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# A push in the right direction

An explorative research to the influence of nudging on the productivity of office workers

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Tutor: Hester van Sprang, MSc

Second reader: Evelien Akker

This thesis has been written by the author and is hereby  
declared as own work

## Preface

Before you lays my master thesis regarding the research on the influence of nudging on the productivity of office workers. The topic of this research has interested me from the beginning of my master degree at Saxion University of Applied Sciences (Deventer, the Netherlands)/University of Greenwich (London, UK) I have grown a passion for the combination of facilities management and behaviour psychology and I am very humble that I have gotten the change to perform a research in this field.

On my journey to this document I have faced some academic and personal challenges. Regardless, I am very proud to say that I have learned a lot, on an academic level but more so on a personal level. I am sure that this document and the knowledge that I have gained so far will give me the extra motivation to continue my research in the upcoming academic year and that I will be able to finish this research in January 2019.

I would like to thank Hester van Sprang for the guidance and wisdom throughout this academic journey. Next to her, I would also like to thank my family for supporting me in choosing my own pace and listening to all my stories about school.

Even though it is not a full thesis yet, I hope you enjoy reading it.

Marloes J.A. Wientjes  
19-08-2018, Nijmegen (the Netherlands)

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# 1 Introduction

Nowadays, we live in a knowledge-based society. The political and economical changes in the world require that society relies on their educated knowledge to drive innovation and entrepreneurship (Leydesdorff, 2003). This means that the world will rely more and more on office workers, people who produce work by mainly using their brain.

This shift in what kind of work people execute makes it more difficult to measure how people are performing and therefore make adjustments to improve their performances.

In the past, there was a lot of manual labour work being executed. An example can be found in the car factory Ford, where all the employee worked on an assembly line. This made it easier to measure how people where performing by looking at how long it took to produce one product. This would result in a productivity ratio.

Nowadays, it is not so straightforward to determine the productivity of office workers. This makes it more difficult to indicate how well people are working and where improvements can be made. However, Oswald, Proto & Sgroi (2014) do believe that it is important to measure the productivity of these office workers. By doing so, their added value to the organisation can be determined (Oswald, Proto, & Sgroi, 2014).

To increase the added value of office workers, productivity can be used as a parameter. Study has shown that people who are satisfied at their work show an increase of productivity by 12% (Oswald, Proto, & Sgroi, 2014). This means that office workers need to be satisfied to increase their performances.

Thaler & Sunstein (2008) state that behaviour psychology can benefit health, wealth, and, happiness of people in their book. One way of influencing people is by implementing nudging. Nudging occurs when choice architecture is modified in a way that it encourages certain behaviour but does not force it (Thaler & Sunstein, 2008).

The use of nudging can be beneficial for the level of productivity of office workers. It can also have an impact on the level of satisfaction. These benefits will not only enable people to be more productive, it will also show advantages for organisations.

However, due to the shift in what kind of work people execute, it has become difficult to measure productivity. This makes it harder to improve as individuals or as teams. Even though productivity rates are sometimes not well-known or easy to measure, nudging is being implemented even more. Even though this development appears to have a positive effect, there is not a lot of research done to the influence that nudging has on the productivity of office workers.

## 2 Literature review

### 2.1 Productivity

The productivity of office workers is harder to define than the productivity of manual labour practisers. The productivity of manual labour practisers can be determined by measuring how many products a manual labour worker produces in an amount of time. This ratio shows how long a manual labour worker needs to work to produce one product. On the contrary, office workers mostly use their brain to produce work, meaning that defining productivity becomes different.

Aronoff & Kaplan (1995) define productivity as the ratio of output. This definition of productivity does not consider time as one of the most important aspects in measuring productivity (Aronoff & Kaplan, 1995). The definition of Aronoff & Kaplan (1995) shows that the aspect of time is not as relevant in measuring productivity of office workers as it is for measuring the productivity of manual labour practisers.

The missing aspect of time in the Aronoff & Kaplan (1995) definition does diminish the comparison between two factors that can be made when productivity of manual labour practisers is measured. The consequence that follows is that productivity of office workers cannot hardly be compared to the productivity of other office workers, where the productivity of manual labour practisers is more likely to be compared to one another. In order to define productivity of office workers, there are a lot more aspects to be taken into consideration. These aspects also differentiate from every individual, making productivity more an individual measurement tool than a generalizable measurement tool (Oswald, Proto, & Sgroi, 2014).

