

# Nudging business policy

Making it easy to do the right thing



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# Preface

The concept of 'nudging' comes from the book: *Nudge: Improving Decisions about health, wealth and happiness*, from 2008, written by behavioural economist Richard Thaler and lawyer Cass Sunstein. The motivation behind the book is the 'cognitive bias' that modern behavioural research has uncovered, which in daily life induces our behaviour to often deviate from our good and valid intentions. When we make decisions, we are simply more susceptible to other influences than pure rational incentives.

The concept of 'nudging' encompasses the idea of using these insights to promote certain behaviours without resorting to the use of hard regulation or incentives. This makes the approach particularly attractive to civil servants and politicians.

In August 2012, The Danish Business Authority decided to launch a project on 'nudging'. The motivation was the many positive experiences with nudging from among others the Behavioural Insights Team (BIT) under the Cabinet Office in the UK. The project aims to:

1. Test 'nudging' or behavioural economic experiments as a method to improve business policy.
2. Find new ways of using the business support system in order to encourage new business' understanding of and ability to comply with administrative requirements.

The project has been carried out in cooperation between The Danish Business Authority and The Ministry of Taxation. Five experiments have been conducted during the project in cooperation with regional and local stakeholders as well as different teams within The Danish Business Authority. This summary report presents the results of three of the experiments.

In addition to the summary report, the complete material from each of the five experiments is compiled in separate reports.

## Chapter 1

# Results and implications

Copenhagen Economics in close cooperation with the project group and Assistant Professor Pelle Guldberg Hansen have carried out five experiments in order to test whether behavioural economics or nudging may be a relevant tool for improving the business support system. We find the answer to be a clear 'yes'.

This chapter presents the main results. In section 1.1 we demonstrate a significant increase in the number of businesses that reply to a letter from the Business Authority due to changes made to the letter.

We then present a substantial increase in the number of people who click through on a public website, because we attract people's attention using different graphics on the website. That is the results from the experiment in section 1.2.

Finally, in section 1.3, we present an experiment, which should make it easier for start-ups to register correctly in the public system (electronically at [virk.dk](http://virk.dk)). This taught us the challenges of carrying out complex experiments.

### 1.1 Increase in the response rate to a letter

Many businesses and individuals do not respond to letters from public institutions at all, or they do not respond in the way the institution had intended them to. This leads to unnecessary administrative costs for the business as well as for the public institution.

Therefore, the project team wanted to carry out an experiment with the purpose of increasing the response rate to a specific letter that the Business Authority sends out to certain businesses urging them to sign up to the Nutrition Base. Box 1 describes the Nutrition Base.

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#### Box 1 The Nutrition Base

The Nutrition Base is an online public database that all food businesses are required to be registered in order to operate their business legitimately.

All businesses selling or transporting food for more than 50,000 DKK per year shall initially be registered in the Nutrition Base.

The requirement applies to businesses that handle food of any kind such as beer, wine, soft drinks, sweets and other foods.

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Source: [Næringsbasen.dk](http://Næringsbasen.dk) and Copenhagen Economics

Today, only around half of the businesses reply to the letter and even less sign up to the Nutrition Base. The consequences are that the Business Authority has to do follow up with another letter and eventually an indictment, both of which entail additional expenses.

es. The Business Authority plans to send out approximately 10,000 letters during 2013. Without intervention, it is expected that it has to send out approximately 5,000 reminder letters. Each letter implies costs for printing, envelopes, stamps and especially administration as well as indictment costs.

If more businesses would sign up to the Nutrition Base when receiving the first letter, the Authority could save money. However, we have not conducted the concrete business case under the auspices of this project, i.e. how much money the Authority is able to save by increasing the number of businesses that sign up to the Nutrition Base compared to the costs of e.g. changing internal procedures in relation to developing and sending out a new letter.

We sent out three different letters as part of the experiment:

1. The original letter (the control letter)
2. A new letter on white paper
3. A new letter on red paper

The project team identified the following factors in the original letter as being potential barriers for businesses to respond to the letter:

- It was impersonal in its enquiry
- The setup of the text was messy
- Key information was not highlighted
- The costs of failing to act as requested was not clear
- It was not explicitly stated what specific action was required on the part of the business (which is to sign up to the Nutrition Base)

An excerpt of the original letter is shown in Figure 1.



**Figure 1 The original letter (used as control letter)**

Skal din virksomhed have et næringsbrev?  
Fødevarestyrelsen har oplyst Erhvervsstyrelsen om, at

P-NR XXXXXXXXXXXX, P\_ENHEDSNAVN, P\_ENHEDADRESSE,  
P\_ENHED POSTNUMMER & P\_ENHEDBY

formodentligt skal have et næringsbrev i Næringsbasen.

Alle fødevarevirksomheder med detailsalg, catering, servering, transport- eller fødevareengrosvirksomheder skal have et næringsbrev, hvis der er en årlig omsætning af fødevarer for mere end 50.000 kr.

