

Nudging and choice architecture in health

A way to improve nutrition?

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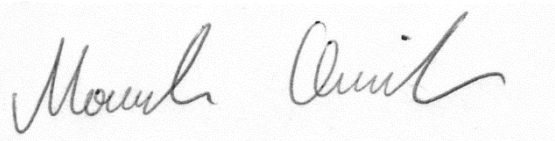
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Declaration in lieu oath

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I would like to end with a recommendation to everybody who will read these lines. Perhaps this thesis is not the most interesting and attractive piece on nudging. But certainly, I strongly recommend you reading the book of Cass Sunstein and Richard Thaler: Nudge, Improving decisions about health, wealth and happiness. And if you have done so, please feel free to spread the word and report people what nudging really is and what it can and cannot do.

Abstract

Background: A large proportion of the global burden of non-communicable diseases are caused by unhealthy food choices of individuals which are shaped by unconscious factors. Nudging and choice architecture can be a tool for policymakers in order to steer people towards choices that will help them to live healthier, longer and better lives. This is an emerging strategy gaining attention within Austria, but about which many uncertainties remain.

Objective: The purpose of this study was to explore the current state of 'nudging' in Austria, taking the specific example of its application for healthier nutrition. First and foremost, this study provides insights of the attitudes, perceptions and knowledge of decision-makers and advisors regarding the theoretical concepts of 'nudging' and 'choice architecture' in the Austrian health setting.

Methods: With a grounded theory approach ten semi-structures interviews were conducted with decision-makers and advisors in the Austrian healthcare system. Purposive sampling was used to identify these participants.

Results: The most important finding was that there seems to be a lack of knowledge and discussion about the topic of nudging and choice architecture in Austria. Five different themes were identified after the analysis: Ignorance, fuzzy definition, ethical aspects, evidence of nudging and political influences.

Conclusion: There is the need of an objective and fact-based political and societal discussion about nudging, the opportunities and benefits as well as the risks and the limits to it.

Keywords: Nudging, Choice Architecture, Nutrition, Qualitative Research, Behavioural Economics

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List of abbreviations

BIT	Behavioural Insights Team
BMGF	Federal Ministry of Health and Women
BMI	Body Mass Index
CMO	Chief Medical Officer
EESC	European Economic and Social Committee
EU	European Union
GP	General practitioners
HV	Hauptverband der österreichischen Sozialversicherungsträger
IHS	Institute for Advanced Studies Vienna
JRC	Joint Research Center
LBi	Ludwig Boltzmann Institut
NCD	Non-communicable disease
SBST	Social Behavioral Sciences Team
OECD	Organisation for Economic Cooperation and Development
OIRA	Office of Information and Regulatory Affairs
ÖGPH	Austrian Public Health Association
QDAS	Qualitative Data Analysis Software
UK	United Kingdom United of Great Britain and Northern Ireland
US/USA	United States of America
WHO	World Health Organisation

1 Introduction

Dietary risks (such as low in fruits, high in sodium, high in trans fatty) are some of the major causes of death and disability in the human population in the US and worldwide (Lim et al., 2012; Murray et al., 2013).

A global paradigm change away from juvenile communicable disease towards adolescent non-communicable diseases (NCD) can be witnessed (Bloom, D.E., Cafiero, E.T., Jané-Llopis, E., Abrahams-Gessel, S., Bloom, L.R., Fathima, S., Feigl, 2011; Lim et al., 2012).

The global burden of NCD's will cause 17.3 trillion US dollars of accumulated costs in healthcare spending, reduced productivity and capital loss between 2011 and 2030 (Bloom, D.E., Cafiero, E.T., Jané-Llopis, E., Abrahams-Gessel, S., Bloom, L.R., Fathima, S., Feigl, 2011). These health and economic burdens make diet-related illnesses one of our major challenges and top priorities of our age (Mozaffarian, 2016).

In the United States of America Yang and Colditz (2015) concluded in 2015 that there are currently more obese (35,94%) than overweight (34,85%) citizens. Being overweight is also a major problem within the European Union (EU). The EU-28 average of males older than 18 is 59.1% and 44.7% for females. In comparison to that the Austrian adult female figures are relatively low (39.9%) but the men are close to the average (56.5%). 14.3% of the overall Austrian grownup population is considered obese (Eurostat, 2014). The recently published Austrian nutritional report 2017 states that 41% of the participating adults were overweight or obese (Rust, Hasenegger, & König, 2017). An alarming projection by the OECD, illustrated in Figure 1, shows a constant increase in obesity rates until the year 2030 (OECD, 2017).

Stressing the importance to act upon rising levels of obesity, a recent meta-analysis by Di Angelantonio et al. displays again the detrimental effect on health. In their paper 239 studies and in total 10.6 million patients were analysed and showed that 14% of

premature deaths could be prevented if people had a BMI¹ between 18.5 and 24.9 (Di Angelantonio et al., 2016).

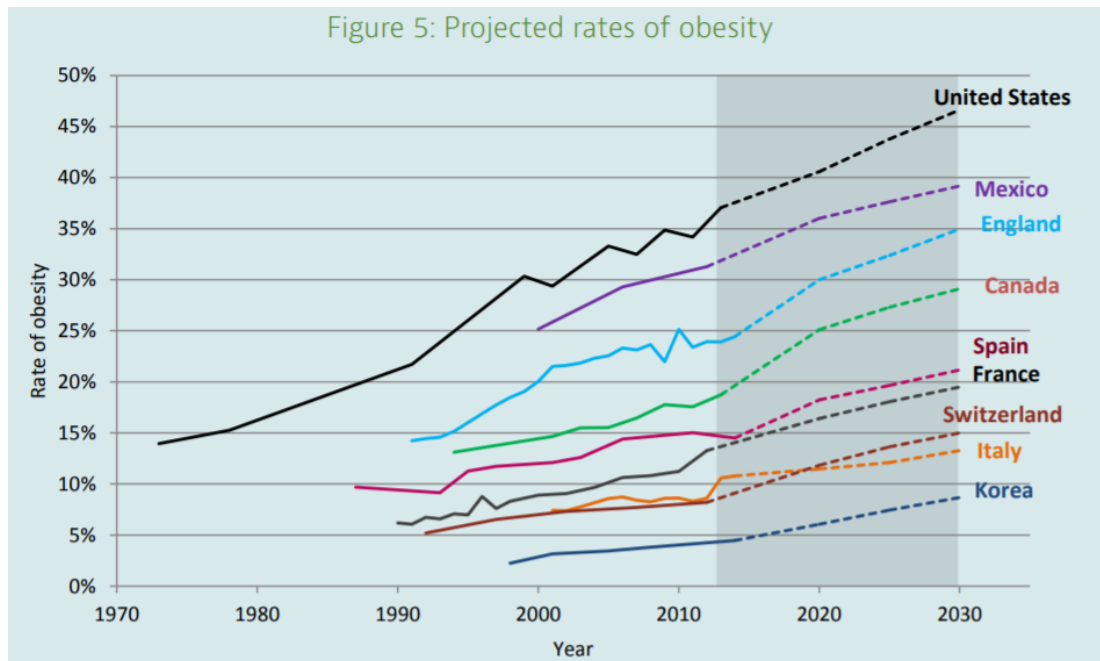


Figure 1 OECD obesity projections (OECD, 2017)

These facts nurture the interest of policymakers around the globe on how to tackle these issues, also often with innovative approaches to improve dietary choices of people worldwide (Gortmaker et al., 2011; Lancet, 2011).

Guthrie, Mancino, and Lin (2015) state that even when consumers understand the nutritional information, food preferences for tastier, cheaper or more convenient products may affect their choices in other directions. The effectiveness of providing consumers with information about nutrition can be improved and supported by scientific research from the fields of psychology, marketing and behavioural economics.

A possible way of counteracting these developments would be a standard economic approach, changing the price for customers through so-called “sin taxes” on products

¹ According to the World Health Organization (WHO) overweight and obesity are defined depending on the body mass index (BMI). A BMI greater or equal 25 is overweight and a BMI of greater or equal to 30 is obesity World Health Organization (2018)

detrimental to health. These measures have been in place for certain products, such as alcohol and tobacco, almost globally for many years already and positive health effects have been proven (Sen & Wirjanto, 2010; Wagenaar, Tobler, & Komro, 2010). Such taxes could also be applied to food which contains a high amount of fat or sugar, although internationally fewer examples exist. In 2011 Denmark introduced a fat-tax which had a minor effect on the consumption of fat and the risk of ischemic heart diseases. Two years after its introduction the tax has been abolished in 2013 (Bødker, Pisinger, Toft, & Jørgensen, 2015a) (2015a; Bødker, Pisinger, Toft, & Jørgensen, 2015b). Since 2014 a tax on sugar-sweetened beverages has been in place, Colchero, Popkin, Rivera, and Ng (2016) did show a reduction of the consumption of these products of 6%, although the effects are bigger for low socioeconomic groups.

Another way could be financial incentives or rewards for improving health-related behaviour. Some examples are existing on a global level, but there is little empirical evidence about the effectiveness and efficiency of these interventions (Pruckner & Schober, 2017). Sigmon and Patrick (2012) showed in their systematic review that economic incentives are effective in reducing smoking. In another meta-analysis was shown that financial incentives can increase the physical exercise adherence of adults, although only in the short run, specifically for less than six months (Mitchell et al., 2013). An Austrian randomized field experiment showed that monetary incentives (300€) for a 5% loss of weight can increase the likelihood of reaching this goal by up to 50%. In the control group with no financial incentives 17% and the second intervention group (150€), 31% of the participants achieved the weight loss target. However, it can be argued that there is doubt about the long-term effects since after six months' time all the test persons returned to their original weight (Halla & Pruckner, 2016). The phenomena that people will regain their lost weight after the omission of the incentive was confirmed by several studies (John et al., 2011; Paloyo, Reichert, Reinermann, & Tauchmann, 2014; Volpp et al., 2008)

As an alternative approach, Thaler and Sunstein (2003; 2008) combined behavioural economics with psychological aspects and developed the so-called „nudges“. Different to the above mentioned standard economic incentives these policies focus more on the psychological way of making choices and the environment (choice architecture) in which they take place, rather than on restricting these choices. These small initiatives can be financial but, as the authors specifically state “without forbidding any options or scientifically changing their economic incentives” (Thaler

& Sunstein, 2008, p. 6). A more detailed description of the concept will follow in chapter 2 Theoretical background.

One of the typical fields of application of nudging is the initiation of healthy eating. Small incentives led to a drastic increase in fruit and vegetable consumption in 40 school settings in the US. The effect could be observed two months after the experiment ended and the authors suggest that a longer period of intervention period would increase the effect duration (Loewenstein, Price, & Volpp, 2016). But financial incentives are no substantial part in the nudging concept. Through placement on eyesight or other special locations of healthier food in supermarkets or canteens, people can be “nudged” to consume more of these products. Reisch, Sunstein, and Gwozdz (2017) did perform an online survey spread across different countries in Europe to test the level of support of citizens for the use of nudges in order to increase the health. The majority of participants supported measures such as informative advertisements in cinemas, warning signs and calorie information on packages or “sugar-free” cash registers and “meatless” days in canteens.

Marteau, Ogilvie, Roland, Suhrcke, and Kelly (2011) refer to nudging as a tool which may lead the way to broader public acceptance of governmental interventions in promoting health. Further on, it could contribute to a change in deeply rooted societal behavioural trends.

2 Theoretical background

“It does not treat of the whole of man’s nature as modified by the social state, nor of the whole conduct of man in society. It is concerned with him solely as a being who desires to possess wealth, and who is capable of judging of the comparative efficacy of means for obtaining that end” (Mill, 1874, paragraph 38). This quote is from John Stuart Mill paper about political economy. He goes on with “[...] Political Economy presuppose an arbitrary definition of man, as a being who invariably does that by which he may obtain the greatest amount of necessities, conveniences, and luxuries, with the smallest quantity of labour and physical self-denial with which they can be obtained in the existing state of knowledge” (Mill, 1874, paragraph 48).

Mill’s work has been the basis for many important mathematical theories of economists who based their work on his assumptions. Just to mention a few, Pareto’s

manual (1906) and Lionel Robbins' (1932) work on the rational choice theory and have been influenced by Mill's paper.

Later in history, the term *homo economicus* emerged out of these ideas and became commonly used in economic literature. Although the roots of the term are not clearly known, the first written usage of the term is attributed to the Italian economist Maffeo Pantaleoni in the year 1889 (O'Boyle, 2008). But the research of O'Boyle (2008) suggests that the origin lay maybe in the early or mid-19th century in the German-language economics literature.

The traditional definition of economics is still connected to the *homo economicus* nowadays. This standard approach assumes the individual as a fully rational and emotionless human being, who can always optimize their economic benefits as much as possible (Thaler & Sunstein, 2009). According to the "neoclassical" model of consumer behaviour, the decisions made by people will result in their optimum. Considering the accessible resources, they can reach this state by wisely choosing among the available alternatives. Their judgment is not deceived by overstated claims or advertisements. And customers can assess the appropriate quality and costs from the given information on the marketplace and their experiences (Rice, 2013).

But Thaler and Sunstein (2009) argue that during the past forty years of social research serious doubts about the rationality of human judgements and decisions have been raised. It was even longer ago that the political scientist Herbert Simon described his concept of "bounded rationality" (Simon, 1955, 1956). His major postulation is that humans are limited in their cognitive processing of information and have trouble memorizing it when needed. Due to the magnitude of making necessary decisions, people face the requirement to use shortcuts, or heuristics, rather than sticking carefully weighing the pros and cons to maximize utility.

To illustrate that the reality is far from the "neoclassical" model of consumer behaviour, Thaler and Sunstein (2009) mention the rates of obesity all over the world. Considering the publicly-known facts that obesity is increasing the risk of cardiovascular diseases and diabetes as well as premature death, they state that the diet choices of people cannot be in line with rationality.

This is the reason why behavioural economics have emerged in the first place. It counters the assumption that individuals are always rational. The knowledge of

behavioural science is the basis for studying how these often irrational decisions are made and what the role of emotions or social surroundings is in the decision-making process. Overall behavioural economics can be defined as a discipline that applies behavioural science to the studying of economic reasoning. Many scholars describe it as the bridge between economics and social, natural sciences as well as psychology (Kahneman, 2011; Santos, 2011). Again Simon (1955, 1956) already criticizes that traditional economic theory does not address the decision-making process and it is only interested in the outcome, not the way there. More than fifty years later, Bruni and Sugden (2007) state that the relying as little as possible on psychological aspects is in the interest of the economy.

As already mentioned before, subjects may in different circumstances act in conflict with rationality, even systematically. These so-called “psychological biases” are described quite well by the literature and as the name already suggest are related to the psychology of individuals (Simon, 1991). These discrepancies from the two basic assumptions, “unbounded rationality” and “self-interest”, of the neoclassical economic theory have been discovered by experiments of Thaler (1991) and Camerer (1995).

