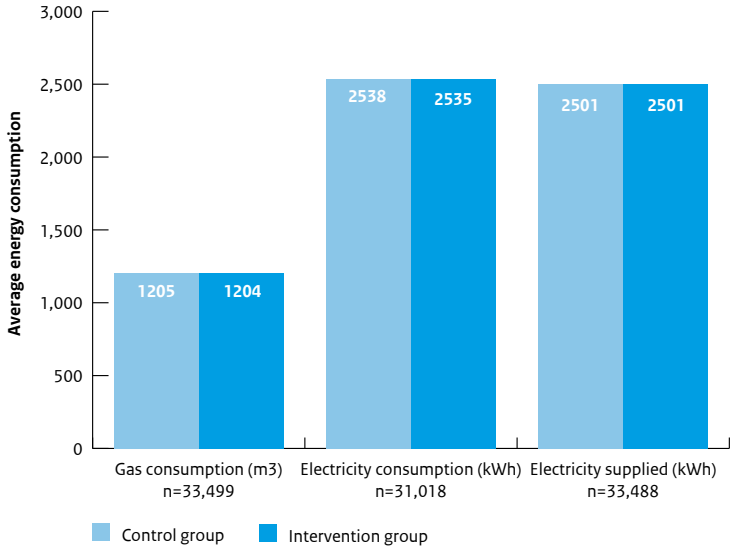
No difference was observed between the control and intervention group in terms of gas and electricity consumption (see Figure 33). In other words, the improvements made to the old-style Energy Consumption and Costs Overview and the monthly feedback did not have a significant effect on the participating households' energy consumption. However, the survey responses did show that the intervention group looked at the overview more often than the control group. Furthermore, households rated the new Energy Consumption Overview more positively than the old-style Energy Consumption and Costs Overview, and significantly more of them indicated that the overview had prompted them to think about green home improvements and energy conservation.

Impact: *an understanding of how hard it is to get feedback completely right*

The study results were not consistent with what we have seen in international literature on the subject. This may have been due to the following reasons:

- This study compared the energy consumption of households that received the old-style Energy Consumption and Costs Overview with the energy consumption of households that received an improved version of the overview. Literature on the subject generally focuses on studies in which one group received feedback while another did not, meaning that the differences between de groups in terms of feedback was bigger in those studies compared to this study. The Dutch situation does not make for good comparisons with the situation found in other countries. For instance, contrary to other countries, the Dutch government has focused on energy conservation ever since the 1980s.
- In other studies, there is often a focus on information about other households in the neighbourhood, e.g. a comparison with the 'most efficient neighbours'. This study only allowed for a comparison with an average household.

Figure 33: No difference in energy consumption between the intervention group and the control group during the full 11-month measuring period



Even though the study results were not what the energy suppliers had hoped for, they did show that impact measurements are important and that simply giving more feedback will not cause people to change their behaviour just like that. It is vital that the feedback is given properly. We expect that a combination of feedback and additional measures designed to encourage people to save energy will be more impactful.

More people use a tool for energy consumption management

How can behavioural insights help to realise this?

The researchers appealed to people's identity and made it easier for them to change their behaviour in order to get them to use a tool for energy consumption management. They are more likely to go through the following steps: visit a website, create an account and log into the energy consumption management tool to check how much energy they are consuming.

Why this experiment was conducted: *too many people are not yet using energy conservation devices*

The Dutch government hopes that the National Climate Agreement will help the country reduce its greenhouse gas emissions. The 'Everyone Chips In' climate campaign was launched to encourage people to behave in a more eco-friendly way. People can use a tool for energy consumption management to save energy at home. Such tools are available in the form of a website, app or an in-home display. However, at present, there are not many people in the Netherlands who use such tools. The Ministry of Economic Affairs and Climate Policy wants to employ communication interventions that encourage people to try using a tool for energy consumption management.