Du kan læse meget mere i vores vejledning. Den finder du på [www.virk.dk/naeringsbasen](http://www.virk.dk/naeringsbasen) under "Hjælp og support".

Note: Excerpt from the original letter. The actual letter contained the actual name and address instead of the XXX's.

Source: The Danish Business Authority

The project team now designed a new letter using the nudges below, which according to previous experience from behavioural economics, have demonstrated to be successful in increasing the response rate to similar type letters:

- Specifically addressing a person or the business by name
- Including boxes to tick off to make it easy for businesses to conclude whether the criteria for signing up to the Nutrition Base apply to them
- Highlighting key pieces of information to emphasise the costs of not responding
- Presenting how to sign up to the Nutrition Base in an action-oriented way and with illustrations
- Reposition the option to argue why the business is not eligible for the Nutrition Base by moving it from page 1 to page 2.

An excerpt of the new letter is shown in Figure 2.

**Figure 2 The new letter (which was sent out on both white and red paper)**

Fødevarestyrelsen har indstillet til Erhvervsstyrelsen, at din virksomhed skal have et næringsbrev i Næringsbasen, idet det vurderes, at din virksomhed:

*beskæftiger sig med detailsalg, engrossalg, transport eller servering af fødevarer eller med cateringvirksomhed, og*



*har en årlig omsætning på mere end 50.000 kr.*



Du skal derfor have oprettet et næringsbrev **senest onsdag d. 13. februar 2013** med mindre, du gør indsigelse.\* Bemærk: Det er ulovligt at drive fødevarevirksomhed uden at være optaget i Næringsbasen. **Du risikerer en bøde på mindst 10.000 kr.**

**GØR DET FØR DU GLEMMER DET! (det tager 2 minutter):**

1. Gå ind på [www.virk.dk/naeringsbasen](http://www.virk.dk/naeringsbasen)
2. Vælg "Opret, ændring eller ophør af fødevarenæringsbrev(alle typer)"



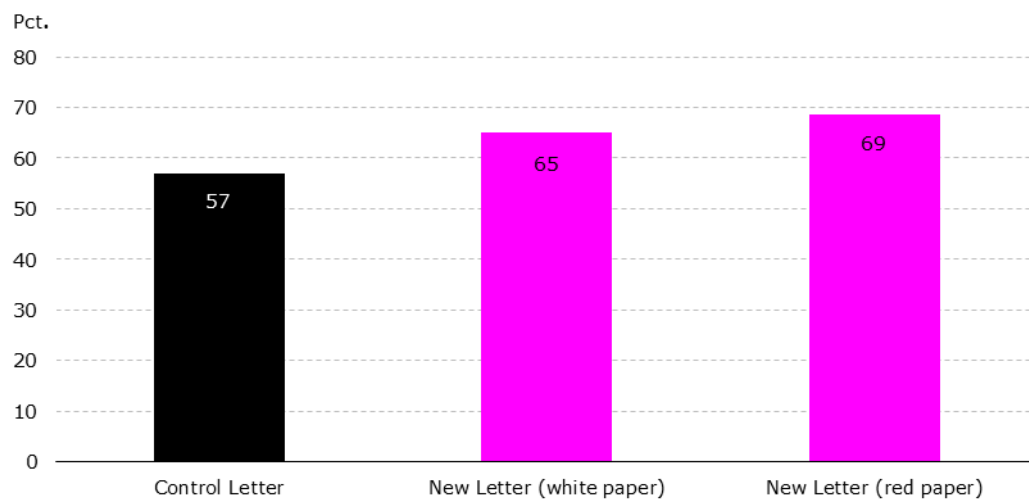
Note: Excerpt of the new letter.

Source: The Danish Business Authority and the project group.

**The new letter increased the response rate**

The letters were sent out to three randomly selected groups of businesses, which under normal circumstances would all have received the original letter. In total, almost 600 businesses received a letter. The original or control letter was sent out to close to 200 businesses, the new letter on white paper was sent out to another 200 businesses and the new letter on red paper was sent out to the remaining 200 businesses.

The changes in the new letter caused the response rate to increase significantly, cf. Figure 3. We found that 57 per cent of the businesses that had received the original letter responded, either by signing up to the Nutrition Base or by explaining why they did not need to register (which is the two ways in which the businesses can respond). The response rate in the group that received the new letter on white paper was 65 per cent, while it was even higher, 69 per cent, in the group of businesses that received the new letter on red paper.