The first one who combined the knowledge from psychology and behavioural science was Richard Thaler at the University of Chicago. The ideas of him and, the legal scholar, Cass Sunstein are in line with the theory to change the behaviour of people with encouraging them in ways which are supposedly better for them, instead of forcing them to. Thaler and Sunstein (2008) coined the term to “nudge” and claimed that it is based on the theory of libertarian paternalism.

“A nudge [...] is in 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. To count as a mere nudge, the intervention must be easy and cheap to avoid” (Thaler & Sunstein, 2009, p. 6) As already mentioned in the Introduction, a very important difference between classical economic incentives and nudges are the notion of being “cheap to avoid” for the individual. Incentives try to stimulate and encourage people to execute different actions, nudging instead operates sometimes on a more subconscious level and influences the environment in which they make their choices. Further on, the authors see no conflict between traditional economic theory and nudging. They state that these measures are far from

unimportant but these two concepts can exist side by side (Thaler & Sunstein, 2008, pp. 106–107).

Changing the environment for people with the goal of reorganizing the context in which their decisions are made is referred to as choice architecture. A number of examples are mentioned by Sunstein and Thaler subsequently, such as doctors explaining different treatment options to their patients or chefs arranging the accessibility and display of their canteen food. All people who are explicitly designing certain areas of life are choice architects, whether they are aware of it or not (Thaler & Sunstein, 2008, p. 3).

The basis of the nudge theory is a large variety of psychological theories about behavioural tendencies and decision-making process of humans. Sunstein (2011) distinguishes four different behavioural tendencies, and are empirical robust and are directly necessary for the development of nudging policies.

The first one, inertia and procrastination, describes the habit of human to stick with a product or behaviour even if the effort is low and the benefit big. The higher the complexity of the decision, the higher this effect. So-called “default-rules” make use of this inertia. Procrastination means that people often postpone actions or changes and focus on the present. The uncertainty of the future leads humans to avoid short-term costs, even it would result in long-term gains (Sunstein, 2011). The effect of default options is defined as a very powerful one and often trigger the idea that the default setter (choice architect) has put some effort in specifically designing this default (Thaler & Sunstein, 2008, pp. 38–39).

Framing is the context related presentation of information. For example, is it essential for making a decision if you are being presented to make profits or avoid losses, even if the final outcome is identical. But the way this message is “framed” affects the attitude towards a decision. Salience is promoting the awareness of information and such vivid information can have a way higher effect than purely statistical fact-based information. The easier to understand the information is the more likely it leads to the action taking. Another aspect that must be considered is “loss-aversion”. The importance of possible losses is rated way higher than the possibility of gains (Sunstein, 2011).

As third Sunstein (2011) mentions that norms and social influences play a central role in regard to lifestyle, health and risk-taking. People are worried about their reputation and how they are perceived among others in a society. Especially in nutrition, the food choices are highly based on the consumption of other people with a similar body type.

The last one is connected to a difficulty of humans to assess probabilities. One form of this is unrealistic optimism and the phenomenon of “above average” estimations. People generally estimate their chances of suffering from misfortunes, such as car accidents or bad health outcomes, lower than others. This is linked to the “confirmation bias” which describes that individuals tend towards overestimating the validity of their former attitudes and expectations. Heuristics, so to say mental shortcuts are used by humans to assess risks in a fast way. If a similar event has happened somewhere around an individual, this person will estimate the probability of this happening to her/himself way higher than it actually is (availability bias) (Sunstein, 2011).

Agha (2003) values the meaning of behavioural economics in health a high way, he states that healthcare management seems to be a perfect match for these behavioural economic principles. On the one hand, traditional persuasion messages which are used in healthcare appear to have a limited impact (Agha, 2003). On the other hand, the omnipresent financial pressures and the need for reforms are pressing issues in the healthcare sector (Thaler & Sunstein, 2008).

Voyer (2015) appeals to the responsibility of healthcare managers to turn the solely theoretical concept of behavioural economics and nudging into a practical implemented approach. Decision makers need to integrate the results and insights of scientific trials into daily management routines.

2.1 Literature review

Nudging internationally

In the year 2014, a report by the Economic and Social Research Council in the US stated that at that time a total of 136 governments have taken up elements from behavioural economics in their actions. 51 countries even created units which centrally coordinate these policy initiatives (Whitehead, Jones, Howell, Lilley, & Pykett, 2014).

The United Kingdom (UK) was one of the first governments in Europe who took nudging to an institutional level. In 2010 the so-called Behavioural Insights Team (BIT), also referred to as the “Nudge Unit”, was established. It is an independent governmental unit which works with businesses, NGOs and other departments of the government to create and evaluate nudging interventions (BIT, 2015, BIT, 2017; Ly & Soman, 2013). One of their achievements (in cooperation with Public Health England and the Department of Health and the Chief Medical Officer [CMO]) is, for example, the reduction of over-prescribing antibiotics. General practitioners (GP) who prescribed antibiotics the most were provided with a social norm feedback² (John, Sanders, & Wang, 2014) with the aim to decrease their antibiotic prescription practice. The intervention of the randomized controlled trial consisted of a letter sent to 800 GP practices informing them that their great majority (80%) of practices in their local area are prescribing fewer antibiotics. Three simple and feasible alternatives were included in the letter, for example, a delayed prescription method in which the patient can pick up the prescription at a later point in time if it is still needed. Over a period of six months, the prescription rates of the practices who received the letter fell by 3.3% compared to the control group. The authors calculated that if the intervention would have been applied to all eligible practices, the overall prescription rate would have been reduced by 0.85%. To put this in perspective, a five year UK wide strategy aims at reducing the antibiotic prescribing by 4% (Hallsworth et al., 2016).

Speaking about numbers, the annual update 2012 of the Nudge Unit stated that over £300 million has been saved over the next five years, by identifying specific interventions. It achieved a 10-fold return of the team related cost. These results have attracted the attention of other countries. A partnership with the governments of New South Wales and Australia is planned in order to transfer their knowledge from behavioural sciences to certain areas of public policies (Behavioural Insights Team, 2012).

The BIT (2014) has also developed the so-called, EAST framework, which serves as a tool for demonstrating four main recommendations to policymakers on how to implement behavioural insights. It is a further development of the MINDSPACE list, which has been found as not simple and memorable enough. The MINDSPACE

² To present individuals information to show them that they are outliers in their behaviour leads them to adjust their behaviour towards the social norm

framework has the same goals as EAST but it encompasses nine elements (Dolan, Hallsworth, Halpern, King, & Vlaev, 2010). The acronym EAST stands for easy, attractive, social and timely and in Table 1 an application to the four main health issues is displayed.

Table 1 EAST applied to the big four health issues (Piso, Stanak, & Winkler, 2015)

	EASY	ATTRACTIVE	SOCIAL	TIMELY
<i>Smoking</i>	Reduce cues for smoking by keeping cigarettes, lighters and ashtrays out of sight	Put stickers on pregnancy tests pointing out that the purchaser could easily access help to stop smoking in pregnancy	Make the public know that majority of smokers want to quit smoking	Target the moments of 'transfer' when new habits are being created, such as first-time mothers
<i>Alcohol consumption</i>	Serve alcoholic drinks in smaller glasses	Prevent alcoholic drinks from being put at the end-of-aisle spots in supermarkets as that increase sales	Make the majority of students know that binge drinking at university is not the default behaviour	Make General Practitioners recommend their patients not to consume excessive amounts of alcohol right after the check-up as that is when patients are most responsive
<i>Nutrition</i>	Nudge supermarkets to introduce smart shopping baskets that count calories and keep separate compartments for fruit and vegetables	Put nutrition labels on pre-packaged food in university halls at the level of eye-sight for healthier food to sell better	Use eyes and faces in health nutrition campaigns as that tends to make people behave more virtuously	Make food choice in canteen available ahead of time as that boost people to be more consistent with choosing the healthy option
<i>Physical activity</i>	Make public transport and city bikes easy to access and easy to use	Create an entertaining show aimed at young children to make a healthy lifestyle fun and automatic	Make physical activity the social norm, such a walking up the stairs in public	Support the making of commitments towards being fit or losing weight

The Office of Information and Regulatory Affairs (OIRA) in the USA was led by Cass Sunstein from 2009 until 2012. In this period he evaluated already existing legislation and regulation through cost-effectiveness analysis and implemented the policy of libertarian paternalism (Thorun et al., 2017). The Social Behavioral Sciences Team (SBST) was founded in 2014 and included experts of applied behavioural science with the aim of transferring scientific findings and approaches from social sciences and behavioural sciences into federal policies and programs (SBST, 2015). The organisation has a broad scope of functions and deals with a variety of different issues across health and healthcare, environmental protection, education and many others (SBST, 2016; Thorun et al., 2017).

At the European level, no particular entity has been founded in order to deal with possible applications of behaviour economics, but the Joint Research Center (JRC) is responsible for the implementation of these (Thorun et al., 2017). The JRC report published in 2013 “Applying Behavioural Sciences to EU Policymaking” describes how findings in behavioural economics can be integrated into EU and serve as a roadmap for the EU commission (van Bavel, Herrmann, Esposito, & Proestakis, 2013).

Another the initiative “Nudge-it” by the University of Edinburgh is provided with funds from the European Union. This is a multidisciplinary project which seeks to develop and implement innovative scientific strategies to lead consumers to healthier food choices, thereby tackling obesity (The University of Edinburgh, 2014).

The topic of nudging in Austria has been firstly discussed on a governmental level in the year 2015 when a written request has been delivered to the Austrian federal minister of science, research and economy. This request covered questions concerning “Nudging” in general in Austria and the establishment of a “Nudge Unit” (Dietrich, 2015).

Around one month earlier there has been a newspaper article about Harald Mahrer (former secretary of state for the economy, science and research) and his ideas and considerations to initiate an Austrian nudge unit in the example of the BIT (Weiser, 2015). Apparently, they decided otherwise because the written answer by the minister appeases fears expressed in the request of nudging being manipulative marketing and he emphasises that the freedom of choice is always maintained. It further on says

that several pilot projects were currently in progress with the voluntary help of international experts. If and how nudging will be incorporated in a legal basis has not been decided, but the establishment of a “Nudge Unit” is not intended (Mitterlehner, 2015).

The next time this topic became part of a public discussion was in 2017 when the Austrian Newspaper “Trend” published an article which states that in February that year the decision about the foundation of a centre of competence for behavioural economics will be made. The director of the Institute for Advanced Studies (Institut für Höhere Studien IHS) Martin Kocher should be leading it (Ecker, 2017).

Almost a year later, in January 2018, it finally came to the creation of an Austrian “Nudge Unit” (Insight Austria³). It has been established, as mentioned above, under the roof of the IHS, which is a non-university, economic and social science research centre (Institut für höhere Studien, 2018). Insight Austria although is not limited to nudges, the focus lies on the application of concepts of behavioural economics on questions of all kind and the design and conduct of causal impact analyses (Insight Austria, 2018).

Concerning the scientific landscape of publications in Austria, the situation is quite sparse. There is the already quoted paper of Pruckner and Schober (2017) but they primarily talk about economic incentives rather than nudging. The publication of the Ludwig Boltzmann Institut (LBI) for Health Technology Assessment deals with immaterial incentives and their effects on health-related behaviour (Piso, Winkler, & Reinsperger, 2015). An addendum of this paper deals specifically with nudging and their application to the four big public health issues. However, with no particular reference to Austria or the Austrian context (Piso, Stanak et al., 2015).

Nudging in health

One of the most famous mentioned examples of nudging connected to healthcare (more precisely a default option) are the different approaches when it comes to organ donation. The paper of Johnson and Goldstein (2003) demonstrates that those

³ A special thank you applies here to Mr Clemens Wallner, who drew my attention, during my study participant recruitment process, to this recently founded institution.

countries with an opt-out system or organ donation have a significantly higher consent rate than those with an opt-in scheme.

Specifically speaking about nutrition and nudging, Dayan and Bar-Hillel compared the positioning of different foods on a restaurant menu. The result was that items which were placed at the beginning or the end of their category list were 20% more popular than items placed in the middle. There was no connection to the kind of the food nor the size of it. The authors conclude that placing healthier menu items at the top or bottom of a list should lead to healthier food choices of consumers (Dayan & Bar-Hillel, 2011)

Another experiment conducted in Norway examines a reduction of the plate size and placement of social cues on food waste in hotel restaurants. These nonintrusive social cues were signs saying "Welcome back! Visit our buffet many times. That's better than taking a lot once". The results showed a 20% reduction in food waste. Kallbekken and Sælen (2013) see huge potential in their findings, on the one hand, cut down food waste in order to reduce climate change. On the other hand, the reduced amounts of purchased food for the restaurants, while the consumer satisfaction stayed the same.

The study by Schwartz, Riis, Elbel, and Ariely (2012) provides additional evidence on the efficacy of nudging in a nutritional setting. Study participants in a Chinese fast-food restaurant were asked if they want to downsize portions of starchy side-dishes. The overall percentage of customers who agreed on reducing their food portion varied from 14 to 33%. Surprisingly a financial incentive of a 25-cent cost reduction showed no difference in the results.

While more effortful approaches may lead to weight loss, they will likely not lead to long-term weight maintenance. A word of caution concerning the nudge approach: despite its popularity, as evident from the establishment of nudge units at public policy level in a number of countries (e.g., UK, US, Denmark, Singapore) systematic investigation and implementation of nudges to create behaviour change is still in its infancy and lags behind the somewhat pre-scientific and, therefore, premature enthusiasm by some policymakers (Meule & Vögele, 2017)

In order to provide a solid evidence basis for the effectiveness of theories, meta-analysis's and systematic reviews are necessary. Arno and Thomas (2016) identified the need for a large-scale examination of the nudge theory on encouraging healthier

food choices. They argue that numerous governments and policymakers are already using these strategies, although not enough research and evidence on the topic has been performed and delivered. Their results show an average increase of 15.3% in healthier nutritional choices. A number of limitations have to be kept in mind. The majority of the included experiments was conducted in high-income countries this leads them to the assumption that these results are maybe not transferable into low or middle-income countries. The study shows that nudging strategies offer an effective and practical public health strategy in leading adults to healthier food choices. Although further research on the topic is necessary to confirm these results and verify the finding in different settings.

A number of other systematic reviews on nudge interventions and choice architecture has been found during the literature review. The context ranged from positional changes (Bucher et al., 2016) to salience and priming (Wilson, Buckley, Buckley, & Bogomolova, 2016), to choice architecture interventions for increased vegetable intake (Nørnberg, Houlby, Skov, & Pérez-Cueto, 2016) up to choice architecture to change behaviour in self-service settings (Skov, Lourenço, Hansen, Mikkelsen, & Schofield, 2013).