Image 31: Image from the 'Everyone Chips In' climate campaign

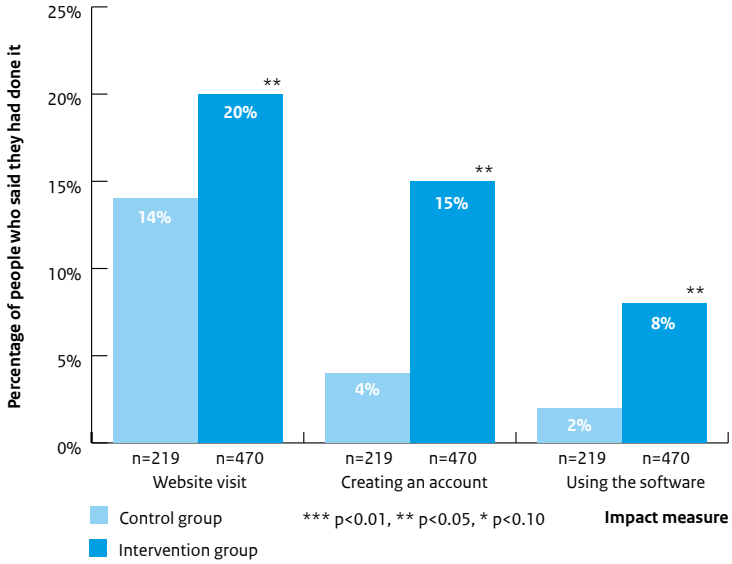
Type of intervention: *appealing to identity; making behaviour manageable*
The intervention was tailored towards a particular group within the Dutch population, namely people for whom sustainability matters a great deal. In a research setting, respondents were proactively offered a free tool for energy consumption management by the Ministry of Economic Affairs and Climate Policy from Enelogic's website. Two different types of interventions were created:

- an appeal to people's identity: people's environmental values were activated – among other ways, by getting them to think about how important the climate is to them
- making the change manageable for people: it was made easy for people to use the tool for energy consumption management, by means of a step-by-step plan and email reminder (among other things).

Method used: *RCT*
A randomised controlled trial was established to conduct this study. The study subjects were randomly allocated to three groups: two intervention groups (one of which appealed to people's identity, while the other made the change manageable for people), as well as a control group. Each group received a different version of the survey. In the control condition, people received a proactive offer at the end of the survey, but no attempt was made to appeal to specific behavioural determinants in the questions asked until that point.

Result obtained: *appealing to people's identity and making behaviour manageable are effective strategies*
People who received a proactive offer that involved behavioural change techniques were more likely to accept the offer than people who received a regular offer. They visited Enelogic's website more often, created an account more often and logged in more frequently to check how much energy they were consuming. This pattern could be observed both in people's self-reported behaviour and in behavioural statistics. Making behavioural change manageable proved to be slightly more effective than appealing to people's identity.

Figure 34: Proactive offer to allow people to use energy consumption management software for free encourages people to use it



Impact: *targeted effort to get people to consume less energy*

The behavioural analysis and interventions constituted input for a communications approach targeted at specific groups of people. This is more effective and more cost-efficient than a mass media campaign geared towards the general public. Widespread use of tools for energy consumption management will in the long term help households reduce their gas and electricity consumption.

More sustainable delivery options for people who order things online

How can online shops get their customers to opt for delivery options that minimise carbon dioxide emissions?

This study focused on how the choices made by customers of online shops regarding the delivery of their orders can be influenced. Those who received information on the carbon dioxide impact of the various delivery options were twice as likely to opt for the most sustainable delivery option. Ticking that option by default had the most significant impact on customers' behaviour.

***Why** this study was conducted: growth of e-commerce is increasing carbon dioxide emissions*

Every day, parcel delivery services deliver thousands of products purchased online, which is resulting in increased carbon dioxide emissions. As part of the Dutch Climate Agreement, Dutch online shops have committed themselves to reduce their carbon dioxide emissions by 50% by 2025, compared to 2018 levels. In order to determine how online shops and their customers can contribute to the achievement of this target, the Ministry of Infrastructure and Water Management had a behavioural experiment conducted. The central question to be answered was: do consumers opt for sustainable delivery options if the online shop gives them specific information on the carbon impact of each of the various options during the ordering procedure?

