Strategies to change eating behaviours in food delivery applications

Ana Sofia Cabral Silva da Cruz

Dissertation written under the supervision of Daniel von der Heyde Fernandes

Dissertation submitted in partial fulfilment of requirements for the MSc in Management with Specialization in Strategic Marketing, at the Universidade Católica Portuguesa, December 2020.

ABSTRACT

Title: Strategies to change eating behaviours in food delivery applications

Author: Ana Sofia Cabral Silva da Cruz

Key words: Nudges; food delivery applications; healthy eating; price changing.

Obesity and overweight are problems that are more and more present in today's society. In order to overcome these issues, it is important to change consumers' eating behaviours. There has been a lot of research around this subject in order to find the most effective strategy to change these behaviours in different contexts (eating at a restaurant, grocery shopping, among others). However, the food delivery applications are a quite recent market that has not been studied for this purpose. The implementation of nudges is a strategy that has been deeply studied to change undesirable eating behaviours. As such, this dissertation considers two types of nudges – cognitively oriented and affectively oriented – and price changes as possible strategies to implement in food delivery applications. As an extra analysis, it is also studied whether demographics and personal factors influence how effective each strategy is. Even though the results suggested that the most effective strategy is changing the price, followed by implementing a cognitively oriented nudge and, lastly, an affectively oriented one, the analysis did not have any statistical power. It is also clear that demographics, namely gender, and personal factor such as self-control and the habit of reading labels of food products have a role on the efficacy of these strategies.

RESUMO

Título: Estratégias para mudar os comportamentos alimentares em aplicações de entrega de comida

Autor: Ana Sofia Cabral Silva da Cruz

Palavras-Chave: *Nudges*, aplicações de entrega de comida, alimentação saudável; mudança de preço.

A obesidade e o excesso de peso são problemas que estão cada vez mais presentes na sociedade. De maneira a combater estas dificuldades, é importante mudar os comportamentos alimentares dos consumidores. Este assunto já foi muito estudado com o intuito de encontrar a estratégia mais eficaz para mudar estes comportamentos em diferentes contextos (comer num restaurante, compras no supermercado, entre outros). Não obstante, as aplicações de entrega de comida são um mercado recente que ainda não foi estudado com este propósito. A implementação de *nudges* é uma estratégia que já foi bastante estudada para mudar comportamentos alimentares indesejados. Assim, esta dissertação considera dois tipos de *nudges* –orientados cognitivamente e afetivamente – e mudanças de preço como possíveis estratégias para implementar em aplicações de entrega de comida. Como análise extra, foi estudada a influência de fatores demográficos e pessoais na eficácia de cada estratégia. Ainda que os resultados indiquem que a estratégia mais eficaz é a mudança de preço, seguida da implementação de *nudges* orientados cognitivamente e, por último, *nudges* orientados afetivamente, a análise não teve poder estatístico. Adicionalmente, os fatores demográficos, nomeadamente o género, e pessoais, tais como o autocontrolo e o hábito de ler os rótulos de produtos alimentares, têm um papel importante na eficácia destas estratégias.

ACKNOWLEDGMENTS

Firstly, I would like to thank my advisor, Professor Daniel Fernandes, for his patience and guidance throughout this process.

To my friends and family, for supporting me every step of the way.

To Bá, for being patient enough to read this thesis and help me find little mistakes that I have missed. For being a great friend and inspiration.

To Tiago, for listening to me reading the same sentence over and over again to make sure it made sense and for motivating me to do my best.

Lastly, but most importantly, to my parents, who stood by my side through the best and worst moments of this journey. For giving me everything that I needed to be the best I can be and for always believing in me, even when I didn't.

TABLE OF CONTENTS

1. Introduction

Obesity has become a public health issue. According to the World Health Organization (WHO), it reached epidemic proportions globally. The number of people affected by this disease has been increasing dramatically over the years. In 2016, 650 million adults suffered from obesity, and more than 1.9 billion were overweight (World Health Organization, 2017). Promoting a healthy diet is helpful to fight obesity. In fact, World Health Organization's report (2015) shows that, in the European Region, excess body weight, underconsumption of healthy food and overconsumption of unhealthy one are considered risk factors. This shows the urgent need to improve consumers' food choices towards a healthier diet.

One of the strategies that has been deeply studied to improve consumers' eating habits is the use of nudges. A nudge is defined by Thaler and Sunstein (2008) as "any aspect of the choice architecture that alters people's behaviour in a predictable way without forbidding any options or significantly changing their economic incentives". The use of nudges to improve consumers' eating behaviours has been used relying on the tendency that these have to not deliberate thoroughly their decisions, often using heuristics and habitual behaviours instead (Evers, Marchiori, Junghans, Cremers and De Ridder, 2018). This was also studied by Kahneman (2011), who distinguished and identified the conflict between system 1, that is driven by emotion, and system 2, that is driven by cognition. A study by Wansink and Sobal (2007) shows that each person does 220 food choices per day, on average. Hence, it is natural that environmental cues are crucial, as they influence these decisions. Further, heuristics are often used to facilitate these situations. Choice architecture can change the undesirable behaviours of overconsumption and underconsumption of unhealthy and healthy food, respectively. This happens because most of these decisions are done unconsciously (Johnson, Shu, Dellaert, Fox, Goldstein, Häubl, Larrick, Payne, Peters and Schkade, 2012).

The impact of price changes in eating behaviours is a subject that has been studied deeply. In fact, increasing the price of unhealthy options and decreasing the price of healthy ones has a significant impact on consumers' food choices (Afshin, Penalvo, Del Gobbo, Silva, Michaelson, O'Flaherty, Capewell, Spiegelman, Danaei and Mozaffarian, 2017). Further, consumers are often biased by the impression that healthy food is necessarily more expensive than unhealthy food (Haws, Reczek and Sample, 2017) and can, therefore, influence their decisions. However, increasing the price for unhealthy options has to be done carefully. A study

shows that, if consumers know that the option has a higher price due to being unhealthy, they might end up choosing it because the price becomes perceived as fair (Shah, Bettman, Ubel, Keller and Edell, 2014). Changing the price, however, cannot be considered a nudge. According to Thaler and Sunstein (2008), a nudge has to change the choice environment itself. Hence, since changing the price does not do that and provides an economic incentive instead, it cannot be considered a nudge (Cadario and Chandon, 2019).

It is important to acknowledge that there are nudges and strategies that are more effective in certain types of service and situations. When consumers do their grocery shopping, they are choosing food that they will not eat in the moment, unlike when ordering in a restaurant. As such, it is important to study each situation individually as they will have different cues.

Ever since applications like UberEats came to Portugal, having food delivered at home from restaurants has become a reality for several households. Even though this service can be compared to picking up takeout food from a restaurant, it has key differences that lead to a different decision-making process. Firstly, the consumer does not have to leave the house, since the whole process is done online. Also, there is no time pressure to choose from the menu. Further, if after analysing the menu there is nothing that pleases them, they can simply choose a different restaurant. Lastly, any distance restraints become less important, and the consumer gets to know different restaurants that would not be an option otherwise. This type of service, being different from eating in a restaurant and having takeout, can also benefit from specific nudges and strategies to improve their clients' eating behaviours. This topic's managerial relevance is to allow a better understanding of what are the best strategies to change consumers' undesirable eating behaviours in a digital environment, namely through applications that provide them with the ability to order food to be delivered at their houses.