Throughout all four reviews, methodological issues concerning the quality of identified studies was a persistent topic. The sample size was either small (Nørnberg et al., 2016), the intervention period short (Nørnberg et al., 2016; Skov et al., 2013) or even too little information about the methods in order to comprehensibly understand the study layout (Nørnberg et al., 2016; Skov et al., 2013). Wilson et al. (2016) and Bucher et al. (2016) particularly argue that there is a need of high-quality studies or even a standardized approach for conducting field experiments to better quantify the magnitude of nudging interventions.

Bucher et al. (2016) described in their review steady evidence but also state the difficulty to make statements about the effect size of positional changes because of the issues mentioned above and the heterogeneity of the included studies. Wilson et al. (2016) conclude that the examined nudging interventions can influence healthier food choices but the findings are not conclusive. Furthermore, they state that although the concept of nudging has become quite popular in recent times only a surprisingly low number of scientific papers which specifically study nudging interventions have been published. Skov et al. (2013) and Nørnberg et al. (2016) report limited and

inconclusive evidence about the use of choice architecture in their study settings. Nørnberg et al. (2016) speak about a “gap of knowledge” if choice architecture is effective in increasing the vegetable consumption of people.

Subsequent to the expressed need for systematic evaluation of the nudge theory, other authors raised doubts about the long-term effects of nudging strategies. Although several countries around the earth have established their individual nudge units on a public policy level, the scientific review and repetition of results are behind this development. Caution has to be exercised in order to keep the eager policymakers on an evidence-based approach of the nudging concept (Meule & Vögele, 2017).

Concerning public acceptability, Reisch et al. (2017) performed a survey across six countries in the EU. Their findings show a robust support for health nudges throughout Europe. Almost all of the interventions would be accepted by a majority of the survey participants in all countries.

Petrescu, Hollands, Couturier, Ng, and Marteau (2016) analysed in their study the public acceptability of nudge interventions to reduce the consumption of sugar-sweetened drinks in the US and UK. The authors report that no significant differences in the support of these interventions exist between the compared countries. A majority in both nations approve the changing of the location of products in order to decrease their consumption. The authors draw our attention to the fact that different from their expectation, the unconscious mechanisms by which nudging works does not decrease the acceptability of these interventions.

A qualitative study performed in the United Kingdom revealed that the majority of the population was not familiar with the concept of nudging. After an explanation was provided, the majority of the participants approved the use of nudges, especially with regard to improving health behaviour (Junghans, Cheung, & Ridder, 2015).

The ministry of health in Austria published in the year 2013 a so-called “nationwide action plan nutrition” (Nationaler Aktionsplan Ernährung). To ensure an evidence-based and quality-assured course of action, this report shall be revised continually. According to the preface of the paper, it shall serve as a dynamic planning and action tool and is the central record. Interesting about this report is the there is a chapter about promoting healthy nutrition and food choices. There they implicitly speak about

nudging, they write “make the healthy choice the easier one” (Lehner, Sgarabottolo, & Zilberszac, 2013, p. 109), which is basically a pillar of the nudge theory. (Thaler & Sunstein, 2008, p. 14). They do not explicitly mention nudging, but they speak about creating incentives to increase the fruit and vegetable consumption, positioning of food and nutritional information about products on the packaging.

Another publication of the ministry of health in Austria focuses on national health goals. These goals are valid for the next twenty years and describe how a healthier Austria shall look like in the future and what measures have to be taken to reach that. The overall aim is to improve the health of all people living in Austria and not only react to sickness but to sustain health (BMGF, 2017). Goal number 7 (Gesunde Ernährung mit qualitativ hochwertigen Lebensmitteln für alle zugänglich machen) is to grant an access to high-quality healthy nutrition for everyone. Concerning specific actions, the report primarily refers to the above mentioned national action plan nutrition. Although some strategies are stated such as: providing homogenous information about healthy nutrition in order not to unsettle consumers combined with truthful advertisement and responsible marketing.

Ethics of nudging

In an own-initiative opinion, the President of the European Economic and Social Committee (EESC), promotes an increased used of nudges in public policymaking. Nudges that meet environmental and social objectives should be prioritised, such as reduction of resource waste, energy transition, social well-being and improvement of population health. Furthermore, a platform to exchange good practice examples and knowledge about nudges in order to facilitate research should be created. He also emphasises the significance of information campaigns in order to ensure transparency of those who are “nudged”. An open discussion about nudges could contribute to breaking down prejudices and the risk of manipulation while using nudges. This goes hand in hand with his call for the creation of a code of ethics for nudges in order to prevent abuses. Four conditions should be met when designing a nudge: the transparency of the process, the flexibility of choice of the involved ones, the reliability of the provided information and not making individuals feel guilty (Dassis, 2016).

This provides a good transition to the criticism and suspicions concerning nudging. The most frequently mentioned point of criticism is that nudging is restricting the freedom of choice. Opponents argue that although Thaler and Sunstein call it “libertarian paternalism”, any form of paternalism can never be liberal (Vallgård, 2012). Supporters of nudging on the contrary state that a number of choices are anyway not made by the citizens, for example how elevators and staircases are arranged in public buildings or if there are sweets or fruits displayed on the cashier of canteens (Thaler & Sunstein, 2008). Most of our decisions are predesigned by choice architects and the mere essence of nudging is to not leave the shaping of this environment to chance or commercial interests (Quigley, 2013).

Although it must be kept in mind that the effects of nudging on the freedom and autonomy of an individual cannot be assessed in any general manner. But rather has to be examined for single and concrete interventions and then discussed and considered carefully (Krisam, Philipsborn, & Meder, 2017).

As Thaler and Sunstein (2009) claim, people, do worse in choices in which they are inexperienced, poorly informed or where the feedback provides is slow or infrequent. In this case, some changes in the structure could improve their lives. Of course, viewed from their perspective, not somebody else's. A false misconception is that it is possible to avoid influencing the choices of people. In several situations, organizations or agents just have to make a choice, which then undeniably affect the behaviour of individuals. Another misconception addressed by the authors is that paternalism always involves coercion. Behavioural economists believe that some types of paternalism (libertarian for example) could even be accepted by the most vehement defenders of freedom of choice since according to them there is no involvement of coercion at all.

Globally there is growing interest in nudging to address major health challenges around NCDs, including increasing interest within Austria. But at the same time there are negative perceptions and reservations around the concept that hinder its application in practice, including Austria. Hence it is useful to better understand how this issue is perceived by relevant actors within Austria.

3 Purpose of the study

The purpose of this study is to map the current state of the use of ‘nudging’ in Austria, taking the specific example of healthier nutrition. First and foremost, this thesis shall provide additional insights into the attitudes, opinions and knowledge of decision makers and advisors towards this theoretical concept in the Austrian health setting.

3.1 Research question:

The selected setting and the discovered gaps in literature resulted in the formulation of the following research question:

- What is the knowledge, perception and ideas of decision makers and advisors on nudging towards healthier nutrition in the Austrian health environment?

4 Methodology

In the following chapter, the different steps of the methodological parts of this thesis will be presented. The chapter begins by describing the literature review, moves then on to the design of the explorative study. It will be shown what sampling strategies were used and how the participants were acquired. The data collection method will be outlined and the concluding part consists of an illustration of the data analysis.

All these steps were taken in order to answer the research question. The process of the literature review will be described here but the results of this step can already be found further up.

4.1 Literature review

Greenhalgh and Peacock (2005) described that “systematic review of complex evidence cannot rely solely on predefined, protocol-driven search strategies, no matter how many databases are searched. Strategies that might seem less efficient (such as asking colleagues, pursuing references that look interesting, and simply being alert to serendipitous discovery) may have a better yield per hour spent and are likely to identify important sources that would otherwise be missed. Citation tracking is an important search method for identifying systematic reviews published in obscure journals.”

As already presented in the chapter above, the scientific literature concerning the topic of nudging in the health and nutritional setting in Austria was reviewed. Although different aspects of this approach, which will be mentioned later on, were used in the research step. As a starting point, the search terms “nudging”, “nutrition”, “obesity” and “Austria” were used with the Boolean operators “AND” and “OR” in the databases MEDLINE via PubMed, Cochrane Library via Wiley Online Library and Google Scholar. In addition, the university library catalogues of the Management Center Innsbruck and of the University of Economics in Prague were accessed for the research and acquirement of full-text articles. Given the very limited amount of results, the strategy was adopted and transferred to the standard search engine Google.com as well as the search extended to German literature including the German synonyms for “Austria” (Österreich), “nutrition” (Ernährung) and “obesity” (Übergewicht, Fettleibigkeit) as search terms. A number of strategies described in the Berry picking method by Bates (1989) were used, such as “footnote chasing” and “author searching”. Another strategy was the leveraging of the expert knowledge of the participants as they were asked if they can provide additional literature concerning the described topic.

4.2 Choice of research setting

The reason for choosing Austria as an appropriate geographical setting for this study is causally related to the body of literature. The literature review revealed gaps, or even blank spots in the Austrian context concerning the literature on nudging, especially connected to health and nutrition. Only one paper which deals with nudging and nutrition was found (Piso, Stanak et al., 2015). Plus, the increasing discussion of the topic and now the establishment of an institute (Insight Austria, 2018) shows increasing interest in this topic and the relevance of understanding it better within Austria.

The previously mentioned OECD (2017) prognosis concerning the rising obesity rates all over Europe, as well as the recently Austrian specific figures (Rust et al., 2017), highlight the relevance in this country. Another contributing factor was that Thaler and Sunstein (2008) particularly mention the topic of nutrition as a possible field for the application of nudges.

4.3 Selection of research design

Qualitative inquiry is aimed at providing an individualised and context-sensitive understanding. It can examine the context and determine why and how things matter. Also making comparisons and discover important patterns and themes across cases is an example of qualitative inquiry (Patton, 2015, p. 13). The intention of qualitative methods is to provide a detailed and holistic view of the researched phenomenon. The nature of the research question of this study was an exploratory and wanted to examine the knowledge, perceptions and ideas of decision-makers and their advisors, that is why the method of choice was a qualitative inquiry.

The grounded theory has been chosen as a theoretical research perspective. It is characterized as an iterative process which requires a constant exchange between data collection and analysis in order to derive a theory of the collected and interpreted data (Corbin & Strauss, 2008). Grounded theory allows to address questions of alternative meanings of phenomena, it builds theory rather than test it and allows to draw on data and develop new concepts (Patton, 2015, pp. 110–111).

4.4 Sample

The selection of purposive or theoretical sampling instead of representative or probability-based approaches is given by the nature of the research design (Patton, 1990, p. 169).

Through the research question which was targeted towards a group of decision makers and advisors. These people had to be in certain positions to provide the data needed to answer the research question. Due to this, the purposive sampling strategy was used. Because of this very specific target group, the number of possible candidates was limited before entering the phase of recruitment. This number was even reduced to a lower number because not many were willing to participate. Due to these two reasons, a pragmatic approach was undertaken, by identifying more participants through enlarging the potential group of participants to generate a sufficient pool of participants whilst keeping the focus on purposive sampling.

The key informant strategy, or also referred to as key knowledgeable and reputational sampling, is based on key experience and expertise on specialized issues. According

to Patton (2015, pp. 284–285), key knowledgeable interviews are one of the most common sampling strategies for qualitative methods and can be used alone or in combination with other approaches. The essence is the identification of these knowledgeable experts and attaining their cooperation.

Snowball or chain sampling relies on the so-called snowball effect. At a starting point, especially information-rich, well-situated people are identified and asked about with whom else the author should talk with. By acquiring more and more information, the snowball gets bigger and bigger. Typically in most settings, a few key names or persons are cited recurrently and attribute these informants special importance (Patton, 2015, p. 298). An informative and informal interview was performed with a contact person at an Austrian insurance company, a detailed description will be provided in the section Recruitment of participants below.

These two approaches were found to be the most suitable ones and chosen initially for this study. Hence the key knowledgeable were Austrian politicians who were responsible for healthcare topics and ideally had contact with the nudge theory or similar approaches. Preferably a selection of politically active persons on regional and on the federal level (Länder-/Bundesebene) would be reached. However, the process research, especially purposeful sampling, is an iterative process and due to various reasons, which will be described in detail the chapter 4.5 Recruitment of participants, another sampling strategy, namely convenience sampling had to be included.

4.5 Recruitment of participants

As incorporated in the research question the initial target population did encompass decision makers. In a legislative system, as it is the case in Austria, these decision-makers are usually politicians. The recruitment of participants took place during the time period from March to May 2018. Initially, all the healthcare spokespersons of in the parliament (national council) represented parties were sent an E-Mail and asked for their participation. Unfortunately, out of all five, only one positive answer was received. Parallel to this step all nine federal counsellors responsible for health topics were contacted. Again, only one interview emerged out of this and it was a referral to a primary not politically active person.

As well as these steps, an initial talk with a contact person at an Austrian insurance company was performed. This talk had the nature of merely an exploratory talk than an interview. It helped the author to reflect his ideas on ideas of important persons in the field of nudging in Austria. Additionally, some valuable inputs were generated, as well as the prospect for another interview.

This talk and the experiences, mentioned above, during the recruitment of the politicians, led to the conclusion of the author that a change of the research approach had to be made, in one way or another. The author decided to extend the group of eligible persons for the study to “advisors” of decision-makers on the topic of nudging on nutritional topics in Austria. This would enable the author to display a very heterogenic group of expertise, but all of these advisors had, of course, some affiliation with the topic of nudging. Three different fields of expertise were identified as relevant for this study, either persons working in research on the topic of nudging and who already published some work on this topic. Or people working at insurance companies operating in the particular field of nudging and incentives for healthier nutrition. The third group were civil servants working in the healthcare environment of different governmental organisations.

4.6 Data collection method

The data collection method of grounded theory studies are usually interviews (Corbin & Strauss, 2008). Thus, key knowledgeable or expert interviews were chosen to be the source of the data collection for this study.

Through the described methods above a total number of 10 participants (n=10) could be recruited for this study. With all these experts, interviews were conducted. The majority of the interviews were done via phone calls (n=6). Two of the participants agreed on being interviewed via video-call over Skype (n=2) and two interviews (n=2) were conducted in person via face-to-face.

Due to the Austrian context of the study, the interviews were held in the German language, except one which was held in English upon request of the interviewee. All interviews were audio-recorded and then transcribed. To ensure traceability summaries of the interviews are provided in the Annex D-M. For further information

concerning the audio files or the transcriptions of the interviews, these can be found in the .zip file provided.

The interviews were semi-structured. Prior to the interview, all participants were provided with the interview guide which can be found in the Annex B (German version Annex C). The structure of the interviews followed roughly the interview guide. It consisted of twelve open-ended questions and the interviews followed a semi-structured approach, which provided a greater level of flexibility to pick up interesting topics if this was the case. The first part of the guide was mainly generated to provide an entry into the topic and gather the participants individual understanding of nudging. The second section made sure that a general definition about nudging for this interview was provided. Subsequently, the author wanted to assess if the participants had knowledge of institutional organisations dealing with nudging in Austria. This was inspired with the establishment of Insight Austria, an Austrian version of a nudge unit. Then the shift towards nudging in nutrition was made, the questions arose mainly through the reviewed literature on the topic.