***Type of intervention:** field trial of the Bewust Bezorgd tool's efficacy*

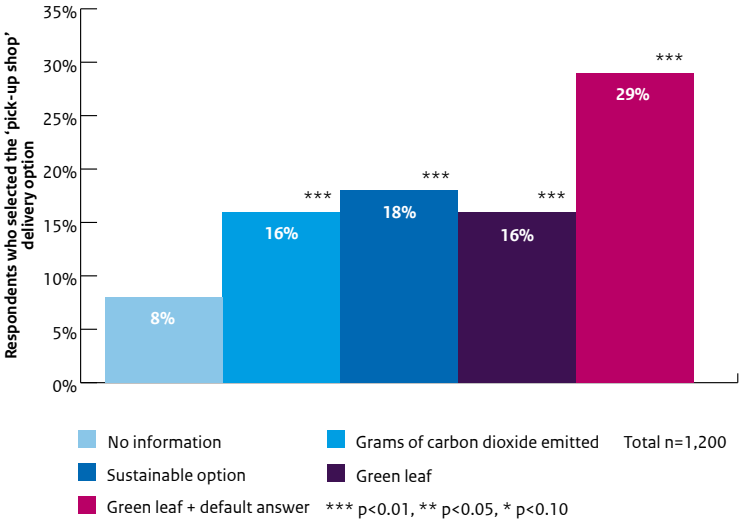
In association with the Ministry of Infrastructure and Water Management and the Logistics Topsector, the Dutch ecommerce trade association Thuiswinkel.org developed a calculation tool: 'Bewust Bezorgd ('Conscious Delivery'). This tool allows online shops to calculate the carbon impact of the dispatch of products ordered online. Before this tool will be implemented on a larger scale by Dutch online shops, a study had to be conducted to determine whether informing clients of the environmental impact of the various delivery options is actually an effective intervention. A live ordering procedure was used to assess whether the intervention made online shoppers more likely to opt for different delivery times or delivery locations. The researchers also looked at how behavioural effects differed if information was conveyed in other ways.

Method used: *RCT and survey*
The study consisted of a combination of a randomised controlled trial and a nationally representative survey. As a result, a link could be monitored between the registrated behaviour of the 1250 study subjects (i.e. the choice they actually made for one of the offered delivery options) and the answers they gave in the survey. Behaviour-related choices were able to be analysed on the basis of socio-demographic variables, online ordering habits and environmental awareness, among other things.

To thank the study subjects for their participation in the survey, the 1250 study subjects were allowed to choose a gift in a specially created online shop. At the check-out moment of the ordering procedure they had to select one of four delivery options with four different carbon impact levels: same-day delivery (largest carbon footprint), next-day evening delivery, next-day delivery or drop-off at a local pick-up shop where customers could collect it themselves (smallest carbon footprint). The subjects had been randomly assigned to five conditions: control group (no intervention), three groups who were given information on carbon dioxide emissions (different text and image variants) and one group who received information on carbon dioxide emissions in combination with a pre-ticked default answer (the most sustainable option – 'collect at a pick-up shop' – had been pre-ticked).

Result obtained: *the use of information on carbon dioxide emissions and default answers encourage people to opt for the most sustainable delivery option*
The graph shows that all interventions in the randomised controlled trial had a positive behavioural effect: the three treatment groups who had been presented with information on carbon dioxide emissions were twice as likely to select the most sustainable option than the control group. In the 'information-and-default-answer' group, even 29% opted for 'collect at a pick-up shop'. Most study subjects stuck to their habitual behaviour (i.e. they choose next day delivery'). Environmentally conscious and highly educated participants were most likely to select the most sustainable delivery option.