This study aims to understand which nudges are the most effective for applications that allow consumers to have food delivered at home and whether changing the price of different options will be more or less effective than these nudges. In order to understand what the most effective strategies are to change consumers' eating behaviours when ordering food from this type of applications, one needs to answer two research questions. Are cognitively oriented nudges more effective than affectively oriented nudges? Is price changing a better strategy than nudges? These questions will be answered in a chapter further ahead.

This thesis is organized as follows. The second chapter is the literature review, which will be divided into three parts. The first part describes the effects of nudges on previous research, and

the difference between cognitive and affective oriented nudges. The second part is about the role of price, in which the theories that predict the impact of price changes are examined. Lastly, the third part is about the online context, the fact that the decision-making process is done in a digital environment, and its impact. The third chapter will present the methodology used to be able to answer the research questions. The data from this chapter will be analysed in the fourth chapter, that will also contain the main results, theoretical and managerial implications, limitations and recommendations for future research.

2. Literature Review

Even though there is significant evidence that changing the price of the different food options is a reliable method to change consumers' eating behaviours (Afshin et al. 2017), comparing this effect with the effect of different nudges, has great managerial implications. It is important to acknowledge that there are several factors that influence consumers' choice when it comes to food, such as budget and taste preferences (Balasubramanian and Cole, 2002). As an example, if the menu has both healthy and unhealthy options, the utility for choosing a healthy one will be higher than if the set only had healthy options, which demonstrates that the nonchosen options are also important and can influence the consumers' choice (Dhar and Wertenbroch, 2012). This means that choice architecture and price changes will be influenced by all the other cues that influence the consumers' decision-making process. Furthermore, when ordering food to be delivered at home, there is a delay between the moment consumers order and consume their meal. In this specific context, there is a tendency to choose options that are healthier and lower in calories because of this delay (VanEpps, Downs and Loewenstein, 2016). With this in mind, one factor that can have great influence is how hungry the person is when choosing a meal.

2.1 Nudges

Using nudges can be a powerful weapon to fight undesirable behaviours because these, not only influence consumers' choice in a certain moment, but, if implemented permanently, can also build a sustainable habit of making healthier food choices (Thorndike, Riis, Sonnenberg and Levy, 2014).

Cadario and Chandon (2019) distinguish seven types of nudges that are grouped in three categories. The cognitively oriented nudges aim to change consumers' behaviours by changing what they know. The affectively oriented focus on changing how people feel without

necessarily changing what they know. Finally, the behaviourally oriented seek to change what consumers do. In order to make a feasible study, only two of the three categories described by Cadario and Chandon (2019) were chosen.

According to Macht (2008), cognitive control is not likely to overcome affective factors. The behaviourally oriented nudges are the ones with the highest effect size, followed by affectively oriented, with the cognitively oriented coming in last (Cadario and Chandon, 2019). Hence, one can hypothesize that a cognitively oriented nudge will be less effective than an affectively oriented one.

H_1: A cognitively oriented nudge is less effective than an affectively oriented nudge.

Furthermore, Cadario and Chandon's (2019) metanalysis suggests that, in the context of the study, the effect of nudges is equivalent to a permanent price reduction of 10%. As such, one can hypothesize that as long as the price change is greater than 10%, it will be more effective than nudges.

H_2: For price changes greater than 10%, its effect size will be higher than nudges' effect.

2.1.1 Cognitively Oriented

Cadario and Chandon (2019) distinguish three types of cognitively oriented nudges: descriptive labelling, that includes information about calories or other nutrients; evaluative labelling, that can provide descriptive information but also helps the consumer interpret it; and visibility enhancements, that makes the option more visible for the consumer.

As suggested by Balasubramanian and Cole (2002), one strategy to encourage people to eat healthier food is to include nutritional information in nonpackaged goods. However, unless nutritional education is part of this solution, it is unlikely that consumers will use it effectively (Balasubramanian and Cole, 2002). This finding is supported by Dzhogleva, Inman and Maurer's (2013) work, which shows that providing consumers with simple and easily understandable nutritional information will improve their decisions to consume more healthy food. A label that has interpretive summary indicators has shown to be helpful for consumers to choose healthier options (Ikonen, Sotgiu, Aydinli and Verlegh, 2020). This was also observed by Cadario and Chandon (2019) saying that evaluative nutritional labelling is more effective than descriptive nutritional labelling.

There is a meta-analysis that shows that labelling menus only with calories has no impact on consumers' choices. However, it also shows that this information can be useful when combined with interpretive information (Sinclair, Cooper and Mansfield, 2014). Nevertheless, it is important to not include excessive information, since it can have the opposite effect (Fernandes, Oliveira, Proença, Curioni, Rodrigues and Fiates, 2016) and lead people to choose unhealthier options. The study by Liu, Roberto, Liu and Brownell (2012) suggests that, in order to influence people to consume less calories, it can be helpful to color code and rank order the several options according to the calories in them. As a way to simplify the nutritional information, one can color code the food (Hieke and Wilczynski, 2011) as green (healthier option), yellow (medium healthy option) and red (unhealthier option).

According to Zou and Liu (2019), nutritional information has an impact on online food shopping. The authors suggest that this can be explained by the fact that, since consumers cannot rely on their senses in this type of situation, different cues are needed. Since ordering food to be delivered at home is under the same relevant circumstances (the inability that consumers have to rely on their senses) it is acceptable to assume that the nutritional information that is provided will have an impact on the consumers' decision-making process. The type of service and the format of the nutritional information are determinant for the impact of menu labelling on consumers' food choices (Fernandes et. al 2016).

2.1.2 Affectively Oriented

There are two affectively oriented nudges that can be considered: healthy eating calls, that consist in motivating consumers directly, which can be done through signs encouraging them to make a healthier choice, or by having staff saying it directly to them; and hedonic enhancement, which aims to make the healthy option more appealing through hedonistic descriptions, appealing photos or display settings (Cadario and Chandon, 2019).

Moore and Lee (2012) showed that the visualization of the food product happens due to its description and leads to taste anticipation and consumption impulses. Further, the most effective affectively oriented nudge, according to Cadario and Chandon (2019), is the hedonic enhancement, that aims to enhance the hedonic appeal by using visual stimuli such as photos. In order to adapt these nudges to the food delivery applications context, one of the affectively oriented nudges was chosen according to its fit to the situation. Regarding healthy eating calls, having staff encouraging the consumer to make a healthier choice in person is not possible, since the order is made through the phone/computer and there is no personal contact. As such,

the only viable option would be to have a sign or a banner on the app encouraging a healthier choice. Nevertheless, the hedonic enhancement has proven to be the most effective (Cadario and Chandon, 2019) and it will be the affectively oriented nudge tested in this study.

2.2 Price

Changing the price to manipulate demand has been a very used and studied tool. World Health Organization's (2015) report indicates that it is possible to change consumers' diet by changing food prices. This is supported by Afshin et al. (2017), that claims that consumers' consumption behaviour can be manipulated by increasing the price of the undesirable option and decreasing the price of the desired one.

