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Attitude and behaviour in relation to healthier fast food among Danes

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i. Project description

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MSc Thesis

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Aim and objectives:

The aim is to map the Danes' attitude in relation to healthier fast food and to clarify if the Danes want healthier fast food and which initiatives should be taken to obtain products and concepts which the Danes then want.
A second aim is to map the behaviour the Danes exhibit when consuming fast food and to gain insight into which measures could be used to obtain a healthier way of consuming fast food.
One objective is to conduct a questionnaire analysis of the attitude among Danes towards fast food, with emphasis on healthier concepts and alternatives, including the Keyhole symbol.
Another objective is to provide an overview of how the attitude among Danes is related to the behaviour they exhibit when buying and consuming fast food, including a natural experiment set in a fast food outlet.
Final objective is to provide an insight into measures available to selected stakeholders to modify people's behaviour towards a healthier way of life, with particular emphasis on labeling.

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ii. Preface and Acknowledgements

This thesis is the main product of a 30 ECTS point Master's Thesis research project, which was conducted at the Division of Nutrition, the National Food Institute, Technical University of Denmark. This Master's Thesis was carried out from November 2012 till June 2013. The Master's Thesis is a significant part of the Danish Master of Science in Engineering and also marks the end of this degree.

The idea for this thesis came into existence, when I asked for permission to join the "Grønt Udviklings- og Demonstrationsprogram" (GUDP) funded project "SpisVel", concerning the development of healthier fast food concepts.
My motivation for working with the subject is a perception of people always being "on-the-go" and always seeming to be going somewhere, but at the same time people tries to follow mega trends of healthy lifestyle and diet. So how does fast food fit into this "time-chase" and the desire to comply with a healthy lifestyle?

First and foremost I would like to thank my supervisor Anne Dahl Lassen for her close collaboration in planning and conducting the in-store experiment and the development of the online questionnaire, and also for helpful guidance in the making of this thesis. A special thank you to supervisor Inge Tetens for thesis supervision, and to Katja Thomsen, intern at the Division of Nutrition, the National Food Institute, Technical University of Denmark, for assistance in conducting the in-store experiment. Further, I would like to thank Signe Brink Wagner and Sara Helweg-Larsen, McDonald's Denmark, for provision of information and for making the in-store experiment possible. Thank you to the steering group of the "SpisVel" project, for letting me take part in the process and for competent feedback and sparring. Finally, thank you to students, interns and employees at the Division of Nutrition, the National Food Institute, Technical University of Denmark.

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(*Cover photos: Colourbox.com)*

iii. Abstract

The amount of overweight and obese people is increasing worldwide. Overweight and obesity can cause various life threatening diseases and it has been shown that a frequent or high intake of fast food can contribute to increased body weight.

The aim of this thesis is to map the Danes' attitude in relation to healthier fast food and to clarify if the Danes want healthier fast food and which initiatives should be taken to obtain products and concepts which the Danes then want.

A second aim is to map the behaviour the Danes exhibit when consuming fast food and to gain insight into which measures could be used to obtain a healthier way of consuming fast food.

An online questionnaire was developed to assess attitudes and was pilot-tested among 12 respondents. The questionnaire was sent out to a representative sample of the Danish population to map their attitudes. The online questionnaire was analyzed by segmentation of respondents in various ways including; high frequency of consuming burgers, gender, age and health aspects.

Furthermore an in-store intervention experiment was conducted at a McDonald's restaurant in Copenhagen, to assess attitudes and behaviours when purchasing and consuming fast food. An intervention line and control lines were established, where the intervention attempted to make the healthier choices easier to make and more accessible. At the intervention line different measures were taken i.e. cash register-display pointing out the possibility to buy carrots as a side order, menu display showing "green and fiber" options, sales clerk informed about the option to choose between carrots or French fries, spring water or soda, if the customer wanted the burger on a plain or fiber bun, and finally the sales clerk did not ask if the customer wanted the meal upgraded to a large size.

A total of 819 respondents (51 % male, aged 18-65) answered the online questionnaire. No frequent users of fast food/take away were found and typical reasons for consuming fast food/take away were: habit (48 %), appetizing and tempting food (40 %), and reasonably priced food (33 %). Those who did not consume fast food/take away very often stated this to be due to; it being unhealthy (78 %), and it being too expensive (74 %). Top-3 specific changes wanted for the fast food market were: more attention on taste (80 %), a wider selection of healthier meals (78 %), and less fat in food (77 %).

217 customers consented to participate in the in-store experiment and results showed that customers at the intervention line more often made the healthier choice than customers at the control lines (9 % vs. 2 %, P=0.019). These customers also purchased big menus to a lesser extent than customers at the control lines (6 % vs. 20 %, P=0.027). Customers at the intervention line consumed 472 kJ (113 kcal) less than those purchasing from a control line (P=0.025). Respondents from the in-store experiment also stated; habit (42 %), appetizing and tempting food (41 %), and reasonably priced food (34 %) as top reasons for having chosen their meal.

From the online questionnaire; gender, age, and to some extent health perception seems to have an effect on frequency of fast food consumption and on attitudes in relation to healthier fast food, where males, younger people, and people with less healthy visions of themselves consume fast food more frequent, and women and people of higher age have more positive attitudes in relation to healthier fast food. Respondents at either control lines or intervention line in the in-store experiment had similar attitudes and answered questions of the survey in a resembling ways. Hence attitudes do not form the basis for making the healthier choice, but if nudged or made aware of healthier options, thereby breaking their habits, they were able to make a healthier

choice. Downsizing or choosing the regular menu size did have impact on reducing energy intake when purchasing food from a fast food restaurant.

The conclusion from the present thesis is that health is not a first priority among those consuming fast food today. However, a desire for healthier concepts were found but the majority is probably not willing to compromise appetizing and reasonably priced food in return for these healthier concepts.

iv. Resumé (Danish)

Antallet af overvægtige og fede mennesker er stigende på verdensplan. Overvægt og fedme kan forårsage livstruende sygdomme, og et hyppigt eller højt indtag af fastfood er vist at kunne bidrage til øget kropsvægt.
Formålet med denne afhandling er at undersøger danskernes holdning til sundere fastfood og få belyst om danskerne ønsker sundere fastfood, og i givet fald finde ud af hvilke initiativer der bør tages for at udvikle produkter og koncepter som danskerne ønsker. Et andet formål er at undersøge den adfærd danskerne udviser når de indtager fastfood og få indsigt i hvilke foranstaltninger der ville være nyttige for at opnå en sundere måde at forbruge og indtage fastfood på.
Et online spørgeskema blev udviklet for at undersøge holdninger og blev pilot-testet blandt 12 respondenter. Spørgeskemaet blev sendt til et repræsentativt udsnit af den danske befolkning for at kortlægge deres holdninger. Online-spørgeskemaet blev analyseret ved forskellig segmentering af respondenterne, herunder; højt forbrug af burgere, køn, alder og sundhedsaspekter.
Desuden blev et in-store forsøg udført på en McDonald's restaurant i København for at undersøge holdninger og adfærd, når der købes og spises fastfood. En interventionslinje og kontrollinjer blev etableret, hvor interventionen forsøgte at synliggøre de sundere valg. Interventionen indeholdt forskellige foranstaltninger: kasseapparat-display der påpegede muligheden for at købe gulerødder som tilbehør, menu display der viste "grønt og groft" valgmuligheder, ekspedient informerede om muligheden for at vælge mellem gulerødder eller pommes frites, kildevand eller sodavand, om kunden ønskede sin burger på en almindelig eller en fiberbolle og endelig spurgte ekspedienten ikke om kunden ønskede sit måltid opgraderet til stor størrelse.
819 respondenter (51 % mænd, i alderen 18-65) besvarede online-spørgeskemaet. Ingen hyppige brugere af fastfood blev fundet og typiske årsager til at indtage fastfood var: vane (48 %), appetitlig og fristende mad (40 %) og rimelig pris af måltider (33 %). De der ikke indtog fastfood særlig ofte, svarede at dette skyldtes; at det er usundt (78 %) og at det er for dyrt (74 %). Top-3 over specifikke ændringer til det nuværende fastfoodmarked var; mere fokus på smag (80 %), et større udvalg af sundere måltider (78 %) og mindre fed mad (77 %).
217 kunder indvilgede i at deltage i in-store forsøget og resultater viste, at kunderne ved interventionslinjen oftere foretog sundere valg end kunder ved kontrollinjerne (9 % vs. 2 %, P= 0,019). Disse kunder købte også store menuer i mindre grad end kunder ved kontrollinjerne (6 % vs. 20 %, P=0,027). Kunder ved interventionslinjen indtog 472 kJ (113 kcal) mindre end de der købte ved en kontrollinje (P = 0,025).
Respondenterne fra in-store forsøget opgav også; vane (42 %), appetitlig og fristende mad (41 %) og rimelig pris (34 %) som vigtigste grunde til at have valgt deres måltid.
Fra online-spørgeskemaet synes køn, alder og til en vis grad sundhedsopfattelse at have en effekt på hyppigheden af fastfoodindtagelse og på holdninger i relation til sundere fastfood, hvor mænd, yngre personer og folk med en dårlig sundhedsopfattelse af sig selv, spiser fastfood hyppigere. Desuden har kvinder og ældre personer mere positive holdninger i forhold til sundere fastfood. Respondenterne ved kontrollinjer og interventionslinje i in-store forsøget havde overensstemmende holdninger og besvarede spørgsmål i undersøgelsen på lignende vis. Derfor kan det ikke siges at deres holdninger dannede grundlag for at træffe sundere valg, men hvis de blev nudget eller gjort opmærksomme på sundere alternativer, og dermed brød deres vaner, var de i stand til at træffe et sundere valg. At vælge en mindre menustørrelse hos en fastfoodrestaurant, havde en effekt på reduktionen af energiindtag.

Konklusionen for denne afhandling er at sundhed ikke er første prioritet hos dem der indtager fastfood i dag. Et ønske om sundere koncepter var dog til stede, men flertallet er sandsynligvis ikke villige til at gå på kompromis med appetitligheden og rimelige priser.

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Nomenclature

ANOVA - Analysis of Variance

BMI - Body Mass Index (kg/m^2)

BS - “Burger-Segment”

GDA - Guideline Daily Amount

GUDP - “Grønt Udviklings- og Demonstrationsprogram

REST - “Rest of population”

SD - Standard Deviation

1 Introduction

The amount of overweight and obese people is still increasing in the world, including Denmark (Bonke and Greve, 2010; A. I. Christensen et al., 2010; World Health Organization, 2012). Overweight and obesity can lead to life threatening disease and medical conditions including; diabetes mellitus type 2 (Knowler et al., 2002; Must et al., 1999), cardiovascular disease (Aballay et al., 2013; Calle et al., 1999) and metabolic syndrome (Aballay et al., 2013; Tamborlane et al., 2004).

It has been shown that a frequent or high intake of fast food can contribute to increased body weight (Bezerra et al., 2012; Bowman and Vinyard, 2004; L. J. Harnack and Simone A French, 2003; Pereira et al., 2005; Rosenheck, 2008) and that food bought and consumed "away from home" tend to be high in energy and fat (Fagt, 2006a, 2006b; Skovmand Hansen et al., 2011), compared to food cooked and consumed at home (Hurley and Corcoran, 1998; Lachat et al., 2012; Lin and Guthrie, 2012; Orfanos et al., 2007).

1.1 Current fast food market

In Denmark there is a broad variety of fast food/take away businesses, ranging from gourmet take away to the local grill on the corner, and the Danish population paid almost 262 million restaurant visits in 2011, which resulted in an average annual visit-rate of 55 per average Dane (HORESTA, 2013). For the market as a whole the visit-level is still low compared prior to the financial crisis but the rates are increasing (HORESTA, 2013). For the fast food market, this up-going tendency holds for pizzerias, burger bars, and partly for cafés, whereas grill bars still have a declining trend (HORESTA, 2013).

1.1.1 McDonald's

McDonald's represents one of the leading brands in the Danish fast food industry, and covers most of Denmark with 86 restaurants serving around 160,000 meals daily (McDonald's Denmark, 2013a). McDonald's might not be the company mostly thought of in regards to healthier initiatives on the fast food market, but nonetheless they have taken action in creating healthier menu options e.g. carrots, salads, buns with more fibers, wraps etc. (McDonald's Denmark, 2013a).

From correspondence with McDonald's Denmark, sales statistics from 2012 concerning "healthier options" were provided. Around 11 % of McFeast burgers sold include a bun containing more fibers than the ordinary bun and salads constituted about 1 % of combined sales of salads and burgers (McDonald's Denmark, 2013b). Approximately 6 % of costumers ordered carrots instead of French fries out of the total amount of side orders and for soda vs. spring water approximately 4 % sold were spring water (McDonald's Denmark, 2013b).

1.2 Consumers' attitude and behaviour towards healthier fast food

Many studies have researched various health aspects of fast food, but in this thesis emphasis is on the needs and wants of healthier fast food, focusing on literature that have been using the survey methods of questionnaires and in-store experiments.

Various studies have tried to clarify consumption of and attitude towards fast food using the method of questionnaires in either online-versions or pen-and-paper-versions (e.g. questionnaires together with body

composition measurements, questionnaires and focus groups, mailed/home-distributed questionnaires, interviews, food frequency questionnaires etc.) (for detailed overview of the articles mentioned below, see Appendix 1: Consumer Questionnaires).

French et al. showed that people eating regularly at fast food outlets had a less nutritious diet with a higher energy and fat intake, while having a lower intake of fruit, vegetables, and grains (S A French et al., 2001). In another study by *French et al.* increased consumption of high energy-dense foods were shown to be associated with increased body weight and BMI (S A French et al., 2000).

For gender differences in fast food consumption, *Van der Horst et al.* found that males had a higher rate of fast food consumption than females and that consumption rate decreased with age (K van der Horst et al., 2011). Similar findings were acquired by *Seo et al., Heidal et al.,* and *Mohr et al.* (Heidal et al., 2012; Mohr et al., 2007; Seo et al., 2011).

Rydell et al. investigated reasons for consuming fast food and found that convenience, fast purchase, high accessibility, and palatability were the most important parameters, while health concerns like the food being nutritious were less important (Rydell et al., 2008). *Glanz et al.* correspondingly found consistency for convenience reasons being positively correlated to fast food consumption, while nutrition and weight control reasons were negatively correlated (Glanz et al., 1998).

In-store natural experiments were conducted in other studies (for detailed overview of the articles mentioned below, see Appendix 2: Fast Food Experiments). These studies used a similar method or study design to investigate consumers' attitudes or behaviours in relation to fast food and health aspects.

Atkinson and Palmer investigated the effect of nutritional promoted fast food at fast food restaurants (Atkinson and Palmer, 2012). In this study, surveys were used to assess the purchase rate of the nutritional promoted products vs. the ordinary products, and results showed that the purchase rate of the nutritional promoted products were low but when bought they gave rise to a decreased energy intake. *Dumanovsky et al.* used a similar approach but also asked the customers to hand in their purchase receipt together with the completed survey (Dumanovsky et al., 2011). In this cross sectional survey study the researchers were investigating the effect of calorie labeling legislation in New York City before and after the legislation came into effect. From the results it was suggested that calorie labeling could have an effect on energy intake, however a significant reduction across the full sample was not found. In another study conducted in New York City by *Bassett et al.,* a natural experiment, which is an experiment taking place in natural surroundings, was setup for examining the effect of calorie information and provided insight into the calorie content of purchased meals (Bassett et al., 2008). The researchers collected data on the basis of a short questionnaire and customer receipts and results showed that placement of calorie information at the point-of-purchase was the most effective way of displaying calorie information. This display method showed promising results for reducing energy intake at a fast food restaurant. *Dumanovsky et al.* investigated awareness of calorie information in another study by the use of in-store surveys (Dumanovsky et al., 2010). Here it was shown that customers notice and use calorie information if posted on menu boards.

Summary; the studies mentioned did not show specific wishes among Americans for healthier fast food options but when different measures of food labeling were taken into action to convince the customers to choose more healthy at restaurants, an effect in a healthy direction was obtained in most studies.

In Denmark there has been little research on consumption of fast food and attitude towards fast food. Nevertheless *Mäkelä et al.* conducted a study in the Nordic countries regarding different influences on practices and preferences of fast food for young Nordic people aged 15-29 years (Lavik, 2010; Mäkelä et al., 2011). A web survey was completed in Denmark, Sweden, Norway, and Finland and showed that young Scandinavian people select fast food due to convenience reasons, e.g. easy to access, easy to consume etc. When people who did not consume fast food very often were asked why they did not do so, the reasons were that the food was too unhealthy and too expensive. For changes in the fast food market there was a desire for healthier options e.g. lower fat content, more fruit and vegetables, more whole grains etc. and a wish for less processed food (made on location). The desire for healthier fast food was more markedly for Denmark and Norway.
Across all age groups there has not been conducted research of attitude and behaviour towards fast food among Danes, and in the preparation of this thesis no studies from Denmark were found operating with the method of natural in-store experiments in relation to fast food.

The above forms the hypothesis of the present thesis that among Danes there is a desire or a need of healthier fast food.

1.3 Modification of health behaviour

When wanting to improve the health of people by trying to modify their lifestyle behaviour, different initiatives have been used in Denmark for primary prevention strategies e.g. information campaigns, structural change initiatives, educational approaches (Kamper-Jørgensen and Almind, 2003; The Danish Health and Medicines Authority, 2013; The Danish Veterinary and Food Administration, 2013).

Since emphasis in this thesis is on labeling concerning health promotion for food products and more specificly the Keyhole symbol, only these modification measures will be reviewed.

The Keyhole symbol makes it easy to make the healthier choice (The Danish Veterinary and Food Administration, 2012a). Making a more socially and governmental acceptable choice easier to make can be considered to stem from the terms of empowerment. Empowerment is promoting the abilities of the citizen to make the healthier choices on their own behalf, which involves enabling the citizen to have control of decisions and actions that influences their life (Kamper-Jørgensen and Almind, 2003).

When assessing the effect of healthier consumption due to labeling *Driskell et al.* executed a study in dining halls at a university in America (J. A. Driskell et al., 2008). They found that almost 60 % of the respondents used the health labels on foods in the dining halls. The reasons for using them were knowledge of the labels' requirements, a general concern of health and for the use of counting calories. *Liu et al.* conducted an online survey, where respondents were asked to order fast food from different assigned menus; one with no calorie information, one with calorie information, one with calorie information including food ranked from low to high

calories, and one menu with calorie information including a green and red coloring of items for low and high calorie content (P. J. Liu et al., 2012). Compared to the no calorie information menu the two elaborated calorie information menus showed a lower intake of calories, while comparing the no calorie information menu with the menu with only calorie information showed no differences. Similar findings were obtained by *Roberto et al.* when inviting participants to order from three different menus; one without calorie information, one with calorie information and one with calorie information including recommended daily calorie intake for an average adult (Roberto et al., 2010).
Yamamoto et al. did not find fat and calorie content information on menus to modify the food purchasing behaviour for a majority of adolescents (J. a Yamamoto et al., 2005). Customers were first shown a standard menu and asked to order. Hereafter customers were shown a modified menu specifying fat and calorie content for food items and asked if they wanted to change their order. The few who did change their selection reduced their fat and calorie intake by roughly 25 %. *Thunström and Nordström* analyzed the effect of the Keyhole label on meals in a lunch restaurant in Sweden, but did not find it promising for increasing healthier meal choices (Thunström and Nordström, 2011).

In these studies, effects were obtained to some extent when researchers constructed an intervention which made it easier for the participants to make the healthier choice. Empowering the participants in this way of intervention design and principles have become known as nudging or choice architecture, where it is believed possible to influence consumers' behaviour towards healthier choices by redesigning the environment in which consumers make their food choices (Thaler and Sunstein, 2008).

Wansink et al. and *Wansink* found that when stating health claims on food labels, a short claim on the front with a full health claim on the back of products lead consumers to fully process and understand the claim better, than when stating a long health claim on the front (and a full health claim on the back) (Wansink, 2003; Wansink et al., 2004).

1.4 Methods for evaluation of questionnaires

Validity is the establishment of whether results obtained from a study will be able to meet all requirements of the chosen scientific research method and it defines the strength of the final results and whether they can be regarded as accurately describing the "true" situation (Babbie, 2010; Shuttleworth, 2009).

Construct validity defines how well a test or experiment measures up to its claims and is important when doing quantitative studies (Babbie, 2010; Shuttleworth, 2009). It ensures that what is intentionally sought investigated is also the outcome of the examined with a given method (Babbie, 2010; Shuttleworth, 2009). Construct validity can be obtained both by thoroughly working through the questionnaire by the researchers and by performing pilot-tests (Babbie, 2010; Mackison et al., 2010; Shuttleworth, 2009).

Face validity is a measure of how representative a research method is in literal interpretation, and supports construct validity by making sure the research method is meaningful, understandable and not misleading in any way for the respondent (Babbie, 2010; Mackison et al., 2010; Shuttleworth, 2009).

A way of accessing validity of a questionnaire is by conducting a pilot-test (Babbie, 2010; Mackison et al., 2010; Shuttleworth, 2009). A pilot-test could be done in various ways and one way of piloting a questionnaire is by performing cognitive interviews (Beatty and Willis, 2007; Drennan, 2003).

Cognitive interviews (also called verbal protocol or think-aloud interviewing) have shown to be very useful in achieving the best wording and understanding of questions while developing questionnaires. These interview forms have in particular been effective in identifying problems with questionnaires before distribution to the actual sample population, thereby making sure that the outcome of the questionnaire matches the intention. In this relation it is important to emphasize that these forms of interviews cannot determine the full extent of problems with a questionnaire but identify characteristics that might be troublesome when responding (Beatty and Willis, 2007; Drennan, 2003).

In some cognitive interviews called concurrent interviews the respondent gives a verbal formulation of thoughts and ideas while answering the question (thinks aloud). In this way the interviewer will gain insight in how the question is understood and interpreted. The interviewer can probe the respondent to get specific matters and concerns highlighted during the process and to avoid the respondent diverging onto an irrelevant tangent. The interviewer thereby maintains focus on the pertinent issues (Beatty and Willis, 2007; Drennan, 2003; Krosnick and Presser, 2010). This variety of cognitive interviewing tries to make the interviewer objective by intervening as little as possible during the process (Beatty and Willis, 2007).

In a retrospective cognitive interview the respondent is asked about the understanding and interpretation of the question after the respondent has read and answered it. Here the interviewer can also use probing to highlight specific matters and concerns about the question (Beatty and Willis, 2007; Drennan, 2003; Krosnick and Presser, 2010). In these interviews the interviewer is highly active and asks intensive into how the respondent perceived the question, while letting the actual process of answering as natural and undisturbed as possible (Beatty and Willis, 2007).

Reliability of a scientific method is the action of yielding the same or compatible results when conducting an experiment more than once (Babbie, 2010; Mackison et al., 2010; Shuttleworth, 2009). Reliability describes the repeatability and consistency of a test and one way of testing the reliability of a given method is by performing a test-retest (Shuttleworth, 2009). Test-retest is the action of administering the same test to the same sample population at two different occasions and checking if there is consistency between the two measurements (Babbie, 2010; Shuttleworth, 2009).

In summary, validity is important when conducting scientific research to obtain strong and reliable results. Validity can be assessed by thorough evaluation of the research method and by the use of pilot-tests, which can be performed by cognitive interviews. Reliability outlines the repeatability and consistency of a method for obtaining identical or compatible results.

1.5 "SpisVel"

This thesis builds on the governmental (GUDP) funded project "SpisVel". The aim of this project "SpisVel" is to provide a wide range and availability of Keyhole labeled and tasty fast food dishes and concepts. These concepts need to fit into the everyday characteristics of dining outside the home. Development of new products and concepts in the project will try to help dining venues/outlets in meeting the many new requirements of the Keyhole, and create products that appeal in terms of taste to the customer groups that are not particularly concerned about health. The project will also assess the hopefully positive impact on corporate economy, on the environment, and on the health of consumers that the new healthier Keyhole labeled fast food offerings will have.

The general requirements of Keyhole labeled products are; less fat, sugar and salt and more dietary fibers (elaborated requirements for convenience foods can be found in "The decree for use of the Keyhole label/symbol") (The Danish Veterinary and Food Administration, 2012a, 2012b).

1.6 Aim and scope

The aim is to map the Danes' attitude in relation to healthier fast food and to clarify if the Danes want healthier fast food and which initiatives should be taken to obtain products and concepts which the Danes then want.
A second aim is to map the behaviour the Danes exhibit when consuming fast food and to gain insight into which measures could be used to obtain a healthier way of consuming fast food.

One objective is to conduct a questionnaire analysis of the attitude among Danes towards fast food, with emphasis on healthier concepts and alternatives, including the Keyhole symbol.
Another objective is to provide an overview of how the attitude among Danes is related to the behaviour they exhibit when buying and consuming fast food, including a natural experiment set in a fast food outlet.
Final objective is to provide an insight into measures available to selected stakeholders to modify people's behaviour towards a healthier way of life, with particular emphasis on labeling.

Delimitation
The scope of this thesis is to do a quantitative investigation of the Danes attitude and behaviour in relation to healthier fast food, by using end-points which try to quantify attitudes as if to make them more manageable and meter behaviour by looking upon purchase behaviour and energy intake.
It is therefore chosen not to go further into the nutritional end-points of fast food, since it is believed important to know why people consume fast food and what people want in relation to healthier fast food, before exploring physiological and nutritional effects in depth.

2 Material & Method

2.1 Questionnaire

Flowchart for the development process of the questionnaire is illustrated in Figure 2-1.

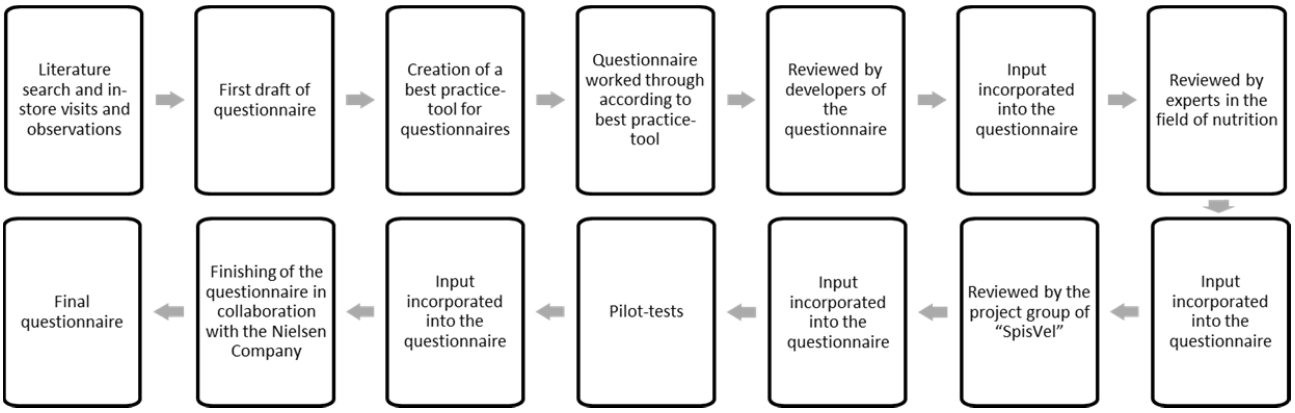

Figure 2-1 Flowchart for the development process of the questionnaire from literature search to final questionnaire.

2.1.1 Development of questionnaire

The individual questions were designed on the basis of literature in the field of fast food questionnaires (for an overview of some of the studies used see Appendix 1: Consumer Questionnaires). Some were merely used for inspiration, i.e. *Nordström, Aarup et al.* while others, i.e. questions of the Danish National Survey of Dietary Habits and Physical Activity 2011-2013 and *Mäkelä et al.* were used as basis for molding the specific questions or written in the exact same wording for possible comparisons of results (Mäkelä et al., 2011; Nordström, 2012; Aarup et al., 2010).

In order to address and get hands-on knowledge of the current situation of the fast food market, in-store visits and observations in 15 fast food outlets were completed. Local grill bars and pizzerias were visited as well as major chain restaurants e.g. McDonald's, MAX Hamburgers, Sunset Boulevard etc. Both officially invited behind-the-counter observations and unscheduled "through the eyes of the consumer" observations were conducted.

The questionnaire was developed in close collaboration with supervisor Anne Dahl Lassen (cf. Appendix 3: Full and final questionnaire in Danish).

The questionnaire was worked through thoroughly according to best practice in the field of questionnaire surveys, which resulted in creation of a best practice-tool (cf. Section 3.1.1). The specific literature used for the development was acquired through a literature search for "questionnaire development" with specific emphasis on keywords like; "health", "fast food" and "nutrition". The specific literature used for creation of tool was: Crawford, 1997; d'Ardenne, McManus, & Hall, 2011; Krosnick & Presser, 2010; The Market Research Society, 2011; Willis & Lessler, 1999.

Test and evaluation was done in several rounds. Initially it was reviewed by the developers of the questionnaire. Secondly it was in review by experts in the field of nutrition with core expertise in food science, human nutrition, sociology and data modeling. Third round was conducted in the project group of "SpisVel" with experts from governmental institutions, private companies (food manufactures and outlets/restaurants), and universities. The final round consisted of pilot-tests of the questionnaire.

Reliability of the questionnaire as a whole could not be verified due to lack of resources for performing a test-retest.

2.1.2 Pilot-tests

Pilot-tests were performed to test, validate, and optimize the final questionnaire.

For conducting the interviews the intended idea was to use the concurrent cognitive interview method, but since the respondents' completion time wished to be tested, the retrospective method was chosen.

A total of 12 subjects were chosen among friends, family and network to get a wide span in age, subjects covering different parts of the country, and different educational background in the test-population.
Respondents were asked to fill out the questionnaire with pencil and paper in a natural and relaxed pace. The completion time was noted before the respondents were probed with in-depth questions.

To begin with, the respondents were asked if anything had been confusing or misleading. Then focus was directed toward topics which had been chosen prior and included:

- One-word-free-association to: fast food, quick food, take away
- Did the attitude questions provide exhaustive answering options?
- How were the menu-examples received and perceived?
- Did the respondents have any new initiatives to improve/develop healthier fast food?

2.1.3 Incorporation of results into the final questionnaire

Prior to the pilot-tests the questionnaire was estimated to take approximately 10 minutes to complete by the Nielsen Company. However the pilots found this to be more than double, so the questionnaire was scrutinized to cut questions and to remove answering options which were not crucial for the final questionnaire. The final time aspect of the questionnaire was evaluated in collaboration with the Nielsen Company since the pilots were conducted in pencil-paper and the final questionnaire was set up as an online web-survey.

One all-embracing word to describe the products aimed to be surveyed could not be chosen, and from the free associations it was clear that stating both fast food and take away gave both negative and positive associations.

The menu-examples were adjusted by deleting one example of the two menus which some subjects had informed to be too similar. Also the information in and title of the examples were adjusted in a matter to avoid misunderstandings. Higher price options were also provided to offer a wider price range and avoid "in-the-middle" biased answers.

From the pilots, many of the mentioned comments or new initiatives to changes of the fast food market were already incorporated into the questionnaire, but some questions and answering options were adjusted to accommodate these initiatives, e.g. in relation to new initiatives for the products, an answering option about "more fish dishes/menus" was introduced.

The entire snack-section of the questionnaire was reexamined, and emphasis was made on the snacks that are bought "on-the-go". Since subjects in the pilots had trouble distinguishing between snacks bought "on-the-go" and those brought from home, all through this section it was highlighted that the snacks needed to be taken into consideration, when filling in the questionnaire, were the ones bought "on-the-go" (Data from snack-section of the questionnaire will not be processed in this thesis).

2.1.4 Finishing of questionnaire

During the questionnaire development process the Nielsen Company was used as consultancy firm for generating the best possible questionnaire and they were also in charge of executing the questionnaire with an online panel.

During the finishing process of the questionnaire in collaboration with the Nielsen Company, some questions were deleted, rephrased and reworked to give a more reasonable response time.
Choosing which questions to omit from the final, involved looking into overlaps between different questions and assess which ones would address the aim of the questionnaire most fulfilling. This also involved choosing in which form the answering options should be organized (general prioritizing or elaborate assessment of each answering option) and whether to include open-ended answering options, scales or other answering options.
Questions were also rephrased to fit the wording normally used by the Nielsen Company. The online panel was used to specific questions being stated in a particular manner, so as to fit into this "routine" some questions were reworked.