Furthermore, a consent form was sent to them and had to be signed by them before conducting the interview. This ensured the voluntary agreement to participate in the study and the possibility to be anonymised. Additionally, all the participants agreed on the recording of the interview and using the acquired data for scientific purposes of writing this master thesis. The form, which is attached in Annex A, also states that the interviewee can stop the interview at any time and can withdraw their agreement to record the interview. This form was only provided in German since all the participants were able to understand German, only the one mentioned felt more comfortable to conduct the interview in English. To ensure a more aesthetic and consistent display of the study participants, all of their identities were anonymized although only some of them wanted this.

The average length of the interviews was 30 to 35 minutes. This adds to the fact that the interview guide was only seen as a basic structure, the course of the interview was dictated mainly by the responses of the participants. Thus, not all interviews were conducted in the original order of questions.

4.7 Data analysis

Patton (2015, p. 545) states that with the term sensitizing concepts certain the researcher already brings some ideas to the data. The origins of this concepts go back to Blumer (1954, p. 7), a qualitative sociologist. He distinguished between definitive concepts and sensitizing concepts as following: “definitive concepts provide prescriptions of what to see, sensitizing concepts merely suggest directions along which to look”.

Quite sometime later, sensitizing concepts are still seen as starting points for deriving building blocks for the creation of a grounded theory. They have been found to be effective in providing a basis for the analysis of empirical data (Bowen, 2016).

According to Gilgun (2002, as cited by Bowen, 2016), “Research usually begins with such concepts, whether researchers state this or not and whether they are aware of them or not” (p. 4). The sensitizing concepts in this research were derived from the thorough review of the literature on nudging and choice architecture in Austria as well as internationally. The basic line was that ethical aspects were present in almost all studied publications. They were discussed as the main concern towards nudging and its appliance. Another finding of the literature review was that a lack of publications on nudging was identified in the Austrian context. Hence, the author included two sensitizing concepts which were on part of the analysis.

A grounded theory consist of themes and these emerge through the data analysis and display the essential experiences or ideas of the researched setting. Morse and Field (1995, pp. 139–140) describe thematic analysis as the process of searching and identifying prevalent features among all of the conducted interviews. The challenge obliges in the discovery of the theme which may not be obvious at the first glance. This step requires a reflective and sometimes even distant view of the researcher on this data. After the themes have been detected they may look obvious and as an essential connection between the different sections of the interviews.

Qualitative Data Analysis Software (QDAS) is a tool for the researcher which assists him and serves as a data management tool as well as facilitates the analysation process. In this study, the QDA program MAQDA version 10 was used in order to speed up certain processes and manage the collected data. The first step of the

analysis consisted of identifying and coding interesting sections in the interviews. This was done in style of the described 'paraphrasing' described by Mayring (2010). Already during this coding process noticeable similar statements were provided with the same code. After this first round, codes were grouped together, and sub-codes were created. Followed by a second round of analysis in which more an attention was paid to generate bigger coding trees and then ultimately the themes were named. All the previously described steps were conducted in German, the themes were then translated into English.

5 Results

This chapter provides an overview of the collected data from the interviews and the results of my thematic analysis. Through the analysis of the transcribed interviews, different themes were formed and will be described in the following. The analysis process took place in German and the identified themes were firstly named in German and then translated into English. Key quotations which represent certain themes best or added extra value were translated into English and will be provided in the following.

For this study, a total of ten participants (n=10) were recruited and interviewed by the author. Table 2 provides an overview of the different study participant characteristics. During the initial question, the interviewees were asked to introduce themselves. Given the fact that all of them had at least one university degree, the column “educational background” was based upon their answers to the first question of the interview. Table 3 shows a detailed description of the experiences and responsibilities of the experts. The sample comprised two politicians, two civil servants, three employees of sickness funds, two researchers and one public health teacher. Although not all the experts wanted their identity to stay covered, the author chose to anonymize all of them for consistency.

Table 2 Study Participants characteristics

No.	Category	Educational Background	Gender	Setting	Acronym
1	Politician 1	Psychology	F	Phone Call	Po1
2	Civil servant 1	Nutritional sciences	F	Phone Call	Cs1
3	Sickness fund 1	Sociology	M	Phone Call	Sf1
4	Politician 2	Law	M	Skype Videocall	Po2
5	Sickness fund 2	Pharmacy	M	Face-to-face	Sf2
6	Sickness fund 3	Business Administration	M	Phone Call	Sf3
7	Civil servant 2	Sociology	F	Face-to-face	Cs2
8	Researcher 1	Economics	M	Phone Call	Rs1
9	Public health teacher	Social Sciences	M	Phone Call	Ph1
10	Researcher 2	Philosophy, Politics and Health Economics	M	Skype Videocall	Rs2

Table 3 Detailed information about study participants

Participants	Current employment	Responsibilities
Politician 1	municipal and district council for 14 years	committee on health and social affairs
Politician 2	4 ½ representative in parliament	labour, social affairs, health and housing
Sickness fund 1	14 years main association of sickness funds	health promotion and prevention as well as health policies
Sickness fund 2	30 years at health insurance	public health topics and health strategy
Sickness fund 3	10 years health insurance	health service department
Civil servant 1	20 years at a governmental health institution	nutrition, lifestyle, obesity and health promotion
Civil servant 2	13 years state government health agency	health literacy, public health and health goals.
Researcher 1	12 years of teaching and research at a university	behavioural and experimental economics
Researcher 2	3 years research institute for health technology assessment	research on public health and bioethics
Public health teacher	6 years teacher at university of applied sciences	member of the Austrian public health association (ÖGPH)

As described in detail in the methodology, the author aimed for a heterogenic group of experts in order to provide a well-balanced overview of different professions within the topic of nudging. An analysis of the final composition (Table 3) shows that two politicians, three sickness fund employees, two civil servants, two researchers and one member of the Austrian association for public health ensured a broad selection of participants and bestowed this paper with different perspectives within the Austrian health system.

Now moving on to the actual results. Through the analysation process these five themes were identified and will be explained in detail subsequently:

- **“Ignorance”**
- **“Fuzzy definition”**
- **“Ethical aspects”**
- **“Evidence of nudging”**
- **“Political Influences”**

5.1. Ignorance

The formation of this theme already started during the literature review. Only one research paper on the specific topic of nudging was identified and led to the assumption that the overall knowledge about the concept of nudging and choice architecture is quite low in Austria. During the interviews, the participants did claim to know about nudging, but some did explicitly state that choice architecture is new to them.

“Concerning nudging, as the request was, I thought to myself “Yeah I know that and so forth”, but when I saw the interview guide then. The term choice architecture, I have to admit explicitly as a term I thought to myself “Ups, what is that?”. I believe to know it, the analysing and the doing of it, what such incentives could be or so.” (Ph1, paragraph 15-16)

“[...] I mean your second question, choice architecture, this term, I have not heard until now, until recently.” (Cs1, paragraph 25)

One of the researchers did specifically talk about the current situation and their perception of the relative lack of knowledge on nudging in decision makers in Austria:

“Ähm, and we are going to organize this meeting of the health decision makers in Austria, where question of nudging or the aspect of nudging in the question will be also presented and it seems that there is very / well to my understanding and to the understanding of my boss, forename surname, there is very little understanding of nudging in the Austrian context” (Rs2, paragraph 11)

A possible reason for this lack of knowledge on the topic at hand is linked to the lack of discussion in Austria presently.

“Well, for for my view not at all really, that is what I would say. [...] And there, I presented this, and there are places in Austria that none of it / the whole concept of nudging I had to introduce that in order to go any deeper into it, because it really seemed to be new” (Rs2, paragraph 11)

“[...] I have now been to the Austrian Public Health conference, there I have not encountered it in a single presentation.” (Ph1, paragraph 20)

Although the book, by Thaler & Sunstein, which made the concept popular has been published in 2008, seven years later apparently the awareness is still low in the perception of these interviewees:

“No, I did not get in touch with it during my education. I / the first, the first moment actually was when I started at the research institute ähm that was in 2015, when we did the work for the Hauptverband.” (Rs2, paragraph 7)

“Yes, I am not sure when that was exactly, it has to be back approximately two to three years. I think it was 2015, this initiative „motivating state“[...]“ (Rs1, paragraph 20)

Due to this, it was unsurprising that none of the study participants knew about the 2018 initiated centre of competence on behavioural economics, Insight Austria (except the one researcher who works for this institute).

5.2. Fuzzy definition

Related to the relative lack of knowledge about “nudging” described above is a relatively imprecise concept of what “nudging” refers to, even amongst those who were aware of the idea. Especially two of the three included employees at sickness funds talked about issues connected to an imprecise and unclear definition of terms.

„[...] very often in discussions terms are confused, expressions blurry defined, fuzzily used as well in the communication, often one can get the impression that people are talking about the same things, but if you ask more precise you will find out that the concepts behind the terms differ very much and the understanding as well.” (Sf1, paragraph 13)

“Nudging has been recommended to us time and again, as a new and additional way to influence and guide health behaviour. But apart from that, that the definition of nudging shows a very wide dispersion and one sometimes has difficulties to picture what exactly is meant by it when it comes to nudging” (Sf2, paragraph 5)

Even a researcher who already published a paper on the topic of nudging admitted that it is “with nudging, (...) it is hard to say what it is and what it is and what it is not” (Rs2, paragraph 17).

Within this overall theme of fuzzy definition is that some elements of understanding did not reflect what the authors of the concept meant by it. Participants on the one hand described that the idea of nudging is not new, just the term and the designation of it.

“If one takes a closer look you can see that what it is all about is to create incentives to motivate to make the right decision and this approach, this methodology I think is really not that new. So, for me it is just the term which is used new.” (Cs1, paragraph 23)

This can be perceived as an explanation for a phenomenon the author came across in his analysis. First, some participants argued that they are not aware of any specific nudging interventions or are unsure about the detailed concept. Further on in the interview, they then unknowingly described the idea of nudging or talk about choice architecture without calling it that way.

„Or there are even strategies and with which the water drinking in schools should be increased for example. Incentives are created for children, that they prefer to drink water, I know a project example, especially in Vienna it is already taking place in 75% of the primary schools where the children and the teachers are being led to regularly just drink water, and no juices [...] and then the children get a nice water bottle from the Wiener Wasser and then they are really keen on drinking their water. And they are constantly reminded because the teachers are provided with information material and handbooks through which the kids learn to drink water in a playful way.” (Cs 1, paragraph 41)

„[...] I told you before that we are using the topic of nudging in many fields without calling it that way.” (Sf1, paragraph 43)

“But if we take for example the proposal that both parents take parental leave they will get more months. This is also a form of nudging, even though I do not explicitly call it that way”. (Po2, paragraph 17)

People not only seem to be unsure about the definition of nudging, they actively talk about this during the interviews:

„There are examples, especially in the school setting, that in some states the vending machines with soft drinks [...] are step-by-step cleared up from the sugary drinks and then there are healthier, in quotation marks, drinks in there. Maybe this is also a form of nudging in the broader sense.” (Sf2, paragraph 11)

On the other hand, participants either referred to nudging although they characterised classical economical incentives with their illustrations. Or they even used economic incentives as a synonym for nudging.

“I mean certain regulations could also be made from above, that would be the pricing policy, I do not know whether this is still nudging?” (Ph1, paragraph 32)

„I think one can say for instance, but this is as well nationwide, that the mother-child-pass examinations (Mutter-Kind-Pass) falls under the competence of our departments, that the families get their financial support and this conditioned to the examinations, this is also a type of nudging. (Cs1, paragraph 9)

A striking example that there may even be some misconceptions and confusions in the scientific environment is that the researcher 2, who published a paper on the topic of nudging, even misinterprets the concept himself. He mixes it up with two other psychological concepts, namely anchoring and salience:

“I have my one kid (?) experience from living in the UK. That in the UK you have when you shop in a supermarket whatever contains some fruits or vegetables it tells you on the package how many of your five vegetables a day that you should eat, this contains. So it just sets you an anchor and it makes you, makes you understand that you should at least five fruits or vegetables every day. And this anchor that I experienced for the period of four years, that I lived in the UK, I still have it in my head. So even now when I eat some fruits or vegetables I still think about: Oh have I had my five a day? I think, I think about it less actively than I did back then, because back then I could see it everywhere and because of the salience I had reminded all the time. But I still feel / I still think about it sometimes that if I had it or not. Ähm, but yeah that is

an empirical question to what extent the impact remains to significant even afterwards, I would assume it varies with interventions. Ähm, and this is one of those that I think worked very well, the question of five a day. That was a very smart nudge.” (Rs2, paragraph 33)

Except, it was not a nudge. In the paper he published as a co-author, which cannot be quoted directly due to anonymity reasons, they correctly quoted Sunstein (2015): “Nudging can also include incentives as part of its strategy but the imposition of significant material incentives such as taxes, subsidies, and fines no longer falls under the heading of nudging”. Therefore, it is particularly interesting that he wrongly incorporates the other two concepts of anchors and salience under the roof of nudging.

Even more surprising then is that at the end of the interview researcher 2 himself speaks about the definition of nudging and using the terms right:

“[...] I would just be very careful with with applying the terminology right. Because there can be some misunderstanding there, I mean the way I understand Sunstein’s and Thalers work with making a distinction choice design or choice architecture and nudging, I think it is important to realize that the nudging comes in, the moment intention comes in. That we talk about nudging the moment somebody, some agent, a person takes a deliberate decision to intentionally work with the design of choices. And I think this is something that needs to be clear in nudging, if there is no intention we are not to talk about nudging in a way. We ought to talk about choice design or the architecting of choice, but nudging comes in when intention / that is my understanding. So that is something that I would be careful about when working with the topic.” (Rs1, paragraph 35)

A quote from the Public Health Teacher describes the result and the threats that are connected to the unclear definition of nudging best:

“I have, as someone who is in the public health scene in Austria, not the perception that a lot are actively thinking or wondering about what meaningful nudging, I do not know if that is said like this, interventions could be. But I regard that as very negative, because when then it is spoken about it a lot of phantasies arise.” (Ph1, paragraph 16)

5.3. Ethical aspects

Although the author had included a question in the interview guide about ethical concerns, it barely ever came to the point in which it had to be asked. In the majority of the interviews, the experts brought up the topic by themselves. General scepticism, alleged manipulation and the restriction of the freedom of will are common topics throughout the interviews. Furthermore, a sickness fund employee (Sf2) claims that nudging is somewhat a dishonest way of influencing people. He argues that nudging leads people with certain tricks to change their behaviour.