It is, however, important to understand whether it is more viable to increase the price of unhealthy food or decrease the price of healthy one. Increasing the price of an unhealthy option alone, even if considerably, is not effective in changing the consumers' undesirable behaviour of overconsuming it (Shah, Bettman, Anand Keller and Ubel, 2013). Talukdar and Lindsey (2013) found that there is an asymmetric pattern of demand for healthy and unhealthy food. The study showed that the demand sensitivity for healthy food is higher for a price increase rather than a price decrease. This means that, if a store increases their vegetables' prices, the demand will decrease more than it will increase if they lower its prices. The opposite happens for unhealthy food, the demand is more sensitive to a price decrease than to a price increase (Talukdar and Lindsey, 2013). With this in mind, one feasible option to make sure that changing the price of the different options is as effective as it can be, one cannot only increase the price for unhealthy food, but should also decrease the price for healthy one.

2.3 Online Context

The fact that the decision-making process happens online makes this context quite distinct from all the other ones studied so far, such as experiences at restaurants or buying food at the supermarkets. In fact, these processes are occurring in a digital environment a lot more often and the effectiveness of the nudges depends deeply on the context and type of nudge (Hummel and Maedche, 2019). It is relevant to notice that, since the use of nudges in the present context is done through a mobile app or a website, one can identify it as a digital nudge, which is the "use of user-interface design elements to guide people's behaviour in digital choice environments", as defined by Weinmann, Schneider and Vom Brocke (2016). The choice

environment influences the decision-making process and, hence, its outcome. Consumers face decisions on a daily basis, and these are influenced, not only by cognition, but also by the way that the different options and their information are delivered and displayed (Weinmann et al. 2016).

A recent study by Raj, Sundararajan and You (2020) shows that platforms like UberEats play a very important role for the companies' survival during crisis such as the COVID-19 one that the world is going through. This type of applications allows the restaurants to stay connected to their customers, even under the most difficult situations such as not being allowed to go there in person. Accordingly, it is only logical to invest deeply in these online channels so that the restaurants are more flexible and, therefore, resilient. In order to do it in the most effective way possible, it is relevant to study what are the most fruitful strategies in this context.

Further than restrictions that forbid the customers to go to the restaurants, there are many more reasons that can lead the consumers to choose to order from food delivery apps. Not only it is more convenient (since the customer does not need to leave the house), but can also improve the customer's experience by making it easier for them to search for restaurants (Ray, Dhir, Bala and Kaur, 2019).

3. Methodology

To collect data, an online survey powered by Qualtrics was conducted. This method allows a high range of respondents in a short period of time. Further, it generates reliable answers from a diversified sample that wouldn't be easily accessible throughout other methods. The survey focused on UberEats alone. Since the Portuguese market was the object of study, the survey was only available in Portuguese. The distribution was made through social media and personal contacts by sharing its link.

As mentioned previously, in order to study the different types of nudges and their effect, the categorization by Cadario and Chandon (2019) was used. Two types of nudges were chosen to be included in the data collection: cognitively oriented and affectively oriented. The behaviourally oriented nudges were not included in this study because their fit in a digital environment would be limited. Firstly, a convenience enhancement would be hard to implement since this type of applications usually have one simple layout that is used for all the restaurants. Further, the size enhancements cannot be done in this context since the consumer is not able to see the size of the serving until it is delivered. When choosing a cognitively oriented nudge, the

literature review showed that evaluative labelling would be the most effective option. Regarding the affectively oriented nudges, a hedonic enhancement was chosen since it has shown to be the most effective nudge in this category (Cadario and Chandon, 2019).

Level of hunger. As a mean to understand if the level of hunger interferes with the healthiness of the food choice, the participants were asked to rate how hungry they were feeling at the moment they were filling the survey on a 5 point scale (1=”very hungry”; 2=”hungry”; 3=”not hungry”; 4=“full”; 5=”very full”).

App Usage. The participants were asked about how often they order food from UberEats so that it is possible to measure whether it influences their food choices or not. A 6 point scale was used (1=”more than once a week”; 2=”once a week”; 3=”between two and three times per month”; 4=”once a month”; 5=”less than once a month”; 6=”never ordered”). The participants were previously asked if they knew the application and, regardless of the answer, were presented with a brief presentation of it in order to avoid uniformed responses.

Personal Factors. The participants were asked to rate four statements on a 5-point Likert scale (1=”totally disagree”; 2=”partially disagree”; 3= “neither agree or disagree”; 4=”partially agree”; 5=”totally agree”). As a mean to figure out the participants’ concern about the impact that the food has on their health, two of the statements were “I care about the nutritional value of my meals” and “I read the labels of food products before buying them”. To measure their self-control respecting food temptation, the statement was “I easily give in to the temptation of eating something that is unhealthy”. Lastly, to measure to what extent the participant considers price when choosing their food, the statement was “I choose my meals according to their price”.

To study the participants’ eating behaviour when ordering food to be delivered at home, a food menu was developed. It included three different options. One that is healthy (green salad), one that is medium (tagliatelle) and, lastly, an unhealthy one (burger with fries). All options had a sticker next to it informing that vegan options were available. In order to access what is the most effective strategy to change these behaviours, a variation of this menu was made for each of the strategies. Thereby, four blocks were created to study the effectiveness of these two types of nudges and the price change: one block for the cognitively oriented nudge, one for the affectively oriented nudge, one for a price change and one as a control group. These were randomized so that each participant only answered to one of them.

Figure 1 - Control Group's Menu

After seeing the menu, the participants were asked to choose one of the options. An answer saying "none" was provided for all blocks, if chosen the participants were asked why they chose none.

The control group was showed a menu with the three options with no indications whatsoever, where the price of these three options was the same (12€) (*Figure 1*). The cognitively oriented group was presented with the same menu described before, but the three options had color-coded calories underneath each of them (green for healthy, yellow for medium and red for unhealthy). The affectively oriented group saw the same menu as the control group, only with images of a salad on the left side of it. The price group was presented with the default menu with different prices. The healthy option was 10€, the medium one was 12€ and the unhealthy one was 14€. This represents a 16,6% price decrease for the healthy option and a 16,6% price increase for the unhealthy one.

After the randomized blocks, all participants were asked to select the criteria they used to choose from the menus, except for the ones that chose none because, as mentioned, there was a specific open question for them. The options were "Nutritional Value", "Price", "Taste" and "Desire/Temptation", and an open entry "other" option was provided.

Demographics. In order to understand if demographic factors revealed an eating behaviour pattern, the participants were asked about their household monthly income, gender, age and education.

4. Results

The online survey had 265 participants. Of this sample, 10 did not finish it. Besides, 16 of the respondents, when asked to choose an option from the menu, chose none of them. When asked why they didn't choose one, 10 said that they didn't like any of the options available, 5 said the price was too high and 1 claimed to not be able to eat any of the options because of a food allergy. It is important to mention that the participants who chose none because of the price were not allocated to the price changing group. With this in mind, this survey has 239 eligible participants.