2.1.5 Respondents

The contract with the Nielsen Company stated a sample population of 800 respondents (Jacobsen, 2012a).

The panel consisted of a representative national sample in gender for Danes, aged 18 to 65. This panel was part of the SSI panel (Survey Sampling International) which is the panel the Nielsen Company normally employs (Jacobsen, 2012a).
The SSI panel is recruited from multiple sources, giving diversity in the panel and the opportunity to enroll very specific segments for surveys (Survey Sampling International, 2012a, 2012b). Respondents are authenticated in various measures, including digital fingerprinting, third-party database checks etc., to provide as valid data as possible for the client (Survey Sampling International, 2012a, 2012b). The panel is kept up-to-date at all time, as to provide the most reliable representative sample for surveys as well as providing specific segments for surveys (Survey Sampling International, 2012a, 2012b). The respondents are compensated with points which they can exchange for a variety of products (Jacobsen, 2012b).

2.1.6 Conduction of survey

The survey was conducted as an online ad hoc survey in the period December 5th 2012-December 10th 2012, in agreement with the regulations of ICC/E.S.O.M.A.R. International Code of Market and Social Research (Jacobsen, 2012a).

The online questionnaire survey was set up in an ordinary questionnaire platform for the respondents to answer (Survey Sampling International, 2012c).
During the survey the respondents were checked real-time to ensure the integrity of data, for example by eliminating "speeders" and "straight liners" (Survey Sampling International, 2012a, 2012b).

2.1.7 Segmentation of respondents

In order to give a more diverse insight into the data it was chosen to segment the data for analysis into a "Burger-Segment" (from now on called BS) and compare this segment to the rest of the population.
This segmentation was chosen because it was hypothesized that people eating regularly at burger outlets had different health attitudes and behaviours than the rest of the population. This segmentation was also chosen since it was assumed that this segment would be more comparable with the respondents from the in-store experiment than the total respondent population of the questionnaire.

The BS was classified as: Those respondents whom in the question of how often they ate at a burger bar/chain answered 2-3 times/month or more frequently ("5+/week","3-4/week"," 1-2/week","2-3/month"). The rest of the respondents were segmented as "Rest of population" (from now on called REST) being those who answered approximately once/month or less often ("app. 1/month", "app. once every second month or less often", "never", "do not know").

For additional segmentation some of the questions were analyzed in terms of gender, age group, the assessment of own health and the assessment of one's own adequate healthy consumption.

2.2 In-store experiment

For assessing the behavioural aspects of fast food a natural in-store experiment was set up at a McDonald's restaurant in Copenhagen, Denmark.

2.2.1 Setup

Cash register lines were set up, some as control- and one as an intervention-line. At the control-lines, normal procedure for cash desk expedition was performed. At the intervention-line different measures were taken i.e. cash register-display pointing out the possibility to buy carrots as a side order, menu display showing "green and fiber" options, customer informed of the option to choose between carrots or French fries, spring water or soda, sales clerk asked customer if the burger was wanted on a plain or fiber bun (was only done for two specific burgers), and finally the sales clerk did not ask if the customer wanted the meal upgraded to a large size.

For all lines dining-in customers were given receipts by the sales clerk after their purchase. Customers from each line were then approached by a researcher and invited to participate in the survey. If the customer did

not wish to participate the researcher registered gender and estimated age. If the customer accepted, an envelope with questionnaire was handed out and the customer was asked to return the questionnaire in the envelope together with their purchase receipt. Gender and estimated age was registered by the researcher for customers consenting to participate in the experiment as well.
After fulfillment and delivery of the questionnaire, the customer was offered a breakfast-voucher as an incentive for participation.

The study was performed over two consecutive days (April 13th –April 14th 2013) in the time slot of 11:00-19:00 (this time slot was the period in which customers were approached, except for a break between 15:00-16:30). The time slot was divided into a lunch and a dinner period with lunch being 11:00-15:00 and dinner 16:30-19:00.

Customers were classified as three different groups: non-respondents; being those approached who did not wish to participate, respondents; being those who successfully fulfilled and handed in the questionnaire and receipt and non-completers; being those who returned an inadequate questionnaire which could not be used in the data analysis (cf. Figure 2-2).

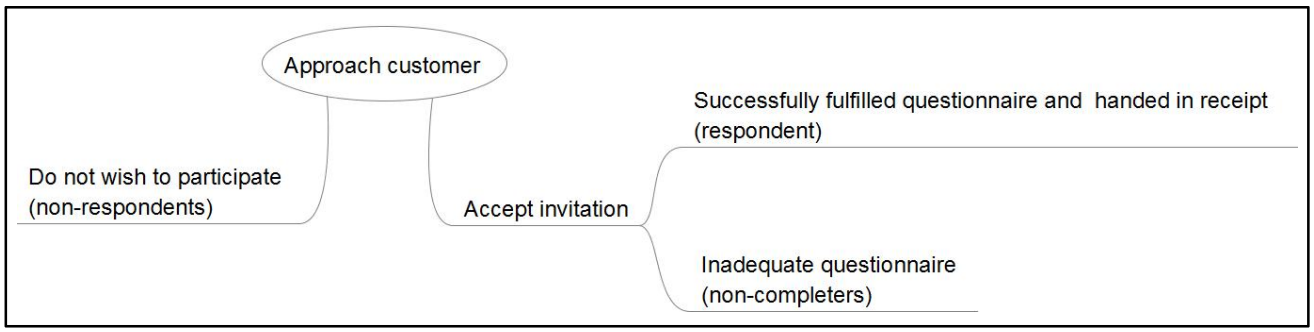

Figure 2-2 Classification of customers in in-store experiment

Customers eligible for answering the questionnaire were all ordering customers within a reasonable age range (children/teenagers too young to order for them self were not included). Customers needed to possess Danish language skills in order to answer the questionnaire, therefore non-Danish speaking customers were not approached.

2.2.2 In-store questionnaire

The in-store questionnaire was created containing selected questions which were included in the online questionnaire. Some were stated in the exact same wording while others were reworked to fit a pen-and-paper questionnaire. Further questions were developed to access the intervention setup of the experiment and to get a detailed picture of the respondents' consumption.

Initially the questionnaire was worked through by the developers of the questionnaire. Afterwards the questionnaire was in review by experts in nutrition, rhetoric and teaching. It was also in review at McDonald's

Denmark for making sure the questionnaire was suitable for the purpose of the experiment as well as not being in conflict with McDonald's Denmark's communication strategy.

2.2.3 Pilot-test

The pilot was performed at the same location as the main study, one week prior, to see if the setup would function as planned and to get a hands-on perception of the location. That being; where would it be reasonable to place interviewers/researchers, placement of box for finished questionnaires, did the customers receive a receipt etc.

Respondents were interviewed when they had answered and delivered the questionnaire to clarify if the questionnaire had been fully understood and if other comments or questions had arisen.

On the day of the pilot the breakfast-vouchers were not ready so a voucher for a fiber-pasta salad was offered instead.

2.2.4 Analysis of survey data

To give an overview of healthier choices made, food items were grouped into a "healthier choice" category and analyzed. The "healthier choice" category consisted of: McFeast on a fiber bun, salads, Grilled Chicken Wrap, carrots, and spring water. Purchases of regular vs. big menus were analyzed and menu sizes were analyzed on the basis of purchases of medium (regular) sized French fries and large (big) portions.

Segmentation of the data was done on the basis of the question "endeavor to daily healthy eating".

2.3 Statistical analysis

For all statistical problems, data was assumed to be normal-distributed.
For descriptive analysis Microsoft Excel 2007/2010 (Microsoft) was used. Statistical analysis between segments in the questionnaire survey and in-store experiment was done by a double-sided χ^2-test. One-way analysis of variance (ANOVA) and test for linearity (eta squared - η^2) was used to assess the energy intake from the in-store experiment to test for significant differences between groups and to test effect size (strength of relationship between two variables) (control vs. intervention, bought healthy vs. did not, big vs. regular menu and endeavor to daily healthy eating). For further analysis of energy intake on "endeavor to daily healthy eating" Bonferroni and Fisher's LSD (Least Significant Difference) post hoc tests were performed to test for differences between each group separately. All statistics were performed in IBM SPSS Statistics 20 (IBM Corporation). Significance levels were set to: * $P<0.05$, ** $P<0.01$, ***$P<0.001$.

3 Results

3.1 Questionnaire

3.1.1 Best practice-tool for questionnaire

A literature search resulted in creation of a tool useful for developing an optimal questionnaire in the field of fast food and nutrition.

Generally the respondent should be able to understand the questions, be able to answer the questions and be willing to answer.

1.	Reading/Wording
•	Include introductory phrases to outline and specify the scope of the survey/question
•	Use simple familiar words and phrases for the respondent to understand each question
•	Use neutral words to keep survey objective
•	Avoid vague words which can be ambiguous so question can be misinterpreted
•	Ask for one thing. Do not include multiple concepts in a single question
•	Do not lead respondent to an answer e.g. by using charged words

2.	Answering categories
•	Open ended questions are best for qualitative surveys
•	Closed ended questions should have exhaustible answer options, otherwise open ended options should be present to illustrate aspects not adequately covered in the questionnaire also to emphasize the value of the respondents' views
•	Use different answering forms to break the routine for respondents
•	Specific benchmark measures are better understood than general ones e.g. "3-4 days/w", "1-2 days/w" etc. vs. "often", "sometimes" etc.
•	"Decline"-answering should always be an option
•	Too many answering options tire the respondent, so overlapping of options should be avoided
•	Different respondents should receive answer options in different order to avoid biases due to the sequence of the answer options
•	"Do not know" is not a necessary option since it does not increase answer quality and respondents who are uncertain of their answer might use this as an easy way to decide

3.	Scales
•	5-7 is optimal length for a scale since shorter scales provide less diversity in answers, and longer ones are less likely for the respondent to identify with
•	Negative scales should be avoided due to the fact that people tend to favor positive options more frequent than when only positive scales are used
•	Verbal scales make questions more comprehensible for respondent
•	Midpoints give respondent options to answer vaguely, but some might have the neutral opinion so it is favorable to include midpoints (odd numbered scales)
•	All scale points should be labeled to increase the understanding for the respondent
•	Differentiated answering options should be used. Agree/disagree options should be avoided since acquiescence is common, otherwise the wording of the question should be carefully formulated to avoid biased answers

4.	Question order
	• Early questions should outline the topic and "funnel" into the more specific issues. They should not be "threatening" to the respondent because this could lead to non-completion of the questionnaire • Variety in questions, so respondent does not tire from monotonous questions • Group questions together to create comprehensible and coherent flow • Later/end questions should not be critically important since they may be prone to fatigue

5.	Sensible questions
	• Placed in the end of questionnaire to avoid non-completion • Make them acceptable in wording • Make clear that specific attitude/behaviour is normal/occurs despite it being socially undesirable • Do not include "do not know" possibility because it creates an easy "way out" • Less prone to social desirability bias completion when self-administered

6.	Memory/recall error
	• Shorter reference periods give higher accuracy for specific measures • Longer reference periods should be used to target less frequent behaviour or when approximate measures are required • "Typical" should not be used when specific answers are wanted. Otherwise a follow-up question of the "typical" should be asked • Cues make respondent more aware of the question and creates higher empathy for the respondent

7.	Test and evaluation
	• Expert preview, QAS-program could be used to evaluated questionnaire • Respondent feedback either by focus group, debriefing or cognitive interviews. • Pre-test population should mirror the actual sample population • Statistical modeling testing • Artificial intelligence testing (QUAID, SQP) • Multi-method is preferred to make the survey as valid and reliable as possible • Standard questions need to be stated exactly the same to make comparison possible

Literature used: Crawford, 1997; d'Ardenne, McManus, & Hall, 2011; Krosnick & Presser, 2010; The Market Research Society, 2011; Willis & Lessler, 1999

3.1.2 Pilot-tests

3.1.2.1 Background variables

A total of 12 subjects were interviewed in the pilot-tests. 75 % were female and average age for both sexes was 29 years (19-59 years). Marital status for the test group was; 58 % unmarried, 25 % had a partner, and 17 % married. For highest finished educational degree the numbers were; 42 % high school diploma, 25 % short university degree (3-4 years), 17 % long university degree (5 years and above), and 8 % for both college degree (under 3 years) and lower secondary education. For profession both student/apprentice and skilled work accounted for 42 % each, while 17 % stated having unskilled work. Urbanization accounted for 67 % in the capitol area, 8 % in a city with 50,001-500,000 citizens, 17 % in a city with 10,000-50,000 citizens, and 8 % in a city with less than 10,000 citizens.

3.1.2.2 Output/results

It took the subjects on average 20.69 minutes to complete the survey (13-30 minutes).

From the one-word-free-association, different aspects were highlighted:

- Fast food: disgusting, unhealthy, expensive, burger, McDonald's, ew!, greasy.
- Quick food: easy, hotdog, pizza, train, business, fast food, shawarma joint, microwave oven, freezer-food.
- Take away: sushi, rarely, greasy, expensive, pizza, wok, Asian, fatty food, China box.

The subjects found the answering options for the attitude questions exhaustive and no one had any further options they found necessary to include to fully cover the topic.

There were mixed statements about the menu-examples, since some preferred them more detailed and others thought they were too detailed in the form they had at the present time. Some subjects said that too many examples were stated and two examples were seen too alike, so subjects preferred only one being used in the final questionnaire. Regarding the price-scale a few suggested higher price options.

Many initiatives were mentioned to improve/develop healthier fast food; raise the bottom line, personal choices to make products healthier, more dishes/products containing fish, healthy spread (should taste like mayo), sandwich made with rye bread, falafel-bar, and pure bottled juice.

Observations during response time and statements from subjects made it clear that the aim of the snacks section was not fully understood.

3.1.3 Main results

3.1.3.1 Respondents

A total of 10,000 participants were invited to answer the questionnaire and 819 (8 %) respondents completed comprehensively. 190 (2 %) partly completed, 78 (1 %) were screened off and 8,739 (87 %) did not activate the link so the final sample population was n=819 (Jacobsen, 2012a).

51 % (n=414) of the respondents were male (females 49 %, n=405), and age group distribution was; 14 % for 18-24 years, 19 % for 25-34 years, 22 % for 35-44 years, 21 % for 45-54 years, and 24 % for the upper age group, 55-65 years. 76 % lived with a partner/parents/children etc. while 24 % lived alone. 30 % of respondents lived in the capitol or suburbs, 18 % in a greater city (above 50,000 citizens), 19 % in a city with 20,000-50,000 citizens, 24 % in a city with 1,000-19,999 citizens, and 9 % of respondents on a farm or in a house on the countryside. Highest completed education for respondents was; primary school (10 years or less) 13 %, practical vocational education (10-12 years) 21 %, high school diploma/diploma in theoretical commerce (10-12 years) 18 %, short-cycle higher education (Ba. degree or similar; 13-15 years) 26 %, and medium-/long-cycle higher education (M.Sc., Ph.D. degree; 15≥ years) accounted for 22 %.

BMI distribution for the respondents was; 3 % BMI<18.5, 47 % BMI=18.5-25, 32 % BMI=25-30, 11 % BMI=30-35, 2 % BMI=35-40, and 2 % had a BMI>40 (1 % outliers and 2 % do not know).

3.1.3.2 Fast food intake in general

About 40 % of the respondents consume fast food/take away as a main meal 2-3 times per month or more often (cf. Figure 3-1).

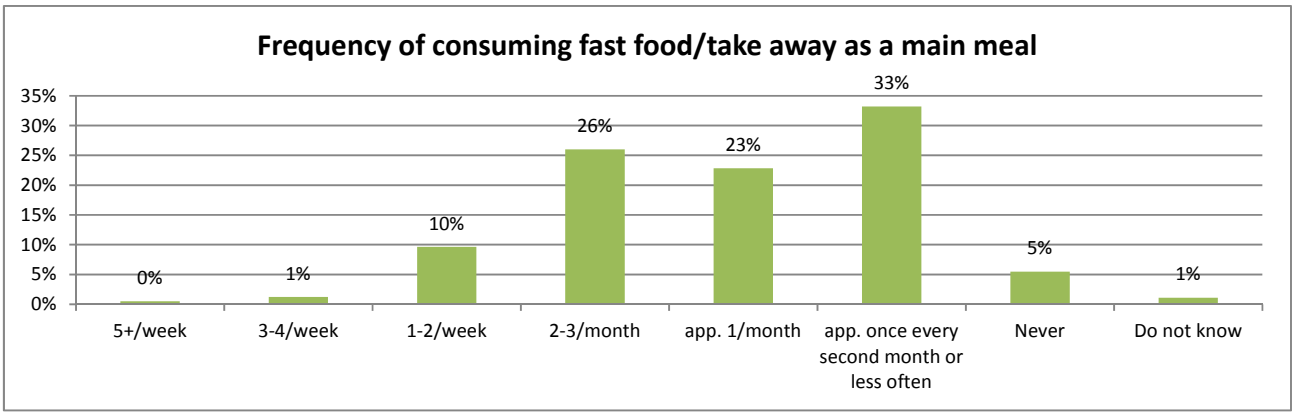

Figure 3-1 Frequency of consuming fast food/take away as a main meal, n=819.

The food items consumed most often are pizzas, calzones, pies, pirogues (25 %), burgers (18 %), kebabs, shawarmas, pitas, wraps and alike (11 %), sandwiches on whole-grain bread (9 %), and sushi (7 %) (cf. Table 1)(For complete list of data see Appendix 4: Questionnaire Graphs).

The beverages most often consumed together with fast food/take away are regular soda (23 %), still water (19 %), diet soda (15 %), beer/wine/cider (9 %), and sparkling water (7 %) (cf. Table 1)(For complete list of data see Appendix 4: Questionnaire Graphs).

Table 1 Top 5 types of fast food/take away consumed most often and top 5 beverages most often consumed with fast food/take away (maximum of three choices pr. respondent pr. question), n=493.

Top 5 types of fast food/take away consumed most often	
Pizza, calzone, pies, pirogues	25 %
Burger (e.g. cheeseburger, chicken burger)	18 %
Kebab, shawarma, pita, wrap and alike	11 %
Sandwich - whole-grain bread	9 %
Sushi	7 %
Top 5 beverages most often consumed with fast food/take away	
Soda - Regular	23 %
Water - Still	19 %
Soda - Diet	15 %
Beer/Wine/Cider	9 %
Water - Sparkling	7 %

When asked what the typical reasons for buying fast food/ take away, respondents top reasons were; “what I am used to” (habitual, same fast food/take away) (48 %), “the fast food/take away most appetizing and tempting” (40 %), and “the fast food/take away most reasonable in price” (33 %) (cf. Table 2).

Table 2 Typical choice reasons when consuming fast food/take away as a main meal (maximum of three choices pr. respondent), n=493.

Typical choice reasons when consuming fast food/take away as a main meal	
What I am used to (habitual, same fast food/take away)	48 %
Fast food/take away most appetizing and tempting	40 %
Fast food/take away most reasonable in price	33 %
Fast food/take away perceived most healthy	22 %
Fast food/take away which can be consumed with fingers	17 %
Organic and/or climate friendly fast food/take away	6 %
None of the mentioned	4 %
Do not know	3 %

The respondents who ate fast food/take away approximately once every second month or less often (n=317) were asked for their reasons for consuming fast food/take away less often or never (cf. Figure 3-2). “It is unhealthy” (78 % answered yes) was the main reason to refrain, while the opposite applied for “too large portions” (62 % answered no).

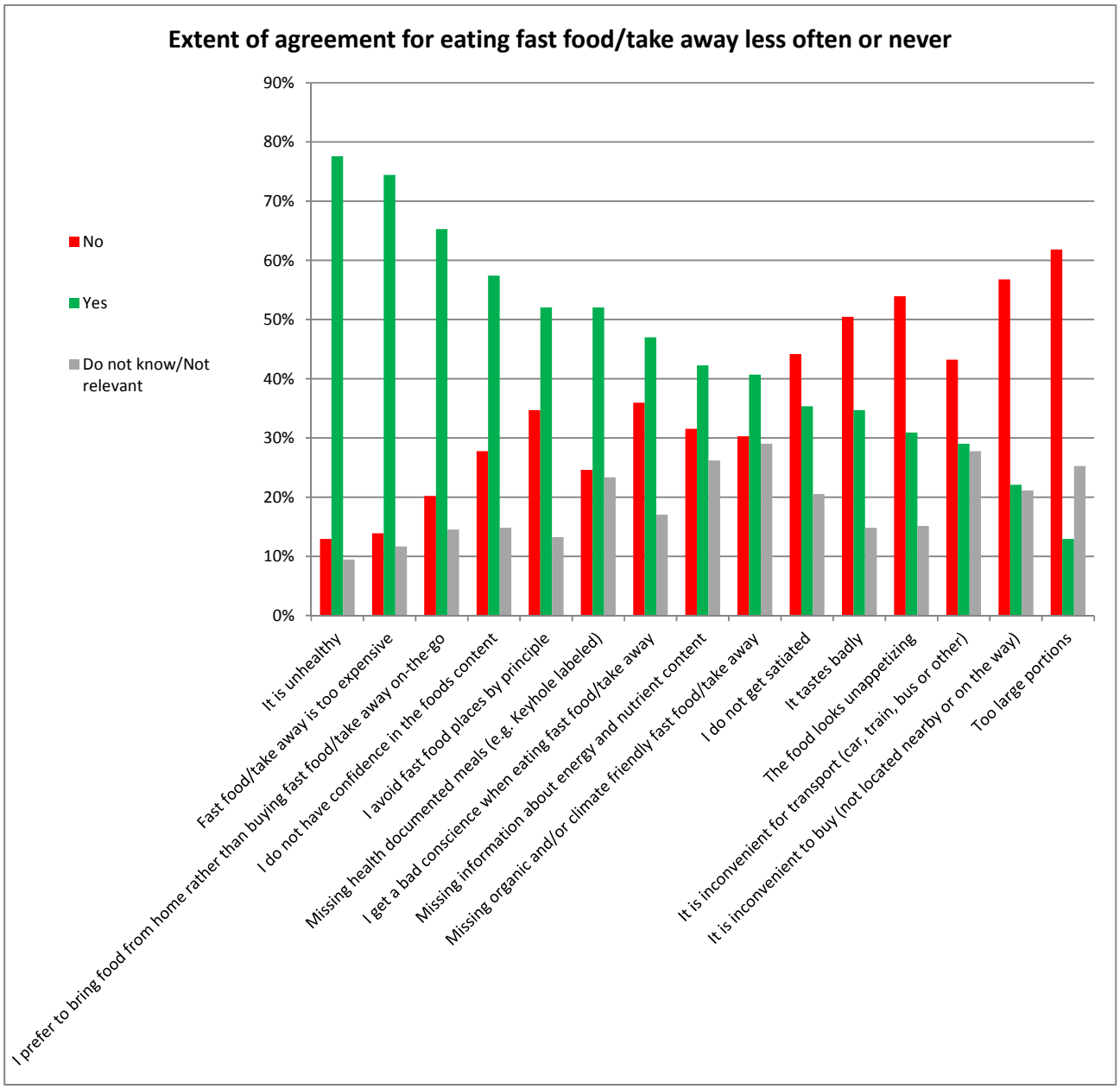

Figure 3-2 Extent of agreement for eating fast food/take away less often or never (respondents were asked to answer for every statement) (no: no, not at all and no, to a lesser extent, yes: yes, very much and yes, to some extent), n=317.

When asked to assess the fast food/take away consumed most often the past month, respondents rated the food mainly positive, even though the health and organic/climate aspects of the food were negatively assessed (cf. Figure 3-3).

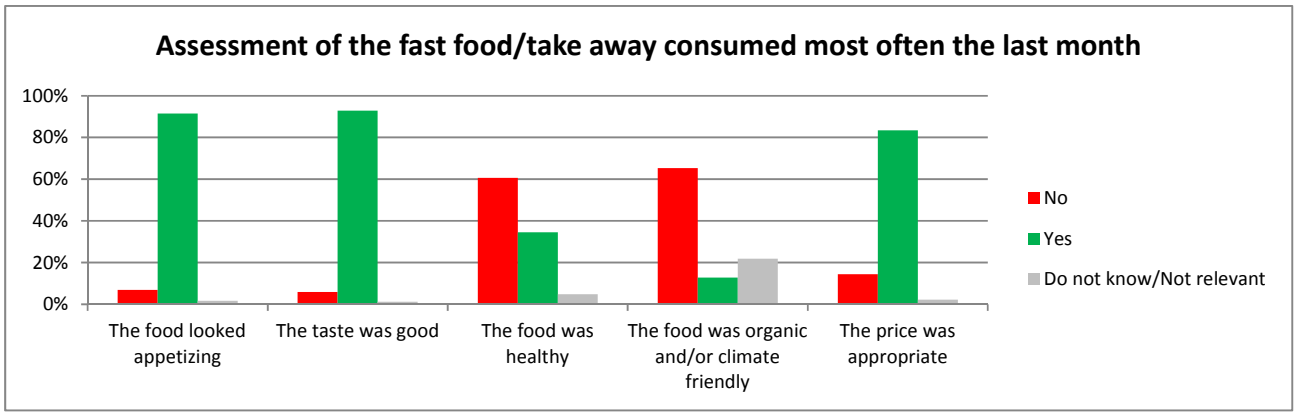

Figure 3-3 Assessment of the fast food/take away consumed most often the last month (respondents were asked to answer for every statement) (no: no, not at all and no, to a lesser extent, yes: yes, very much and yes, to some extent), n=493.

3.1.3.3 Healthier fast food options in general

Respondents were asked to assess four burger menus for price (data not shown) and prioritize among the menus (cf. Figure 3-4). The four menus were as follow (in parentheses the percentage who chose menu): Keyhole labeled burger menu: burger with whole-grain bun, lean beef, cheese with low-fat content, spread, salad, tomato, and pickles served with a green salad or bean-salad and still or sparkling water (37 %), Whole grain and less fat burger menu: burger with whole-grain bun, lean beef, cheese with low-fat content, spread, salad, tomato, and pickles served with low-fat French fries and soda (22 %), Organic burger menu: burger with wheat bun, beef, cheddar cheese, burger spread, salad, tomato, and pickles served with French fries and soda (19 %), and Regular burger menu: burger with wheat bun, beef, cheddar cheese, burger spread, salad, tomato, and pickles served with French fries and soda (15 %).

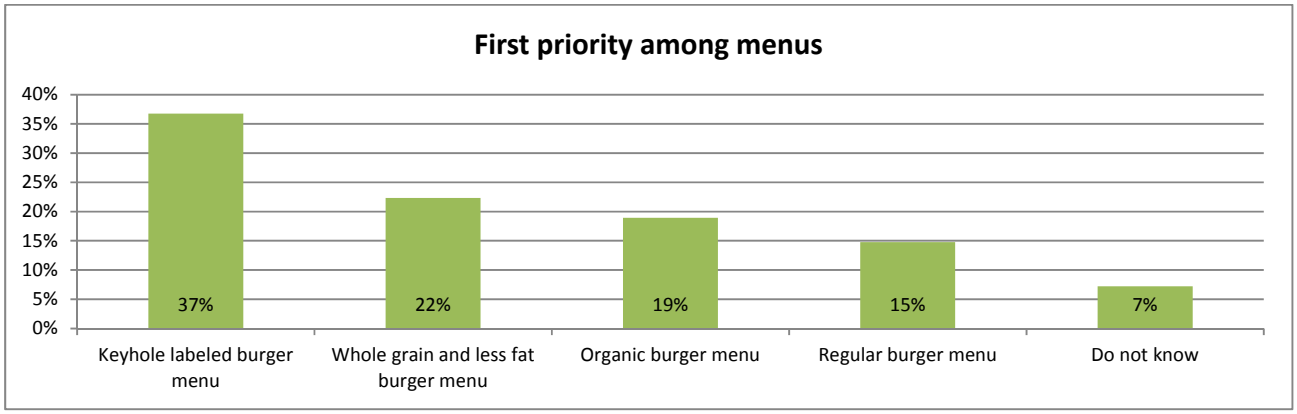

Figure 3-4 First priority among menus, n=819.

Respondents were further asked to which extent they would support specific changes to the existing fast food market (provided that the price was fixed to the current level of fast food) (cf. Figure 3-5). The most preferred changes were; "more attention on taste" (80 %), "wider selection of healthier meals" (78 %), "less fat in food" (77 %), and "food should be made on location" (75 %). The least wanted changes were; "more fish dishes" (51 %) and "more ethnic/exotic food" (48 %).

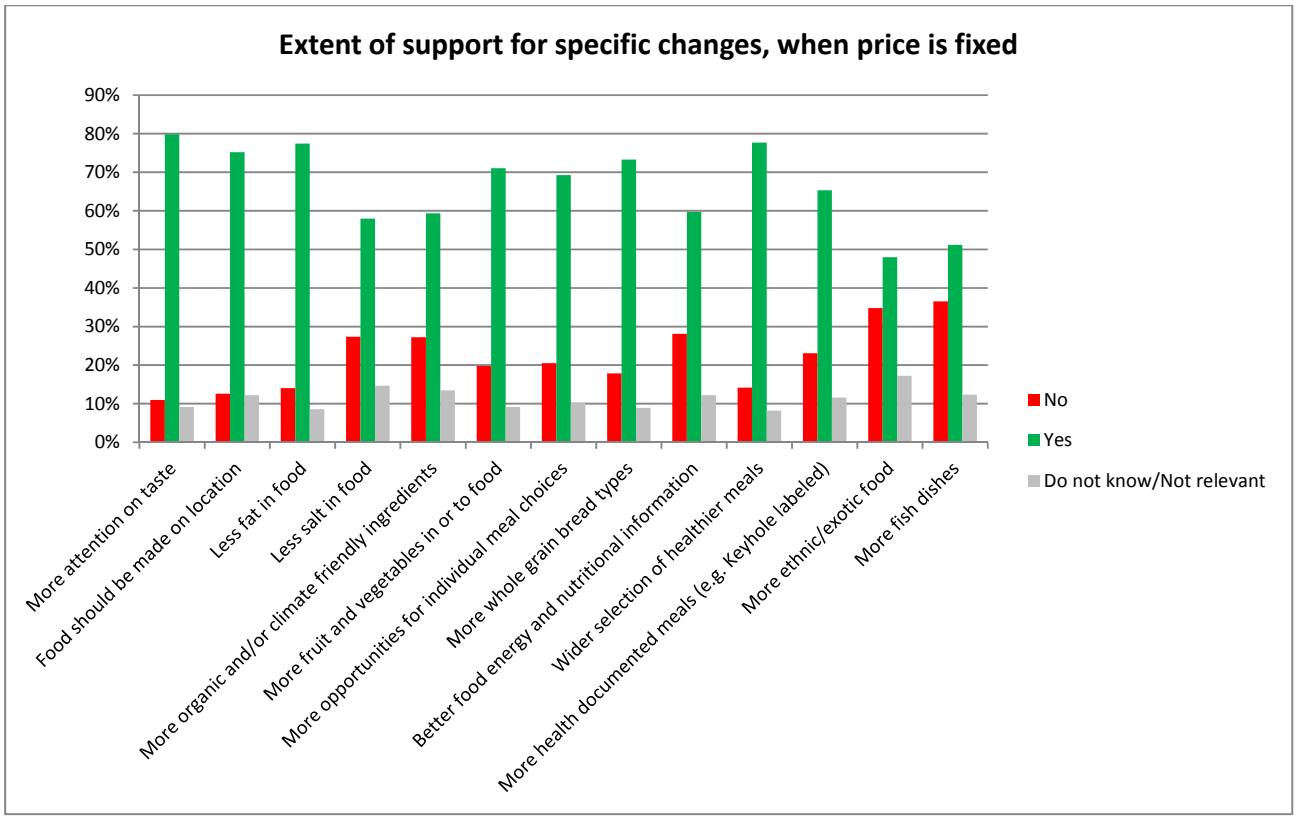

Figure 3-5 Extent of support for specific changes, when price is fixed (respondents were asked to answer for every statement) (no: no, not at all and no, to a lesser extent, yes: yes, very much and yes, to some extent), n=819.

