



# DESIGN OF A NUDGING INTERVENTION USE OF INTERDISCIPLINARY APPROACH

# TITLE PAGE

4<sup>th</sup> Semester, MSc. Integrated Food Studies /Cand. scient.techn. i Integrerede fødevarestudier  
The Faculty of Engineering and Science  
School of Architecture, Design and Planning  
Aalborg University, Campus Copenhagen

## TITLE

DESIGN OF A NUDGING INTERVENTION, USE OF INTERDISCIPLINARY APPROACH

## REPORT TYPE

Master Thesis, 30 ECTS

## PUBLICATION DATE

21<sup>th</sup>August 2014

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## COOPERATION COMPANY

Hjerteforeningen  
UCH Uddannelsescenter Holstebro

## PAGES NUMBERS

101 (included appendixes)

## APPENDIXES

14

## CONFIDENTIALITY STATUS

Non confidential

## WRITTEN BY

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## ABSTRACT

Inequality in health is a major focus today in Danish health promotion activities. The partnership project *Healthier vocational colleges* is targeting this health issue by making health promotion activities at *Holstebro educational centre, Bastrupgårdvej* where vocational college students are the target group. One of the health promotion activities is nudging interventions in the canteen environment.

The aim of this master thesis is to analyse the possibilities and hereof develop proposal for nudging interventions in the vocational college of *UCH Bastrupgårdvej*, aiming to influence the food behaviour of young men towards a healthier food choice.

The theoretical framework is based on an interdisciplinary approach of combining design tools and models with 'nudging' typologies. The theories, tools and models used are: 'customer journey map', 'persona', nudging typology' and 'ecological approach to health promotion intervention'

The methodologies used are:

- Qualitative methodology: observations, interviews, semi-structured conversations
- Quantitative methodology: questionnaires

The main results are a selection of 7 proposals for 'nudges' that are desirable from a human point of view, economically viable for the canteen and the project and finally functional & technological feasible.

### Key words:

Nudging, food behaviour, public health nutrition intervention, Danish vocational college, design, interdisciplinary approach, customer journey,

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# 1. READING GUIDE

As a service to the reader of this assignment for understanding differences in text and format we have chosen to include this reading guide.

## Use of acronyms

To increase the readability of this assignment, I as authors have chosen to make use of acronyms. UCH: Uddannelsescenter Hostebro. When referring to UCH this indicate all the branches of UCH. When mentioned the branch at bastrupgårdvej the term *UCH bastrupgårdvej* is used.

## English/Danish translation

UCH, Holstebro educational centre = Uddannelsescenter Holstebro

The Danish Heart Foundation = Hjerteforeningen

Danish Health and Medicines Authority = Sundhedsstyrelsen

Project healthier life for all = Projekt Sundere liv for alle

Project Healthier vocational colleges = Projekt Sundere erhvervskoler

Danmarks Lungeforening = The Danish Lung Association

The Danish Cancer Society = Kræftens Bekæmpelse

The keyhole = Nøglehullet

Basic course = grundforløb, at the vocational education

Main course = hovedforløb, at the vocational education

## Use of concepts, names, organizations and literature

All concepts, product names, theories and notions are put in single brackets like: 'hot dish counter'

Name on organisations, projects, companies, literature, policies, agreements and conventions are in italic, like: *Forbyggelseskommissionen*, *UCH bastrupgårdvej*

## Style of reference

Harvard style reference: <http://libweb.anglia.ac.uk/referencing/harvard.htm>

## Analysis of interview

Quotes are put in quotation marks and Italic.

## 2. PROJECT FRAMEWORK

### 2.1. Introduction and Problem area

The social inequality in health has emerged on the political agenda since it was documented by *Danish Health and Medicines Authority* in a national report (Diderichsen, Andersen & Manuel. 2011, p.15) that there has been an increase in inequality in health in the period from 1980s to 2011. Already in 2009 the Danish *Forebyggelseskommission* (2009, p.46) concluded that men with a short educational level lose 2,5 years of average life spend and 3 years of quality-adjusted life-year (QALY) compared to men with high educational level (13+ years).

Inequality in health is a result of complexes factors and the reason for why men with short education live shorter than men with high education isn't just the cause of one factor but an interaction of several factors that can be determinants. The *Danish Health and Medicines Authority* (Diderichsen, Andersen & Manuel. 2011, p.42) has established 12 different kinds of determinants that interfered with mechanism that creates the inequality in health. One of these determinants is health behaviour which including eating habits and how close these are to the Danish Dietary Recommendation (DDR) (Diderichsen, Andersen & Manuel. 2011, pp.100, 102). The eating habits of Danish men with short educations do not live up to these recommendations. They have too high an intake alcohol, sugar and fat and the content of vitamin D and dietary fibre is too low. This is a result of a diet with too high a intake of high fat milk and meats product, soft drinks, wine and beer, and also a too low intake of whole grain products, fish and vegetables (Christensen et al. 2012, pp.51-56; Groth et al. 2013, p.69). In addition, research identify men (18-70 years) with short education as the population group furthest from reaching the DDR's level of 600 g fruit and vegetables (F&V) a day, with only an average consumption of 346g/10MJ, this intake is 20% lower than men with high educational level (Groth et al. 2013, p.106).

The social inequality in health isn't just the case for the adults. A recent report by the *National Food Institute, Technical University of Denmark (DTU Food)* conclude the social inequality in eating habits is also the case for children of parents with short education and there is a considerable social difference in the prevalence of overweigh and obesity. They recommend that to reduce the social inequality in health, future health promotions initiatives should be more gender differentiate and target two groups: 1) children of parents with a short education in particular boys and with an aim to increase the fruits and vegetable intake, reduce the fat intake and increase the physical activity level, 2) adult men with short education with an aim for a healthier diet (Groth et al. 2013, p.8). **As a result there is a good opportunity and need for developing a health intervention more gender differentiated and therefor aiming young men with short educational level with the aim of increasing their F&V intake.**

In addition to *DTU Food's* recommendation the Danish government launched in January 2014 their new health promotion policy *Sundere liv for alle* with seven national goals for health where the first

goal is: Equality in health. The government wishes to achieve these goals through partnerships with the private, public and civil sector in order to include the environmental setting where public life is been lived like in kindergarten, schools, work places etc. (Regeringen, 2014a, p.22-23 ). A focus on the 'environmental setting' for understanding and influencing health behaviour, is one of the key messages for the *ecological model* of health promotion. During the last two decades there has been much enthusiasm and interest among researchers and interventionists in ecological models of health promotion and intervention. Adopting an *ecological approach* to health interventions is claimed to be more powerful than developing intervention at the individual level (Richard, Gauvin & Raine, 2011; Reynolds, Klepp & Yaroch, 2004). The model present health as a product of interactions and interdependence between the individual and subsystems of the environment. It suggests three different levels which determined health and nutritional behaviour. These include the intrapersonal (beliefs, attitudes and perceptions), social and cultural (individual interactions with friends, institutions and policies), and physical level (availability) (Reynolds, Klepp & Yaroch, 2004, p.106-109). The determinants of nutritional behaviour has been describe by many others researcher in attempt to understand which factors are influencing the food choice which is imperative for nutritionists and interventionists for successful translations of dietary recommendations into consumer behaviour (Cox & Anderson, 2004; Gedrich, 2003) <sup>1</sup>.

**A suited environmental setting for developing an intervention for targeting young men with short education, is the setting of their vocational colleges where they all passes through to complete their educations.** In 2012 there were 131.277 people attending vocational college in Denmark with an average age of 24 years (Undervisningsministeriet, 2014a). The Danish vocational education programmes are sandwich-type programmes where teaching at vocational colleges alternates with practical training in a company. The length of the college program varies according to the type of education. In general the students are attending college between 45-80 weeks in order to complete their vocational education which in general have duration between 3-3½ years (Undervisningsministeriet, 2014b). This college program period offers a time period and environmental setting possibility for influencing the target group towards making a healthier food choice.

Another argument for including the environmental setting in development of health interventions is that traditionally public information campaigns seem to be successfully in increase the knowledge and awareness of dietary recommendations, but doesn't seem to be successful in achieving behavioural change. This was concluded by a large review of 107 European healthy eating interventions (Pérez-Cueto et al. 2011, p.1493). This conclusion is supported by a resent Danish survey of the Danes knowledge about the Danish dietary advice (De otte kostråd). On the recommendations of F&V the survey concludes that even though people have the knowledge of the F&V recommendations, they find challenging to act accordingly (Hansen et al, 2013). **This**

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<sup>1</sup> A Danish example of use of the ecological approach is the '6 a day' program which consisted of a public information campaign, a public private partnership, a research program and new official dietary recommendations for fruit and vegetables (Tøttenborg, 2013)

**indicates that a gap between knowledge and behaviour can occur.** Thaler & Sunstein (2008) addresses this gap in the paradigm of nudging. Nudging assume that choices are not only based on the knowledge which has been created through reflective, rational and cognitive processes, but are also influence intuitive and automatic processes (Thaler & Sunstein, 2008, p.21). These processes are also referred to as the *dual-process* accounts of reasoning or *system 1 and system 2* (Gawronski & Creighton, 2013).

In a health promotion perspective, nudging works to make the healthier choice to the easy choice by **re-thinking** and **re-designing** the environment setting without limiting people options through prohibition or price differences. Nudging is defined as “*any aspect of the choice architecture that alters people’s behaviour in a predictable way without forbidding any options or significantly changing their economic incentives*” (Thaler & Sunstein, 2008). A recent Danish review over international published nudging experiment and ongoing nudging project, conclude that various studies shows there is a good justification for claiming that nudging by alterations in the environment of canteens and cafeteria settings can influence people to make a healthier food choice. Alterations can be done in three ways: 1) alterations in the availability 2) change in the default choice, 3) *priming* by making the choice more mental available (Mørk et al., 2014, p.34). **A possible form for the health intervention in the vocational college could be by use of the nudging theory to influence the food choice toward a healthier choice.**

If the solution it to re-think and re-design the environmental setting how do we as public health interventionist then do this? How do we develop the environmental setting to include nudging alteration? Social science and natural science are concerned with describing and analysing how things are, where design on the other hand is concerned with ‘synthesis’ or in other words how things ought to be to obtain certain goals (Cross, 2001; Simon, 1996, p.4). Design is about shaping the future and the ability to develop with a multi-dimensional and ecological approach is the core of the design working process. A working process that integrated the human point of view with what is technological workable and economical viable (Brown, 2009, p.3). Typical methods used in design is the *blueprint* or *Customer Journey*. Tools that helps us to capture how people travel through the physical environment of an experience both to analyse the current situation but also in development of a new solution. This provide the researcher with a framework for working out the details of people interaction with the environmental setting (Brown, 2009, pp.126-127). Can design methodologies be a solution for the development of the environmental setting to encourage healthy choices by making them more available? There is a growing interest and activity within the design community to apply the design theoretical and methodological approach to broad-scale societal challenges like public health and environmental sustainability. An example is the Design for Good campaign developed by AIGA the largest professional organisation for designers in the United States, focused on implementing design methodology in solving societal issues (AIGA, 2014). In Denmark, Aalborg University is first mover to launch a master education *Integrated Food Studies* (IFS), with an interdisciplinary course curriculum. The aim is not only to understand the area of

healthy and sustainable food choices along with an understanding of the food policies and systems behind, the aim is also to provide students with competence in the aesthetic understanding and creative work of shaping and designing interventions and concept in relation to public health nutrition issues. This interdisciplinary approach leads to the research question.

## 2.2. Research question

Inequality in health is a major focal point today in Danish health promotion activities. The partnership project *Healthier vocational colleges* is targeting this health issue by making health promotion activities at *Holstebro educational centre, bastrupgårdvej* where vocational college students are the target group. One of the health promotion activities is nudging interventions in the canteen environment.

The aim of this master thesis is to analyse the possibilities and hereof develop proposal for nudging interventions in the vocational college of *UCH bastrupgårdvej*, aiming to influence the food behaviour of young men towards a healthier food choice. This will be done by making suggestions to alteration in the physical environment by use of an interdisciplinary approach within public health and design theories and methodologies.

The aim is therefore:

*How can a health promotion nudging intervention be designed, by use of interdisciplinary approach, so it will influence the target group's purchase of food towards a healthier choice in the cash-counter cafeteria setting at Holstebro Educational Center, Bastrupgårdvej.*

*The target group being the students at Holstebro Educational Center, Bastrupgårdvej., attending their basic course.*

I will investigate this through the following questions:

- How are the elements in the physical and social environment influencing the target group?
- Which and how can alterations in the physical and social environment be made so they 'nudge' the target group toward healthier food behaviour?
- How can selected design methodologies be combined with traditional health promotion intervention developing models and nudging theory in order to develop the 'nudging' intervention?

## 2.3. Delimitation

The master thesis will have the 'nudging intervention' as its focal point. Therefore I delimitate myself for analysing on the other activities in the project *Healthier vocational colleges*.

### 3. METHODOLOGY

This chapter will present the scientific approach used during the master thesis. Initially a description of the chosen **research strategy** is presented. This is dealing with the chosen research type and the thesis' relationship between theory and research. Secondly presented are how the **data collection** has been conducted and why the selected data collection methods were chosen. Thirdly the **analytical and developmental methods** are presented along with a proposal of how these can be merged into an interdisciplinary analytical tool. Finally, the **methods for synthesis or development** are presented. This is done in order to establish an analytical and synthesis framework which will be applied in chapter 6.

#### 3.1 Research strategy and design

The research design is illustrated in figure 3.1.

##### Qualitative methods

The thesis is primary based on qualitative methods. The main preoccupation of the qualitative methods is that it enables the researcher to access the *liveworld* of the people being studied and to see the world through their eyes (Bryman, 2012). The liveworld is the world they experience in their daily life in the context being researched (Kvale & Brinkmann, 2009).

##### Action research or co-creation

Action research, or also referred to as co-creation in the design world (Brown, 2009), have been used in this master thesis. This has enables me as researcher to collaborate with UCH canteen staff

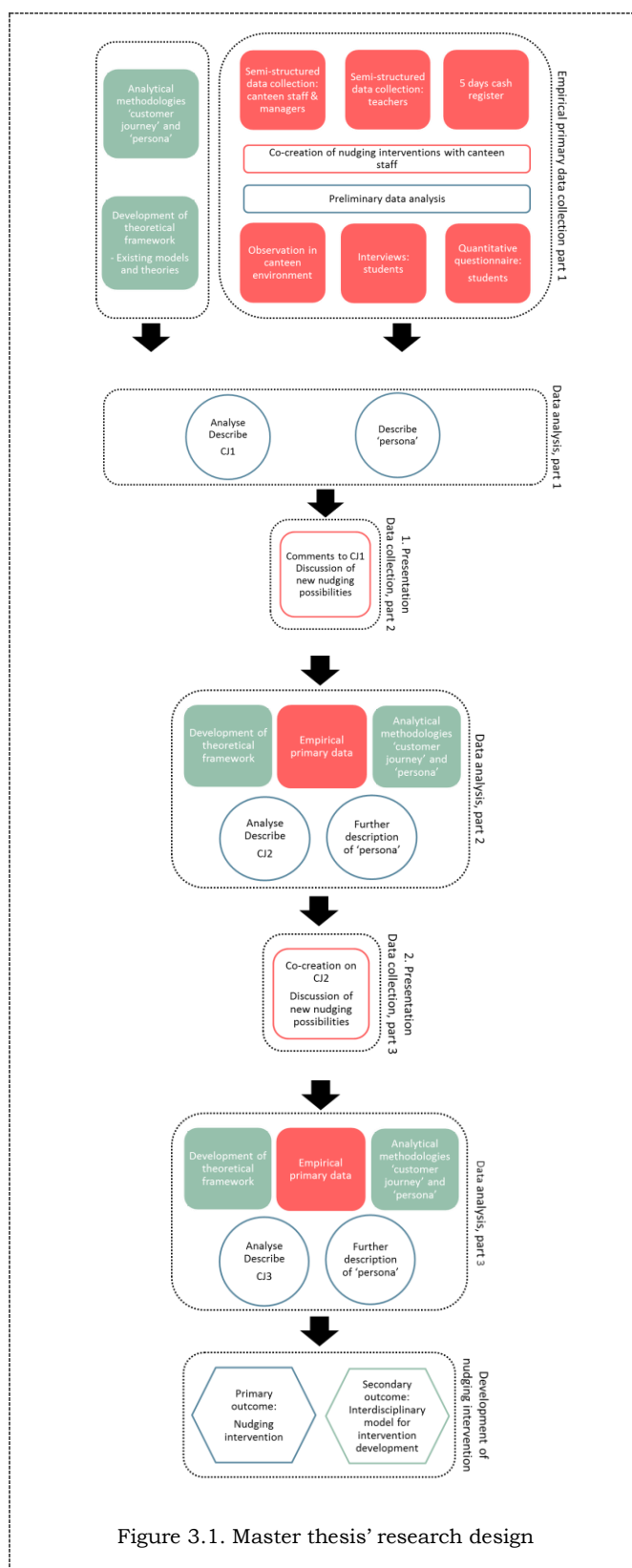


Figure 3.1. Master thesis' research design

about the analysis and development of 'nudging' intervention proposals.

Action research has a double-purpose. Firstly it seeks both to create knowledge of the context its studies and secondly it seeks to change the context that its studies. Knowledge is therefore created through an attempt to change the context (Duus et al., 2012). The aim has been to create change in a direction which is desirable for the participant being the canteen of *UCH bastrupgrådvvej*.

In action research the researcher and stakeholders are collaborating on creating a solution to a problem and thereby create an intervention (Duus et al., 2009). My stakeholders have been, apart from the canteen staff: the executive kitchen manager, two pedagogical process managers, 3 teachers, the local educational manager, the local project manager and the students.

### 3.2. Collection of data

The complete data collection and collaboration period lasted 7 weeks.

#### **Semi-structure interview and student observations**

There were conducted two semi-structured group interview with students (app. 2 & 3). The interview was conducted as a part of an observation where I followed a group of 3-4 students during their lunch break. The journey started at their classrooms or workshop and continued to the canteen and ended at either the classroom again or at the 'eating room' where I accompanied them for their lunch. A interview guide was prepared before conducting the interviews (app. 4).

#### **Semi and non-structured data collection by conversations**

During the 7 weeks of data collecting and collaboration there were conducted many non-structured conversation with the stakeholders. Some have been recorded and transcribe and some have been turned into notes (app. 1, 5, 6). The non-structured data collection allows the researcher to conduct a dialog with the participant and stakeholders with questions that varied from very open question to less specific questions and also to questions and answers develop in collaboration between the researcher and the participant (Launsø, Olsen & Rieper, 2011).

#### **Observation**

There has also been collected data from observations. This is a field based method which is conducted in the physical, social and time spend setting where the participants actually have their daily life (Angrosino, 2007). It is a method that is personalized since it is conducted by me as the researcher who are in face-to-face contact with the people of my study, the male students at UCH.

Observations have been conducted in the canteen area of *UCH, bastrupgårdsvej*. Following the male students through their journey to the canteen and other eating areas. Observation on their meeting with the food, the canteen staff, the room and the physical environment.

## Quantitative questionnaire

A questionnaire was developed to set up basic data for the target group' used of the canteen and some of their demographic information. The questionnaires were conducted in Danish to make sure that the it was understandable for the target group. The questionnaires were distributed to the two educational dept. of *UCH bastrupgrådvej* by the help of two teachers. They ensured that the entire basic course student filled out the questionnaires.

## 3.3. Analytical and development methods

The analytical and development part of the thesis was done through using the design methodology 'customer journey map' and 'personas'. The theoretical framework was incorporated into the 'customer journey map' and 'personas' so that it was the elements from the 'joint model for food service development', and the 'ecological approach to health promotions interventions' that made the frame for the 'customer journey map' and 'personas'. Theses frames was then used to analyse the empirical data collected from *UCH bastrupgårdvej*. A further description of the 'customer journey map' methods is elaborated in chapter 4.4.

During the research process there were produced three versions of the 'customer journey map'. I produced the first version of the 'customer journey map' named 'CJ1' after terminating all the first part of the empirical primary data collection. The data collection also included several feedback and intervention ideas provided by the canteen staff during the data collection period. 'CJ1' was presented at a meeting (1<sup>st</sup> presentation) at *UCH bastrupgårdvej* to the executive kitchen manager, the local kitchen manager at *UCH* and the local project manager for project *healthier vocational colleges*. They made comments to the CJ1 and some new nudging possibilities were discussed, this represented the data collection, part 2 (appendix 6). I then conducted a further analyses and description of the personas interaction with the environment in a 'customer journey map 2' (CJ2). This was conducted with including once again the collected empirical primary data part 1.

The second version of CJ2 was then presented at a meeting (2<sup>nd</sup> presentation) for the canteen staff and their local kitchen manager. The CJ2 described and analysed the journey of the students starting at their class rooms and finishing at the checkout with an indication of touch point where the student and the environment interacted. These touch point had all been turned into ideas for nudging interventions. We discussed each touch point and their enclosed nudging interventions idea and added a few new ideas. After the meeting I presented the CJ2 to one of the pedagogical managers at *UCH*. We elaborated on the intervention ideas and a few was removed due to not being workable with the teaching conditions.

Hereafter I once again made analysis on the students' interaction with the canteen environment by working on third 'customer journey map' (CJ3) which I named: 'Nudging customer journey map'. The 'nudging customer journey map' was also used to develop the proposal for 'nudges'. Further explanations on how the analysis and development is done by the 'nudging customer journey map' can be found in chapter 4.4.

## 4. THEORETICAL FRAMEWORK

### 4.1. 'Nudging' and 'Dual Process' theory

As the intervention is based on nudging alterations to influence the food choice of students toward a healthier choice, the nudging approach is here presented. To gain a greater understanding of the underlying ideology of 'nudging', the theory of 'nudges' and 'choice architecture' with its theory of 'dual-process' and 'libertarian paternalism' theory is here elaborated. Following, a further elaboration and typology of the different types of nudging will be presented as a basic for development of the intervention.

#### 'Nudging' and 'choice architecture'

Behavioural economist Richaerd H. Thaler and law scholar Cass R. Sunstein (2008) brought the idea of using behavioural insight into understanding and designing decision-making contexts, out to broader audience with the book *Nudge: Improving Decisions About health, wealth and happiness*. In their book they suggested that public policy-makers and other 'choice architects' should use 'nudging' to promote people's behavior into the society's best interest as well as people's own interest (Thaler & Sunstein, 2008, p.253). Thaler and Sunstein (2008) promotes the use of 'nudges' in many contexts consequently this thesis will only look at the use of 'nudge' in the context of influencing a healthy food choice. The argument for using 'nudging' is based on findings from behavioural research which shows that individual's decisions and judgments are not always bounded rational and in some cases they make poor choices for their own health and welfare (Thaler & Sunstein, 2008, p.8).

#### Definition of 'nudging'

".. 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".

Textbox 4.1.: Definition of 'nudging' (Thaler & Sunstein, 2008, p.6)

The definition in textbox 4.1. contains 3 aspect of choice architecture. Firstly it is an intervention, which serves a purpose to changes people's behavior in a predictable way. Secondly, it does so in a way without forbidding any options or changing their economic incentives. Thirdly, the nudge is design by the choice architect.

To start backwards with the third aspect the 'choice architecture', is become clear that this is central in making interventions for promoting a healthier food choice. Thaler and Sunstein's talk about the 'choice architect' as: "*A choice architect has the responsibility for organizing the context in which people make decisions.*" (Thaler & Sunstein, 2008, p.3), this being the role and responsibility for the public policy maker, the health professionals or the private companies that wished to make good for their customers and co-workers. The 'choice architect' makes design choices that will have beneficial effect for the individual's health and wellbeing. And in that way choice architect are

influencing what people eat. In the notion of 'choice architecture' it is important to remember that like in traditional architecture there is no thing as a "neutral" design. A design will always fulfill certain requirement and influence people in a certain direction (Thaler & Sunstein, 2008).

### **'Libertarian paternalism'**

The first aspect of Thaler & Sunstein's (2008) definition of a 'nudge' (textbox 4.1.) indicates that there is a need for changing people's behavioural into making better choices. This follows the ideology that assumes that human behaviour isn't always rational and can therefore profit from a 'paternalistic' point of view. 'Paternalisme' as ideology, expresses itself as a consideration and care for the individual or as it underline it the word, from father to a child. In the context of public health the paternalists assume that some individual's don't have the complete information, cognitive ability or the self-control to do what is best for themselves. (Vallgård, 2012). With this belief the public health professionals or public policy makers will make health interventions that intend to change the unhealthy behaviours of the individuals. These interventions can be advertising bans on unhealthy product or prohibition of trans-fatty acids in bakery products (Buchanan, 2008).

The second aspect of the nudge definition, in textbox 4.1., indicates the importance of maintaining people's liberty to make a free decision and thereby their own choices. This is emphasised by libertarian ideology which is the opposite of 'paternalism'. 'Liberalism' sees the individual's liberty as a fundamental right and has a superior value that should be respected, even if it has a cost in welfare (Holm & Ploug, 2013). On the other hand it can also be seen as an expression of avoidance of taking the responsibility for fellow citizen and therefor a matter of neglect (Vallgård, 2012).

The paradox with maintaining both a 'paternalistic' and 'libertarian' point of view has led to the notion of 'libertarian paternalism'. This notion can be seen as a paradox or an oxymoron, but Thaler & Sunstein (2008,pp.5-6) addresses this paradox by arguing that because of the human mind's fallibility to make rational decisions and judgments for their own health, it can sometime be preferable to design the context so its 'nudge' the individual to make better choices. The given context or setting must be designed by the 'choice architect' so it 'nudge' people to make a healthier choice or behaviour without denying them the opportunity to make other choice than those introduced by the 'choice architect'. This justified according to Thaler & Sunstein (2008), to call it 'libertarian' and also 'paternalistic' therefore 'libetarian paternalisme'.

### **Dual Process theory**

The modern psychology and neuroscience has for the last 30 yeast been shaped and channeled by a group of theories described as 'dual process theories'. These describe a framework for how mental process of social judgments, behavior and choices occur in the human brain. (Gawronski & Creighton, 2013).

Philosophy Daniel Kahneman (2011, pp.20-21) describe these mental processes when being affected by an external factor or event which then affect our behaviour. He divides all cognitive process into two general classes: system 2 those that operate reflective and controlled and system 1 those that operate automatically and intuitive.

System 1 or reflective thinking is deliberate, controlled, slow and concessions processing of information from an external source like a nutrient information on food packaging or an encouragement to eat more whole grain. It is linked to self-awareness and autonomy (Kahneman, 2003,pp.698-699).

System 2 or automatic thinking is characterised by being effortless, fast and intuitive. It is it often driven by emotions and habits that controlled our behaviour which result in people behaving in a way which they feel is right without questing it. All of this not often related to the word “thinking” (Hansen & Jespersen, 2013, p.13-14; Gawronski & Creighton, 2013). Depending on which theory there is used these processes are called ‘system 1’, ‘automatic’ or ‘systematic’ (Kahneman, 2011).

The key features of the two systems are shown in table 4.1.

<b>‘System 1’ / Automatic thinking</b>	<b>‘System 2’ / Reflective thinking</b>
<b>Fast</b>	Slow
<b>Uncontrolled</b>	Controlled
<b>Parallel</b>	Serial
<b>Effortless</b>	Effortful
<b>Skilled</b>	Rule-following
<b>Unconscious</b>	Self-aware
<b>Emotional</b>	Rational
<b>Can be overridden by ‘system 2’</b>	

Table 4.1. Two cognitive models of thinking  
(Kahneman, 2003, p.698; Tahler & Sunstein, 2008, p.22)

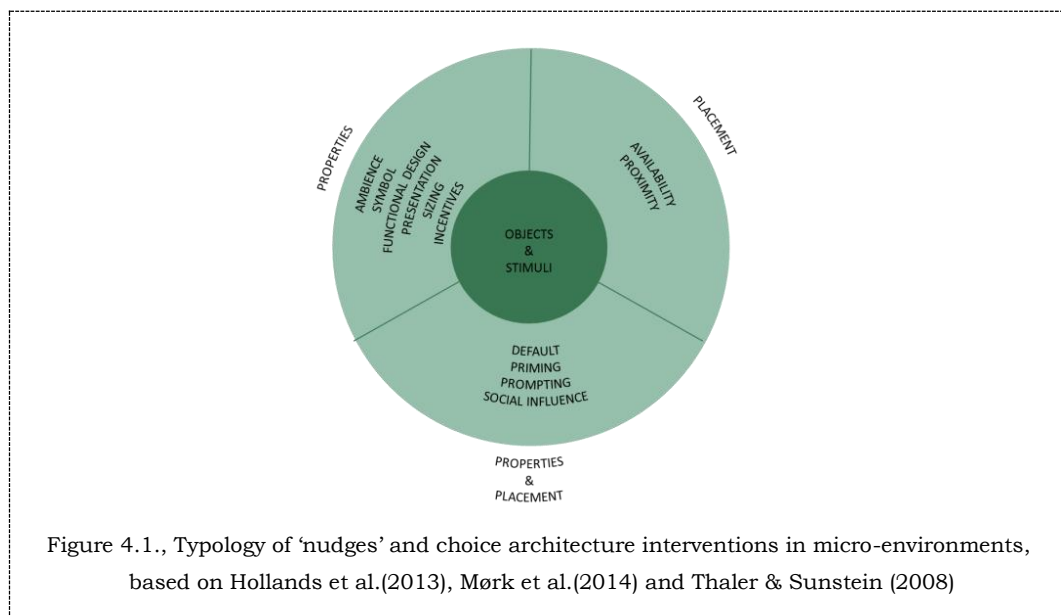
These two processes don’t necessarily appear insolated and therefor exclusive from one or another. ‘Automatic thinking’ happens on its own, but ‘reflective thinking’ only operates on the basic of the context provide by the ‘automatic system’. If a situation is well-known and familiar, people rely on the ‘automatic system’, if not the ‘reflective system’ takes over and result in a choice. In ‘nudging’ there will always be an effect of the ‘automatic system’ but is doesn’t necessarily relate to the ‘reflective system’ (Hansen & Jespersen, 2013, p.14).