As a mean to make an easier analysis, the data went through a recoding process. This was needed since the data downloaded from Qualtrics did not include a variable to define to which group the participant was allocated to. Hence, a new variable was created to define which block was answered by each respondent. Further, a variable was created to show which of the menu option was chosen regardless of the group. This allows an analysis of all the respondents together and an easier way to analyse the differences between the choices of each group. Additionally, so that one can analyse the effectiveness of nudges versus a price change, a variable was created to aggregate the participants allocated to the cognitively oriented and affectively oriented groups. Lastly, the criteria used by the respondents to choose the option from the menu were turned into dummies to facilitate the analysis.

4.1 Experimental Groups

Out of the 239 respondents, 58 were randomly allocated to the control group, 59 to the price changing group, 61 to the cognitively oriented group and the other 61 to the affectively oriented group. In order to compare the menu choices of each group, a cross tabulation was performed with these two variables.

			Group				
			Control	Price	Cognitive	Affective	Total
Menu Option	Green Salad	Count	12	19	15	17	63
		%	20,7%	32,2%	24,6%	27,9%	26,4%
	Tagliatelle	Count	22	21	29	21	93
		%	37,9%	35,6%	47,5%	34,4%	38,9%
	House Burger	Count	24	19	17	23	83
		%	41,4%	32,2%	27,9%	37,7%	34,7%

Table 1 – Cross Tabulation Menu Option per group

As it can be seen (*Table 1*), the control group is the one with less percentage of participants choosing the green salad and the highest one for the house burger. Nevertheless, the remaining groups show unconclusive results. Even though the price changing group has the higher percentage for the healthier option, it shows the same percentage for the unhealthier one. With this in mind, it can be useful to analyse the means of the groups. Since the variable is qualitative and non-metric, it is not possible to perform a mean. However, since the green salad is coded as 1, the tagliatelle as 2 and the house burger as 3, one can interpret the mean as the higher it is, the unhealthier the option. This allows to interpretate it as a metric and quantitative variable. It is relevant to compare the mean of each group with the control group. For this purpose, three independent-samples T tests were performed. The control group ($M = 2.21$, $SD = 0.767$) showed a higher tendency towards unhealthy choices than the price group ($M = 2.00$, $SD = 0.809$, $p = 0.158$), the cognitive oriented group ($M = 2.03$, $SD = 0.093$, $p = 0.207$) and the affectively oriented group ($M = 2.10$, $SD = 0.810$, $p = 0.455$). However, the test revealed that these differences were not statistically significant, since the p-value for the three tests was higher than 0.05.

Two more independent-samples T tests were performed, one to compare the effectiveness of a cognitively oriented nudge with the effectiveness of affectively oriented one, and the other to compare the general effectiveness of nudges with the effectiveness of a price change.

The test that compares the cognitively oriented nudge with the affectively oriented one, showed that the difference in their effectiveness was not statistically significant ($p = 0.639$) (*Table 2 &3*).

	Group Statistics				
	Group	N	Mean	Std. Deviation	Std. Error Mean
Menu Option	Cognitive Group	61	2,03	0,73	0,093
	Affective Group	61	2,1	0,81	0,104

Table 2 – Group Statistics of Independent Samples Test: Cognitive x Affective

		Independent Samples Test								
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Menu Option	Equal variances assumed	0,178	**0,094**	-0,47	120	**0,639**	-0,066	0,14	-0,342	0,211
	Equal variances not assumed			-0,47	118,697	0,639	-0,066	0,14	-0,342	0,211

Table 3 – Independent Samples Test: Cognitive x Affective

In order to perform the test that compares the nudges with the price change, as mentioned before, a new variable had to be created to aggregate the two nudges groups. As such, the test showed that, even though the groups submitted to nudges had a higher tendency to choose unhealthy options (M = 2.07, SD = 0.070), the difference between the two groups was not statistically significant (p = 0.598) (*Table 4 & 5*).

	Group Statistics				
	Group	N	Mean	Std. Deviation	Std. Error Mean
Menu Option	Price Group	59	2	0,809	0,105
	Nudges Group	122	2,07	0,769	0,07

Table 4 - Group Statistics of Independent Samples Test: Price x Nudges

		Independent Samples Test								
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Menu Option	Equal variances assumed	0,178	**0,673**	-0,529	179	**0,598**	-0,066	0,124	-0,31	0,179
	Equal variances not assumed			-0,519	109,616	0,605	-0,066	0,126	-0,316	0,185

Table 5 - Independent Samples Test: Price x Nudges

4.2 Demographics

As a mean to understand if demographics are relevant to the menu option chosen, a linear regression was performed. The model that included age, income, education and gender as independent variables was not significant ($p = 0.468$) and didn't have explanatory power ($R^2 = 0.017$). Further, none of the independent variables were significant. Since the dependent variable of this model was the menu option regardless of the group the participants were allocated to, the same regression was run for each group separately. The model for the control group was not significant ($p = 0.185$) and it did not have explanatory power ($R^2 = 0.126$). Nevertheless, it should be mentioned that this model shows that gender is significant ($p = 0.020$) as males have 34,0% (Standardized $\beta = 0.340$) more tendency to choose an unhealthier option when no strategy is used to change their behaviour. For the price group, the model was also not relevant ($p = 0,927$) and didn't have explanatory power ($R^2 = 0.018$). As for the cognitively

oriented group, even though the model was not relevant (p = 0.240) and did not have explanatory power ($R^2 = 0.108$), gender was also significant (p = 0.045) (Tables 6, 7 & 8). The model suggests that men under a cognitive stimulus are 29,5% (Standardized β = 0.295) more likely to choose an unhealthier option.

Model Summary			
R	R Square	Adjusted R Square	Std. Error of the Estimate
0,329	0,108	0,032	0,823

Table 6: Model Summary Demographics' Linear Regression - Cognitive Group

	ANOVA				
	Sum of Squares	df	Mean Square	F	Sig.
Regression	3,865	4	0,966	1,427	0,24
Residual	31,828	47	0,677		
Total	35,692	51			

Table 7: ANOVA Demographics' Linear Regression - Cognitive Group

	Coefficients				
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1,92	0,638		3,008	0,004
Income	0,032	0,126	0,036	0,252	0,802
Gender	0,492	0,239	0,295	2,061	0,045
Age	-0,015	0,092	-0,024	-0,165	0,87
Education	-0,09	0,162	-0,083	-0,555	0,581

Table 8: Coefficients Demographics' Linear Regression - Cognitive Group

In order to confirm this, a One-Way ANOVA was performed to compare the mean of male and female participants allocated to the cognitively oriented group. As it can be seen bellow (*Table 9*), the difference between the mean of female and male participants in the cognitive group is significant.

One-Way ANOVA - Cognitive Group's Menu Option					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3,047	1	3,047	6,356	**0,014**
Within Groups	27,803	58	0,479		
Total	30,85	59			

Table 9 – One-Way ANOVA Cognitive Group's Menu Option

Lastly, the model for the affectively oriented group was not significant (p = 0.248) and didn't have explanatory power (R^2 = 0.107).