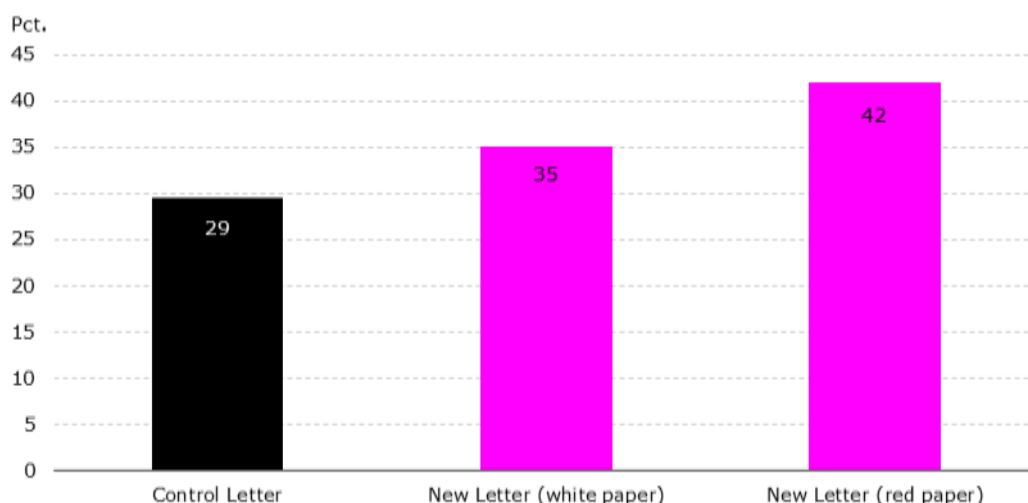
**Figure 3 The response rate increased with the new letters**

Note: The increase from 57 pct. in the control letter to 69 pct. in the new letter on red paper represents an increase of 21 pct. The difference between the new letter on white paper and the control the letter is statistically significant at the 10 pct. level (p-value = 6.4 pct.), While the difference between the new letter on red paper compared to the control letter is statistically significant at a 5-pct. level (p-value = 1.4 pct.).

Source: Copenhagen Economics based on data from the experiments.

In addition, a larger share of the businesses that received the new letter actually signed up to the Nutrition Base, cf. Figure 4. We found that 29 per cent of the businesses in the control group signed up to the Nutrition Base; that share increased to 35 per cent for the group that had received the new letter on white paper and it rose to 42 per cent in the group that that had received the new letter on red paper.

**Figure 4 The new letters increased the share of businesses that signed up to the Nutrition Base**



Note: The figure shows the share of businesses who signed up to the Nutrition base (of all businesses that received a letter). The difference between the new letter on white paper and the control letter is not statistically significant at a 10 pct. level (p-value = 11.5 pct.), while the difference between the new letter on red paper in relation to the control letter is statistically significant at the 1 pct. level (p-value <1 pct.).

Source: Copenhagen Economics based on data from the experiments.

### Recommendations

The results of this experiment are striking. Based on the results from the experiment, an actual business case could be made estimating costs and benefits of making the new letter the standard one. The Business Authority should view other cases where it sends out letters to individuals or businesses and consider whether similar improvements could be achieved.

### 1.2 More 'clicks' on public websites

It is not always easy to make businesses and individuals access and exploit even important and useful information made accessible to them through public websites. Therefore, the project team experimented on a public website to see if more - in this case businesses - would click through to particularly important and useful information.

The public website 'Startvækst' ([www.startvaekst.dk](http://www.startvaekst.dk)) was used in the experiment. 'Startvækst' is a website for entrepreneurs and growing businesses, operated by the Business Authority in cooperation with the Regional Business Development Centres.

On 'Startvækst' the entrepreneur or business can register a user account, which enables them to access the best information on the website. However, currently not many businesses avail themselves of this opportunity.

### Big results with small changes

A major reason for the lack of success is due to the portal design. The old webpage of 'Startvækst' is designed in a way that results in many users leaving the webpage without realising the benefits of registering.

A banner showing a red man is located at the bottom of the old version of the front page, cf. Figure 5. The visitor can access the 'benefits' page by clicking on him. On the 'benefits' page you are able to register a user account, which gives you access to a variety of tools to manage your business. However, the red man does not attract many clicks.

**Figure 5 The red man does not stand out**



Note: Screenshot of the original front page's banner, which is located at the bottom of the front page.

Source: Startvaekst.dk

As it was not doable to move about the graphic elements on the front page, the project team decided to focus attention on the red man that provided access to the 'benefits' page. This was done with the use of the following rather simple changes:

- We replaced the banner of illustration red man with a picture of an actual person. The banner then stands out from the rest of the page in a positive way and the probability that people let their eyes rest on the banner increases.
- We chose the picture of a woman's face and it is the only picture of a human face on the front page. People tend to find and immediately decode facial expressions, i.e. faces draw attention.
- The picture was carefully chosen to show a woman who stands outside of a small group of two slightly indistinct people standing in the background. The image indicates that the two others are already set to work and the woman is invited to join them.
- We replaced the original stationary text across the image with a 'gif' animation where the text flashes and changes colour. People react instinctively to movements, which in the physical space are a potential danger, the possibility of food or just something we have to navigate around. This reflex is intact in a 2D image universe.
- We made the text both welcoming and action-oriented. It leaves no doubts as where to start.
- The nudged banner provides 'the easy way' compared with the old front page, which seemed both daunting and complex. The internet is characterized by a lack of patience and the banner provides a quick way forward.