### **Typology of ‘nudges’ and ‘choice architecture’ interventions**

Since the emerge of the notion ‘nudge’ by Thaler & Sunstein (2008) many different researchers has tried to categorise ‘choice architecture’ interventions or ‘nudges’ like Dolan et al.(2012), Hollands et al. (2013) and Hansen & Jespersen (2013) In addition the Danish *MAPP - Centre for Research and Customer Relations in the Food Sector* has in early 2014 published a report where they categorised ‘nudges’ and their effect based on their literature review of international studies plus an overview of

ongoing project regarding nudging and promotion of healthier food choice (Mørk et al., 2013). For most of these researcher's works they have all made proposal of different categories or typologies which has been broadly applied to a range of interventions types across environmental and behavioural contexts (Hollands et al. 2013). However there is difference in which specific contexts the typologies are being applied. They are not all being applied to alterations in public health behaviours towards a healthier food choice but also in contexts for alterations of pension schemes, saving energy, environmental protection and organ donation (Dolan et al., 2012; Hansen & Jespersen, 2013; Thaler & Sunstein, 2008).

In this master thesis the following typology of the different types of interventions within alterations in behaviours towards a healthier food choices contexts is presented in figure 4.1. The 'nudges' are groups together into three overall classes of interventions. The first group being those that involve changing the properties of stimuli and objects within the micro-environment. The second group being those that involved changing the placement of the stimuli or objects. The third and last group, 'nudges' that alter both properties and placement or stimuli or objects.



**'Ambience'** involves the interventions or manipulations factors that alter aesthetic aspects or ambient of the physical micro-environment surrounding behaviour, but which is incidental or independent of it. A range of interventions can be; brightness of lighting, music volume and tempo, decorations like color, artwork, use of different material to enhance appeal (Hollands et al., 2013).

**'Presentation'** has some similarity to ambience in terms of making alteration that will enhance a visual appeal. However presentation involves interventions that alter the visual design and sensory quality of the product which include what is actually consumed and its packaging and serving utensils. Presentation doesn't involve alteration in the physical micro-environment which is the case for 'ambience'. A range of interventions and 'nudges' in the type of presentation can be: elements of packaging design e.g. use of color and branded versus plain, shaping and presentation

of the food to enhance visual appeal, altering the way food is presented or the color of it (Hollands et al., 2013).

**‘Symbol’** involves the ‘nudges’ in the physical micro-environment where information is used but in an extent that doesn’t require greater concessions processing of the information. Symbols can therefore not be nutritional labeling like the GDA whereas the ‘whole grain’ symbol and the ‘keyhole’ symbol are examples of symbol nudging (Mørk et al., 2014).

**‘Functional design’** is the adaption or design of the physical micro-environment through alterations in equipment or objects. A range of interventions or ‘nudges’ can be: trolley or trays with indication space for fruit and vegetables, shape and size of plates and drinking glass, size and type of eating utensils, trays versus lack of trays within cafeterias (Hollands et al., 2013; Mørk et al., 2014).

**‘Sizing’** involves ‘nudges’ that changes the size of the product itself. Related either to the size of the package or to the size of a portion served within the overall package or finally related to the size of the individual unit within a portion (Hollands et al., 2013).

**‘Incentives’** are properties of stimuli which originate from behavioural economics and deals with prices and cost. In the context of healthier food choices incentives is related to the ‘nudges’ that offers economical or beneficial stimuli that encourage people to make healthier food choices. An incentive that offers lower discount rate today is more preferable compare to higher discount rate in two weeks. This indicates that people prefer smaller and more immediate cash settlement than more distant ones (Dolan et al., 2012; Thaler & Sunstein, 2008).

The following two types of choice architecture or ‘nudges’ interventions (availability and proximity) are all related to the alteration of the placement of the stimuli or objects. Some researchers see these as one type and classified them all as alteration in ‘availability’ but here presented they will be split into two types, being ‘availability’ and ‘proximity’.

**‘Availability’** involves ‘nudges’ that change the availability of objects through adding behavioural options within the micro-environment. ‘Nudges’ can be: changing the quantity of product within a given environment e.g. in a vending machine, on a menu or a buffet (Hollands et al., 2013).

**‘Proximity’** is alteration of objects or stimuli that creates ‘nudges’ that facilitates engagement with the behavioural options by creating these options more prominent or to reduce the required effort for the engagement. This can be done by altering the proximity, accessibility and also visibility. Examples of ‘nudges’ can be: placing objects out of immediate sight or making them less visible, altering the positions of a food in a menu card, make healthier purchases more convenient or faster than en less healthy, alter the position of healthy product to eye-level in refrigerator (Hollands et al., 2013; Mørk et al., 2014; Thaler & Sunstein, 2008)

'Priming' and 'prompting' work very alike and many researches don't separate the but in this chapter they will be dealt with separately.

**'Prompting'** alter both properties and placement of stimuli and objects. It involves 'nudges' that contain standardized explicit visual or verbal information with the aim to raise awareness of a given behaviour. These types of 'nudge' are aimed at influencing the attention and therefor the behaviour anchored in the 'reflective' system, via influencing the 'automatic' system. 'Prompting' can be 'nudges' which are motivational objects like poster, signs or footprint symbols. The signage and the material can also include audio and public announcement (Hansen & Jespersen, 2013; Hollands et al., 2013)

**'Priming'** alters also both placement and properties of stimuli and objects. It involves 'nudges' that place stimuli or incidental clues within the micro-environment in order to make a behavioural option more mentally available. The 'nudges' can also be placed within the material that people are exposed to and therefor a property of the object. The 'primes' influence the 'reflective' system by making associative process or semantic responses. 'Nudges' can be: smell of certain food, decorative object that prime a consumption of specific food type, furniture and décor that suggest ethnic theme or type of meal (Hollands et al., 2013; Mørk et al., 2014; Thaler & Sunstein, 2008).

**'Default'** alters the placement and properties of object and stimuli. Most decision and choices have a default option and the 'nudges' in this case involves alteration of the option that will be obtained if no active choice is made. This alteration is towards a healthier food choice. 'Nudges' can be: standard menu in canteen, sale of pre-made lunchbox including healthy beverages (Dolan et al., 2012; Thaler & Sunstein, 2008).

**'Social influence'** is the last type of 'nudges' and also deals with alteration in placement and properties of stimuli and objects. It involves the cultural and social norms for behavioural options, within a group or society. The behaviour being an ideal form within the specific social group and which people are trying to conform into. The 'nudges' will try to influence the individual by placing information or clues of what the group norm are. This type of 'nudges' are working in the same way as 'priming' and 'prompting' which are aiming to influence the attention anchored in the 'reflective' system, via influencing the 'automatic' system (Dolan et al., 2012; Thaler & Sunstein, 2008).

### **Application of theory**

In order to analyse the context and thereby develop 'nudges' for the canteen at *UCH bastrupgårdvej* the above typology of 'nudging' and 'choice architecture' will be applied to the analyse and development.

## **4.2. The ecological approach in design of public health interventions**

As mentioned in the problem area there is a claim that developing health promotion interventions at the individual level is less powerful than the ecological approach. In this chapter there will

therefore be a presentation of the ecological approach in terms of: background and the levels with emphasis on how design of intervention can be done.

## Background

Our food system has undergone major changes in the past 100 years all through industrialisation on four levels: agriculture, processing food, food service and retailing. For a long time there has been a 'productionist' paradigm where the food system is dominated by key actors in the above mentioned four levels (Lang & Heasman, 2004, pp.28-30). An example of this is the growth of the food service sector. Up to 50% of consumer's expenditure on food and drink is today spent outside the home and therefore in the food service sector (Lang & Heasman, 2004, pp.167-173). There is no doubt that the availability of healthy food in the food service sectors e.g. a school canteen, is an important determinant for people's capability to make a healthy food choice. So when national public health strategies are planned there is a need to rethink and change the relationship with the private sector like food service so that the environment surrounding the individual is supporting a healthy behaviour. This supporting environment is a corner stone in the 'ecological approach to making public health interventions (Reynolds, Klepp & Yaroch, 2004, p.107).

The ecological approach to planning of public health interventions has emerged from development in many fields and disciplines e.g. sociology, psychology and public health which aim to make us understand how complex health behaviour is (Richard, Gauvin & Raine, 2011, p.308).

## Levels of organisation in the ecological approach and design of interventions

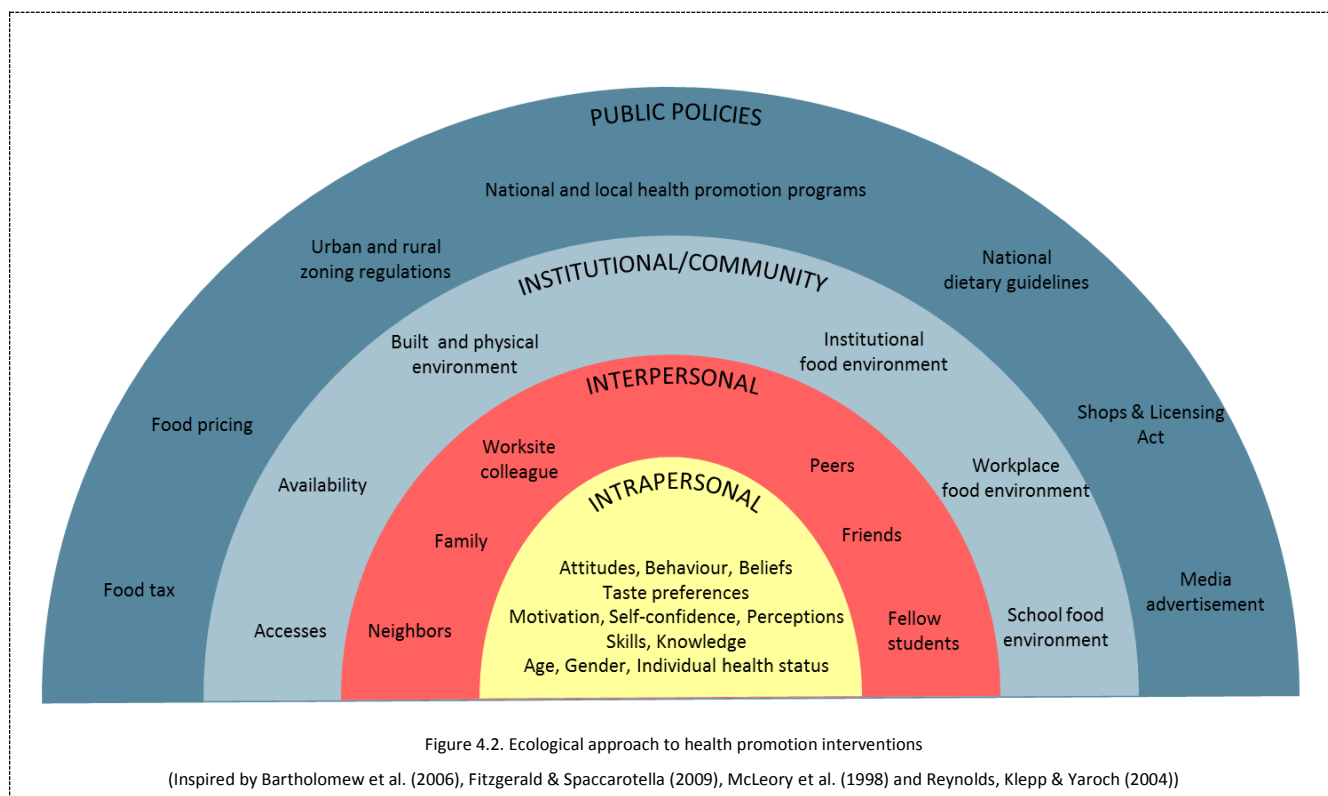
The key element in the ecological approach is that it recognises the influence of the individual actions and characteristics but at the same time it acknowledges the importance of the factors and processes lying outside the individual. In addition it also presents health as a product of the interdependence between the two as described in textbox 4.2. A useful starting point is there for an explanation of how health and behaviour are characterised in the ecological approach, see textbox 4.2.

Defining characteristics of the ecological approach
<ul style="list-style-type: none"><li>• <i>Behaviour</i> is determined by a multiple levels of influence, including intrapersonal factors and environmental factors.</li><li>• <i>Health</i> is a product of the interdependence between the individual and subsystems of the ecosystems (e.g. family, community, and culture, physical and social environment).</li></ul>

Textbox 4.2. Defining characteristics of the ecological approach  
(Green, Richard & Potvin, 1996; pp.271-272; Reynolds, Klepp and Yaroch 2004, p.107)

Various models have and are used to describe the ecological approach and many labels have been applied like 'ecological model', 'ecological perspective' and 'multilevel model' (Richard, Gauvin & Raine, 2011, p.309). The various models of 'ecological approach' all share that they describe the ecosystems by dividing them into different levels. Some researchers divide the ecosystem into factors and processes according to "where" they influence the individual, like Reynolds, Klepp & Yaroch (2004) with a division into three levels: a intrapersonal level, social & cultural environment

and lastly a physical environment level. Other researchers divide the ecosystem into a mix of “where, what and who” factors and processes that influence the individual, like McLeory et al. (1988). This chapter describe a version based on “where, what and who” factors which is originated from a mixture of models from various researchers: Bartholomew et al. (2006), Fitzgerald & Spaccarotella (2009), McLeory et al. (1998) and Reynolds, Klepp & Yaroch (2004) see figure 4.2.



**Intrapersonal level factors:** These factors include attitudes, behaviour, beliefs, taste preferences, motivation, self-confidence and perceptions the individual hold toward dietary behaviour. It also includes knowledge and skills such as cooking skills knowledge of nutrition and health benefits. Other factors are age and individual health status (Fitzgerald & Spaccarotella, 2009; McLeory et al., 1998).

Most of the factors at the intrapersonal level are within control of the individual and therefore many of the theories used at targeting the individual at this level are behaviour change models adapted from psychology (McLeroy et al., 1988, p.356) such as ‘The Theory of Planned behaviour’, ‘Stages of change model’ and ‘Health belief model’ (Margetts, 2004, p.7). These theories of change have the purpose to change individuals and by this the targets of the interventions include characteristics of what the intention is to change such as skills, competences or attitudes. Interventions at the intrapersonal level use a wide range of intervention strategies to target the individual like individual counselling, educational program and mass medias (McLeroy et al., 1988, p.356).

**Interpersonal level:** Involves the environment of the primary social relationship surrounding the individual being both informal and formal social network. These can be family, friends, neighbours,

fellow students, peers and worksites (McLeroy et al. 1988, p.356). The social relationship provides the individual with important social resources such as information, emotional support, access to new social role and contacts. Dietary behaviour of the individual is generally developed because it's practical, effective and meaningful in a social context, religion or culture. Consequently the people belonging to that social context will affect the dietary behaviour of the individual (Cox & Anderson, 2004). In social interaction, individuals will often change their behaviour according to the social norms. These norms are the expectations of how to behave in a group which are strong automatic components (Bartholomew et al. 2006, pp.108-109).

The target of the intervention at this level could be to alter the social influence so it serves to support and encourage the desired healthy dietary behaviour. The ultimate target is the dietary behaviour of the individuals but the proximal targets are the social influences and social norms. There is a range of interventions strategies which is used at this level such as peer modelling, support groups and mobilising social network (Bartholomew et al. 2006, p.163-164; McLeory et al. 1988, pp.357-359).

Institutional/Community level: The third level involves factors and processes which affect dietary and health behaviour coming from the environment of institutions and community. These are characterised as social institutions like schools, kindergarten, day-care centre, nursing home and worksites. In addition it also includes the socioeconomic characteristics of the institution/community and its influence on the dietary behaviour. At this level factors like availability of healthy food and the built environment in worksites, schools etc. are influencing the food choice and thereby the dietary behaviour. The physical environment of a neighbourhood is also an important factor. In addition factors can also be the access to: transportation for shopping for food, storage space for food, equipment for meal preparation, available packages and portions size in the environment (Reynolds, Klepp & Yaroch, 2004).

Interventions strategy at this level can be to create institutional support to change health behaviour: Interventions strategies can be to alter the rule and regulations, change in structure of work like possibility to go to health related activities during the day, change in benefits like health insurance coverage and free fruit. Target of interventions is to support health promotion activities within the institution like a school or worksite. (McLeroy et al., 1988, p.360).

Target of the interventions can also be the institutional changes, the organisation itself. This means creating a healthy environment in addition to creating healthy students, users and employees. The intervention target can therefore be to alter the 'cooperate culture' or 'school culture' so it includes health outcome issues in both strategic and tactical organisational decisions making (McLeory et al. 1998, p.361).

An advantage of using this level as a part of the intervention strategy is that it can influence the dietary behaviour of individual without the need to alter the individual's attitude, knowledge and skills. This type of strategy program is often called 'passive intervention program'. These programs

are, once established, easier to maintain and can last longer since they are built into institution, communities and worksites (Reynolds, Klepp & Yaroch, 2004, p.109).

Public policy level (macro): The public policy level consist of local, regional, national, European and international laws and policies. All of these policies creates an environment surrounding the individual which influence the nutritional behavioural. The policies can be divided into having different aims (McLeroy et al., 1988, p.365):

1. Policies that restrict behaviour such as restriction on sale and consumption of alcohol.
2. Policies which involves behavioural incentives like change in national dietary guidelines
3. Policies which affect behaviours indirectly. These can be tax on food product like the former Danish fat tax or regulation of food-related advertisement toward children.
4. Policies that distribute programmatic resources like establishment and founding of health promotions project.

For the health professional who are designing intervention there is two approaches to the public policy level. Firstly it is important to understand and analyses how the individual is being influence by these policies. Secondly the target for the intervention can be to alter public policies and an interventions strategy could be to make mediate-structures in the project both at citizen and health professional level (McLeroy et al. 1988).

When using the ecological approach to design public health interventions Reynolds, Klepp & Yaroch (2004) suggest the following guidelines to support the development:

1. Enhance the match between individuals and their surroundings and thereby give tme larger control over changes in their environment.
2. Focus interventions on factors with high-impact.
3. Use of several levels of the ecosystems should be considered when designing interventions.
4. Use of more than one level is more likely to be effective, due to the interaction between the levels in the ecosystem.

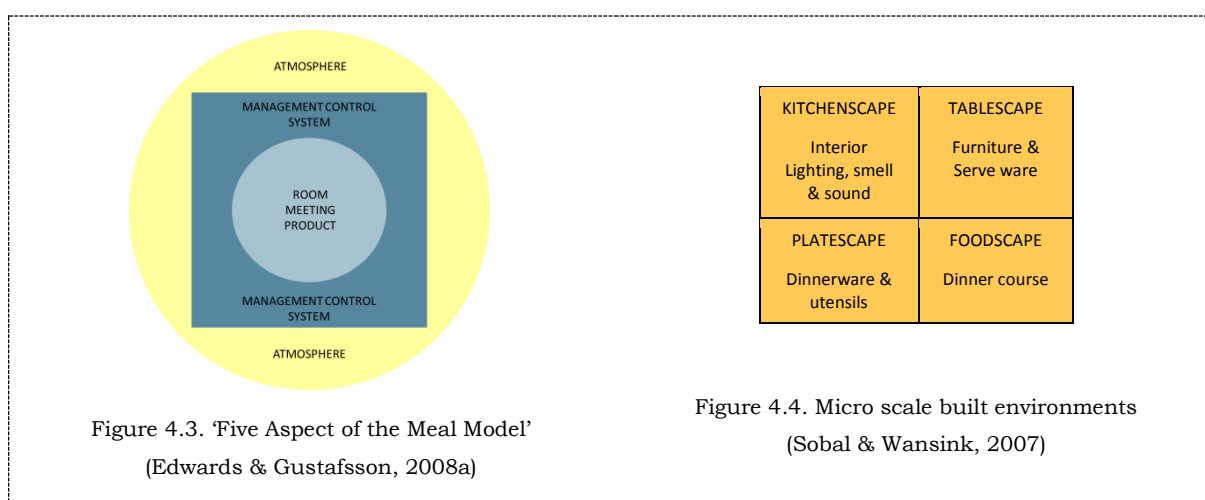
#### **Application of theory**

The theory of the ecological approach to design of public health interventions will be applied to the empirical data in order to analyse and design the nudging intervention at *UCH bastrupgårdvej*.

### **4.3. 'Kitchenscapes, Tablesapes, Platescapes and Foodscapes' and the 'Five aspect of a meal model'**

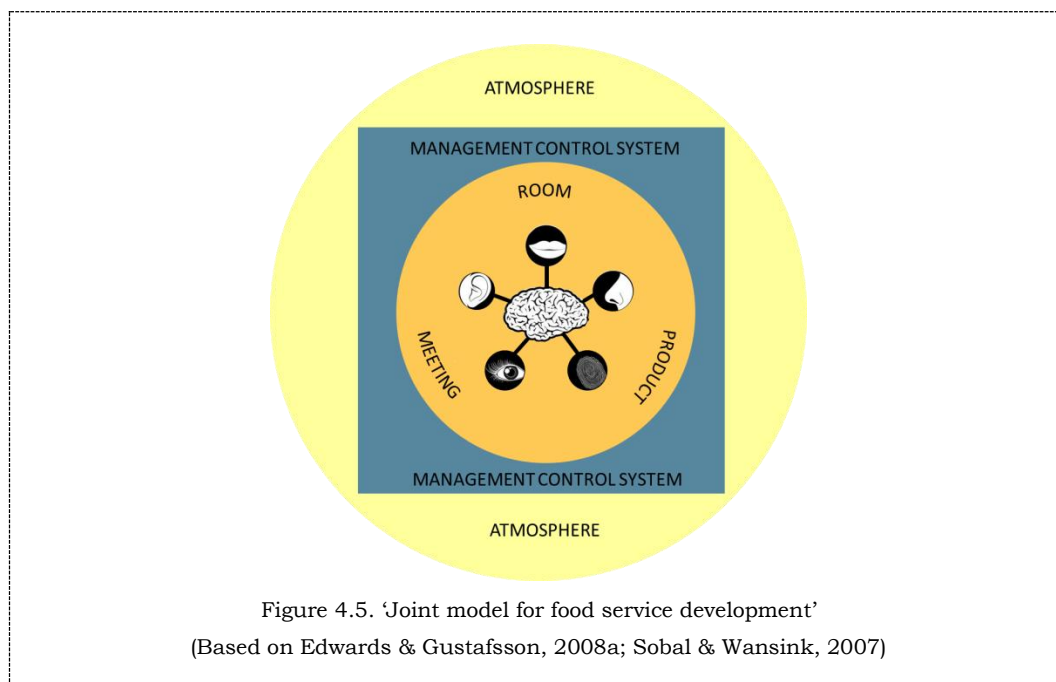
This chapter present a model which describes how the individual, or customer, is influence by the interaction with the different aspect in a food service environment and therefor which elements must be considered when designing an intervention in a food service environment to promote a healthy nutritional behaviour and food choice. The model is based on a model by Guastafsson et al. (2006) and four concepts by Sobal & Wansink (2011).

The model by Gustafsson et al. (2006) is the 'Five Aspect Meal Model' (FAMM) and is developed for meal service. This model (figure 4.3.) was originally developed for meal service in restaurants, with inspiration from the Michelin Guide's evaluation of hotel and restaurants. It was the first academic attempt to formalise the structures for the meal experience and create an important tool for the design of food, products for food and the food environment in food service (ifooddesign, 2014). The aim of the model is to describe how food service professionals must consider important aspects in order to prepare, plan and serve meals to the service delivery to enhance their customer needs. The model emphasises that eating out is not only about the food but also a range of complementary factors, which influence the meal experience (Edwards & Gustafsson, 2008a). The same factors can also be applied in a school or worksite canteen, since whether eating here or in a restaurant is the same as eating away from home.



The concepts by Sobal & Wansink (2007) is made a literature review on how the micro scale built environments can influence the food intake and consequently developed the concept of the four micro scale 'scapes': 'kitchenscapes', 'tablescapes', 'platescapes' and 'foodscapes' (figure 4.4.). The spaces and objects in these four 'scapes' influence the aspects of priming perceptions, activities and framing interpretations in relations to food choice and hence nutritional behaviour. The concepts provide the health professionals with an understanding on how individuals respond to the elements in the four 'scapes' and thereby how the micro scale environment should be design to promote a healthier nutritional behaviour (Sobal & Wansink, p.137).

In this chapter the four concepts by Sobal & Wansink (2007) will be merged into the five aspects from the 'FAMM model' (Gustafsson et al., 2006) to make a joint model which describes how the individual, or customer, is influence by the interaction with the different aspect in the food service environment and thereby which elements must be considered when designing an intervention in a food service environment to promote a healthy nutritional behaviour and food choice (figure 4.5.). The joint model will be presented by use of the headlines from the 'FAMM model' ('room', 'meeting', 'product', 'management control system' and 'atmosphere').



### **'Room'**

Meals are always consumed in a certain kind of physical room. Besides restaurants, which the original FAMM model focuses on, this physical room can also be applied to all other places where meals are consumed like hospital, a school or worksite canteen, train or at home. The 'room' is the first aspect the individual encounters when entering a restaurant. Gustafsson et al. (2006) describe this room as the built environment, meaning a range from buildings, rooms and interiors. This also includes a scale of interiors which goes from furniture where food is served and eaten, decoration in the room, sounds, smells, service ware and dinner ware. By adding this scale Sobal & Wansink's (2007) concepts of 'kitchenscapes', 'tablescapes' and 'platescapes' can be included into the 'room'.

The elements in the 'room' are providing the individual with a range of information that is captured by our sensory process. This provides the brain with information that connects to earlier experiences, knowledge and memories which all creates certain perceptions of the food being served. The smells, sounds, lighting, colors and design of textile, surface material and design of dinner ware and service ware are therefore provide the individual with perception of what to expect or by priming the forthcoming experience of the food being served or sold in this new environment (Gustafsson et al., 2006). That individual can therefore perceive the same food differently when being in different rooms like hospitals, schools and restaurants because there is no coherence between the sensory information like smell, taste and sight (Edwards & Gustafsson, 2008b).

The choice of furniture of the 'room' must be in accordance to the concept and style of the restaurant or canteen since the furniture works as primer for the individual's expectation of the meal. Study has showed that even in fast-food restaurants the choice of furniture are influencing the consumers meal experience (Gustafsson et al., 2006).

Size of serve ware and dinner ware can influence the food behaviour. When increasing the size of serve ware like a self-serving bread basket this will lead to a higher choice of this type of bread. This has also been seen in bowls with snacks and ice cream. The containers use in both serve ware and dinner ware provide the individual with clues that serves as standards to indicate what the expected consumption of food is (Sobal & Wansink, 2007).

### **‘Meeting’**

The second aspect is the ‘meeting’, which refers to the meeting between customer and staff (serving staff like a waiter) and also meeting between customer and customer. This ‘meeting’ can take place in all food service environments like restaurants, fast-food outlets and school canteens (Gustafsson et al., 2006). In a school canteen the ‘meeting’ will referee to the meeting between canteen staff and students, and between students and students, and finally between students and other canteen customers like teachers.

To understand the ‘meeting’ aspect and how to design them, knowledge from social psychology will be used to understand the social interactions and the rules of etiquettes in an eating environment. In the meeting between student and student the theory of commensality (Fischler, 2011) helps us to understand the aspect of eating together. The theory states that individuals eat more when finding themselves in company than they do alone. There is two reason for this behavior; the first states that when people are eating together in a group they spend longer time eating, where eating alone is less pleasurable for most people, and therefore lonely eaters spend less time at table. The second reason referrer to that social norm has an effect in group eating. This result in individual tends to adjust their choice of food and volume of food intake according to the group norms due to a need of gaining approval of the group. Certain individual can act as peers and will therefore have the same power as the group (Fischler, 2011, pp. 538-539, 543).

The meeting between student and teachers is also being influence by the commensality theory in the aspect of sharing food. In most cultures, eating the same kind of food makes people closer, which result in they become more like each other. Sharing food together is often associated with something personal, as contrary to something professional. If the relationship is good between the student and teacher then eating the same food from the canteen will bring them closer together and produces bonding (Fischler, 2011, p. 533). The reverse can also happen in the meeting between student and teachers or between student and student; this can be called the risk of commensality. It deals with the danger of sharing food with a group or a person which the individual doesn’t want to associate itself with, this process involves danger and consequently creates ambivalence that will influence the food behaviour of the student (Fischler, 2011, pp.538-539).

In the meeting between students and others users of the canteen, this being both teachers and other student, the aspect of crowding can also have an influence on the students experience and thereby the food behaviour. Crowding in a food service setting can be an unpleasant feeling. The

higher density of people in one room the more intense the feeling of being crowded (Edwards & Gustafsson, 2008b, pp.28-29).

In the food service environment the meeting between student and canteen staff can be unequal. The staff has more authority and power due to their knowledge of the product being served like beverages and food. The attitude and behavior of the staff will therefore influence the students' experiences of the food environment and thereby influence their behaviour. If the staff are more observant and helpful to their customer (e.g. students), rather than being arrogant and uncommitted, this will help the canteen or restaurant to achieve a good reputation and good relationship with their customers (Gustafsson et al., 2006). This power relationship can also happen in the meeting between students and teachers in their use of the canteen. The teachers have also more power and authority just like the canteen staff, but this is due to their position as teachers. The behaviour and attitude of the teachers will therefor also influence the students in same way as in the meeting with the canteen staff.

### **'Product'**

The third aspect is the 'product', which Gustafsson refers to as the food, beverage and their preparation (Gustafsson et. al., 2006). In the same way as in a restaurant the canteen prepares and serves food and beverages for the customer.

The food being served in a canteen or restaurant is a result of the staffs' knowledge and skills in how to transform ingredients into a dish. In addition to this is the kitchen equipment also an important factor for this transformation. Together these two factors must be considered when designing food and food environments since the quality of the dishes being served will influence the food behaviour (Gustafsson et al., 2006, p.88).

The visual effect of the 'product' is a factor that many people see an important for their food intake. In addition the visual sensory perception of suggestive menu descriptions also seems to affect the food intake positively (Gustafsson et al., 2006, p.88).