Those who answered yes to some of the specific changes were then asked if these changes were implemented to the market which effect they would have on respondents' shopping/eating behaviours. 78 % would buy the new products/concepts and 52 % would buy more fast food/take away (37 % would not buy more fast food/take away) (cf. Table 3).

Table 3 Effect of implementing supported changes (respondents were asked to answer for every statement) (no: no, not at all and no, to a lesser extent, yes: yes, very much and yes, to some extent), n=753.

Effect of implementing supported changes			
	No	**Yes**	**Do not know/Not relevant**
Buy the new products instead of the ones bought present	14 %	78 %	8 %
Buy more fast food/take away	37 %	52 %	11 %

3.1.4 "Burger-Segment" vs. "Rest of population"

The BS consisted of 96 respondents (REST, 723 respondents). The gender distribution was 73 % males vs. 27 % females for BS which was significantly different than for REST (48 % vs. 52 %) (P<0.001). When looking at the age group distribution there was a remarkable variation between the two segments (P<0.001), where BS had a greater amount of young respondents while a distribution inclining towards the older part accounted for REST (cf. Table 4). Regarding living situation there was no difference (P=0.636) between the two segments and the data was distributed almost equal (BS: 22 % alone, 78 % with others, REST: 24 % alone, 76 % with others). Highest completed education showed a difference between the two (P=0.042) with BS vs. REST; primary school (10 years or less) (22 % vs. 12 %), vocational education, practical (10-12 years) (14 % vs. 22 %), high school diploma/diploma in commerce, theoretical (10-12 years) (19 % vs. 18 %), short-cycle higher education (Ba. degree or similar; 13-15 years) (25 % vs. 26 %), and medium-/long-cycle higher education (M.Sc., Ph.D. degree; 15≥ years) (21 % vs. 23 %).

Table 4 Segmented age distribution for Burger-Segment (BS) and Rest of population (REST), n=96, n=723. Significant difference between the two segments (P<0.001).

Segmented age distribution		
Age groups	**BS**	**REST**
18-24 y	27 %	12 %
25-34 y	28 %	18 %
35-44 y	22 %	22 %
45-54 y	18 %	22 %
55-65 y	5 %	27 %

BMI distribution was not significantly different between the two segments (P=0.344), BS vs. REST; BMI<18.5 (3 % vs. 2 %), BMI=18.5-25 (51 % vs. 46 %), BMI=25-30 (26 % vs. 33 %), BMI=30-35 (10 % vs. 11 %), BMI=35-40 (4 % vs. 2 %), BMI >40 (4 % vs. 2 %), outliers (1 % vs. 1 %), and "do not know" (0 % vs. 2 %).

3.1.4.1 Lifestyle

Physical activity during work or leisure time showed no significant difference between the two segments (P=0.059, P=0.443) but respondents seemed to follow a quite sedentary life style (Data not shown. See Appendix 4: Questionnaire Graphs for illustrative data).

Self-assessed health yielded a highly significant difference between the two (P<0.001), with REST having a very good (30 %) or excellent (11 %) health (for BS 17 % and 8 %) (cf. Table 5).

To clarify behavioural aspects of health, respondents were asked if they endeavored to eat healthy on a daily basis (cf. Table 5). There was a notable difference among the segments where BS had predominance in the "not-so-healthy" part of the scale while the opposite applied to REST (P<0.001). To elucidate attitude perspectives on health of the respondents, they were asked to assess whether they found their eating habits healthy or not and whether they had a future desire to eat healthier. REST found their eating habits healthier than BS did (P<0.001) (cf. Table 5). As for future desire of healthier eating, REST had no desire (24 % vs. 16 %)

or wanted to start immediately (17 % vs. 10 %) while BS had a more distant desire for this matter (P=0.016 overall between the two segments) (cf. Table 5).

Table 5 Segmented health behaviour and attitude for Burger-Segment (BS) and Rest of population (REST), n=96, n=723.

Segmented health behaviour			
	BS	**REST**	**Significance**
"How would you rate your health all-in-all?"			
Poor	4 %	1 %	P<0.001
Fair	14 %	11 %	
Good	51 %	46 %	
Very good	17 %	30 %	
Excellent	8 %	11 %	
Do not know	6 %	1 %	
"Do you endeavor to eat healthy on a daily basis?"			
No, never	5 %	3 %	P<0.001
Sometimes	52 %	28 %	
Yes, often	32 %	44 %	
Yes, very often	3 %	24 %	
Do not know	7 %	1 %	
"Do you consider your eating habits as healthy enough?"			
No, not at all	10 %	7 %	P<0.001
No, only partly	42 %	28 %	
Yes, to some extent	32 %	50 %	
Yes, very much	10 %	14 %	
Do not know	5 %	1 %	
"Do you desire to eat healthier in the future?"			
No	16 %	24 %	P=0.016
Yes, in a distant future	21 %	10 %	
Yes, during the next 6 months	17 %	12 %	
Yes, during the next 3 months	8 %	11 %	
Yes, during the next month	11 %	9 %	
Yes, from now on	10 %	17 %	
Yes, other	3 %	3 %	
Do not know	14 %	15 %	

3.1.4.2 Segmented fast food intake

When asked upon the frequency of consuming fast food/take away in general, there was a remarkable difference between BS and REST (P<0.001) (cf. Figure 3-6). BS had a greater prominence in the more frequent part of the scale than REST had.

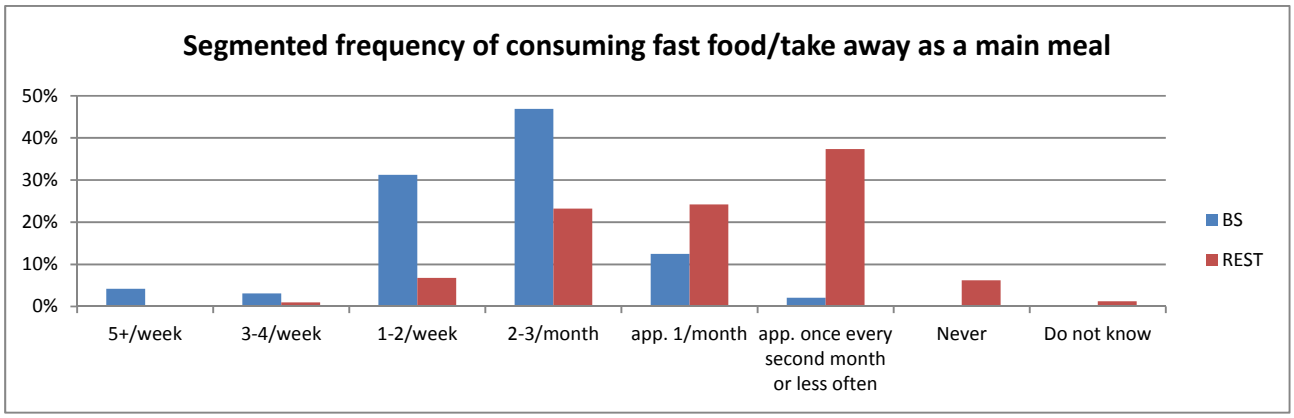

Figure 3-6 Segmented frequency of consuming fast food/take away as a main meal for Burger-Segment (BS) and Rest of population (REST), n=96, n=723. Significant difference between the two segments (P<0.001).

The respondents, who ate fast food/take away approximately once per month or more often, were asked further questions about their attitudes towards and use of fast food/take away.

Reasons for buying fast food/take away showed differences between the two segments (cf. Figure 3-7). There were differences in two statements, where REST was more concerned about the food being perceived as healthy (P=0.013) while BS differed on the practical statement for the food being easy to consume with fingers (P=0.012).

Figure 3-7 Segmented typical choice reasons when consuming fast food/take away as a main meal for Burger-Segment (BS) and Rest of population (REST), n=94, n=399 (maximum of three choices pr. respondent). Significant difference between the two segments: * P<0.05.

Assessment of the fast food/take away consumed most often also showed differences (cf. Figure 3-8). REST assessed the food as appearing more appetizing (P=0.039) and also thought that the price had been more

appropriate compared to BS (P<0.001). Differences were also present when asked to assess if the food had been organic and/or climate friendly, where BS had stronger opinions on the statement (P=0.020).

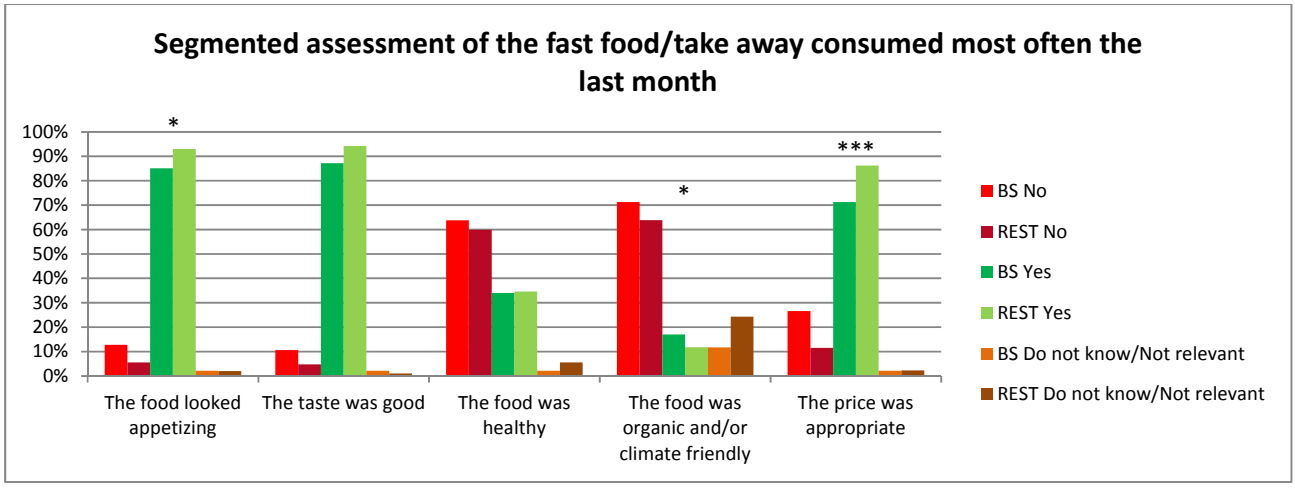

Figure 3-8 Segmented assessment of the fast food/take away consumed most often the last month for Burger-Segment (BS) and Rest of population (REST) (no: no, not at all and no, to a lesser extent, yes: yes, very much and yes, to some extent) (respondents were asked to answer for every statement), n=94, n=399. Significant difference between the two segments: * P<0.05, ***P<0.001.

3.1.4.3 Segmented healthier fast food options

As previously mentioned the respondents were asked to assess four burger menus for price (data not shown) and prioritize among the menus (for elaborated explanation of the menus see section 3.1.3.3). Analysis of prioritizing among the menus for the two segments showed a highly significant difference (P<0.001) (cf. Figure 3-9). REST chose the Keyhole labeled menu more often than did BS and the opposite was the case for the regular menu.

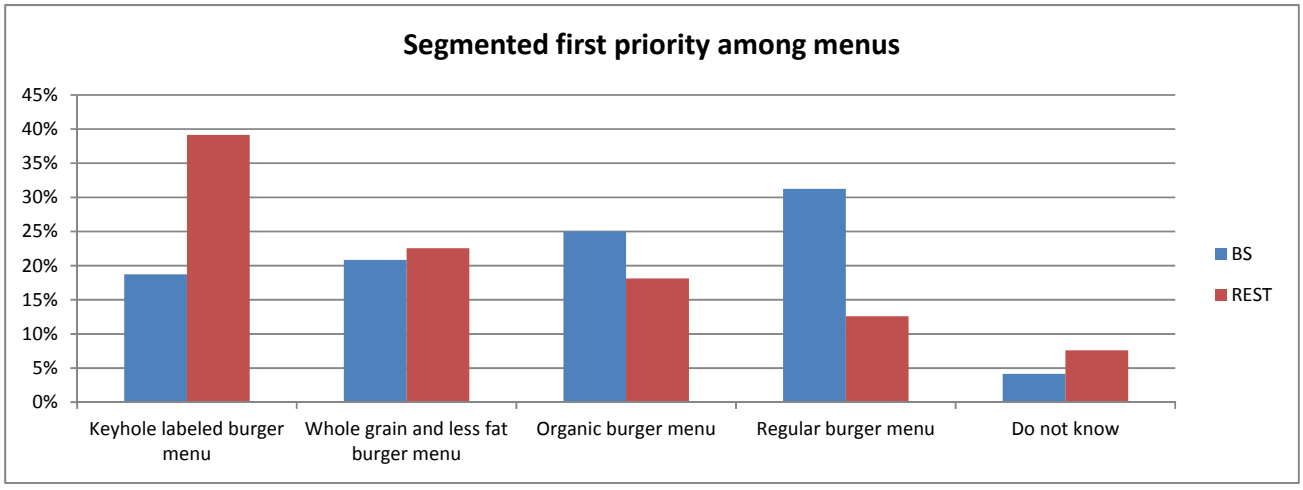

Figure 3-9 Segmented first priority among menus for Burger-Segment (BS) and Rest of population (REST), n=96, n=723. Significant difference between the two segments (P<0.001).

Extent of support for specific changes to the existing fast food market showed variances among BS and REST (changes were thought implemented provided that the price was fixed to the current level of fast food) (cf. Figure 3-10). REST was more interested in health compared to BS for changes like; "less fat in food" (P<0.001), "more whole grain bread types" (P<0.001), and the interest for personalizing meals was likewise more profound for REST than BS (P<0.05). Although there were significant differences, BS showed considerable support for the changes. A difference was furthermore seen when asked if respondents wanted more ethnic/exotic food where BS was least interested (P<0.001).

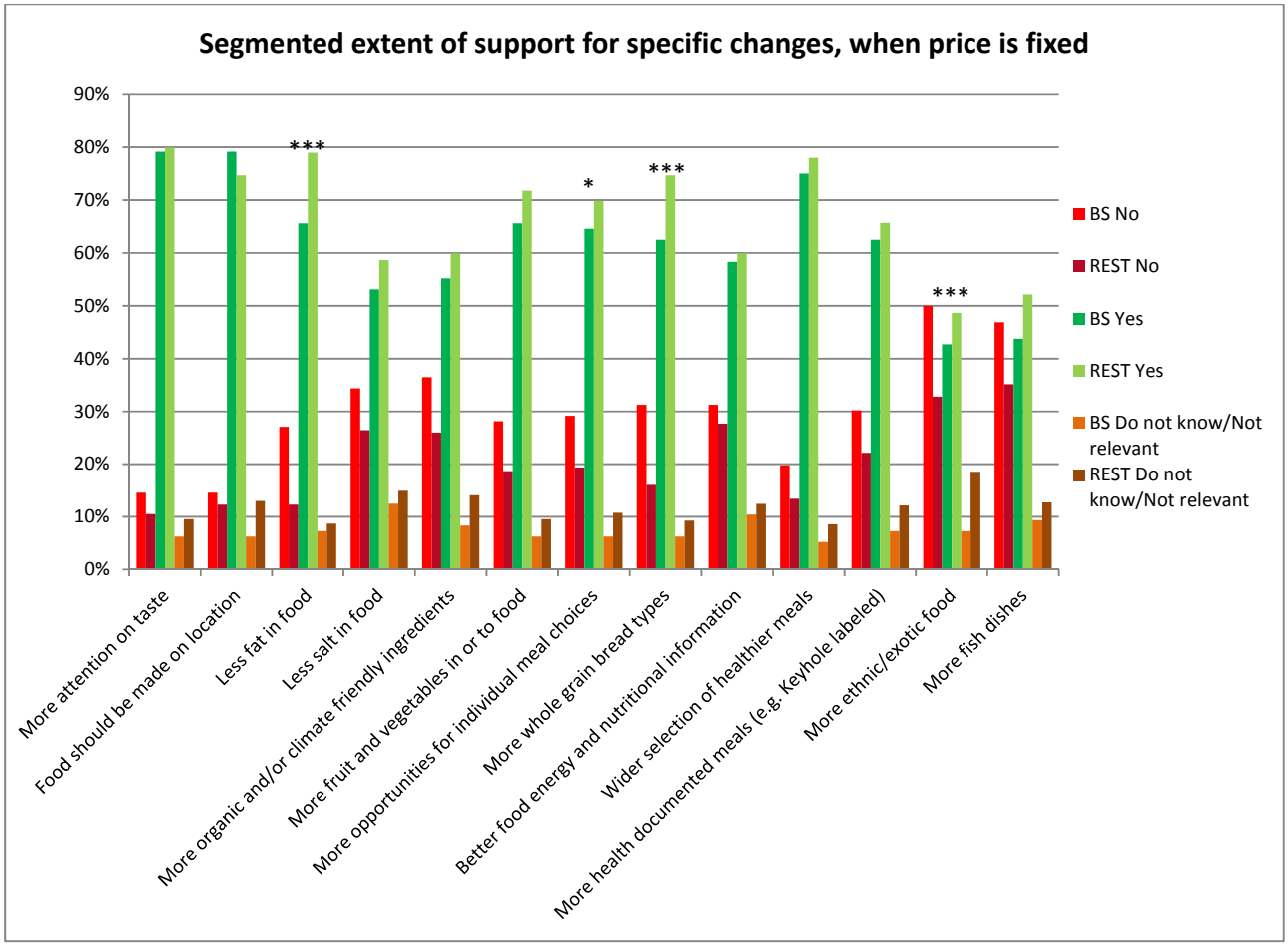

Figure 3-10 Segmented extent of support for specific changes, when price is fixed for Burger-Segment (BS) and Rest of population (REST) (no: no, not at all and no, to a lesser extent, yes: yes, very much and yes, to some extent) (respondents were asked to answer for every statement), n=96, n=723. Significant difference between the two segments: * P<0.05, ***P<0.001.

3.1.5 Further segmentation

For additional segmentation some questions were analyzed in terms of gender, age group, the assessment of own health, and the assessment of one's own adequate healthy eating habits.

There was a highly significant difference in the frequency of consuming fast food/take away between all segments (P<0.001 for all) (cf. Table 6). For gender, women were represented more in the lower part of the frequency scale while the opposite was the case for men. The younger age groups ate fast food/take away more frequent than the older groups.

Table 6 Frequency of consuming fast food/take away as a main meal for different segments.

Segmented frequency of consuming fast food/take away as a main meal										
	5+/ week	**3-4/ week**	**1-2/ week**	**2-3/ month**	**app. 1/ month**	**app. 1/second month or less often**	**Never**	**Do not know**	**Significance**	**n**
Gender										
Men	1 %	2 %	11 %	29 %	23 %	27 %	6 %	2 %	P<0.001	414
Women	0 %	1 %	9 %	23 %	23 %	40 %	5 %	1 %		405
Age groups										
18-24 y	3 %	2 %	9 %	35 %	23 %	22 %	4 %	3 %	P<0.001	111
25-34 y	1 %	3 %	16 %	34 %	23 %	22 %	1 %	1 %		154
35-44 y	0 %	1 %	13 %	26 %	26 %	29 %	5 %	1 %		182
45-54 y	0 %	1 %	10 %	26 %	19 %	40 %	4 %	1 %		173
55-65 y	0 %	1 %	3 %	15 %	22 %	47 %	13 %	1 %		199
Self-assessment of own health										
Poor	8 %	8 %	8 %	31 %	8 %	31 %	8 %	0 %	P<0.001	13
Fair	1 %	1 %	14 %	21 %	21 %	34 %	4 %	2 %		90
Good	0 %	2 %	11 %	26 %	23 %	32 %	6 %	1 %		383
Very good	0 %	0 %	7 %	27 %	28 %	34 %	5 %	0 %		231
Excellent	0 %	0 %	9 %	26 %	17 %	39 %	7 %	2 %		89
Do not know	8 %	15 %	8 %	31 %	8 %	8 %	0 %	23 %		13
Self-assessment of adequate healthy eating habits										
No, not at all	0 %	7 %	15 %	35 %	17 %	23 %	3 %	0 %	P<0.001	60
No, only partly	1 %	0 %	15 %	29 %	23 %	29 %	3 %	0 %		239
Yes, to some extent	0 %	1 %	7 %	27 %	26 %	34 %	4 %	1 %		393
Yes, very much	1 %	0 %	5 %	15 %	16 %	46 %	17 %	0 %		112
Do not know	7 %	13 %	13 %	7 %	7 %	20 %	0 %	33 %		15

For the respondents consuming fast food/take away approximately once per month or more frequently, there were variances in the reasons for consumption between the segments (cf. Table 7). Women preferred the food perceived most healthy (P<0.05) and men preferred the convenience of food which could be consumed with fingers (P<0.05). The younger age groups ate more out of habit than the older age groups (P<0.001).

When asked to assess the fast food/take away consumed most often the last month, significant differences were presents (cf. Table 8). Women considered the food they had consumed as more healthy than men did (P<0.01). In age groups there was an increasing agreement with the food being healthy and being organic and/or climate friendly for the lower and the upper groups (P<0.05). With increasing age there was higher agreement for the price as being appropriate (P<0.05). Those who found their eating habits healthy, found the

food consumed most often the last month significantly healthier than those who had a less healthy assessment of their own eating habits (P<0.001).

Table 7 Typical choice reasons when consuming fast food/take away as a main meal for different segments (maximum of three choices pr. respondent). Significant difference between the individual segments: * P<0.05, **P<0.01, ***P<0.001.

Segmented typical choice reasons when consuming fast food/take away as a main meal									
	What I am used to (habitual, same fast food/take away)	Fast food/take away most appetizing and tempting	Fast food/take away most reasonable in price	Fast food/take away perceived most healthy	Fast food/take away which can be consumed with fingers	Organic and/or climate friendly fast food/take away	None of the mentioned	Do not know	n
Gender									
Men	48 %	40 %	36 %	19 %*	20 %*	5 %	5 %*	6 %	269
Women	49 %	40 %	30 %	26 %*	13 %*	7 %	10 %*	3 %	224
Age groups									
18-24 y	53 %***	41 %	19 %	46 %	24 %	9 %	4 %	8 %	80
25-34 y	39 %***	50 %	26 %	48 %	15 %	6 %	3 %	3 %	117
35-44 y	29 %***	39 %	23 %	52 %	22 %	4 %	9 %	5 %	120
45-54 y	24 %***	34 %	18 %	55 %	14 %	7 %	9 %	0 %	96
55-65 y	23 %***	34 %	25 %	39 %	9 %	3 %	10 %	8 %	80
Self-assessment of own health									
Poor	75 %	25 %	25 %	63 %	25 %	13 %	13 %	0 %***	8
Fair	36 %	51 %	23 %	53 %	26 %	4 %	4 %	0 %***	53
Good	34 %	40 %	20 %	49 %	14 %	5 %	9 %	5 %***	235
Very good	31 %	39 %	26 %	47 %	18 %	9 %	7 %	4 %***	142
Excellent	28 %	39 %	28 %	52 %	17 %	0 %	4 %	2 %***	46
Do not know	22 %	22 %	0 %	11 %	11 %	0 %	0 %	56 %***	9
Self-assessment of adequate healthy eating habits									
No, not at all	52 %	46 %	11 %***	59 %**	21 %	5 %	2 %	0 %***	44
No, only partly	33 %	42 %	13 %***	56 %**	18 %	3 %	10 %	1 %***	163
Yes, to some extent	31 %	39 %	29 %***	45 %**	16 %	7 %	6 %	6 %***	238
Yes, very much	32 %	39 %	39 %***	34 %**	15 %	10 %	7 %	5 %***	41
Do not know	29 %	14 %	0 %***	14 %**	14 %	0 %	14 %	43 %***	7

Table 8 Agreement with assessment of the fast food/take away consumed most often the last month for different segments (data only shown for agreement (yes: yes, very much and yes, to some extent)) (respondents were asked to answer for every statement). Significant difference between the individual segments: * P<0.05, **P<0.01, ***P<0.001.

Segmented agreement with assessment of the fast food/take away consumed most often the last month						
	The food looked appetizing	**The taste was good**	**The food was healthy**	**The food was organic and/or climate friendly**	**The price was appropriate**	**n**
Gender						
Men	89 %	91 %	29 %**	13 %	80 %	269
Women	95 %	95 %	41 %**	13 %	87 %	224
Age groups						
18-24 y	88 %	89 %	40 %*	23 %*	76 %*	80
25-34 y	89 %	94 %	35 %*	13 %*	80 %*	117
35-44 y	93 %	91 %	25 %*	8 %*	79 %*	120
45-54 y	95 %	96 %	35 %*	9 %*	92 %*	96
55-65 y	93 %	95 %	41 %*	14 %*	91 %*	80
Self-assessment of own health						
Poor	75 %***	88 %***	38 %	0 %	75 %***	8
Fair	89 %***	93 %***	32 %	8 %	74 %***	53
Good	92 %***	92 %***	31 %	14 %	83 %***	235
Very good	94 %***	96 %***	39 %	12 %	91 %***	142
Excellent	94 %***	98 %***	46 %	17 %	85 %***	46
Do not know	56 %***	44 %***	22 %	11 %	33 %***	9
Self-assessment of adequate healthy eating habits						
No, not at all	86 %***	96 %***	16 %***	5 %**	77 %***	44
No, only partly	90 %***	94 %***	23 %***	9 %**	82 %***	163
Yes, to some extent	94 %***	93 %***	40 %***	13 %**	87 %***	238
Yes, very much	95 %***	93 %***	73 %***	32 %**	83 %***	41
Do not know	57 %***	43 %***	14 %***	29 %**	43 %***	7

There were significant differences for gender when asked to prioritize among the menus (cf. Table 9). More men chose the regular menu and the menu with whole grain and less fat while women wanted the Keyhole labeled menu (P<0.001). The youngest respondents were more interested in the regular menu while increasing age increased the desire for the Keyhole labeled menu (P=0.011).

Table 9 First priority among menus for different segments.

Segmented first priority among menus							
	Keyhole labeled burger menu	**Whole grain and less fat burger menu**	**Organic burger menu**	**Regular burger menu**	**Do not know**	**Significance**	**n**
Gender							
Men	25 %	26 %	19 %	21 %	9 %	P<0.001	414
Women	49 %	18 %	19 %	9 %	6 %		405
Age groups							
18-24 y	26 %	21 %	19 %	29 %	5 %	P=0.011	111
25-34 y	38 %	21 %	19 %	16 %	7 %		154
35-44 y	36 %	26 %	20 %	14 %	4 %		182
45-54 y	41 %	21 %	18 %	12 %	8 %		173
55-65 y	39 %	21 %	19 %	10 %	11 %		199
Self-assessment of own health							
Poor	39 %	31 %	8 %	23 %	0 %	P<0.001	13
Fair	31 %	24 %	18 %	21 %	6 %		90
Good	37 %	25 %	16 %	14 %	9 %		383
Very good	39 %	19 %	25 %	12 %	6 %		231
Excellent	44 %	20 %	21 %	14 %	1 %		89
Do not know	0 %	15 %	8 %	31 %	46 %		13
Self-assessment of adequate healthy eating habits							
No, not at all	27 %	30 %	17 %	23 %	3 %	P<0.001	60
No, only partly	34 %	26 %	18 %	18 %	4 %		239
Yes, to some extent	39 %	22 %	20 %	12 %	8 %		393
Yes, very much	46 %	14 %	21 %	9 %	10 %		112
Do not know	0 %	7 %	0 %	53 %	40 %		15

Differences were present in support for specific changes to the existing fast food market (changes were thought implemented provided that the price was fixed to the current level of fast food) (cf. Table 10). Women were generally more positive toward specific changes and compared to men, they were significantly more interested in; “more attention to taste” (P<0.05), “less fat in food” (P<0.001), “less salt in food” (P<0.05), “more organic and/or climate friendly ingredients” (P<0.001), “more fruit and vegetables in or to food” (P<0.001), “more opportunities for individual meal choices” (P<0.001), “more whole grain bread types” (P<0.001), “better food energy and nutritional information” (P<0.001), “wider selection of healthier meals” (P<0.001), and “more health documented meals” (P<0.001). The youngest age group were less interested in more fruit and vegetables (P<0.05) and increasing age also increased the wish for more fish dishes (P<0.01). Increasing positive assessment of own health showed a correlation to more attention on taste (P<0.001), less salt in food (P<0.01), and more whole grain bread types (P<0.001). Those who found their eating habits healthier also preferred less salt in food (P<0.001), more fruit and vegetables (P<0.001), better food energy and nutritional information (P<0.001), more health documented meals (P<0.001), and more organic and/or climate friendly food (P<0.001).

Table 10 Support for specific changes, when price is fixed for different segments (data only shown for agreement (yes: yes, very much and yes, to some extent)) (respondents were asked to answer for every statement). Significant difference between the individual segments: * P<0.05, **P<0.01, ***P<0.001.

Segmented support for specific changes, when price is fixed														
	More attention on taste	Food should be made on location	Less fat in food	Less salt in food	More organic and/or climate friendly ingredients	More fruit and vegetables in or to food	More opportunities for individual meal choices	More whole grain bread types	Better food energy and nutritional information	Wider selection of healthier meals	More health documented meals (e.g. Keyhole labeled)	More ethnic/exotic food	More fish dishes	n
Gender														
Men	78 % *	75 %	69 % ***	54 % *	53 % ***	60 % ***	64 % ***	65 % ***	52 % ***	69 % ***	56 % ***	45 %	48 %	414
Women	82 % *	75 %	86 % ***	63 % *	66 % ***	83 % ***	75 % ***	82 % ***	67 % ***	86 % ***	75 % ***	51 %	54 %	405
Age groups														
18-24 y	78 % *	68 %	70 %	58 %	53 %	57 % *	69 %	66 % *	55 %	76 %	59 % *	44 %	41 % **	111
25-34 y	82 % *	76 %	75 %	60 %	63 %	75 % *	68 %	76 % *	60 %	77 %	68 % *	55 %	51 % **	154
35-44 y	88 % *	79 %	81 %	62 %	63 %	75 % *	74 %	76 % *	59 %	82 %	71 % *	52 %	53 % **	182
45-54 y	80 % *	76 %	82 %	59 %	60 %	74 % *	73 %	76 % *	62 %	78 %	65 % *	46 %	50 % **	173
55-65 y	72 % *	75 %	76 %	52 %	57 %	70 % *	63 %	70 % *	61 %	75 %	62 % *	43 %	56 % **	199
Self-assessment of own health														
Poor	62 % ***	54 % **	77 % ***	39 % **	31 % **	54 % ***	54 % **	69 % ***	46 % **	77 % ***	46 % **	54 % **	46 %	13
Fair	77 % ***	76 % **	73 % ***	50 % **	49 % **	66 % ***	71 % **	67 % ***	57 % **	76 % ***	61 % **	49 % **	54 %	90
Good	82 % ***	77 % **	79 % ***	57 % **	59 % **	71 % ***	70 % **	73 % ***	61 % **	79 % ***	65 % **	43 % **	52 %	383
Very good	81 % ***	75 % **	79 % ***	62 % **	64 % **	72 % ***	70 % **	77 % ***	59 % **	79 % ***	70 % **	52 % **	49 %	231
Excellent	81 % ***	78 % **	82 % ***	67 % **	67 % **	83 % ***	71 % **	78 % ***	65 % **	78 % ***	71 % **	60 % **	55 %	89
Do not know	39 % ***	31 % **	15 % ***	23 % **	23 % **	31 % ***	31 % **	23 % ***	23 % **	31 % ***	15 % **	15 % **	15 %	13
Self-assessment of adequate healthy eating habits														
No, not at all	80 % ***	80 % ***	77 % ***	48 % ***	38 % ***	63 % ***	70 % ***	63 % ***	52 % ***	68 % ***	53 % ***	52 % *	40 % ***	60
No, only partly	82 % ***	76 % ***	76 % ***	57 % ***	54 % ***	65 % ***	72 % ***	71 % ***	57 % ***	78 % ***	61 % ***	49 % *	45 % ***	239
Yes, to some extent	82 % ***	78 % ***	81 % ***	60 % ***	65 % ***	76 % ***	71 % ***	78 % ***	64 % ***	81 % ***	70 % ***	48 % *	56 % ***	393
Yes, very much	77 % ***	70 % ***	76 % ***	63 % ***	68 % ***	77 % ***	67 % ***	75 % ***	64 % ***	80 % ***	71 % ***	46 % *	60 % ***	112
Do not know	13 % ***	20 % ***	13 % ***	13 % ***	7 % ***	27 % ***	13 % ***	7 % ***	7 % ***	20 % ***	7 % ***	20 % *	13 % ***	15

3.2 In-store experiment

3.2.1 Pilot-test

3.2.1.1 Background variables

A total of 12 customers were approached in the pilot-test. Six chose to participate (50 %) and six declined. Half of those who agreed to participate (respondents) were female and the average respondent age was 41 years (21-87 years). Highest completed educational degree for respondents were; 33 % medium-/long-cycle higher education (M.Sc., Ph.D. degree; 15≥ years), 33 % short-cycle higher education (Ba. degree or similar; 13-15 years), 17 % high school diploma/diploma in commerce, theoretical (10-12 years), and 17 % for vocational education, practical (10-12 years).