Figure 6 shows an excerpt of the new front page.

**Figure 6 The picture of the woman stands out**



Note: Screenshot of the new front page with the new item in the banner. See the full report on this experiment for the other changes that were implemented.

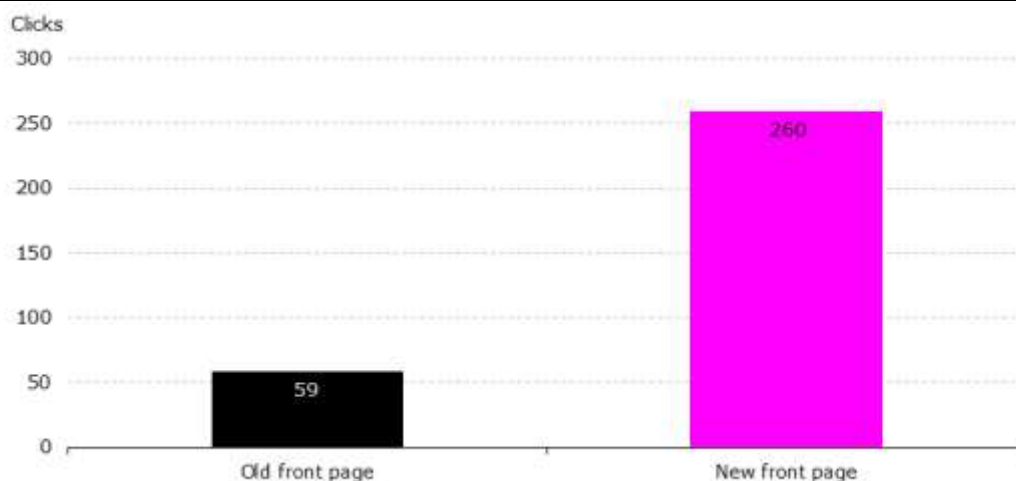
Source: Startvækst.dk and the project group.

The changes on the front caused many more users to click on to the 'benefits' page, cf. Figure 7. We found that 260 persons clicked on the new banner, while only 59 clicked on the old banner during the test period. That it is more than a fourfold increase.

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**Figure 7 The new front page induced significantly more users to click through to the 'benefits' page**

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Note: The number of users who clicked on from the front page to access the "benefits" page during the test period.

Source: Copenhagen Economics based on data from the experiment.

### Recommendations

With relatively few and simple changes and without rearranging the elements on the front page, we managed to get significantly more users to click through to the 'benefits' page. The same changes can be tested on other websites both under the auspices of the Business Authority and on websites of other public authorities.

The experiences and results from this experiment give rise to a forward-looking focus on working with other public websites. The outcome of business cases, that should include non-monetary gains, will determine which websites to experiment on first. The users of the websites, i.e. the businesses, would regard the modified websites as an improved service and transparency as well as allowing them to access valuable information.

### 1.3 Correct registration for duties

Many start-ups are not registered correctly for duties to the public sector on [virk.dk](http://virk.dk). Box 2 gives a brief introduction to [virk.dk](http://virk.dk).



## Box 2 virk.dk

virk.dk is businesses' digital portal to access to the public authorities. The purpose of virk.dk is to reduce the administrative burden for businesses. The portal provides access to registration for duties and to make approximately 1,500 different types of filings. With virk.dk the businesses only need to access one single website in order to report to all the public authorities.

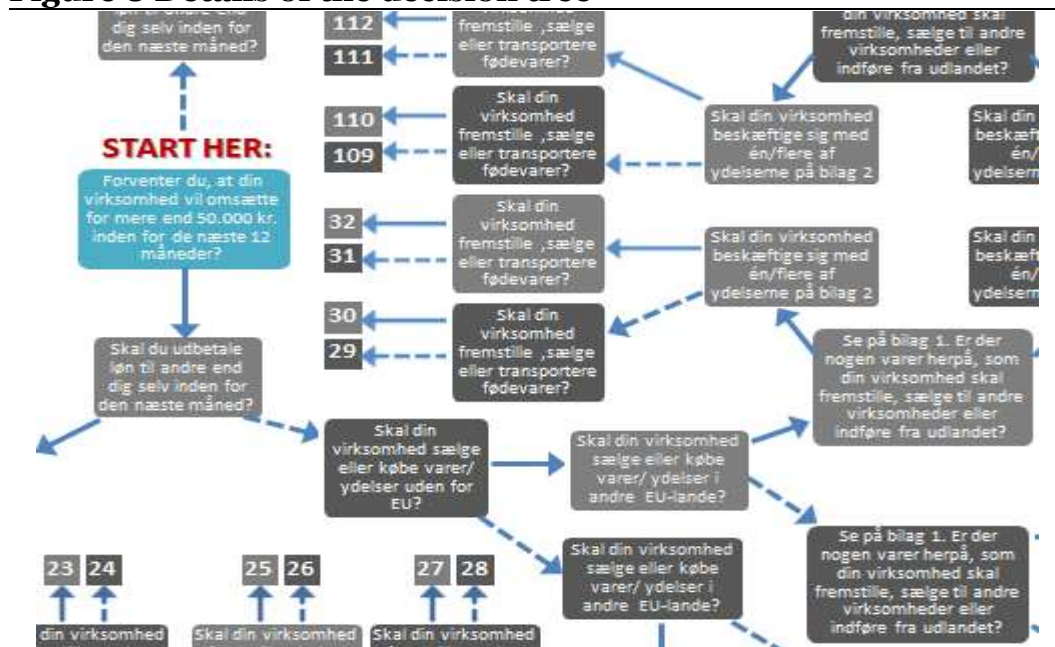
The portal has been developed through a cross-public cooperation. The daily operation and development of the portal, including editorial work, support, and contact to the authorities are located in the Business Authority.