However visual effect isn't sufficient in itself. The taste of the product (both food and beverages) being served must meet the standard and expectations of the customers. Even in fast-food outlet customers have showed to have expectations of taste (Gustafsson et al. 2006, p.88).

The customers' expectations and wishes also concern the aspect of the 'product'. The composition of the menu and the selections of beverages must meet the customers' needs and as a result selected according to the taste and preference of the target group in the restaurant or canteen. In addition the food and beverages should also represent value for money for the customer (Gustafsson et al., 2006, p.88).

The size of the food portions is directly related to intake. The larger the portion size of e.g. a pizza slice or a bottle of soft drink, the more people consume. The norm is to consume the chosen food or beverages in its entirety (Sobal & Wansink, 2007, p.133).

### **‘Management control system’**

The fourth aspect is the ‘management control system’, which represent the different systems of an administrative nature. This is systems and elements such as management, work plan regulations, food policy, nutritional labeling, regulations for food safety, economic rules, sales price, procurement contract and logistical system for food supply (Gustafsson et al., 2006, p.89). All these elements must be considered when designing the food environment so it will influence the food behaviour towards a healthier one.

The ‘management control system’ is working backstage and is often not visible for the customers. However if the system fails like a wrong delivery of food or a delay in the buffet being ready for lunchtime due to inadequate work plan, the customers will be affected by the faults in the system. The ‘management control system’ is superior to the first three aspect in the model (‘room’, ‘meeting’ and product) which enhances that customers may not regard the failures as belonging to the ‘management control system’ but rather to the other aspect like ‘product’ or ‘room’ (Gustafsson et al., 2006, p.89).

### **‘Atmosphere’**

The fifth and last aspect is the ‘atmosphere’, which is created by all the four other aspects together and therefor express the entirety of meal experience which are influencing the customers behaviour in the food service environment. Consequently is it important to create and appealing ‘atmosphere’ by designing the other four aspects (Gustafsson et al., 2006, pp. 89-90). In whole the ‘atmosphere’ can be said to be created by two overall elements: Senses and environment.

The senses can be described as the ‘inner frame’ which is a subjective personal experience of the ‘product’. All five senses are used for this experience, the taste for the various flavor of the dish, the touch for the texture and differences in texture of the dish, hearing for the sounds of the food, smell for the aroma of the food, sight for the appearance of the components in the menu selection being shape, size, color, shine and surface texture (Gustafsson et al. 2006, p.90).

Secondly the environment is the ‘outer frame’ and consists of the customers’ interaction with the physical ‘room’ and the staff and other customers therefore being the ‘meeting’. In total the ‘atmosphere’ is a product of both immaterial and material factors and the balance between the two.

### **Application of model**

The different aspect in ‘joint model for food service development’ (textbox 4.3.) will be used for doing analysis and development of the nudging intervention at *UCH Bastrupgårdvej* canteen. This will be done through the ‘Nudging customer journey map’ as described in chp.4.4.

Aspect in the 'Joint model for food service development'
<b>Room:</b> <ul style="list-style-type: none"> <li>• Elements: furniture for serving food and where food is eaten, surface material, textile, decoration, design of serve ware and dinner ware, sounds, smells, lighting.</li> <li>• The elements in the room are captured by sensory process which creates perceptions of the food being served, based on earlier experiences, knowledge and memories.</li> <li>• Serve ware and dinner ware provides clues for what to choose and proportion of food to be consumed.</li> </ul>
<b>Meeting:</b> <ul style="list-style-type: none"> <li>• Meeting between student and canteen staff, student and students, student and teachers</li> <li>• Inequality in the meeting, due to more authority and power</li> <li>• Eating together in a group</li> <li>• Sharing food</li> <li>• Risk of commensality</li> </ul>
<b>Product:</b> <ul style="list-style-type: none"> <li>• Product covers both food and beverages</li> <li>• Size of product portions is related to intake. The norm is to consumed the chosen food or beverages portion in its entirety</li> <li>• Staff competences and kitchen equipment → quality of dishes</li> <li>• Visual appearance and text must be attractive</li> <li>• Taste according to target group</li> <li>• Menu and beverages composition and 'value for money' must meet customers' needs and desire.</li> </ul>
<b>Management control system:</b> <ul style="list-style-type: none"> <li>• Legal, Leadership, Economic, sale prices</li> <li>• Regulations for hygiene and food safety</li> <li>• Logistics system for food supply and procurement contracts</li> <li>• Food policy and nutritional labeling</li> <li>• Working backstage</li> <li>• Superior to the room, product and meeting.</li> </ul>
<b>Atmosphere:</b> <ul style="list-style-type: none"> <li>• Atmosphere is created by sense and the environment: <ul style="list-style-type: none"> <li>○ Senses: the inner frame and subjective personal experiences. Must be in harmony.</li> <li>○ Environment: outer frame of the meal, representing the room: interaction, sounds, culture, social context</li> </ul> </li> <li>• To create an appealing atmosphere that will influence the customers perceptions depend on the harmony between the three: room, meeting, product.</li> </ul>

Text box 4.3. Aspects in the 'Joint model for food service development' (Based on Edwards & Gustafsson, 2008a; Edwards & Gustafsson, 2008b; Fischler, 2011; Gustafsson et al., 2006 and Sobal & Wansink 2007)

## 4.4 Design tools and methods for analysis and development of new services and interventions

As mentioned in the problem area design is about shaping the future so this chapter presents how design methodologies can provide a solution for the development of interventions in the environmental setting which can be used to develop the nudging interventions at *UCH bastrupgårdvej* canteen.

### 'Design thinking'

The core of 'design thinking' is taking disciplines and skills from the design world and turn them into tools that non-design people like public health interventionists can apply to a wide range of issues. By integrating the objectives and requirement from stakeholders surrounding the product in a harmonious balance 'design thinking' claim to be cable of producing ideas that are:

Harmonious balance of 'design thinking'
<ul style="list-style-type: none"> <li>• <u>Desirable</u> from a human point of view</li> <li>• Economically <u>viable</u> for a sustainable business model</li> <li>• Technologically and functional <u>feasible</u>, product being innovated will be capable to be applied and succeed in a wide range of aspect in society and business.</li> </ul>

Textbox 4.4. Harmonious balance of 'design thinking' (Brown, 2009, p.18-21)

This integrated approach suggests a new way of thinking and problem-solving practices with issues e.g. in public health and sustainability. The tools in 'design thinking' are human-centered and are built on our ability to be intuitive recognize patters and to express ourselves by visualisation other than words (Brown, 2009, pp. 3-7, 19). Some of the tools in 'design thinking' is the scenario structure 'customer journey map', 'experience blue print' and 'personas' (Brown, 2009, pp. 94, 126-128). The use of visualisation in research is a familiar process among designers like service designers where visualisation is used in two aspects:

1. As a tool for translating data into insight, like through the method of 'mapping'.
2. A way of communicating insight to stakeholders, like 'customer journey map'.

Visualisation can therefore be an important element in the collaborative process with non-design stakeholders (Segelström & Holmlid, 2009).

### 'Customer journey map'

A 'customer journey map' is a structured visualisation of a user's experience of a service and can be used both to analyses a current situation and to develop a futuristic situation. The user, or customer, travels through an experience in time and in a physical environment, like in this case buying a meal in the canteen. The 'customer journey map' charts the stages of this journey while identifying where the customer and the service, objects, actors and environment interact (Stickdorn & Schneider, 2011, p. 158). These interaction are 'touch point' which, if found suitable, can then be turned into opportunities for development of the futuristic situation (Brown, 2009, p.126).

The 'customer journey map' provides the researcher with user insight and helps us see and understand the journey through the user's eyes. It provide us with a clear understanding of the customer's needs, perceptions and most important how the physical and social environment influence the customers behaviour. By describing all the elements within a service, the 'customer journey map' allows the most important areas to be identified which can be both problem and opportunities for interventions or innovations (Stickdorn & Schneider, 2011, p.159).

'Customer journey maps' are developed collaboratively with users and stakeholders, as they are a great way of bringing different working disciplines, departments or teams together to enlighten the needs and challenges as well as finding solutions together (Stickdorn & Schneider, 2011, pp. 204-205). The collaborative exploration process is a corner stone in many design methodologies and also in 'design thinking'. The collaborative process is vital since different working disciplines often have different ways of communication ideas and results which can be less understandable for others than themselves. Through working with the collaborative 'customer journey map' the participants provide collective insight for the other participant and stakeholder in the design process (Mattelmäki, Brandt & Vaajakallio, 2011, p.80).

There are several ways of producing a 'customer journey map' and it has many similarities with the 'experience blueprint'. The original (s) customer journey maps are based on the idea that people's behaviour are formed by reflective process' that produce attitude and emotions (Designing CX, 2013; Stickdorn & Zehner, 2009). However according to the 'dual process theory' and theory of 'nudging', peoples' behaviours are often based on more automatic process that produces behaviours. However often are these processes not isolated and therefore not exclusive from one or another. Therefore many 'nudges' will affect both the 'reflective thinking' and the 'automatic thinking', like in a case of a motivational 'nudges' based on 'prompting' as mentioned in chapter 4.1.

Presented in this chapter (figure 4.6.) is the 'Nudging customer journey map' model I have develop to be used in the context of this master thesis; the design of 'nudges' in a canteen setting. The model is based on a mix of models from different design researchers merged with element from the 'dual process theory', see also chapter 4.1. (Brown, 2009; Designing CX, 2013; Fliess & Kleinaltenkamp, 2004; Kahneman, 2008; Stickdorn & Schneider, 2014; Stickdorn & Zehner, 2009; Spragagen & Chan, 2008 and Tahler & Sunstein, 2008). 'Nudging customer journey map' will therefore include elements that capture both **behaviours**, solo based on 'automatic thinking', and **behaviours and attitudes** based on the mix of both 'reflective thinking' and 'automatic thinking'.

The 'customer journey map' consist of a horizontal line, the journey's time spend displayed through a sequence of events (activities on the journey) and a vertical line is divided into three overall themes: 1) the customer's Attitudes, Emotions & Behaviour, 2) on-stage's Actors, Agencies, Objects and Environments, 3) back-stage's Actors, Agencies, Policies, Rules and management system (Figure 4.6.).

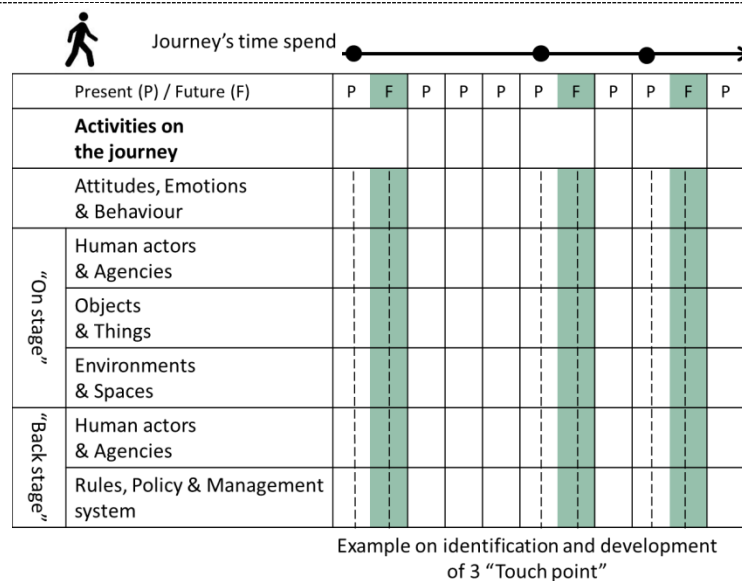


Figure 4.6. 'Nudging customer journey map' for development of nudging interventions

Inspired by Brown, 2009; Designing CX, 2013; Fliess & Kleinaltenkamp, 2004; Kahneman, 2008; Stickdorn & Schneider, 2014; Stickdorn & Zeher, 2009; Spragagen & Chan, 2008 and Tahler & Sunstein, 2008)

The step in using the 'Nudging customer journey map' to first analyse a 'journey' and then develop the 'nudges' is done by following these steps:

1. Select the customer and map the **journey's activities** in the **present time** step by step through the time spend and experiences.
2. Map the **"on stage"** elements (**actors, objects, environments**), considering what the customer is seeing during the journey.
3. Add the customer **attitudes, emotions & behaviour** while experiencing the "on stage" elements
4. Map **"back stage"** elements (**actors, objects, rules etc.**) which the customer doesn't see. The "back stage" provides the "on stage" with actions and that they required to follow.
5. Identify present **"touch point"** which are moments, problems and opportunities that matter for the customer, the organization and the intervention.
6. **Prioritise** the "touch points" and focus on "touch points" that matters and are desirable from a human point of view, economical viable and functional feasible.
7. Design the **future 'nudges'** on basis of the prioritized 'present touch points' by following step 7-10.
8. Add desired **futuristic behaviour**.
9. Map **futuristic 'on-stage'** element (**actors, objects, environments**) that can influence the behaviour based on 'nudges' typology (chapter 4.1).
10. Map **futuristic 'back-stage'** elements (**actors, objects, rules etc.**) required and influenced by the implementation of futuristic 'on stage' elements.

The main element in making the 'Nudging customer journey map' is therefore identifying the "touch points" where the customer is interaction with the service (Brown, 2009, p.94). The starting

point of the journey can be an imaginary point, but in the case of this thesis the starting point came from observations and interviews of UCH students on their way from their class rooms to the canteen.

### **'Personas'**

'Personas' is a tool often used in connecting with 'customer journey map' and design scenarios, but the 'personas' come first. The 'personas' are fictional profiles and represent a character with which stakeholders and other collaborative participants can relate to. The 'personas' is a communication medium in the collaborative process. Although being a "fictional" character the 'persona' is based on real data which make their behaviours and attitudes real (Grudin & Pruitt, 2002). A strong argument for using 'personas' instead of plain demographic is that it changes the focus to be the needs, wants and behaviour of real people (Stickdorn & Schneider, 2011, pp.178-179).

Often you will draw up a series of 'personas' which are very different from each and another. The aim is to reach a large representing of the target group. But it is not uncommon either to have just one or two 'personas'. To develop 'personas' there is a need of research insight into the target group, which then can be develop into useful characters. Most 'personas' are developed on the based on ethnographic fieldwork like interviews, observations and/or quantitative analyses (Stickdorn & Schneider, 2011, pp.178-179; Stickdorn & Zehrer, 2009, p.7).

'Personas' will often consist of a presentation of the character by answering (Stickdorn & Schneider, 2011; Stickdorn & Zehrer, 2009; Tvedebrink, 2013):

- Who is the character?: background information like age, gender, household,
- What do they do?: activities, behaviours in connection to the context of their life and the product/service being developed.
- Why do they do as they do?: attitude, motivation and beliefs

The test how successful the 'persona' has been developed is a test of how engaging it proves to be in collaborative process. The presentation of the 'personas' is therefore important and can take many forms of visual representation like poster representation or anecdotal persona booklet (Mattelmäki, Brandt & Vaajakallio, 2011).

The 'persona' that will be develop in this master thesis, will be based on the model in figure 4.7.

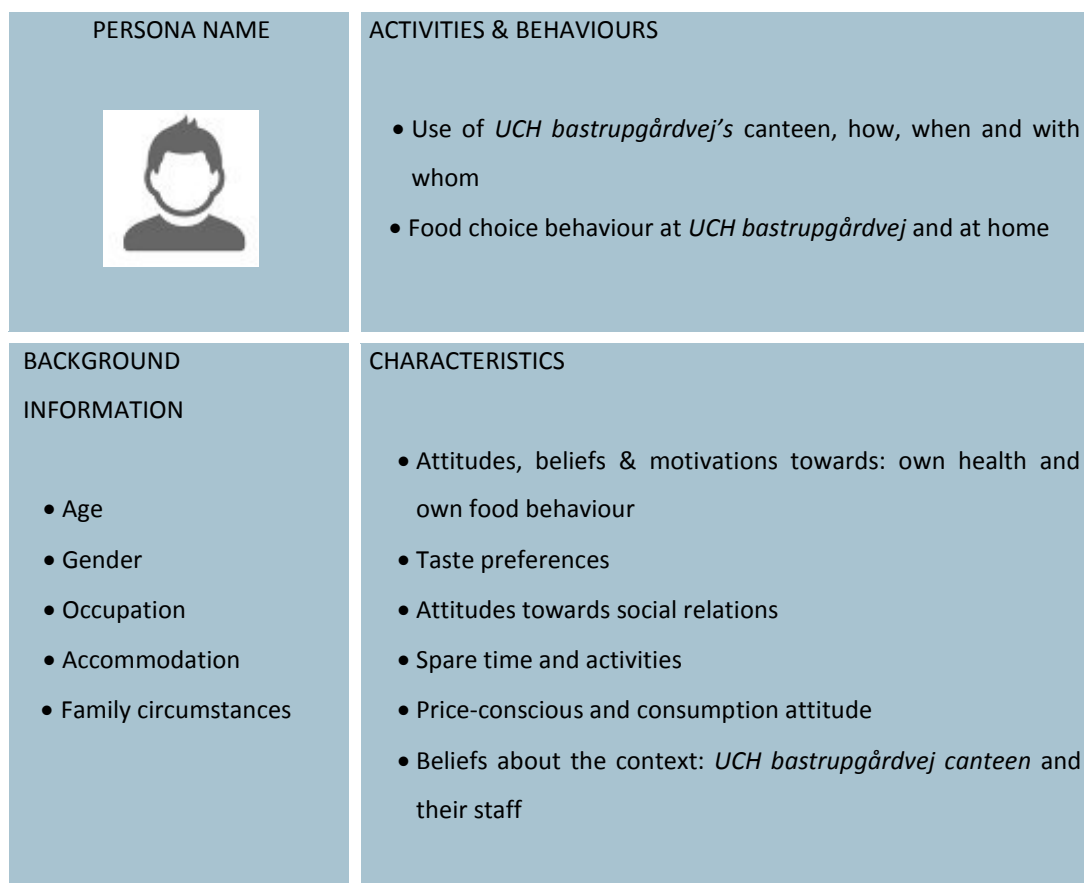


Figure 4.7. My model for development of 'Persona'  
inspired based on Grudin & Pruitt, 2002; Tvedebrink, 2013

### Application of tools and models

The 'persona' will be the first part of the analyses and will be developed on base of the collected empirical data. The 'personas' will then act as the customer and target group in the 'Nudging customer journey map'.

## 5. PRESENTATION OF THE CASE

In this chapter the partnership project *Healthier vocational colleges* will then be presented in order to understand what role the nudging intervention plays in the overall partnership project. The canteen at *UCH bastrupgårdvej* will also be presented. This is done in order to present the context for where the nudging intervention is taking place.

### 5.1. Project Healthier vocational colleges

Project *Healthier vocational colleges* is an upcoming one year partnership project under the *Danish government* partnership strategy *healthier life for all*. The overall aim of the partnership strategy is to engage as many private, public and civil sector partners as possible into working with making more health promotion activities within the 7 national goals for health. This it to be done be creating results in cooperation with local and national partners that are close to the individual. The overall idea behind the strategy is that when private, public and civil society partners are pulling together then they'll achieve the goal easier and better. In addition the idea is also that when changing the environmental factors the partners can support the individual with choosing a healthier lifestyle (Regeringen, 2014a).

#### Project partners

The partners in project *Healthier vocational colleges* are *The Danish Heart Foundation*, the *Danish Lung Association*, *UCH Transport & Logistic dept. and Vehicle dept.*, *Holstebro Municipality's health center* and *Aalborg University*. In addition to the partners there is also formed an advisory group. Their aim is to contribute with knowledge, experience and thereafter expand the project model. The advisory group consists of *3F-United Federation of Danish Workers* and *The Danish Cancer Society* (Hjerteforeningen, 2014a).

The case for the project is *UCH* and consequently there is an internal project group within *UCH*. This consists of the two pedagogical process managers from *Transport & Logistic dept. and Vehicle dept.* and the Educational manager for *UCH* branch on *bastrupgårdvej*. In addition there is also a local project coordinator from the *Danish Heart Foundation* who manages the project on a daily basis and coordinates the project with *UCH* (Hjerteforeningen, 2014b).

#### Project aim, methods and activities

The project aim is to promote a healthier lifestyle among young people at vocational colleges and in particularly *UCH*. This will be done by developing a best practice model for health at vocational colleges and thereafter implementing the model on a range of vocational colleges where the *Danish Heart Foundation* are running another project (Hjerteforeningen, 2014a).

An important element is user involvement in the project therefor a 'health committee' will be assembled with participation of students, management group, teachers, future employer at training and the local project coordinator from the *Danish Heart Foundation*. The committee will be

involved in making the final plan and to implement the interventions in order to secure the relevance for the involved partners and to ensure a broad endorsement of the interventions in the project (Hjerteforeningen, 2014a).

The activities in the project consist of several focus areas: physical activities, smoking, food and obesity, see figure 5.1. for activity details. Not all activities are planned at the present moment since the 'health committee' hasn't been assembled yet (Hjerteforeningen, 2014b). The focus in this IFS master thesis is in focus area 'food and diet' being the nudging intervention in the canteen environment.

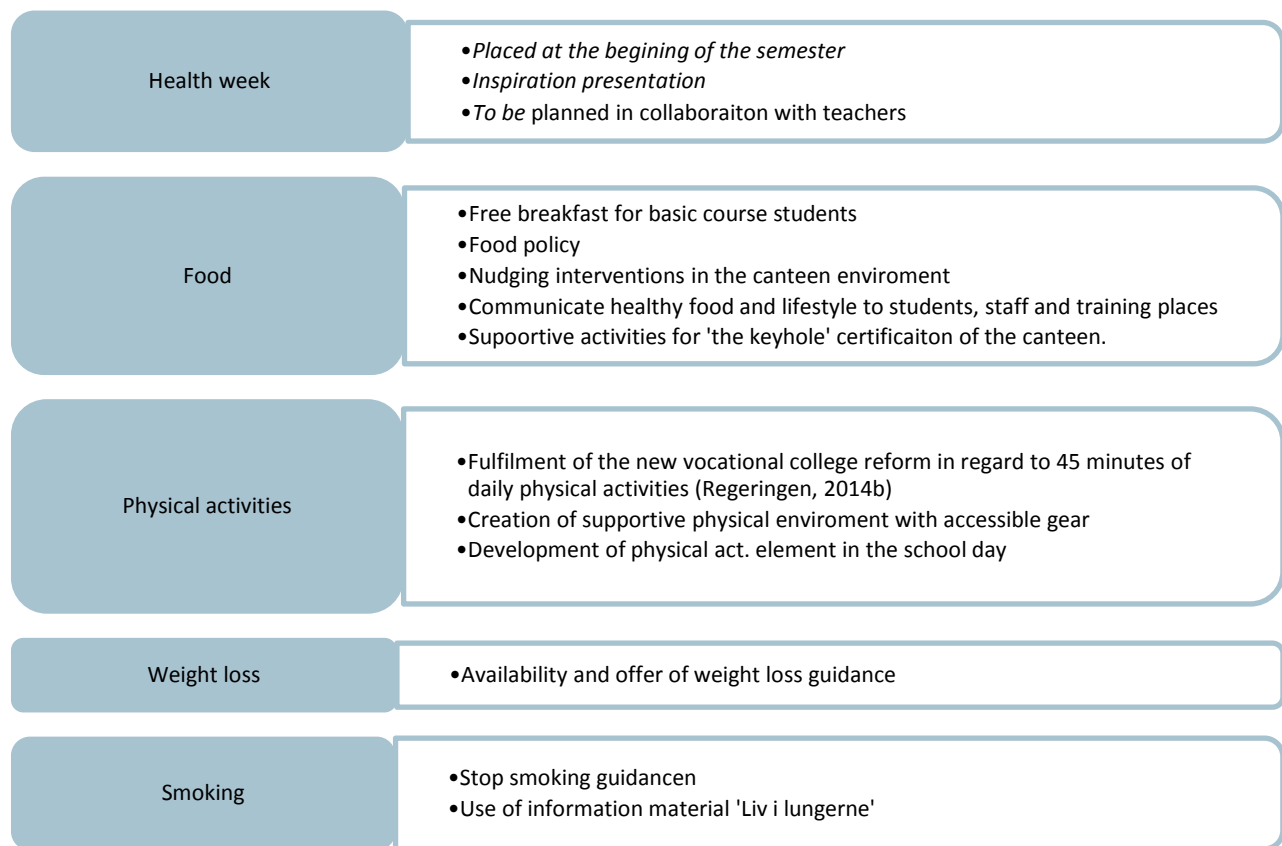


Figure 5.1, Activities in project *Healthier vocational colleges* (Hjerteforeningen, 2014a)

This is a multi-component program which aims to be more effective than an isolated focus area. The health interventions will be a combination of more structurally changes combined with individual and group level interventions. The idea is to make healthy food, physical activities, stop-smoking offer and weight loss consulting easy accessible and attractive for the student at *UCH bastrupgårdvej*. Health will also be implemented in the teaching modules so that the students understand the purpose with the healthy structural elements and thereby gets motivated to use them (Hjerteforeningen, 2014a).

The primary target group for the project is basic course students from UCH's two educational branches: Vehicle dept. and Transport & Logistics dept. The secondary target group is the teachers and other staff members at *UCH bastrupgårdvej*, employer at the students training places and finally the students' families. There is also a future target group which is students on other vocational colleges where the developed project model will be applied (Hjerteforeningen, 2014a).

## 5.2. UCH

The educational branches and physical placement of *UCH* are spread over 6 addresses in Holstebro. This covers their 8 tracks of vocational education, 2 grammar school educations and two boarding facilities for students. In total there are 6 canteens at *UCH*. Most of the food is produced at the *UCH main canteen* where the executive kitchen manager is also placed.

There are approximately 385 employees at *UCH* covering all educational department and management and all administration. In 2013 there were 2000 students attending *UCH* 8 track of vocational education and 2 grammar school educations. In addition there were a large group of AMU course participant passing through one of UCH's many schools during the year, approximately 200 'year-pupils' which is about 14.000 people.

### UCH's food policy

*UCH* have a food policy covering all their canteens. They have all been certified as 'keyhole certified eatery' since February 2013 and therefore 'the keyhole' principles are incorporated in their daily menu, assortment and food policy (Fødevarstyrelsen, 2014). Their 'keyhole' labeling and menu choice is designed to make it easier and possible for their user to make a healthier meal.

The food policy describes *UCH's* vision for the assortment in *UCH main kitchen* and its canteens. It claims to place great emphasis on encouraging the user's intake of fruits, vegetables and fish and to reduce the intake of fat especially the saturated fat. The vision also describes their aim for making food that is made of fresh product, seasonal adjusted and nutritionally balanced (UCH, 2014).

The food policy outlines what the daily offers in the canteens should be in general covering: morning, snacks, lunch and how 'the keyhole' is incorporated into these. In addition to this the food policy also acknowledges that the canteens have a social function for the users and how this is being accommodated by offering an inspiring and attractive eating environment for the users (UCH, 2014).

## 5.3. The canteen at *UCH bastrupgårdvej*

### Decision-making for the food assortment

The food assortment for the breakfast buffet and the afternoon buffet are decided, purchased and produced by the staff at *UCH bastrupgårdvej* whereas the menu for the lunch buffet is decided, purchased and produced by the *UCH main kitchen*. For the lunch buffet the canteen staff at *UCH*

*bastrupgårdvej* are supplying with purchased product for the ‘salad buffet’, bread and smaller snacks like ‘pizza snails’ and ‘sausage rolls’. (UCH canteen staff, 2014).

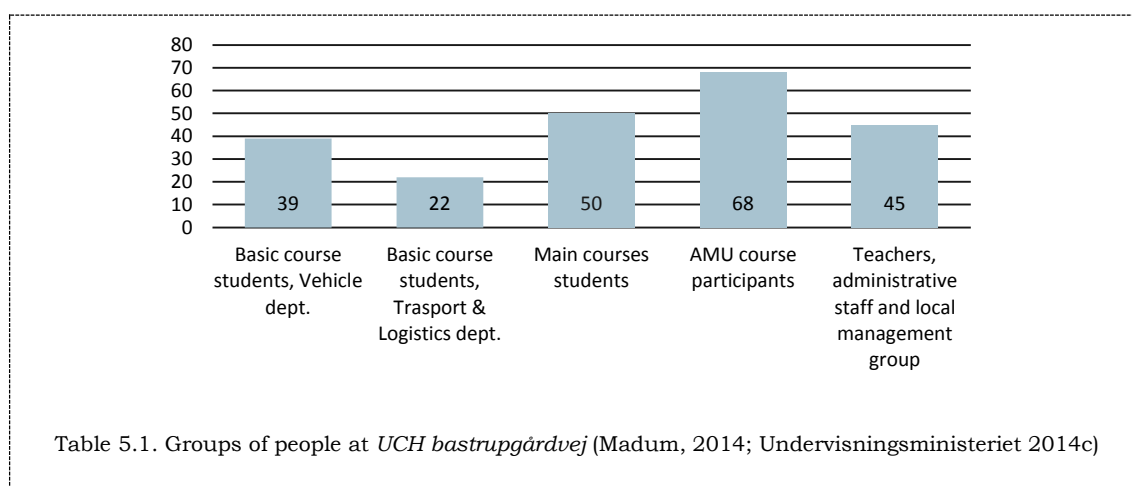
The lunch menu plan has a 12 weeks cycle and is developed by the *UCH main kitchen* with input and ideas from the 6 canteens employees.

### Canteen staff

The canteen have 6 employees of whom 4 are working every day at *UCH bastrupgårdvej* and 2 are apprentices in circulation between UCH’s different canteens in Holstebro (UCH canteen staff, 2014).

### User combination

The users in the canteen are a variety of people attending college, AMU courses or working at *UCH bastrupgårdvej*. During the period for project *Better health at vocational colleges* table 5.1. shows the groups present at *UCH bastrupgårdvej* daily and thereby possible users for the canteen (the numbers are approximately).



The number of AMU course participants varies very much from day to day according to the number of AMU courses being held at *UCH bastrupgårdvej*. The number 68 is therefore the average number for an entire year.

### Sale in the canteen

The day in *UCH bastrupgårdvej* is divided into breaks that fit mealtimes during the school day. These are then converted into the opening hours for sale in the canteen however it is possible to access the ‘eating room’ and the hot and cold drinks vending machines during all time (UCH canteen staff, 2014).

