The Virtual Lidl Supermarket:
re-designing a healthy checkout aisle

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How can changing the visual design of the virtual checkout aisle guide customers to choose healthier?

Theme of semester - Welfare Foodscapes

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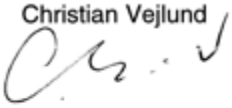
Christian Vejlund 

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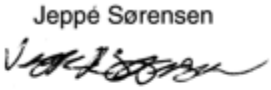
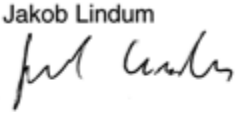
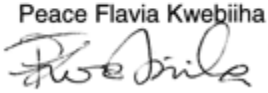
Jeppé Sørensen 

Jakob Lindum 

Peace Flavia Kwebiiha 

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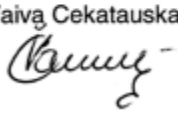
Vaiva Cekatauskaite 

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Abstract

Background

This project is about exploring how design and nudging can influence consumer behavior in the setting of a virtual supermarket replicated from an actual Lidl supermarket, to a point where the results can be used in a health intervention. One of the most prominent advantages of virtual supermarket is the possibility to devise and simultaneously test multiple changes to the checkout aisle setting, without unwanted or unforeseen interference. In the hypothesis it is expected that emphasizing the visuals of the healthy checkout aisle like adding fresh fruit and vegetables, increases the likelihood that the consumers will use the healthy check out aisle when testing the virtual supermarket.

Methods

The project applied mixed methods which included observations and questionnaires. Furthermore in the efforts to increase the visibility of healthy food nudging was found to be a suitable method for the project. The main objective of the methods was to obtain a comparable interpretation of the results from experiment 1 at the virtual supermarket and the results from the questionnaires and observations at the Lidl supermarket. Then the results were used to implement changes in the checkout aisle of the virtual supermarket for the experiment 2.

Findings

According to the questionnaires from both experiments, the majority of the participants would be influenced positively on Lidl's health strategy by having the option of a healthy CoA.

Conclusion

People chose the shortest line or nearest checkout aisle, or simply they were not aware of the healthy checkout aisle. The empirical data from this project suggests, that in order to guide customers to chose the healthy checkout aisle, Lidl must emphasize its focus on it and increase its attractiveness.

Key words: check out aisles, virtual supermarket, nudging and Lidl.

Abbreviations

CoA - Checkout Aisle

VS - Virtual Supermarket

E1 - Experiment 1

E2 - Experiment 2

Table of Contents

1. Introduction

1.1 Background

The nature of many contemporary health issues and lifestyle related diseases, is often caused by a surplus of food intake and sparse exercise (Kim and Popkin, 2006). This lifestyle can be a potential source of obesity, which is a current problem for more than 750.000 people in Denmark (Ministry of Health, 2007). Suffering from obesity means a greater risk of numerous sequelae, such as cardiovascular diseases, type-2-diabetes and several forms of cancer (Liberatio and Brimblecombe, 2014). Not only is it detrimental to the people at risk, financially it is also a serious cause for concern. The expenses related to overweight and obesity in Denmark, including hospital permissions and a loss in workforce, is estimated to 14.4 billion DKK,- every year (Ministry of Health, 2007).

1.2 Lidl

In 2018 the German supermarket chain Lidl is expected to be the largest retailer of food products in Europe, with an estimated turnover of 80 billion Euros yearly (Ritzau Finans, 2014). A profit in that order suggests a large customer base, which makes it an ideal place to promote healthier shopping habits. Lidl has already made advances towards healthier shopping opportunities, as part of rebranding themselves. These changes include visual and architectural modifications to the store layout, specifically the checkout aisle (CoA) that replaced unhealthy snacks with fresh fruit and nuts (Lidl, 2013).

1.3 Designing the visuals through the virtual supermarket

The strategic design of a store is important when attempting to run a successful business. How customers spend their money is partly influenced by visual and physical stimuli provided by the design and atmosphere (Turley and Milliman, 2000). According to literature "*A choice architect has the responsibility for organizing the context in which people make decisions"* (Thaler and Sunstein, 2008, p.3). This project is about exploring how design and nudging can influence human behavior in the setting of a Virtual Supermarket (VS) replicated from Lidl in Vangede, to a point where the results can be used in a health intervention. Exploring the contemporary scientific field reveals that there is already existing, albeit sparse, comparable VS's. The purpose of them are unlike ours, made with the intention to investigate if they can generate revenue **(**Westland and Au, 2014**)**. As an example, a project that was developed in Netherlands focused on using the VS to investigate different pricing strategies as a tool to stimulate healthier food choices (Waterlander et al., 2011). A meta study shows that similar health-based interventions are being done in actual supermarkets, but that further research and testing is needed to strengthen evidence of efficiency (Escaron et al., 2013).

1.4 The project

The VS offers various advantages compared to reality. One of the most prominent advantages is the possibility to devise and simultaneously test multiple changes to the CoA setting, without unwanted or unforeseen interference. In the efforts to increase the amount of healthy food purchased in Lidl nudging was found to be a suitable method for the project. Nudging deals specifically with changing people's behavior in a predictable healthier way. It is important to note that the people influenced by nudging do not have their other options limited (Thaler and Sunstein, 2008**)**. The virtual supermarket concept used in this project is designed by Mediology students from Aalborg University (Andersen et al., 2014).