Source: virk.dk

The project group completed an experiment with alternative guidance for entrepreneurs about their duties in order to make it easier for them to correctly register their duties on virk.dk.

The experiment consisted of giving one group of Copenhagen based entrepreneurs the usual information about their duties, which is provided by the Business Service of the City of Copenhagen; while another group in addition to the usual information was given a decision tree. The decision tree guides the entrepreneur to the knowledge of the duties he/she has towards to authorities, through seven simple questions, cf. Figure 8.

**Figure 8 Details of the decision tree**



Note: The participant follows the solid arrow if the answer is 'yes' and the dotted arrow if the answer is 'no'. After seven questions the participant gets very specific information about the duties to the authorities of the specific business. The figure shows an excerpt of the decision tree

Source: The project group



The project team chose to make use of a decision tree based on the expectation that the entrepreneurs' ability to register for correct duties are affected by the way knowledge about the duties is provided to them. The project group considered the barrier to correct registration to be the difficultness of finding out which exact duties a specific business has.

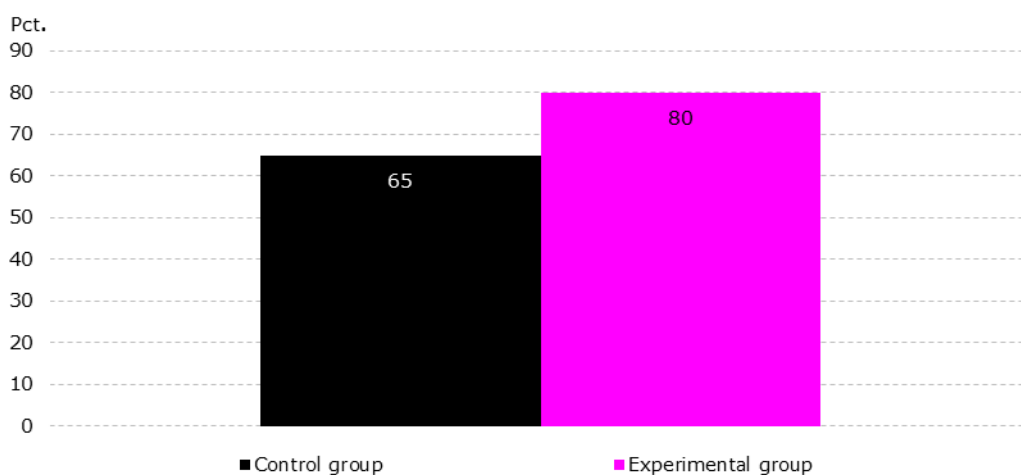
Entrepreneurs in both the control group and experimental group were then asked to list their duties and to register on a mock-up version of virk.dk.

The results were mixed. A greater proportion of participants in the experimental group correctly registered their business on the mock-up version of virk.dk, see Figure 9. This is consistent with our expectations.

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**Figure 9 More participants with a decision tree correctly registered their business**

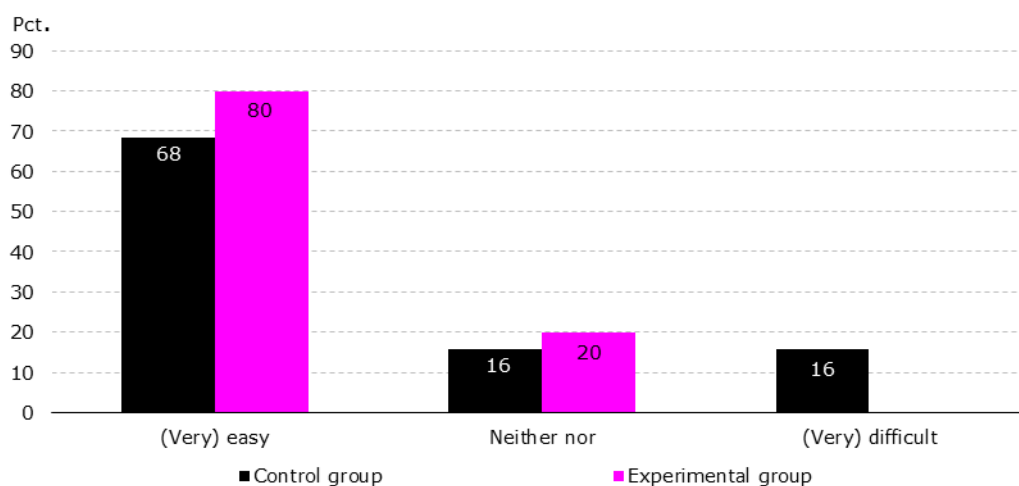
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Source: Copenhagen Economics based on data from the experiments.