Table 5.2. illustrates that lunchtime is the break during the day with most customers but it is very closely followed by the forenoon break. The amount of money spend per customer during the

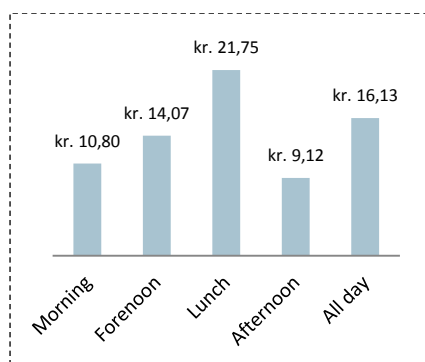


Table 5.3, Sale per customer, mean of week 21, 2014 (appendix 7)

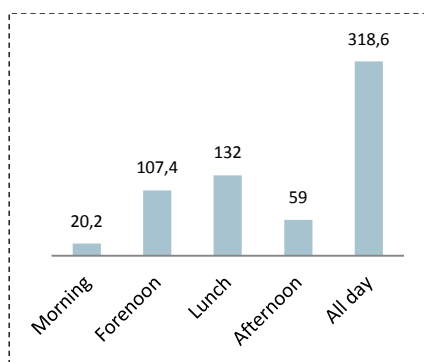


Table 5.2. No. of customer, mean of week 21, 2014 (appendix 7)

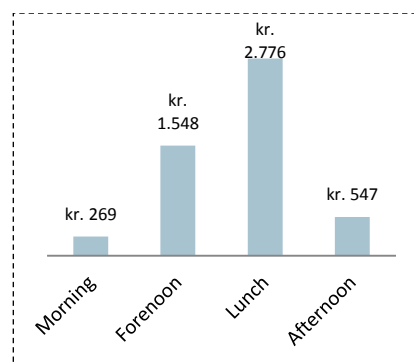


Table 5.4, Sale per break, mean of week 21, 2014 (appendix 7)

forenoon breaks are however smaller than the amount spend during the lunch break as seen in table 5.3. This becomes even clearer when looking at table 5.4 the mean of week 21 sale divided into breaks.

The numbers of customer are the total mixture of customer in the canteen being students, AMU course participants, teachers and other UCH staff. However observation conducted during May and June 2014 shows that students are using the canteen frequently during all opening hours and that the afternoon break is the least used (appendix 1).

### The canteen design



Photo 5.1. Roll-up at canteen entrance door  
8<sup>th</sup> May 2014



Photo 5.2. Entrance door to 'buffet room',  
8<sup>th</sup> May 2014

The canteen users have access to two room in the canteen; one being the 'buffet room' and the other being the 'eating room'. A part from this the canteen staff also incorporate the canteen entrance area into an environment for promotion the canteen by signboards and roll-ups.

Going from the entrance (photo 5.1 and 5.2) the users enter the 'buffet room'. From here there is an open door to the

kitchen and a. fourfold open doorway leading to the 'eating room' (photo 5.3). The 'eating room' holds an area for: eating area for 130 persons (photo 5.4), the checkout (photo 5.5), vending machines for soft and cold drinks and sweets, refrigerator and microwave oven for the users own packed lunch and finally and area for depositing the dirty tableware.



Photo 5.3. Doorway between 'eating room' and 'buffet room', 21<sup>st</sup> May



Photo 5.4. Eating area for 130 persons, 21<sup>st</sup> May 2014



Photo 5.5. Checkout and vending machines, 21<sup>st</sup> May 2014

The 'buffet room' (figure 5.2) is divided up into zones according to where the food and beverages are placed.

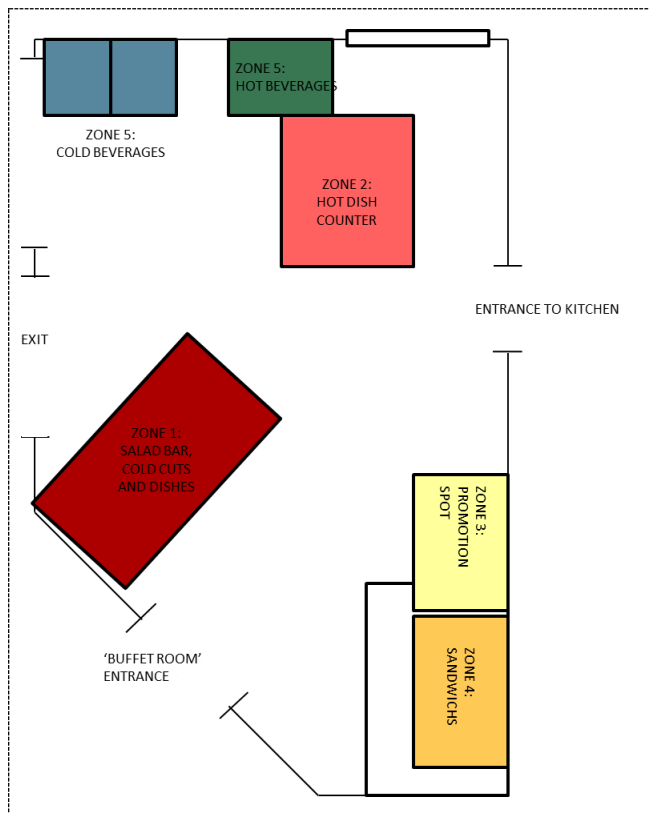


Figure 5.2. Plan and zones in 'Buffet room'

The zones are:

Zone 1: Salad bar with a connected small buffet table for cold cuts and smaller hot dished

Zone 2: 'Hot dish counter'

Zone 3: Promotion spot with special snack offers

Zone 4: Sandwiches placed in an old cooling counter

Zone 5: Hot and cold beverages

The zones are not all completely static however most zones are built in pieces with electrical installation and changes in the physical placement are not without obstacles.

For the buffet in zone 1 it is more manageable to change position and the canteen staff are in general very interested in making the design as optimal as possible (UCH canteen staff, 2014).

## Use of decoration

The canteen staff is responsible for the decoration in both the 'buffet room' and the 'eating room'. It is primarily the 'buffet room' which has changes done in the decoration. The staff change the decoration approximately every second months or according. The themes can varies a lot during the year and sometimes the decoration follows the seasons like Christmas or winter holiday &

snow. Other times the themes are connected to the colleges students like an auto theme (Madsen, 2014).

During May and June 2014 while observation was conducted, the decoration consisted of a mix of elements from the health promotion campaign 'Herrefedt' from 'the key hole', photo 5.6., 5.7. and 5.8. These elements were mixed with element signaling whole grain.



Photo 5.6. Elements from 'Herrefedt' campaign, 8<sup>th</sup> May 2014



Photo 5.7. Decoration with element of whole grain, 8<sup>th</sup> May, 2014



Photo 5.8. Decoration with elements of whole grain, 8<sup>th</sup> May 2014

In the end of June 2014, the canteen staff changed the decoration theme to a summer holiday theme with inflatable swim ring, sand and parasols. The canteen staff are enjoying making the decorations and are working together as a team on this task (Madsen, 2014).

### Use of signboards

The canteen is accreted to use 'the keyhole' label and sign, photo 5.9., 5.10. and 5.11.



Photo 5.9. 'Keyhole' on product, 21<sup>st</sup> May 2014



Photo 5.10. 'Keyhole' on product, 21<sup>st</sup> May 2014



Photo 5.11. 'Keyhole' on dish and on signboard with nutrient content, 21<sup>st</sup> May 2014

The canteen staff are each day labeling the selected dishes and product with small signs, stickers and signboards with nutrient content of the 'keyhole' dish of the day. There is also a range of 'keyhole' merchandise like inflated balloons and badges to be found in the canteen along with 'keyhole' roll-up posters and various smaller posters at the entrance and eating area.

A menu card in a metal frame with the weekly menu for the hot dish is also to be found in the 'buffet room', photo 5.12. This menu card is also found at the entrance door to the 'buffet room'. The canteen staff produces the menu card them self



Photo 5.12. Weekly menu card on



Photo 5.13. Smoothies signboard,

each week and can therefor make 'hot dish counter', 8<sup>th</sup> may 2014  
them as they like

21<sup>th</sup> May 2014

according to their graphical taste and IT competences. Often there can also be found another signboard in the 'buffet room' communicating a special offer or just to make some 'noise' for a specific dish or product (UCH canteen staff, 2014). An example of this is the use of a signboard for signaling the price of homemade smoothies inserted a picture or an illustration of a smoothie, photo 5.13. In both the entrance and eating area there can be found various other signboards signaling events at the school or general information about the canteen like 'smiley' report, how-to-hand disinfection.

### Morning buffet

The canteen is open during the morning from 07:40-08:00am and again at forenoon from 08:45-10:15am where a large breakfast buffet tempts the students, photo 5.14. and 5.15. The assortment consists of is the same during these two breaks and consist of:

- 8-10 different types of bread rolls and bread slices of which 1-2 are homemade rolls and the rest are bake-off product. Once in a while the *UCH bakery educational dept.* provides some bread for the buffet.
- 3-4 pastries
- Cheese in slices, cold meat cuts, marmalades, butter and spread
- Bags of oatmeal and sugar



Photo 5.14. Breakfast buffet, part 1, 13<sup>th</sup> May 2014



Photo 5.15. Breakfast buffet, part 2,  
13<sup>th</sup> may 2014

There are communicated whole grain products by adding the whole grain label on the following products: crisp bread, rye bread and two types of bread rolls

Prices for breakfast buffet: slice of white bread kr.3, 'håndværker' kr.6, Homemade rustic bread roll kr.6, one slice of rye bread kr.3, one slice of crisp bread kr.2, chocolate rolls kr.6, carrot rolls kr.6, large rustic roll kr.8-10, bag of oatmeal and sugar kr.5, 250ml milk kr.3, various pastries kr.10 (UCH canteen staff, 2014).

## Lunch buffet

Lunch is served from the 'buffet room' during 11:00-12:45. In this time period students, AMU course participants and UCH staff takes their lunch breaks in shifts in order make the service quick and the experience as smooth as possible, photo 5.16. and 5.17. (UCH canteen staff, 2014).

The lunch assortment consists of:

- Dish
- 'Dish of the day': one hot dish served from the 'hot dish counter' dished up by a canteen staff member. The 'dish of the day' can be divided up into two categories; either Danish traditional dishes like roasted pork with potatoes and gravy, hotpot with mash potatoes or more youthful dishes like pizza & salad, burgers & salad and wraps. During the weeks there is often 2 days with youthful dishes and 3 days with Danish traditional dishes.
- 1-2 smaller hot dishes, served at the cold cut buffet table
- Salad bar with a variation of small bowls of salad, cut vegetables, dried fruits, nuts and dressings.
- 3-4 sandwiches
- 1-2 mixed salad, made by the *UCH main kitchen*
- 2-3 dishes with cold cuts and suitable garnish
- 1 snack e.g. 'sausage rolls' or 'pizza snail'



Photo 5.16. Salad bar, 8<sup>th</sup> May, 2014



Photo 5.17. Cold cuts and small hot dishes, 13<sup>th</sup> May 2014

Prices for lunch are: 'dish of the day, small kr.27/large kr.37, sandwich kr.15/kr.27, salad bar with cold cuts and mixed salads kr.9 per 100g., sausage roll kr.16 (UCH canteen staff, 2014).

## Afternoon buffet

The canteen is open during the afternoon from 13:30-14:00, photo 5.18. and 5.19. This break is the second least visits break during the day as seen in table 5.2. no of customer, mean-sale in the canteen.

The assortment for the afternoon buffet consists of:

- 8-10 different cakes and pastries
- Pudding arrange on plates like apple trifle, fruit pie, warm waffles with ice cream

- 1-2 types of sandwiches
- Sometimes pizza snails, sausage rolls, carrot rolls or freshly made smoothies
- 2-5 types of fruits (not always placed on the buffet table but then placed at the checkout)
- Carrots bags (not always placed on the buffet table but then placed at the checkout)
- Crispbread



Photo 5.18. Afternoon buffet, part 1, 13<sup>th</sup> May 2014



Photo 5.19. Afternoon buffet, part 2, 13<sup>th</sup> May 2014

Prices for the afternoon buffet are: sandwiches kr.10/kr.20, pudding kr.12, cakes and pastries kr.1-6, kr. 5 carrots roll, pizza snail, sausage roll kr.14, carrots bags and fruits kr.3 or 3 pieces for kr.10.

The bread rolls, carrots rolls and sandwiches are the same which has been on sale also for breakfast or lunch. The prices in the afternoon on these products have been reduced compare to previously during the day.

### **Beverages**

In the 'buffet room' a wide assortment of hot and cold beverages are available for purchase during the opening hours of the canteen. The cold beverages are placed in two large refrigerators in which one is reserved for milk and yoghurt drinks while the other is for mineral water, soft drinks, juices, ice teas, energy drinks and other sugar added beverages, photo 5.20. A part from this there is also hot coffee and tea available.

In the 'eating room' there are placed two vending machines respectively with hot and cold beverages. These vending machines can be used during all day and not just during the opening hours of the canteen.

The assortment and prices on beverages are:

- Milk, 250 ml (fat content: 0,5%, 0,9%, 1,5%), kr.3
- 7-8 types of soft drinks, 500 ml, kr.22
- 6 types of soft drinks, 500 ml, kr.22 (vending machine)
- 2 types of energy drink, 500 ml, kr.22
- 4 types of chocolate milk, 500 ml/700 ml, kr.16/kr.22
- 2 flavours of Ice tea, 500 ml, kr.15
- 2 flavours of juice, 500 ml, kr.14
- Still water, kr.10
- Sparkling water, kr. 22



Photo 5.20. Cold beverages in 'buffet room', 15<sup>th</sup> May 2014

## Sweets



Photo 5.21, Sweets etc., 8<sup>th</sup> may 2014

During the opening hours of the canteen there is a wide selection of sweets, chocolate, granola bars, and crisps available for purchase, photo 5.21.

There are around 25 varieties to choose from and the prices varies from kr.2,5 to kr.10 where the majority are around kr.6. The sweets are all placed at the checkout.

## 6. ANALYSIS AND DEVELOPMENT OF NUDGING INTERVENTION

The analysis will be done on basis of the collected empirical data (appendix 1-12). As describe in ch. 4.4., the analyses will be done by first developing a 'persona'. Secondly the 'persona' will be used to analyse specific moments (prioritised 'touch point') in the present journey in the physical and social environment of the canteen. This is done by using the 'Nudging customer journey map' model by which the theoretical framework from ch. 4 is incorporated. The 'touch points' are then used to develop 'nudges' be using the 'Nudging customer journey map' again.

### 6.1. 'Persona'

#### Gender

Since only 7% of the students are female, the chosen gender for the 'persona' is therefore a male student (appendix 9).

#### Age

The majority (49%) of all the students are age between 16-20 years old and 31% are 20-24 years old (Table 6.1). However when looking at the two educations departments seperatly it's clear that the students from transport & logistics dept. are in general older than students from *vehicle dept.*

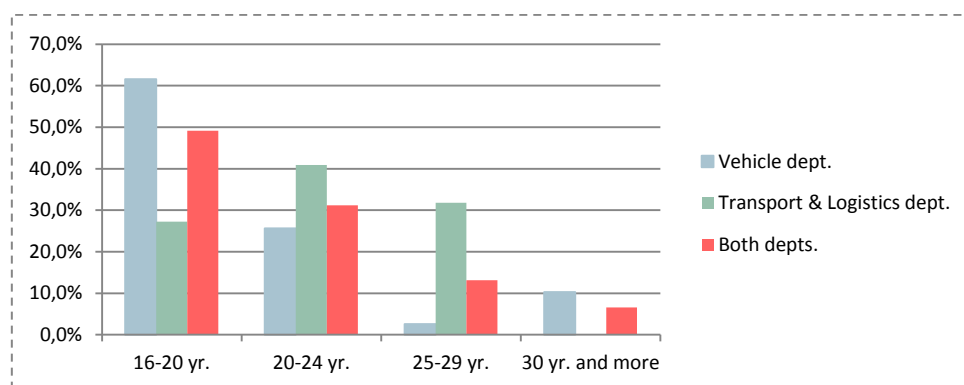


Table 6.1. Students' age composition, basic courses UCH bastrupgårdvej (appendix 6)

The chosen 'persona' is age 16-20 year old.

#### Name

The boy name Mads is chosen as name for the 'persona'. In 1995 the name came in number eight of most popular boy names (Danmarks statistic, 2014).

#### Family circumstances and household

The students from the two educational departments (*transport & logistics dept.* and *vehicle dept.*) are not completely identical in their type of household. Figure 6.1, and 6.2. clearly demonstrates that there is a higher tendency that students from *vehicle dept.* are living with parents (67%) than found with the student from *transport & logistics dept.* (18%). This indicates that 82% of the *transport & logistic* students are responsible for their own household cooking whereas only 33%

from the *vehicle dept.* However a Chi-square analysis has shown that there is no consistency between the educational departments and how often they buy lunch in the canteen nor is there any consistency between the educational departments and how often they uses the canteen (appendix 11; appendix 10). Therefore the difference in type of household have no influence on the students usages of the canteen.

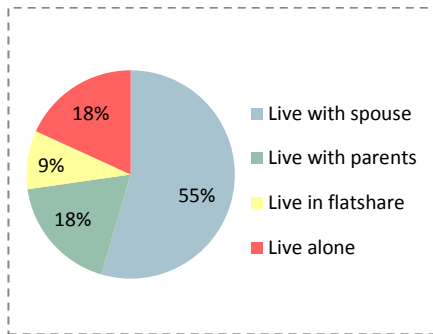


Figure 6.1. Type of household, *Transport & Logistics dept.* (appendix 9)

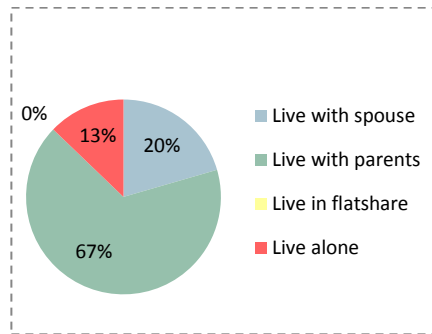


Figure 6.2. Type of household, *Vehicle dept.* (appendix 9)

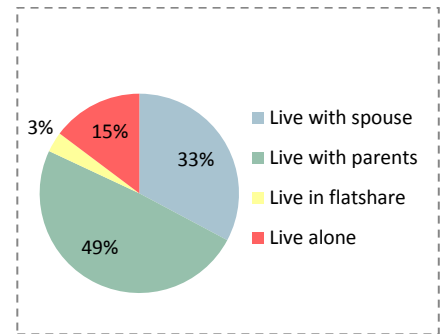


Figure 6.3. Type of household, both educational departments. (appendix 9)

When looking at both educational departments together approximately half of the students sharing household with their parents and 50% are responsible for their own household. The ‘persona’ can therefore be either and it is choosen that Mads will be living with his parents.

## Residence

The residential form of the students have many similarities with the their type of household and the patterns of the students is therefore very similar. The majority of students from *transport & logistics* (68%) live in either rental or own residence (figure 6.4.) where only 28% of the *vehicle dept.* students have this residential form, figure 6.5 . But when looking at both departments together, 58% of the students live with parents or in boarding house, figure 6.6.

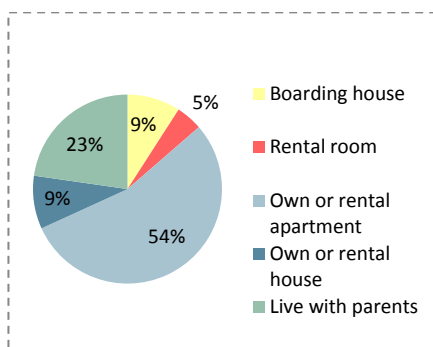


Figure 6.4. Residential form, *Transport & Logistics dept.* (appendix 9)

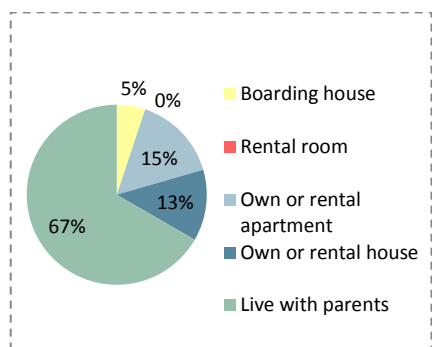


Figure 6.5. Residential form, *Vehicle dept.* (appendix 9)

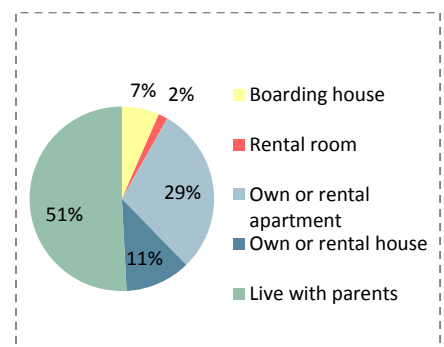


Figure 6.6. Residential form, both educational dept. (appendix 9)

The chosen residential form for Mads is again to live with parents’.

## Food behaviour and beliefs & attitudes toward own health

Mads belief that the 'good and health life' is when you can do what to and eat what you like without gaining extra kilo (appendix 2, l. 88). He has observed classmates who have been affected by their unhealthy dietary behaviour which has led to weight gain and others classmates has lost their focus and concentration due to too low food intake and a daily high intake of energy drinks (appendix 3, l. 115-119). However he doesn't believe he is in their situation although he also skips meals, not daily but quiet frequently. He also enjoys energy drink like his classmates but doesn't feel he his consumer too many although he almost consume them on a daily basis (appendix 3, l. 107-108). He sometimes thinks about if his habits will affect his health but it doesn't seem to have a very lasting effect on his present attitudes toward his food behaviour.

For Mads the composition of the menu is more important for him then if it's healthy, it has to match otherwise he doesn't want it, so if the 'dish of the day' is a pizza slice with salad, is OK for him but he doesn't compose his own healthy dish form the canteens assortment of food (appendix 3,l. 63-67). He believe that taste overrule health (appendix 3,l. 57). Often he thinks that the "healthy dishes" doesn't taste of much (appendix 1, p.5).

Mads doesn't always feel hungry at lunch time given that he often buy breakfast in the forenoon break and is therefore not yet hungry at lunch time. In fact the forenoon break is the time he most generally will make a purchase at the canteen (appendix 12). For all students it can be concluded that in a week's visits the forenoon visits count for 44 % of all visits, lunch at 29%, and morning at 17% (table 6.2).

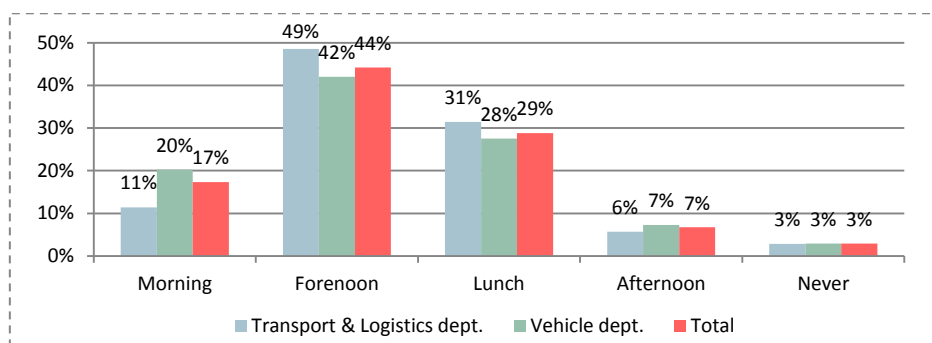


Table 6.2. Which breaks does the students make purchase in the canteen (appendix 12)

It often happens that Mads accompanies his classmates to the canteen just for the sake of company and to see if something can temp him (appendix 2, l. 66). He makes purchases in the canteen 3-4 times a week (appendix 11).

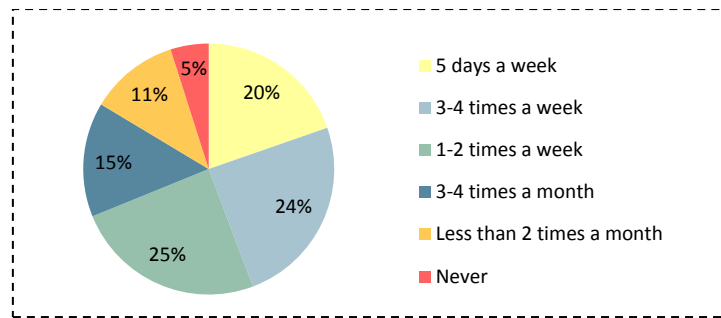


Figure 6.7. Students purchase frequency in the canteen, both educational depts. (appendix 11)

In a close by driving distance to UCH bastrupgårdvej there are fast food outlets like Burger King, BILKA and pizzeria. On a weekly basis Mads will gather together with his class mates and go and have lunch from these places. He finds that there's enough time for it during the lunch break (appendix 2, l. 24, 73). Mads doesn't decide upon this in the morning but it will often pop up during the morning conversations with his classmates (appendix 2, l. 53-54). In general Mads likes to eat at places like McDonald's and Burger King. There is a cool atmosphere and he like the food being served here (appendix 3, l.57).

### Social relationship

The social relations around the meals and food behaviour in general are important for Mads. He believes it's boring to eat alone; it nice when there is somebody to talk to while eating. So it very rare he finds himself alone on the path to the canteen. There is always somebody who wants to join up with for going to the canteen (appendix 3, l. 32-33; appendix 2, l. 9-13).

Mads and his friends like a tease each other in a friendly way (appendix 1,p.1). Sometimes the canteen staff are also friendly teasing him like if the find that he has too dirty hands when he arrives at the check out. He likes this teasing and believe it would be boring if the staff never made any comments (appendix 1, p.7; appendix 2, l.147-149).

### Price-conscious and consumption attitudes

Mads sometimes think is too expensive to shop lunch at the canteen. Kr. 27 for a hot meal can be a lot compare to what he sometimes find in other places, like a cheeseburger at Burger King for kr.10, which he admits doesn't fill up his stomach. But then again once in a while he purchase soft drink for kr. 22 in the canteen, and that doesn't seem to bother him, but kr. 27 for the 'dish of the day' that's sometimes too much (appendix 3, l.29-53; ;appendix 5, l. 38). Sometimes Mads isn't hungry for a whole meal he want a cheap little snack (appendix, l. 38).

The 'persona' Mads is illustrates in figure 6.8.



**MADS**

**19 year-old**  
**Lives with his parents**  
**Want to move out,**  
**as soon as he can afford it**

**Motor Mechanic**  
**Vehicle dept. at UCH**  
**Basis course**



*"Healthy food is often expensive food"*

### Frequency of canteen purchases

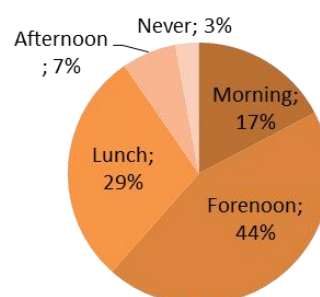


Figure 6.8. The 'persona' Mads

## 6.2.'Customer journey map'

By developing the 'Nudging customer journey map' it helps us analyse how Mads' behaviour is influenced by the elements he encounters during the **present journey** (actors, objects, environments, policies etc.). To design and develop the '**nudges**' these elements are then changed so Mads' **future behaviour** will be influence toward making healthier food choices. The full developed 'Nudging customer journey map' can be found in its whole form in appendix 13-14.

### Activity: Closing in on the canteen, fig. 6.9

Mads is walking down the corridors with a 2 classmates.

**Attitude:** He enjoys the company of his classmates and always prefers to have company on a journey to the canteen (app. 2, 1.2-6). It give him an feeling of being part of a social network and his behaviour is clearly affected by if there are classmates to team up with for the canteen journey.

**Actors:** During the journey Mads founds himself to be almost alone except for the company of his two classmates (app. 3, 1.25-26).

**Environment:** The physical room is dominated by two elements. First the height of the room with a ceiling high up and with a good inflow of light that is appealing. The height of the ceiling make the eye wonders up the wall. The second dominated element is the walls which are made of traditional red brick. They cover both side of the long corridors and are almost 100 % bare for any decorations like **(objects)** poster, painting, signboards (app. 1, p.1).

**Emotions:** These two physical elements give an impression of humans being very tiny and that humans are inferior compare to these two strong physical elements in the built environment. This can lead to Mads having an even stronger need for social relations. The room and the no visual of people or food doesn't give any clues on that Mads is approaching a place where food is produced and where people are eating together in a social context ('room' in 'joint model for food service development').

A desire **future behaviour** of Mads in this touch point of the journey is that he will accompany his classmates more often to the canteen and also to take initiative to gather classmates to accompany him to the canteen. This could be done by enhancing the social aspect of the canteen visit. **Objects and environments:** the bare physical elements of the corridors can be included in a visual journey that gives clues of a meeting with other people using the canteen and enjoying food. The use of role models and 'peers' in this meeting is obvious since they have more authority and power which creates a stronger influence on Mads' behaviour ('meeting' in 'joint model for food service

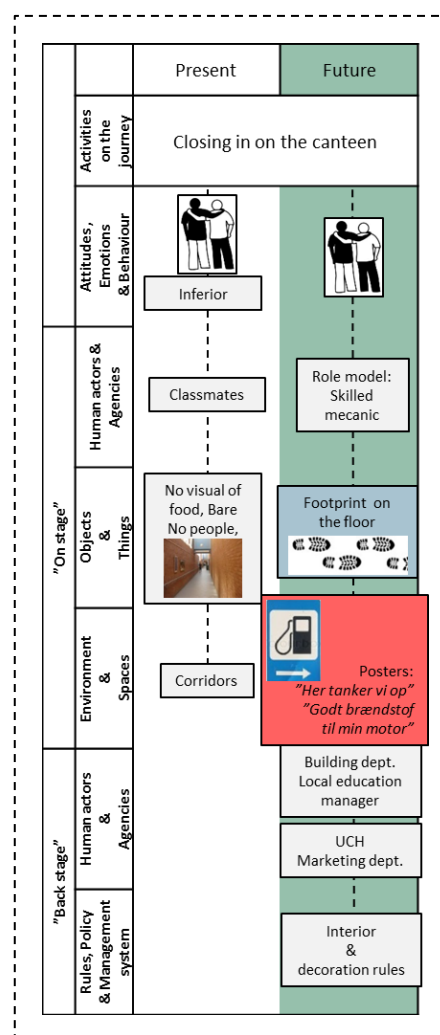


Figure 6.9. Closing in on the canteen

development; interpersonal level in ‘ecological approach to health promotion). The **‘nudges’** could be posters illustrating: skilled mechanics, popular teachers and rewarded national champions of mechanic apprentice. In the posters these actors should express that eating healthy is the “right” group norm and code of practice. Statement could be: “*Godt brændstof til min motor*” with visual pictures of a funnel filled with healthy food product. Another statement could be: “*Her tanker vi op*” accompanied by a symbol of a petrol filling station and an arrow heading to the canteen. A third ‘nudge’ could be to make paths in the floor of footprints from safety shoes leading the way to the canteen entrance.