Figure 35: Differences in percentage of respondents who opt for the most sustainable delivery option ('pick-up shop') between conditions



Impact: *the online shop sector is making a contribution to the country's efforts to attain the targets specified in the Climate Agreement*

The study results will be used in the further development of the Bewust Bezorgd tool – for instance, to optimise the various information variants. In addition, they may help convince online shops to use this tool. In its communications with the people it represents, the Thuiswinkel.org trade association is using the study results to demonstrate that providing customers with information on the carbon impact of available delivery options during the ordering procedure is an effective method, particularly when combined with pre-ticking the most sustainable delivery option as a default answer. More and more Dutch online shops are planning to add the information and/or default answer to their check-out procedures, so as to encourage their customers to select the delivery option with the lowest possible carbon dioxide emissions.

Thuiswinkel.org expects this will go some way towards helping the e-commerce sector get closer to attaining the carbon dioxide emissions reduction target specified in the Climate Agreement.

Getting masters of inland shipping vessels to leave less rubbish

How can we reduce the number of filled bin liners masters of inland shipping vessels leave next to wheelie bins in ports and harbours?

Inland shipping is one of the sources of litter in rivers. When masters of shipping vessels leave rubbish next to the wheelie bins intended for residual waste in the overnight ports operated by The Directorate-General for Public Works and Water Management (Rijkswaterstaat), more plastic will pollute our inland waterways. A behavioural intervention was developed to reduce the amount of rubbish left next to bins, which involved signs with explanations near the jetties (among other things). This intervention caused the number of bin liners to be left outside bins to be reduced significantly.

Why this experiment was conducted: *litter on river banks*

The Directorate-General for Public Works and Water Management seeks to reduce the amount of litter that can be found on Dutch river banks. Reducing the amount of litter at the source reduces the amount of plastic polluting the sea. Inland waterway transport is one of the sources of waste found on river banks and in the water. This pilot study specifically focused on waste left outside bins in the IJzendoorn overnight port operated by the Directorate-General. This is waste placed next to residual waste bins by masters of inland shipping vessels or their employees. How can we achieve a measurable reduction in the number of bin liners left next to bins? The researchers started by performing an extensive analysis of shipmasters' behaviour, motives and why they were not conforming. Among other things, they used the experiences and user data collated by Stichting Afvalstoffen Binnenvaart (the Waste Materials and Inland Shipping Documents Foundation, a.k.a. SAB).

Type of intervention: *activating signs in the overnight port.*

The results of this analysis were then used to develop a behavioural intervention featuring sympathy, associations, recognition, norm activation, a course of action, prompting and nudging. The intervention consisted of three components:

- a 'Welcome!' sign near the entrance of the port
- signs near the jetty from which cars are loaded or offloaded (the main place where behaviour change needs to be effected, because this is where shipmasters decide whether they are going to take their waste from their vessel or not)
- a highly visible residual waste bin with stickers on it

Image 32: Waste bin with stickers on it

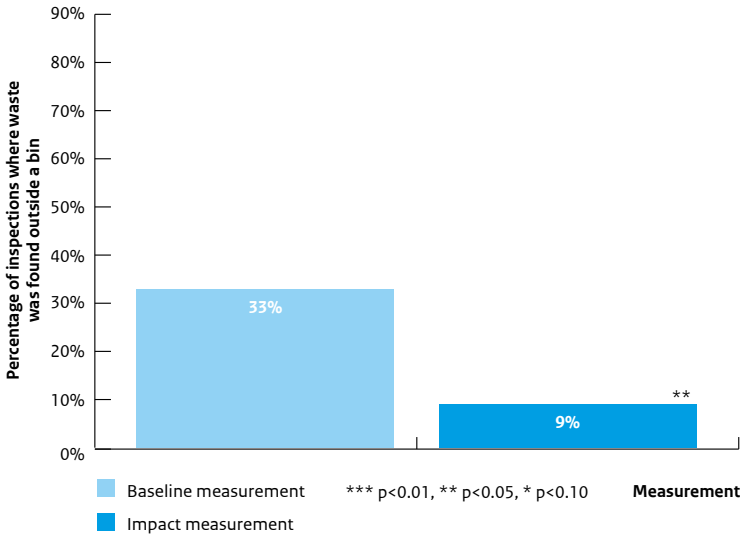
All signs feature a shipmaster icon, as well as an eye-catching colour (yellow) and a link to the SAB waste disposal plan. Signs on the jetty in both Dutch and German, featuring both symbols and words, state that the residual waste bin can be used by people with a SAB waste disposal plan. Non-SAB members must keep their waste on board. Near the residual waste bin itself, the emphasis is on proper use of the bin (instructions can be found on a sticker on the lid) and on shipmasters joining the SAB.