Furthermore, the participants in the experimental group found it easier to register, cf. Figure 10. We found that 80 per cent of the participants in experimental group found it very easy or easy to register, compared to 68 per cent in the control group. This is also in line with our expectations.

**Figure 10 Participants with a decision tree found it easier to register**

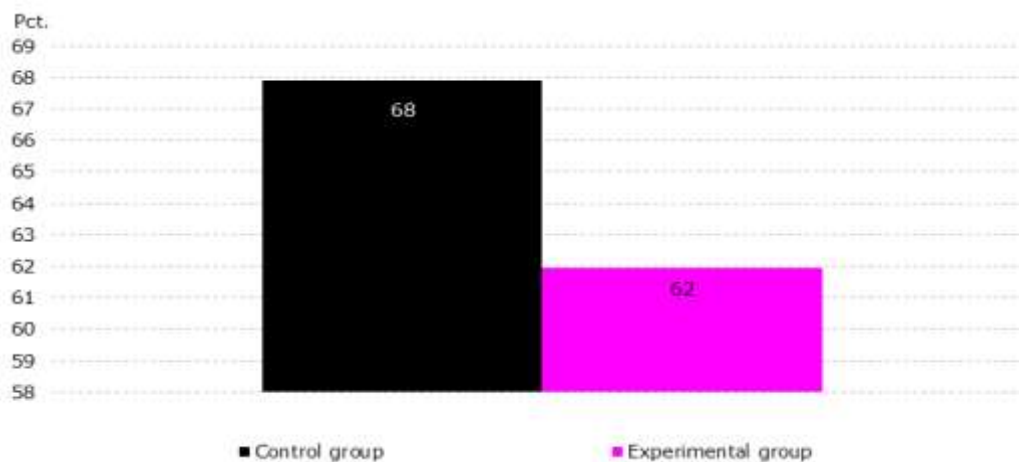


Note: Answers from a questionnaire.

Source: Copenhagen Economics based on data from the experiments.

However, some of the results contradicted our expectations. For example, the participants in the experimental group felt they were to a lesser extent knowledgeable about their duties compared to the participants in the control group, cf. Figure 11. Offhand this seems counter-intuitive, when considering that more participants in the experimental group actually managed to register their business correctly on the mock-up version of *virk.dk*.

**Figure 11 Participants without a decision tree had a better knowledge of their duties**



Note: The figure shows the proportion of correct duty registration.

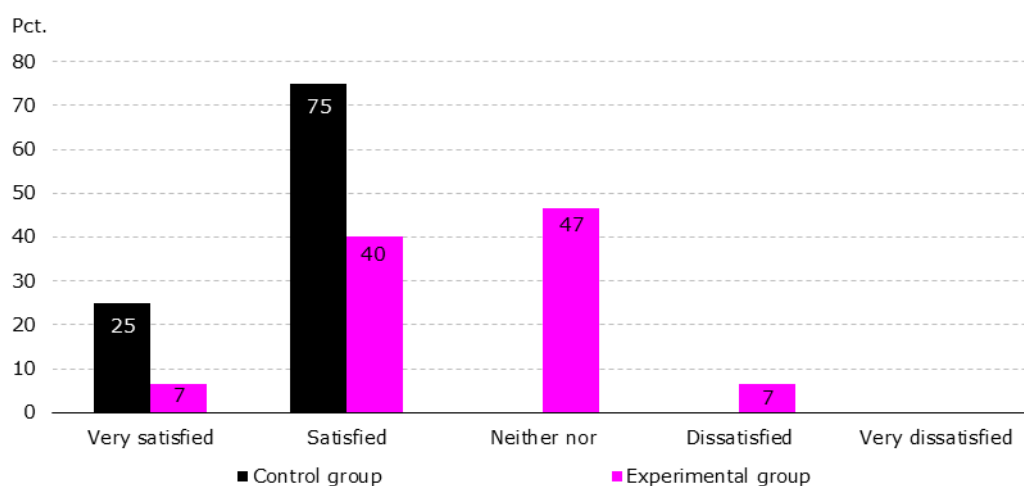
Source: Copenhagen Economics based on data from the experiments.

However, the result may be explained by the fact that the decision tree is designed to ensure that businesses get registered correctly. It is not designed to give the entrepreneurs an underlying understanding of *why* they must register as they do. By going through the decision tree each business ends up with a very precise list of duties to the public that are specific to their business. The decision tree does not give an understanding of why the business has the given duties.