To implement ‘these nudges’ the future element that is required is permission from **back stage actors and agencies**: *UCH building dept.* and local educations manager. Also the involvement of another agency is *UCH marketing dept.* to assist with the production of these poster and footprints. **Rules** regarding interior and decorating in the college must be consulted and examined before producing the ‘nudges’.

#### Activity: Looking around in the ‘buffet room’, fig. 6.10

Mads has just entered the ‘buffet room’ at lunchtime and is now looking around at the different food options with a trivial expression on his face (app.3, l. 28).

**Emotions:** He doesn’t feel very hungry and isn’t looking for a whole meal just a quick cheap snack. He believe that healthy food often is expensive food and therefore isn’t really concerns about going for a healthy option (app. 3, l. 80). In addition to this is he finds that the food in the canteen is expensive and that cheaper food can easy be found elsewhere outside the college (app. 3, l. 48-55). **Behaviour:** As a result of his attitude towards the selection in the canteen, he often ends up with choosing just a soft drink, a chocolate roll or maybe leaves the canteen and college empty handed to purchase unhealthy food in nearby fast food outlet (app. 2, l. 23-25; app. 3, l. 38-39). The **object** he encounters in the ‘buffet room’ is prices signs and food product that doesn’t suite his taste buds or represent value for money all which are related to the ‘product’ in the ‘joint model for food service development’.

The desired **future behaviour** of Mads in this touch point of his journey is that he more often chooses a small and healthy snack from the canteen. An idea for a **‘nudge’** could be to develop a ‘product’ that suite Mads’ interpersonal taste

preference, his attitudes toward what is value for money and an attitude that the canteen is a nice and age suited environment in order to influence his behaviour for choosing this healthier canteen option. A product (**object**) could be to have a selection of: mini-sandwich, mini-wrap, mini whole

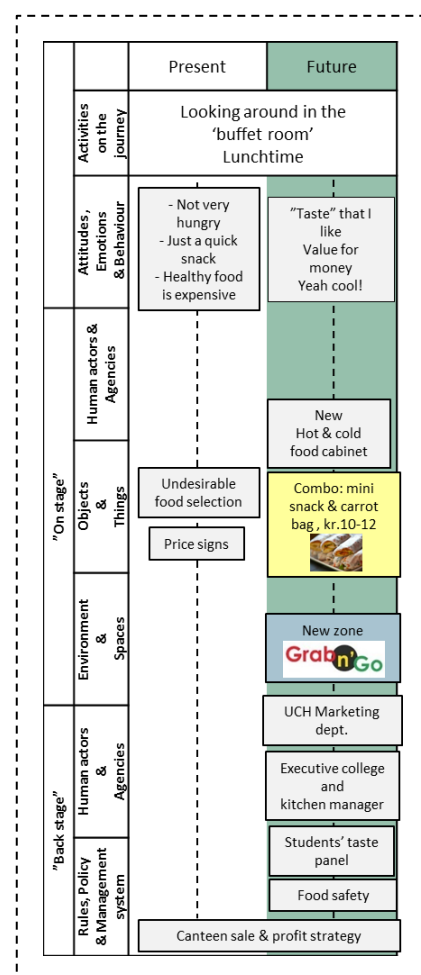


Figure 6.10 Looking around the 'buffet room'

grain sausage roll, mini-pizza snails all combined with a small carrot bag, all for the sale price of max kr.10-12. This selection of snacks could be placed in zone 3 and 4, which could be developed into to a cool and youthful **space** called “Quick bites” or “Grab ‘n’ Go”. This intervention could lead to a future **attitude** of Mads that expresses a match of his needs for taste, style and price level.

To implement this ‘nudge’ several **back-stage actors and agencies** must be include in the development. Firstly the executive kitchen manager and the local kitchen manger must be consulted in regard to establish a price level that is economically viable to cover the expenses of these new snack products. Also if necessary there must be established financial funds for procurement of equipment to maintain the snacks either cold or hot according to the **rules** for food safety. These equipment should be functional feasible and in style accordance to the style of a cool and youthful food spot.

Maybe the **rules** for canteen sale and profit strategy must be considered if the price level can’t match the desirable need from Mads’ point of view. Therefore it might be necessary that also the executive college manager (**back stage actor**) should be involved to establish the profit strategy. Secondly to ensure that the snack product are desirable from Mads and his fellow student point of view. A group of student could be involved in the product development e.g. in form of a taste panel. Finally the *UCH marketing dept.* can be in charge of the development of the visual design of the environment with decoration, signboards and price labels.

### Activity: Looking at 'salad buffet' and 'cold cut buffet', fig. 6.11

Mads has just entered the 'buffet room' at lunch time with three classmates and is now looking at zone 1 with two buffet for salad and cold cut. **Objects:** Several sign boards are placed around the 'salad buffet' informing about price and repeatedly using the word salad (app. 1). One of Mads' classmates throws a glance at the 'salad buffet' while commenting "*salad is for girls*" (app. 1, lunch buffet). According to the theory of commensality ('meeting') sharing the same food and values of what is the norm to consume, brings individual closer and they become more alike. The 'persona' Mads has strong values about the importance of these social relations during his mealtimes, this lead to Mads having an **attitude** toward choosing his lunch to not include product from the 'salad buffet' since he is strongly influence by his classmates comment.

A desired **future behaviour** of Mads is that he more often chooses the healthy products from the 'salad buffet and 'cold cut buffet'. From the theory of 'product' comes the explanation that the individual's visual perception of suggestive menu and text can influence our food choice. An idea for a '**nudge**' could be to change the wording "*salad*" to something that is more appealing to Mads. The **object** would be new sign board designed visual attractive and with a wording that is more hip

and in accordance with the style of Mads' young and masculine taste and perception e.g. "*Veggie bar*". This would all be done so they are desirable in Mads' point of view.

A more comprehensive 'nudge' could be to change more physical elements in zone 1 (**object**), which are not in accordance with Mads' young and masculine perception of the visual elements. According to theory of the 'room' influence on our food behaviour the mixture of furniture in zone 1 could be improved so they are more coherence and in harmony with the young customers taste preference.

To implement the first 'nudge' suggested there is a need of **back stage agencies** like *UCH marketing dept.* to work on the layout of the new signboards. This first 'nudge' is both very economically viable and technological feasible. To implement the more comprehensive 'nudge' financial funds from the **management system** must be allocated to procure the new furniture for zone 1. This 'nudge' is therefore much less economically viable.

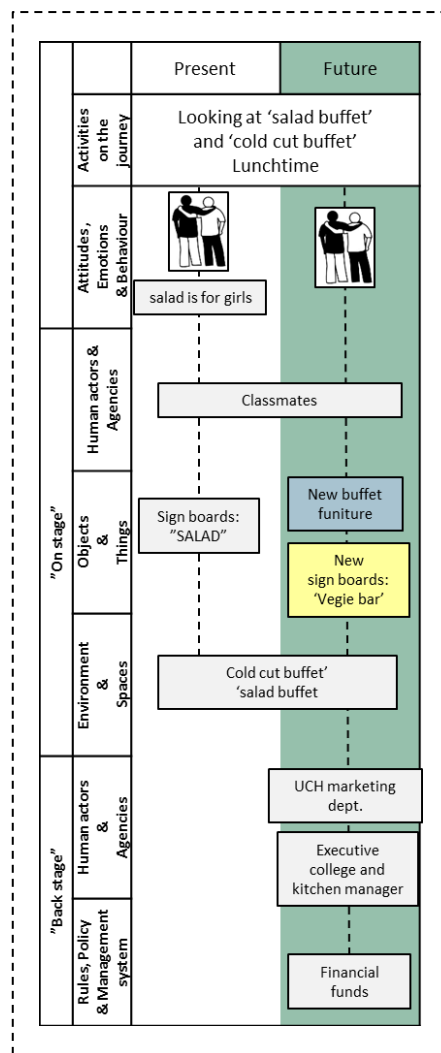


Figure 6.11, Looking at the 'salad buffet' and 'cold cult buffet'

### Activity: Picking up ‘dish of the day’, figure 6.12

**Environment:** Mads is standing in front of the ‘hot dish counter’ (app.1, p.4) and have just ordered the ‘dish of the day’ which is a slice of pizza with salad. The canteen staff (**actor**) hands him his plate with a pizza slice that by large extend the perimeter of the plate (**object**). On the ‘hot dish buffet’ is a serving shelf facing Mads. Here is placed a large bowl of mixed salad and a stack of 20 cl self-served glass bowls in additions there is also 2 bottles of dressing. **Emotion and behaviour:** Mads has his hands busy juggle with the plate with the large pizza slice so he don’t have a free hand to mix up a bowl with salad for himself. He also feels the pressure of the other customer waiting in line behind him. The result is that he gives up on the salad and settles for the pizza slice.

A desired **future behaviour** of Mads is this touch point of the journey is for him not to settle for only pizza since the salad is an important part of making the ‘dish of the day’ an healthier choice. **Object:** The ‘product’ (‘joint model for food service development’) is the salad in the bowl and this portion size is related to the intake since it indicates standard for what is expected to be consumed. Since Mads doesn’t take salad at all due to above mentioned a **‘nudges’** could be about ensuring that he picks up a bowl of salad. Pre-made bowls can be made by the canteen staff (**actors**) and placed on a shelf at the ‘hot dish counter’.

This will according to the theory behind the ‘joint model for food service development’ increase the possibility that Mads consume the portion of salad to go with the pizza slice and thereby have a healthier behaviour. The bowls must be larger than the present 20 cl. and could preferably be of a less heavy and fragile material than glass, so they are easier to juggle with.

To implement this ‘nudge’, future work plans (**management system**) must be made so they provide staff resources to prepare and maintain serving of the pre-mad salad bowls. The management system must also allocate financial funds in order to procure appropriated bowls of the right size and material.

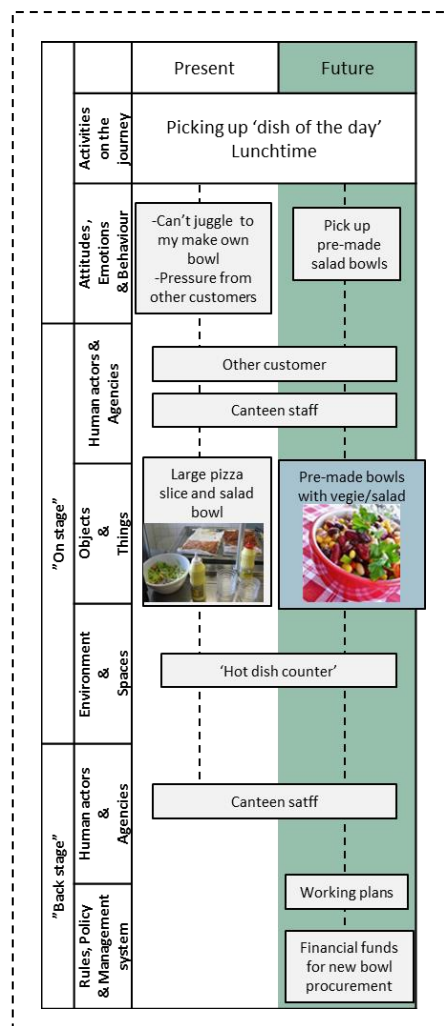


Figure 6.12, Picking up ‘dish of the day’

### Activity: Which plate size to go for?, fig.6.13

Mads is standing in front of the 'hot dish counter' and have just ordered the 'dish of the day'. He is asked by the canteen staff (**actor**) which plate size (**object**) he want: "*stor eller lille?*". Mads is surrounded by a couple of classmates and there is also a teacher present in the room (**actors**). He casts a sidelong glance to his classmate and responds to the canteen staff: *I'm not having a small*" (app.1, p.4). His **attitude** of responding could indicate that he is influence by his classmates and what their belief on norm for plate size. Individual will often change their behaviour according to a group norm according to theories on the 'interpersonal level' and also according to the 'meeting' theory of how individual adjust their volume of food intake according to a believed group norm. In this touch point the 'group' consisted of Mads' classmates and the present teacher. The word "*lille*" can indicate that people who are choosing this size are not part of a masculine group environment where mechanic belongs.

A desired **future behaviour** for Mads could be to choose the smaller plate size since this is a healthier choice. He will do this if he feels that there is a group norm that indicates the smaller plate size. A possible '**nudges**' could be to change the name of the plate sizes so that the canteen staff (**actor**) will be asking Mads if he want a plate that is "*normal eller stor*". This choice of words indicates that the norm is "*normal*", and not an inferior size, which can influence Mads and his classmates' **attitude** toward the choosing the smaller plate size due to this being the believed group norm (**object**).

To implement the 'nudge' the future elements that must be considered are firstly the 'on stage' **actor** being the canteen staff which are inquirer Mads about his choice of plate size. Secondly **object** like the menu cards and price list with the old wording should be replaced.

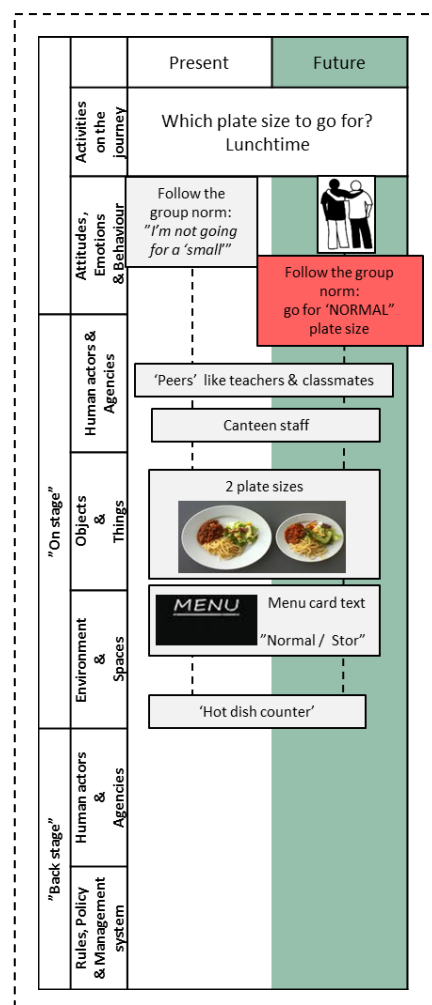


Figure 6.13, Which plate size to go for?

### Activity: Watching the bread selection, morning and forenoon buffet

Mads has just entered the 'buffet room' and is watching the breakfast buffet with its large selection of bread. **Objects:** There are 8-10 different bread rolls, 1 type of sliced bread loaf, rye bread and crispbread to choose from. Out of this selection there are 4 'keyhole' products including the rye bread and the crispbread which lead to two 'keyhole' label bread rolls. These two type of bread rolls are placed in the smallest basket with the smallest amount of bread rolls in (3 pieces). The largest breadbaskets is contains approximately 15 pieces of 'håndværker' based on white flour. This basket is 3-4 times bigger. The second largest available bread type is slice of white loaf in a basket containing approximately 18 slices. The table where the many bread baskets are placed is very small and there isn't any of the bread baskets which are not accessible by being out of reach or in any other way difficult to reach (app. 1,p.2; ch. 5). **Behaviour:** Mads is picking up a plate a taking a 'håndværker' up from the largest and nearest basket. According to the theory on how individual are influences by the size of serve ware, as described in ch. 4.3. 'Room', Mads is in this touch point influence by the different sizes of bread baskets in front of him. This result in a behaviour that goes for the largest basket also containing the largest quantity.

The desired **future behaviour** of Mads is for him to choose a brad type which is 'keyhole' label and therefore healthier. An obvious **nudge** could be to change the assortment in the largest bread basket with the largest quantity of bread to a 'keyhole' label bread type, hence **object** being both the bread and the basket. Such a 'nudge' should according to the theory influence the Mads' **behaviour** in ending up with a healthier bread roll on his plate.

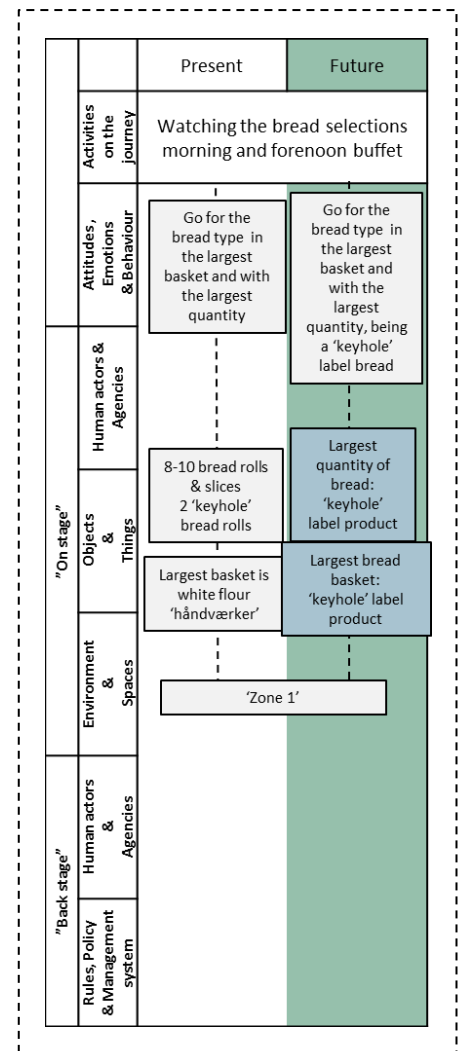


Figure 6.14, Watching the bread selection, morning and forenoon buffet

## 7. FINDINGS

Summarised here are the findings from the analysis and development of the proposal for ‘nudges’ in chapter 6, app. 13 & 14.

Activity	‘Nudge’	Physical zone in UCH canteen	Type of ‘nudges’	Balance in ‘design thinking’	Level of intervention strategy	Aspect in food service development
Closing in on the canteen	Poster of ‘peers’ like skilled mechanic, popular teacher communication that healthy food is their norm	Corridors	Prompting	<ul style="list-style-type: none"> <li>• Desirable</li> <li>• Economically viable</li> <li>• Partly technological feasible</li> </ul>	Interpersonal level by influence by peers	‘Meeting’ and partly ‘room’
	Safety shoes foot print path on the floor “walking” toward the canteen entrance	Corridors	Prompting	<ul style="list-style-type: none"> <li>• Desirable</li> <li>• Economically viable</li> <li>• Technological feasible</li> </ul>	Interpersonal level by alter the social norm	‘Room’ and partly ‘Meeting’
Looking around in the ‘buffet room’	Selection of healthy mini snacks with carrot bag	‘Buffet room’ Zone 3	Availability & Default	<ul style="list-style-type: none"> <li>• Desirable</li> <li>• Partly economically viable</li> <li>• Functional feasible</li> </ul>	Institutional level	‘Product’
	Grab ‘n’ Go space	‘Buffet room’ Zone 3 & 4	Priming	<ul style="list-style-type: none"> <li>• Desirable</li> <li>• Partly economically viable</li> <li>• Functional feasible</li> </ul>	Institutional level	‘Room’
Looking at ‘salad buffet’ and ‘cold cut buffet’	Sign board with a masculine and youthful attractive name and style	‘Buffet room’ Zone 1	Prompting	<ul style="list-style-type: none"> <li>• Desirable</li> <li>• Economically viable</li> <li>• Functional feasible</li> </ul>	Institutional level	‘Product’
	New furniture in harmony of the style of young customer taste	‘Buffet room’ Zone 1	Priming	<ul style="list-style-type: none"> <li>• Desirable</li> <li>• Questionable economically viable</li> <li>• Functional feasible</li> </ul>	Institutional level	‘Room’
Picking up ‘dish of the day’	Pre-made salad bowls	‘Buffet room’ Zone 2	Default	<ul style="list-style-type: none"> <li>• Desirable</li> <li>• Partly economically viable</li> <li>• Functional feasible</li> </ul>	Institutional level	‘Room’
Which plate size to go for?	New name: “ <i>Normal eller stor</i> ”	‘Buffet room’ Zone 2	Social influence	<ul style="list-style-type: none"> <li>• Desirable</li> <li>• Economically viable</li> <li>• Functional feasible</li> </ul>	Interpersonal level -alter the social influence	‘Meeting’
Watching the bread selection	Largest bread basket and the largest quantity of bread is ‘keyhole’ label products	‘Buffet room’ Zone 1	Availability	<ul style="list-style-type: none"> <li>• Desirable</li> <li>• Economically viable</li> <li>• Functional feasible</li> </ul>	Institutional level	‘Room’

Tabel 7.1 Findings

## 8. DISCUSSION

### 8.1. Discussion of findings

In chapter 7 are listed the nine proposal for nudging interventions for the canteen at *UCH bastrupgårdvej*. These are all based on the analysis and development from ch. 6. The locations for the nudges are fairly spread out in the canteen physical environment. The only zone where there hasn't been develop a 'nudge' is zone 5 "cold and hot beverages". It would have been obvious choice to make a 'nudge' here since lots of research already confirmed that an reduction or increase in package size lead respectively to an reductions and increasing consumptions of the food or beverages product (Wansink, 1996). A possible 'nudge' was discussed many times with the canteen staff at *UCH bastrupgårdvej* and in May 2014 the staff already decided that at the semester start-up in august they would change the package size for the energy drink from 500 ml to 330 ml. But at the return in august they have decided to stop al together selling the energy drinks at the canteen. Which of course is a much appreciated development but it can't be categorized as a 'nudge'.

The level of intervention strategy for the proposed 'nudges' are almost all placed on the 'institutional level' and are therefore aiming to create an institutional support so the target group will be influence to change health behaviour (McLeroy et al. 1988). This is not surprising since 'nudging' is a kind of interventions strategy that doesn't need to alter knowledge and skills of the target group and is therefore often called 'passive intervention program' (Reynolds, Klepp & Yaroch, 2004).

The types of 'nudges' that has been proposed are classified in only two of the overall classes of interventions: placement and properties & placement (ch. 4.1.). This leave out 'nudge' that are changing the properties of stimuli and objects like 'presentation', 'symbol' and 'sizing'. Again there is research that confirm that such 'nudges' can be successful (Wansink, Van Ittersum, & Painter, 2006) but they were not prioritized for development since it wasn't the most relevant 'touch point' due to that the canteen has already implement such elements. Many of the proposed 'nudges' are thypologies like prompting, priming and social influence which all are 'nudges' that are aiming of influence the attention anchored in the 'reflective thinking' (be making associative or sematic responses) and then influencing the 'automatic thinking' (Dolan et al., 2012). Some researcher will maybe question if this can be classified as a 'nudge' since it involve the 'reflective thinking' and not strictly and 'automatic' process, whereas others are positively for including these 'nudges' (Hansen & Jespersen, 2013). However not much research has been made to establish if these types of 'nudges' actually has an effect (Mørk et al. 2014).

The proposed 'nudges' has been balanced according to 'design thinking's' harmonious balance for producing ideas with an integrated approach. Four out of the nine proposed 'nudges' fulfill the three claims: desirable, economically viable and functional feasible. Three 'nudges' only fulfill the

economically viable partly since the financial funding has not been established. One 'nudge' is partly technically feasible since it needs the acceptance of a third party actor (skilled mechanic and rewarded apprentice). But this acceptance is easily received since project *healthier vocational colleges* also include an advisory group with strong connection to skilled mechanic. In addition UCH has very close ties to many local skilled mechanics.

## 8.2. Discussion of choice of theoretical framework

This master thesis is based on several different types of theories and models to obtain an interdisciplinary approach. It has been a challenge to integrate them all and it has not come across in a superficial way. In choosing the theories and models I have been critical towards the sources used. It has especially been a challenge to assess the design models and sources. This is due to that it's a research area which is fairly young compared to the more established social science.

Moreover, before deciding upon which theories to use for the theoretical framework for the analysis and development, a number of theories have been assessed, like public health nutrition bi-cycle (Hughes & Margretts, 2011) and situational analysis (Clarke, 2005) before choosing the one in this thesis which seemed most suitable to the context of *UCH bastrupgrådvej* and the research question.

## 8.3 Discussion of the choice of methodology

This master thesis consists of a large primary data collection. The empirical data are all except one, of qualitative nature, and thus a qualitative analysis was conducted.

The one quantitative data comes from the student questionnaire and were used together with data from interviews to development of the 'persona'. To mix qualitative and quantitative is not without controversy and there can be many arguments against mixed methods. One argument can be that the collected questionnaire data, based on percentage and statistical significant, is not mixable with interviews that are more of a snapshot into the life world of the interviewed (Bryman, 2012).

The choice of action research design works with a double purpose; seeking knowledge of the context and seeking to change the context. It has been clear from the first day in the canteen at *UCH bastrupgrådvej*, that my presence was changing the context from day to day. While one day discussion present practices of student and the canteen and talking about 'nudge' proposal, the next day on arrival at UCH the staff would inform me that they have already successfully implemented certain proposals. This makes the research process very interesting since there is a quick response and a dynamic collaboration but also challenging because it's more difficult to separate the analysis part from the development part.

## 9. CONCLUSION

The aim of this master thesis was to analyse the possibilities and hereof design and develop a proposal for a 'nudging' intervention at the canteen at *UCH bastrupgrådvej*. To analysing the empirical data collected from the seven weeks of observations and collaborative work with the stakeholders at *UCH bastrupgrådvej*, I have used the theories and models present in the theoretical framework being 'Typology of nudges and choice architecture', 'Joint model for food service development', 'Ecological approach to health promotion interventions', 'Persona' and finally the 'Nudging customer journey map'.

Through the analysis in chapter 6, have I identified six 'touch point' where element from the social and physical environment are influencing the attitudes and hence behaviours of the target group toward an unhealthy food choice. I have also in chapter 6 develop nine proposals for alterations of these elements in order to 'nudge' the target group toward a healthier food behaviour. The nine 'nudges' proposals are presented jointly in chapter 7.

An important observation is that many of the present elements are not found in the physical environment but are influencing the target group socially like the group norm of not choosing a "small" plate or salad which is regarded as a girly product. This can also be seen in the nine 'nudges' proposals of which six are targeting attentions anchored in the 'reflective thinking' and then influencing the 'automatic thinking' afterwards.

Out of the nine proposed 'nudges' the nudges there is 4 which can be implement very easily, these are: foot print path, masculine sign boards, alterations in bread baskets and new name for plate sizes. 2 others require a little allocations of financial funds (salad bowls and healthy mini-snacks) which there is reason to believe will be allocated. 1 nudges require acceptance from third party, but there is also good reason to believe that this will be granted. The last 2 'nudges' requires a good portion of financial funds which I believe it doubtful that there is funds for (Grab 'n' God space and new furniture in zone 1).

The research process with combining design and health promotion interventions models to obtain an interdisciplinary approach has succeed in some ways. The interdisciplinary approach to combined the model of 'customer journey' and 'persona' together with the typologies of 'nudging' has worked excellently. But the use of 'interventions strategy levels' from the 'ecological approach to health promotion' together with developing a 'nudging' interventions doesn't seem to be necessary in my context since the 'nudges intervention' is more of a 'passive intervention program'. However the methods of working with the 'customer journey map' has proven itself to be of great value due to its strength of a collaborative and visual tool which creates a good platform for interacting in analysis and development of problem and solutions together with stakeholders.

## 10. REFERENCES

- AIGA, 2014. *Design for Good*. (online) Available at: [www.aiga.org/design-for-good/](http://www.aiga.org/design-for-good/) (Accessed 30 April 2014)
- Angrosino, M., 2007. *Doing ethnographic and observational research*. London: Sage Publications Ltd
- Bartholomew, L.K., Parcel, G.S., Kok, G. and Gottlieb, N.H. 2006. *Planning health promotion programs: an intervention mapping approach*. 2nd ed. San Francisco: Jossey-Brass
- Brown, T., 2009. *Change by Design: How Design Thinking Transforms Organisations and Inspires Innovation*. New York:Harper Business
- Bryman, A., 2012. *Social research methods*. 4th ed. Oxford: Oxford University Press
- Buchanan, D.R., 2008. Autonomy, Paternalism, and Justice: Ethical Priorities in Public Health. *American Journal of Public Health*. 98(1), pp.15-21
- Christensen, L.M., Kørup, K., Trolle, T. and Fagt, S., 2012. *Måltidsvaner for voksne med kort uddannelse 2005-2008*. Søborg: DTU Fødevareinstituttet
- Clarke, A.E., 2005. *Situational Analysis. Grounded Theory after the Postmodern turn*. Sage Publications. Thousand Oaks London New Delhi.
- Cox, D.N. and Anderson, A.S., 2004. Food Choice. In: J.M. Gibney, B.M. Margretts, J.M. Kearney, and L. Arab, eds. 2004. *Public Health Nutrition*. Oxford: Blackwell Publishing. Chp 8.
- Cross, N., 2001. Designerly ways of knowing: design discipline versus design science. *Design Issues*,17(3), pp. 49–55.
- Danmarks statistik. 2014. *Navne til nyfødte 1995*. [online] Available at: <http://www.dst.dk/da/Statistik/emner/navne/navne-til-nyfoedte.aspx> [Accessed 16 Aug. 2014]
- Designing CX, 2013. *CX Journey Mapping Workshop*. [online] Designing CX . Available at: <http://designingcx.com/cx-journey-mapping-toolkit/> [Accessed 11 Aug 2014]
- Diderichsen F., Andersen I. & Manuel C., 2011. *Ulighed i sundhed – årsager og indsatser*. København: Sundhedsstyrelsen
- Dolan, P.,Hallsworth, M., Halpern, D. King , R. Metcalfe, R. & Vlaev, I. 2012. Influencing behaviour: The mindspace way. *Journal of Economic Psychology*, 33, pp.264–277
- Duus, G., Husted, M., Kildedal, K., Laursen E. and Tofteng, D., 2012. *Aktionsforskning - en grundbog*. Frederiksberg C: Samfundslitteratur
- Edwards, J.S.A. & Gustafsson, I.-B., 2008a. The Five Aspects Meal Model. *Journal of Foodservice*. 19, pp.4-12
- Edwards, J.S.A. & Gustafsson, I.-B., 2008b. The room and atmosphere as aspect of the meal: a review. *Journal of Foodservice*. 19, pp.22-34
- Fischler, C., 2011. Commensality, Society and Culture. *Social Science Information*. 50(3-4), pp. 528-548
- Fitzgerald, N. & Spaccarotella, K. 2009. Barriers to a Healthy Lifestyle: From Individuals to Public Policy—An Ecological Perspective. *Journal of extension*. 47(1).