Method used: *baseline and impact measurements*
As part of the field trial, baseline and impact measurements were performed in the IJzendoorn overnight port. In the six weeks leading up to the intervention, the amount of waste (expressed in full bin liners) placed next to the bins was tracked. The same thing was done for a month after the interventions had been carried out. Statistical analysis was used to assess whether the approach had resulted in a significant reduction of the amount of waste left next to bins.

Result obtained: *a significant reduction in the amount of waste placed outside bins*
The behavioural intervention proved highly effective in preventing people from leaving residual waste next to bins. During the impact measurement period, no bin liners filled with residual waste were left outside the bins, although someone did leave two boxes full of paper. This pilot study showed that the use of clever

and well-timed behavioural techniques can convince shipmasters to behave the right way. The number of bin liners left next to bins decreased very considerably in a short while. We must check whether the intervention will prove effective in the long run. We can do so in a similar way to the baseline and impact measurements performed as part of this study. The number of people signing up for SAB waste disposal plans did not increase significantly during the measurement period.

Figure 36: Frequency with which inspectors found waste left outside bins



Impact: *a study that can be replicated in other places; less plastic polluting the sea*
The behavioural intervention may be replicated in other ports and harbours operated by the Directorate-General, and possibly in flights of locks, as well, so as to ensure more uniform policies across the board. A more uniform approach will raise awareness of the issue and have a positive effect on people's behaviour. The more uniform the waste collection system (within the Netherlands and preferably elsewhere, as well), the easier it will be for people working on ships to do the right thing.

This project is a good example of a project in which waste is tackled at the source. In this way, the amount of waste sitting on Dutch river banks that ends up in the water will be reduced, and less plastic soup will pollute our waterways.

Chewing gum: 'Bin your blob'

How do we get people to stop leaving their chewing gum on the pavement?

The goal of this pilot study was to encourage students to dispose of their chewing gum into a bin rather than on the street. The 'Bin your blob' behavioural intervention that was developed resulted in the amount of chewing gum on the pavement being reduced by 80%.

Why this experiment was conducted: *too much chewing gum on the pavement*
Blobs of chewing gum on the pavement are a major source of annoyance. Their removal costs municipal authorities a small fortune every year, they make the streets look dirty and they attract other types of litter. The Ministry of Infrastructure and Water Management seeks to make our environment cleaner and more liveable. The Ministry wanted to conduct this pilot study to help bring about a cleaner environment and to demonstrate the added value of behavioural insights in solving social issues.

Type of intervention: *'Bin your blob'*
The Ministry and a behavioural science agency developed the 'Bin your blob' intervention on the basis of behavioural insights. The behavioural intervention consisted of campaign posters, stickers on waste bins and ground signage. In addition, the following things were incorporated: a waste-disposal robot (fun factor), a photo booth (commitment and consistency) and a photo poster (norm activation). See image 33. The 'Bin your blob' slogan conveyed the desired behaviour very directly, and the message was reinforced by means of images (norm activation). The human figure on the poster wore headphones, meaning he was very relatable to young adults. The ground signage component of the behavioural intervention gave young adults a timely reminder of the desired behaviour (prompting). The waste bins were rendered more visible by means of bright pink stickers.