“What we do with information, with health education, with the old-fashioned word is health education, with an increase of the health literacy, that is the new form of how to enter the field, for us this seems to be this newer version of health literacy to be a more honest form of influencing behaviour.” (Sf2, paragraph 5)

Politician 2 states before this quote that he has no doubt that nudging can influence the behaviour of people but:

“[...] I personally am a sceptic of it, because it because nudging is emerging from the assumption that I know it better than you and that is why I nudge you now to do what I think is best for you. And this is always the restriction of choice of the affected person.” (Po2, paragraph 29)

It looks as if the scepticism towards nudging would arise from the relative lack of knowledge towards it. Indeed, the concept of paternalism is resonating here. But our whole concept of laws and regulations is somehow linked to this idea since it emerges from the fact that some people have the power to change the choice architecture of others. This will be described further in the theme of political influences.

Researcher 1 brings up an interesting aspect to the manipulation allegations towards nudging. He talks about the role of media in communicating and “informing” the society:

“[...] no one knows what nudging means, and so on, what does it stand for and there was this beautiful, that was the Spiegel (German Newspaper) before oh, four years or so, where in Germany Chancellor Merkel wanted to build a kind

of unit too, like the BIT. And, and that was just this um, title page, at the Spiegel, that was pictured, Merkel standing in front of the speaker's podium, in the Bundestag or wherever, and behind a shadow was on the wall and that was like a ghost that has access with the hands, in that direction yes. And that was somehow a symbol, so now the manipulation begins. And is this somehow discussed and there are also many opponents who are also active on the net and actually conjure this picture of manipulation as an awful ghost somehow. And I think what we could do is: a proactive approach, so people should be educated, no one should feel manipulated, people should know what the state is doing". (Rs1, paragraph 44)

This shows the crucial role of media and their part in the communication. As well as it influences the common idea of a society towards a concept like nudging.

Politician 1 even admitted that maybe more information could lead to a different perception of the concept.

"Or rather I have to say personally I as a psychologist am a little bit sceptic towards nudging, in terms of a manipulation. But maybe I do not know enough about that yet, that could also be." (Po1, paragraph 21)

But there was a counterflow of perception on the topic of nudging being manipulative. The two researchers and the public health teacher had different opinions, they argued that nudging or better choice architecture always happens. It is just a matter if it is done intentionally or not.

"[...] to make it clear that ähm we cannot talk about not nudging, we can talk about not nudging sort of not doing it intentionally but that does not mean that the choice design will not be going on. It will go on unintentionally then and it is at question if it is unintentionally if we know that there is a tool, but we do not use it right, so that is another aspect of it." (Rs 2, paragraph 19)

„I find that it is discussion in the context, quite astonishing because say to speak here in respect to nudging it is perceived as extra in quotation marks intrusive, like “Huh, the politicians want to lead us now”. But this is nothing new, the politicians always wanted to do that. [...] But I say now in general this part is always a bit strange for me (laughs), I understand that, I am in my

environment also in particular concerning nudging immediately confronted with manipulation allegations or the ideas that someone could do something evil with it.” (Rs 1, paragraph 36)

This adds to the general notion that these fears can be removed by further information about the nudging and choice architecture concept. One researcher stated that everybody who is dealing with the topic should be an ambassador:

„And I think all those who have spent a bit of their time dealing with the topic should proactively communicate and educate, just not manipulate in this direction, to hide a bit, but carry transparency out. I think that is the essence and everybody can be ambassador, maybe you, that you just say transparency is necessary and then everyone can form their own opinion.” (Rs1, paragraph 44)

A very interesting question arises from this finding: Why do people have negative perceptions towards nudging, in detail why is it perceived as being particularly intrusive and restricting choices of people? This question will be addressed in the discussion.

5.4. Evidence of nudging

Interestingly the majority of participants brought up the topic of the evidence connected to nudging. No question about this issue was included in the interview guide. However, it was stated that there is not enough scientific evidence on the effectiveness of nudging. And according to some participants long-term evaluations are missing.

“[...] we examined if there is some proof that these approaches, establishing incentives or nudging systems, achieve an effect. And the result was rather sobering. So, in terms of the evidence on the subject that there is also some effect generated, I am talking about relevant health outcomes.” (Sf1, paragraph 11)

“There is still no evidence that nudging has a lasting effect and particularly on issues such as overweight and obesity we would need sustained effect of health interventions. The information, the health literacy, um the

consciousness there are already studies that through it, in a modest extent but still some behavioural changes can be achieved". (Sf2, paragraph 7)

These quotes lead to the assumption that the from both participants mentioned paper of the LBI has been the foundation for the talks upon nudging in the Austrian sickness funds. Indeed the publication provides a systematic overview, but come to the conclusion that mainly financial incentives have been examined and shown small effects (Piso, Winkler et al., 2015).

Interestingly another aspect connected to the matter of the evidence on nudging was identified. Although it is more a hypothetical one because the participants talk about the possible potential of nudging. This may seem ironic since it is not being discussed, let alone used as we already established above. Anyhow, there seems to be an agreement that nudging alone cannot be the answer. The first interviewed sickness fund employee states that: *„[...] not in which level you are using it, but in the course of a overall strategy is this topic a part of the overall strategy. Hence in a set of measures"* (Sf1, paragraph 31). His colleague describes it in a similar way:

„[...] I mean you cannot expect that only because you perform once a nudging intervention that they will change their behaviour and acts quasi until death conform, that would be completely naive. So basically, a functioning incentive model is usually a set of different incentives, which act on different levers [...]" (Sf3, paragraph 44)

This view about a set of various measures is also shared by the researcher 1. He speaks generally about behavioural economics though, but nudging is a tool of it.

"Um, the behavioural economics cannot solve all the problems of the world, that is not how it works, we do not even try to overthrow other things completely, but I think we can offer an interesting, complementary toolkit. And in the end, it does make a difference, it is well-invested money, which shows up relatively quickly." Rs1, paragraph 22)

"Well me, I would believe / I would believe in the mix. I think that you should not only rely on purely economic instruments but also on nudges, but I would also say that you should not just rely on nudges. So that's what it takes um

needs it both. It needs a mix of instruments, that's what I think is important.”
(Rs1, paragraph 32)

So basically, there was an overall agreement, of the participants who mentioned the possible use of nudging, that it has to be combined with other measures and that it alone is not a “*universal remedy*” (Ph1, paragraph 16).

Researcher 2 explained a specific example in which he argues that nudges and economic incentives or better, disincentives should be combined in order to create synergies between these two concepts. Specifically, he is talking about the sugar tax in the UK on sugar-sweetened beverages:

“However, the way you communicate for instance the fact that your children are obese. Ähm, then ähm or the way you communicate ähm about that tax, that is already the way you present the choice to the people, in one way or another. And so, the way you present it has an impact on how they are going to uptake the choice. Ähm, so surely tax is a limit and that is a restriction and no longer nudging, but the way you go about introducing that, that there is loads of synergy of nudging and restrictions.” (Rs2, paragraph 17)

His colleague, researcher 1, agrees with him on this topic and even mentions the same sugar tax in the UK. He claims that financial incentives actually work in decreasing the consumption of these products and that they could be easily applied to fat or sugar.

The question of how nudges can work on the topic of healthier food consumption was discussed in one interview as well. Nudging does not always have to involve a third party or not even a second one. The researcher 1 speaks about outsmarting yourself, the author defined it as “self-nudging”:

“[...] in principle, nobody wants to eat unhealthy food, I do not know, smoke, get fat, whatever, do not do any sport just stuff yourself with sweets, nobody wants that. [...] and if you point out mechanisms at a certain point in time, how you can do that yourself, how you can commit yourself to it, um, at a time when there is no craving for chocolate, then that will, how shall I say, the backpack packed for the day. Um, and then when you are hungry but only the apple is there and not the chocolate and then you eat the apple and not the chocolate,

you enjoy eating it and then over time maybe even one, one can develop a habit, a habit that you do not want to change any more. That's it, the long-term variant. But first you have to change (incomp.) short-term and the choice architecture, also consciously, it does not have to be a third actor who sets the course, the marionette that pulls the strings in the background.” (Rs1, paragraph 24)

He is implying in a way that every individual has the power to “nudge” themselves into making healthier choices by changing your own choice architecture. It is a very powerful statement which can easily be misunderstood and put the other way. Where is the legitimacy to nudge if people can do it themselves?

However, the appliance of this method would be fairly easy and completely shuts down all worries about ethical issues because it merely works on an individual level without any interfering party. But the method was used on purpose because it would raise the question if it would be per definition nudging or not anymore.

Another aspect which was mentioned by the researcher 1 is connected to the reaction of individuals towards instruments from the behavioural economics. He urges to act cautiously when designing such methods because of possible unintended behaviours.

“Yes, so the problem was just a kindergarten and there are the children from 9 to 16 o'clock there and then at 16 o'clock the parents have to pick up the children. And now there was a problem that parents are always late, or some parents are always late. And the problem is that now the kindergartens are open longer, which causes costs and so on. Now they said, well, if that's the case we have to discipline the parents somehow, they should come punctually and have introduced a kind of penalty, so these ten euros or so, if you come too late then there are ten euros extra due. And what did they observe then? They have noticed that way more parents have come much later. And why? So, the real idea would have been yes, now there is a punishment quasi, now they arrive punctually that they do not have to pay the penalty. But now the behavioural psychological effect was that the parents perceived that as a price they can pay to pick up the kids later. So, it has not been construed as a punishment, that is evil and avoid that, but has arrived as a payment of legitimacy: Now that I already pay, I do not need to have a guilty conscience.

And I mean what you have to pay attention to when you use econometric instruments, the effect of which I am basically convinced, but it always depends on the context in which he attaches what heights of instruments and there must be the behavioural economic effects, you have them just be aware.”
(Rs1, paragraph 34)

Here he specifically refers to the publication of Gneezy and Rustichini (2000) and recalls that not only the good intention is important in designing the environment in which people live. In this example, a classical economic incentive is mentioned but this could also be said about nudging. Anyhow the economic threshold of such an intervention decides if it is a nudge or not anymore. So, his appeal is to always consider unintended or possible unintended behaviour when using behavioural economic instruments.

5.5. Political influences

The fifth theme that has been established, discusses the political aspects connected to nudging. Politician 2 explained that the term itself is not used in political debates, even though their party uses it internally:

„It is not advisable to use (...) terms such as nudging in parliament because then you risk that a significant proportion of the panellists or listeners will not understand you, misunderstand you or willingly misinterpret you. Such scientific terminology, especially more modern ones, will not be present in a parliamentary debate”. (Po2, paragraph 7)

This finding interconnects with the theme of ignorance and ethical aspects on the topic nudging and choice architecture. If not even decision makers are objectively discussing this, is nudging per se politically too sensitive?

Resulting from the collected data through the interviews, the participants claimed that they would have a special kind of aversion and awareness towards the government interfering with personal choices. Researcher 2 phrased it this way:

“I think on the one hand it is definitely plausible and I would definitely sign it that one needs to be careful with the way the government uses it's power. And that needs to be done in a transparent way, and that is something that the

nudging seems to possibly undermine and that is something that people tend to be very careful about that. Let's not undermine my freedom in making my own decisions, it is sort of more acceptable if the industry does it, if if the film industry does it or whatever supermarket industry does it. But the moment your own government does it, that is when people start to be very ähm ähm annoyed about it.” (Rs2, paragraph 19)

There now the notion of paternalism comes into play. This concept is existentially linked with the topic of nudging. Although some of the participants do not perceive it as liberal as the creators of the concept claimed it is. Politician 2 has a very strong opinion on the involvement of the government in the choices of people:

„The tendency is paternalistic, I think that the boundaries are fluid. And that the legislature already takes a lot out in the (...) in the patronizing of people anyway. I rather believe (...) that where there is not just this authority gradient state to citizen, but where one has it on a partnership level, in a company one can pronounce oneself expressly to say: we do that here because we believe / so there are people who want to be taught to eat healthy food and are willing to submit then (...) they should have it. But as a state intervention, I would not see it. (Po2, paragraph 31)

This leads the way to a possible explanation of these worries and fears. The authority gradient was identified as a sort of triggering factor for people to get very careful and sceptical towards government involvement in nudging activities. It conveys the image of people feeling powerless and of less worth a government acts on their behalf. Even if it happens in the best interest. And because it is more accepted in other sectors it seems that people have a certain kind of trust or ideal of a government which should not interfere with the very personal levels of decision making.

Some participants saw the origin for this rooted in the fact that they fear a responsibility shift towards the individual level. The public health teacher calls for the awareness of influencing concepts, such as the determinants of health. The first worry he has is that the state maybe delegates nudging to certain sectors and evades its responsibility in that case somehow. He goes on with:

“And the second issue that I have, maybe there are fans of the concept, I stay general and do not want to say names or organisations. But those who just

target this individual responsibility, because nudging or other strategies which are rather at this action level, do not pry the fact that there are just the determinants of health and health just not just by my actions. So, I tell you that, I often say there are studies that say health is 25% of your own actions, so I am doing something wrong and right and nudging makes me do more easily right. But then there are still many other percentages that are influenced by many determinants and I would feel that this is more of a socio-political, philosophical question, if this nudging does not say anything about society, how it thinks, how it sees organisation and responsibility.” (Ph1, paragraph 22)

The last sentence of this quote addresses the topic of what nudging says about a society. In other interviews, this has been a matter as well. Civil servant 2 calls for reasonable government actions:

„But I think that this actually has to be a question for a government, what is our picture of mankind in Austria and how do we want to inform people and what goals do we consider as desirable.” (Cs2, paragraph 23)

At an earlier stage in the interview, she brought up the topic that nudging or financial incentives would neglect the social and personal environment of people being obese. She mentions that this would not comply with her holistic image of man:

“[...] I mean the JKU (Johannes Kepler University) in Linz has made an attempt to work um (...) with monetary incentives to lose weight and it has been it has no lasting effect. Although it has at the moment / it stimulates (...) it is it is also important what goal you are actually pursuing. Now, if I want to be able to say for a statistic, he lost six kilograms after three months and after ten months / I may not even know why he is obese or has to do with his personal situation, his social environment. So, if I do not take that into consideration and somehow these stimuli are only linked to this success rate, then that is also partly true for me (...) does not correspond to the holistic image of man that I have. And maybe I'm just manipulating someone, or I just set incentives that are really for someone / when I think of money now, really pose a help and that is why he does it. So, for me, that question is always this purpose or goal pursuit, um, how is it described. That is so closely related for me and we also

see that people are heavily manipulated so there are / there you can come up with a lot” (Cs2, paragraph 15)

These concerns about responsibility are supported by the public health teacher. Adding to his quote from above, he goes on with:

“So, I have a bit of feeling of unease in front of false friends of nudging, who then say it's the individual and he with his responsibility. Now we'll help him a bit, but if he still does not get it right then (...) so I think that would happen in Austria very well”. (Ph1, paragraph 22)

This theme is of course very much linked to ethical considerations and Researcher 2 calls for a virtue ethics approach in health and healthcare:

“So for instance nutrition, well who are we to tell someone that they should not be obese. Well of course it is a burden for the society ähm but so what? I mean do we live in a state in which we are going to limit people's freedom and disrespect because it is a burden on the society, well that is a question that we need to ask in the first place. So, there are issues inherent to nudging and the way I would think one can go about them (...) is ähm I really think that there is a role for for virtue ethics approach, meaning that we ähm we look at the particular agents making decisions in particular contexts and we combine that with ähm we combine that with some kind of accountability or transparency principle applied to this world. Of course, this can undermine some of the nudging because you make it transparent it may undermine some of it, but I think it is an acceptable cost for the benefit of ähm / for a greater benefit that we / that this could provide [...] (Rs2, paragraph 27)

These thoughts are already quite far from the original topic of nudging because they draw on very meta level concepts of society and philosophy. Asked about the restrictiveness of economic incentives such as a sugar tax, the employee 1 of the sickness funds claims that in Austria often comprehensive solutions are being avoided:

“Pooh, I say it very pointed yes? Without say to speak blaming anyone, doing certain things at the expense of health, it is also about taking jointly responsibility and calling things by name and then trying to implement them.