Fliess, Sabine & Kleinaltenkamp, Michael. 2004. Blueprinting the service company Managing service processes efficiently. *Journal of Business research*, 57, 392-404

Forebyggelseskommissionen., 2009. *Vi kan leve længere og sundere*. København: Forebyggelseskommissionen

Fødevarestyrelsen, 2014. *Nøglehullet på spisesteder*. [online] Available at: <https://www.noeglehulletpaaspiesteder.dk/Spisesteder/n%c3%b8glehulscertificeret%20spisested/Sider/Jylland.aspx>. [Accessed 14 July 2014]

Gawronski, B. & Creighton, L.A., 2013. Dual-Process Theories. In: Carlston, D.E. ed. 2013. *The Oxford Handbook of Social Cognition*. New York:Oxford University Press. (online), Available at: <http://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780199730018.001.0001/oxfordhb-9780199730018> (Accessed 20 April 2014)

Gedrich, K., 2003. Determinants of nutritional behaviour: a multitude of levers for successful intervention? *Appetite*, 41, pp.231-238

Green, L.W., Richard, L. & Potvin, L., 1996. Ecological foundations of health promotion. *American Journal of Health Promotion*. 10, p.270-281

Groth, M.V., Christensen, L.M., Knudsen, V.K., Sørensen, M.R. Fagt, S., Ege, M., and Matthiessen, J., 2013. *Sociale forskelle: Børns kostvaner, fysiske aktivitet og overvægt & voksnes kostvaner*. Søborg: DTU Fødevareinstituttet

Grudin, Jonathan and Pruitt, John., 2002. Personas, Participatory Design and Product Development: An Infrastructure for Engagement. In: Binder, Thomas et al. *PDC-Participatory Design Conference*, Malmö, Sweden, 23-25 may 2002, pp.144-152.

Gustafsson, I.-B., Öström, Å., Johansson, J. and Mossberg, L., 2006. The Five Aspects Meal Model: a tool for developing meal services in restaurants. *Journal of Foodservice*, 17, pp.84-93

Hansen, I. H., Aachmann, K., Latheenmaki, I. and Grunert, G. K., 2013. *Danskernes forståelse af de otte kostråd*. DCA rapport nr. 22. Århus: DCA-Nationalt Center for Fødevarer og Jordbrug

Hansen, P.G. & Jespersen, A.M., 2013. Nudge and the Manipulation of Choice: A Framework for the Responsible Use of the Nudge Approach to Behaviour Change in Public Policy. *European Journal of Risk Regulation*, 1, pp.3-28.

Hollands, G.J., Shemilt, I. Marteau, T.M., Jebb, S.A., Kelly, M.P., Nakamura, R. Suhrcke, M. and Ogilvie, D., 2013. Altering micro-environments to change population health behaviour: towards an evidence base for choice architecture interventions. *BMC Public Health*, 13:1218

Holm, S. & Ploug, T., 2013. "Nudging" and Informed Consent Revisited: Why "Nudging" Fails in the Clinical Context. *The American Journal of Bioethics*. 13(6), pp.29-31

Hughes, R. & Margetts B., 2011. The public health nutrition intervention management bi-cycle: a model for training and practice improvement. *Public Health Nutrition*, 15(11), 1981-1988

ifoddesign, 2014. *International Food Design Society*. [online] Available at: <http://ifoddesign.org/academics/g.php> [Accessed 3 August 2014]

Kahneman, D. 2003. A Perspective on Judgment and Choice-Mapping Bounded Rationality. *American Psychologist*, 58(9), pp.697-720

- Kahneman, D. 2011. *Thinking, fast and slow*. London: Penguin Group
- Kvale, S & Brinkmann, S., 2009. *Interview-Introduktion til et håndværk*. 2nd ed. København: Hans Reitzlers Forlag
- Lang, T. & Heasman, M., 2004. *Food wars, the global battler for mouths, minds and markets*. New York: Earthscan
- Launsø, L., Olsen, L. and Rieper, O., 2011. *Forskning om og med mennesker - Forskningstyper og forskningsmetoder i samfundsforskning*. 6th ed. København: Nyt Nordisk Forlag Arnold Busck
- Lind, D.A., Marchal, W.G. & Wathen, S.A., 2013. *Basic statistics for business and economics*. 8th ed. New York: McGraw-Hill Irwin
- Margetts, B.M. 2004. An Overview of Public Health Nutrition. In: Gibney, J.M., B.M. Margetts, J.M. Kearney, L. Arab eds. *Public Health Nutrition*. Oxford: The Nutrition Society, Blackwell Publishing. pp.1-12
- Mattelmäki, T., Brandt, E., Vaajakallio, K., 2011. On designing open-ended interpretations for collaborative design exploration. *CoDesign*, 7(2) pp.79-93
- McLeroy, K. R., Bibeau, D., Steckler, A. & Glanz, K. 1988. An ecological perspective on health promotion programs. *Health Education Quarterly*, 15(4), 351-377.
- Ministeriet for forebyggelse og sundhed, 2013. *Ulighed i sundhed*. København: Statens Serum Institut, Sundhedsstyrelsen
- Mørk, T., Tsalis, G., Hummelshøj, I. and Grunert, K.G. 2014. *Nudging: et overblik over publicerede undersøgelser og igangværende projekter om nudging på fødevarerområdet*. DCA rapport nr. 36. Århus: DCA-Nationalt Center for Fødevarer og Jordbrug
- Pérez-Cueto, F.J., Aschemann-Witzel, J., Shankar, B., Brambila-Marcias, J., bech-Larsen, T., Mazzocchi, M., Capacci, S., Saba, A., Turrini, A., Niedzwiedzka, B., Piorecka, B., Kozio"-Kozakowska, A., Wills, J., Traill, W.B. and Verbeke, W. 2011. Assessment of evaluations made to healthy eating policies in Europe: a review within the EATWELL Project. *Public Health Nutrition*, 15(8), pp.1489-96.
- Regeringen, 2014a. *Sundere liv for alle: Nationale mål for danskernes sundhed de næste 10 år*. København: Ministeriet for sundhed og forebyggelse
- Regeringen, 2014b. *Aftale om bedre og mere attraktive erhvervssuddannelser*. København
- Reynolds, K.D., Klepp, K-I., Yaroch, A.L., 2004. Public health nutrition strategies for interventions at the ecological level. In: J.M. Gibney, B.M. Margetts, J.M. Kearney, and L. Arab, eds. 2004. *Public Health Nutrition*. Oxford: Blackwell Publishing. Chp 5.
- Richard, L., Gauvin, L., Raine, K., 2011. Ecological Models Revisited: Their Uses and Evolution in Health Promotion Over Two Decades. *Annual Review of Public Health*, 32, pp.307-326
- Segelström, F. & Holmlid, S., 2009. Visualizations as a tools for researcher: service designers on visualizations. In: *Nordes 2009, Engaging Artifacts*. Oslo, Norway, 30 Aug-1. Sep 2009. (online). Available at: <http://www.nordes.org/opj/index.php/n13/article/view/53> (Accessed 15 March 2014)
- Simon, H. A., 1996. *The Sciences of the Artificial*. 3rd ed. Massachusetts: MIT Press

Sobal, J. & Wansink, B., 2007. Kitchenscapes, Tablesapes, Platescapes and Foodscapes - influences on microscale built environment on food intake. *Environment and Behaviour*. 39(1), pp.124-142

Spraragen Susan L. & Chan, Carrie, 2008. Service Blueprinting-When customer satisfaction numbers are not enough. In: *International DMI Education Conference, Design Thinking: new challenges for designers, managers and organizations*. Cergy-Pointoise, France, 14-15 April 2008

Stickdorn, M. & Schneider, J., 2011. *This is service design thinking - Basics-Tools-Cases*. 4th ed. Amsterdam:BIS Publishers

Stickdorn, M. and Zehrer, A., 2009. Service Design in Tourisme: Customer experience driven desitnations management. In: *Nordic conference on service design and service innovation, DeThinkingService ReThinkingDesign*. Oslo, Norway, 24-26 November 2009.

Thaler, R.H. & Sunstein, C.R., 2008. *Nudge: Improving decisions about health, wealth and happiness*. London: Yale University Press

Tvedebrink, T.D.O., 2013. IFS course, *Food Design and structural analysis of meals and spaces*. Aalborg University

Tøttenborg, S. 2013. *Seminar: 6 a day and the Danish School Fruit Scheme*. The Danish Cancer Society, AAU. September 27th 2013.

UCH canteen staff, 2014. *Information about UCH bastrupgårdvej canteen*. [conversation] (Personal communication, 8 May-4 June 2014)

UCH, 2014. *Køkken og kantine, kostpolitik*. [online] Available at: <http://admin.ucholstebro.dk/artikel/koekken-og-kantine.html> [Accessed 14 July 2014]

Undervisningsministeriet, 2014a. *Elevtal på Erhvervsuddannelserne*. (online) Available at: <http://uvm.dk/Service/Statistik/Statistik-om-erhvervsuddannelserne/Elevtal-paa-erhvervsuddannelserne>. (Accessed 17 April 2014)

Undervisningsministeriet, 2014b. *Vocational Education and Training (vet)*. (online) Available at: [http://eng.uvm.dk/education/upper-secondary-education/vocational-education-and-training-\(vet\)](http://eng.uvm.dk/education/upper-secondary-education/vocational-education-and-training-(vet)). (Accessed 17 April 2014)

Undervisningsministeriet, 2014c. *Godkendelser af udbud til AMU, Minimums-aktivitetsopgørelser*. (online) Available at: <http://uvm.dk/Uddannelser/Uddannelser-til-voksne/Fakta-om-uddannelser-til-voksne/Udbud-af-uddannelser-til-voksne/Godkendelser-af-udbud-til-AMU>. (Accessed 12 July 2014)

Vallgård, 2012. Nudge—A new and better way to improve health?. *Health Policy*. 104(2), pp.200–203

Wansink, B. 1996. Can package size accelerate usage volume. *Journal of Marketing* 60, 1-14.

Wansink, B., Van Ittersum, K., & Painter, J. E. 2006. Ice cream illusions. Bowls, spoons, and self-served portion sizes. *American Journal of Preventive Medicine*, 31(3), pp.240-243

### Non-Publisher references

Hjerteforeningen, 2014a. *Sundere erhvervskoler - et partnerskab om mere sundhed for unge*. Projektbeskrivelse. København : Hjerteforeningen

Hjerteforeningen, 2014b. *Information about project Healthier vocational colleges*. [meeting] (Personal communication, 7 May-26 June 2014)

Madsen, L., 2014. *Information about UCH bastrupgårdvej canteen*. [conversation] (Personal communication, 14 May 2014)

Madum, G., 2014. *Information about UCH bastrupgårdvej*. [conversation] (Personal communication, 8 May 2014).

Tvedebrink, T.D.O., 2013. IFS course, *Food Design and structural analysis of meals and spaces*. Aalborg University

Tøttenborg, S. 2013. *Seminar: 6 a day and the Danish School Fruit Scheme*. The Danish Cancer Society, AAU. September 27th 2013.

UCH canteen staff, 2014. *Information about UCH bastrupgårdvej canteen*. [conversation] (Personal communication, 8 May-4 June 2014)

## OBSERVATIONS, UCH BASTRUPGÅRDVEJ

All field notes are collected at UCH, bastrupgårdvej 5, 7500 Holstebro, Denmark, in a time period from 8<sup>th</sup> May-19<sup>th</sup> June 2014.

### Canteen entrance

A group of students walk down the corridors at UCH. They slow down they speed when approaches the canteen entrance and pauses for a while on arrival at the reach the entrance area of the canteen. One student read out loud what on the 'comments board' today. The students' reaction to the 'comments board' varies from day to day. Sometimes the comments make them smile, laugh or just talk.

A canteen staff member is wiping out yesterday's writing on 'comments board' and writing today's comment. She is joined by another staff member, they explain to me: *"we put up at new comments every day. Yesterday we made a joke about men, so today we go for the women."* Yes, it has to be fair for all." *"This is good way for us to interact with our customers, the do notice what we write, and make comments about it towards us."*

### 'Buffet room'

#### Breakfast buffet

Canteen staff is commenting on how they arrange the breakfast buffet. *"We place the pastries and so like on the faraway side of the bread buffet"*. Observations shows that this is the rule when setting up the buffet in the morning, but by the run of the assortment goes down the bread baskets and serving plates are gather together.



Photo A, Pastries placement, 3<sup>th</sup> June 2014, 08:30 am



Photo B, Pastries placement, 3<sup>th</sup> June 2014, 10:00 am

2-3 students are gathering around the breakfast buffet. They each have an empty plate in their hand, and are looking at the assortment of bread rolls and pastries. One student takes a piece of Danish pastry, and the two others are smiling at him while one of them is commenting: *"Ahh, so you begrudge yourself with that, it looks yummy"*. This is said in a warmly tone and is being responded with a smile and a comment on *"yeah, why not"*.

Photo C, Breakfast buffet, bread assortment 21<sup>st</sup> May 2014Photo D, Breakfast buffet, bread assortment 20<sup>th</sup> May 2014

Most customers are choosing the bread roll from the largest bread basket the type 'håndværker'.

The students are moving around the 'buffet room' in a familiar way. Many start out with taking a plate and then looking at the bread assortment. The last place they look is at the promotional spot with the hot plate.

One student is grabbing a whole grain bread roll from a basket and cutting it into two pieces with the bread knife while commenting at his fellow students *"This is so good, this is my kind of stuff"*.

One student is working around the bread selection and talking to his class mates *"I don't know what to choose...I want a bread with a crispy crust...."*, then he is choosing what his two class mates has just chosen a 'håndværker' bread roll.

Canteen staff is talking about how to increase the sale of whole grain product at the breakfast buffet: *"We can try to have 'håndværker' in a smaller basket. And maybe put them a bit further away. Maybe then we'll sell more of the whole grain bread rolls. And it isn't difficult for us to make this change, if we prepare two extra bread baskets with 'håndværker' in the kitchen, then it's quick to replenish with a fresh supply"*. Another canteen staff member is adding: *"After the summer we can also order 'håndværker' with whole grain. We order the assortment for the breakfast buffet and bread by our self and not the main canteen department."*

Teacher from transport & logistic department is commenting on the choice of some students: *"I don't understand how they can afford it. They use kr.30-40 on nothing. And then in the morning they buy soft drinks and energy drinks and feed of that during the day. I have students who really need to eat healthy. They are unfocused in the classes and have either too much energy going on or have no energy what so ever. They are just collapsing and lying around all day either in a chair, over the desk or in the classroom sofa. They hardly stand up doing the day at all."*

### **Lunch buffet**

A group of 4 students enter the 'buffet room'. There are only one or two people in the room and the newly arrived students scatter themselves around the room. First they look collectively at the 'cold dish buffet' and straight after they look at the 'hot dish counter'. They scatter around the room and

each student picks up a plate and goes for different food choices. A bit later two students enter the 'buffet room' and they also look first at the 'cold dish buffet' and then at the 'hot dish counter'. One starts to queue up for the hot dish and the other lingers a moment but chooses then to follow his classmate with a hot dish.

At lunchtime a canteen staff member are being carefully to arrange the bowls in the salad buffet by choice of color. So that it the same color is not placed next to each other and therefore gives a variety in the visual impression "I think it look more nicely this way" she says.

4 students enter the 'buffet room' and start looking around. One student glances briefly at the salad buffet while mumbling: "salad, that's for girls". One of his classmates looks at him with a little smile.

The white serving trays has now been removed for the *hot meal serving area* for several days and Canteen staff member is commenting: "*You (Trine) have saved us for a lot of washing up, hardly any customer are now using the trays.*"

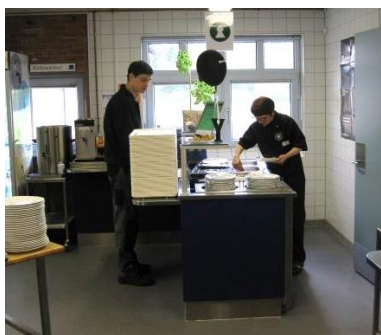


Photo E, Trays at hot meal serving area, old placement, 8<sup>th</sup> May 2014



Photo F, New placement of trays, 21<sup>st</sup> May 2014

Every day during lunchtime at around 11:40 am the canteen staffs are cleaning the floor in the kitchen. Through the open door to the buffet room this can be observed and a strong smell of cleaning detergent is overpowering the smell of food.

The buffet room doesn't often get crowded since the lunch time is spread out. On days with many extra courses activities the buffet room seems to get crowded since many of the adult course participants are choosing to buy their lunch at the canteen. With 17 people in the buffet room it seems much crowded and people are starting to be quieter the people are entering the room. A small group of student are entering the room but one person is heading straight out again with a comment: "*scary, the crowd of people in here*".

The 'dish of the day' is a variety of home-made pizza with mixed green salad and dressing. The canteen staff is slicing and serving the pizza. The size of the pizza are so large that there I there is no empty space available for salad on the plate. The mixed salad is therefore served in a large bowl accompanied by small 20 cl self-served bowls. Not many students are using the salad bowls. Some students dish salad on the top of the pizza and ad dressing on the top. The salad is composed by



Photo G, Serving bowls for mixed salad,  
13<sup>th</sup> May 2014

UCH main kitchen and so are the pizzas. The pizzas are though baked on site at bastrupgårdsvej in order to be fresh out of the oven for the customer and also to add the smell of pizza to the atmosphere in the canteen. Once the salad bowl is empty the canteen staff mixed up a new portion according to their own choice and the selection of fresh product available that day.

Every day at lunchtime there is a small-talk at the 'hot dish counter' between students and the canteen staff member who dish up the hot meal. There is no other canteen staff member working on the floor in the 'buffet room'.

The canteen staff are often bold enough to give the student a cheeky comments on their food choice like: *"and now you're going to take some salad with that dish ... right?"*. To which one student reply with a smile *"yes, of course"*.

2-3 students are standing in queue at the 'hot dish counter'. The canteen staff is asking one student of he want a small or a large portion of food. The student respond looking at his classmates: *"I'm sure not having a small one"*.

When teacher and students are entering the buffet room they are always greeted with a warm, heartfelt and light *"Hallo"* from the canteen staff. During lunchtime the canteen staff at the 'hot dish counter' greets students and teacher not only with at hallo but also with announcing the 'dish of the day': *"Hallo, we have meatloaf today"*, this is accompanied with a sincere smile.

### **Afternoon buffet**

Student and teachers are entering the room with an attitude that is both calm and has some expectations. Many students inspect the assortment of cakes very carefully before choosing their cake.

A student with a fresh and energetic attitude enters the room and goes determinedly for the basket with fruits and vegetables. He picks up 3 bags of carrots (3 for kr.10) and continued with a smile for the checkout. After paying for his carrots bags he put them casual in his large side pocket on his working trousers.

During an afternoon break fruits and vegetable were not placed at the buffet table. There for the buffet only content different kinds of cakes. F & V were however placed at the checkout which were 10 m away from the buffet. During the last minutes of the break a small dialog arouse on this matter: the canteen apprentice commented with a friendly curious inquiring mind *“Why didn’t we also place fruit at the buffet?”*. The other staff member are commenting with a smile *“yea that right, that is because ‘no-name’ wasn’t here today, she is always good at making ensure the fruits is on place”*



Photo H, Afternoon buffet with fruits and vegetables,  
21<sup>st</sup> May 2014



Photo I, Afternoon buffet without fruits and  
vegetables, 13<sup>st</sup> May 2014

During the afternoon breaks a sweet smell of vanilla and marzipan welcomes the students when the look at the cake buffet.

One of the cakes on the buffet is completely green in the color. Students are joking with each other saying it looks poisoning. One of the students takes a piece and the two are following their classmate.

2 students are standing with their plates in their hands and trying to figure out what to choose from on the buffet. One student make a comment about the assortment: *“‘The keyhold’ doesn’t taste of anything”*.

## Checkout area

### The placement of sweets followed by more exposure on fruit and vegetables

20<sup>th</sup> May. The canteen staff member working mainly at the checkout is making comments about that since the sweets has been removed, the sale of fruits and vegetables has gone up. *“It has caught the attention of somebody that fruits and vegetable doesn’t normally do”*. The staff can see that the sale of also smoothies has increase since the better exposure: *“The smoothies have been flying over the counter”*

One staff member is commenting while smiling proudly to me: *“I really think it works with the new placement of sweet, this morning I have only sold one ‘Kinder Bueno’”*.

Canteen staff is commenting to me on the new placement of the sweets away from the checkout. She is clearly happy with change and seems proud to make the announcement to me. She is making reflection on how the change has influence the sale at the checkout:

*“It’s just crazy how little sweets we are selling now after the new placement. And now theses new homemade smoothies, yesterday we sold a lot of them. And they were placed where the sweets normally are placed here at the checkout. And if the sweets where still here there wouldn’t have been the same place for the smoothies. They would have ‘drowned’ in our large assortment of sweets and maybe we would have placed the smoothies in the fridge and then not many would have notice them. The sale would definitely not have been the same.”*. Another canteen staff member are also joining in and smiling at the comment her college has made.



Photo J, Checkout 21<sup>st</sup> May 2014

On the 4<sup>th</sup> June, the sweets are now placed on a shelving unit which is placed next to the check out. The shelving unit is a little bit rough in the finishing on the top, like it is meant to have a signpost at the top. The shelving unit looks in overall nice and the assortment of sweet is presented more clearly.



Photo K, Checkout, 4<sup>th</sup> June 2014

The shelving unit comes from the canteen storage and it therefore not a newly bought unit. The canteen staff has only once before mentioned this unit and their intention with it.

The staff is content that they have retrieved it and at the same time content that the trolley is now released for other purposed. The staff is clearly content that the sweets now can be displayed more clearly and therefore provides a better service to their customer.

The canteen staff tells me: *“Yes, it looks so much better now. And many customer are happy that we have brought if forward again”*. The sale of sweets has been increased since the new placement. Nobody from the canteen staff are commenting on the health aspect regarding the increased sale of candy. The staff tells me that several customer has made positive comments regarding the new placement: *“now I can SEE the assortment so much more clearly”* and *“ before it was a bit of a hassle to get to the sweets before”*.

### **General observation**

The canteen staff at the checkout is very interactive with both students and teachers. There is always a smile and often a joyful comment from her. Students seem to be very glad for her and familiar with her comments, and often there are a lot of funny comments from both sides.

Canteen staff is serving 3 students at the checkout. She look at one of them with a cheeky smile and says: *"how about a carrots to go with that"*. The student responds her with a smile.

A small group of students are queuing and talking about what is on their plates. When the reach the counter the canteen staff is adding to their discussion with a smile and an opening line: *"and now it is my turn to say something..."*

During the observation period the staff and I talk about how signs and symbols can help nudge people to do desired behavior. On the arrival at UCH one morning two canteen staff members gladly take me by the arm and proudly show me a new design to the trolley with washing-up dished with added sticker for placing of dishes: "Look what we have done, this is what you talked about. And they (users of the canteen) are almost all placing the plates according to the stickers". During the day some students are commenting with a high voice on the new stickers. One of the canteen staff members join the students and explain the purpose with the stickers. This explanation is done with a warm tone with absolutely no hint of lecturing.



Photo L, Nudging symbols on trolley for dirty dished, 15<sup>th</sup> May 2014

At the checkout a student is commenting on a tray of carrots bags all labeled with 'the keyhold' stickers. He asks the canteen staff member with a bold attitude: *"Are you trying to make us healthy?"*

In front of the counter there is placed a 'digital picture frame'. It contents of a series of a mix of pictures, text and symbols all concerning healthy eating and food product, often added a sense of humour. The series are made by use of pictures etc. found available on the internet. A new series is made approximately every 3-4 week. The production of this series is made entirely by one certain member of the canteen staff, being the staff member who is most often responsible for handling the cash transactions in the canteen. She makes theses series in her free time and finds in a fun task to create a mix of pictures than can draw the customer's attention, make them talk about what they see and draw on a sense of humour.



Photo M, Digital picture frame, 8<sup>th</sup> May 2014

Students are often making remarks on the pictures.

## Conversations with canteen staff and management

### Assortment of food and the students purchase behaviour

The canteen staff are concerned about producing food at strategic moments during the day so there is a smell of food in the buffet area. During the morning the first staff member on work are starting to prepare for baking fresh bread rolls for the breakfast buffet. For lunch time dishes that need to go in the oven, like meatloaf and roasted pork with crackling, are prepared on site instead of at the main canteen.

Commenting on the choice of menu and the students: *“even if we have burgers on the menu, then we see some students are walking out the door. Sometimes we simply don’t know what there is happening inside their heads. Then we try to have something extra on the menu like a pizza slice, but some will still walk out.”*

*“The vehicle department students often have more money. Especially on their main course they have more money since many have the chances to make some ‘black money’ on the side. They therefore purchase more in the canteen compare to the students from transport & logistics department.”*

Talking with the local manager about making changes in the canteen. *“we do want to (make changes), we see ourselves as a unit and everybody WANT TO and ARE participation in making changes.”. “we all do want to make it, but how to go about it, with the restriction we have and such like.”*

Many times during observations the canteen staff surprised me with making changes from day to day with references to conversations about what I had observed. When confronting them with this observation they responded with the *“The path of tuning thoughts into to actions, isn’t long, if we can change something, then we’ll change it.”*

The canteen staff are concerned with making everything looking nice: *“we try to make it our best... I don’t want to brag but we want it to look nice and we won’t serve anything that we wouldn’t serve at home to private guests.”*

When presenting the canteen staff with my observations on the students behavior and responds on the canteen staffs interaction with the students, the canteen staff are very happy that to hear that it is being appreciated: *“When hearing that it’s being noticed and our ‘hallo’ are so valued, then you really want to do more. It makes a different.”*

### Change in accessibility of sweets

During a 5 week period the sweet have had a less visible placing. This has been changes again back to having a very accessible and visual placing at the checkout. It is clear that the canteen management at this time do not wish to lower the revenue of the sweets by placing by changing its accessibility. The

executive kitchen manager and the local kitchen manager stated that replacement of sweets close to the checkout is a deliberate choice, since there has been a clearly decrease in sale of sweets since it was moved away from the checkout. There had to be a better sale in sweets. Customers had been commenting on the replacement: “oh this is nice, now we can really see the assortment”.

The local kitchen manager stated that they will cut down on the variety in sweets when making the next order after the summer holiday. In this way the variety will be smaller, but still suite the customer’s needs. The executive kitchen manager state the financial matter is a balance between what they should do for a healthy canteen and still maintain an assortment than gives a good enough sale.

### Conversation with teachers and pedagogical management

Comments from teachers: *”those energy drinks, they (students) are simply out of control when they drink them”*. This is said accompanied by head shaking movement.

One teacher expresses her concern about the fit of her student. She explains that during yesterday activity lecture at a training field only one student were fit enough to run the course of 1 km with her. Some students were struggling with running 300m. *“They simply ‘hit the wall’ and collapsed. They can’t feel their body. They think when it hurts a bit then it’s dangerous for their body and they stop. Many are not use to felling that their muscles are being used and mistakes the feeling for danger.”*

The same teacher expresses her concern about the whole healthy vocational college project. She is concerned about that a lot of written information to her students won’t work. *“It just won’t work my students are so visual orientated so pictures are needed. I do hope that the project group won’t come up with lots of reading stuff and boring lecture for my students”*.

Teacher and pedagogical manager are often expressing their thought on the collaboration with the canteen and on how sincere the canteen wish to make changes to become a healthier canteen. They are especially thinks about the canteens willingness to make changes in the assortment of soft drink, energy drinks and sweets. *“The think too much on their sale instead of being open to make changes”*.

*”I think the canteen really needs to dare a bit more. They are so afraid for their sale and don’t dare to make too many change. Take the assortment of sweets and soft drinks, I ask myself why do have sweets, soft drinks and energy drink in the first place. In my opinion they don’t belong at a school”*.

*”They (canteen) keep it on the safe side and don’t dare to change too much”*.

## INTERVIEW AND OBSERVATIONS DURING INTERVIEW 1, STUDENTS

Interview with: Vehicle departments students from UCH, Martin-E1, Steven-E3, Nick-E2.

Place for interview: UCH, gang område og kantine

Date for interview: 20. maj 2014

Interviewer: Trine Heilmann-Hansen

Transcribe by: Trine Heilmann-Hansen

Interview duration: 26:52 min.

1 00:00

2 I: Går I normalt samme med andre elever ned i kantinen? Alle sammen når I slutter. Går I  
3 alenen?

4 S: det er meget forskelligt. Normalt er vi 2-3 der går sammen, dem som vi er samme med på  
5 værkstedet. Det er de teams som vi arbejder i. Nogen gange er vi sat i dem af Lars (underviser)  
6 og nogen gange må vi selv bestemme.