4.3 Personal Factors

The same analysis that was performed for demographics, was made for the personal factors. A linear regression was run (Tables 10, 11 & 12) with the menu option regardless of groups as the independent variable. Even though its explanatory power was not high (R^2 = 0.128), the model was significant (p = 0,000). Only self-control (ability to not give in to temptation) and the habit to read the labels of food products are significant for the model.

Model Summary			
R	R Square	Adjusted R Square	Std. Error of the Estimate
0,358	0,128	0,114	0,855

Table 10: Model Summary Personal Factors' Linear Regression

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Regression	26,85	4	6,713	9,191	0,000
Residual	182,585	250	0,73		
Total	209,435	254			

Table 11: ANOVA Personal Factors' Linear Regression

	Coefficients				
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1,74	0,356		4,889	0,000
I care about the nutritional value of my meals.	-0,039	0,054	-0,048	-0,727	0,468
I easily give in to the temptation of eating something unhealthy.	0,169	0,052	0,204	3,242	0,001
I read the labels of food products before buying them.	-0,147	0,041	-0,227	-3,563	0,000
I choose my meals according to their price.	0,04	0,051	0,048	0,789	0,431

Table 12: Coefficients Personal Factors' Linear Regression

The same linear regression was run for each group separately. For the control group ($p = 0.069$, $R^2 = 0.386$) and the price group ($p = 0.076$, $R^2 = 0.378$), there were no significant variables. The cognitively oriented group ($p = 0.008$, $R^2 = 0.462$) had two significant variables, the habit to read the labels ($p = 0.040$, Standardized $\beta = -0.273$) and self-control ($p = 0.044$, Standardized $\beta = 0.266$). Lastly, for the affectively oriented group ($p = 0.001$, $R^2 = 0.517$), the significant variables were the habit to read the labels ($p = 0.025$, Standardized $\beta = -0,272$) and self-control ($p = 0.008$, Standardized $\beta = 0,329$).

4.4 Level of Hunger

It was also studied whether how hungry people are impacts their food choices or not. This was made through a One-Way ANOVA (Table 13) that shows that the impact of hunger on the menu option is not relevant ($p = 0.644$).

	One-Way ANOVA - Level of Hunger				
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2,08	4	0,52	0,627	**0,644**
Within Groups	207,356	250	0,829		
Total	209,435	254			

Table 13 – One-Way ANOVA Level of Hunger

Further, the same analysis was made for each group separately and the variable was not significant for none of the groups.

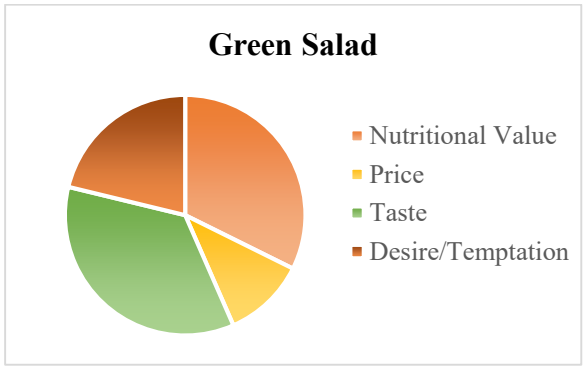
4.5 Criteria

The table below (*Table 14*) shows the count of each criteria selected divided by each group and each food option.

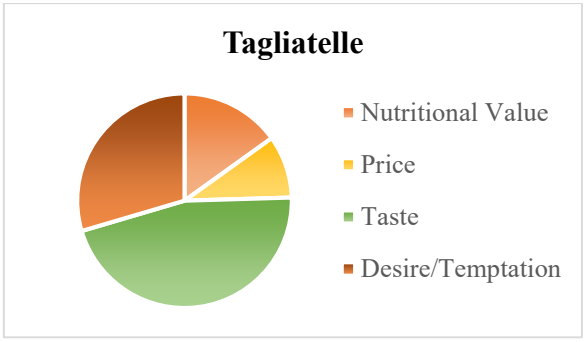
			Menu Option			
			Green Salad	Tagliatelle	House Burger	Total
Criteria	Nutritional Value	Control	5	8	0	13
		Price	11	3	0	14
		Cognitive	7	9	2	18
		Affective	9	4	0	13
		Total	32	24	2	58
	Price	Control	2	3	3	8
		Price	7	3	1	11
		Cognitive	0	6	2	8
		Affective	2	3	3	8
		Total	11	15	9	35
	Taste	Control	8	17	16	41
		Price	12	16	13	41
		Cognitive	7	25	10	42
		Affective	8	15	17	40
		Total	35	73	56	164
	Desire / Temptation	Control	5	10	17	32
		Price	6	16	11	33
		Cognitive	7	12	9	28
		Affective	3	9	15	27
		Total	21	47	52	120
Total			63	91	83	237

Table 14 – Crosstabs Criteria chosen for each Menu Option

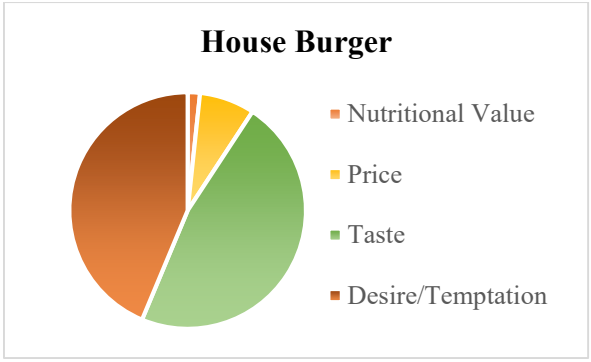
The graphs bellow show the proportions of participants who considered each criteria when choosing the green salad, the tagliatelle and the house burger, separately (*Graph 1, 2 & 3*).



Graph 1: Criteria considered by participants who chose Green Salad



Graph 2: Criteria considered by participants who chose Tagliatelle



Graph 3: Criteria considered by participants who chose House Burger

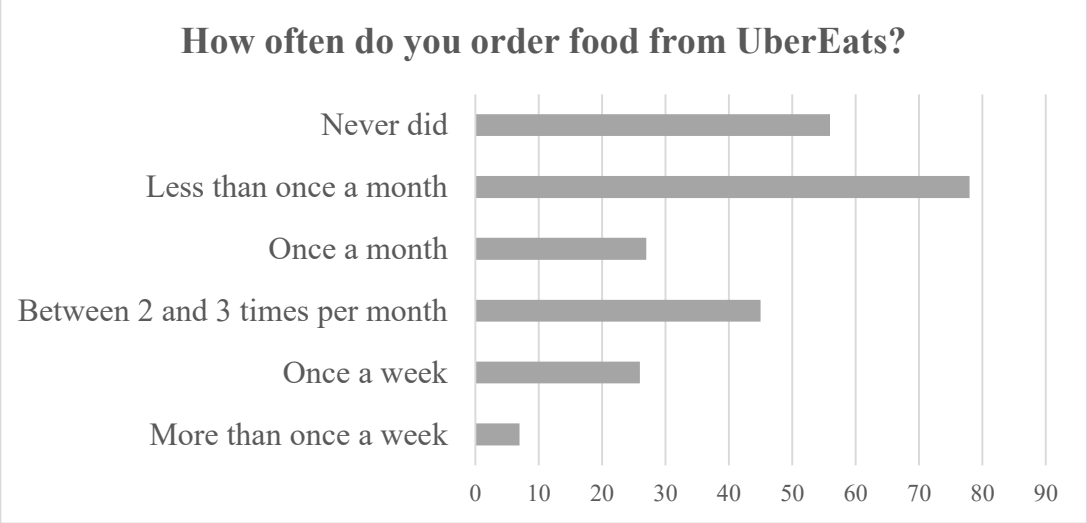
As it can be seen, the participants who chose the green salad were not driven by taste as much as the ones who chose the house burger. The exact opposite happens for the nutritional value, since it was considered by more participants who chose the green salad than the house burger. Further, almost half of the participants who chose the house burger were driven by desire, whereas for the other two options this value was lower. All the other criteria had similar results for each option.