But what we always avoid a bit in Austria is to find big / larger solutions that are also effective nationally, we often turn to the individual in the sense of self-responsibility and often neglect to shape the framework. Whether you do this through incentives or through nudges, or whatever level you can think of, is the secondary issue. But the question is, who can take responsibility, who has to take responsibility and there is certainly a need for research and generating knowledge there. That there are interests or conflicts of interest or even contradictions between business and health is not only a topic of nutrition. You have the same issue on the topic of alcohol, you have it on the topic of tobacco. And (...) I am not for overstraining one side, but for finding a balance between individual responsibly and the social framework.” (Sf1, paragraph 37)

This question about conflicts of interests in the field of nudging and nutrition has been discussed in other interviews as well. All the participants stated that profit maximisation poses a major challenge or even barrier to nudging, for example in the retail sector. A possible solution could be on a micro level, where all stakeholders agree and have a shared interest. Politician 2 mentions the canteen of a company where obviously the interests to sell and consume healthy food could be aligned. (Po2, paragraph 27)

A call for action was stated by the last participant, Researcher 2, a clear opinion on the responsibility of the government was expressed in this statement. He focuses not on particular measures taken towards nudging but on the institutional framework. This needs to be provided on any governmental level in order to use and coordinate the potential of nudging:

“And I think no doubt, this is not / it is a tool that we cannot close / we can close our eyes and hope for the best but it is not a tool that we can just avoid. I mean it is going on, if you choose to recognize it or not, same at the governmental level. Something needs to be made, if it is centralized or decentralized, I do not think that matters so much. If it is one for the whole Austria or if every Länder has it's own, well it does not matter, there is a need for the recognition of this so there is a need to work with it, even at the governmental level.” (Rs2, paragraph 29)

To conclude this chapter, an overview of how the author derived the five themes is presented.

The above-described themes emerged from two different origins. The use of sensitizing concepts led the researcher to look in the certain direction while performing the analysis. This was justified through the earlier conducted literature review.

1. **Ignorance** is connected to the discovered gaps in scientific literature toward the topic of nudging and choice architecture in Austria.
2. **Ethical aspects**, however, were mentioned in almost all publications which have been read. The reoccurring of this topic caused the author to define it as the second sensitizing concept before the analysis step.

By the means of examining the gathered interview data the following other themes emerged:

3. **Fuzzy definition:** Remarkably many people either confused nudging with other concepts and approaches.
4. **Evidence of nudging:** Doubts about the effectiveness but also lack of knowledge led to the formation of this theme. Additionally, the interviewee's perceptions of the potential of nudging are included.
5. **Political influences** played a role not only for the interviewed politicians but also merely philosophical topics were incorporated in this theme.

6 Discussion

In this section, the distribution of the themes and their emergence will be explained with regard to the professions of the participants. Followed by the discussion of the main findings according to their themes. Possible explanations and arguments will be presented.

Distribution of themes

Overall it can be said that the data was reasonably distributed among the participants. But the author recognized that some features were possibly linked to the professional background of the participants. The emergence of the theme **Ignorance** was mainly related to the statements of the researcher 2 and the public health teacher. Because these participants seemed to have a good overview of the Austrian health and public health context and reported that they are not aware of anyone actively working on the topic. Within the theme of **Fuzzy definition**, the group of sickness fund employees seemed to be more informed about the general basics of nudging, but their interview answers were more in the direction of misinterpreting the concept. The theme **Evidence of nudging** was dominated by answers of the sickness fund employees who said that there is not enough proof of the effectiveness and long-term effects of nudging. **Ethical aspects** were like a common thread throughout all of the interview, although the group of researchers had a different view than the other participants. Their statements acknowledged the fact that ethical aspects are affiliated with the topic but also explained that these ethical aspects are connected to all other actions that aim at designing the choice architecture somehow. The theme of **political influences** again was quite well-balanced between the statements of the sample.

Ignorance of nudging

The major and most important finding of this study is that there seems to be quite some ignorance on the topic of nudging in Austria. Another hint towards this is the fact that of the ten participants only three of them (Sf1, Rs1, Rs2) used the term choice architecture in their statements. All the others either did not use it in their own explanations or did even claim to not know the term. In fact, as presented in the result sections, some of the participants then described choice architecture unintentionally or unknowingly because they beforehand negated that they know about it. This again

is a clue to the lack of knowledge about the concept of nudging since the concept is used but not referred to it as nudging. This has been openly stated in two interviews. Nudging or nudging strategies are being used at the moment, for example in the healthy school buffet to position certain food, but are not called this way (Sf2, paragraph 9 and Sf 1, paragraph 43)

A possible reason for this is the short timespan nudging has been present in Austria. The earliest this topic publicly appears in the country is, in fact, the year 2015 (Piso, Stanak et al., 2015; Piso, Winkler et al., 2015). At that time the parliamentary request was sent as the first relevant newspaper articles were published on nudging in the Austrian context (Dietrich, 2015; Weiser, 2015). The answer of the minister of science, research and economy was appeasing the fears of the requestor. “Nudging [...] does not represent manipulative marketing. The risk of abuse is therefore not given.” (Mitterlehner, 2015). That it took some years until earlier this year the Austrian version of the BIT was founded, Insight Austria (2018), may point out that such political developments take time. It could be a reason why the participants of this study overall were not as informed about the concept and its characteristics as it would be desirable. Junghans et al. (2015) show in their qualitative study that consumers in the UK are largely unfamiliar with the concept. This may only be a small indication because it has to be discussed with regard to the fact that the BIT was only founded in 2014 (BIT). Another important difference is the target population, Junghans et al. interviewed consumers, whereas the author of this paper chose expert interviews. Therefore, it is even more surprising that a lack of knowledge still appears to exist.

Fuzzy definition

Three of the five identified themes seem to be very much interconnected and linked to each other. Ignorance, ethical aspects and the fuzzy definition appear to be very difficult to determine which of these is causing or influencing the other. The author thinks the ignorance of nudging and choice architecture could be a special topic in the Austrian context, whereas the fuzzy definition appears to be a more international one. Wilson et al. (2016) found in their systematic review similar hints towards the usage of the terms of nudging and choice architecture. In general, these two terms are often used as synonyms, meaning no distinction is made between them. Furthermore, some of the authors of the included papers do not use these keywords instead only behavioural economic literature is mentioned.

This supports the finding of the author and the formation of the theme fuzzy definition. As described in the findings above, one participant mentioned that people seem to talk about the same things but in the end, the concepts and understanding of these are somehow different (Sf1, paragraph 13). Hausman and Welch (2010) argue as well that the term nudging seems to be defined in an unclear and insufficient way. They claim that specific interventions cannot be differentiated completely from other approaches. Marteau et al. (2011) add to that: "However there is no precise, operational definition of nudging".

It could also be the case that the popularity of the nudge theory was not beneficial for its overall understanding. Policymakers all across Europe jumped on the bandwagon in 2015 and wanted to promote their new ideas on nudging (Dams, Ettel, Greive, & Zschäpitz, 2015). The way how the governments communicated their plans to the public was mostly newspapers. But the article of Weiser (2015), which was the first to thematise nudging in Austria, was already misleading and creating confusion. According to the article, the origin of nudging in the UK was an idea about a pricing policy adaption that could lead to healthier nutrition in the country. This was then turned into a „Fat Tax“ by local media and created a bad image of the concept. For the interested reader, the picture is conveyed that nudging is connected to taxes and economic incentives. Because it cannot be said enough, a part of the definition of nudging by Thaler and Sunstein (2009, p. 6) will be provided once again: "[...] without forbidding any options or significantly changing their economic incentives. To count as a mere nudge, the intervention must be easy and cheap to avoid".

All in all, the media coverage on this topic surely can contribute to the fuzzy definition of nudging. This then may be an explanation why some participants in this study used nudging and economic incentives as synonyms. Another aspect to this topic is that people use the terminology of nudging without even knowing what it means. Skov et al. (2013) acknowledge in their systematic review that they found several studies which claim to use nudging and choice architecture but by definition, their interventions are not nudges anymore. The possibility that the term nudging was misused to label and promote otherwise unpopular policies measures is a consequence of the described developments above.

Marteau et al. (2011) argue that nudging is possibly not more than "a fuzzy set intended to draw attention to the role of social and physical environments in shaping

our behaviour and not to inform a scientific taxonomy of behaviour change interventions.” The term nudging may be new, but the theory it builds upon is way older than many would think. It dates back to the psychologist Lee Ross and his theory about how environments shape and constrain human behaviour (Ross, 1977). All the more, the call for a clear and tangible nudging definition is repeated.

Ethical aspects and political influences

The two themes of ethical aspects of nudging and political influences are linked with each other since the notion of paternalism is inherent to nudging and a highly controversial topic within politicians around the world. One participant (Sf2) of the study claimed that nudging is somewhat of a dishonest way of influencing people since it happens unconsciously of the nudged one. Dietrich (2015) links nudging in her parliamentary request to manipulative marketing and demonstrates the fears and reservations towards this terminology. Horton (2009) detects the risk of nudging being used by states to influence the micro-levels of peoples decision making processes. All this would happen behind the curtain, on the level of the unreflective and unconscious system of a human. Leggett (2014) even writes about the risk of nudging being used as an element to control people in a totalitarian way. Researcher 1 provided with his example of the media communication about nudging a very interesting approach. The public scepticism towards nudging seems to be of a great extent. Although Thaler and Sunstein (2009, pp. 5–6) argued that libertarian paternalism has to be considered as a soft form of paternalism. “[...] it tries to influence choices in a way that will make choosers better off, as judged by themselves”. It would be particularly fascinating and a possible research approach to examine if these fears can be reduced through proactive communication and enlightenment of the misconceptions and ignorance on nudging.

Self-nudging, change your own choice architecture, refer to the watch quote maybe? He is implying in a way that every individual has the power to “nudge” themselves into making healthier choices by changing your own choice architecture. It is a very powerful statement which can easily be misunderstood and put the other way. Where is the legitimacy to nudge if people can do it themselves? However, the appliance of this method would be fairly easy and completely shuts down all worries about ethical issues because it merely works on an individual level without any interfering party.

But the method was used on purpose because it would raise the question if it would be per definition nudging or not anymore.

In the theme ethical aspects, a lot of fears and worries about the intrusiveness and manipulation of nudging were stated. Researcher 1 formulates in this interview the thesis that through proactive communication and education of people on the topic of nudging and choice architecture their fears will allay (Rs1, paragraph 44). This adds indeed to the perception of the author that open and proactive communication could help increase the understanding of the public. As stated above, the media would play an important role in how and what to communicate. But from this analysis the question of why people generally perceive nudging as a restriction of their choices arises? Maybe it is due to the fact that this happens unconsciously, but on the other hand, humans are influenced all the time unconsciously by various different marketing strategies. But somehow it seems to be more accepted when it comes to this field. Another possible explanation could be the fact that the lack of knowledge on the topic leads to the emergence of fears and prejudices.

Evidence of nudging

Some participants (Sf1, Sf2) raised questions upon the not sufficient enough proven effectiveness of nudging. They refer to the study conducted by the LBI on behalf of the HV (Piso, Winkler et al., 2015). On the topic of nutrition, this paper exclusively examined the effectiveness of financial incentives and not nudges. Low positive effects were shown on various outcomes. However, they could not be sustained after the end of the intervention. Therefore, it was conspicuous that the participants referred to this publication since it first did not investigate nudging interventions and secondly did show positive effects. But there was an addendum to this publication, also by the LBI, which specifically dealt with nudging but more in an explanatory setting about the concept itself (Piso, Stanak et al., 2015). As a result, there could have been a confusion of these two publications. Another possible explanation is the fact that this was just used as a justification not to explore nudging interventions any further because they were perceived as being unethical and dishonest (Sf1). Anyhow on the topic of nudging a variety of systematic reviews with contradicting results have been published. Wilson et al. (2016), Skov et al. (2013) and Nørnberg et al. (2016) illustrate inconclusive evidence on the topic of nudging and choice architecture towards food choices and consumption behaviour. Whereas, Arno and Thomas

(2016) and Bucher et al. (2016) report that nudging shows effective and consistent effects on food positioning and encouraging healthier eating choices. A common thread of all the reviews was the need for high quality studies on the topic.

7 Limitations

Patton (2015, p. 311) states that: “There are no rules for sample size in qualitative inquiry”. He argues that the size of a sample is linked to the intention of the researcher, what he wants to know or what will be helpful to answer the research question. To achieve this, information-rich cases are desired for a smaller sample size.

In this study, the data saturation seems to be not completely reached. This can be explained by the fact that some themes are not as balanced between the interviews as desired. The drawn conclusion of this is that either more interviews would have been useful. Another possible explanation could be the heterogeneity of the sample, this can be seen as a two-edged sword. On the one hand, a very broad picture of different actors in the Austrian healthcare system was included. On the other hand, a possible larger population within the different professions would have led to a more consistent picture of the acquired data.

Another limitation could also be seen as an explanation of the not reached data saturation. In fact, that the identification of “nudging experts” was quite difficult in Austria. There may have been better or more “information-rich” candidates but they were unable to for the author to acquire for the study. Or another explanation is that there is not a sufficient number of people with relevant knowledge and in relevant positions within Austria. Therefore, the variety of answers and different perspectives are in fact a realistic picture of the understanding in Austria.

One way how these participants were acquired was convenience sampling. It is as the name already tells, the selection of research participants is based on their availability. Patton (1990, pp. 180–181) refers to it as being “probably the most common sampling strategy – and the least desirable.” The author of this study was aware of the problems connected to convenience sampling, therefore it has been only used very cautiously and carefully.

Methodologically there can be the issue of the translation bias identified. The main language of the performed interviews was German and the analysis, as well as the theme identification, were performed in German. But then these themes and the included quotes for describing these themes were translated by the author into English. Therefore, this could influence the literal meaning of the statements.

Another limitation which is connected to the methodology of the research inquiry is the generalisation of findings. Given the fact that this study was performed as a qualitative work no generalising statements shall be made. The findings show possible leads and aspects for further research but do not reflect the overall situation and picture concerning the topic of nudging and choice architecture in Austria.