Method used: *field trial and survey*
A field trial involving baseline and impact measurements (each lasting four weeks) was conducted at two branches of the ROC Mondriaan school and the nearby Leidschenveen shopping centre. Prior to both measurements, chewing gum was removed and streets were cleaned. Researchers monitored how much chewing gum was left on the street in certain pre-selected places. In addition, a survey was held. The impact measurement was performed in February 2020, i.e. before the first lockdown.

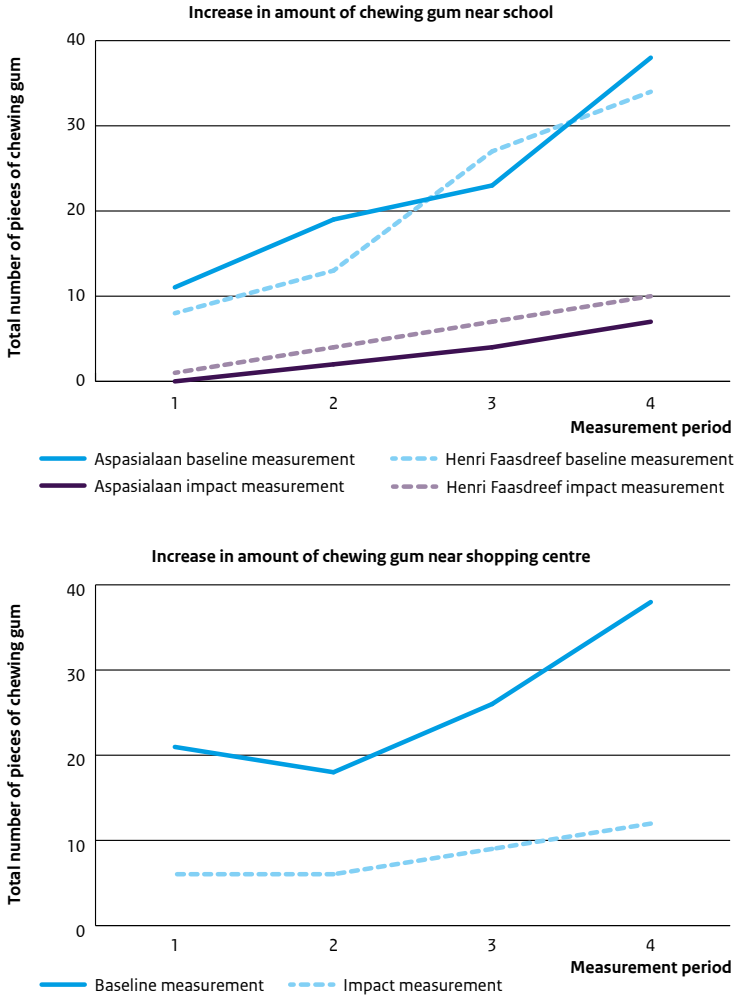
Image 33: Photo booth and photo strip

Result obtained: *less chewing gum left on pavements*
The 'Bin your blob' behavioural intervention resulted in an 81% reduction in the amount of chewing gum found on the pavement near the ROC schools. The amount of chewing gum found on the ground near the shopping centre was reduced by 68% after the behavioural intervention. See Figure 37. In other words, people left less chewing gum on the pavement during the impact measurement period than during the baseline measurement period. Students really liked the behavioural intervention – more particularly, the way it looked, the 'Bin your blob' slogan and how noticeable the campaign was outdoors.