7 I: Hvor mange er I på holdet?

8 E: 17 elever.

9 I: Er der rart at have selskab når I spiser?

10 E: ja, det er dejligt, Det er så kedeligt at sidde der alene. Hæ Hæ. Jeg bor alene, så der spiser  
11 jeg alene. Jeg er vant til at spise alene. Så her har jeg mulighed for selskab når jeg skal spise.

12 I: Hvorfor er det mere spændene at spise samme med andre personer?

13 E: For der har du nogle at snakke med. Så der sidder du ikke bare og glor. Normalt sidder jeg  
14 Der hjemme og ser fjernsyn når jeg spiser, så er det hurtigt overstået.

15 01:57

16 I: Nu nærmere vi so kantinen. Har I allerede besluttet jer for hvad I skal have at spise når I  
17 Kommer her?

18 E1: Det gør jeg ikke. Jeg skal først lige se hvad der er af varmt mad i dag. Og hvis jeg ikke gider  
19 det, så tager jeg bare noget andet. Men jeg bor på skolehjem, så jeg spiser bare altid herover.  
20 Så prisen på middagsmaden betyder ikke så meget for mig (den er betalt gennem skolehjem).

21 I: Læser I menu? Kigger I på den inden I går ind?

22 E1: Ja, jeg skal bare lige se hvad der er.

23 E2: Nej, jeg går bare ind og ser hvad der er. Fro det meste går jeg ud igen. Jeg synes ikke jeg gider  
24 betale for det. Så jeg har madpakke med hjemmefra. Eller også går jeg ud og spiser ude i byen. Og  
25 vi kan godt nå det i frokost pausen.

26 I Hvor opbevare I maden hjemmefra?

27 E: Nogle gange har vi det i køleskabet. Andre gange har vi det bare i tasken. Hvis nu det bare er  
28 rugbrød og pålæg så behøver det jo ikke komme i køleskabet.

29 I: Selvom I har madpakke med går I alligevel i kantinen og spiser den?

30 E: ja det gør vi. Vi må ikke spise den på klassen. Det foregår inden i kantinen altid.

31 03:56  
32 Hvordan påvirker lugten af maden jer når I skal vælge maden? Eller er det mere synet af maden  
33 som er afgørende for jeres madvalg?  
34 E2: jeg tror det mest er synet, sådan har jeg det i hver til fald. Det er mere synet.  
35 E1: jeg ved ikke rigtigt hvordan jeg har det. Jeg har det sådan at når det er nyt mad. Så skal jeg  
36 lige se det an.  
37 I: Hvad skal der ske for at du prøver noget nyt?  
38 E1: I det mindste noget jeg kender. Hvid det lyder voldsomt hvad den indeholder. Så kan jeg måske  
39 godt tage den. Nogen gange jeg bare se hvad der er i og det vurdere jeg udefra. Og det er de fleste  
40 gange nok.  
41 05:37  
42 I: Hvordan vælger I drikkevarer?  
43 E: det er noget vi har lyst til når vi kommer ind i rummet. Jeg planlægger i hver tilfald ikke hvad jeg  
44 skal drikke. Jeg går bare ind. Så går jeg ind og tror jeg skal have cola og så kommer jeg ud med  
45 faxe kondi.. hæ hæ.  
46 06:32  
47 I: Ser I de forskellige ting her ud på døren, lægger i mærke til at de skifter.  
48 E: det er kun menuen de plejer at skifte. Eller er det opskriften og hvad de nu skriver på tavlen  
49 som jeg ser efter. Det plejer at være dagen smil.  
50 07:16  
51 I: I sagde at nogen gange tager I ud i byen og henter noget mad. Er det noget I går alene eller er det  
52 mere gruppevis. Hvordan beslutter I jer for det?  
53 E2: Vi beslutter det i løbet af dagen, og nu vil vi ud og spise. Vi taler om det normal tom det i løbet  
54 af formiddagen. Hvad så skal vi ud og spise?  
55 E3: Jeg plejer bare at tage en sandwich der hende i køledisken. Det er mere fast hav jeg spiser. Så  
56 ved man hvad det er. Jeg ved ikke rigtig hvorfor, jeg spiser den bare.  
57 10:04  
58 Observation: Døren til kantinen åbnes. E3 går målrettet og tager en sandwich. E2 stiller sig op og  
59 kigger lidt rundt, på det varme og det kolde. E1 stiller sig ved det varme. Og spørger ind til dagen ret  
60 'dish of the day' (wrap) Wrap er i dialog med Sasha (kantine personale) omkring hvad der skal i  
61 wrappen. Kylling, oksekød, salsa, guacamole.  
62 12:27. Vi sætter os ned.  
63 Observation: Steven spiser en sandwich, Nick endte med en ½ liter letmælk og Martin (skolehjem)  
64 spiser en wrap (dagens lune ret / 'dish of the day')  
65 E: altså man får ikke så meget ud af det.  
66 E2: det er bedre end ingen ting. Jeg synes ikke der var noget. Jeg fik brød her til formiddag. Det  
67 her feder ikke. Altså et rundstykke jeg fik her til morgen, det feder ikke.

68 Observation: andre elever fra holdet som allerede sad ved bordet gør sig klar til at køre efter pizza.  
69 ”skal vi daffe?” . Det har vi ikke godt af, jeg er den enesete som har godt af det fordi jeg er i under-  
70 vægt. Hvorfor tager du så ikke med på pizzerier?  
71 13:56.  
72 I: Hvor tit sker det at I kører i byen og henter mad, pizza og lign.?  
73 E: Hæ hæ , det sker næsten hver dag. Cirka hver dag. Der er en bestemt person som altid kører.  
74 14:39.  
75 I: Hvor stor betydning tror I prisen har for det I spiser?  
76 E2: I mit tilfælde har det stor betydning. Jeg er på egu (skoleydelse).  
77 E3: jeg tænker ikke så meget over prisen, jeg skal bare have noget at spise.  
78 I: Hvad betyder sundhed for jer?  
79 E2: det har det, men sommetider glemmer man det. Men skal jo have en bajer ind imellem.  
80 E1: jeg har det bare sådan at jeg er ligeglad. Jeg spiser det jeg kan lide. Men det er heller ikke  
81 usundt for mig. Jeg dyrker også motion. Al det junkfood, det usunde det kan jeg godt brænde af i  
82 løbet af dagen. Jeg fik også af vide af lægen at min forbrænding og det der....stofskifte, som sker  
83 inden i kroppen. Det er ca. dobbelt så hurtigt end normalt mennesker som dig. Det er højere end  
84 f.eks. E2. Så derfor kan jeg være ligeglad med hvad jeg spiser. Man skal også bare kigge på os.,  
85 griner lidt og ser på E2, som også griner.  
86 16:42.  
87 I: Hvad med det ’gode liv’, er det noget som er mere vigtig for jer? Hvad er et godt liv for jer?  
88 E2: det er vel at du kan gøre hvad du vil, uden at du kan gøre dig nogle tanker om hvad der sætter  
89 sig på sidebenet. Og sådan  
90 Observation: E1 og E3 griner lidt af E2 kommentar og siger  
91 E3: spis spis!  
92 E2: jamen det gør jeg også.  
93 I: Synes I selv I lever et ’godt liv’?  
94 E3: jeg gør ikke.  
95 E1. Jeg gør ikke. Jeg spiser al det jeg vil spise. Jeg ryger, ikke helt vildt sundt synes jeg. Og jeg  
96 overvejer også snart at holde op med al det der dårlige, spise lidt mere sundt og stoppe med at ry-  
97 ge.  
98 I: Hvorfor overvejer du al det?  
99 E1: Når jeg f.eks. skal ud og løbe, jeg kan ikke løbe mere end 200-300 m uden at jeg skal stoppe  
100 for så kan jeg ikke trække vejret ordentligt.  
101 E3: Henvendt til E1- jeg troede du var i god form.  
102 E1: Jeg er i god form, jeg kan bare ikke løbe.  
103 E2: men det er ikke i god form, når man ryger. Det kan ikke lade sig gøre.  
104 E3. har du prøvet at løbe så?  
105 E1: det er også det der med spisning, jeg skal passe på en lille smule. Jeg har tidlig tegn på suk-  
106 kersyge. Jeg skal lige passe på en lille smule. Det der med sukker syge kan jeg ikke undgå, for min

107 far. Alle mænd har det. Jeg kan nok ikke undgå det, men jeg skal bare ikke have det når jeg er 19.  
108 det gider jeg ikke.  
109 20:04  
110 I: Bliver du ikke sulten når du sidder der og ser dine venner spiser og du kan lugte maden (hen-  
111 vendt til E2).  
112 E2: Nej, jeg er vant til det. Det kommer an  
113 Derhjemme gider jeg heller ikke lave mad. Jeg gider ikke, jeg gider ikke når det kun er en om det.  
114 Så bliver det bare noget rugbrød og såen. Så det skal være hurtigt, f.eks. spaghetti og kødsovs og  
115 sådan.  
116 I: Bor du alene?  
117 E2: Ja, jeg bor alene.  
118 I: Er der mange af jer der bor alene i klassen.  
119 E1: Der er kun max 5 personer på holdet. En bor sammen med sin kæreste, og nogle bor på skole-  
120 hjem.  
121 22:02  
122 I: Her i kantinen hænger I masser af plakater, som 'Herrefedt' kampagne og nøglehullet. Ved I hvad  
123 nøglehullet står for?  
124 E2: Neejj  
125 E3: Min mor arbejder i et køkken, så jeg spiser det som der er (tilstede).  
126 E2: ved du hvad nøglehullet står for (henvendt til E1)  
127 E1: det er noget sundhed noget. Man tager ikke så meget, Det er om det modsatte af hvad du spi-  
128 ser (henvendt til E1) mindre kød og sådan. Spiser mere sundt.  
129 E2: Jeg spiser også sundt nogen gange.  
130 I: Hvad er sundt for dig, at spise sundt.  
131 E2: det er en skålfuld salat, men så er problem at jeg bagefter hælder en hel masse dressing på. Og  
132 så noget sovs og kartofler til. Og måske en bøf og sådan. Det kunne være et sundt måltid.  
133 I: Hvad er et usundt måltid så for dig?  
134 E2: Det er nok en tur på Burger King eller McDonald's.  
135 E1: jeg kan sige endnu mere. Usundt er f.eks. også krydderier og fedt. Og så McDonald's burger,  
136 der er al for meget krydderier, salt og fedt.  
137 24:00.  
138 I: Hvad med her over i kantinen, der er jo forskellige 'hapse ting' slik, grønsager og sådan. Køber I  
139 nogle gange det og tager med ned på værkstederne?  
140 E3: Vi må ikke spise på værkstedet, så det giver sig selv. Det må vi ikke.  
141 E1: Men der er nogen som gør det. Nogen gange hvis vi sidder med opgaver, så har vi bare brug for  
142 noget sukker. Så tager vi noget slik og spiser det.  
143 E2: Jeg køber det en gang i mellem, men det er yderst sjældent.  
144 25:31

145 I: Hvordan har I det med damerne der arbejder her i kantine. De snakker jo til jer hele tiden, hvor-  
146 dan har I det med det?

147 E3: Det er OK. Det gør det lige lidt sjovere når jeg går op og skal købe noget i stedet fro at de lige-  
148 som bar står holder deres kæft. Så er det altså lidt sjovere at hun siger noget.

149 E2: ja det er lidt sjovt. De går heller ikke for tæt på. Det er OK.

## INTERVIEW AND OBSERVATIONS DURING INTERVIEW 2, STUDENTS

Interview with: *Transport & Logistics* dept. student from UCH. (S1, S2 and other students (S) during second interview)

Place for interview: Class room, training courtyard, canteen and corridors at UCH

Date for interview: 21. May 2014

Interviewer: Trine Heilmann-Hansen (I)

Transcribe by: Trine Heilmann-Hansen

Interview duration: First interview 15:20 + Second interview 26:38

1

### 2 **First interview**

3 01:03

4 I: Hvad er det du gerne vil ud os se? (snak om uddannelsesvalg til chauffør)

5 S1: Jeg vil gerne ud og se verden. Altså Danmark.

6 *Small talk between interviewer and interviewee*

7 02:50

8 I: Hvornår har normalt frokost pause?

9 S1: det ved jeg ikke rigtig, jeg spiser aldrig noget.

10 I: Hvad gør du så?

11 S1: Jamen ingen ting.

12 I: Spiser du så noget om formiddagen eller morgen?

13 S1: Nej, overhovedet ikke. Det er sgu sældent jeg spiser jeg spiser mormorgenmad og middagsmad.

14 Jeg plejer først at spise når jeg kommer hjem engang. Så nu her går jeg og hjælper min far, herude  
15 i Holstebro. Så går det jo lidt stærkere at komme hjem til mad. Så jeg går ikke og er sulten.

16 *Small talk about the arrival of the other students and what they studie.*

17

### 18 **Second interview**

19 01:

20 *Small talk between interviewer and the two interviewees on the way down to the canteen*

21 01:42

22 I: Hvor tit går I i kantine for at købe og spise noget?

23 S1: Det er fandeme sjældent. Jeg spiser bare ikke ret meget, jeg er ikke sulten.

24 S2: Jeg går der næsten hver dag.

25 Observation: The sound of slow and dragging footstep from the students fill the hall way.

26 Observation: Enter the canteen area. A lot of noises from people talking and mostly from the plates  
27 and cutlery.

28 Observation: E1 is just looking around, with a trivial expression on his face. E2 get two chocolate  
29 buns from a basket, while commenting:

30 S2: jeg skulle bare have noget hurtig. Jeg har jo fået stor morgenmad. Jeg spiser aldrig så meget i  
31 løbet af dagen.

32 I: Hvordan går i kantine, er det alene eller i grupper?



33 S2: Vi plejer at gå sådan lidt i grupper, når vi endelig går derned ik? (henvendt til S1)

34 S1: Jo, jo, jo. Fuck hvor går du langsomt (henvendt til S2, som har en fodskade)

35 Observation: The corridors from the canteen back to the classroom is silent compare to the vibrant

36 canteen environment. The corridors acoustic is bad and you can hear footsteps very clearly.

37 S2: jeg spiser faktisk kun rigtig i weekenden. For så er der morgenmad, frokost, mellemmåltid og

38 aftensmad. I hverdagen er det morgenmad, snack, som en chokoladebolle, eller en anden snack

39 ting, så aftensmad eller guf sent aften.

40 S2: Jeg har også to børn jeg skal tage mig af. Så i hverdagen spiser jeg aftensmad med ungerne når

41 jeg kommer hjem. Jeg spiser sundere når jeg er med mine børn.

42 05:22

43 Back in the classroom more students are gathering around to join in on the interview. The stu-

44 dents are encouraging each other to join the interview. Small outburst of laughter and friendly

45 teasing among the students. A group of 6-7 students gather around a cozy sofa setting in the class-

46 room with the interviewer.

47 07:01

48 I: Hvor tit bruger I kantinen?

49 S: det er al for dyrt. Det er dyrt i forhold til hvad man kan få alle mulige andre steder. Det er fri-

50 stende for dem som har bil, for så tager de lige på Burger King eller McDonalds, der for man mere

51 for pengene.

52 I: Så hvordan synes i prisen i kantinen påvirker det?

53 S: Prisen har rigtig meget at sige. For kr. 27 så får du sådan en lille sandwich med to stykker ba-

54 con i. Eller i går var der wraps. 28 kr. for en. Og en mætter ikke. Pisse dyrt.

55 S: Du kan køre på Burger King og få en cheeseburger for en 10'er.

56 S: Når ja, men så er der også dobbelt så mange kalorier i.

57 S: Ja, ja, men det smager godt. Så det er ligegyldigt.

58 S: Hvornår er du begyndt at gå op i kalorier.

59 S: ja, det spørg jeg også mig selv om... hæ hæ.

60 S. det 'cult' der er der mange kalorier i.

61 I: Hvad er sundhed for jer?

62 S: Når der kommer dressing på så går sundheden jo ligesom lidt af det hele. Om det er fedtfattigt.

63 I: Er det vigtig at det er sundt for jer?

64 S: Nej, det er mere vigtigt at der er et udvalg. Fordi hvis jeg går derop, og jeg ser der kun er salat.

65 Så vil jeg hellere bare tage noget at drikke og så går ned i klassen. Men hvis der f.eks er noget kød,

66 også salat. Så kan jeg godt tænke, "når noget kød og så salat. Så kan jeg godt finde på at tage no-

67 get salat. Men det skal passe sammen.

68 S. De har haft sådan nogle frikadeller med noget grønt i. Porre eller sådan noget grønt i. der var

69 feta i, føj for satan.

70 S. Der må gerne være et udvalg i kød, så det er mere.

71 S. det er sgu så dyrt at købe sundt. Det er helt vildt. Det er jo derfor at folk går ud og køber chips  
72 og sådan. Hvad koster et salat hoved ? 25 kr. Og 6 kr. så har du en pose chips.

73 S: Men det mætter jo ikke.

74 S: Når ja, hvis det så er et økologisk salat hoved så koster det 30 kr.

75 S: Hvem siger du skal spise økologiske.

76 S: Det er åbenbart sund med sundt. Jeg forstår ikke hvorfor det skal være så dyrt at spise sundt.

77 S: Økologisk er uden sprøjtemiddel. Og de har brugt længer tid på det. Pga

78 S: Men det er jo derfor at mange ikke gider spise sundt. Så er det billigere at spise usundt. Så kan  
79 du købe en billig sovs og kværne en mælk i. Men det er jo ikke sundt. Har du set hvad majs koster.  
80 Det er sgu dyrt. Så det er derfor at jeg ikke spiser ikke særlig meget sundt, det er for dyrt at købe.

81 S: Men du gider heller ikke stå og skærer.

82 S: Nej, det gider jeg ikke det skal være færdig lavet og koste en 10'er. Så skal jeg nok købe det.  
83 Men jeg spiser ikke så meget burger og sådan. Det smager godt, men det mætter ikke.

84 S: Men når man har en vis størrelse så skal man altså spise noget der mætter. Jeg har også altid  
85 fået af vide at man skal spise kød, for det giver energi og sådan. Det der med at spise sundt og så  
86 bliver man vegetar, fedtet på kødet kan du jo bare skærer af. Men på en flæskesteg er det altså  
87 sværene der smager godt. Og på kylling er det skindet.

88 S: Nej, skindet er bare for ulækkert.

89 S: Fedtet sidder i smagen.

90 S. Det er altid i julen man tager på. Øl feder rigtig meget og snaps.

91 13: 07

92 I: Hvor mange af jer går i kantinen og spiser?

93 S. Jeg har faktisk tit madpakke med. Efter regler må vi faktisk ikke spise herved i klasserummet. I  
94 dag var jeg faktisk op og købe to pølsehorn. De smagte ikke godt, men jeg var sulten. Der er tit ikke  
95 noget smag i det.

96 S: jeg kan tit godt gå en hel dag uden af spise.

97 S: Jeg venter også tit til at jeg kommer hjem. I perioder kan jeg bare ikke spise. Når det nu her er  
98 varmt, så kan jeg bare ikke. Jeg kan godt drikke noget mælk eller vand eller koldskål. Men jeg skal  
99 ikke have noget som jeg skal tygge, det kan jeg bare ikke overskue.

100 S: jeg gider ikke smører madpakke når jeg står op, og jeg gider ikke om aften. Så derfor gør jeg det  
101 når jeg kommer hjem. Så derfor har jeg aldrig madpakke med.

102 S: jeg har aldrig noget spændene i køleskabet derhjemme, så det er rart af få noget her.

103 14:41

104 I: det lyder som om at I alle kan have nogle dage hvor I ikke spiser og så er der også nogle som har  
105 madpakke med eller mad fra kantinen. Hvordan synes I at jeres klasse kammerater påvirker hvad I  
106 spiser?

107 S: der er mange som ikke spiser noget, de drikker bare cola. Og energidrik. Det er det som vi er  
108 baseret på, det er energidrik ... hæ hæ.

109 Observation: Mange stemmer i og små griner.

110 S: Vi har en affalds sæk over i hjørnet, den bliver tømt mandag morgen og fredag er den fyldt igen.  
111 Der er flasker, dåser og sådan i den. Nogen gange går der lidt mere end en uge. Cult, cola, energi  
112 drik.  
113 S: Jeg har været god til at ligge i.  
114 S: Jeg er ved at få lidt hold på det igen. Altså det er ligesom alkoholiker de skal have 30 bajer om  
115 dagen, sådan havde jeg det med 'cult' næsten. Jeg drak 4-6 liter om dagen. Til sidste begyndte jeg  
116 at få hjertebanken, så var jeg godt klar over at nu skulle jeg til at få hold på det. Og så kunne jeg  
117 holde mig vågen i 24 timer. Men kan godt mærke at man ikke kan koncentrere sig så meget. Jeg fik  
118 ikke rigtig noget at spise, det eneste jeg fik var bare det der 'cult', såå. Jeg kan godt lide at få en i  
119 gang imellem nu, jeg skal bare passe på, det ikke bliver...  
120 S: Det kommer også an på hvad du drikke, noget kan man bare fyrer sådan en kasse af, og andre  
121 brænder mig i halsen efter to stykker.  
122 17:20  
123 I: Når I går i kantine hvor dan går I så derned, alene eller i grupper eller?  
124 S: For det meste i grupper, så spørg man "er der nogle som skal i kantinen?". Og så går man sam-  
125 men.  
126 S: Nogen dage gider jeg ikke folk, så går jeg alene.  
127 I: Ved I hvad I vil købe når I går i kantinen?  
128 S: Man kigger lige hvad der er, om der er noget der frister. Ellers går man bare igen.  
129 S: jeg synes det er rigtig meget usundt dernede. Men så kan man købe de der 3 poser til en 10'er.  
130 Gulerødder og sådan.  
131 S: de er sgu da ulækre da.  
132 S: Hvor sælger de slik når det er en skole som snakker om sundhed hele tiden. Jeg ser at de er  
133 nogen som går op og spiser 'kinder kiks', det er bare ulækkert.  
134 S: Helt ærligt, drik noget vand, og så tag dine ADHD piller samtidig, så kan det være du kan slappe  
135 lidt mere af.  
136 *Small talk about energy drinks.*  
137 20: 10  
138 S: de skal ligesom starte med sig selv (skolen). Hvis de kan sige til mig at jeg skal være mere sund  
139 og jeg er blevet lidt fed, så synes jeg de skal starte oppe i kantine. Altså ved at stoppe med at sælge  
140 al det usunde i kiosken (kantinen). Men de er nok bange for den indtjening der kommer.  
141 S: Tror du virkelig der kommer så mange op i kantine, hvis de stopper.  
142 S. Nej, men det er jo en start.  
143 S: men det er jo ikke andet end at vi ligger tæt på et supermarked eller et andet sted hvor vi kan  
144 købe det, hvis man vil have det skal man nok finde det. Men det er jo bare nemmer hvis det ligger  
145 let fra hånden (kan købes i kantinen)  
146 S: det vil dø hvis de fjerner al det usunde. Men jeg troede ikke det var planen.  
147 S: de vil skyde sig selv i foden hvis de fjerner al slik.

148 S. Efter sommerferien, skal vi til at gå 45 minutter hver dag. Det gider jeg bare ikke. Hvis nu det  
149 var fitness center, så ja. Men bare at gå. Hvad er det vi skal gå rundt og se?. Så dør den jo også lige  
150 pludselig.

151 I: Hvad synes I at skolen og kantinen vil lave nogle sundhed ting?

152 S: Det må du gerne. Men igen, de skyder sig selv i foden ved at have de usunde sager (til salg i kan-  
153 tinen). Men det mister noget salg. Men det kan jo godt være, at når man så kommer op i kantinen,  
154 så er man lidt sulten og så køber man et eller andet, altså. Men det kommer også an på prisen. Og  
155 det kommer også an på hvad folk vil og sådan. Som sagt så ligger BILKA ikke langt væk herfra.

156 S: Jeg vil mene det er dobbelt moralsk at sælge det usunde, og så sige at vi skal spise sundt. Det er  
157 måske noget med at finde en balance.

158 S: Hvorfor sælge vand! Det burde være gratis hvis de gerne vil have os til at drikke det.

## INTERVIEW GUIDE, STUDENTS

### **Attitudes and belief toward own health and a "good life"**

- Connection between health and a "good life"
- For you and for your classmates
- Which factors do you think indicates a health life
- Health status

### **Beliefs and behaviour toward healthy food**

- What is "healthy food" for you?, knowledge
- Do you believe you eat healthy?
- Is it important to eat healthy for you?, motivations
- Motivations for healthy food/beverages behaviour vs. the less healthy behaviour

### **Social relations (questions and observations)**

- Attitudes toward the canteen staff
- Behaviour toward going to the canteen, alone/with classmates
- Effect of eating with others, the choice of others, the choice in the canteen
- How do they react each other's statement about food, health, dietary behaviour and comments in general

### **Dietary behaviour**

- Behaviour towards eating lunch at UCH
- How, when to decide what to do for lunch,
  - o UCH canteen / fast food outlet / lunch pack / no eating.
- Taste preference, believe about the food at UCH
- "Feel" of hunger
- Drinking habits at UCH
- Cooking at home

### **Accommodations and household form**

- Living alone / with family / UCH boarding house

### **Physical environment at UCH and canteen (observations and questions)**

- What do they see
- How do they orientate themselves in the canteen environment
  - o Corridors
  - o 'canteen entrance area'
  - o "buffet room"
  - o 'eating room'
- Where do they choose to eat their purchased food and beverages
- Are they influenced by the noise in the canteen environment
- Are they influence by the smell from the food
- Attitudes toward the room and products

## UNSTRUCTURED DIALOG AND OBSERVATION WITH CANTEEN STAFF

Dialog with: Canteen staff (CS), UCH

Place for dialog: canteen eating area

Date for dialog: 20<sup>th</sup> May and 21<sup>st</sup> May 2014.

Interviewer: Trine Heilmann-Hansen

Transcribe by: Trine Heilmann-Hansen

Dialog duration: First dialog 17: 58, second dialog 35:05

- 
- 1 CS: Når de unge fra auto kommer tilbage på hovedforløb, så er de bliver de bare store og  
2 stærkere. Og med tatoveringer. Hvor de unge fra lager og logistik bliver store på den forkerte  
3 måde.
- 4 CS: de tager jo en 'lille tur', når de sådan kører afsted i frokost pausen.
- 5 CS: Når vi har mange 'fiske drenge', *grine lidt* altså drenge fra Thyborøn og , de tager gerne  
6 afsted. Men der er jo også vildt langt til hverdag. Så ser vi at de skal lige ud og sådan.
- 7 CS: Men der er mange som bare gerne vil på McDonald's, de kan du ikke gøre noget ved. Det  
8 der branding har bare slået sig fast. Det er umuligt at kæmpe imod.
- 9 CS: Og så når de kommer, så siger de "det er fandme for dyrt", jamen så spørger jeg, 2havd er  
10 for dyrt, i forhold til hvad?". I forhold til hjemme. Men det vil jo altid være dyrere end at spise  
11 hjemme hos familien. Men de tager gerne på McDonald's, og betale ren formue for noget fryg-  
12 teligt at drikke og eledigt mad. Og en time efter er du sulten igen.
- 13 03:07
- 14 I: Nu den her nøglehul kampagne 'Herrefedt' der prøver man at tale håndværker til håndvær-  
15 ker.
- 16 CS: der skulle havde været nogle opskrifter med, som vi kunne lave her i kantinen. De skulle  
17 haft bedre tid til det over på køkkenet (UCH hovedkøkken), så de kunne planlægge det ind. Så  
18 kunne eleverne se det på tallerknerne. Og så kunne vi stå og fortælle om det sammen med  
19 kampagnen.
- 20 CS: Men nu kommer al det her ned (peger rundt i lokalt på kampagne materiale). Og så skal  
21 vi have pyntet op til sommer. Det bliver nu her i denne uge eller næste uge, vi må se hvordan  
22 vi lige gør det.
- 23 I: Hvem køber de smoothies som I har lavet i dag?
- 24 CS: ja, jeg er lidt overrasket, for nogle af dem som normalt er sådan lidt "åhh nej" overfor  
25 frugt. De har faktisk taget nogle af dem.
- 26 CS: men nu kører smoothies jo flere og flere steder, McDonald's, 7/11, tankstationer og så er  
27 det lige som i orden. Og det er bare sådan nogle ting vi er nød til at køre på, altså hvad der  
28 lige er inde. Det betyder rigtig meget.
- 29 04:46
- 30 I: Kunne man spille med det i forhold til udsmykning, altså rollemodeller, og hvad man kalder  
31 tingene. Hvad med at kalde det noget andet end salat bar, måske grønsagsbar?
-

32 CS: Jo, det kan man godt. Det er lige som de vi talt om hvad portionerne hedder. Lille og stor,  
33 og så normal og stor.

34 *Two student passes in the distance and are followed with at comments about cleaning their*  
35 *hands when that are so dirty. There is a small outburst of friendly laughter among the students*  
36 *and the canteen staff on these issues, and the boys succeed in escaping.*

37 06:45

38 CS: Når de kommer op til mig (ved kassen) Altså uanset hvem de er og hvad rang de har. Så  
39 er jeg ikke bleg for at bede alle om at vakse deres fingere. Og vi laver også papir testen på nog-  
40 le af dem, så kan de se hvor beskidte fingere de i virkeligheden har.

41 CS: de har jo al mulige derved til at gøre deres fingere rene. Men der er bare ikke så meget  
42 opbakning fra deres lærer. Så får man ligesom en kommentar "er I ikke på arbejde".

43 CS: Men der er mange som er rigtig gode til at bruge sprit.

44 CS: Ja, man kan blive helt skæv nogen gange når de kommer op til kassen med ny sprittet  
45 hænder.

46 10:23

47 CS: Så var der ham her den anden dag som blev så vred. Han kylede bare tallerken ned på  
48 bordet, så jeg knap nok nåede at gribe den. "det er bare for peperet, det kan man sgu ikke  
49 spise" Jeg svare at vi havde smagt på det, og jeg nåede næsten ikke at sige det færdig så hav-  
50 de han 'smidt' tallerken fra sig. Sådan en opførelse det er lige over min grænse, normalt er jeg  
51 altid sød og smilende, det var jeg også i dag da han kom.