3.2.1.2 Output/results

Eligible customers for the main experiment were found to be people with understanding of the Danish language and people/children old enough to order for themselves. It was concluded that only one researcher should approach customers since people appeared overwhelmed when two researchers approached them. Approaching moment was found to be most suitable at the point where the customer had taken a seat in the restaurant either with their food or to wait for their food to be served. The researcher should try to make the sampling of customers as random as possible so when a researcher was available, he or she should approach the next potential customer. None of the respondents had any comments or questions for the questionnaire when interviewed after fulfillment and delivery of the questionnaire.

On the day of the pilot-test McDonald's had their own researchers in the restaurant to ask young women for consent to try a new burger. This gave some issues for approaching the same customer who had already been asked by another person. These McDonald's researchers were confirmed not to be present in the restaurant at the main experiment.
The dining-in customers did not receive a receipt at the pilot. It was reconfirmed by McDonald's Denmark that receipts were to be given for every dining-in customer at the main experiment.

3.2.2 Main results

3.2.2.1 Respondents

A total of 321 customers were approached and 227 consented to participate in the survey (94 non-respondents) where 10 were non-completers giving 217 actual respondents. There were no significant differences between the two lines (control and intervention) for gender, age groups, highest completed education, BMI, and endeavor to daily healthy eating (cf. Table 11). Respondents were represented to a higher extent by males, younger people, people with shorter completed educations, and people with normal BMI.

Table 11 Demographic data for respondents in the in-store experiment.

Demographic data				
	Control	Intervention	Significance	n
Gender				
Male	52 %	61 %	P=0.197	121
Female	48 %	39 %		96
Age groups				
18-24 y	37 %	29 %	P=0.544	74
25-34 y	21 %	18 %		43
35-44 y	27 %	31 %		61
45-54 y	10 %	15 %		26
55-65 y	5 %	7 %		13
Highest completed education				
Primary school (10 years or less)	32 %	27 %	P=0.324	64
Vocational education, practical (10-12 years)	11 %	11 %		23
High school diploma/Diploma in commerce, theoretical (10-12 years)	16 %	15 %		33
Short-cycle higher education (Ba. degree or similar; 13-15 years)	13 %	25 %		38
Medium-/long-cycle higher education (M.Sc., Ph.d. degree; 15≥ years)	28 %	22 %		54
BMI				
<18,5	5 %	6 %	P=0.479	11
18,5-25	64 %	67 %		142
25-30	22 %	22 %		48
30-35	6 %	1 %		9
35-40	1 %	2 %		3
>40	0 %	0 %		0
Outliers	2 %	1 %		4
Endeavor to daily healthy eating				
No, never	8 %	4 %	P=0.521	13
Sometimes	28 %	24 %		57
Yes, often	42 %	52 %		99
Yes, very often	21 %	19 %		43
Do not know	2 %	2 %		4

3.2.2.2 Bought and consumed

There were no differences between lunch and dinner for the lines therefore data is analyzed for the whole period.

A total of 11 respondents had made the “healthier choice” and there was a significant difference between the lines (cf. Table 12) (“healthier choice” category consisted of: McFeast on a fiber bun, salads, Grilled Chicken Wrap, carrots, and spring water). An almost five times greater amount of “healthier choices” were made at the intervention line (9 %) compared to the control lines (2 %) (P=0.019).

For purchases of regular vs. big menus, there was a significant variance between the lines (P=0.027) (cf. Table 12). A larger amount of big menus were sold at the control lines (20 %) than at the intervention line (6 %).

Table 12 Categorized respondents purchasing behaviour. Healthier choice consists of: McFeast on a fiber bun, salads, Grilled Chicken Wrap, carrots and spring water. Menu sizes were analyzed on the basis of purchases of medium (regular) sized French fries and large (big) portions.

Categorized respondents purchasing behaviour				
	Control	Intervention	Significance	n
Healthier choice				
No	98 %	91 %	P=0.019	206
Yes	2 %	9 %		11
Menu size				
Regular	80 %	94 %	P=0.027	108
Big	20 %	6 %		19

For a further detailed view of the "healthier choices" made during the experiment, sales reports were provided by McDonald's Denmark for the two survey days (McDonald's Denmark, 2013b).

Of McFeast burgers sold 1 % vs. 19 % (control vs. intervention) was made of a bun containing more fiber than an ordinary bun (cf. Table 13). 2 % vs. 6 % ordered carrots instead of French fries as a side order (carrots plus French fries as total) for the two lines, and 6 % vs. 3 % for spring water vs. soda out of the total sale of soda and spring water. For the control lines and the intervention line 44 % and 32 % ordered big menus out of the total amount of ordered menus (large and medium menus).

Table 13 Sales data from McDonald's Denmark for the two consecutive survey days.

Sales data from McDonald's		
	Control	Intervention
McFeast-Fiber bun out of total McFeasts (ordinary and fiber buns)	1 %	19 %
Amount of carrots out of total side orders (carrots and French fries)	2 %	6 %
Amount of spring water out of total drinks (spring water and soda)	6 %	3 %
Amount of big menus out of total menus (large and medium)	44 %	32 %

Energy intake for the meal consumed during the in-store experiment showed a significant difference between the register lines (P=0.025, η^2=0.025) (cf. Table 14). The energy intake for customers who had purchased their meal at the intervention line was on average 472 kJ (113 kcal) lower than those who had purchased their meal at a control line. Those who had made a "healthier choice" when purchasing their meal only showed a tendency in reducing mean energy intake compared to those who did not make a "healthier choice" (P=0.069, η^2=0.016). For those who chose a big menu a highly significant difference was seen compared to those who chose a regular menu (P<0.001, η^2=0.119) giving an average higher energy intake of 1152 kJ (268 kcal). No significant differences were seen for "endeavor to daily healthy eating" (P=0.316, η^2=0.024) neither when further post hoc tests were performed (data not shown).

Table 14 Energy intake for consumed meal at in-store experiment. One-way analysis of variance (ANOVA) for register lines, healthier choice, menu size and endeavor to daily healthy eating.

Energy intake						
	Mean (kJ/kcal)	SD (kJ/kcal)	F	Significance	Eta Squared	n
Register lines						
Control	4027/962	1423/340	5.08	P=0.025	0.025	121
Intervention	3555/849	1499/358				80
Healthier choice						
No	3885/928	1463/350	3.33	P=0.069	0.016	190
Yes	3058/730	1382/330				11
Menu size						
Regular	4310/1030	1119/267	16.96	P=0.001	0.119	108
Big	5435/1298	965/231				19
Endeavor to daily healthy eating						
No, never	3899/931	1387/331	1.19	P=0.316	0.024	13
Sometimes	4072/973	1345/321				56
Yes, often	3879/927	1339/320				87
Yes, very often	3546/847	1738/415				40
Do not know	2895/691	2789/666				4

3.2.2.3 *Survey answers*

Results are represented in totals since there were no significant differences between controls and intervened for questionnaire answers.

About 75 % of the respondents consume fast food/take away 2-3 times per month or more often (cf. Figure 3-11).

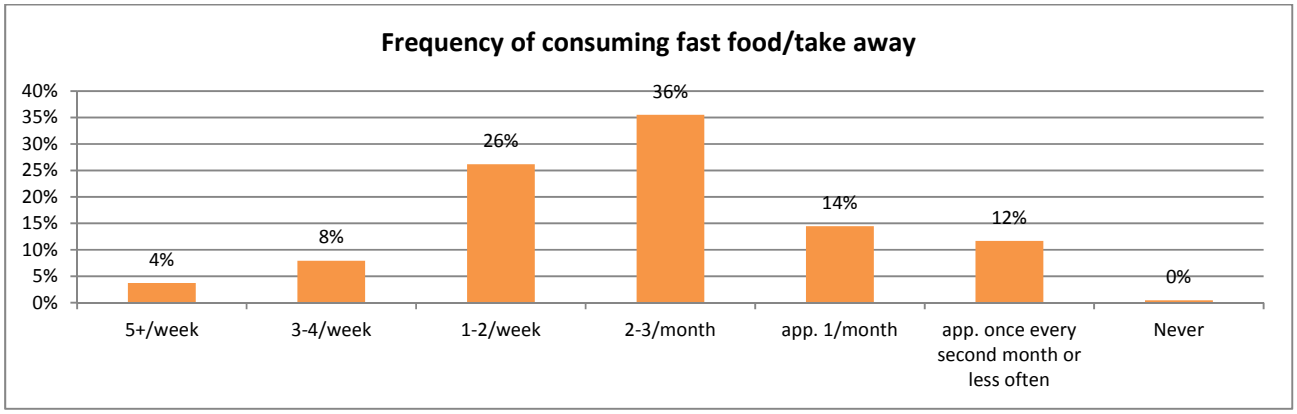

Figure 3-11 Frequency of consuming fast food/take away, n=214.

When asked what the reasons of choice for buying the meal just consumed, respondents' top reasons were; "what I am used to" (42 %), "the food looking most appetizing and tempting" (41 %), and "the food most reasonable in price" (34 %) (cf. Table 15).

Table 15 Choice reasons for consumed meal (maximum of three choices pr. respondent), n=217.

Choice reasons for consumed meal	
What I am used to (habitual, same type of food)	42 %
The food looking most appetizing and tempting	41 %
The food most reasonable in price	34 %
Other	14 %
The food perceived most healthy	11 %
Sustainable and/or climate friendly food	5 %

Assessment of the food just consumed revealed that the respondents were satisfied with the taste of the food, thought the food looked appetizing and found the price of the food appropriate but respondents did not find the food healthy (cf. Table 16).

Table 16 Assessment of the food consumed (respondents were asked to answer for every statement) (no: no, not at all and no, to a lesser extent, yes: yes, very much and yes, to some extent).

Assessment of the food consumed				
	No	**Yes**	**Do not know**	**n**
The food looked appetizing	18 %	80 %	2 %	213
The taste was good	8 %	91 %	1 %	214
The food was healthy	81 %	15 %	4 %	212
The price was appropriate	21 %	75 %	4 %	213

Respondents were asked to which extent they would support specific changes to the existing fast food market (provided that the price was fixed to the current level of fast food) (cf. Table 17). The most preferred changes were; "less fat in food" (73 %), "more attention on taste" (69 %), and "more fruit and vegetables in or to food" (68 %).

Table 17 Extent of support for specific changes, when price is fixed (respondents were asked to answer for every statement) (no: no, not at all and no, to a lesser extent, yes: yes, very much and yes, to some extent).

Extent of support for specific changes, when price is fixed				
	No	Yes	Do not know	n
More attention on taste	24 %	69 %	7 %	213
Less fat in food	22 %	73 %	5 %	215
More fruit and vegetables in or to food	26 %	68 %	6 %	209
More opportunities for individual meal choices	29 %	64 %	7 %	214
More whole grain bread types	32 %	61 %	8 %	213
More health documented meals (e.g. Keyhole labeled)	33 %	57 %	10 %	214

3.2.3 "Endeavor to daily healthy eating" segmentation

There was a highly significant difference in the frequency of consuming fast food/take away when segmenting respondents after their endeavor to daily healthy eating (P<0.001) (cf. Table 18). A greater extent of endeavor to daily healthy eating, the less often was fast food/take away consumed.

Table 18 Frequency of consuming fast food/take away segmented in regards to "endeavor to daily healthy eating".

Segmented frequency of consuming fast food/take away									
	5+/ week	3-4/ week	1-2/ week	2-3/ month	app. 1/ month	app. 1/second month or less often	Never	Significance	n
Endeavor to daily healthy eating									
No, never	25 %	17 %	42 %	0 %	17 %	0 %	0 %		12
Sometimes	4 %	9 %	38 %	29 %	13 %	9 %	0 %		56
Yes, often	3 %	6 %	25 %	45 %	13 %	8 %	0 %	P<0.001	98
Yes, very often	0 %	7 %	12 %	30 %	21 %	28 %	2 %		43
Do not know	0 %	0 %	25 %	75 %	0 %	0 %	0 %		4

In reasons for consumption of the meal there were differences in the segment (cf. Table 19). When endeavor to daily healthy eating decreased in frequency, the more often the food was chosen out of habit (P<0.05).

Table 19 Choice reasons for consumed meal segmented in regards to "endeavor to daily healthy eating" (maximum of three choices pr. respondent). *Significant difference in the segment (P<0.05).

Segmented choice reasons for consumed meal							
	The food most reasonable in price	The food looking most appetizing and tempting	The food perceived most healthy	What I am used to (habitual, same type of food)	Sustainable and/or climate friendly food	Other	n
Endeavor to daily healthy eating							
No, never	23 %	23 %	0 %	62 %*	0 %	15 %*	13
Sometimes	42 %	44 %	4 %	54 %*	5 %	7 %*	57
Yes, often	31 %	44 %	14 %	37 %*	5 %	13 %*	99
Yes, very often	33 %	33 %	14 %	33 %*	7 %	28 %*	43
Do not know	25 %	100 %	25 %	0 %*	0 %	0 %*	4

When asked to assess the food consumed, a significant difference was present (cf. Table 20). Increasing frequency of endeavor to daily healthy eating gave higher agreement with the food looking appetizing (P<0.05).

Table 20 Agreement with assessment of the food consumed segmented in regards to "endeavor to daily healthy eating (data only shown for agreement (yes: yes, very much and yes, to some extent)) (respondents were asked to answer for every statement). *Significant difference in the segment (P<0.05).

Segmented agreement with assessment of the food consumed					
	The food looked appetizing	The taste was good	The food was healthy	The price was appropriate	n
Endeavor to daily healthy eating					
No, never	69 %*	77 %	8 %	62 %	13
Sometimes	80 %*	98 %	15 %	72 %	53
Yes, often	83 %*	93 %	13 %	75 %	98
Yes, very often	79 %*	81 %	21 %	86 %	43
Do not know	75 %*	100 %	0 %	50 %	4

Support for specific changes to the existing fast food market was also asked upon (changes were thought implemented provided that the price was fixed to the current level of fast food) (cf. Table 21). There were highly significant differences present. Increasing frequency of endeavor to daily healthy eating resulted in a higher degree of support for all changes concerning health (P<0.001) i.e. "less fat in food", "more fruit and vegetables in or to food", "more whole grain bread types", and "more health documented meals". Furthermore being more concerned with daily healthy eating was correlated to wanting more attention on taste (P<0.05).

Table 21 Support for specific changes, when price is fixed segmented in regards to "endeavor to daily healthy eating (data only shown for agreement (yes: yes, very much and yes, to some extent)) (respondents were asked to answer for every statement). Significant differences in the segment: * P<0.05, ***P<0.001.

Segmented support for specific changes, when price is fixed							
	More attention on taste	**Less fat in food**	**More fruit and vegetables in or to food**	**More opportunities for individual meal choices**	**More whole grain bread types**	**More health documented meals (e.g. Keyhole labeled)**	**n**
Endeavor to daily healthy eating							
No, never	54 %*	39 %***	17 %***	58 %	15 %***	8 %***	12
Sometimes	69 %*	68 %***	64 %***	56 %	54 %***	47 %***	55
Yes, often	71 %*	81 %***	72 %***	65 %	63 %***	66 %***	95
Yes, very often	72 %*	79 %***	88 %***	69 %	83 %***	69 %***	42
Do not know	25 %*	0 %***	0 %***	75 %	0 %***	0 %***	4

4 Discussion

4.1 Main results of online questionnaire

The results of the online questionnaire show that no high-frequent users of fast food/take away were found (cf. Figure 3-1). If the results are compared with data from the Danish National Survey of Dietary Habits and Physical Activity from 2005-2008, the present results represent a more frequent use of fast food compared to this prior survey, where 46 % said they never consumed food from a hot dog stand, grill bar and alike and 32 % said they never consumed food from cafeteria, pizzeria, burger bar and alike (Groth et al., 2009), while only 5 % said they never consumed fast food/take away in the present data. However, the questions asked are not identical so results are not fully comparable.

Burgers rank as the second most often consumed fast food (cf. Table 1) (Pizza, calzone, pies, pirogues ranked number one) which reinforces the segmentation of BS vs. REST and justifies making the in-store experiment at a burger chain (McDonald's), since a considerable amount of people stated that they purchase and consume burgers.

The typical top reasons for consuming fast food/take away is habit, appetizing and tempting food and a reasonable price (cf. Table 2). For the Nordic study of young people the top reasons were characterized by convenience but followed by reasonable price and good quality of the food (Lavik, 2010). In our study we did not include the more convenience prone answer categories so it cannot be ruled out that the results might have turned out more uniform if the exact same question had been asked. Other studies found convenience reasons to top the list (Glanz et al., 1998; Rydell et al., 2008) and in one, good taste of the food was ranked highly (Rydell et al., 2008). In the present data, reasons for health are not prioritized as high as the previously mentioned reasons and this tendency was also seen in *Lavik*, *Rydell et al.,* and *Glanz et al.* (Glanz et al., 1998; Lavik, 2010; Rydell et al., 2008).

Reasons for consuming fast food/take away less often or never are similar between present results and results from the Nordic study. The top reason is that the food is unhealthy followed by the food being too expensive (cf. Figure 3-2) (Lavik, 2010). In the Nordic study a difference was seen between the countries, where Norway and Denmark found the price too expensive to a greater extent than Sweden and Finland (Lavik, 2010). For the present data general prices of food in Denmark might have influenced results, since food prices in Denmark are high compared to the price level in other European countries we normally compare ourselves to (Danmarks Statistik, 2010). This mindset of a generally too high price of food could have influenced respondents to find fast food too expensive as well.

From results of assessment of the food consumed most often the last month, there seems to be accordance between what people are purchasing and their typical reasons for consuming fast food/take away (cf. Figure 3-3, Table 2). People find the fast food they purchase appetizing and with the right price but they do not find the food healthy. This could be because the selection of healthier options is limited in today's market or it

could be because the healthy options which are available today are not appetizing to the customers or are too expensive.

When respondents are given a case of four different burger menus they choose the healthier options (cf. Figure 3-4). The Keyhole labeled menu is the most often chosen which imply that respondents might find this menu more trustworthy in being healthy compared to the whole grain and less fat menu, which was runner-up. The Keyhole labeled menu has a governmental controlled label assuring this menu to be a healthy choice and given that respondents choose this menu, reinforces the Keyhole label in being a strong brand and that people have confidence in it, like shown in other surveys (Krøyer and Schou, 2011).

Wishes for specific changes correspond with the wishes found in the Nordic study (Lavik, 2010; Mäkelä et al., 2011). Healthier options e.g. "less fat in food" (present: 77 %, Nordic: 48 %), more attention to taste (present: 80 %, Nordic: 16 %) and food made on location (present: 75 %, Nordic: 28 %) are some of the things respondents prefer the most in both studies.

4.2 Segmentation of online questionnaire

It cannot be established that the BS segment consumes fast food more frequently than REST since both gender and age group segmentation showed similar results (cf. Figure 3-6, Table 6). BS consists of a higher proportion of males and people in the younger age groups (cf. Table 4) so these factors might influence the higher intake. Other studies have also found males and younger people to have a more frequent or higher intake of fast food (Heidal et al., 2012; Mohr et al., 2007; Seo et al., 2011; K van der Horst et al., 2011). Self-assessment of health and healthy eating habits could have impact on the results as well, since BS consists of respondents who do not find their health and eating habits as good and healthy as REST does (cf. Table 5). Segmentation on the basis of health and healthy eating habits show similar proportions as did results for BS vs. REST segmentation for frequency of consuming fast food/take away (cf. Table 6, Figure 3-6).

Differences found in the results for reasons for consuming fast food for BS and REST segmentation, can be due to other factors. Women prefer healthy foods and men want food that is convenient to consume with fingers (cf. Table 7) and these findings are similar to REST (healthy food) and BS (convenient) (cf. Figure 3-7). So the higher proportion of males in BS could be the reason for these results. It is remarkable that people who do not find their eating habits healthy are more profound of choosing the food being perceived as most healthy (cf. Table 7). They might try to choose healthier foods to compensate for their eating habits but it could also be because they are poor at judging what fast food is healthy and what is not. This result is just the opposite from what is seen in BS vs. REST (cf. Figure 3-7) if assessments of healthy eating habits of the two are included (cf. Table 5). BS might be aware that what they consume is unhealthy but show no desire to change this.

For assessment of the food consumed most often the last month, other factors might contribute to the results seen for BS and REST (cf. Figure 3-8). The better one's own health is rated and the healthier one's eating habits are rated, the higher is also the agreement with the food consumed as looking appetizing (cf. Table 8). Since BS and REST significantly differed in these assessments (cf. Table 5), health and consumption factors could influence the differences seen in the results between BS and REST. For finding the price appropriate for the

food consumed, age group, assessment of own health, and assessment of adequate healthy eating habits could have an impact on the results seen in BS-REST segmentation (cf. Table 8, Figure 3-8). Perhaps REST finds the price more appropriate because the proportion of people of higher age is higher in REST than in BS (cf. Table 4) and increasing age might entail more money so an economic perspective can influence this result.

First priority of the Keyhole labeled menu is chosen to a higher extend by REST than BS (cf. Figure 3-9). This could be due to the fact that BS has a larger proportion of men and younger people and also because REST consider their eating habits to be healthier and their health to be better (cf. Table 4, Table 5, Table 9).
Perceiving oneself as healthy and to have healthy eating habits could perhaps be correlated to a greater understanding of the requirements for Keyhole labeled items. A higher age might also influence this, even though mixed results for age on knowledge, use and confidence of and in the Keyhole label have been observed (Krøyer and Schou, 2011).
The regular menu was chosen more frequently by BS and might be due to more males, younger people and the fact that BS consider their health and eating habits less healthy than REST do, since results of further segmentation showed similar results to those obtained between BS and REST (cf. Figure 3-9, Table 5, Table 9).

It cannot be excluded that other factors influence the increased interest for less fat and more whole grain bread types in fast food for REST (cf. Figure 3-10, Table 10), since more men are represented in BS, and REST assess themselves as being more healthy and having healthier eating habits than BS (cf. Table 5). These factors can neither be excluded to have impact on the wanting of individual opportunities for meal choices. Wanting more ethnic/exotic food could be influenced by respondents "health perspectives" and thereby creating the difference seen for BS and REST (cf. Figure 3-10, Table 10).

Other not analyzed factors could also have influenced the results of the online questionnaire e.g. socio-economic factors (education, income and social class), ethnicity etc.

4.3 Comparison of online and in-store results

Since it cannot be determined that the results seen for the BS vs. REST segmentation is truly due to the more frequent consumption of food from burger bars/chains, the results from the in-store experiment questionnaire is compared to both the answers of the entire online sample population and the BS segment. The results from the online and in-store experiment have not been compared statistically so the following discussion is to highlight possible resemblances and differences between attitudes when being in a behavioural situation (in-store) and not being in a behavioural situation (online, both total and BS).

For frequency of consuming fast food/take away in total, BS and the in-store results are more similar than comparing the whole online population with in-store results (cf. Figure 3-1, Figure 3-6, Figure 3-11). It seems from these comparisons that the people eating at burger bars/chains consume fast food/take away more frequently than the rest of the online sample population does, but if these tendencies truly take place or if they are merely an image of a more honest response from the in-store respondents (since they were "caught in the act") or due to a third factor (e.g. being influenced from being in a fast food restaurant causing a change in mindset etc.) cannot be answered from the scope of this thesis.

The results of reasons for food choice also showed a difference (cf. Table 2, Figure 3-7, Table 15). In-store results for "the food perceived most healthy" looked more like results for BS than the online population as a total, since the total population chose this reason to a greater extent. This health perspective could be due to which food is bought and consumed, since BS and in-store results have a basis in burgers, which tend to be considered unhealthy (Schröder and McEachern, 2005), whereas the total online population could have based their answers on foods being perceived more healthy in general (e.g. sushi, salads, sandwiches etc.).

On assessment of the food consumed most often the last month for the online questionnaire and the food consumed during the in-store experiment, the most notable difference is for the food being healthy (cf. Figure 3-3, Figure 3-8, Table 16). The respondents from the in-store experiment find their food unhealthy to a larger degree than the online respondents did. This could once again be due to the fact that these customers were asked specifically when they were at McDonald's, which in everyday publicity tend to have a poor reputation when it comes to serving healthy food. It could also be due to the fact that these respondents prior to answering the questionnaire had consumed fast food, which could have inflicted them with guilt an biasing their answers. This is further highlighted when looking into health segmentation of answers for both online and in-store answers (cf. Table 8, Table 20), where the in-store respondents generally rate themselves a being unhealthier than the online respondents.

Specific changes wanted for the fast food market also showed minor differences (cf. Figure 3-5, Figure 3-10, Table 17). The in-store respondents want "more attention on taste" to a lesser extent than the online respondents (both total and BS) but still the amount is rather large. The reason for the lesser extent could be because the in-store respondents just finished consuming a meal and thereby might be biased towards having this meal as reference point, and they did find this meal quite satisfying (cf. Table 16) so the need for change might not be as explicit as for the online respondents. This tendency for lesser support for changes for in-store results, holds for almost all changes stated in the questionnaire compared to online results.

For "more whole grain bread types", the food item point of reference could give the results of BS and in-store respondents to wanting this change less than the total online population does, since they might prefer the soft wheat bun of regular burgers. Still the majority (61 %) of in-store respondents wants more whole grain bread types, so focusing on whole grain buns with the "mouthfeel" or texture of an ordinary bun might be preferable. In-store respondents wanted "more health documented meals" the least compared to BS and total online population. This could be because they are more prone to having the opinion that once you decide to "sin" or eat fast food why then choose something healthy that might not be as good as the regular food? So the need of health documentation is not essential to them in the given situation or they cannot imagine McDonald's serving health documented meals, although 57 % wants more health documented meals in general.

4.4 In-store health segmentation

From the segmented results of the in-store experiment on "endeavor to daily healthy eating" it is seen, that the more healthy respondents endeavor to eat, the less often they consume fast food/take away (cf. Table 18). Refraining from consuming fast food/take away frequently seems logical since it is considered to be unhealthy by some people (cf. Figure 3-2) (Lavik, 2010) but looking at the results, even the respondents who make an

effort to eat healthy on a daily basis consume fast food. This could show that keeping a healthy diet is believed not to be about total restriction, but consumption of unhealthy food is okay as long as it happens in moderation and not all the time (Mølbak, 2010; Sørensen et al., 2012). It could also indicate that when one is in a hurry and the food needs to be quick, health can be compromised once in a while.

The reason of choice for eating out of habit is more profound for those who to a lesser extent endeavor to eat healthy (cf. Table 19). Maybe this is due to the more frequent consumption of fast food (cf. Table 18) so they are aware of what is on the menu and what they like from it. The lower percentage for those who strive to eat healthy maybe because they are used to making food decisions to maintain a healthy and balanced diet (T. Hansen et al., 2010) so they follow the same pattern when choosing fast food.

The respondents less concerned about eating healthy are the ones who find the consumed food appetizing to the lowest extend (cf. Table 20). Possibly because they consume the same food more frequently than the rest (cf. Table 19) so it has become a routine for them. The higher agreement with the food looking appetizing for those rating their consumption as more healthy could be because they have a preconceived view of food at McDonald's as being unappetizing because they consume fast food less often (cf. Table 18), and when they finally are in the restaurant and have consumed their meal they are quite satisfied and their prejudices are rejected.

The respondents trying to eat healthy are the ones more interested in healthier changes to fast food which seems reasonable (cf. Table 21). If one tries to eat healthy, initiatives easing this task are undoubtedly favorable. Support for changes to fast food is generally lower for those trying the least to eat healthy which could be due to them worrying less about nutritious food than those more concerned about eating healthy, who are more aware of food choices, diet etc.

4.5 Bought and consumed at the in-store experiment

Before going into details with the behavioural part of the in-store experiment there are some factors which need to be highlighted from the experiment.

At the pilot-test there were not given receipts to the customers since it is not normal procedure to hand out receipts to customers. It was promised that dining-in customers would receive a receipt on the days of the actual experiment. Therefore at the pilot-test the reporting of customers' food intake could not be fully investigated since there would be different circumstances at the main study. Unfortunately on the days of the experiment receipts were not given to customers consistently even though the importance of this was emphasized to the staff. When asked to perform a task which is not normal procedure or habit it can be tough to do so during busy hours, so the self-reported consumption provided by the respondents must be trusted to be adequate. Respondents were told to report everything consumed even if purchased over several times but from personal observations not all respondents accomplished to do so. With all this in mind, when data was registered for analysis there were doubts of the reported intake, so the results on energy intake are properly to be considered as a minimum. Doubtful cases were equal in amount between control and intervention.

The intervention setup was not followed consistently so customers were not always asked if they wanted carrots or French fries etc. but the cash register-display and menu display were present at all times so the intervention is not to be considered as invalid.
Sales data provided by McDonald's Denmark supports the found and analyzed results and thereby further confirms the intervention as being valid.
Compared to the setup of other studies using the same kind of method with surveys and receipt collection (Bassett et al., 2008; Dumanovsky et al., 2011), the present study setup has its shortcomings (mentioned above). It is important to consider the different countries where the studies were performed. In the US (where *Bassett et al.* and *Dumanovsky et al.* studies took place) the sales clerks at fast food restaurants might be used to handing out receipts to customers and/or they may be more adaptable for taking instructions specified in the experimental setup.

Results show that there was an effect of the intervention when looking at items sold at McDonald's during the experiment (cf. Table 12, Table 13). From respondent reported data and sales data provided by McDonald's Denmark the customers who purchased their meals at the intervention line made a healthier choice to a greater extent than those at the control lines, by both buying the healthier options (McFeast on a fiber bun, salads, Grilled Chicken Wrap, carrots and spring water) and by not upgrading their meals to a big menu. The only result where the intervention did not seem to have an effect is on sales of spring water out of total amount of drinks (cf. Table 13). Since the data does not specify whether the sodas bought were regular or diet, it can be discussed if the costumers at the control lines truly made a healthier choice regarding drinks.

Comparing sales data from the present study with sales data from the year of 2012 for McDonald's Denmark, it is only the sales of McFeast on a more fiber rich bun that differs (cf. 1.1.1 McDonald's, Table 13). When comparing these data it is important to keep in mind that the present data is collected at one restaurant in the capitol whereas the data from 2012 is a summary of all 86 restaurants in Denmark. It is known that socio-demographic differences of dietary habits are present in Denmark (A. I. Christensen et al., 2010; FDB Analyse, 2013) so this could have impact on the results of 2012, since the sales data of 2012 includes restaurants where a large amount of healthier options are sold and restaurants where small amounts are. To obtain results where healthier choices are made to the same degree and more frequently, compared to the average of the entire restaurant chain, including the shortcomings of the intervention mentioned above, must be considered as a success relative to getting costumers at McDonald's to make a healthier choice.