Impact: *clean and liveable surroundings*
This pilot study showed that a clever application of behavioural insights contributes to clean and liveable surroundings. The researchers were successful in reducing the amount of chewing gum left on the streets. As a result, local authorities no longer have to spend a fortune on street-cleaning and streets continue to look presentable for longer. In a clean and neat environment, people are less likely to litter. The intervention package has been made available to all parties that are interested in, such as municipal governments.[20]

[20] Zwerfafval.rijkswaterstaat.nl/%40237423/toolkit-bekkie-bakkie/

Figure 37: The 'Bin your blob' intervention resulted in less chewing gum on the pavement



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 'Behaviour Day' conference, the online community hosted on www.binnl.nl, the monthly lectures, the release of this publication and the development and facilitation of a module in the training programme offered to government trainees.
The table below is a list of all these activities and what was gained from them.

Overview of BIN NL activities carried out in 2019-2021

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.	2019: 600 attendees 2020: 1,000 attendees (online edition)
Monthly lunch-time lectures	Sharing knowledge and going more in depth	On average: 80 attendees
Online platform: www.binnl.nl	Forum: discussions on different disciplines; sharing articles and knowledge Who is who: a landing page for questions and networks Website: 'What works and what doesn't?' project database, as well as overviews of relevant job advertisements and training courses	Over 2,000 members 31,500 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	2019 print quantity: 900 copies Downloads: 5,670 2021 print quantity: 900 copies (November 2021)
Hoe is gedrag te onderzoeken? (How to study behaviour)	Overzicht van 18 onderzoeks- methodieken voor effectiever beleid. (An overview of 18 research methodologies for a more effective policy'). A publication designed to help people discuss the conduct of research	Print quantity: 800 Downloads: 8,555
Elective module incorporated into the training programme offered to government trainees	Introduction to behavioural insights for government trainees	60 government trainees annually

Contact persons for the various individual projects

Name of organisation	Project(s)	Contact person	Email address
ACM	Getting more people to read and properly understand shops' general terms and conditions	Mareille de Bloois	*mareille.de.bloois@acm.nl*
ACM	Clarity on paid rankings	Mareille de Bloois	*mareille.de.bloois@acm.nl*
ACM	Effective communication on additional costs	Mareille de Bloois	*mareille.de.bloois@acm.nl*
AFM	Proper guidance in decisions regarding pension schemes (I and II)	Wilte Zijlstra	*wilte.zijlstra@afm.nl*
AZ, EZK	More people use a tool for energy consumption management	Joost Loef	*j.loef@minaz.nl*
AZ, Customs Authority	Travellers declare cash to customs before departing	Joost Loef	*j.loef@minaz.nl*
EZK	Energy-conserving consumers	Thomas Dirkmaat	*t.dirkmaat@minezk.nl*
EZK, LNV	Replacing international business trips with online alternatives	Amber van Druten	*a.e.a.vandruten@minezk.nl*
EZK, BZK, Fin	Green home improvements with a savings bonus	Thomas Dirkmaat	*t.dirkmaat@minezk.nl*
Fin, BZK	Responsible mortgage amounts	Janneke Toussaint	*j.toussaint@minfin.nl*
Fin	Financial service providers compared more often	Janneke Toussaint	*j.toussaint@minfin.nl*
Fin / Wijzer in Geldzaken	Getting people to act on their good intentions with regard to their pension	Rick Nijkamp	*r.nijkamp@minfin.nl*
IenW	More sustainable delivery options for people who order things online	Koos Tamis	*koos.tamis@minienw.nl*
IenW / Directorate-General for Public Works and Water Management	Getting masters of inland shipping vessels to leave less rubbish	Stefan van der Wal	*stefan.vander.wal@rws.nl*