Some more technical explanations for the counter-intuitive result are that some of the participants in the experimental group wrongly answered questions about their understanding of the duties before they tried out the decision tree and the number of participants was too low to give reliable results (the control group had 21 participants, while the experimental group had 16).

Finally, participants in the experimental group were less satisfied with the content of the general information meeting than were the participants in the control group, cf. Figure 12. One could argue that they should be more satisfied since they could use the decision tree for uncovering their duties. Conversely, the general information could appear superfluous for those participants who received the specific information from the decision tree, resulting in them being less satisfied with the meeting.

**Figure 12 Participants *without* the decision tree were more satisfied with the content of the meeting**



Note: The question was: "How well do you think that the meeting informed you on how to register your business on virk.dk?"

Source: Copenhagen Economics

### Recommendations

The results are inconclusive with respect to whether the decision tree helps entrepreneurs to understand and register for their duties better than the current information provided by the City of Copenhagen.

The decision tree was tested in a field experiment<sup>1</sup>, which in itself is quite complex. Furthermore, the experiment included many tasks and activities that the participants had to go through. This increased the risk of the experiment not being implemented as expected and, hence, the results not providing the expected knowledge of the effect of the decision tree. Therefore, we cannot with confidence conclude on the effect of the decision tree.

In the future, the Business Authority could carry out similar, but less complex experiments with the decision tree, and conduct the experiment several times in order to increase the number of overall participants. This will enhance the credibility of the results. In case of the experiment showing good results, and having a positive business case, the decision tree could be rolled out to supplement introductory lectures held for entrepreneurs around the country.

<sup>1</sup> In a field experiment the experiment is conducted through direct face-to-face contact with participants, as opposed to a 'desktop' experiment, such as in the letter-based experiment of the Nutrition Base, where an experiment is conducted via a written request, without direct face-to-face contact.

## Chapter 2

# Learning points and the way forward

The process of designing and carrying out experiments has given rise to a number of learning points. Based on the learning points we provide recommendations to how the Business Authority should design and conduct experiments in the future and how it should select the areas experiments.

### 2.1 Complexity

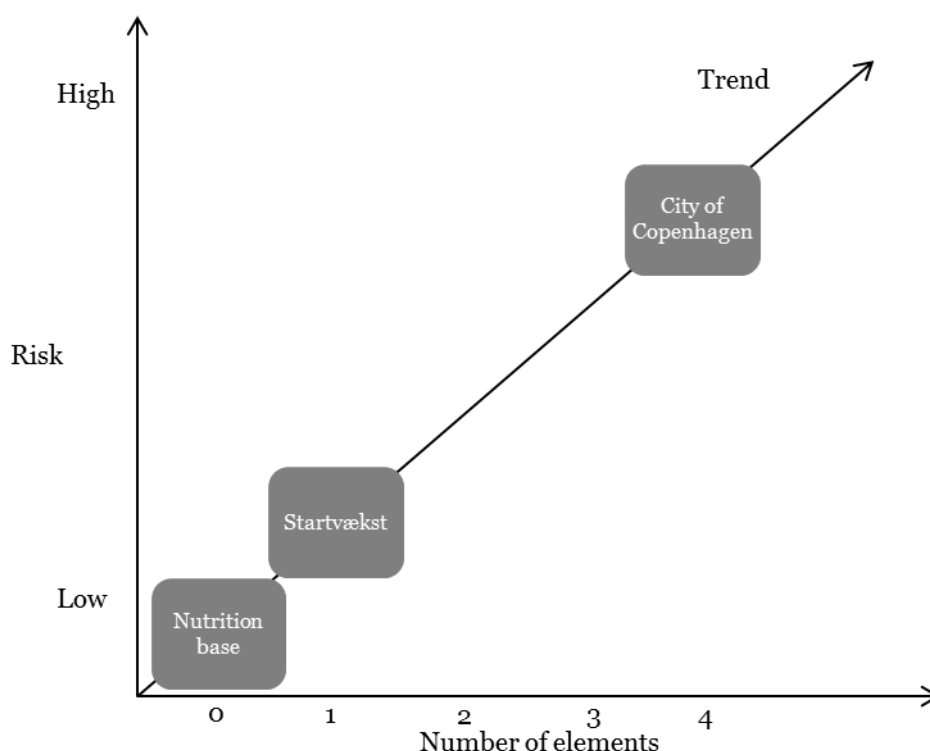
We find that correlation exists between the complexity of the experiments and the risk of the results not being valid. The more complex the experiments are the greater is the risk of the experiments not being executed as planned, and hence that the changes in behaviour results do reflect the specific nudges.

We have identified four main elements that increase the complexity relative to a simple 'desktop experiment' (exemplified by the Nutrition Base).