8 Conclusion

What is the knowledge, perception and ideas of decision makers and advisors on nudging towards healthier nutrition in the Austrian health environment?

This was the research question of this paper. The results of this study will now be used in order to provide explanation attempts. It has to be kept in mind that the nature of this research was an explorative therefore no generalisations can be made. Firstly, there are hints that the knowledge of decision-makers and advisors on nudging and choice architecture in Austria is low. This may be due to the overall ignorance of the concept, or better the lack of discussion about it, in the Austrian healthcare system. The author has a critical view of this because if no discussion takes place about the topic, possible applications of the strategy will face strong opposition. One participant made a very accurate statement about this. He said that without a discussion about it, fantasies arise (Ph1, paragraph 16). This is very closely connected to the following topic.

Secondly, the gathered perceptions of the participants were mainly sceptical or dismissive due to mainly ethical concerns about manipulation. A possible cause was seen in the fuzzy definition of the terminology at hand as well as the previously mentioned ignorance of the topic in Austria. This poses risks of wrongful use of the terminology. Either it could be used just to label different or maybe unpopular policies as nudging although they do not fall under the definition of the term. Or also the risk of miscommunication between different interpretation approaches arise.

Thirdly, the ideas of the participants mainly led towards the fact that nudging alone cannot be the method of choice in order to move people towards healthy eating behaviours. It was seen as an additional instrument alongside classical economic and many others.

The findings of this study shall surely be taken into account by policymakers in Austria trying to introduce or communicate nudging policies. First, a common ground has to be set that all the different stakeholders know what the topic is but more importantly understand the concepts and ideas behind.

In the recently published government program of the newly formed government in Austria, some references are being made with respect to incentives in various settings. Nudging itself is not being mentioned but it seems that implicitly the

topic should be addressed in the following scenarios: 1) behavioural incentives for a speedier studying and increasing the seriousness and obligation. 2) preventive medical check-up in combination with incentives (waiving fees of health insurance card “E-Card”) and 3) Evaluation of all deductibles in the healthcare system with the analysis towards a steering effect and a redesign of economic incentives in the healthcare system (Kurz & Strache, 2017).

This and the fact that the already multiple times mentioned the creation of the Austrian “Nudge Unit”, Insight Austria, seem to be a starting point and points towards the direction that there is some political will to enforce nudging and behavioural economics in healthcare and other fields (Insight Austria, 2018). The mission of Insight Austria as well is promising. They aim at showing the potential of nudges and behavioural economics to decision makers and want to ease up the negative perceptions of nudging.

But this paper also shows some possible challenges for the mission of Insight Austria. They may have to find a way to tackle issues such as the lack of knowledge about the concept of nudging and the resistance to it as well. The question is if these issues can be resolved only with the provision of knowledge or if any alternative strategies might be needed in order to create more acceptance and understanding of the topic of nudging in Austria.

As described above in the literature review there have been few qualitative research papers published on the topic of nudging. This is even more true for the context of Austria. As the literature review displayed, only a very few scientific papers on the topic of nudging have been published.

This and the findings of this paper do affirm the need for further research on the topic of nudging and choice architecture. Not only in general but also in the specific health and nutrition environment. The need for a more precise and delimitable definition of the terminology is maybe even more fundamental.

Another possible further research question arises from theme ethical aspects, particularly connected to the assumption that active communication and education of nudging and its characteristics would allay people fear about it. The nature of this question would then be to explore whether people’s attitudes towards nudging as a

strategy become more positive and accepting when they understand the concept better.

Quo Vadis nudging in Austria? The author of this paper is cautiously optimistic that the establishment of the Austrian nudge unit will contribute a bit to an increase of the knowledge and as well the public discussion about it. Anyhow some of the challenges were stated above, the question of the significance of an organisation with five employees in a country with roughly 8.7 million inhabitants is open to discussing. The topic needs an objective and calm political discussion about nudging its opportunities and benefits as well as its risks and limits. Vital to this discussion is the correct and transparent presentation of the concept and no political games.

9 References

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Annexes

Annex A



Forschungsprojekt: „Nudging and choice architecture in health - A way to improve nutrition?“

Durchführende Institution: Department International Health and Social Management
(MCI Management Center Innsbruck)

Projektverantwortliche: Markus Quirchmair BScN, Dr. Nicolas Fahy

Interviewerin/Interviewer: Markus Quirchmair BScN

Interviewdatum: ____.

Ich, _____, erkläre mich dazu bereit, im Rahmen des genannten Forschungsprojekts an einem Interview teilzunehmen. Ich wurde über das Ziel und den Verlauf des Forschungsprojekts informiert. Ich kann das Interview jederzeit abbrechen, weitere Interviews ablehnen und meine Einwilligung in eine Aufzeichnung und Niederschrift des/der Interviews zurückziehen, ohne dass mir dadurch irgendwelche Nachteile entstehen.

Ich bin damit einverstanden, dass das Interview mit einem Aufnahmegerät aufgezeichnet und sodann von den Mitarbeiterinnen und Mitarbeitern des Projekts in Schriftform gebracht wird. Für die weitere wissenschaftliche Auswertung des Interviewtextes (bitte ankreuzen)

- ☐ werden alle Angaben zu meiner Person aus dem Text entfernt und anonymisiert.
- ☐ können die Angaben zu meiner Person im Text verwendet werden.

Innsbruck, am ____.

Unterschrift

Annex B

Interview Guide #1

Introduction

- Welcoming and thanking for the interview
- Asking about recording with phone/skype recorder
- Confidentiality agreement and data protection information

General part

1. I would like to ask you to briefly introduce yourself, what are your occupational experiences and the responsibilities and duties at your current position?
2. Are you familiar with the term "nudging" [Better: Did you know the terms "nudge theory" (by Thaler and Sunstein) and "choice architecture" before the preparation for this interview]
 - a. Could you please define in your own words what you understanding under these?
3. Have you ever dealt with this topic before?
 - a. If so was it on private or occupational level?
 - i. If occupation, under which context was nudging discussed?

Short definition of nudging

„Nudge theory“ definition of Professor Mike Kelly (Cambridge University professor for public health):

It is a term that describes the fact that if you create environments, in particular small micro environments, in which things are easy to do, humans take the easy options.

Some public health activists picked it up and said "if we could make healthy choices easier by altering the environment in some kind of way, people will choose them." (E.g. put healthier food at the front of canteen displays, getting rid of things that make us buying chocolate at the cash register)

Institutional framework of nudging in Austria

4. Is the topic nudging discussed in your community/organisation?
 - a. If yes in which context?
5. Do you know about any formal responsibilities for this topic on federal or regional level? (Bundes/Länder)
 - a. If yes, do you know the persons or institutions and their competences?
 - b. Are you aware of any specific organisations/institutions depending on different topics?

Starter for the specific nutritional part

Wasnsik/Painter/North conducted an experiment in the US in which they found out that people eat more soup if they had a self-filling bowl in comparison to a regular portion (Wasnsik, Painter, North, 2005).

Another example revolves around the positioning of dishes on a restaurant menu. Dishes placed at the beginning and the end have been 20% more popular than the ones in the middle. According to the authors this could be used to increase the consumption of healthy meals (Dayan&Bar-Hillel, 2011).

6. Are you familiar with any nudging strategies which are specifically aimed to promote healthy nutritional choices?
7. Do you think that these or similar interventions could be applied on micro or macro levels?
8. Do you have any ideas of your own how the "choice architecture" could be altered in order to achieve healthier food choices?
9. Is nudging in your opinion a suitable tool to get people to eat healthier?
 - a. If not, why?
10. Can nudging interventions cause behavioural changes in humans or do you think that these strategies are only successful as long as they are applied?
11. Do you recall any projects that have been implemented in accordance with the topic healthy food choices and nudging, either regional or national?
12. Do you know of any planned projects in the future in this regard?
13. Some authors are worried about ethical issues concerning paternalism and influencing people's minds, how do you think about this?

Exit/end

14. Is there something else concerning the topic you would like to tell me?
 - a. Do you have any other tips or comments?

- Offering to send an update/abstract after the finish of the thesis
- Thanking for the interview and say goodbye

Annex C

Interview Leitfaden Nudging

Einleitung

- Begrüßung, Bedankung für das Interview
- Aufnahme des Gesprächs mittels Telefon/Skype Recorder
- Vertraulichkeitsvereinbarung/Datenschutz Hinweis

Allgemeiner Teil

1. Können Sie sich bitte vorstellen, wer sind Sie, was sind ihre beruflichen Erfahrungen und welche Verantwortungen und Tätigkeiten haben Sie derzeit?
2. Kannten Sie die Begriffe „nudge theory“ und „choice architecture“ (geprägt von Thaler und Sunstein 2008) vor der Vorbereitung auf dieses Interview?
 - a. Können Sie bitte kurz in ihren eigenen Worten definieren was Sie darunter verstehen?
3. Haben Sie sich selbst zuvor mit diesem Thema beschäftigt?
 - a. Wenn ja, auf beruflicher oder privater Ebene?
 - i. Wenn beruflich, in welchem Rahmen wurde Nudging besprochen?

Kurze Definition von Nudging

„Nudge Theory“ Erklärung von Mike Kelly (Cambridge Universitätsprofessor für Public Health): *Wenn man das Umfeld, im speziellen kleine Mikroumgebungen, so gestaltet das Handlungen und Entscheidungen leichtfallen, dann werden Menschen diese Dinge auch machen. In anderen Worten, wenn wir mit einfachen Optionen konfrontiert werden, dann wählen wir auch diese einfachen Optionen. In einem Public Health Rahmen bedeutet dies, dass wenn gesunde Entscheidungen einfacher zu treffen sind dann machen dies auch Menschen (z.B. gesünderes Essen zuerst oder in Griffweite in Kantinen).*

Institutioneller Rahmen von Nudging

4. Wird das Thema Nudging in ihrer Community/Organisation diskutiert, wenn ja in welchem Kontext?
5. Wissen Sie von formellen Zuständigkeiten für das Thema Nudging auf Länder/Bundesebene?
 - a. Wenn ja, sind Ihnen Sie diese Personen/Institutionen und deren Kompetenzbereiche bekannt?
 - b. Beziehungsweise gibt es verschiedene Organisationen/Einrichtungen je nach Thema?

Kurze Hinführung zu Ernährungsspezifischen Nudging

In einem Experiment in den USA 2005 haben die Wissenschaftler Wansik/Painter/North dargestellt, dass Personen mehr Suppe essen, wenn sich das Teller selbst konstant auffüllt (Wansik, Painter, North, 2005).

Ein weiteres Beispiel betrifft die Platzierung von verschiedenen Gerichten auf einer Speisekarte. Das Ergebnis war, dass Gerichte welche am Anfang oder am Ende einer gewissen Kategorie platziert wurden um 20% populärer waren als Gerichte die in der Mitte angeführt wurden. Dies könnte laut Autoren dafür genutzt werden um den Konsum von gesünderen Gerichten zu steigern (Dayan & Bar-Hillel, 2011).

6. Sind Ihnen Nudging Strategien die im speziellen auf gesünderes Essen abzielen, bekannt?
7. Glauben Sie, dass solche oder ähnliche Interventionen auf Mikro/Marko Ebene einsetzbar sind?
8. Hätten Sie eigene Ideen wie die „choice architecture“ geändert werden könnte um gesündere Essensentscheidungen zu erzielen?
9. Glauben Sie, dass Nudging ein geeignetes Tool ist um Menschen dazu bewegen sich gesünder zu ernähren?
 - a. Wenn nein, warum nicht?
10. Sind Sie der Meinung, dass Nudging Interventionen eine Verhaltensänderung von Menschen auslösen können oder sind diese Strategien nur so lange erfolgreich so lange Sie angewendet werden?
11. Kennen Sie spezielle Projekte die in der Vergangenheit bereits zu diesem Thema regional oder national durchgeführt wurden?
12. Wissen Sie von geplanten Projekten in Bezug auf gesündere Ernährung und Nudging?
13. Manche Autoren sprechen von ethischen Bedenken bezüglich der Beeinflussung oder Bevormundung von Menschen, wie sehen Sie diese Überlegungen?

Ausstieg

14. Gibt es etwas was Sie mir zum Thema mitteilen möchten?
 - a. Haben Sie sonst noch Anmerkungen oder Tipps für mich?
- Anbieten eines Updates nach Abschluss meiner Forschungsarbeit
 - Für das Interview bedanken und verabschieden

Annex D

Summary interview 1 (politician 1):

- Studied psychology, 14 years municipal and district council Vienna, social management Vienna living
- Contact with nudging recently connected to the current job
- How to initiate clever decisions, an example would be the social cohabitation in the Vienna municipal housing, nudging to follow rules
- Theoretical, no practical implication yet, sceptic as a psychologist, need more information, thinks it shouldn't be designed to be manipulative
- The lower the level of education, the easier it is to manipulate people
- Nudging in order to improve the understanding of house rules
- Not aware that nudging is being discussed on the local or federal level
- Not familiar with exemplary mentioned nudging interventions
- Although mentions the placement of food in supermarkets
- Through mass-psychology possible to scale it to a higher level
- Again, sceptical about nudging
- Nudging perceived as a useful tool to cause healthier nutrition
- Long-time studies/evaluations needed to estimate if a change of behaviour can be sustained
- Fall-back into old habits after nudging interventions are removed
- No projects in context of nudging and nutrition are known
- Management consultants brought up nudging as a topic
- Risk of negative uses of nudging

Annex E

Summary interview 2 (civil servant 1):

- Studied nutritional medicine, works at the FGÖ
- Responsible for health promotional projects
- Understands nudging as incentivisation
- The terminology is new, but the approach is not
- Has not heard choice architecture before
- Contact with nudging through a presentation of an insurance company about it
- Has been discussed internally, but not taken up on specific projects
- How can circumstances be optimized that incentives are being created for healthy eating
- Describes the placement of food at canteens or in school buffets
- FGÖ does not carry out projects on their own, support them mainly
- No formal institution is known who is dealing with nudging in Austria
- Deterrent pictures on cigarettes mentioned as nudging example
- Thinks nudging can be applied to a bigger level
- Misinterprets nudging as an advertisement of supermarkets with sugar-fat free products
- Presentation of food in buffets matters too for healthy products
- Size of portions varies on the exclusivity of gastronomic setting
- Marketing in order to take up certain trends, sugar-free drinks in vending machines at schools
- The incentive is used as a synonym for nudging
- Incentives for increasing the water consumption of children in schools
- Nudging is perceived as a tool to get people to make healthier choices
- Misinterprets the nudging concept again and is the opinions that it can lead to a long-term change of behaviour for children
- Talks about projects where adults learn in workshops on how to cook and have group training, not connected to the topic of nudging
- Agrees that “nudging” is being done but not called like this
- Bans and limitations are not beneficial for health promotion

Annex F

Summary interview 3 (insurance 1):

- Works for 14 years at an insurance company „Hauptverband der Sozialversicherungsträger“, is responsible for health promotion and prevention
- Nudging and incentive systems are recent health policy topics
- HV did issue a study at the LBI HTA about incentives and as a side topic nudging, but mainly financial incentives are the topic
- The results were sobering, no real evidence on health outcomes found
- During discussions, the terms are being confused and definitions are unclear
- Basic research was needed to clarify that but no findings that these things work but it is not the end of the discussion about nudging
- Everybody is drawing their conclusions but no alignment of interests
- Speaks about how to change the choice architecture to create circumstances to make the healthy choice the easier one
- In the national action plan nutrition, a lot of things are encompassed but not called nudging
- To lead people somewhere has some ideologic appearance, a special kind of mindset, thinks nudging is manipulating humans
- The ambivalence of the term nudging between economic and health policy interests
- Discussion about what is ethical reasonable and what not, nudging will not make us happy since the strategies are not effective
- Nudging can be applied to all levels, but it is needed in an overall strategy, a set of measures has to be applied in order to change the behaviour of people
- No discussion about taking the right measures which are effective, this discussion is not being held in Austria at the moment
- No common strategy, no discussion about things like a sugar tax like in the UK
- In Austria, we avoid the so-called, big solutions. Who has to take responsibility and it has to be a balance between the individuals acting in a responsible way but also the societal framework
- No fact-based discussion is being held

- The underlying idea of health promotion is to change structures and processes, changing the environment, empower the individual
- Behavioural and environmental prevention, that is the wording that we use
- These and nudging are needed permanently in order to make sense
- Healthy school buffet or canteens at companies are interventions which have been in place for years but not called nudging
- The misleading advertisement is nudging as well right?