Name of organisation	Project(s)	Contact person	Email address
IenW/Directorate-General for Public Works and Water Management; The Hague Municipal Government	Chewing gum: 'Bin your blob'	Noor Berkman	*noor.berkman@minienw.nl*
Netherlands Labour Authority	Health and safety awareness at metal-working companies	Koen van der Voorn	*kvdvoorn@inspectieszw.nl*
Netherlands Labour Authority	Request for submission of data on hazardous substances used by companies	Youssef Chrigui	*ychrigui@inspectieszw.nl*
Netherlands Labour Authority	Familiarising recent graduates with work placement rules	Britt Meuter	*bmeuter@inspectieszw.nl*
NEa	Getting more employees to complete their timesheets on time	Angelique Hendriks	*angelique.hendriks@emissieautoriteit.nl*
OCW	Choosing a degree programme with good job prospects	Marc van der Steeg	*marc.vandersteeg@minocw.nl*
OCW/DUO	Getting people who are repaying a student loan to notify that they have a partner	Marc van der Steeg	*marc.vandersteeg@minocw.nl*
OCW/Duo	More conscious student borrowing behaviour (I and II)	Marc van der Steeg	*marc.vandersteeg@minocw.nl*
OCW/DUO	Reducing the number of unnecessary phone calls to DUO	Marc van der Steeg	*marc.vandersteeg@minocw.nl*
OCW/DUO	Reducing the number of students who do not apply for a supplementary grant (I and II)	Marc van der Steeg	*marc.vandersteeg@minocw.nl*
OCW/DUO	Getting students to pay their tuition fees on time	Marc van der Steeg	*marc.vandersteeg@minocw.nl*

Name of organisation	Project(s)	Contact person	Email address
Corona Behaviour Unit	Physical distancing devices designed to help people understand how far 1.5 metres is	Niels Vink	*ny.vink@minvws.nl*
Corona Behaviour Unit	Distance-measuring devices for distance awareness	Niels Vink	*ny.vink@minvws.nl*
Corona Behaviour Unit	Spreading crowds in supermarkets	Maureen Turina	*m.turina@wodc.nl*
Corona Behaviour Unit	Increase willingness for testing in case of coronavirus-related symptoms	Job Harms	*j.a.harms@minfin.nl*
RIVM, SZW	Working safely with forklift trucks	Michelle Zonneveld	*michelle.zonneveld@rivm.nl*
SZW, Fin	Ensuring that fewer parents are required to repay the childcare benefit they have received	Lili Chu	*l.chu@belastingdienst.nl*
VWS/RIVM	'Provident' distribution of iodine tablets	Liesbeth Claassen	*liesbeth.claassen@rivm.nl*
VWS/RIVM	Willingness to participate in mass community testing	Jet Sanders	*jet.sanders@rivm.nl*
VWS/RIVM	Local support to improve self-isolation or quarantine compliance during the pandemic	Jet Sanders	*jet.sanders@rivm.nl*

List of abbreviations

ACM	Netherlands Authority for Consumers & Markets
AFM	Netherlands Authority for the Financial Markets
AZ	Ministry of General Affairs
BZK	Ministry of the Interior and Kingdom Relations
CASI	Communication Activation Strategy Instrument
CJIB	Central Judicial Debt Collection Agency
DPC	Public Communication Department
DUO	Education Executive Agency
ECDC	European Centre for Disease Prevention and Control
EZK	Ministry of Economic Affairs and Climate Policy
Fin	Ministry of Finance
GGD	Regional Public Health Service
HO	higher education
IenW	Ministry of Infrastructure and Water Management
JenV	Ministry of Justice and Security
LNV	Ministry of Agriculture, Nature and Food Quality
MBO	VET college
NCTV	National Coordinator for Counterterrorism and Security
NEa	Dutch Emissions Authority
NKC	National Crisis Communication Core Team.
NLA	Netherlands Labour Authority
NVDE	Dutch Sustainable Energy Association
OCW	Ministry of Education, Culture and Science
RCT	Randomised controlled trial
RIVM	National Institute for Public Health and the Environment
ROC	Regional Training Centre
RWS	Directorate-General for Public Works and Water Management
SZW	Ministry of Social Affairs and Employment
UWV	Employee Insurance Agency
VO	Secondary schools
VWS	Ministry of Health, Welfare and Sport
WODC	Scientific Research and Documentation Centre

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