The energy intakes of the consumed meals from the in-store experiment show a difference between the control lines and intervention line (cf. Table 14). The average meal purchased at the intervention line contained 472 kJ (113 kcal) less than the average meal purchased at the control lines. Even though this saved energy amount is not large it constitutes approximately 6 % of Guideline Daily Amount (GDA is approximately 8300 kJ (2000 kcal) for a grown woman (FoodDrinkEurope, 2013)). This percentage might not seem as much but when a McDonald's meal on average contributes with 4027 kJ (962 kcal) or approximately 49 % of the daily recommended energy intake (a grown woman's GDA), even savings of 6 % (472 kJ/113 kcal) is a step in the right direction.

Results show no significant difference in energy intake due to healthier choices made but choosing between a big or regular menu did (cf. Table 14). Purchasing a larger menu contributes with a higher energy intake (cf. Table 14) and customers at control lines did so to a higher extent than those who purchased meals from the intervention line (cf. Table 12, Table 13). Not upgrading meal size could then be the cause for savings in energy intake.

This result is interesting considering respondents from the online questionnaire who did not consume fast food very often, answering the reason for this not being attributed to too large portion sizes (cf. Figure 3-2). It is also interesting since upgrading to a large meal size is an additional sale for the restaurant, and they are not like to give up this opportunity to increase profit.

The "healthier choices" are composed of various food items and drinks so the combination of the "healthier choices" and other items to compose respondent's meal might have influenced the lack of effect on reducing energy intake. If other end-points had been chosen to focus upon (e.g. fat, fiber, sugar, vegetable content), an effect might have been observed by making the healthier choices.

Respondents' attitudes in regards to own health behaviours do not result in respondents consuming less energy (cf. Table 14). Maybe because choosing to eat at McDonald's, one has already rejected the objective of trying to eat healthy, even though one strives to eat healthy on a daily basis.

The intervention or piece of choice architecture performed at McDonald's, facilitates the customer to make the healthier choice since the environment was redesigned to visualize the healthier options and by making the customer aware of healthier options being available. These measures used in the present study have been shown to have an effect in other studies as well (Skov et al., 2012).

The Keyhole label was not used in the in-store experiment but is based on the principles of making the healthier choice easier to make (The Danish Veterinary and Food Administration, 2012a), like the intervention setup tried to do. As shown in previous studies, health labeling have an effect on reducing the energy intake (P. J. Liu et al., 2012; Roberto et al., 2010) and making customers choose more healthy (J. A. Driskell et al., 2008). Furthermore, the Keyhole label has been used in a study at a worksite canteen (Lassen et al., 2012), where reductions were achieved in customers' energy intake, so the Keyhole label could have potential in being used in fast food restaurants/outlets for both reducing customers' energy intake and as a sales drive for the companies. The Keyhole label is already being used in fast food restaurants in Sweden (Livsmedelverket, 2013), but the way it has been used here has not shown promising results in promoting healthier meal choices (Thunström and Nordström, 2011).

The Keyhole is a well-known label among the Danish population (Krøyer and Schou, 2011), and furthermore it is a very simple claim and simple claims have been demonstrated to improve customers' understanding of the health claim (Wansink, 2003; Wansink et al., 2004).

A great challenge for implementing healthier concepts and alternatives in fast food restaurants are that the general public might not find major chains trustworthy on corporate social responsibility matters, like serving healthier meals (Schröder and McEachern, 2005).

5 Conclusion

The fact that respondents from the online questionnaire ate more frequently at burger bars/chains (BS segment) did not show differences in attitude since other factors like gender, age group and "health perspective" could have influenced the obtained results for BS vs. REST segmentation. What can be concluded from this study is that gender, age, and to some extent health perception has an effect on frequency of fast food consumption and on attitudes in relation to healthier fast food, where males, younger people and people with less healthy visions of themselves consume fast food more frequently and women and people of higher age have more positive attitudes in relation to healthier fast food.

Respondents from the in-store experiment had a different reference point for answering the questionnaire than those who answered the online questionnaire, since they were in the "fast food situation" and thereby did not possess the objectivity the online respondents had, which could be believed to have influenced answers.
Health attitude seemed to have an impact on attitudes toward fast food and frequency of consumption for the in-store experiment. Those who considered their diet to be healthier were the ones consuming it less frequent, tried to make the healthier choices when purchasing fast food, and were more interested in initiatives attempting to make fast food healthier.
Respondents at either control lines or intervention line had resembling attitudes and answered questions of the survey in similar ways. Hence attitudes do not form the basis for making the healthier choice, but if nudged or made aware of healthier options thereby breaking their habits, they were able to make a healthier choice.
It could not be concluded that "healthier choices" did decrease energy intake in the in-store experiment. Downsizing or choosing the regular menu size did have impact on reducing energy intake when purchasing food from a fast food restaurant.
From the present in-store experiment it can be concluded that portion control at a fast food restaurant is important for reducing energy intake and choice architecture or nudging can help customers choose more healthy, which in some cases result in a reduction of the costumers energy intake.

The conclusion from the present thesis is that health is not a first priority among those consuming fast food today. However, a desire for healthier concepts were found but the majority is probably not willing to compromise appetizing and reasonably priced food in return for these healthier concepts. Keyhole labeled fast food is wanted but if the food does not meet the requirements of the Keyhole label, the most important is that the healthier fast food needs to be priced right, compared to type of and quality of product, and at the same time, taste is of greatest importance in the competition with traditional fast food concepts.

6 Future perspectives

Data from the online questionnaire can be analyzed in many different ways than those chosen in this thesis. One interesting way in which it could be done, would be to segment respondents into those consuming fast food more frequent and those who do not, and see how they answer the questions where all respondents were included to answer e.g. first priority of menus.

For future in-store experiments it is important to base the experimental setup on the actual situation in the restaurant and involve personnel who have hands-on experience in the setup-development. Within this scope, the setup can be finalized to comply with desired outputs or end-points and the shortcomings mentioned in this thesis could be avoided.
If the present in-store experiment were to be conducted again, it would be preferred to have a researcher to record food intake for every customer so all desired information is collected comprehensively.

It would also be beneficial to conduct more in-store experiments to investigate the effect of redesigning the environment or nudge in the purchase situation to see if customers then make the healthier choice and if the effect is observed in reduction of their energy intake, but a consistent intervention is needed to establish this. Further, additional end-points would be beneficial to include (e.g. fat, fiber, sugar, vegetable content) to get a nuanced view of which effect healthier choices could have.

The generated knowledge of Danes' attitudes and desires in relation to healthier fast food has already been incorporated into the development of healthier fast food concepts (the "SpisVel" project), and it is obvious that new concepts need to be attractive both in respect to palatability and with regards to price.
The market value and the customers' choice of the new products are not simple to determine in advance, so focus-group interviews and new in-store experiments would be necessary to perform.

Furthermore, the generated knowledge could be used to target Keyhole labeled products to the segments which were found to desire them for increasing profit performance. It could also be used to improve the health of those who did not show a widespread desire for Keyhole labeled products by marketing products specific to these segments. Both people consuming fast food often or rarely showed a desire for a Keyhole labeled burger menu, so there is potential for both increasing satisfaction among regular customers and a market for new customers.
Nudging or choice architecture could be used to break peoples' habits and thereby help people make healthier choices more often when purchasing and consuming fast food.

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Appendix

Appendix 1: Consumer Questionnaires

Title	Aim/Objective	Design	Population	Method	Statistics	Results	Discussion	Conclusion	Reference
Eating out, nutrition, education and the consumer: a case study from Alabama	Investigate consumers' attitudes towards their eating out experience as it relates to their reasons for eating out and the importance that nutrition may place in their experience when eating out.	Preliminary questionnaires.	USA n=305 Alabama, spectators & tailgaters at five American football games located at university, ≥19y,	Questionnaires were handed out to participants, and collected 60min later in closed envelopes. Questionnaires were divided in five: frequency, experience, important aspects, demographics, ideal experience.	χ^2-test, Cramer's V test, Scheffé test, one-way ANOVA, independent *t*-test. (SPSS)	57 % ate out ≥3/w. "not having time to cook", hunger, to socialize were most important. Health issues were not important. Females more emphasis on: health, nutrition, local aspects. Males: volume for money. Uni. Education-> higher interest in health, higher knowledge of nutrition when eating out.	Little sample size, mostly females, a large group aged 19-36, place of study.	Overall, consumers do not seem interested in education or involvement in healthier consumption.	(Alonso et al., 2012)
Fast food restaurant use among adolescents: associations with nutrient intake, food choices and behavioral and psychosocial variables	To examine demographic, behavioral and dietary correlates of frequency of fast food restaurant use in a community-based sample.	Written questionnaire and measurement of weight and height.	USA n=4344 Minnesota, students in 7^{th}- 12^{th} grade at secondary school, 31 schools, 11-18y.	A survey was administered to students in classrooms. Height and body weight were measured. Questions in survey had been verified in diff. ways e.g. through other surveys. Questions concerned the last week's consumption.	Regression models, mixed-model regression (PROC MIXED), logistic regression model. (SAS)	75 % ate at fast food place during the last week. Frequency of fast food restaurant use (FFFRU) HIGHER: non-white race (female, male), older students (m), lower socioeconomic status (f), lower BMI (m), healthy food taste bad (f, m), lack time for healthy foods (f, m), little care of healthfully eating (f, m), weekday television watching (f, m), weekend television watching (f), more eating-out (f, m), more	A prospective study would give a different insight. Poorer diet may lead to less favorable nutritional health e.g. calcium status. Males had lower BMI's when higher FFFRU, which is curious and needs more studies. More women in the workforce -> higher FFFRU. Since many adolescents work at fast food places -> higher FFFRU. Team active males may	FFFRU is associated with a less nutritious diet (higher energy and fat intake) and poorer food choices (lower intake of fruit, vegetables, grains, milk, and higher intake of soft drinks, cheeseburgers, pizza, French fries) among	(S A French et al., 2001)

						snacks (f, m), more ready-made foods (f, m), student working >10h/w (f, m), available unhealthy foods at home (f, m), mother less concerned with child's healthy eating (f, m), friends less concerned with healthy eating (f, m). FFFRU LOWER: perceive oneself as healthy (f), less involvement in team sports (m). Higher FFFRU lead to higher: total energy from food, %energy from fat, total fat, saturated fat, high-sugar foods. Higher FFFRU lead to lower: fruits, vegetables, grains, milk.	have less time to eat as a family and may need a higher energy intake. +: ethnically and socioeconomic diverse, behavioral and psychosocial measures. -: measures of items at fast food places, single-item measure of FFFRU, mismatch btw. dietary food measures (year) and fast food measures (past week).	adolescents.	
Title	**Aim/Objective**	**Design**	**Population**	**Method**	**Statistics**	**Results**	**Discussion**	**Conclusion**	**Reference**
Development and reproducibility of a food frequency questionnaire to assess diets of older children and	To develop a self-administered food frequency questionnaire for older children and adolescents and to demonstrate reproducibility over a 1-year period.	Questionnaire completed twice, 1 year apart (test-retest).	USA n= 179 Aged 9-18, multiethnic, children of participants in the Nurses'	The youth/adolescent questionnaire (YAQ) was based on the validated Nurses' Health Study food frequency questionnaire and was developed to	Pearson correlation, regression models. (SAS)	The overall intake of energy was lower in the second questionnaire. Corr. ranged from .26 for protein and iron to .58 for calcium btw. the two surveys. Lower intakes of fruit, vegetables, meats,	No consistent pattern of corr. btw. age and nutrients. The YAQ did not show as high a reproducibility as adult questionnaires, which may be due	The data demonstrate that the YAQ has the ability to determine levels of nutrient intake with an acceptable	(Rockett et al., 1995)

adolescents			Health Study.	reflect the eating habits of this age group. Same people asked twice.		milk, baked goods, cereal in the second survey. When compared to NFCS mean nutrient intakes were within 25 % of the estimated means and for the Heart Study 5 % for mean energy intake. For NHANES II this was 20 % regarding males.	to a larger change in one year for children's diet, and that the variability among children is larger than for adults. Given that the study was performed on nurses children might have lead to the lower fat intake compared to other studies.	degree of reliability for children and adolescents over time.	
Title	**Aim/Objective**	**Design**	**Population**	**Method**	**Statistics**	**Results**	**Discussion**	**Conclusion**	**Reference**
Validation of a youth/adolescent food frequency questionnaire	Evaluate the validity of the youth/adolescent questionnaire (YAQ) by comparing to the average of three 24-hr dietary recalls.	Questionnaire administered twice at an approximate interval of 1 year (test-retest), and three 24-hr dietary recalls.	USA n= 261 Aged 9-18, children of nurses from the Nurses' Health Study.	Two YAQ's were administered with three 24-hr dietary recalls in between, to catch seasonal variability. The YAQ's were mailed out to be done written and the recalls were done by telephone interview.	Pearson correlation coefficients. (SAS)	Both YAQ's comp. to the mean of recalls: <u>Unadjusted:</u> corr. 0.25 for sodium to 0.57 for folate, mean corr. 0.41. <u>Adjusted for energy:</u> corr. 0.21 sodium to 0.58 folate, mean corr. 0.45. <u>De-attenuated:</u> corr. 0.24 sodium to 0.75 vit-C, mean corr. 0.54. Mean energy intake was higher for YAQ's comp. recalls, but within 1 %. 6/30 mean nutrient were not sig. diff. All nutrients were 20 % within range except vit-A, alcohol and carotene. Boys reported higher	24-hr recalls are considered valid when evaluation food frequency questionnaires (ffq), because biochemical measures (e.g. double labeled water) are expensive and have clinical requirements. For males energy intake was 5-10 % lower than national surveys, for females this was 12-21 % higher. Over- and underestimation is a problem in this age-range.	A simple self-administered questionnaire completed by older children and adolescents can provide nutritional information about this age group over a period.	(Rockett et al., 1997)

						energy and macronutrients on recalls comp. YAQ's. Just the opposite for girls. By age the 9-13 reported higher intake of energy and nutrients on YAQ's comp. recalls. For the 14-18 just opposite.	Several other studies have identified that ffq are valid for use in this age group.		
Title	**Aim/Objective**	**Design**	**Population**	**Method**	**Statistics**	**Results**	**Discussion**	**Conclusion**	**Reference**
Why Americans Eat What They Do-Taste, Nutrition, Cost, Convenience, and Weight Control Concerns as Influences on Food Consumption	To examine the self-reported importance of taste, nutrition, cost, convenience, and weight control on personal dietary choices and whether these factors vary across demographic groups, are associated with lifestyle choices related to health, and actually predict eating behavior.	Two self-administered cross-sectional surveys.	USA n=2967 Nationwide.	First was a lifestyle survey send to a nationwide sample, supplementary surveys were send to increase response of minorities and low-income persons. Second was a "health style" survey which was send to respondents for the first survey. 7 health lifestyle cluster memberships were established to evaluate results: Physical Fanatics (PF), Active Attractives (AA), Tense but Trying (TT), Decent Doolittles (DD), Passively Healthy (PH), Hard-living	κ-means, *t*-test, ANOVA, general linear models, Pearson correlations. (SPSS)	In order the most important aspects of food choices were: taste, cost, nutrition, convenience, weight control. <u>Most important for:</u> *Taste:* women, certain ethnic groups *Nutrition:* older, women, certain ethnic groups *Cost:* younger, women, low-income, non-whites *Convenience:* younger, low-income, blacks *Weight control:* older, women, blacks *Fruits and veg.:* PF, taste, nutrition, convenience, weight control *Fast-food:* younger, men, low-income, blacks, convenience,	Many different demographics and health lifestyle clusters play a role In food choices. Good taste should be considered a minimal standard for food consumption. Greater concern of health leads to healthier eating habits. Food choices are made on a person's existing values and beliefs. To get people to eat healthier, stress the good taste of healthy foods (fruits, vegetables, breakfast cereals)	Nutritional concerns are of less importance to most people per se compared to taste and cost.	(Glanz et al., 1998)

				Hedonists (HH), Noninterested Nihilists (NN).		(neg.: nutrition, weight control) *Cheese:* younger, whites, women, (neg.: weight control) *Breakfast cereals:* younger, PF, cost, convenience.	as well as them being convenient to consume.		
Title	**Aim/Objective**	**Design**	**Population**	**Method**	**Statistics**	**Results**	**Discussion**	**Conclusion**	**Reference**
Revealing the values behind convenience food consumption	Attempts to examine the way personal values are associated with behavior and attitudes regarding convenience food.	Questionnaire survey.	Greece n=729 Thessaloniki city Inclusion criterion: -Responsible for food purchases and preparation -aged ≥18y -did not work in advertising or market research.	First of personally in-home interviews, to get participation permission. Afterwards the questionnaire was distributed. The questionnaire included convenience orientation: meal planning, food shopping, meal preparation, food consumption and clearing up after meal. Also included: questions aiming to explore con. food consumption, food purchasing behavior, motivations for food consumption, inv. in food, items regard. Schwartz' values, socio-economic items. Analyzed on	ANOVA, factor analysis, Cronbach's alpha estimation.	Reliability analyses gave alpha coeff. ranging from 0.64-0.94. 13/15 examined relationships gave sig. results in the polynomial tests. Convenience orientation towards meal preparation-Achievement Con. meal planning – Stimulation Con. food shopping – Achievement Con. meal consumption – Achievement Con. clearing up - Power Shopping in specialized food stores - Tradition Con. food usage - Achievement Con. food service usage – Achievement Variety in diet - Tradition Inv. with cooking – Tradition	Con. cleaning up – Power, might release resources for use on other matters. Inv. with food shopping and clearing up – Security, might give harmony by taking over the housework. Shopping in specialized food stores – Tradition, might be due to the search for fresh groceries to sustain a traditional diet (Also for Inv. with cooking – Tradition). Con. meal planning – Stimulation, give the opportunity to try new things. Achievement, frees	The results reveal that convenience food consumption and convenience orientation in the food domain are mainly connected with values that motivate people to seek new experiences, act independently and enhance their own personal interests, while are in conflict with values of conservation and self transcendence. The opposite	(Botonaki and Mattas, 2010)

				Schwartz theory of values.		Inv. with food shopping and clearing up - Security Natural content – Tradition Sensory appeal – Security.	time to spend in the professional arena. Con. -> "openness to change", "self-enhancement", excitement, seeking novelty, social experiences, trying new things. Var. in diet, inv. in food, food natural content-> "Conservation", personal success, ambition, influence.	holds for other food related attitudes and behaviors like involvement with cooking and variety in diet.	
Title	**Aim/Objective**	**Design**	**Population**	**Method**	**Statistics**	**Results**	**Discussion**	**Conclusion**	**Reference**
Socio-demographic differences in food habits and preferences of school adolescents in Jiangsu Province, China	To identify the differences in food habits and preferences among the adolescents according to socio-demographic characteristics.	Cross-sectional, cluster design study.	China n= 824 Jiangsu province, aged 12-14, attending public school, 8 middle schools, two distinct socio-economic districts (high vs. low). In each district four schools	Self-administered questionnaire containing questions on food and meal frequencies, food preferences and socio- demographic characteristics in 2002. Food sources were grouped into: fruit and vegetables, animal foods, western food, sweet food.	χ^2-tests, ANOVA, multivariate linear regression analysis, Fisher's exact test. (SPSS)	76 % ate three meals a day. Half of students had breakfast and lunch at home. 26 % had lunch at school. 53 % was snacking while watching TV. 60 % drank milk at least once a day (urban 68.7 % vs. rural 38.5 %). ¼ never or rarely drank milk. 74 % consumed veg. each day. <u>Fruit daily:</u> Low socio-economic status (SES): boys 42 %, girls 55 %.	Limitations: small sample size, clustering foods (can't directly be compared to other surveys). In China higher education doesn't always lead to higher income. Survey based on other questionnaires that have been tested for both reliability and validity. Focuses on food	Socio-economic conditions and urban location were positively associated with intake of high-energy foods. Reported food preferences may support this trend.	(Shi et al., 2005)

			were selected from diff. areas: capital city, suburb, county capital, town.			High SES: boys 66 %, girls 72 %. <u>Hamburgers daily:</u> 10 % boys from high SES, 2.8 % boys from low SES. Girls ate fruit and veg. more frequently, while for boys it counts for animal foods. Half would consume more: hamburgers, soft drinks, milk, yogurt, shrimp, and ice cream. For boys of high SES preferences for soft drinks and ice cream were sig. Urban boys had the most unhealthy food preferences. Household SES and parents' education were determinants for all food sources (except edu. for sweet foods).	patterns, not intake level. Urban + high SES -> more: animal foods, fruits, milk, yogurt, soft drinks. High intake of fruit and veg. due to lower price and availability. Higher SES-> less healthy food habits, in contrast to developed countries, but fits other transit/developing countries.		
Title	**Aim/Objective**	**Design**	**Population**	**Method**	**Statistics**	**Results**	**Discussion**	**Conclusion**	**Reference**
Why Eat at Fast-Food Restaurants: Reported Reasons among	To examine the reasons for adolescents and adults to eat at fast food restaurants.	Part of experimental trial. Purchase situation and	USA n= 594 Minneapolis / St Paul,	Enrolled in a 2h evening study to purchase a meal and answer three questionnaires (before purchase,	Logistic regression, Bonferroni correction. (SAS)	Most reported eating at fast food res. ≥3/w. <u>Statements mostly agreed with:</u> are quick (92 %), easy to get to (80 %), and	Questions have not been validated or tested for reliability. People eat at fast	In order to reduce fast-food consumption, food and nutrition	(Rydell et al., 2008)

Frequent Consumers		questionnaire.	urban and suburban, ≥16y, eat at fast food res. at least once a week, read and speak English, Oct. 2005- Apr. 2006.	after, and after consumption). Second questionnaire contained 11 statements of choices to eat at fast food rest. Focus of this study was the second questionnaire. Blinded for real purpose of study.		serve good-tasting food (69 %). <u>Statements least agreed with:</u> a way of socializing with family and friends (33 %), they have nutritious foods to offer (21 %), and they are fun and entertaining (12 %). 16-24y comp. to ≥55y were less likely to eat there because they have nutritious offerings, but more likely due to family and friends eating there. Women comp. to men more likely to eat there because of friends and family. ≥Ba. degree comp. to less education more likely to eat there because too busy to cook. Not work. comp. to full-time more likely due to fun and entertaining, socializing, friends and family. Part-time. comp. to not work. more likely due	food res. because it is quick and convenient. Taste and inexpensiveness also have impact. For healthier alternatives focus on quickness and accessibility. Enhance other arenas for socializing and hanging out.	professionals need to identify alternative quick and convenient food sources. Also consider focusing on improving the nutritional quality of fast food choices.	

						to socializing, friends and family. ≥5 in household comp. to singles more likely due to friends and family. ≤2/w fast food comp. to ≥5/w more likely due to easy to get to, too busy to cook.			
Title	**Aim/Objective**	**Design**	**Population**	**Method**	**Statistics**	**Results**	**Discussion**	**Conclusion**	**Reference**
Fast foods and ethical consumer value: a focus on McDonald's and KFC	To investigate the effect of communicating corporate social responsibility (CSR) initiatives to young consumers in the UK on their fast-food purchasing with reference to McDonald's and Kentucky Fried Chicken (KFC).	Mixed-method approach (qualitative and quantitative). Focus groups and questionnaire.	UK n= 100 Students from an English and a Scottish university.	Two focus groups were carried out to explore the CSR aspect. The themes identified here were then used to construct a self-administered questionnaire to investigate students' behaviors in relation to fast food consumption, image of fast food retailers, and related purchase behavior. Questionnaire was pre-tested to a group not enrolled in the final sample.	Descriptive cross-tabulation analysis, factor analysis. (SPSS)	<u>Focus groups:</u> Students were skeptic towards the underlying intentions of McD and KFC's CSR, whether they were merely marketing strategies. If these places played a role in the increase of obesity was of mixed opinions. Agreed upon fast food being convenient but unhealthy. <u>Questionnaires:</u> 82 % purchased food from one of the two companies regularly, hereof 57 % impulsive and 26 % routine. 53 % didn't trust companies in telling the truth about their products. 18 % of sample did not	Both positive and negative attitudes were identified toward fast food retailers and their CSR. Since many rely on impulse when buying fast food, they easily could be led into the point of over-consumption, even though they did not trust the retailers. Fast food companies need to emphasis on convenience, reasonable prices and quality products. The want for healthier, high-grade, organic,	No longer can either company rely solely on convenience and product consistency as unique selling points. It is clear that a strong corporate emphasis on consumer health, quality and socially responsible initiatives must be incorporated.	(Schröder and McEachern, 2005)

						purchase food from either company. 44 % though the healthy menus as fad/trick. 18 % believed McD in using 100 %beef, 15 % believed KFC using premium chicken pieces. *Meal-size:* 18 % regular, 41 % medium, 16 % large, 7 % super-size. *Health concerns:* (worried about) 64 % fat content, 58 % calories, 53 % sugar. *Motivation:* 77 % convenience, 64 % flavour, 61 % value for money, 61 % quality of ingredients. Factor analysis gave four categories containing 52 % of var. in food purchasing behavior (mentioned in falling degree of fit) : Brand value, Nutritional value, Ethical value, Food quality.	animal welfare cared product is significant, but people might not be willing to pay the price for it. Sample population not representative for the whole nation.		
Title	**Aim/Objective**	**Design**	**Population**	**Method**	**Statistics**	**Results**	**Discussion**	**Conclusion**	**Reference**

Factors influencing fast food consumption behaviors of middle-school students in Seoul: an application of theory of planned behaviors	To examine current fast food consumption rates among middle school students and to influencing fast food use with the explore the factors Theory of Planned Behavior (TPB).	Self-administered pre-tested questionnaire.	South Korea n= 354 Seoul, students from four middle schools.	Questionnaire developed through two steps: free associations about fast food-> together with previous studies-> questionnaire-> tested on 40 students, for wording-> final questionnaire. Students filled in the questionnaire while being under supervision of a teacher. Subjects: fast food consumption, attitude toward fast food use, subjective norm, perceived behavioral control, and intention.	*t*-test, χ^2-test, Pearson correlation. (SPSS)	44 % showed an interest in health. Subjects were also interested in weight control with prevalence from girls. Fast food was consumed on average 4.05 times/month. Hamburgers and fried chicken was preferred from French fries, pizza and doughnuts. Boys ate burgers more often, and the opposite counted for girls with doughnuts. Fast food was consumed on special days and when meeting friends. More girls ate fast food as a meal, while boys did so as a snack. <u>Behavioral intention:</u> btw. little and somewhat. Boys had higher intentions. <u>Attitudes toward fast food consump.:</u> positive for taste, store environment, familiarity, and negative for saltiness. <u>Subjective norm:</u> motivation- family,	The fast food consumption pattern fits other national surveys. Emphasis on fast foods not being snacks should be considered. Middle school children did not eat fast food as a mean of everyday life. Friends are the group of people most likely to influence the consumption of fast food. Fast food consumption might happen regardless of external factors, especially for boys. More accurate data would be collected if a prospective study was made start and end point.	Results indicated that providing alternatives to fast food stores and changing subjective norms regarding fast food may be key focus points in changing fast food consumption patterns among middle school students.	(Seo et al., 2011)

						teachers, friends. Normative beliefs-friends. <u>Perceived behavioral control:</u> fewer stores, fewer advertisements, fewer sales promotions -> would not concern the use of fast food. Fast food consumption was highly correlated to behavioral intention.			
Title	**Aim/Objective**	**Design**	**Population**	**Method**	**Statistics**	**Results**	**Discussion**	**Conclusion**	**Reference**
Cost and Calorie Analysis of Fast Food Consumption in College Students	To assess money spent and calories consumed by college students from fast food restaurants located on and around a southern college campus.	Food frequency questionnaire and lifestyle behavior survey.	USA n= 152 Undergraduate college students, aged 18-24, southern part of USA.	A peer-reviewed, researcher developed Fast Food Frequency Questionnaire (FFFQ) (123 items) was used in conjunction with a validated college life survey to collect data of college students (seven fast food restaurants were used). FFFQ had been validated by five dietitians and the survey had gone through a test-retest. Students enrolled voluntary with the chance of winning a gift certificate.	Pearson correlation, *t*-test, ANOVA. (SPSS)	All participants had consumed fast food within the last month. 71 % reported having a university meal plan. A strong corr. (0.94) was found btw monthly fast food expenses and monthly fast food calorie consumption. Males used more each month on fast food compared to females. Males had higher calorie consumption from fast food compared to females.	Limited number of restaurants and food items used. People without a university meal plan probably bought and consumed more fast food due to convenience. More nutrition education of college students may be beneficial due to the possible long term health effects.	The more money spent by college students contributed to a higher amount of calories consumed from fast food in a typical month.	(Heidal et al., 2012)

Title	Aim/Objective	Design	Population	Method	Statistics	Results	Discussion	Conclusion	Reference
Personal and lifestyle characteristics predictive of the consumption of fast foods in Australia	To identify key predictors of fast-food consumption from a range of demographic, attitudinal, personality and lifestyle variables.	Nationwide survey. Interview and self-administered questionnaire.	Australia n= 20,527 Nationwide, aged ≥14y.	Nielsen Media Research conducted the interview and questionnaire surveys. From June 2004 to May 2005. Survey variables were grouped in; demographic var., media consumption var., attitudinal and lifestyle var., dependent var. ('eat in at any fast food place', 'take away at any fast food place').	Principal component analysis, regression analysis.	Almost 1/3 of respondents reported "eating in" several times/w. Younger age leads to higher frequency of "take away". <u>Significant higher "eating in" corr. to (most->less):</u> Age(neg.), eating on the run, household income, DVD watching, political conservatism, commercial TV viewing, pay TV viewing, fashion consciousness, extraversion, dietary health consciousness (neg.), billboard awareness, sociability, appreciation of technology, love of TV, commercial radio listening. <u>Significant higher "take away" corr. to (most->less):</u> Age(neg.), eating on the run, dietary health consciousness (neg.), DVD watching, household income, car driver, commercial TV viewing, pay TV viewing, children 5-12y	The significant effect of age seems to reflect a cultural shift in eating behavior. Fast food could not be correlated to overweight and obesity, neither for occupational status and education level. Seems to be a relationship btw advertising and fast food consumption. "Eating in" could be influenced by many factors, such as availability, lunch and snack breaks, social activities.	The effects for age suggest that fast-food take away consumption is associated with a general cultural shift in eating practices; individual differences in attitudinal and lifestyle characteristics constitute additional, cumulative, predictive factors.	(Mohr et al., 2007)

						in house, appreciation of technology, love of cooking (neg.), home ownership (neg.), liking informative ads, Sex (male), fitness consciousness (neg.), depression, billboard awareness, teens in house, love of TV, sociability, intolerance of advertising (neg.), political complacency (neg.), commercial radio listening, readership of newspapers.			
Title	**Aim/Objective**	**Design**	**Population**	**Method**	**Statistics**	**Results**	**Discussion**	**Conclusion**	**Reference**
Food Cravings, Ethnicity and Other Factors Related to Eating Out	To study factors related to eating patterns, specifically whether certain food cravings were associated with frequency of meals eaten away from home.	Self-administered questionnaire.	USA n= 277 Arizona, patients at University of Arizona Family and Community Medicine Family Practice Office, aged 16-82.	Patients were asked to fill out questionnaire and return it to the front desk. Survey included questions of: frequency of meals eaten away from home, food cravings and demographics.	Persons R, ANOVA, F statistics, principal component factor analysis, Kaiser-Meyer-Olkin measure, Bartlett's test, Spearman's ρ.	On average adults ate away from home 4.2 times in the surveyed week, which holds for 0.7 breakfasts, 1.8 lunches, and 1.7 dinners. 12 % adults and 8.7 % children did not eat away from home. Hispanic adults and working outside the home was related to eating more meals away from home. Cravings were linear corr. to more meals eaten away from home except sausage/chorizo.	Whether food cravings cause people to eat out more freq. or eating out gives people cravings could not be determined. Lack of money in the lower socio-economic-status groups might have hindered those who had cravings from eating out.	Socioeconomic status, ethnicity, and food cravings are related to adult and child patterns of eating meals away from home.	(Siwik and Senf, 2006)