Annex G

Summary interview 4 (politician 2):

- Studied law and is representing a party in the parliament in the areas of labour, social affairs, health and housing for 4 ½ years
- Nudging in context with social policy, a topic of their political party
- Terms like this are not recommended to use parliament discussions because of the risk being misunderstood or willingly misunderstood
- Nudging to get parents to make use of their parental leave/holiday, but not called nudging
- No nudge unit or organisation known
- Sugar tax of Hungary seen as nudging
- Economic interests before thinking about the health of a customer in a canteen
- In a smaller scale, such as companies it is possible. They can subsidize the meals at the canteen, individual solutions necessary
- Nudging works definitely, sceptical concerning the presupposition that one knows something better than the other one and restricting his choice
- Generally speaking is nudging paternalistic, with fluent boundaries
- Where there is no authority relationship between the state and the citizen, at a partnership level it may be used. But no state intervention
- Nudging can contribute to a behavioural change, people get used to things, some might return to old habits after the intervention
- The demarcation between nudging and leading is difficult
- Thinks that incentives to get lower insurance contributions if people reach health goals is an acceptable application
- But the state has to leave people the freedom to do something unhealthy as well, although it is in the public interest to have healthy citizens
- German insurance companies are paying for the “holiday” of their customers if they do an activity camp there, perceives this as a win-win situation
- Autonomy of decisions has to be kept

Annex H

Summary interview 5 (Insurance 2):

- Studied pharmacy, has been more than 30 years at the upper Austrian Insurance Fund, did a master's in public health as well
- Has been in contact with nudging over the past years, but not in the intensity that there would have been any need for action
- Main areas of activity are legal regulations to influence the health behaviour, second are financial incentives but they have a low impact. The third thing would be the classical way of creating awareness or influencing consciousness, they think this is the most honest one
- Nudging was recommended several times, but there are problems concerning the definition and it is not clear how it should influence the health or the health behaviour of people
- Talks about being sceptical because he thinks nudging is trying to influence people with certain tricks and their organisation values increasing of health literacy more
- Not only ethical concerns are arguments against nudging, also that there is no evidence that it is effective in the long run. On the contrary, these studies exist about health literacy and their impact on changing health behaviours
- Interview partner states that no proof exists if or how it (nudging) works, but it is applied already. The positioning of food at the healthy school buffet for example
- But little impact has been seen, since the children go to the supermarket across and buy their unhealthy sugary drink there
- They favour the unobjectionable way of increasing the health literacy via information
- Various main actors but the common ground is that not only the health behaviour counts, also the environment has to be considered
- Has not dealt with nudge units yet, thinks that the health system of the UK is quite adventurous. Mentions the sugar tax and other interventions, but he is not aware of any long-term evaluations.
- Does not think that we have something that systematic (nudge unit) in Austria

- They orient their strategies according to empirical evidence, not aware of it in this field
- Nudging is applied in the retail sector in positioning of food or at the check-out, but there also the behaviour changes are not evaluated according to their sustainability
- Can not image how it would be applicable to a larger setting, in small areas it is done already. Asks if displaying food at a meeting room and cut fruits is nudging as well
- Nudging could be another tool in influencing the health behaviour of people but first studies on the effects are needed
- Mentions some examples of nudging but thinks it is not applied systematically

Annex I

Summary interview 6 (Insurance 3):

- Studied business administration and has been working for 10 years at the sickness fund
- Nudging was more part of his previous position within the company, he was designing a program called “Selbstständig gesund”. It is primary a prevention program, but it contains also nudging elements
- Distinguishes between nudge and user financial benefit, the latter one would be a real financial incentive. Mentions children allowance in Austria is connected to performing all of the foreseen examinations in order to receive the money
- A nudge can be financial as well but will not lead to a financial improvement of the consumers situation and is primarily targeting people who already have a behaviour change in mind
- Thinks that in the government program some incentive models are mentioned because libertarian paternalism is usually a topic of a certain political party in Austria. But does not think anything similar to the BIT exists in Austria
- Nudging is always applied on a micro-level since it targets the individual and his willingness to change his behaviour
- Health goals of the previous minister of health were not very successful, maybe even individual incentive systems are needed to target different people
- Thinks that nudging definitely can change the behaviour, argues that they have shown it with three examples (personal health goals, reducing body weight and child health)
- Describes an example of a nudging intervention without calling it that way
- The interests of the retail sector are not to keep customers healthy
- One nudge alone can not change the behaviour, it needs a mix of interventions and a whole model of incentives who target different levels
- Has no ethical concerns about nudging, everybody should be able to make a qualified decision with all the provided information
- Nudging opponents are people who want to stipulate the behaviour of people
- We have to be careful to just nudge something of which we know that it has a health benefit, not just as a marketing stunt

Annex J

Summary interview 7 (civil servant 2):

- Studied sociology and did the education as a paediatric nurse, has been in the department for 13 years and is responsible for various public health topics
- Has heard of nudging during a presentation from a sickness fund, else from that no connection with nudging
- Is unsure about the concept, mentions an example for an economic incentive
- Is not aware of any particular government organisation which is working on nudging, but guesses that it is a topic in research and education
- Nudging is being used currently in marketing, therefore it is possible to use
- The question arises what is ethically acceptable or what is allowed to be defined as a goal (dietary recommendations)
- Mentions a study that examined the effect of financial incentives for losing weight, no long-term effects were found
- What is the goal behind such interventions, just for certain statistics would it be against the holistic idea of man
- Incentive is used as a synonym for nudging
- Is sceptical about nudging, people can be manipulated easily. Always depends on what aim you are perusing
- Austria is trying to provide a framework with the national health goals, every government has to be asked what idea of man they are having in mind
- It is about the fundamental questions of leading people somewhere and this has a lot to do with attitude
- Children should grow up in an activity stimulating environment and the individuality has to be maintained. People should not be pushed into standards
- Humans are creatures of habit, it is always said to make the healthier choice to easier one (refers to nudging without knowing it)
- Difficult to estimate the impact of nudging interventions
- Misunderstands the nudging concept and this improving the health literacy of people is beneficial
- Important to understand who is actually gaining from it (nudging) and how can it be ensured that behaviour will be changed sustainably
- Provide less paternalistic and more reliable information

Annex K

Summary interview 8 (Researcher 1):

- Studied economics, is a behavioural scientist, is a founding member of the centre of competence on behavioural economics, Insight Austria
- Already in contact with nudging since his education, actively started working with the concept in 2016
- Explains a project where they used a planning tool as nudging instrument for students to accelerate their studies
- Humans are like water, they want to walk the path with the least resistance
- Nudging means to ease this way and make it look nice so that people are intended to follow this one
- The purpose of Insights Austria is to political institutions how behavioural economics can be applied to their field and inform the people about the concept
- No single method will for all problems, a mix of solutions is necessary
- Insights Austria tries to combine behavioural economics with experimental economics, are not confined to nudges (BIT plus)
- In 2015 there has been the initiative motivating state (“motivierender Staat”) and this was a pre-step for the founding of Insight Austria, in politics things move very slow
- In the beginning the initiative will come from the organisation about topics and then they want to build bridges to the heads of the people
- Behavioural economics can not solve all problems, a whole set of tools is needed
- Talks about Kahneman and system 1 and 2, how people make decisions
- Explains with an example choice architecture, it depends on the situation when somebody is deciding an action
- The retail sector has an interest in maximizing profits rather than health, but in some areas, there are conflicts and similar interests
- “Self-nudging” explained through various examples, put the watch five minutes forward in order to think that you are late in a stress moment and although you did it yourself you will probably not think about it

- This can be seen as giving the people the tools of the trade to understand that sometimes their decisions are not rational
- No ethical worries, “one cannot not manipulate”, either it happens consciously or unconsciously
- No projects yet done in terms of nutrition or health
- Mix of interventions needed, a financial incentive combined with nudges (sugar tax UK)
- Speaks about different channels of nudging, default option here and also the impact of irrelevant alternatives
- Can not say how much nudges alone can contribute to a consumption change, but thinks that a mix of interventions is needed
- Being aware that also unintended behaviour can result from totally different aimed interventions (fee for parents picking their children up later than the opening time of the kindergarten)
- Is always astonished that people perceive nudging as “being controlled” by the politicians but actually a lot of other law and regulations have been in place for a very long time
- It is more a philosophical question: Why are people so upset about nudging, but they are not about a law which comes with sanctions, nobody is talking about manipulation in this example
- If interests are aligned, all parties have the same goal, nothing speaks against it – difficulties arise if it is not the case
- Appeals to stakeholders to think of causes costs as well when designing new laws, behavioural patterns have to be considered (example of kindergarten)
- Some nudges have wear-out-effects, some do not
- Self-nudging to outsmart yourself in certain situations, to alter the choice architecture by yourself for future decisions
- Long-term effects of health behaviours are not fully investigated yet, if scientists know so little, how can it be better for lay persons?
- Everybody who is dealing with the topic in a deeper way should inform people around him about the essence of nudging
- To fight the perception of nudging being manipulation and reducing the fears of people
- Manipulation happens anyway with or without intention

Annex L

Summary interview 9 (public health teacher):

- Studied social sciences, has been a teacher at a university of applied sciences for six years in the area of public health and health promotion, member of the Austrian public health society (Österreichische Gesellschaft für Public Health)
- Nudging not a dominant topic in Austria currently, has not yet heard about choice architecture
- Uses incentive as synonym for nudging
- Nudging not the universal remedy, not a lot of people are actively thinking about meaningful applications of nudging in Austria, perceives this as negative cause a lot of phantasies emerge
- Talks about BIT without mentioning the name and Canada
- Did not read the literature from Thaler and Sunstein
- Connects nudging with media research, positioning of food in the supermarket, or where advertisements are placed in newspapers
- Calls this intersectoral knowledge and thinks that in marketing a lot of this practical knowledge exists
- Does not perceive any political organisation which deals with nudging
- Thinks it is a topic that brings different stakeholders together at one table, but interests may vary (profit versus health)
- Describes unknowingly the concept of choice architecture
- Has two major concerns, one is that the state has some kind of responsibility and should not delegate too much to municipalities
- The second concern is about that certain organisations may favour nudging because it shifts the responsibility to the individual and neglects other things that impact health (determinants of health)
- Does not know about the evidence about nudging in detail, if it works or not
- Products are being promoted too, the need is being created
- Mentions that at some airlines they offer apples as alternative to cookies, then thinks that increasing the price for the sweet stuff would be nudging as well
- Bans and prohibitions do not work well in prevention

- Austria would not be credible if they now announce that they want to nudge the population to healthier nutrition since there have been some other actions recently that were against all public health principles (smoking ban)
- Thinks that continuity and variety are needed at the same time (seasonal differences)
- Some people might fall back into old habits after interventions end
- Describes the layout of a supermarket and the shelf designs (unconsciously talks about choice architecture)
- Perceives that nudging is always put into the manipulation corner everywhere people talk about it, perceives it laid back because in communicational research everything is manipulation
- No bans are in place so no restriction of choices
- Confuses economic incentives with nudging (higher prices for food at restaurants because they are placed in more favourable positions of the menu)
- Accountability of politicians to discuss ethical aspects, also societal trends play a role

Annex M

Summary interview 10 (researcher 2):

- Studied philosophy, politics and health economics, works at a research institute in Austria and is responsible for value ethics
- Writes currently his PhD about applied ethics and nudging in clinical practice
- Did work on the paper for the HV, what is nudging and how come that it is so attractive to other countries
- First got in touch with it in 2015 when the report was written
- What are the moral limits of nudging and accountability of reasonableness
- Speaks about the choice architecture that pushes people one way or another
- Has the perception that nudging is not discussed in Austria, had to introduce the whole concept before going any deeper into the topic (very little understanding of nudging in the Austrian context)
- Nudging can influence people in various ways, depending on the targeted biases
- Mentions the fat tax in the UK, but nudging interventions that go with it (parents of obese children receive letters of an authority)
- Talks about the Nuffield ladder of intervention, as a guiding the choices
- Start with information and limit choice as a last resort
- It is hard to say what nudging is and what it is not, is the opinion that taxes are restriction choice yes, but it is depending how it is communicated that these children are obese
- Restrictions can create a lot of synergies along with nudging
- The government has to be careful how it uses its power
- Nudging is perceived to undermine the transparency, people are more careful about that if it is the government than some kind of industry
- Distinction between choice architecture and nudges is important
- Nudging happens even without any intervention, it happens with or without intention, but it happens
- Can be applied to any level, micro macro or meso
- No long-term evaluation has been conducted because they are very complex and difficult to carry out (co-interventions going on and in health even more)

- One of the main concerns are transparency and manipulation but also paternalism (somebody else deciding on somebody else's behalf what is good for them)
- We do not want to live in a state where the choices of people are being restricted because it would be a burden to society
- Nudging has been a topic at European level, energy labelling of electric products will change because people are way less satisfied with a B than A++ washing machine
- There is the need of an organisation in Austria, either centralized or decentral
- No knowledge of any governmental organisation working on nudging
- Nudging is a politically sensitive topic, requires some understanding
- It is an empirical question if nudging can result in long-term behavioural change or not
- Talks about the UK where food is labelled to show you how many fruits and vegetables a day you should eat, still is in the mind although not living there or seeing it anymore
- It is very crucial to get the terminology right, nudging comes in the moment intention comes in. If not, it is choice design or choice architecture