52 11:24

53 CS: ham den bagerste er sammen med en diætist, der er ikke meget sul på kroppen. Så nogen  
54 af dem de er bare tynde og andre de skal passe på vægten.

55 *Small talk about one of the staff member's teenager boys who also see a dietician because of*  
56 *low weight.*

57 13:13

58 I: Hvordan får I grønsager ind I den varme mad og sådan?

59 CS: Alt hvad der kan være fuldkorn, det laver vi med fuldkorn; ris, pasta, wraps. Og alle kød-  
60 retter, der kommer jo revet grønsager i, gulerødder, osv.

61 CS: Men da vi lavede det der skift (indførelse af nøglehullet for godt et år siden). Da var det jo  
62 sådan lidt 'bum, nu er det sådan her'. Men der har ikke rigtig været noget. *De andre stemmer*  
63 *i.* Altså der har lige været nogle enkel med fuldkorns pasta og ris, men det er godt nok sjæl-  
64 dent.

65 *Small talk about how is also is difficult at home, to influence their own children's eating pat-*  
66 *terns.*

67

68 **Second dialog 21<sup>st</sup> May 2014:**

69 CS: det talte vi også om i går, at dem fra lager & logistik bare bliver større på den forkerte  
70 måde.



71 CS: Men jeg synes også der er mange som kommer med deres vandflasker og fylder og, så det  
72 er ikke kun energi-drikke. Men det er jo nok også dem som kommer her lige når vi slutter, det  
73 er jo auto eleverne.

74 04: 10

75 *Small talk about the students comment on the canteen as a place where it is important to eat*  
76 *healthy and on the other hand are selling candy and soft drinks.*

77 CS: Men det er jo ligesom de her kursister vi har. Så synes de at det er vores skyld at de køber  
78 kage, men der er jo gulerødder lige ved siden af, som de bare kan købe. Så selvom det er en  
79 voksen mand på 60 år, så synes de ikke at vi skal friste dem.

80 CS: Og vi høre nemlig jævnligt, specielt a de ældre af, når de lige har halft sundhed (på et  
81 kursus program) så får de dårlig samvittighed hvis de spiser kage og sådan, så er det nemme-  
82 re at det er vores skyld, end at de selv skal tage et ansvar.

83 CS: ja for de vælger ikke anderledes fordi de har haft 'sundhed' på kursus programmet.

84 05:13

85 I: Hvordan tror I de unge har det med at hvem der skal tage et ansvar?

86 CS: jeg tror ikke de tænker så meget over det. Det er mere lyst betonet.

87 CS: Og har de ikke lyst til vores mad, ja, kan vi ikke friste dem, så har de muligheder for an-  
88 dre ting.

89 *Small talk about the students comments on the price level in the canteen.*

90 06:24

91 CS: Og når de så synes at 27 kr. er dyrt for et måltid, ja der er jo ingen der blinker for 22 so-  
92 davand.

93 CS: Jeg tror reklame betyder meget for de unger, de er lige så meget at sige at man har været  
94 på McDonald's eller pizza. Det er bare 'in', men det der mad. Sådan tror jeg det er.

95 CS: Vores 'pizza slice' herinde har ikke samme værdi, som det de kan købe ude i byen. Fordi  
96 det her er kantine, sådan noget.

97 11:18

98 *Small talk about what they are eating plates.*

99 CS: det er også noget vi er blevet opmærksomme på efter nøglehullet, vi forlænger vores kød  
100 med grønsager. Eller rugmel. Vi har lavet forsøg med bl.a. rugkerner. Men om de er startet op  
101 med det (hoved køkkenet) det ved jeg ikke.

102 19:55

103 CS: Nogen gange når vi har svendegilder her, så har eleverne jo gået et i 2 og 3 år. Så ser vi  
104 folk som vi slet ikke har set hernede i kantinen, ikke engang med en madpakke.

105 CS: Ja, det er overraskende.

106 CS: Vi skal have lærerne til at smide dem ud, løse døren i frikvartererne. *Said friendly with a*  
107 *glint in her eye. Small outburst of laughter.*

108 CS: De skal også nå at ryge, så der er jo meget de skal nå i frikvartererne.

109 24:30

110 CS: Vi kan godt mærke at det er de tunge elever vi får her. Også i forhold til før i tiden, da var  
111 de ikke på samme måde.

112 26:04  
113 CS: jeg synes al det sundhed også tager lidt overhånd engang i mellem. Når jeg tænker på  
114 hvad jeg fik med på madpakke, så 'må' min datter slet ikke have det med i børnehaven nu.  
115 *Small talk about food for children and all the rulls there is today*  
116 CS: de skal jo også have noget, det er så dobbeltmoralsk det hele.  
117 28:03  
118 CS: det er også derfor at det er så vigtigt at det er deres eget valg, for man kan jo ikke bare  
119 proppe ned over hovedet på dem.  
120 Small talk  
121 CS: Vi må jo prøve at se hvad de siger. Men det bliver først efetr sommerferien. Vi bestiller selv  
122 de forskellige drikkevarer.  
123 I: Hvad bestiller I selv og hvad kommer fra hovedkantinen?  
124 CS: Slik, drikkevarer, brød, kartofler, ris pasta, indhold til salatbaren. De blandede salater får  
125 vi fra hovedkantinen. Frugt får vi fra hovedkantinen, det er billigere derover. Grønt som gule-  
126 rødder bestiller vi selv hjem. Og har vi lyst til at lave noget som nu her smoothies, så bestiller  
127 vi bare hjem til smoothies. Så det er meget fleksibelt. Så har vi tiden til det, så er det bare at  
128 gøre det.  
129 31: 35  
130 CS: Vi styrer de to automater med soda vand og de varme drikke. Den sidste automat med  
131 slik, det er ikke vores. Det er en som har fået lov til lov til at stille den op og så kommer han  
132 og fylder den op.

## MINUTES OF MEETING: 1<sup>ST</sup> PRESENTATION OF CUSTOMER JOURNEY MAP 1.

**Dato:** 4 June 2014

**Deltagere:** Marianne Bligaard, executive kitchen manager UCH, Lone Birgit Therkelsen, local kitchen manager, UCH Baustrupgårdsvej. Jyta Daugaard Popik, local project coordinator, Hjerteforeningen. Trine Heilmann-Hansen.

**Emne:** 1<sup>st</sup> presentation af analyse resultater via customer journey map, **ideas** for nudging topics.

---

### 1. Vidensdeling af processen.

The partnership project has a purpose to produce a 'best practice report' contain the key experiences from the overall project. Jyta is encourage Lone and Marianne to reflect on the process of the collaboration regarding the 'free breakfast' and the 'nudging'.

### 2. Knowledge sharing of nudging ideas in UCH's canteens

Marianne has on the first meeting talked about the many of the other UCH canteens are very interested in inspiration from Trine. Can the 'customer journey' model be used in the other canteens?

### 3. Canteen opening hours during summer holiday

Last day 27<sup>th</sup> June. Open again XX

### 4. Product: udvikle en ny billig og sund 'hapser'

**Ideas:** During interview and observations with student's shows that many student are looking for small snacks 'hapser', "Grap and go", like small stuffed breadbuns, small sandwiches all included wholegrain. Snack should cost around 10-12 kr. Just like the small 'pølsehorn' already being sold now in the canteen. Additional it can be sold paired up a carrot bag.

### 5. Management control system – cost and revenue / Placering af slik

I en periode har slik haft en mindre synlig placering – dette er dog ændret tilbage igen til synlig og lettilgængeligt ved kassen – til elevernes tilfredshed. Det er tydeligt at kantine ledelsen på nuværende tidspunkt ikke ønsker at ændre placering af slikket fra kassen. Det er måske en proces hvor vi kan få dem til at rykke sig mere og mere i en sundere retning. På nuværende tidspunkt har de rykket sig til at skærer kraftigt ned på deres udvalg af slik. På nuværende tidspunkt er der 18 typer slik.

Lone and Marianne (management group) stated that replacement of sweets close to the checkout is a deliberate choice, since there has been a clearly decrease in sale of sweets since it was moved away

from the checkout. There had to be a better sale in sweets. Customers had been commenting on the replacement: *“oh this is nice, now we can really see the assortment”*.

Lone stated that they will cut down on the variety in sweets when making the next order after the summer holiday. In this way the variety will be smaller, but still suite the customer's needs.

Marianne state the financial matter is a balance between what they should do for a healthy canteen and still maintain an assortment than gives a good enough sale.

## **6. Implementering af nudging forslag**

Mange af Trines ændringsforslag iværksættes øjeblikkeligt af kantinepersonalet. Trine oplever igen og igen at efter en drøftelse af ændringer, så er tingene afprøvet ved hendes næste besøg på UCH. Dette er meget positivt, men kan måske medføre, at det er svært at vurdere, hvad nudging gør ved kantinegæsten, som en måling før og efter opstart i august.

## SALE IN UCH BASTRUPGÅRDVEJ CANTEEN

		Morning	Forenoon	Lunch	Afternoon	All day	Soft drinks
19 May 2014	Units, total/no						45
	Customer, total /no.					318	
	Customer, break/no.	19	128	119	52		
	Sale/kr.	299,00	1.945,00	2.442,50	503,00	5.169,50	934,00
	Sale per customer/kr.	15,74	15,20	20,53	9,67	16,26	
20 May 2014	Units, total/no						58
	Customer, total /no.					351	
	Customer, break/no.	27	119	144	61		
	Sale/kr.	324,00	1.813,00	2.837,00	711,00	5.685,00	1.255,00
	Sale per customer/kr.	12,00	15,24	19,70	11,66	16,20	
21 May 2014	Units, total/no						52
	Customer, total /no.					339	
	Customer, break/no.	27	134	125	53		
	Sale/kr.	359,00	2340,00	3.008,00	427,50	6.134,50	1.076,00
	Sale per customer/kr.	13,30	17,46	24,06	8,07	18,10	
22 May 2014	Units, total/no						52
	Customer, total /no.					297	
	Customer, break/no.	0	15	206	76		
	Sale/kr.	0	182,00	3.906,50	770,00	4.858,50	1.067,00
	Sale per customer/kr.	0	12,13	18,96	10,13	16,36	
23 May 2014	Units, total/no.						37
	Customer, total /no.					288	
	Customer, break/no.	28	141	66	53		
	Sale/kr.	363,00	1480,00	1.684,00	321,00	3.848,00	765,00
	Sale per customer/kr.	12,96	10,50	25,52	6,06	13,36	
		<b>Morning</b>	<b>Forenoon</b>	<b>Lunch</b>	<b>Afternoon</b>	<b>All day</b>	<b>Soft drinks</b>
All 5 days	Units, total/no.						244
	Customer/no.	101	537	660	295	1593	
	Customer, mean 5 days/no.	20,2	107,4	132	59	318,6	
	Sale/kr.	1.345,00	7.740	13.878,00	2.732,50	25.695,50	5.097,00
	Sale per customer, mean/kr.	10,80	14,07	21,75	9,12	16,13	3,20
	Sale per break, mean/kr.	269,00	1.548,00	2.775,60	546,50		

The sale figures are collected through the cash register at *UCH bastrupgårdvej* canteen with the acceptance of the canteen.

## QUESTIONNAIRE

### BASIC COURSE STUDENTS USE OF THE CANTEEN, UCH BASTRUPGÅRDSVEJ

I forbindelse med UCH's projekt Sundere Erhvervsskoler vil vi være taknemlige hvis du vil bruge et par minutter på at udfylde dette spørgeskema. Resultaterne fra spørgeskemaet bliver anvendt til at analysere brugen af kantine faciliteterne på Bastrupgårdsvej.

Returnere venligst spørgeskemaet til din underviser når du er færdig.

1. Hvor ofte handler du i kantinen? Gælder alle indkøb foretaget i kantinen og dens automater.	Sæt et kryds
5 dage om ugen	
3-4 gange om ugen	
1-2 gange om ugen	
3-4 gange om måneden	
Færre end 2 gange om måneden	
Aldrig	

2. Hvor ofte køber du din <u>frokost</u> i kantinen?	Sæt et kryds
5 dage om ugen	
3-4 gange om ugen	
1-2 gange om ugen	
3-4 gange om måneden	
Færre end 2 gange om måneden	
Aldrig	

3. I hvilken pauser køber du ind i kantinen?	Sæt gerne flere kryds
Morgen	
Formiddag	
Fredag formiddag	
Frokost	
Eftermiddag	
Aldrig	

<b>4. Går du i kantinen og spiser frokost, også selvom du har hjemmebragt madpakke med?</b>	<b>Sæt et kryds</b>
Ja, hver dag (hjemmebragt madpakke eller indkøbt i kantinen)	
Ja, 3-4 gange om ugen (hjemmebragt madpakke eller indkøbt i kantinen)	
Ja, 1-2 gange om ugen (hjemmebragt madpakke eller indkøbt i kantinen)	
Ja, 3-4 gange om måneden (hjemmebragt madpakke eller indkøbt i kantinen)	
Ja, men færre end 2 gange om måneden (hjemmebragt madpakke eller indkøbt i kantinen)	
Nej, aldrig	

<b>5. Hvor gammel er du?</b>	<b>Sæt et kryds</b>
16-20 år	
20-24 år	
25-29 år	
30 år og opefter	

<b>6. Indkøb i kantinen</b>	<b>Skriv cirka beløb</b>
Hvor mange penge bruger du cirka per indkøb når du handler ind i kantinen?	
Hvor mange penge bruger du cirka om dagen i kantinen?	
Hvor mange penge bruger du ca. om ugen i kantinen?	

<b>7. Hvilken type bolig bor du i?</b>	<b>Sæt et kryds</b>
Skolehjem	
Lejet værelse	
Egen eller lejet lejlighed	
Bor i eget eller lejet hus	
Bor hos mine forældre	

<b>8. Bor du sammen med nogen?</b>	<b>Sæt et kryds</b>
Ja, jeg bor sammen med en ven/veninde/kæreste/ægtefælle	
Ja, jeg bor med mine forældre	
Ja, jeg bor i bofællesskab	
Nej, jeg bor alene	

<b>9. Hvilken uddannelsesretning går du på?</b>	<b>Sæt et kryds</b>
Transport	
Auto	

Tak for hjælpen ☺

Spønde	1. Hvor ofte handler du i kantinen?						2. Hvor ofte køber du din frokost i kantinen?						3. I hvilken pauser køber du ind i kantinen?						4. Går du i kantinen og spiser frokost, også selvom du har						5. Hvor gammel er du?				6. Indgår i kantinen				7. Hvilken type bolig bor du i?				8. Bor du sammen med nogen?				Køn					
	5 dage om ugen	3-4 gange om ugen	1-2 gange om ugen	3-4 gange om måneden	Færre end 2 gange om måneden	Aldrig	5 dage om ugen	3-4 gange om ugen	1-2 gange om ugen	3-4 gange om måneden	Færre end 2 gange om måneden	Aldrig	Morgen	Formiddag	Fredag formiddag	Frokost	Eftermiddag	Aldrig	Jå, hver dag (hjemmebragt madpakke eller indkøbt kantinen)	Jå, 3-4 gange om ugen (hjemmebragt madpakke eller indkøbt kantinen)	Jå, 1-2 gange om ugen (hjemmebragt madpakke eller indkøbt kantinen)	Jå, 3-4 gange om måneden (hjemmebragt madpakke eller indkøbt kantinen)	Jå, men færre end 2 gange om måneden (hjemmebragt madpakke eller indkøbt kantinen)	Nej, aldrig	16-20 år	20-24 år	25-29 år	30 år og opover	Hvor mange penge bruger du, når du selv køber mad i kantinen?	Hvor mange penge bruger du om dagen i kantinen?	Hvor mange penge bruger du ca. om ugen i kantinen?	Solebelys	Lejet værelse	Egen eller lejlet lejlighed	Bor i egen eller lejlet hus	Bor hos mine forældre	Jå, jeg bor sammen med en ven/veninde/kæreste/ægtemål	Jå, jeg bor med mine forældre	Jå, jeg bor i bofællesskab	Nej, jeg bor alene	mand	Kvinde				
1.01	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	20	0	0	1	0	0	0	0	1	0	0	0	1	0	0		
1.02	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	1	0	0	1	0	0	0	0	0	0	0	1	0	30	30	150	0	0	1	0	0	0	0	0	0	1	1	0		
1.03	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0		
1.04	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	0	20	0	30	0	0	0	0	1	0	0	0	0	0	1	0		
1.05	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	60	130	300	0	0	1	0	0	1	0	0	1	0	0	1	0	
1.06	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	100	0	0	0	0	1	0	0	1	0	0	0	1	0		
1.07	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	1	0	0	0	20	100	0	0	1	0	0	0	0	0	0	1	1	0			
1.08	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	0	1	0	0	0	0	0	0	1	0	1	0	0	0	80	0	0	0	0	1	0	0	1	0	0	1	0	0			
1.09	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	1	0	30	40	200	0	0	1	0	0	1	0	0	0	1	0	0			
1.10	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	100	0	0	0	1	0	0	1	0	0	1	0	0	0	1	0	
1.11	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	1	0	0	0	1	0	0	0	0	20	0	0	0	0	1	0	0	1	0	0	1	0	0	1	0	
1.12	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	60	250	0	0	1	0	0	0	0	0	1	1	0	0		
1.13	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	20	20	50	0	0	0	0	1	0	0	0	1	0	0	1	0	
1.14	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	40	80	80	0	0	1	0	0	1	0	0	0	0	1	0		
1.15	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	45	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	
1.16	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	25	0	0	0	0	1	0	0	1	0	0	0	1	0	0	1	0	
1.17	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1	0	0	42	0	0	0	0	1	0	0	1	0	0	0	1	0	0	1	0	
1.18	0	0	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0		
1.19	0	0	1	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	20	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0		
1.20	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	30	0	0	0	0	0	0	1	0	1	0	0	0	1	0		
1.21	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	15	40	200	0	0	0	0	1	0	0	1	0	1	0	0	1	0	
1.22	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	27	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	1	0
rt & logist Antal	3	22	6	5	4	3	1	2	3	5	7	4	1	4	14	3	11	2	1	1	1	2	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	
	13,6%	27,3%	22,7%	18,2%	13,6%	4,5%	9,1%	13,6%	22,7%	31,8%	18,2%	4,5%	18,2%	63,6%	13,6%	50,0%	5,2%	4,5%	4,5%	4,5%	4,5%	9,1%	0,0%	13,6%	68,2%	22,7%	22,7%	22,7%	22,7%	22,7%	22,7%	22,7%	22,7%	22,7%	22,7%	22,7%	22,7%	22,7%	22,7%	22,7%	22,7%	22,7%	22,7%	22,7%		
2.01	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	40	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	
2.02	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	0	0	0	0	1	0	0	0	0	0	0	0	0		
2.03	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	
2.04	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0		
2.05	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	50	50	50	0	0	0	0	0	1	0	1	0	0	0	0	0		
2.06	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	1	10	30	50	0	0	0	0	1	0	1	0	0	0	0	0			
2.07	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0		
2.08	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	25	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0		
2.09	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	
2.10	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	35	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0		
2.11	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	27	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0		
2.12	0	0	1	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	50	0	100	0	0	0	0	0	0	1	0	0	0	0	0	0		
2.13	1	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	30	50	150	0	0	0	0	0	1	0	1	0	0	0	0	0		
2.14	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	10	0	20	0	0	0	0	1	0	1	0	0	0	0	0	0		
2.15	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	1	0	0	0	40	100	300	0	0	0	0	0	1	0	1	0	0	0	0	0	0		
2.16	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	15	15	30	0	0	0	0	1	0	1	0	0	0	0	0	0		
2.17	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	20	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0		

## STATISTICS ANALYSIS: CONSISTENCY BETWEEN THE EDUCATIONAL DEPARTMENTS AND HOW OFTEN STUDENTS BUY LUNCH IN THE CANTEEN

### Purpose:

The purpose is to establish **how often the students buy lunch** in the canteen and to see if there is consistency between the two educational departments when it comes to buying lunch

### Description:

A Chi-square contingency table is generally used when independency characteristic in an observed set of data needs to be compared.

In this case the comparison is made between the two educational departments to determine if there is a difference in how often they buy lunch in the canteen.

The following hypotheses are given:

$H_0$  : There is no consistency between the educational departments and how often they buy lunch in the canteen

$H_1$ : There is consistency between the educational departments and how often they buy lunch the canteen

### Data: Chi-Square analyse

How often do you buy lunch in the canteen		5 days a week	3-4 times a week	1-2 times a week	3-4 times a month	Less than 2 times a month	Never	Total
Transport & Logistic dept.	Observed	2	3	5	7	4	1	22
	Expected	1.44	3.97	4.33	3.97	3.97	4.33	22.00
	$(O - E)^2 / E$	0.22	0.24	0.10	2.32	0.00	2.56	5.43
	% of row	9.1%	13.6%	22.7%	31.8%	18.2%	4.5%	100.0%
	% of column	50.0%	27.3%	41.7%	63.6%	36.4%	8.3%	36.1%
	% of total	3.3%	4.9%	8.2%	11.5%	6.6%	1.6%	36.1%
Vehicle dept.	Observed	2	8	7	4	7	11	39
	Expected	2.56	7.03	7.67	7.03	7.03	7.67	39.00
	$(O - E)^2 / E$	0.12	0.13	0.06	1.31	0.00	1.44	3.06
	% of row	5.1%	20.5%	17.9%	10.3%	17.9%	28.2%	100.0%
	% of column	50.0%	72.7%	58.3%	36.4%	63.6%	91.7%	63.9%
	% of total	3.3%	13.1%	11.5%	6.6%	11.5%	18.0%	63.9%
Total	Observed	4	11	12	11	11	12	61
	Expected	4	11	12	11	11	12	61
	$(O - E)^2 / E$	0.34	0.37	0.16	3.63	0.00	4.00	8.50
	% of row	6.6%	18.0%	19.7%	18.0%	18.0%	19.7%	100.0%
	% of column	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	% of total	6.6%	18.0%	19.7%	18.0%	18.0%	19.7%	100.0%

8.50 chi-square  
5 df, 0,1308 p-value

Data: descriptiv analyse

### How often do you buy lunch in the canteen



#### Conclusion:

The critical value for a Chi-Square with a 5 degree freedom (5 df) and on a 5% level is found to be 11.070 (Lind, Marchal & Wathen, 2013, p.543).

The decision is that  $H_0$  is rejected if :  $Z_{\text{test}} \geq Z_{\text{critical value}}$

$H_0$  cannot be rejected since the  $Z_{\text{test}} = 8.50$  and the  $Z_{\text{critical value}} = 11.070$

This means that on a 5% level there is no consistency between the educational departments and how often they buy lunch in the canteen meaning  $H_0$  cannot be rejected

This can also be seen on the p-value. If  $H_0$  should have been rejected the test value should on a 95% significant level have been below 0,05. In this case its 0.1308 which also confirm  $H_0$  is correct.

It can be concluded that 6% of the students within the departments *transport & logistic* and *vehicle* buys their lunch 5 days a week.

It can also be concluded that the rest of the student is equally distibuated with 18-20 % on the other groups.

## STATISTICS ANALYSIS: CONSISTENCY BETWEEN THE EDUCATIONAL DEPARTMENTS AND HOW OFTEN THE STUDENTS USE THE CANTEEN

### Purpose

The purpose with this analyse is to establish if there is consistency **how often the students** from departments *Vehicle* and *Transport & Logistic* uses the canteen

### Description

A Chi-square contingency table is generally used when independency characteristic in an observed set of data needs to be compared. In this case the comparison is made between the two educational dept. to determine if there is a difference in how often they use the canteen.

The following hypotheses are given:

$H_0$ : There is no consistency between the educational dept. and how often they use the canteen

$H_1$ : There is consistency between the educational dept. and how often they use the canteen

### Data: Chi-square Contingency Table Test for Independence

How often do you shop in the canteen		5 Days a week	3-4 times a week	1-2 times a week	3-4 times a month	Less than 2 times a month	Never	Total
Transport & Logistics dept.	Observed	<b>3</b>	<b>6</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>1</b>	<b>22</b>
	Expected	4.33	5.41	5.41	3.25	2.52	1.08	22.00
	$(O - E)^2 / E$	0.41	0.06	0.03	0.18	0.09	0.01	0.77
	% of row	13.6%	27.3%	22.7%	18.2%	13.6%	4.5%	100.0%
	% of column	25.0%	40.0%	33.3%	44.4%	42.9%	33.3%	36.1%
	% of total	4.9%	9.8%	8.2%	6.6%	4.9%	1.6%	36.1%
Vehicle dept.	Observed	<b>9</b>	<b>9</b>	<b>10</b>	<b>5</b>	<b>4</b>	<b>2</b>	<b>39</b>
	Expected	7.67	9.59	9.59	5.75	4.48	1.92	39.00
	$(O - E)^2 / E$	0.23	0.04	0.02	0.10	0.05	0.00	0.44
	% of row	23.1%	23.1%	25.6%	12.8%	10.3%	5.1%	100.0%
	% of column	75.0%	60.0%	66.7%	55.6%	57.1%	66.7%	63.9%
	% of total	14.8%	14.8%	16.4%	8.2%	6.6%	3.3%	63.9%
Total	Observed	<b>12</b>	<b>15</b>	<b>15</b>	<b>9</b>	<b>7</b>	<b>3</b>	<b>61</b>
	Expected	12.00	15.00	15.00	9.00	7.00	3.00	61.00
	$(O - E)^2 / E$	0.64	0.10	0.05	0.27	0.14	0.01	1.21
	% of row	19.7%	24.6%	24.6%	14.8%	11.5%	4.9%	100.0%
	% of column	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	% of total	19.7%	24.6%	24.6%	14.8%	11.5%	4.9%	100.0%

1.21 chi-square                      5 df                      .9439 p-value

Observed = the data collected in the questioner. In this case all students within the two depts.

Expected =  $(\sum \text{Row} \times \sum \text{Column}) / n = 22 \times 12 / 61 = 4,33$

$(O - E)^2 / E$  = individual standard deviation

Chi-Square = test size =  $\sum (O - E)^2 / E$

p-value = the critical significance level

#### Data: descriptive analyse

**How often do students make purchase in the canteen,  
both educational dept.**



#### Conclusion

The critical value for a Chi-Square with a 5 degree freedom (5 df) and on a 5% level is found to be 11.070 (Lind, Marchal & Wathen, 2013, p.543).

The decision is that  $H_0$  is rejected if :  $Z^{\text{test}} \geq Z_{\text{critical value}}$

$H_0$  cannot be rejected since the  $Z^{\text{test}} = 1.21$  and the  $Z_{\text{critical value}} = 11.070$

This means that on a 5% level there is no consistency between the educational dept. and how often they use the canteen.

This can also be seen on the p-value. If  $H_0$  should have been rejected the test value should on a 95% significant level have been below 0,05. In this case its 0.9439 which strongly indicate  $H_0$  is correct.

It can also be seen that 20% of the students shops in the canteen 5 days a week. Worth noticing is also that 16 percentiles of the students in the questioner never or nearly never buys product in the canteen.

## STATISTICS ANALYSIS: CONSISTENCY BETWEEN THE EDUCATIONAL DEPARTMENTS AND WHICH BREAKS STUDENTS MAKE PURCHASES AT THE CANTEEN

### Purpose

The purpose with this analyse is to establish **when** the educational departments, Auto and Storage / Logistic **uses the canteen**.

### Description

A descriptive analyse is used for data description.

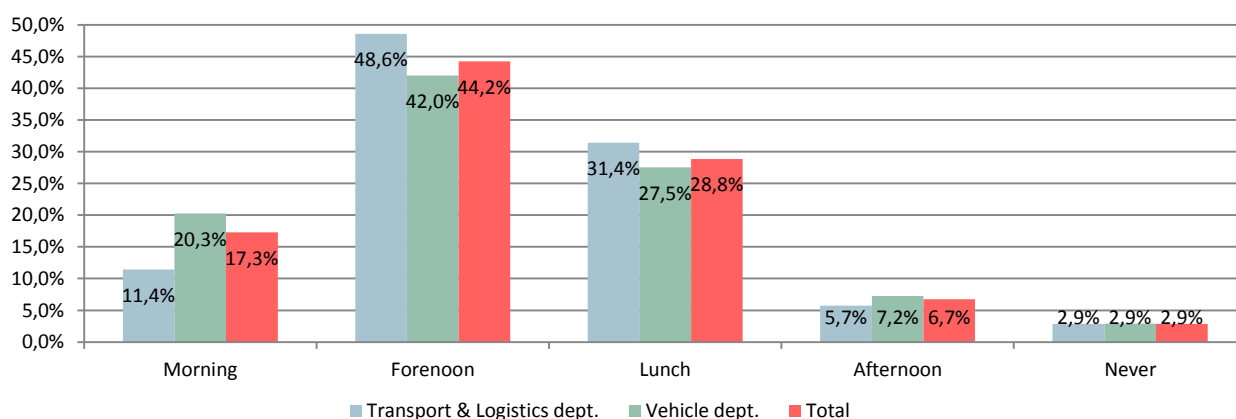
In this case a frequency table is used as a description of which breaks the two braches uses the canteen.

The visits Friday morning is added to the forenoon data.

### Data: Descriptive analyse

In which break does you shop in the canteen	Morning	Forenoon	Lunch	Afternoon	Never	Total
Storage & Logistic	4	17	11	2	1	35
Auto	14	29	19	5	2	69
Total	18	46	30	7	3	104
Storage & Logistic	11.4%	48.6%	31.4%	5.7%	2.9%	100.0%
Auto	20.3%	42.0%	27.5%	7.2%	2.9%	100.0%
Total	17.3%	44.2%	28.8%	6.7%	2.9%	100.0%

In which break does you shop in the canteen



**Conclusion**

It can be concluded that in a weeks visits the forenoon visits count for 44,2 % of all visits with lunch at 28,8% and morning at 17,3% as the next.

The biggest deviation between the two braches is found in morning where storage & logistic is app 6% below the avarage of 17,3% however this is to some exteend justified in the forenoon break where storage & Logistic is app. 4% above the avarage of 44,2%.  
2,9% of the students never visits the canteen.

The frequency table also shows that the differences between the branches and when respectively storage & logistic and Auto visit the canteen can be neglected.