						Strong cravings were negatively corr. with age and not being married. When grouping food items: women having more freq. cravings for sweets and carbohydrates, eating out were corr. to fast food and snacks.			
Title	**Aim/Objective**	**Design**	**Population**	**Method**	**Statistics**	**Results**	**Discussion**	**Conclusion**	**Reference**
Fast food restaurant use among women in the Pound of Prevention study: dietary, behavioral and demographic correlates	To examine demographic, behavioral and dietary correlates of frequency of fast food restaurant use.	Baseline survey and a later survey as part of a prospective intervention trial.	USA n= 891 Women, aged 20-45y, part of the Pound of Prevention study.	Baseline and 3y later survey. No-contact control and a mail-based intervention group, which included monthly newsletters, opportunities to take part in additional eating and exercising programs. Surveys included self-reported: fast food restaurant use, dietary intake, physical activity, restrained eating behavior, low-fat eating behavior, smoking, demographics.	PROC GLM (regression analysis), χ^2 analysis. (SAS)	<u>Visits at fast food restaurant; baseline (3y):</u> 0/w: 24 % (26.1 %) 1/w: 39.2 % (40.7 %) 2/w: 15.7 % (14 %) ≥3/w: 21.1 % (19.2 %) No sig, diff. btw. control and intervention group. 27 % decreased their visits by one or several times/w in 3y, while 26.4 % increased. <u>Baseline:</u> More freq. fast food rest. use sig. ass. to: younger age, unmarried, lower income, non-white, heavier body weight, higher BMI, higher energy and fat intake. More freq. fast food rest. use sig. INVERT.	The average weight gain over 3y was 1.7kg with 0.72kg more for the upper tercile comp. to lowest. Those using fast food rest. most had lower intakes of fruit and veg. which might be due to fast food replacing other food items. Questionable whether more fruit and veg. in fast food will change these people's behavior. Freq. users might be less concerned with their eating and exercise behavior.	Frequency of fast food restaurant use is associated with higher energy and fat intake, heavier body weight, and could be an important factor for excess weight gain in the population.	(S A French et al., 2000)

						ass. to: restrained eating and low-fat eating behavior, intake of healthful foods and nutrients. TV viewing was highest for the tercile with most freq. fast food rest. use. and lowest for the least freq. <u>3year:</u> More freq. fast food rest. use ass. to: higher energy and fat intake, increased body weight, more hamburgers, French fries, soft drinks, decrease in vegetables. More freq. fast food rest. use INVERT. ass. to: restrained eating and low-fat eating behavior, physical activity.	Fast food could be one factor for the increasing excess weight gain and obesity.		
Title	**Aim/Objective**	**Design**	**Population**	**Method**	**Statistics**	**Results**	**Discussion**	**Conclusion**	**Reference**
Observed sex differences in fast-food consumption and nutrition self-assessments and beliefs of college	To determine the influence of sex on fast-food consumption and nutrition self-assessments and beliefs.	Written questionnaire fulfillment.	USA n= 259 Midwestern university, aged 19-24y, student toke the Healthy Lifestyle course.	12-item questionnaire was developed for the survey on basis of previously published findings. Questionnaire included: Living situation, typical place of consumption, social	χ^2 analysis. (SAS)	Breakfast: 44 % home, 43 % uni. cafeteria, 1 % fast food rest. Lunch: 50 % uni. cafeteria, 32 % home, 7 % fast food rest. Dinner: 47 % uni. cafeteria, 39 % home, 5 % fast food rest. Women gained sig.	Use of cafeteria is not surprising since 49 % purchased cafeteria meal passes. Passes were for 5-7d/w. The surveyed students most likely know the correct definition of	Several sex differences were observed in the fast-food consumption and nutrition beliefs of these college students.	(Morse and J. A. Driskell, 2009)

students				context of meals, sources of nutritional knowledge, reasons for eating at fast food rest., favorite aspects of fast food rest., freq. of eating at fast food rest., consideration of energy content of fast food, 10 nutrition self-assessment and belief statements. Questionnaire was validated by 10 university health professionals. Pilot-tested by 10 students. Reliability was assessed by 12 students (84 % identity).		higher nutritional knowledge from friends and magazines and newspapers comp. men. Men reported higher eating at fast food rest. due to "inexpensive and economical" while women reported higher "eat with family and friends" comp. to one another. More than half reported due to "limited time". 12 % woman and 7 % men reported "never eat at fast food". 74 % men and 60 % women reported dining at fast food rest. 1-3t/w. 13 % men and 23 % women reported typically not dining at a fast food rest. Women sig. had a stronger health concern about eating comp. men.	healthy eating since they enrolled in the Healthy Lifestyle course. Hard to compare study with students in the rest of the country, since great demographic variations exist in eating habits. Fast food might not be as easily available all over the country.		
Title	**Aim/Objective**	**Design**	**Population**	**Method**	**Statistics**	**Results**	**Discussion**	**Conclusion**	**Reference**
Fast food and take away food consumption are associated	To examine the associations of time, effort, time spent cooking and cooking skills with fast food and take	Random postal survey.	Switzerland n= 918, German speaking, randomly	Surveys were sent out btw May and June 2009. Fast food and take away consumption were questioned.	Spearman's rank correlations, logistic regression analysis,	24.5 % stated to eat fast food ≥1/month, 44.9 % said so for take away. Mean time spend on cooking was 58min/d	Interventions should be aimed at younger males. People who find cooking	Take away and fast food consumption are behaviours that share	(K van der Horst et al., 2011)

with different lifestyle characteristics	away food consumption.		chosen from telephone directory, person mainly responsible for buying and preparing food in household, 17-93y.	Fast food was defined as things from a fast food company. Take away was defined as sandwich, pizza, kebab etc. Effort, time, cooking and demographics were also asked about.	Nagelkerke's R^2.	and cooking skills were rated as relatively high. Mental/physical effort was rated as low to medium. Fast food and take away were positively corr. Mental and physical efforts were invert. corr. to time spend cooking and cooking skills. Negative corr. were found btw. working status and time spend cooking, working status and cooking skills. <u>Fast food:</u> Males were more likely to eat than women. Fast food consumption decreased with age. More time spend cooking and greater cooking skills were ass. with less consumption. <u>Take away:</u> Males were more likely than women. Consumption decreased with age. Middle education (higher secondary school) lead to less likeliness. Higher	undemanding and are under less time pressure are more likely to spend time on cooking, therefore consuming less fast food and take away. Take away used as a coping strategy for having a higher income and therefore more demanding work. Younger people are more used to quick eating but later in life they appreciate a healthier lifestyle. Only lunch and dinner was survey. Snacks were omitted. A clear definition of fast food and take away was not given, so overlaps are possible.	the same demographic determinants of age and gender, although they are influenced by different lifestyle determinants. It is very likely that motivations related to time, effort and cooking are of increasing importance for food decisions in our society.	

						income ass. with higher consumption. Spending more mental effort toward cooking increased consumption.			
Title	**Aim/Objective**	**Design**	**Population**	**Method**	**Statistics**	**Results**	**Discussion**	**Conclusion**	**Reference**
Differences exist in the eating habits of university men and women at fast-food restaurants	To determine the fast food restaurant eating habits of a group of college students and determine if differences exist by sex.	Self-administered questionnaire.	USA n=226 Midwestern land-grant university college students, introductory nutrition course (representative for entire university, aged ≥19y, 113=men, 113=women.	Two page questionnaire was developed using previously published findings plus questions of nutritional information of healthiness. In the beginning of the questionnaire the definition of a fast food restaurant was stated. The questionnaire was validated before start by 10 faculty members in nutrition and health science, and also pilot tested by 10 students.	χ^2 test. (SAS)	<u>Frequency:</u> 89 % not normally eating breakfast at fast food rest. (men 83 %, women 95 %). 84 % and 58 % (men, women) ate lunch at fast food rest. at least once a week, for dinner this was 82 % for all. 29 % ate a snack weekly at fast food rest. <u>Type of restaurant:</u> 73 % deli sandwich, 62 % American burger/fries, 53 % Mexican. 30 % men and 47 % women did typically not eat at American burger/fries place. <u>Beverage:</u> 41 % men, 21 % women order reg. soda. 14 % men, 31 % women ordered diet soda. 23 % men, 32 % women ordered water. <u>Reasons for consumption:</u> 71 % limited time, 41 % enjoy taste, 13 % men,	Even though college students are reported to skip breakfast in this study they might have consumed breakfast elsewhere. Seems like college students want to spend less time eating meals, and tends to like the taste of fast food. Women are reported to give greater concern for their weight and health, and also to have a wrong vision of their weight which could lead to the increased health concern. Today most fast food rest. have a healthier option available. Fast food might be	The findings of the present study indicate that nutritional consultation and educational materials designed to help college students make good food choices when dining at fast food rest. need to be somewhat different for college men than women because several differences in eating habits at fast food rest. were observed by sex.	(J. a. Driskell et al., 2006)

						34 % women stated to eat with friends and family. <u>Stop eating at…:</u> Satisfied: 22 % men, 40 % women. Everything ordered: 44 % men, 39 % women. Both: 35 % men, 21 % women. <u>Portion size considered:</u> 50 % men did NOT consider. 53 % women did consider. Out of 78 subjects considering smaller size more than half said due to health/weight. Out of 50 subjects considering larger size more than half said due to hunger. <u>Influence of nutritional information:</u> Most of the time: 23 % men, 35 % women. Not at all: 16 % men, 3 % women. Sometimes: 40 % total. <u>Select healthy option:</u> Not at all: 14 % men, 2 % women. Rarely: 23 % men, 18 % women. Sometimes: 37 % men, 51 % women. Most of the time: 21 % men, 24 % women.	part of the college lifestyle at least it is common in use.		

						Always: 5 % for both.			
Title	**Aim/Objective**	**Design**	**Population**	**Method**	**Statistics**	**Results**	**Discussion**	**Conclusion**	**Reference**
Snack frequency: associations with healthy and unhealthy food choices	Examine associations between snack frequency, socio-demographic characteristics, BMI, dietary and eating behaviour.	Food frequency questionnaire (FFQ).	Switzerland n=6189 Aged 20-99y.	Based on data from the 2010 Swiss Food Panel Questionnaire. The questionnaire was mailed to participants. FFQ was used to estimate frequency of various food products, snack frequency/w, meal frequency and survey socio-demographics and lifestyle factors.	ANOVA, regression analysis, Cronbach's α, χ^2 test, *F* test, Tukey Honestly Significant Difference test. (SPSS)	Snack freq. was higher for females comp. to males (6.6times/w vs. 5.2times/w). Females had higher veg. and fruit intake. Males had higher intakes of meat, sugar-sweetened beverages, convenience food. Males were less likely to have breakfast and lunch, less health-conscious, higher BMI, more physical active, higher intake of wine and beer, older, higher educational level, less likely to have children. <u>Snack groups (high, middle, low):</u> Males in low (vs. high): older, eat main meals regular, family meals. Females in high (vs. low): skip breakfast, lower health consciousness. <u>Snack clusters (healthy, middle, unhealthy):</u> Healthy: highest veg. and fruit intake, lowest intake of unhealthy food, highest health consciousness, more	High frequency snack consumers had a higher intake of both healthy and unhealthy food groups. Might have been biases since conflicting views of snacks and meals could occur. A snack for one person might be a meal for another and vice versa. Might have seen more physical active people having higher snack frequency, but this was not the coincidence. Could be due to the missing differentiation in intensities of exercise.	High snack frequency occurred in the context of healthy as well as unhealthy dietary behaviour and lifestyle patterns. Women made healthier dietary food choices and were more likely to consume fruits as snacks, while men chose unhealthy foods, such as sweets and savories, more often.	(Hartmann et al., 2012)

						regular breakfast, higher educated males. Unhealthy: smallest cluster, mainly males, lowest veg. and fruit intake, highest intake of unhealthy food, more skipped breakfast, TV viewing during meal, males highest in wine and beer intake.			
Title	**Aim/Objective**	**Design**	**Population**	**Method**	**Statistics**	**Results**	**Discussion**	**Conclusion**	**Reference**
The habitual meal and snacking patterns of university students in two countries and their use of vending machines	To describe the habitual meal and snack intakes, including the use of vending machines, for two groups of first-year university students in two countries of different cultural backgrounds. Second aim was to explore the relationships between body mass index (BMI) and snacking for these two groups.	Food frequency questionnaire (FFQ).	Scotland & Greece n= 160 University students at universities in Glasgow and Athens, studying non-health courses, ≤24y.	A self-administered FFQ based on the Scottish Health Survey containing 16 questions aiming to asses snacking and drinking consumption of 26 foods. Included vending machine use, height and weight. Data was collected one-on-on by a dietitian.	χ^2 test. (SPSS)	Scottish students mainly bought and prepared their own meals, while Greek students had others to buy and prepare their food. 26 % of all students reported never eating breakfast. 33 % having breakfast 1-3d/w. 54 % Greek and 63 % Scottish students considered a snack as small meal btw main meals. 46 % of Greeks also considered a snack as a small meal eaten in a hurry. 74 % Scottish students bought foods and drinks from vending machine. 76 % of Greeks did not.	Students are a group known to be skipping breakfast. Snack consumption seems to be affected by cultural factors. The use of vending machines and products here from, could be due to the availability of vending machines in the area and the products they contain. Hard to correlate increasing BMI to specific foods, when the participants were mainly within the normal range of	University students living in different countries report similar dietary patterns but differ in their snacking habits. No relationships were found between BMI and snacking.	(Spanos and Hankey, 2009)

						Taste was the most important factor for snack consumption for all students. Scottish students consumed more chocolate bars and cookies than Greeks. Greeks were less likely to consume full or low fat yogurts. Scottish students were more likely to consume fizzy drinks, while Greeks were for juice. Foods related to increasing BMI were: chocolate bars from vending machines, crisps and low fat yogurts.	BMI.		
Title	**Aim/Objective**	**Design**	**Population**	**Method**	**Statistics**	**Results**	**Discussion**	**Conclusion**	**Reference**
Importance of Food Choice Influences for Working Young Adults	Explore influences on food choices of young adults, not attending college.	Qualitative data collection.	USA n= 111 Aged 18-24, not living with parents, no children, no more than nine academic college units.	Telephoned participants to get their consent to participate. Through eligible participants other were found. Participants filled out surveys manually and mailed them back. Non-respondents were phoned to get response.	Cronbach's α, Pearson's *r*, General linear model, χ^2-test. (SAS)	Appearance and taste of food were the sig. influences in almost every food-category. <u>Social young adults (YA):</u> friends habits, childhood eating, convenience. <u>Health focused YA:</u> health, neg. corr. calorie content. <u>Time-concerned YA:</u> advertising.	Many differences between YA. Working YA seem to put less importance in health when making food choices. <u>Social YA:</u> less educated, higher calorie content. <u>Health focused YA:</u> cooked more at home, used vitamin supplements more often, concerned	For young working adults appearance and taste of food is most important.	(Stewart and Tinsley, 1995)

							about long-term health. <u>Time-concerned YA:</u> most educated, thought least of health, higher calorie content, often at fast food outlets. Important to note that the three clusters are influenced differently.		

Appendix 2: Fast Food Experiments

Title	Aim/Objective	Design	Population	Method	Statistics	Results	Discussion	Conclusion	Reference
NEWS: Heart group's approval of fast food meals angers critics, who say it is "a sales ploy".	New versions of existing McD products have been developed.	Less salt, saturated fat, trans fat & energy and more vegetables.				Nutritionists are concerned this will just increase total sales at McD.			(Sweet, 2007)
Effects of calorie labeling and value size pricing on fast food meal choices: Results from an experimental trial.	To analyze if nutrition labeling will change the way consumers buy and eat fast food.	Randomized control 2 x 2 experimental design.	USA. n=597 Minneapolis, suburban and urban. ≥16y, eats ≥1/w at fast food restaurant, speaks and reads English.	Regular fast food consumers were chosen to participate in one of the 4 different menu-options. Calorie, calorie plus price, price and control menu. Didn't know about free-meal, menu-setup, and were required to fill out background info and survey.	General linear model. (SAS)	No differences in calorie consumption between the different menu-setups.	Participants were only exposed to the labeling once. People giving calorie content chose equal amounts of calories as the people without this information.	People regularly eating at fast food outlets doesn't consume differently when being exposed to calorie content or value-pricing.	(L. J. Harnack et al., 2008)
Purchase rates and energy content of nutritionally promoted and traditional fast foods purchased at lunchtime in Australia - a	(i) identify purchase rates of NPFF(Nutrition Promoted Fast Food) at two major fast-food chains; (ii) determine if there were	Survey given to diners at 26 fast food locations.	Australia n= 927 Queensland, ≥16y, diners at McD or Subway at different locations (one location a university food	Surveys were given to shoppers. At McD "Heart Foundation Tick Approved" was considered NPFF, at	X^2 analysis, Fischer's exact test, *t*-test, Mann-Whitney *U* test. (SPSS)	Only 3 % of respondents had purchased a NPFF item ("relaxed" criterion used -> 23 %). These people were ~13 years older than regular fast foods purchasers,	People buying NPFF had a higher population of; women, median age 38, working or training in health-relation. People buying NPFF is a group less likely to buy fast food,	The purchase rate of NPFF observed in the present study was low but led to reductions in energy and improvements in vegetable	(Atkinson and Palmer, 2012)

pilot study.	differences in demographics or reasons for purchase between purchasers of NPFF and purchasers of traditional fast foods; and (iii) investigate whether purchasing NPFF resulted in reduced energy and increased vegetable content at lunch compared with those purchasing traditional fast foods.		court).	Subway "Six grams of fat or less" was. At Subway there were both "strict" and "relaxed" criterions for NPFF purchases.		predominantly female (79 %), and more often reported involvement in a health-relation. Purchasers of NPFF ordered 1.5 fewer mega joules and 0.6 more vegetable servings than purchasers of traditional foods.	which could be the reason to the low sales. Good: that people were asked after they had purchased. Bad: Only dine-in customers. Not randomly selected outlets.	content.	
Title	**Aim/Objective**	**Design**	**Population**	**Method**	**Statistics**	**Results**	**Discussion**	**Conclusion**	**Reference**
Changes in energy content of lunchtime purchases from fast food restaurants after introduction of calorie labeling: cross sectional customer surveys.	To assess the impact of fast food restaurants adding calorie labeling to menu items on the energy content of individual purchases.	Cross sectional surveys conducted in 2007 and 2009, before and after legislation of calorie labeling was required.	USA n=7309 (2007), n=8489(2009) New York, only individual shoppers analyzed.	Surveys were handed out to customers before they entered the outlet, and were asked to bring back the receipt and survey. (2007 outlets=168, 2009 outlets=168) 11 fast food chains.	Two tailed *t*- test, linear regression models. (SPSS)	For the full sample, mean calories purchased did not change from before to after regulation. In the 2009 survey, 15 % of customers reported using the calorie information. These purchased 106 fewer kilocalories than customers who did not see or use the calorie information.	Self-reported use of calorie labeling lead to fewer purchased calories, -> one in six purchases has 11 % less calories (no matter of poverty status). Legislation on calorie labeling has lead to incentives in the industry to create new healthier options.	Results from this study suggest that there is a positive effect of calorie labeling on energy intake at some major chains, and that use of the information is clearly associated with lower	(Dumanovsky et al., 2011)

							The economical crisis might have played a part between the two samples.	calorie purchases across chains. However, a clear reduction in energy intake across the full sample was not found.	
Child and adolescent fast-food choice and the influence of calorie labeling: a natural experiment.	To examine whether calorie labeling had an effect on fast food choices for children and adolescents in low-income communities.	Natural experiment. Pre-/post-study of the mandatory labeling legislation. Survey and receipt collection.	USA n= 349 (NY=266,New=83) New York and Newark, ≥13y, parents for children aged 1-17.	People were asked to bring their receipts after purchase and answer a survey when they did. The same restaurants were used in NY and Newark both pre and post. Post was 4 weeks after the legislation was enforced.	*t*-test, ANOVA, χ^2-test. (SAS)	No significant deviations in the calorie consumption between the pre- and post-study. 16 % of those who noticed the labeling used it in their choice. A majority of the adolescents underestimated their calorie intake for the meal.	Adolescents notice the label in the same frequency as adults, but they don't use it in the same extent. Necessary to study if greater education coupled with labeling is beneficial. Studying labeling might require a longer run-in period. Real-world experiment.	Although adolescents notice the labeling, it didn't lead to any effect in purchase-behaviour.	(B Elbel et al., 2011)
Title	**Aim/Objective**	**Design**	**Population**	**Method**	**Statistics**	**Results**	**Discussion**	**Conclusion**	**Reference**
Does easily accessible nutritional labeling increase consumption of healthy meals away from home? A field experiment	To analyze if a healthy symbol will increase consumptions of healthier meals away from home. Also check if the nutritional qualities of the	Pre- and post-study of purchases of Keyhole labeled meals at a single lunch restaurant.	Sweden n=? (only analyzed items sold) Mostly blue-collar male customers.	12 weeks. After 6 weeks keyhole symbol was put on meals. Point-of-purchase. The menu of the day was offered by	Linear regression model, *t*-test, Hausman test. (STATA)	No sales-effect was seen on labeling with Keyhole. Being on the bottom of the menu decreased sale, as well as later in the week did. Red meat or poultry increased the sales.	Health symbol seems to have the same effect as calorie labeling. People might respond to other symbols focusing on other aspects. More representative	Consumption of a meal is not increased if labeled with a health symbol (Keyhole).	(Thunström and Nordström, 2011)

measuring the impact of a point-of-purchase healthy symbol on lunch sales.	meals are increased.			both emails and displayed outside the lunch restaurant.		(Below not significant) Meals decreased in content of: cal., fat, sat. fat. Meals increased in: fiber, salt.	population could be used, since women seem to react more on health labels. No long-term effect of label was analyzed.		
Inviting Consumers To Downsize Fast-Food Portions Significantly Reduces Calorie Consumption	To test if activating customers by asking if they wanted to downsize their sides had an effect and ultimately decreasing the calorie amount consumed.	Intervention study in a natural setting of a fast food restaurant, Chinese food.	USA n=164 - 992 (only analyzed items sold) Duke University Campus, North Carolina, regular customers (university and medical center staff, college students, staff, visitors)	Collection of receipts from registers. <u>Ex1:</u> baseline-downsizing offered-baseline-downsizing offered with 25cent discount-baseline <u>Ex2:</u>No label(baseline-downsizing offered with 25cent discount-baseline) Calorie labeling(baseline-downsizing offered with 25cent discount-baseline) <u>Ex3:</u> Measuring of leftovers, Calorie labeling(baseli	χ^2-test, ANOVA, *t*-test.	<u>Ex1:</u> 33 % accepted the downsizing offer regardless of discount. <u>Ex2:</u> 21 % accepted offer before calorie labeling and 14 % after introduction on labeling. Calorie labeling did not by itself lead to fewer calories ordered. <u>Ex3:</u> No differences in leftovers between accepters and rejecters. People accepting did so because they wanted to cut calories. Accepting offer lead to both lesser calories ordered as well as consumed.	Those who downsized did not compensate by choosing higher calorie-entrees, thus leading to 200 calories less ordered. Might have worked because ordering is a "script", and being asked prevents this automatic routine.	Activating customers' self-control can help them in getting healthier eating habits when purchasing fast food.	(Schwartz et al., 2012)

				ne-downsizing offered with 25cent discount-baseline-downsizing offered with 25cent discount-baseline)					
Title	**Aim/Objective**	**Design**	**Population**	**Method**	**Statistics**	**Results**	**Discussion**	**Conclusion**	**Reference**
<u>REVIEW:</u> Sales effects of product health information at points of purchase: a systematic review.	-How much evidence is there on product health information on the point-of-purchase? -Investigate explanations for any inconsistencies found in the empirical findings.	A systematical literature review.	USA (one in Canada) n=?(review article)	<u>Criteria for articles:</u> 1. Investigated the effects of product health information. 2. Supermarkets or grocery stores. 3. Used an experimental design (condition vs. control). 4. Used sales data as the outcome measure of interest. 5. Were published in English. 6. 1980 - 2010. 7. Were published in	ANCOVA, diff. regression models, *t*-test, ANOVA, Wilcoxon rank sum tests.	16 articles (17 studies). Mixed results for the impact of health information. Longer studies (>52w) gave a better outcome. If other initiatives were taken than health information the better the outcome. Information targeting both healthy and unhealthy nutrient were most effective.	People might compensate choosing healthier products by chosen unhealthy in another category. Might choose the healthy option when the price is almost equal to healthy vs. unhealthy, but when price difference is bigger this is not the case. Health information might take some time to run-in. Health information might need further initiatives to work. Focusing on absence of unhealthy nutrient may have greater effect than focus	Mixed results for product health information. Success is greater when: -longer than 52w -additional initiatives are made (posters etc.) - focus on absence of unhealthy nutrients.	(Van 't Riet, 2012)

				peer-reviewed journals, books or book chapters.			on present healthy.		
Title	**Aim/Objective**	**Design**	**Population**	**Method**	**Statistics**	**Results**	**Discussion**	**Conclusion**	**Reference**
<u>REVIEW:</u> A Critical Review of the Literature on Nutritional Labeling	A systematic qualitative literature review, of direct provision of information about nutrition and health claim labeling on pre-packaged food products (groceries). Also review consumer characteristics that are known to influence understanding and behaviour.	An extensive and systematic literature review.	?- not listed for the specific and individual articles. (Review article)	<u>Criteria for articles:</u> 1. At least one empirical study and stated test-statistics need to me cited. 2. Core of studies needed to be on nutrition labeling and/or consumer characteristics influencing use of these labels.	?-not listed for the specific articles.	<u>Format:</u> Detailed labeling is preferred (though no "right format" can be concluded). Easy-to-go-to labels have greater effect on behaviour, though to short (e.g. "no cholesterol") can lead to misunderstanding. Mixed results in regards to health claims on their own or paired with nutrition information. <u>Wording:</u> Disclosure of negative foods had effect on purchases. Simple wording (e.g. "high", "low") had greater effect than substantial wording. <u>Consumer factors:</u> Negative stated information lead to higher motivation. Increased nutrition knowledge had mixed effect. Age, gender-> mixed results. Higher	Labels have been found to be beneficial to some people at some times. Many findings can't be directly transferred to an actual shopping environment, e.g. disclosure is more effective than health claims. Other important aspects needed to be considered: placement of label, time constraints for customers, limited motivation to read, e.g. FOP have shown greater effect in natural settings. Simple graphic symbols can have misleading nutritional beliefs. "Real-world" or natural settings of experiments, as wells as a representative population.	Indicates that while some useful findings have resulted, a more holistic view is needed if the research is to be more helpful in framing policy. Difficult to make a simple conclusion.	(Hieke and Taylor, 2012)

						education, bigger household-> healthier behaviour. Income, employment-> mixed results.	Strong measurement points should be chosen. More focus on "eating-out".		
Title	**Aim/Objective**	**Design**	**Population**	**Method**	**Statistics**	**Results**	**Discussion**	**Conclusion**	**Reference**
Purchasing Behavior and Calorie Information at Fast-Food Chains in New York City, 2007	To examine the calorie content of customers purchased meals at fast food outlets, and to check if calorie information had an effect.	Natural experiment. In-store receipt and survey sampling.	USA n=7318 (2007) New York City, >18y. (167 sites)	Customers were asked to return their receipts and answer a short questionnaire. Questionnaire asked into; food just for you, what was ordered, any extras or modifications, seen any calorie information, did information affect purchase.	*t*-test, χ^2-test. (SPSS)	Mean calories purchased 817, 34 % purchased 1000 or more, 15 % purchased 1250 or more. Chicken chain patrons had the highest purchased calories, and sandwich chain patrons the lowest. Excluding Subway 4 % saw calorie information (Subway 32 %). <u>Subway:</u> saw info purchased 52 less calories; saw info-> 37 % effected their purchase; those who saw and had effect 99 calories less purchased than those only seeing info; no diff. btw not seeing info and seeing info but no effect.	Subways placement of calorie information had an effect on customers' tendency to seeing information. Only Subway displayed their information explicit in-store, while others had it on distant posters and/or website. Subway's menu could contain fewer calories than other chains and/or customers at Subway are more likely to purchase fewer calories.	Placement of calorie information at point of purchase is more effective and may be associated with lower calorie purchases among consumers reporting seeing information.	(Bassett et al., 2008)
Title	**Aim/Objective**	**Design**	**Population**	**Method**	**Statistics**	**Results**	**Discussion**	**Conclusion**	**Reference**
Consumer Awareness of	Assess consumer	In-store survey	USA	Pre- and post-enforcement s	χ^2-test. (SPSS)	<u>Pre:</u> 25 % saw calorie info. 3 times	Study leads to 1 M/6 M people in	Posting calorie	(Dumanovsk y et al.,

Fast-Food Calorie Information in New York City After Implementation of a Menu Labeling Regulation	awareness of menu calorie information at fast-food chains after the introduction of health code regulation requiring chains to display food-item calories on menus and menu boards.	sampling.	n=1188 (pre), n= 1229 (post) (2008) New York City, 45 sites.	of health code legislation surveys. Customers were asked to answer survey when exiting restaurants. Survey contained questions on: meal or snack, saw calorie info today or ever in rest., where they had seen it, if info had an effect, demographics.		more likely to see info if posted on full menu board comp. to all other methods. Almost half of rest. had calorie info. <u>Post:</u> 64 % saw calorie info. Younger people noted info more often. 25-44y olds used info the most. <u>Both:</u> 27 % of those who saw info reported using it. Neighborhood was not ass. with seeing info or not. Men were more likely to use info, both for those who saw it than the rest.	NYC sees calorie info each day. 280,000 use it. Less effective to use other methods than display on menu board. Some chains may do more business in phone and online ordering so people won't notice it. More public awareness of calorie info could have happen btw studies. Diff. health perspective for customers at diff. chains. Posting calorie info not the only solution. Customer flow in diff. chains could bias. No way to verify that the info was actually used when said it was.	information on menu boards increases the number of people who see and use this information.	2010)

Appendix 3: Full and final questionnaire in Danish

nielsen

Denne undersøgelse indgår i et samarbejdsprojekt mellem forskningsinstitutioner og virksomheder i Danmark, der sælger fastfood/take-away. Din besvarelse er vigtig for, at vi kan udvikle gode produkter og måltider til dette marked.

Først har vi nogle spørgsmål om dig selv

Baggrundskriterier

K1. (Nielsen Baggrundskriterium)

Marker dit køn

Mand (M)
Kvinde (F)

K2. (Nielsen Baggrundskriterium)

Noter din alder

K24. (Nielsen Baggrundskriterium)

Hvor mange personer er der i alt i husstanden?

1 person (1)
2 personer (2)
3 personer (3)
4 personer (4)
5 personer (5)
6 personer (6)
7 personer eller flere (7)

K19DK.(Nielsen Baggrundskriterium)

I hvilken kommune bor du?

(FVT Baggrundskriterium) Uddannelse

Hvad er din højest fuldførte uddannelse? [SA]	Code (376)	Route
¨ Grundskole (10 år eller mindre)	1	
¨ Erhvervsfaglig uddannelse, praktisk (10-12 år)	2	
¨ Studenter/HF-eksamen, teoretisk (10-12 år)	3	
¨ Kort videregående uddannelse (fx bachelorgrad eller lignende; 13-15 år)	4	
¨ Mellemlang/lang videregående uddannelse (fx kandidat, Ph.d.; 15 år eller over)	5	

(FVT Baggrundskriterium) Ubanisering

Hvilken beskrivelse dækker bedst det område, hvor du bor? [SA]	Code (377)	Route
¨ Hovedstaden (København) og forstæder	1	
¨ En større by (Århus, Odense over 50.000 indbyggere)	2	
¨ En by mellem 20.000 og 50.000 indbyggere	3	
¨ En mindre by mellem 1000 og 19.999 indbyggere	4	
¨ En gård, et hus på landet eller lignende	5	

(FVT Baggrundskriterium) Hvem bor I husstanden

Hvis der svares 5 (Nej, bor alene) kan der ikke svares andet

Bor du sammen med nogle? (evt. flere svar) [MA]	Code (378)	Route
¨ Ja, med ægtefælle/samlever	1	
¨ Ja, med mor/far/forældre	2	
¨ Ja, med hjemmeboende børn	3	
¨ Ja, med andre	4	
¨ Nej, bor alene	5	

Spørgeskema

Næste del af undersøgelsen handler om dine vaner i forhold til den fastfood/take-away du køber og spiser på farten som et hovedmåltid. Det kan være på alle tidspunkter af døgnet fra morgen til nat.