4.6 Data Relevance

So that this data is relevant, it is important to analyse the relationship that the participants have with UberEats, as in if they are familiar with it and if it is a solution that they often resort to. As such, a descriptive analysis was also performed. Results showed that 99,6% of the respondents know UberEats (only one respondent did not know the app). Further, only 23,4% of the participants claimed to never have ordered from it. The distribution of how often participants order from it can be seen below (*Table 15 & Graph 4*).

	Frequency	**Percent**	**Cumulative Percent**
More than once a week	7	2,9%	2,9%
Once a week	26	10,9%	13,8%
Between 2 and 3 times per month	45	18,8%	32,6%
Once a month	27	11,3%	43,9%
Less than once a month	78	32,6%	76,6%
Never did	56	23,4%	100,0%

Table 15: Frequencies – How often users order UberEats



Graph 4 - How often users order UberEats

5. Discussion

5.1 Main Conclusions

5.1.1 Experimental Groups

As a way to study what are the most effective strategies to change the consumers' undesired eating behaviours, the options chosen by each group were compared.

Previously it was hypothesized that a cognitively oriented nudge is less effective than an affectively oriented one. Even though the results show that, on average, the participants on the cognitively oriented group went for healthier choices than the affectively oriented group, they also show that this difference is not significant. As such, one cannot reject the hypothesis that the means of the two groups are different. Hence, one cannot accept the hypothesis previously mentioned (H_1). With this in mind, one cannot discard the possibility that H_1 is correct.

The second hypothesis states that price changes greater than 10% will have a higher effect than nudges. Even though the mean for the nudges group is lower than for the price group, the independent samples t-test shows that one cannot reject the hypothesis that the means are equal. In other words, the participants that were allocated to the nudges' groups, on average, chose unhealthier than the ones allocated to the price group. However, this difference is not statistically significant. As such, this hypothesis cannot be accepted.

After comparing the four groups, even though the results are not statistically significant, the results suggest that price changing is the most effective strategy, followed by a cognitively oriented nudge and, lastly, the affectively oriented one.

5.1.2 Demographics

The menu choice can be driven by several factors, some conscious and some unconscious. A study by Wansink and Sobal (2007) shows that each person does 220 food choices per day, on average. Hence, it is natural that environmental cues are crucial, as they influence these decisions. Further, as mentioned previously, heuristics are often used to facilitate these situations. Since these can be different for each person, one can hypothesize that demographics and personal factors are important characteristics that influence these heuristics and, as such, the decisions made through it. The results of the survey suggest that, even though the participants' age, income, education and gender do not have explanatory power alone, they might be relevant to understand whether certain strategies work better on certain groups. When

measuring the significance of demographics on the full sample, none of the factors showed to be significant. When this analysis was made for the separate groups, the price group and the affectively oriented one did not show any significant variable. However, gender turned out to be significant for both the control group and the cognitively oriented group. As such, demographics should be considered when choosing the type of strategy to change consumers' undesired behaviours, namely gender. Further, results show that the cognitively oriented nudge has different impact on women and men. In fact, the model suggests that a cognitively oriented nudge is 29,5% more effective for women than for men. This can be useful when applying certain strategies to certain groups.

5.1.3 Personal Factors

The personal factors, as mentioned before, can influence the heuristics used by consumers. As such, these have a role in their decision-making process. Out of the personal factors analysed, the ability to resist temptation and have self-control and the habit of reading the labels before buying food products did have an impact on the healthiness of their choices. In fact, results predict that people who read the labels beforehand are 22,7% more likely to choose a healthier option. As for self-control, people who are able to resist temptation are 20,4% more likely to choose an healthier option. All the other variables were statistically insignificant, which means that how much the participants care about the price and nutritional value of the meals did not have a significant influence on their choices.

It is relevant to notice that when this analysis was done for each group separately, for the control group and the price group, there were no relevant variables. Regarding the cognitively and affectively oriented groups, the relevant variables were the habit to read the labels and self-control. The results suggest that people who are used to read the labels before buying food products, when faced with a cognitively oriented nudge, tend to be 27,3% more likely to choose a healthier option. Further, under a cognitive stimulus, people who give in to temptation easily are 26,6% more likely to choose an unhealthy option. As for the affectively oriented group, results suggest that, when in the presence of an affectively oriented nudge, people who are used to read the labels are 27,2% more likely to choose a healthy option and people with low self-control are 32,9% more likely to choose an unhealthy one. It is important to note that these results show that, when nudges are used, regardless of their type, the more people are used to read the labels and the higher their self-control, the less likely they will be to choose an unhealthy option.

5.1.4 Level of Hunger

It would be expectable that how hungry the participants were would be relevant when choosing among the three options, however results show that this relationship is not statistically relevant, regardless of the group.

5.1.5 Criteria

The criteria used to choose the option from the menu can be influenced by which group the participants were allocated. In general, the most chosen criteria were taste and desire/temptation. For the participants that chose the Green Salad, the most chosen criteria were taste and nutritional value. As for the Tagliatelle and House Burger, taste and desire were the most chosen criteria. Hence, one can conclude that healthier choices are driven by their nutritional value, while unhealthier ones are driven by temptation and taste. Since the results are quite similar among groups, it is not likely that the participants were influenced by the group they were allocated to when choosing the criteria.

5.2 Theoretical Implications

This dissertation showed that different services require different strategies. It is important to understand what the most viable strategies are to apply in certain formats. There are many factors that influence the decision-making processes of the consumers when choosing food. Firstly, the results of the survey suggested that demographics can have an important role when choosing the strategy. Namely, gender can be important since cognitively oriented nudges showed to be more effective for women than for men. Accordingly, demographics should be considered when trying to improve and study consumers' eating behaviours.

It is also important to have in mind each person's personal factors, such as how much they care and are aware of the nutritional value of their meals. It can be useful to form clusters based on the consumers' habits and behaviours towards food consumption. The extent to which people are informed about the content of what they are eating influences deeply their reaction to certain strategies.

The food delivery market is expanding quickly and could benefit from strategies developed specifically for it in order to have the most effective results. It is relevant to focus on this segment of the food market alone since it has characteristics that are distinct from all the other formats and, as such, provide different environmental cues to the customers.