1. **Field Experiments:** There is a greater risk associated with field experiments due to interaction with the participants (exemplified by the decision tree in the virk.dk case)
2. **External stakeholders:** External stakeholders constitute an element you cannot control (e.g. when you do not have complete control over the changes to a letter or on a website because the external stakeholders can veto you)
3. **Many processes:** The more processes the more risks and unexpected courses the experiment can take; this weakens the credibility of the results (e.g. when participants must complete many activities and are exposed to many influences in each experiment)
4. **Usage of IT:** Usage of IT provides an additional risk through technical problems or user difficulties.

Figure 13 shows the relationship between complexity and risk and the location of three of the experiments.

**Figure 13 There is a positive correlation between complexity and the risk of the results not being caused by the nudges**



**Note:** The figure refers to the three experiments, while we actually completed five. The omitted experiments are the "Roskilde experiment" and the "Region Midt experiment". Both of which were so different in nature that we have chosen not to classify them here. See all the details in the separate reports.

**Source:** Copenhagen Economics

- There were limitations in the Startvækst experiment due to external stakeholders, which restricted the potential to change the website. However, the experiment was implemented according to planned and with very positive results.
- The City of Copenhagen experiment contained four risk factors. Unlike the other experiments, this was a field experiment. Additionally the experiment included external stakeholders, many processes/tasks that the participants had to go through during the experiment and the use of IT. This resulted in the experiment not being carried out as planned, with the consequence that we are unsure as to whether the results reflect the effect of introducing our nudge, the decision tree.

## 2.2 Clarification

A prerequisite for carrying out the experiments is deciding on what specific behaviour the authorities would like to change. That is not always evident.

The experiments gave rise to the following learning points:

- Generally authorities can observe the implications of an undesired behaviour of businesses or individuals. For example, too few responses to a letter. However, it is far from always that authorities can identify reasons why businesses exhibit the underlying undesirable behaviour, which makes it difficult to launch an initiative to rectify the problematic behaviour. When this is the case, new initiatives may still appear confusing for business: "What is it exactly the authorities want me to do?"
- From the authority's point of view, it is necessary to balance between the 'we fulfil our duty to inform' and 'we want to change the behaviour of businesses. When using nudging authorities cannot abandon their duty of disclosure.
- When nudging is being used, it forces authorities to decide on their own role in the requests to businesses: Could the authorities be clearer in their communication with businesses about what they specifically want businesses to do, know or remember? And how does the goal for one authority coincide with the goals of other authorities?
- In order to use nudging you need to be able to measure both the existing undesirable behaviour and the desired behaviour. It may be necessary to build up the infrastructure for that purpose as it may not exist already. This also underlines why it can sometimes be difficult to identify problematic behaviour in businesses above anecdotal level and gut feelings, "when we cannot measure behaviour, how do we know that it is wrong?"
- Experiences from the project show that 'feedback loops', where behaviour and changes in behaviour are recorded in order for an authority or designer of the experiment to observe behaviour, are often fairly easily established. This will in general be beneficial to the authority's work, because knowledge about businesses behaviour becomes available.

## 2.3 Future

The Business Authority has set out the following guidelines for future work, based on the experiences from this project.

### Selection of new experiments

The Business Authority will focus on using nudging in areas where it is possible to identify a specific behaviour and where it is possible to generate data about the expected behavioural change. In addition, experiments need to have a certain volume and a positive business case.

### The improved model

In future work, the Business Authority will use a 6-step model developed by Copenhagen Economics and Pelle Guldberg Hansen. The 6-step model, including a number of concrete pieces of advice based on the completed experiments, is illustrated in Figure 14.

**Figure 14 The optimised 6-step model****Diagnosis****1. Issue**

- Describe the current behavior

**2. Goal**

- Describe the desired behavior

**3. Barriers**

- Why does the desired behavior not happen today

*Allow more time than might be expected. It may be difficult to be specific on what behavior we want from the companies.*

*Discuss whether current approaches to the companies actually calls for a given behavior and whether other authorities better can create the desired behavior*

**Solution - nudges****4. Identify**

- Identify sample space of possible nudges that can change behavior

**5. Design and testing**

- Set up the experiments, fit to the context, test

**6. Execute and present**

- Execute the experiments, gather data, analyze data, present the results

*Infrastructure to measure behavior may not be present. If so it must be built up. I.e. devote time to that.*

*Make a plan. Keep down the complexity. Be in close dialogue with stakeholders that are needed to implement the experiment. Do tests of field experiments.*

Source: Copenhagen Economics and Pelle Guldberg Hansen, excerpts from the original presentation for the start-up meeting on the project.

**A permanent team**

Overall, the focus of the Business Authority is to identify and prioritise areas where the business support system can be improved by means of behavioural economics, i.e. improving the service to businesses (and individuals) using nudges when this is the best tool. The work will be undertaken by a competent team composed of employees of the authority with expertise in statistical processing of data, preparation of business cases and data mining in the authorities' systems. A project manager with knowledge of the authority and with experience in nudging experiments will head the team. In addition, the Business Authority will co-operate with external experts and consultants on the concrete experiments and in developing a more comprehensive and systematic approach to and use of nudging in the Business Authority.