Fastfood/take-away defineres som mad, der er klar til at spise. Det kan spises med fingrene eller med enten en ske eller en gaffel, for eksempel pizza, pølser, burgere, salater, pommes frites, sandwich, rundstykker eller smurt brød.

Q1 ***Randomize response 1-12***
R5-R6 and R7-R8 randomized in block. R7 should always become before R8

Alle får spørgsmålet spørgsmålet
Alle udsagn randomiseres og R5-R6 R7-R8 randomiseres i en blok. R7 kommer altid før R8

Hvor ofte spiser du fastfood/take-away som hovedmåltid, der er købt på et af følgende steder?
[SA]

	5 gange om ugen eller oftere	3-4 gange om ugen	1-2 gange om ugen	2-3 gange pr. måned	Ca. 1 gang pr. måned	Ca. hver anden måned eller sjældnere	Aldrig	Ved ikke
	(124)							
Burgerbar/kæde (fx McDonald's, Burger King) (R1)	1	2	3	4	5	6	7	8
	(125)							
Sandwichbar/kæde (fx Subway, Sunset) (R2)	1	2	3	4	5	6	7	8
	(126)							
Pizzeria - uden servering fra tjener (R3)	1	2	3	4	5	6	7	8
	(127)							
Grillbar, shawarmabar, pølsebod og lignende - uden servering fra tjener (R4)	1	2	3	4	5	6	7	8
	(128)							
Cafeteria langs motorvej/landevej (fx Monarch) (R5)	1	2	3	4	5	6	7	8
	(129)							
Cafeterier ved svømme- og idrætshaller (R6)	1	2	3	4	5	6	7	8
	(130)							
Kiosk ved en benzinstation (fx Q8, Statoil) (R7)	1	2	3	4	5	6	7	8

	(131)							
Kiosk ved togstationer, på gaden og i centre (R8)	1	2	3	4	5	6	7	8
	(132)							
Salgsvogn i toget (fx DSB) (R9)	1	2	3	4	5	6	7	8
	(133)							
Supermarked/bager/slagter og lignende (R10)	1	2	3	4	5	6	7	8
	(134)							
Sushibar, chinabox, wokshop og lignende - uden servering fra tjener (R11)	1	2	3	4	5	6	7	8
	(135)							
Kaffebar og cafe (fx Baresso) - uden servering fra tjener (R12)	1	2	3	4	5	6	7	8

Alle får spørgsmålet

Q2 Samlet set, hvor ofte spiser du fastfood/take-away som et hovedmåltid? [SA]

	Code (136)	Route
5 gange om ugen eller oftere	1	
3-4 gange om ugen	2	
1-2 gange om ugen	3	
2-3 gange pr. måned	4	
Ca. 1 gang pr. måned	5	
Ca. hver anden måned eller sjældnere	6	
Aldrig	7	
Ved ikke	8	

Q3 ***Q2=6-7***
Randomize responses 1-15

Dem som har svaret 6-7 i Q2 (Ca. hver anden måned eller aldrig) får spørgsmålet
Udsagn randomiseres

Angiv i hvilken grad de følgende udsagn forklarer, hvorfor du sjældent eller aldrig spiser fastfood/take-away?
[SA]

	Nej, slet ikke	Nej, i mindre grad	Ja, til en vis grad	Ja, i høj grad	Ved ikke/ikke relevant
	(137)				
Fastfood/take-away er for dyrt (R1)	1	2	3	4	5
	(138)				
Det er usundt (R2)	1	2	3	4	5
	(139)				

(R3) Det smager dårligt	1 (140)	2	3	4	5
(R4) Jeg har ikke tillid til madens indhold	1 (141)	2	3	4	5
(R5) Jeg får dårlig samvittighed, når jeg spiser fastfood/take-away	1 (142)	2	3	4	5
(R6) Jeg undgår fast-food steder af princip	1 (143)	2	3	4	5
(R7) Det er for store portioner	1 (144)	2	3	4	5
(R8) Jeg foretrækker at tage mad med hjemmefra frem for at købe fastfood/take-away, når jeg er på farten	1 (145)	2	3	4	5
(R9) Jeg bliver ikke mæt	1 (146)	2	3	4	5
(R10) Der mangler oplysninger om indholdet af energi og næringsstoffer	1 (147)	2	3	4	5
(R11) Der mangler måltider, der er dokumenteret sundere (fx nøglehulsmærket)	1 (148)	2	3	4	5
(R12) Maden ser uappetitlig ud	1 (149)	2	3	4	5
(R13) Der mangler økologisk og/eller klimavenlig fastfood/take-away	1 (150)	2	3	4	5
(R14) Det er for besværligt at købe (ligger ikke i nærheden eller på vejen)	1 (151)	2	3	4	5
(R15) Det er ikke praktisk ved transport (bil, tog, bus eller andet)	1	2	3	4	5

Q4 ***Q3 = R1_3-4 - R15_3-4 and Plusfilter Q3 (R1_3-4 - R15_3-4)***
Q4 should only be shown to respondents who has answered 3 (Ja, til en vis grad) or 4 (Ja, i høj grad) to 4 or more responses (R1-R15) in Q3.
It should only be possible to mark max. three responses
Randomize 1-15
R16-17=SA

Dem som har svaret 3-4 (Ja til en vis grad-Ja til en høj grad) til 4 eller flere udsagn i Q3 får de udsagn vist som de har svaret 3-4 til i Q3
Kun muligt at afgive max 3 svar
Udsagn undtagen "ingen af disse og Ved ikke" randomiseres

Code (152)	Route

Hvilke af nedenstående udsagn beskriver de vigtigste årsager til, at du ikke spiser fastfood/take-away oftere end du gør?

Hvis der er flere end 3 årsager forneden, kan du max. vælge 3 årsager [MA]

Fastfood/take-away er for dyrt	01	
Det er usundt	02	
Det smager dårligt	03	
Jeg har ikke tillid til madens indhold	04	
Jeg får dårlig samvittighed, når jeg spiser fastfood/take-away	05	
Jeg undgår fast-food steder af princip	06	
Det er for store portioner	07	
Jeg foretrækker at tage mad med hjemmefra frem for at købe fastfood/take-away, når jeg er på farten	08	
Jeg bliver ikke mæt	09	
Der mangler oplysninger om indholdet af energi og næringsstoffer	10	
Der mangler måltider, der er dokumenteret sundere (fx nøglehulsmærket)	11	
Maden ser uappetitlig ud	12	
Der mangler økologisk og/eller klimavenlig fastfood/take-away	13	
Det er for besværligt at købe (ligger ikke i nærheden eller på vejen)	14	
Det er ikke praktisk ved transport (bil, tog, bus eller andet)	15	
Ingen af disse	16	
ved ikke	17	

Q5 ***Q3 =R 1_3-4 - R15_3-4 and Plusfilter Q3 (R1_3-4 - R15_3-4)***
Q5 should be shown to respondents who has answered 3 (Ja, til en vis grad) or 4 (Ja, i høj grad) to 1-3 responses (R1-R15) in Q3
Randomize 1-15
R16-17=SA

Dem som har svaret 3-4 (Ja til en vis grad-Ja til en høj grad) til 1-3 udsagn i Q3 får de udsagn vist, som de har svaret 3-4 til i Q3
Muligt at afgive flere svar
Udsagn undtagen "ingen af disse og Ved ikke" randomiseres

Hvilke af nedenstående udsagn er de vigtigste årsager til, at du ikke spiser fastfood/take-away oftere end du gør?

Det er muligt at vælge flere årsager
[MA]

Code (154)	Route

Fastfood/take-away er for dyrt	01	
Det er usundt	02	

Det smager dårligt	03	
Jeg har ikke tillid til madens indhold	04	
Jeg får dårlig samvittighed, når jeg spiser fastfood/take-away	05	
Jeg undgår fast-food steder af princip	06	
Det er for store portioner	07	
Jeg foretrækker at tage mad med hjemmefra frem for at købe fastfood/take-away, når jeg er på farten	08	
Jeg bliver ikke mæt	09	
Der mangler oplysninger om indholdet af energi og næringsstoffer	10	
Der mangler måltider, der er dokumenteret sundere (fx nøglehulsmærket)	11	
Maden ser uappetitlig ud	12	
Der mangler økologisk og/eller klimavenlig fastfood/take-away	13	
Det er for besværligt at købe (ligger ikke i nærheden eller på vejen)	14	
Det er ikke praktisk ved transport (bil, tog, bus eller andet)	15	
Ingen af disse	16	
ved ikke	17	

Q6 ***Q2=1-5***
Should only be possible to Rank two responses
R7 should not be ranked. But it should be possible to answer R7
R7=SA

Dem som har svaret 1-5 (1 gang om ugen – 5 gange eller oftere) i Q2 får spørgsmålet Rangeringsspørgsmål
Det er kun muligt at rangere 2 svar
"Ved ikke" kan ikke rangeres, men det er muligt at svare Ved ikke og så gå videre til næste spørgsmål

Når du spiser fastfood/take-away, hvornår på døgnet spiser du det så hyppigst?

Tast 1 ud for det tidspunkt på døgnet hvor du spiser det hyppigst, og tast 2 ud for det tidspunkt på døgnet hvor du spiser det næst-hyppigst

	RANK	
(R1) Morgen		(156-157)
(R2) Formiddag		(158-159)
(R3) Middag		(160-161)
(R4) Eftermiddag		(162-163)
(R5) Aften		(164-165)
(R6) Sen aften/nat		(166-167)
(R7) Ved ikke		(168-169)

Q7 ***Q2=1-5***

Should only be possibel to rank two responses
R5 should not be ranked. But it should be possible to answer R5
R5=SA

Dem som har svaret 1-5 (1 gang om ugen – 5 gange eller oftere) i Q2 får spørgsmålet Rangeringsspørgsmål
Det er kun muligt at rangere 2 svar
"Ved ikke" kan ikke rangeres, men det er muligt at svare Ved ikke og så gå videre til næste spørgsmål

Når du spiser fastfood/take-away, hvem spiser du så hyppigst fastfood/take-away sammen med?

Tast 1 ud for dem, som du spiser det hyppigst med, og tast 2 ud for dem, som du spiser det næst-hyppigst med

	RANK	
(R1) Alene		(170-171)
(R2) Med venner		(172-173)
(R3) Med kollegaer/studiekammerater		(174-175)
(R4) Med familie		(176-177)
(R5) Ved ikke		(178-179)

Q8 ***Q2=1-5***

Dem som har svaret 1-5 (1 gang om ugen – 5 gange eller oftere) i Q2 får spørgsmålet
Det er kun muligt at give et svar

Når du køber et fastfood/take-away måltid inklusiv eventuel drikkevare, hvad betaler du så typisk for måltidet?
[SA]

	Code (180)	Route
105 kr eller mere	01	
95-104 kr	02	
85-94 kr	03	
75-84 kr	04	
65-74 kr	05	
55-64 kr	06	
45-54 kr	07	
35-44 kr	08	
25-34 kr	09	
Mindre end 25 kr	10	
Ved ikke	11	

Q9 ***Q2=1-5***

Code	Route

It should only be possible to choose 3 responses
Randomize 1-16
R6-R7 and R8-R9 and 13-14 and 15-16 randomized in blocks and within the blocks
17-18=SA

Dem som har svaret 1-5 (1 gang om ugen – 5 gange eller oftere) i Q2 får spørgsmålet
Udsagn randomiseres
R6-R7 og R8-R9 og 13-14 og 15-16 randomiseres in blokke og inden for blokken
R17-R18 randomiseres ikke

Når du spiser fastfood/take-away, som hovedmåltid, hvilke typer af fastfood/take-away måltider spiser du så oftest?

Du kan max. vælge tre måltider
[MA]

	(213)	
Pølse (fx hotdog, pølsemix)	01	
Burger (fx cheeseburger, kyllingeburger)	02	
Pizza, calzone, madtærter og pirogger	03	
Fiskefilet, grillkylling og lignende	04	
Kebab, shawarma, pita, wrap og lignende	05	
Pommes frites - som enkeltstående ret	06	
Pommes frites - som tilbehør	07	
Sandwich - lyst brød	08	
Sandwich - groft/fuldkornsbrød	09	
Rugbrødsmadder/smørrebrød	10	
Ris-, pasta- og kartoffelretter	11	
Sushi	12	
Salater/grøntsager - som enkeltstående ret	13	
Salater/grøntsager - som tilbehør	14	
Bolle, rundstykke eller lignende - lyst brød	15	
Bolle, rundstykke eller lignende - groft/fuldkornsbrød	16	
Ingen af disse	17	
Ved ikke	18	

Q10 ***Q2=1-5***
It should only be possible to choose 3 responses
Randomize 1-14
R1-R2 and R4-R5 and R8-R9randomized in blocks and within the blocks
15-16=SA

Dem som har svaret 1-5 (1 gang om ugen – 5 gange eller oftere) i Q2 får spørgsmålet

Code	Route

Udsagn randomiseres
R1-R2 and R4-R5 and R8-R9 randomiseres in blokke og inden for blokken
R17-R18 randomiseres ikke

Hvad drikker du til fastfood/take-away måltider?

Du kan max vælge 3 drikke
[MA]

Sodavand - almindelig	01	
Sodavand - sukkerfri	02	
Juice eller most	03	
Mælk - skummet eller minimælk	04	
Mælk - let eller sødmælk	05	
Kakaomælk/milkshake	06	
Drikkeyoghurt	07	
Vand - uden brus	08	
Vand - med brus	09	
Smoothie	10	
Kaffe/Te	11	
Øl/vin/cider	12	
Vitaminvand	13	
Iste	14	
Drikker ikke noget til maden	15	
Ved ikke	16	

Q11 ***Q2=1-5***
Randomize repsponses
Should only be possible to mark 3 responses
7-8=SA

Dem som har svaret 1-5 (1 gang om ugen – 5 gange eller oftere) i Q2 får spørgsmålet
Det er kun muligt at vælge max 3 svar
Udsagn randomiseres undtagen7-8

Når du spiser fastfood/take away som hovedmåltid, hvad vælger du så typisk ud fra?

Du kan max vælge tre 3 [MA]

	Code	Route
Den fastfood/takeaway der er mest rimelig i pris	1	
Den fastfood/takeaway der ser mest appetitlig og fristende ud	2	

Den fastfood/takeaway som jeg opfatter som mest sund	3	
Hvad jeg er vant til (samme type fastfood/take away)	4	
Fastfood/takeaway der kan spises med fingrene	5	
Økologisk og/eller klimavenlig fastfood/take away	6	
Ingen af disse	7	
Ved ikke	8	

Q12 ***Q2=1-5***
Randomize responses

Dem som har svaret 1-5 (1 gang om ugen – 5 gange eller oftere) i Q2 får spørgsmålet
Udsagn randomiseres

Hvordan vil du vurdere den fastfood/take-away mad, du har spist oftest den sidste måned?
[SA]

	Nej, slet ikke	Nej, i mindre grad	Ja, til en vis grad	Ja, i høj grad	Ved ikke/ikke relevant
	(247)				
(R1) Maden så appetitlig ud	1	2	3	4	5
	(248)				
(R2) Smagen var god	1	2	3	4	5
	(249)				
(R3) Maden var sund	1	2	3	4	5
	(250)				
(R4) Maden var økologisk og/eller klimavenlig	1	2	3	4	5
	(251)				
(R5) Prisen var passende	1	2	3	4	5

Q13 ***Q2=1-5***

Dem som har svaret 1-5 (1 gang om ugen – 5 gange eller oftere) i Q2 får spørgsmålet

Forestil dig, at du køber et fastfood/take-away måltid på et salgssted. Vil du være villig til selv at opvarme dit måltid i fx en mikrobølgeovn ved salgsstedet? [SA]

	Code (260)	Route
Nej, slet ikke	1	
Nej, i mindre grad	2	
Ja, til en vis grad	3	
Ja, i høj grad	4	
Ved ikke/ikke relevant	5	

Q14 ***Randomize responses 1-13***

Alle får spørgsmålet
Udsagn randomiseres

Nedenstående udsagn er forskellig forslag til ændringer af det nuværende fastfood/take-away marked.

Forudsat at ændringerne ikke ændrer på prisen på produkterne, i hvor høj grad er du så enig i disse ændringer?
[SA]

	Nej, slet ikke	Nej, i mindre grad	Ja, til en vis grad	Ja, i høj grad	Ved ikke/ikke relevant
	(261)				
(R1) Mere fokus på smagen	1	2	3	4	5
	(262)				
(R2) Maden skal tilberedes på stedet	1	2	3	4	5
	(263)				
(R3) Mindre fed mad	1	2	3	4	5
	(264)				
(R4) Mindre salt i maden	1	2	3	4	5
	(265)				
(R5) Flere økologiske og/eller klimavenlige råvarer	1	2	3	4	5
	(266)				
(R6) Mere frugt og grønt i eller til maden	1	2	3	4	5
	(267)				
(R7) Flere muligheder for valg ved måltidet, fx valg af brød, dressinger osv.	1	2	3	4	5
	(268)				
(R8) Grovere brødtyper	1	2	3	4	5
	(269)				
(R9) Bedre information om madens energi og næringsindhold	1	2	3	4	5
	(270)				
(R10) Større udvalg af sundere måltider	1	2	3	4	5
	(271)				
(R11) Flere måltider der er dokumenteret sundere (fx mærket med Nøglehullet)	1	2	3	4	5
	(272)				
(R12) Mere etnisk /eksotisk mad	1	2	3	4	5
	(273)				
(R13) Flere retter med fisk	1	2	3	4	5

Q15 ***Q14=3-4***
Randomize R1-R2

Dem, som har svaret 3-4 (Ja, til en vis grad-Ja, i høj grad) i Q14 får spørgsmålet
Udsagn randomiseres

Hvis de ændringer til fastfood/tale-away markedet, som du er enig i, bliver gennemført, vil det så få dig til at:
[SA]

	Nej, slet ikke	Nej, i mindre grad	Ja, til en vis grad	Ja, i høj grad	Ved ikke/ ikke relevant
	(274)				
(R1) Købe de nye produkter frem for dem du køber i dag?	1	2	3	4	5
	(275)				
(R2) Købe mere fastfood/takeaway?	1	2	3	4	5

Du vil i det følgende blive præsenteret for forskellige typer af burgermenuer. For hver type menu bedes du svare på, hvad du er villig til betale for den. Til sidst bedes du prioritere, hvilke menuer du foretrækker.

Q16 ***Please place Q16-Q19 on the same page***

Q16-Q19 placeres på samme side

Alle får spørgsmålet

Hvad vil du betale for følgende måltider:

	Code (276)	Route
1. Almindelig burgermenu: En burger der består af hvedebolle, oksekød, cheddarost, burgerdressing, salat, tomat og syltede agurker serveret med pommes frites og sodavand [SA]		
105 kr eller mere	01	
95-104 kr	02	
85-94 kr	03	
75-84 kr	04	
65-74 kr	05	
55-64 kr	06	
45-54 kr	07	
35-44 kr	08	
25-34 kr	09	
Mindre end 25 kr	10	
Ved ikke	11	

Q17 ***Alle får spørgsmålet***

	Code (278)	Route
2. Burgermenu med økologiske råvarer: En burger bestående af hvedebolle, oksekød, cheddarost, burgerdressing, salat, tomater og syltede agurker, serveret med pommes frites og sodavand [SA]		
105 kr eller mere	01	
95-104 kr	02	
85-94 kr	03	
75-84 kr	04	
65-74 kr	05	
55-64 kr	06	
45-54 kr	07	
35-44 kr	08	
25-34 kr	09	
Mindre end 25 kr	10	
Ved ikke	11	

Q18 ***Alle får spørgsmålet***

	Code (280)	Route
3. Burgermenu med mere fuldkorn og mindre fedt: En burger bestående af en fuldkorns hvedebolle, magert oksekød, ost med lav fedtprocent, dressing, salat, tomat og syltede agurker, serveret med pomme frites (mindre fedt) og sodavand. [SA]		
105 kr eller mere	01	
95-104 kr	02	
85-94 kr	03	
75-84 kr	04	
65-74 kr	05	
55-64 kr	06	
45-54 kr	07	
35-44 kr	08	
25-34 kr	09	
Mindre end 25 kr	10	
Ved ikke	11	

Q19 ***Alle får spørgsmålet***

	Code (313)	Route
4. Nøglehulsmærket burgermenu, det vil sige indeholder mere fuldkorn, flere grønsager og mindre fedt, salt og sukker: En burger bestående af en fuldkorns hvedebolle, magert oksekød, ost med lav fedtprocent, dressing, salat, tomat og syltede agurker serveret med en valgfri grøn salat eller bønnesalat og vand med/uden brus. [SA]		

105 kr eller mere	01	
95-104 kr	02	
85-94 kr	03	
75-84 kr	04	
65-74 kr	05	
55-64 kr	06	
45-54 kr	07	
35-44 kr	08	
25-34 kr	09	
Mindre end 25 kr	10	
Ved ikke	11	

Q20 ***Alle får spørgsmålet***
Rangeringsspørgsmål

Hvis prisen var den samme på de 4 menuer, hvilke ville du så vælge som din første prioriteret, anden prioritet, tredje prioritet og fjerde prioritet?

Tast 1 ud for din første prioritet, 2 ud for din anden prioritet, 3 ud for din tredje prioritet og 4 ud for din fjerde prioritet.

	RANK		
(R1) Almindelig burgermenu			(315-316)
(R2) Økologisk burgermenu			(317-318)
(R3) Burgermenu med mere fuldkorn og mindre fedt			(319-320)
(R4) Nøglehulsmærket burgermenu med mere fuldkorn, flere grønsager og mindre fedt, salt og sukker			(321-322)

I næste del af spørgeskemaet vil vi spørge ind til de småretter og snacks du køber og spiser, når du er på farten. Det er mindre måltider, for eksempel pølsehorn, pizzaslice, boller, youghurt, smoothie, energi/müslibar, kager, frugt, (mindre) burgere og sandwich, du spiser som mellemmåltid. Det kan være på alle tidspunkter af døgnet fra morgen til nat.

Q21 ***Randomize response 1-12***
R5-R6 og R7-R8 randomized in block. R7 should always become before R8

Alle får spørgsmålet spørgsmålet
Alle udsagn randomiseres og R5-R6 og R7-R8 randomiseres i en blok. R7 kommer altid før R8

Hvor ofte køber og spiser du småretter/snacks fra følgende steder?
[SA]

	5 gange om ugen eller oftere	3-4 gange om ugen	1-2 gange om ugen	2-3 gange pr. måned	Ca. 1 gang pr. måned	Ca. hver anden måned	Aldrig	Ved ikke
	(323)							
(R1) Burgerbar/kæde (fx McDonald's, Burger King)	1	2	3	4	5	6	7	8
	(324)							
(R2) Sandwichbar/kæde (fx Subway, Sunset)	1	2	3	4	5	6	7	8
	(325)							
(R3) Pizzeria - uden servering fra tjener	1	2	3	4	5	6	7	8
	(326)							
(R4) Grillbar, shawarmabar, pølsebod og lignende - uden servering fra tjener	1	2	3	4	5	6	7	8
	(327)							
(R5) Cafeteria langs motorvej/landevej (fx Monarch)	1	2	3	4	5	6	7	8
	(328)							
(R6) Cafeterier ved svømme- og idrætshaller	1	2	3	4	5	6	7	8
	(329)							
(R7) Kiosk ved en benzinstation (fx Q8, Statoil)	1	2	3	4	5	6	7	8
	(330)							
(R8) Kiosk ved togstationer, på gaden og i centre	1	2	3	4	5	6	7	8
	(331)							
(R9) Salgsvogn i toget (fx DSB)	1	2	3	4	5	6	7	8
	(332)							
(R10) Supermarked/bager/slagter og lignende	1	2	3	4	5	6	7	8
	(333)							
(R11) Sushibar, chinabox, wokshop og lignende - uden servering fra tjener	1	2	3	4	5	6	7	8
	(334)							
(R12) Kaffebar og cafe (fx Baresso) - uden servering fra tjener	1	2	3	4	5	6	7	8

Q22 ***Alle får spørgsmålet spørgsmålet***

Samlet set hvor ofte køber og spiser du småretter/snacks på farten?[SA]

	Code (335)	Route
5 gange om ugen eller oftere	1	
3-4 gange om ugen	2	

1-2 gange om ugen	3	
2-3 gange pr. måned	4	
Ca. 1 gang pr. måned	5	
Ca. hver anden måned eller sjældnere	6	
Aldrig	7	

Q23 **Q22=6-7**
Randomize responses 1-13

Dem som har svaret 6-7 i Q22 (Ca. hver anden måned eller aldrig) får spørgsmålet
Udsagn randomiseres

Angiv i hvilken grad de følgende udsagn forklarer, hvorfor du sjældent eller aldrig spiser småretter/snacks? [SA]

	Nej, slet ikke	Nej, i mindre grad	Ja, til en vis grad	Ja, i høj grad	Ved ikke/ikke relevant
	(336)				
(R1) Småretter/snacks er for dyre	1	2	3	4	5
	(337)				
(R2) Det er usundt	1	2	3	4	5
	(338)				
(R3) Det smager dårligt	1	2	3	4	5
	(339)				
(R4) Jeg har ikke tillid til madens indhold	1	2	3	4	5
	(340)				
(R5) Jeg får dårlig samvittighed, når jeg spiser småretter/snacks	1	2	3	4	5
	(341)				
(R6) Det er for store portioner	1	2	3	4	5
	(342)				
(R7) Jeg foretrækker at tage mad med hjemmefra frem for at købe småretter/snacks, når jeg er på farten	1	2	3	4	5
	(343)				
(R8) Der mangler oplysninger om indholdet af energi og næringsstoffer	1	2	3	4	5
	(344)				
(R9) Der mangler småretter/snacks, der er dokumenteret sundere (fx nøglehulsmærket)	1	2	3	4	5
	(345)				
(R10) Maden ser uappetitlig ud	1	2	3	4	5
	(346)				

(R11) Der mangler økologiske og/eller klimavenlige småretter/snacks	1	2	3	4	5
	(347)				
(R12) Det er for besværligt at købe (ligger ikke i nærheden eller på vejen)	1	2	3	4	5
	(348)				
(R13) Det er ikke praktisk ved transport (bil, tog, bus eller andet)	1	2	3	4	5

Q24 ***Q23 = R1_3-4 - R13_3-4 and Plusfilter Q23 (R1_3-4 - R13_3-4)***
Q24 should only be shown to respondents who has answered 3 (Ja, til en vis grad) or 4 (Ja, i høj grad) to 4 or more responses (R1-R13) in Q23.
Should only be possible to mark max. three responses
Randomize 1-13
R14=SA

Dem som har svaret 3-4 (Ja til en vis grad-Ja til en høj grad) til 4 eller flere udsagn i Q23 får de udsagn vist som de har svaret 3-4 til i Q23
Kun muligt at afgive max 3 svar
Udsagn undtagen "ingen af disse og Ved ikke" randomiseres

Hvilke af nedenstående udsagn er de vigtigste årsager til, at du ikke spiser småretter/snacks oftere end du gør?

Hvis der er flere en 3 årsager forneden, kan du kan max vælge 3 årsager [MA]

	Code (349)	Route
Småretter/snacks er for dyre	01	
Det er usundt	02	
Det smager dårligt	03	
Jeg har ikke tillid til madens indhold	04	
Jeg får dårlig samvittighed, når jeg spiser småretter/snacks	05	
Det er for store portioner	06	
Jeg foretrækker at tage mad med hjemmefra frem for at købe småretter/snacks, når jeg er på farten	07	
Der mangler oplysninger om indholdet af energi og næringsstoffer	08	
Der mangler småretter/snacks, der er dokumenteret sundere (fx nøglehulsmærket)	09	
Maden ser uappetitlig ud	10	
Der mangler økologiske og/eller klimavenlige småretter/snacks	11	
Det er for besværligt at købe (ligger ikke i nærheden eller på vejen)	12	
Det er ikke praktisk ved transport (bil, tog, bus eller andet)	13	
ved ikke	14	

Q25 ***Q23 = 1_3-4 -13_3-4 and Plusfilter Q23 (1_3-4 -13_3-4)***
Q25 should be shown to respondents who has answered 3 (Ja, til en vis grad) or 4 (Ja, i høj grad) to 1-3 responses (1-15) in Q23
Randomize 1-15
R16=SA

	Code (351)	Route

Dem som har svaret 3-4 (Ja til en vis grad-Ja til en høj grad) til 1-3 udsagn i Q23 får de udsagn vist, som de har svaret 3-4 til i Q23
Muligt at afgive flere svar
Udsagn undtagen "ingen af disse og Ved ikke" randomiseres

Hvilke af nedenstående udsagn er de vigtigste årsager til, at du ikke spiser småretter/snacks oftere end du gør?

Det er muligt at vælge flere årsager

[MA]

Småretter/snacks er for dyre	01	
Det er usundt	02	
Det smager dårligt	03	
Jeg har ikke tillid til madens indhold	04	
Jeg får dårlig samvittighed, når jeg spiser småretter/snacks	05	
Det er for store portioner	06	
Jeg foretrækker at tage mad med hjemmefra frem for at købe småretter/snacks, når jeg er på farten	07	
Der mangler oplysninger om indholdet af energi og næringsstoffer	08	
Der mangler småretter/snacks, der er dokumenteret sundere (fx nøglehulsmærket)	09	
Maden ser uappetitlig ud	10	
Der mangler økologiske og/eller klimavenlige småretter/snacks	11	
Det er for besværligt at købe (ligger ikke i nærheden eller på vejen)	12	
Det er ikke praktisk ved transport (bil, tog, bus eller andet)	13	
ved ikke	14	

Q26 ***Q22=1-5***
It should only be possible to mark max 3 responses
Randomize 1-17
R7-R8 and R15-R16 should be randomized in blocks and within the blocks
18-19 = SA

Dem som har svaret 1-5 (1 gang om ugen – 5 gange eller oftere) i Q22 får spørgsmålet
Det er kun muligt at markere max 3 svar
Udsagn bliver randomiseret
R7-R8 og R15-R16 bliver randomiseret som en blok og indenfor blokken

Hvilke typer af småretter/snacks køber og spiser du oftest på farten?

Du kan max vælge 3

[MA]

	Code (353)	Route
Drikke og spise yoghurt, koldskål, mini-meal og lignende mælkebaserede produkter	01	
Smoothie og friskpresset juice	02	
Nøddeblanding/tørret frugt	03	
Müslibar, energibar, proteinbar eller lignende	04	
Frugt	05	
Grønsager	06	
Bolle, rundstykke eller lignende - lyst brød	07	
Bolle, rundstykke eller lignende - groft/fuldkornsbrød	08	
Pølse (fx pølsehorn)	09	
Muffin, kage, cookie, wienerbrød	10	
Burger (fx cheeseburger, hamburger)	11	
Pizzaslice, foccacia, toast og pirog	12	
Wrap, pita eller lignende	13	
Pommes frites	14	
Sandwich - lyst brød	15	
Sandwich -groft/fuldkornsbrød	16	
Chokolade/chips/is/slik	17	
Ingen af disse	18	
Ved ikke	19	

Q27 ***Q22=1-5***
It should only be possible to mark 3 responses
Randomize 1-6
7-8 = SA

Dem som har svaret 1-6 (1 gang om ugen – 5 gange eller oftere) i Q22 får spørgsmålet
Det er kun muligt at markere max 3 svar
Udsagn bliver randomiseret undtagen 7-8

Når du køber og spiser småretter/snack på farten hvad vælger du så typisk ud fra?

Max 3 svar
[MA]

	Code (355)	Route
De småretter/snacks, der er mest rimelig i pris	1	
De småretter/snacks der ser mest appetitlig og fristende ud	2	
De småretter/snacks jeg opfatter som mest sunde	3	
Hvad jeg er vant til (samme type af småretter/snack)	4	
Småretter/snack der kan spises med fingrene	5	
Økologiske og/eller klimavenlige småretter/snacks	6	

Ingen af disse	7	
Ved ikke	8	

Q28 ***It should only be possible to choose 3 responses***
Randomize 1-13
14-15=SA

Det er kun muligt at markere max 3 svar
Udsagn bliver randomiseret undtagen 14-15

Nedenstående udsagn repræsenterer forslag til nye sundere produkter indenfor småretter/snacks markedet.