5.3 Managerial Implications

Companies like Glovo and UberEats, food delivery applications, are able to change their consumers' eating behaviours by making small changes. Implementing nudges is a promising strategy to incentive consumers to choose healthier options. Changing the price of each option according to their healthiness and nutritional value showed to be more effective than nudges. However, this is not always possible since the price of each option is defined by the restaurant rather than the food delivery application. As such, implementing nudges can be a promising strategy to change the consumers' eating behaviour. Further, it can be useful to customize these changes according to demographics. Since women showed to be more sensitive to cognitive nudges than men, and knowing that users fill in that information upon registration, this can be a feasible strategy to improve results. In order to go a bit further, the companies can also cluster their users based on their eating habits by asking them to fill a survey or based on their orders on the app. With this feature, the application will apply nudges according to their consumers' characteristics (such as demographics or their personal factors) and, hence, have better results when influencing the consumers to improve their eating behaviour.

Restaurants can also benefit from studies that tackle the online context of food consumption since, as mentioned before, food delivery applications can be a great resource to prosper their business even in the most difficult times. The sales from this type of platforms are incremental and can be a reliable solution for many adverse circumstances.

Even though restaurants and food delivery applications might not have healthy eating as a top priority, these strategies can be implemented if the World Health Organization or the government of each country creates incentives for them to be present in this recent context. There are more and more restaurants expanding their businesses throughout this type of services and it can, in fact, be a good tool for WHO and the governments to explore.

5.4 Limitations and Future Research

This dissertation did not get as many significant results as desired. In fact, the two hypotheses were not accepted since the results were not statistically significant. One of the reasons for this can be the sample size. As mentioned before, the survey was answered by 239 eligible respondents. In order to have relevant results, this sample would have had to be wider. Furthermore, since the survey had four randomized blocks, each block had around 60 respondents, which lowers even more the survey's statistical power. The survey was shared with personal contacts and through social media, namely Facebook and Instagram. This can also cause a bias since most of the respondents were from the same social group. This sample was probably not representative of the population since it was a convenience sample. Furthermore, in order to collect more viable insights, a field experiment would be helpful. Having participants ordering food from these platforms with these strategies implemented would help understand what the most effective ones in this context are.

Regarding the survey, one of its limitations is the fact that it was based merely on UberEATS. In fact, there are a lot more food delivery applications in Portugal and, even though UberEATS might be the most known and used one, there are people who prefer other ones, such as Glovo. Though the participants were asked their use of the app and explained the concept afterwards, for people who are more used to order from other applications the survey was not optimized. Ideally, the participant would choose which application they were more used to or ordered more from and its layout would be used.

The resources available for the study were very limited, not only there was no monetary investment to gather responses to the survey, but also the study was done in four months, being a master thesis as it is. Furthermore, it could have been quite helpful to have an experiment besides the survey. Completing a survey where the participants are asked to choose what they would order through a food delivery application might not be realistic enough for the participant to choose what they would choose if they were actually ordering. Accordingly, the results of an experiment would be more reliable since it would be closer to the truth. The ideal would be to have both: an experiment to gather insights to, then, test in the survey.

One of the most important and relevant limitations of the study was the menu showed to the participants. It is only natural that with only three dishes available, there would be participants who didn't like any of them. The ideal menu would have several options available. Having three healthy options, three medium ones and three unhealthy ones would eliminate this taste bias.

One cannot overlook the fact that this thesis and its survey were conducted during a very atypical time. In fact, the survey was conducted during the first lockdown that Portugal went through during the COVID-19 pandemic. Not only many people were being paid less than usual, but also some lost their jobs. It would be unrealistic to assume that these circumstances did not have an impact on the participants' responses. Further, since it was a time of uncertainties, it is possible that users wouldn't be so inclined to order from food delivery applications due to the change in their finances and the fear of having their food handled without them seeing.

Based on the limitations of this study and in order to gather more relevant and reliable results for future research, an experiment should be conducted in order to create a more realistic scenario for the participants so that the results are as similar to the reality as possible. With the insights gotten from this experiment, a survey can be helpful to test them.

The food delivery market is quite recent and has a lot of potential. There are more and more people choosing to order food to be delivered at their houses instead of going to the restaurant to pick up food or even eat there. As such, it is important to tackle the undesired eating behaviours in these types of platforms. As mentioned before, since there are critical differences in the circumstances of each situation, it is important to study what are the specific strategies that optimize the outcome, being users making healthier choices, in this case.

For future research, it would also be interesting to study the influence that demographics have on the effectiveness of strategies that aim to change the consumers' eating behaviours. Even though the results of this study suggest that nudges are less effective than price changing, both strategies should be studied on different people, namely different genders.

As a mean to better understand what drives consumers to have different behaviours on food consumption, it should be helpful to understand what are the cues that influence their decision-making process and how. For example, it would be interesting to understand whether the time of the day is relevant for the users' choice. Is there a higher tendency for unhealthier choices during dinner time than during lunch time? With this information, it will be possible to leverage from each context to change undesired behaviours through strategies such as nudges and price changing in the most effective way.

6. References

Afshin, A., Penalvo, J. L., Del Gobbo, L., Silva, J., Michaelson, M., O'Flaherty, M., Capewell, S., Spiegelman, D., Danaei, G., & Mozaffarian, D. (2017). The prospective impact of food pricing on improving dietary consumption: a systematic review and meta-analysis. *PloS One*, *12*(3), e0172277.

Balasubramanian, S. K., & Cole, C. (2002). Consumers' search and use of nutrition information: The challenge and promise of the nutrition labeling and education act. *Journal of Marketing*, *66*(3), 112–127. https://doi.org/10.1509/jmkg.66.3.112.18502

Cadario, R., & Chandon, P. (2019). Which Healthy Eating Nudges Work Best? A Meta-Analysis of Field Experiments. *Marketing Science*, *39*(3), 465–486. https://doi.org/10.1287/mksc.2018.1128

Dhar, R., & Wertenbroch, K. (2012). Self-signaling and the costs and benefits of temptation in consumer choice. *Journal of Marketing Research*, *49*(1), 15–25.

Dzhogleva, H., Inman, J., & Maurer, J. (2013). Does reducing nutritional information complexity promote healthier food choices? *ACR North American Advances*.

Evers, C., Marchiori, D. R., Junghans, A. F., Cremers, J., & De Ridder, D. T. D. (2018). Citizen approval of nudging interventions promoting healthy eating: the role of intrusiveness and trustworthiness. *BMC Public Health*, *18*(1), 1–10.

Fernandes, A. C., Oliveira, R. C., Proença, R. P. C., Curioni, C. C., Rodrigues, V. M., & Fiates, G. M. R. (2016). Influence of menu labeling on food choices in real-life settings: a systematic review. *Nutrition Reviews*, *74*(8), 534–548.

Haws, K. L., Reczek, R. W., & Sample, K. L. (2017). Healthy diets make empty wallets: The healthy= expensive intuition. *Journal of Consumer Research*, *43*(6), 992–1007.