As stated, the productivity of manual labour practisers is easier to determine than the productivity of office workers. The Aronoff & Kaplan (1995) definition of productivity shows that there is no direct comparison made between two variables to determine the productivity of office workers. Literature research shows different angles of approach to determine the aspects that influence productivity. Batenburg & van der Voordt (2008), experts in the field of Real Estate and Facilities Management, conclude that productivity of office workers is influenced by seven different factors, that can be categorized into three themes: the person itself, their job description, and, their surroundings. The study also concludes that the factors that influence productivity can differentiate for individuals, meaning that the theme surroundings can have a larger influence on one individual than it would have on another individual.

Even though definitions show that productivity of office workers is more individually focused, the measurement tool is often used. Oswald, Proto & Sgroi (2014) state that productivity shows the efficiency and effectiveness of an individual. This information can be used to determine the added value that an individual has to the organisation (Oswald, Proto, & Sgroi, 2014).

### 2.2 Nudging

Nudging is used to change people's behaviour without people knowing that their behaviour is being influenced. By modifying the choice architecture, people still have the ability to make a choice. However, the circumstances where this choice is made in are modified so that the chance of people chosen the desired behaviour will improve (Thaler & Sunstein, 2008).

Nudging is implemented in two different ways. There are implementations that people encounter with on a regular basis and a form of nudging where implementing a 'game-element' is the focus point.

### **Nudging in everyday life**

Nudging is implemented in the everyday life. The choices that people make every day are influenced by nudging frequently. An example of nudging in everyday life is the choices students make in the lunchroom. By using signing, lighting, lay-out, and, smell, students are more likely drawn to a certain food (Hanks, Just, Smith, & Wansink, 2012). Another example can be found in the study that was conducted in 2015 where nudging was used to research whether more healthy products at the train station would be sold. This study showed that nudging did increase the sales of healthy products (Kroeze, Marchiori, & de Ridder, 2015).

Even signing in office buildings can be seen as nudging. Signing directs people to certain areas of the building, meaning that the choice architecture is being modified to go to certain areas (Thaler & Sunstein, 2008).

### **Gamification**

Another way of implementing nudging into the choice architecture is by using gamification. Gamification is seen as a part of nudging where 'game-thinking' is being implemented in non-game-environments (Deterting, Dixon, Khaled, & Nacke, 2011). Game elements can be implemented to motivate people (Streck, 2016).

Gamification is used to make the choice process more fun. The piano staircase experiment is an example of implementing gamification within the daily life. This experiment showed that more people took the stairs instead of the escalator because the staircase was rebuilt to look and work like a piano (The Fun Theory, 2018).

Implementing gamification can also benefit the intrinsic motivation of people. When people accomplish something, their intrinsic motivation increases. By implementing game-elements into this process, people will feel accomplished and motivated to accomplish new goals (Reiners & Wood, 2014).

## **2.3 Influence of nudging on productivity**

As stated, nudging influences the behaviour of people by changing the choice architecture (Aronoff & Kaplan, 1995). Focussing on office workers, the implementation of nudging will change the behaviour, which will result in a different way of working. This different way of working will influence the level of efficiency and effectiveness of office workers, which will influence the level of productivity that office workers show (Oswald, Proto, & Sgroi, 2014). This relation shows that nudging has an effect on the level of productivity of office workers.

The correlation between nudging and productivity also shows benefits for organisations. A higher level of productivity of employees will show an increase in the business results. An increase in business results will benefit the organisation because their position in the market will improve (Reiners & Wood, 2014).

The positive effects that nudging can have on productivity, and therefore on the organisation, will enable the real estate and facilities department to develop the use of nudging even further. The real



estate department can make visible changes to the real estate to enable the use of nudging to expand. The facilities department will be able to expand the use of nudging into an organisation by implementing different ways of nudging that will stimulate people to show a certain desired behaviour. Nudging can therefore be a tool for facility management to stimulate behaviour that will have a positive effect on saving costs, increasing happiness under employees, or, increase motivation by using gamification tools (Oswald, Proto, & Sgroi, 2014).

### 3 Questions, objectives and hypotheses

#### 3.1 Main research question

The main research question for this research is as follows:

*‘To what extent does implementations of nudging have an influence on the productivity of office workers in the Netherlands?’*

#### 3.2 Sub questions

- |                       |  |
|-----------------------|--|
| <i>Sub question 1</i> | How is nudging currently used to stimulate the productivity of office workers in the Netherlands?  |
| <i>Sub question 2</i> | What are the possibilities to implement nudging in the future in order to stimulate the productivity of office workers in the Netherlands? |
| <i>Sub question 3</i> | How is the influence of nudging on the productivity of office workers in the Netherlands measured?   |
| 3.1                   | How is the influence of nudging currently measured?  |
| 3.2                   | How can the influence of nudging be measured in the future?  |

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