Hvilke af nedenstående forslag, er du mest interessert i?

Du kan max vælge 3 forslag [MA]

	Code (356)	Route
Små fyldte brødprodukter med krydret kød og grønt	01	
Rå grøntsager med sund dip	02	
Rugboller/brødbar med tørret frugt/nødder	03	
Salat med kerner	04	
Brødstænger med sund dip	05	
Grød "to-go"	06	
Suppe med kød og grønt	07	
Sundere pølsehorn	08	
Fallafelkugler på stick	09	
Lille sandwich med grov grønsagsmos	10	
Grønsagsmuffins med kylling eller skinke	11	
Pitabrød med grillet kød og grønt	12	
Nye typer energi/müslibarer	13	
Ingen af disse	14	
Ved ikke	15	

Q29 ***Q28=1-13***
Randomize responses

Den som svarer 1-13 i Q28 får spørgsmålet
Udsagn randomiseres

Hvis de nye produkter, som du er mest interesseret i kommer på markedet, vil det så få dig til at:
[SA]

	Nej, slet ikke	Nej, i mindre grad	Ja, til en vis grad	Ja, i høj grad	Ved ikke/ ikke relevant
	(358)				
(R1) Købe de nye produkter frem for dem du køber i dag?	1	2	3	4	5
	(359)				
(R2) Købe flere småretter/snacks "på farten"	1	2	3	4	5

Afslutningsvis har vi nogle spørgsmål om dine levevaner

Q30 ***Alle får spørgsmålet***

Hvordan synes du dit helbred er alt i alt?
[SA]

	Code (360)	Route
Dårligt	1	
Mindre godt	2	
Godt	3	
Vældigt godt	4	
Fremragende	5	
Ved ikke	6	

Q31 ***Alle får spørgsmålet***

Hvor mange timer arbejder du i gennemsnit per uge?

Du bedes inkludere alle former for beskæftigelse (hoved- og bibeskæftigelse samt frivilligt arbejde og studietid).

(R1) ..... Timer

Q32 ***Alle får spørgsmålet***

Føler du dig tit stresset?[SA]

	Code (364)	Route
Ja, ofte	1	
Ja, af og til	2	
Nej (næsten aldrig)	3	

	Ved ikke	4	

Q33 ***Alle får spørgsmålet***

	Code (365)	Route
Hvis du skal angive din fysiske aktivitet under arbejdet inden for det sidste halve år, hvilket af følgende udsagn passer så bedst på din arbejdssituation? [SA]		
Hovedsageligt stillesiddende arbejde, som ikke kræver legemlig anstrengelse	1	
Arbejde, som i stor udstrækning udføres stående eller gående, men ellers ikke kræver legemlig anstrengelse	2	
Stående eller gående arbejde med en del løfte- eller bærearbejde	3	
Tungt eller hurtigt arbejde, som er anstrengende	4	
Irrelevant	5	
Ved ikke	6	

Q34 ***Alle får spørgsmålet***

	Code (366)	Route
Hvis du ser på det sidste år, hvad ville du så sige passer bedst som beskrivelse på din aktivitet i fritiden? Du bedes også medregne transport til og fra arbejde/skole [SA]		
Hovedsageligt stillesiddende aktivitet (fx computer, TV, biograf) eller let fysisk aktivitet i mindre end 2 timer pr. uge	1	
Let fysisk aktivitet fra 2-4 timer pr. uge (fx gåture, cykelture, let havearbejde, let motionsgymnastik)	2	
Let fysisk aktivitet i mere end 4 timer pr. uge eller mere anstrengende fysisk aktivitet i 2-4 timer pr. uge (fx hurtig gang og/eller hurtig cykling hvor man overhaler andre, tungt havearbejde, hård motionsgymnastik, hvor man sveder eller bliver forpustet)	3	
Mere anstrengende fysisk aktivitet i mere end 4 timer eller regelmæssig hård træning og eventuelt konkurrencer flere gange pr. uge	4	
Ved ikke	5	

Q35 ***Alle får spørgsmålet***

	Code (367)	Route
Bestræber du dig dagligt på at spise sundt? [SA]		
Nej, aldrig	1	
En gang imellem	2	
Ja, ofte	3	
Ja, meget ofte	4	
Ved ikke	5	

Q36 ***Alle får spørgsmålet***

	Code (368)	Route
Synes du at dine kostvaner er sunde nok?[SA]		
Nej, slet ikke	1	
Nej, kun til dels	2	
Ja, i nogen grad	3	
Ja, i høj grad	4	
ved ikke	5	

Q37 ***R7=open ended***

Alle får spørgsmålet
R7 giver mulighed for åbne svar

	Code (369)	Route
Ønsker du at spise sundere i fremtiden?[SA]		
Nej	1	
Ja, i en fjernere fremtid	2	
Ja, i løbet af det næste halve år	3	
Ja, i løbet af de næste 3 måneder	4	
Ja, i løbet af næste måned	5	
Ja, fra nu af	6	
Ja, andet, venligst notér_____	7	
Ved ikke	8	

Q38 ***Should be possible to proceed without answering***

Alle får spørgsmålet
Muligt at gå videre uden at svare

Hvor høj er du?

(R1) ..... cm.

Q39 ***Should be possible to proceed without answering***

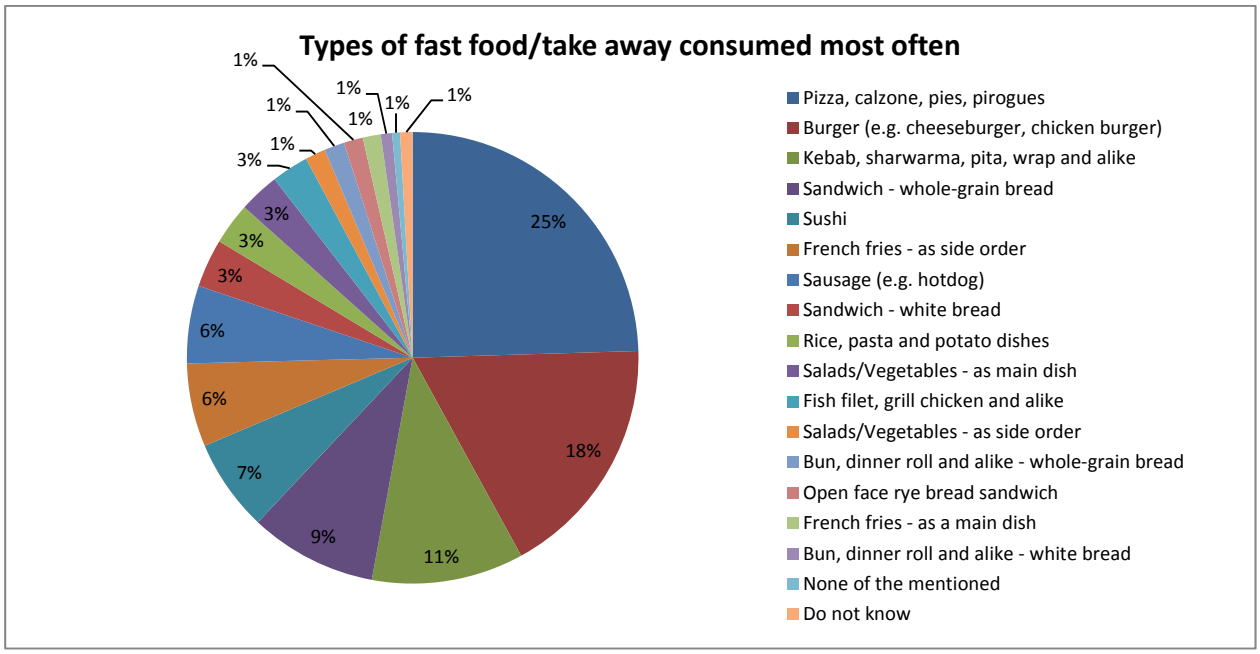
Alle får spørgsmålet
Muligt at gå videre uden at svare

Hvad vejer du?

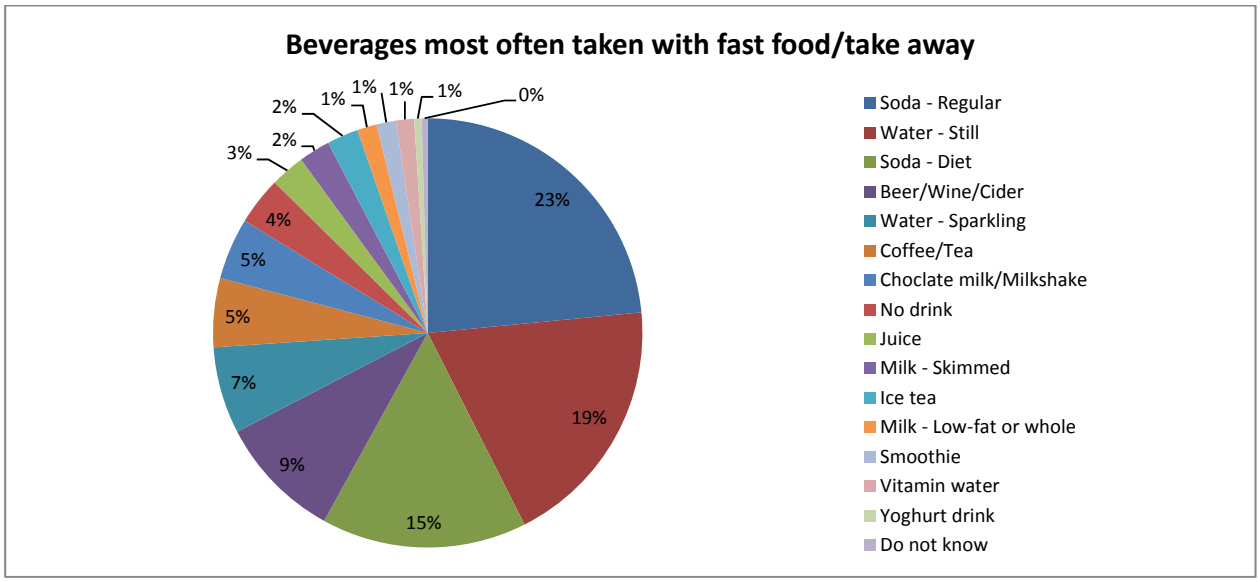
(For gravide vægt før graviditet)

(R1) ..... Kg.

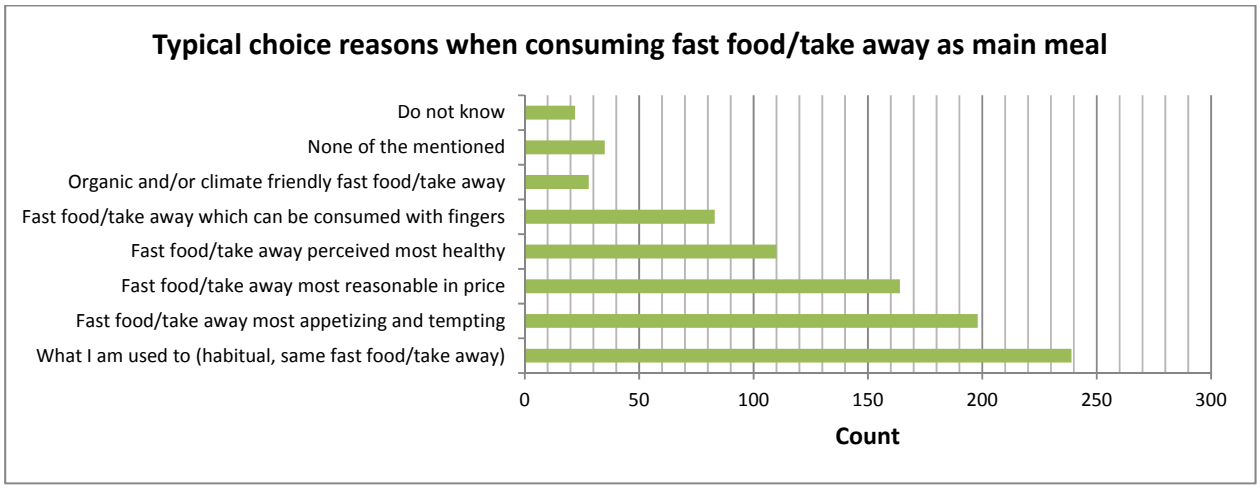
Appendix 4: Questionnaire Graphs



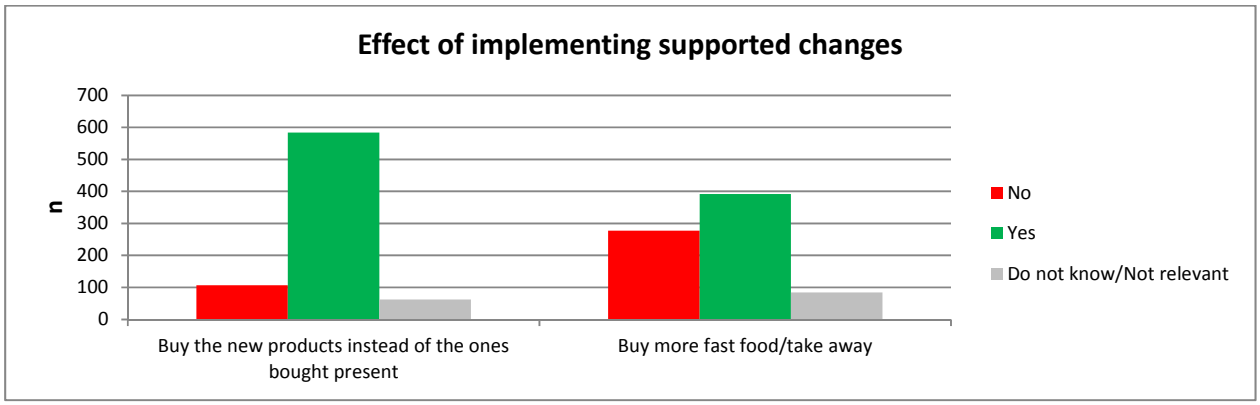
1. Types of fast food/take away consumed most often (maximum of three choices pr. respondent), n=493



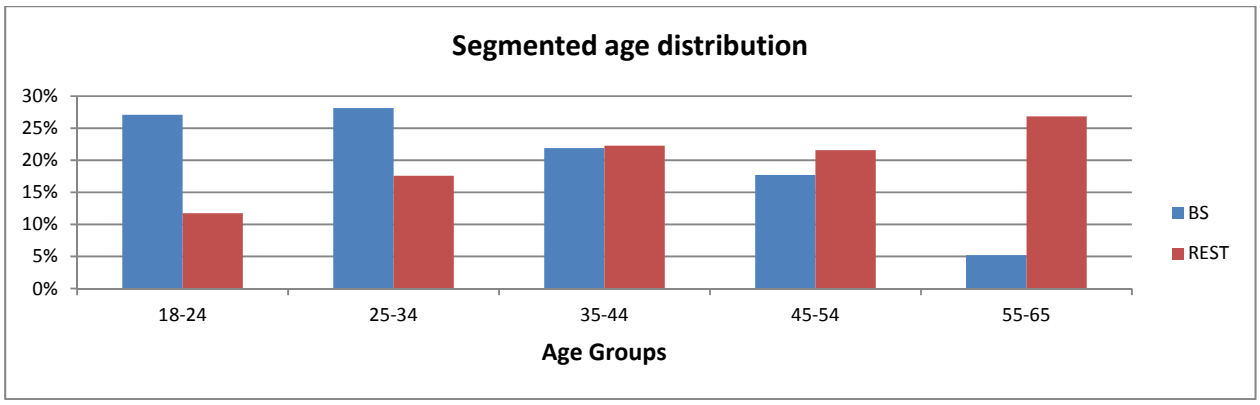
2. Beverages most often taken with fast food/take away (maximum of three choices pr. respondent), n=493



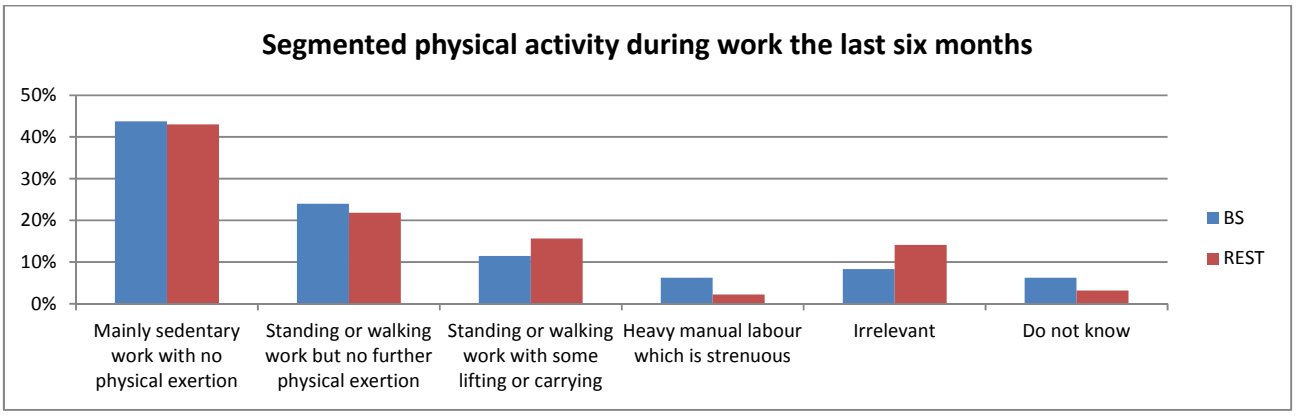
3. Typical choice reasons when consuming fast food/take away as main meal (maximum of three choices pr. respondent), n=493



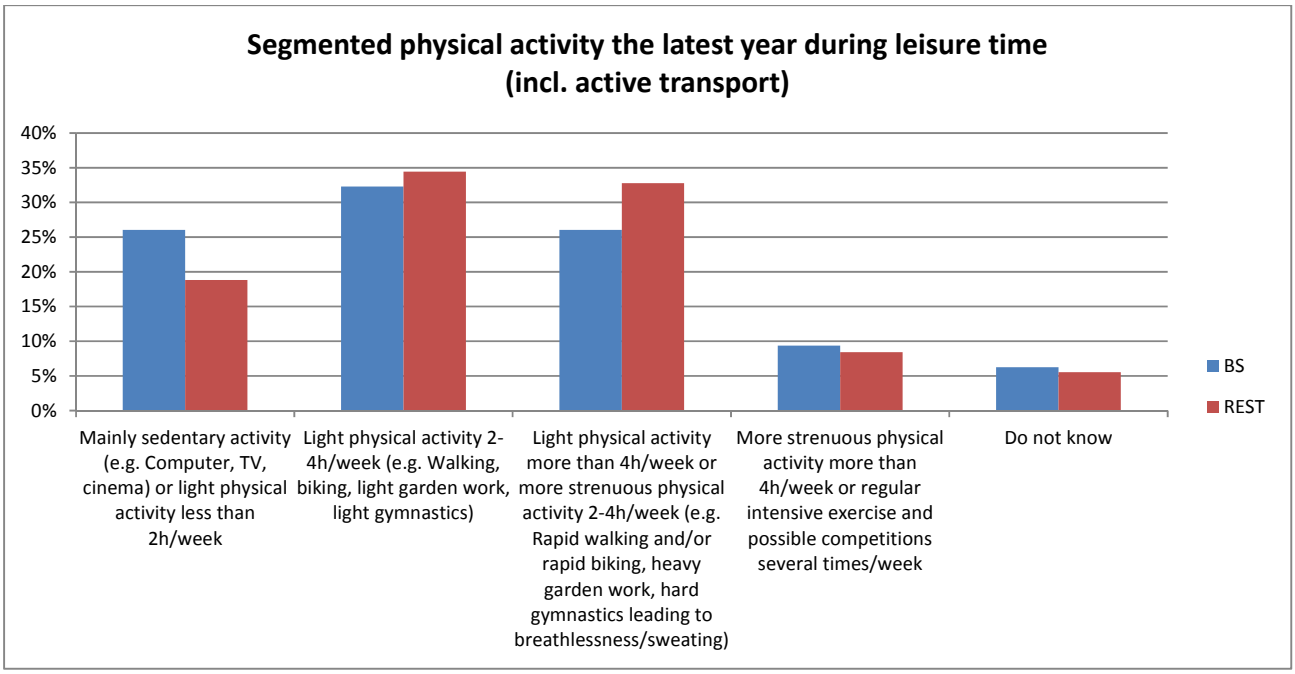
4. Effect of implementing supported changes (respondents were asked to answer for every statement) (no: no, not at all and no, to a lesser extent, yes: yes, very much and yes, to some extent), n=753



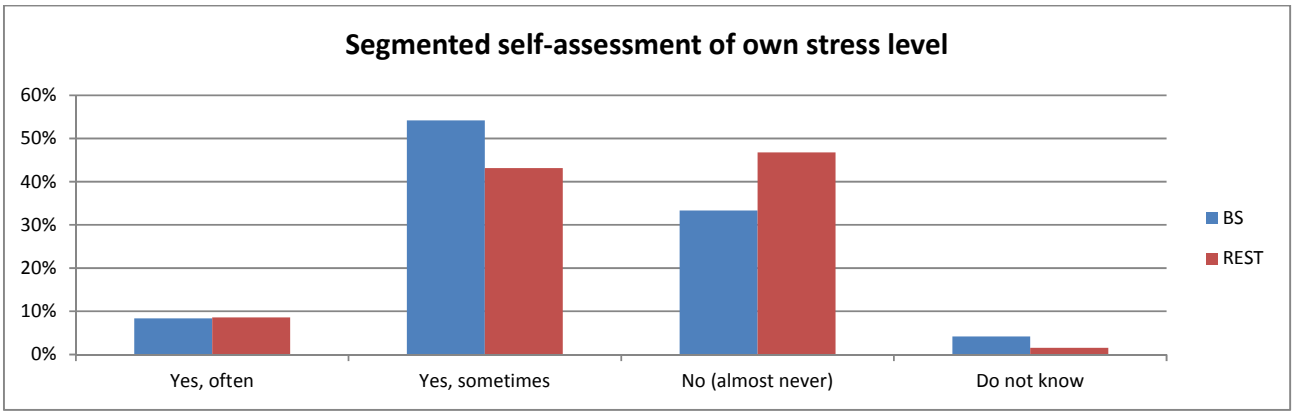
5. Segmented age distribution for BS and REST, n=96, n=723. ***Significant difference between the two segments in age group distribution (P<0.001).



6. Segmented physical activity during work the last six months for BS and REST, n=96, n=723. No significant difference between the two segments (P=0.059).

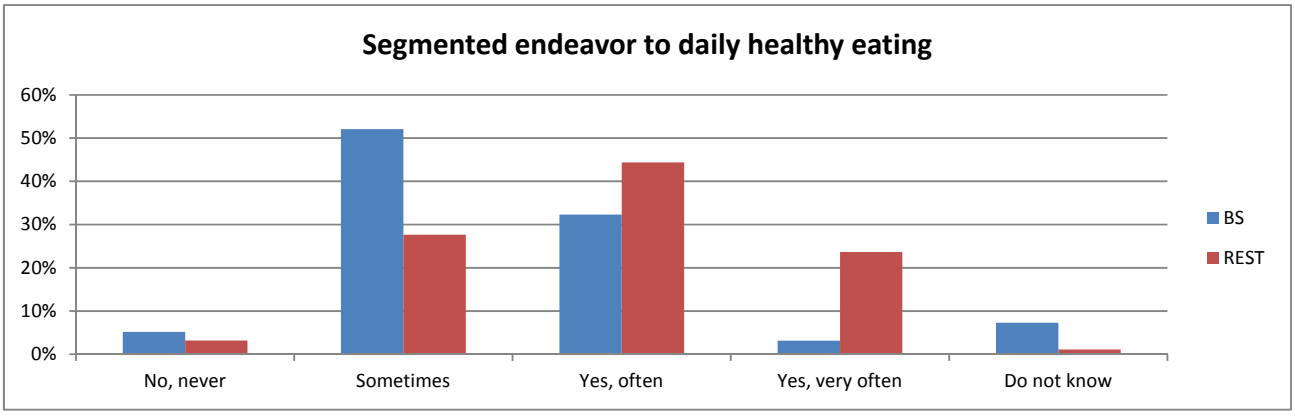


7. Segmented physical activity the latest year during leisure time (incl. active transport) for BS and REST, n=96, n=723. No significant difference between the two segments (P=0.443).

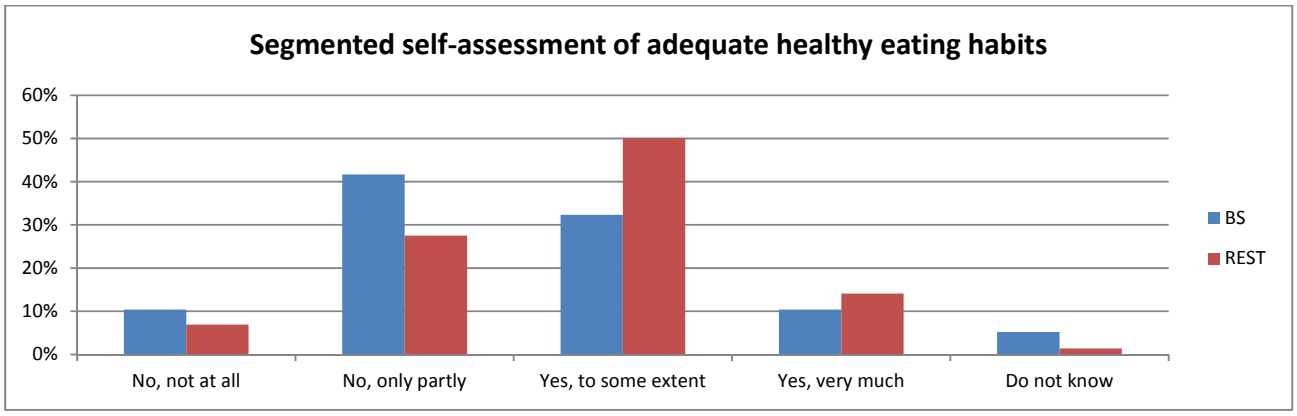


8. Segmented self-assessment of own stress level for BS and REST, n=96, n=723. *Significant difference between the two segments in self-assessed own stress level (P=0.030).

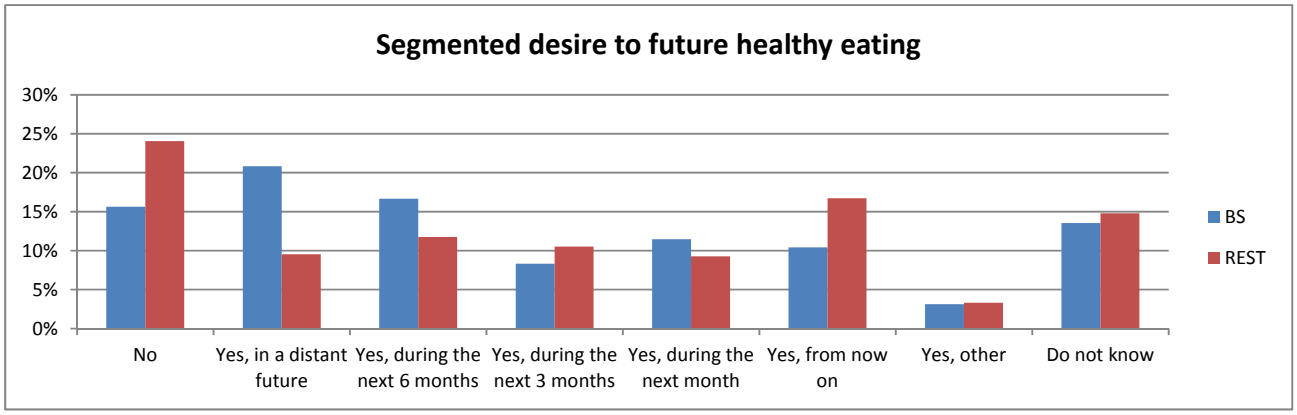
9. Segmented self-assessment of own health for BS and REST, n=96, n=723. ***Significant difference between the two segments in self-assessed health (P<0.001).



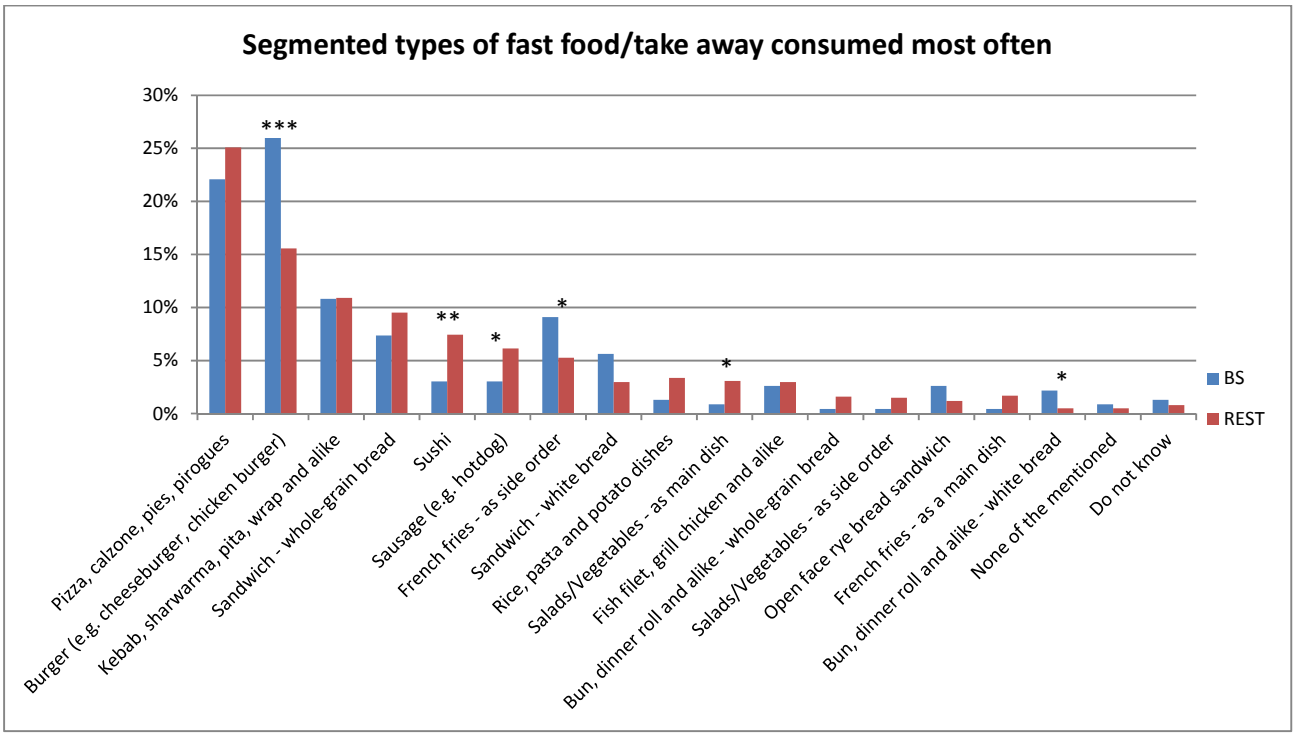
10. Segmented endeavor to daily healthy eating for BS and REST, n=96, n=723. ***Significant difference between the two segments in endeavor to daily healthy eating (P<0.001).



11. Segmented self-assessment of adequate healthy eating habits for BS and REST, n=96, n=723. ***Significant difference between the two segments in self-assessed adequate healthy eating habits (P<0.001).



12. Segmented desire to future healthy eating for BS and REST, n=96, n=723. *Significant difference between the two segments in self-assessed health (P=0.016).



13. Segmented types of fast food/take away consumed most often for BS and REST, n=94, n=399 (maximum of three choices pr. respondent). Significant difference between the two segments: * P<0.05, ** P<0.01, ***P<0.001.