Hieke, S., & Wilczynski, P. (2011). Colour Me In – an empirical study on consumer responses to the traffic light signposting system in nutrition labelling. *Public Health Nutrition*, *15*, 773–782. https://doi.org/10.1017/S1368980011002874

Hummel, D., & Maedche, A. (2019). How effective is nudging? A quantitative review on the effect sizes and limits of empirical nudging studies. *Journal of Behavioral and Experimental Economics*, *80*, 47–58.

Ikonen, I., Sotgiu, F., Aydinli, A., & Verlegh, P. W. J. (2020). Consumer effects of front-of-package nutrition labeling: an interdisciplinary meta-analysis. *Journal of the Academy of Marketing Science*, *48*(3), 360–383. https://doi.org/10.1007/s11747-019-00663-9

Johnson, E. J., Shu, S. B., Dellaert, B. G. C., Fox, C., Goldstein, D. G., Häubl, G., Larrick, R. P., Payne, J. W., Peters, E., & Schkade, D. (2012). Beyond nudges: Tools of a choice architecture. *Marketing Letters*, *23*(2), 487–504.

Kahneman, D. (2011). *Thinking, fast and slow*. Macmillan.

Liu, P. J., Roberto, C. A., Liu, L. J., & Brownell, K. D. (2012). A test of different menu labeling presentations. *Appetite*, *59*(3), 770–777. https://doi.org/https://doi.org/10.1016/j.appet.2012.08.011

Macht, M. (2008). How emotions affect eating: a five-way model. *Appetite*, *50*(1), 1–11.

Moore, D. J., & Lee, S. P. (2012). How advertising influences consumption impulses. *Journal of Advertising*, *41*(3), 107–120.

Raj, M., Sundararajan, A., & You, C. (2020). COVID-19 and Digital Resilience: Evidence from Uber Eats. *ArXiv Preprint ArXiv:2006.07204*.

Ray, A., Dhir, A., Bala, P. K., & Kaur, P. (2019). Why do people use food delivery apps (FDA)? A uses and gratification theory perspective. *Journal of Retailing and Consumer Services*, *51*, 221–230.

Shah, A. M., Bettman, J. R., Ubel, P. A., Keller, P. A., & Edell, J. A. (2014). Surcharges plus unhealthy labels reduce demand for unhealthy menu items. *Journal of Marketing Research*, *51*(6), 773–789.

Shah, A., Bettman, J., Anand Keller, P., & Ubel, P. (2013). 'Does This Tax Make Me Look Fat?': Using Stigma-Inducing Labels to Decrease Unhealthy Food Consumption. *ACR North American Advances*.

Sinclair, S. E., Cooper, M., & Mansfield, E. D. (2014). The influence of menu labeling on calories selected or consumed: a systematic review and meta-analysis. *Journal of the Academy of Nutrition and Dietetics*, *114*(9), 1375–1388.

Talukdar, D., & Lindsey, C. (2013). To buy or not to buy: Consumers' demand response patterns for healthy versus unhealthy food. *Journal of Marketing*, *77*(2), 124–138.

Thaler, R. H., & Sunstein, C. R. (2008). *Nudge: Improving Decisions About Health, Wealth and Happiness*. Yale University Press.

Thorndike, A. N., Riis, J., Sonnenberg, L. M., & Levy, D. E. (2014). Traffic-light labels and choice architecture: promoting healthy food choices. *American Journal of Preventive Medicine*, *46*(2), 143–149.

VanEpps, E. M., Downs, J. S., & Loewenstein, G. (2016). Advance Ordering for Healthier Eating? Field Experiments on the Relationship between the Meal Order–Consumption Time Delay and Meal Content. *Journal of Marketing Research*, *53*(3), 369–380. https://doi.org/10.1509/jmr.14.0234

Wansink, B., & Sobal, J. (2007). Mindless Eating: The 200 Daily Food Decisions We Overlook. *ENVIRONMENT AND BEHAVIOR*, *39*, 106–123. https://doi.org/10.1177/0013916506295573

Weinmann, M., Schneider, C., & Vom Brocke, J. (2016). Digital nudging. *Business & Information Systems Engineering*, *58*(6), 433–436.

Wilcox, K., Vallen, B., Block, L., & Fitzsimons, G. (2009). Vicarious Goal Fulfillment: When the Mere Presence of a Healthy Option Leads to an Ironically Indulgent Decision. *Journal of Consumer Research*, *36*, 380. https://doi.org/10.1086/599219

World Health Organization. (2015). *Using price policies to promote healthier diets*. WHO Regional Office for Europe. https://apps.who.int/iris/handle/10665/156403

World Health Organization. (2020). *Obesity and Overweight*. https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight

Zou, P., & Liu, J. (2019). How nutrition information influences online food sales. *Journal of the Academy of Marketing Science*, *47*(6), 1132–1150. https://doi.org/10.1007/s11747-019-00668-4

7. Appendix

Online Survey

Dear participant,

This survey is conducted in the scope of the master thesis of a Católica Lisbon School of Business and Economics' student. Its aim is to understand the food delivery applications consumers' eating habits.

All answers are anonymous and confidential. There is no wrong or right answers, as such I ask you to be completely honest.

In case you have any doubts regarding the questionnaire, the last section of the survey is reserved for that purpose.

Thank you in advance for your time and availability to answer this survey.

According to the scale shown below, how do you feel right now?

- Very hungry
- Hungry
- Not hungry
- Full
- Very full

Do you know the application UberEATS?

- Yes
- No

UberEATS is a food delivery platform to several restaurants. This service allows the consumer to order meals from these restaurants to a chosen address in a quick and simple way.

How often do you order food from UberEATS?

- More than once a week
- Once a week
- Between two and three times per month
- Once a month
- Less than once a month
- Never ordered

On a scale from "totally disagree" to "totally agree", rate how much you agree with the following statements.

	Totally disagree	Partially disagree	Neither agree or disagree	Partially agree	Totally agree
I care about the nutritional value of my meals.	•	•	•	•	•
I easily give in to the temptation of eating something that is unhealthy.	•	•	•	•	•
I read the labels of food products before buying them.	•	•	•	•	•
I choose my meals according to their price.	•	•	•	•	•

Imagine you are ordering lunch from a restaurant through UbearEATS. The menu is shown below, please read carefully before answering.

Control Group

Affectively Oriented Group

Cognitively Oriented Group

Price Group

Which option would you choose?

- Green Salad
- Tagliatelle

- House Burger
- None

Why would you choose none of the alternatives?

What criteria did you consider when choosing your meal? (you can choose more than one)

- Nutritional Value
- Price
- Taste
- Desire/Temptation
- Other _____

Household monthly income

- Less than 700€
- 700€ - 1.500€
- 1.501€ - 3.000€
- 3.001€ - 5.000€
- 5.001€ - 10.000€
- More than 10.000€
- Prefer not to answer

Gender

- Female
- Male
- Other
- Prefer not to answer

Age

- < 18 years old
- 18 – 23 years old
- 24 – 30 years old
- 31 – 40 years old

- 41 – 50 years old
- 51 – 60 years old
- > 60 years old
- Prefer not to answer

Education

- Elementary School
- High School
- Bachelor's degree
- Master's degree
- Doctoral degree
- Prefer not to answer

In case you have any questions or comments regarding the survey, please leave it down below.