There are several elaborate reports and meta studies dealing with nudging in real life supermarkets. The studies are often supporting different claims and findings are somewhat contradictory (Liberatio and Brimblecombe, 2014). A concurring conclusion seems to be that more research is needed (Skov et al., 2012). The virtual counterpart is even more unexplored as a sustainable way to promote healthier shopping habits, which makes it an interesting approach to health interventions in private retailers' auspice.

With this in mind, it is then interesting to investigate the following research question:

1.5 Research question

How can changing the visual design of the Lidl virtual checkout aisle guide customers to choose healthier?

1.6 Hypothesis

It is expected that by conducting questionnaires at Lidl supermarket, a significant amount of knowledge will be gained from the customers' answers. This information will be used directly to implement the visual changes in the VS.

Based on the knowledge of contemporary research that deals with health interventions in the nudging auspices, it is expected that emphasizing the visuals of the healthy CoA, adding fresh fruit and vegetables, increases the likelihood that the consumers will use the healthy CoA, when testing the VS.

1.7 Delimitation

- **Changes in Virtual Supermarket**

  It is important to emphasize that the project will not focus on changing the decor of the CoA in the actual supermarket in Lidl. All the changes necessary for the project will be applied only to the VS. This approach was chosen due to the interest of collaboration with the Mediology department. Furthermore, there could be some difficulties and time restrictions of implementing the change in the actual supermarket, thus changes will be applied to the VS only.

- **Focus on healthy checkout aisle**

  Another important aspect of this project is the decision to focus only on the healthy CoA, and not the entire consumer journey throughout the supermarket. Due to time restrictions and the scope of the project, it will focus on the improvements on making the healthy CoA more visible to to the customers.

1.8 Ethical considerations

'Paternalism' is used in the health system as a concept describing actions against a patient's will, if the person acting is doing it for what is presumably the patient's own good (Sundhedsstyrelsen, 2009). The point of nudging is to influence and change human behavior, without adding artificial boundaries or making alternative options difficult. Nudging is not considered actual 'paternalism', but is referred to as 'liberal paternalism', because it does not limit human behavior, but still seeks to influence it (Thaler and Sunstein, 2008). According to Birkler (2006) each human should be considered an individual with an inviolable autonomy, and in that sense nudging is a questionable method to change behavior. No matter how honorable the intentions of the health professional are, reflecting on the ethical obligations when attempting to influence the behavior of others, should be mandatory. These considerations are important in terms of how to approach the project, but because ethics is a very elaborate and complex subject, it will not be further included.

1.9 Definition of 'health'

The intention of this project is to conduct research in Lidl auspice and remain loyal to the original range of products presented in the healthy CoA and solely focus on the design.

According to Lidl's online advertising magazine, the healthy CoA offers healthy alternatives to candy and chocolate, such as fruit, wholegrain crackers as well as fresh- and dried fruit (Lidl, 2014 A). Lidl promoted the new CoA initiative in an online press release in March, including the statement *"Lidl Danmark er dermed den første discountkæde, der helt fjerner slik og andre søde sager fra en kasselinje"*

(Lidl, 2013), translation: "Lidl Denmark is the first discount retailer to completely remove candy and sweets from a checkout aisle". Lidl presents health in relation to the nutritional value of foods by referring to the general perception that candy is considered unhealthy and fruit is healthy. To standardize this perception for the entire project, 'health' will prospectively be referred to with the nutritional value of the food presented at Lidl's healthy CoA in mind. However, the reflection section will address if there should be any temperance in relation to what Lidl claim is healthy food.

1.10 Definitions of customers, participants and consumers

Throughout this report different definitions on people will be used as following:

- When referring to 'customers' it is the people from the actual Lidl in Vangede.
- When referring to 'participants' it is the people participating in the experiments at the Virtual Supermarket
- When referring to 'consumers' it is the people in general, not specific.

1.11 The Integrated Food Studies approach

The master program of Integrated Food Studies is built around the three pillars, 'Public Health Nutrition', 'Food Networks & Innovation' and 'Food and Design' (Aalborg University, 2012). This project about the CoA in Lidl, includes all the three pillars in the IFS approach, which is shown in the use of the Public Health Nutrition Cycle (Perez-Cueto and Reinbach, 2014), Actor Mapping (Clarke, 2005) and The Design Model (Riis, 2001).

The Public Health Nutrition Cycle is being used as a base throughout this project and to make sure that there is measurable elements in the investigation. The Actor Mapping is an important part of understanding the different actors influencing the project. Finally, The Design Model helps to sort out the different elements in the design of the CoA at Lidl in Vangede, and helps to create a new design in order to make the healthy CoA more visible for the customers.

These three pillars are combined in order to complete the investigation in an IFS approach, and will be elaborated further on later in this report.

1.12 Target group

The project targeted Lidl's customers at Vangede and participants for experiment 1 (E1) and experiment (E2) at Aalborg university, Copenhagen. The inclusion criteria aimed at recruiting as many participants as possible. Therefore the 'non-probability consecutive sample' was used. This sampling technique involves all the accessible participants as part of the sample (Bryman, 2008). Participants were approached and

asked if they had time to answer the questionnaires or to participate in the virtual supermarket experiment. Whoever accepted was thus involved in the sample space.

1.13 Timeframe

The timeframe model explains how the project is approached and implemented.

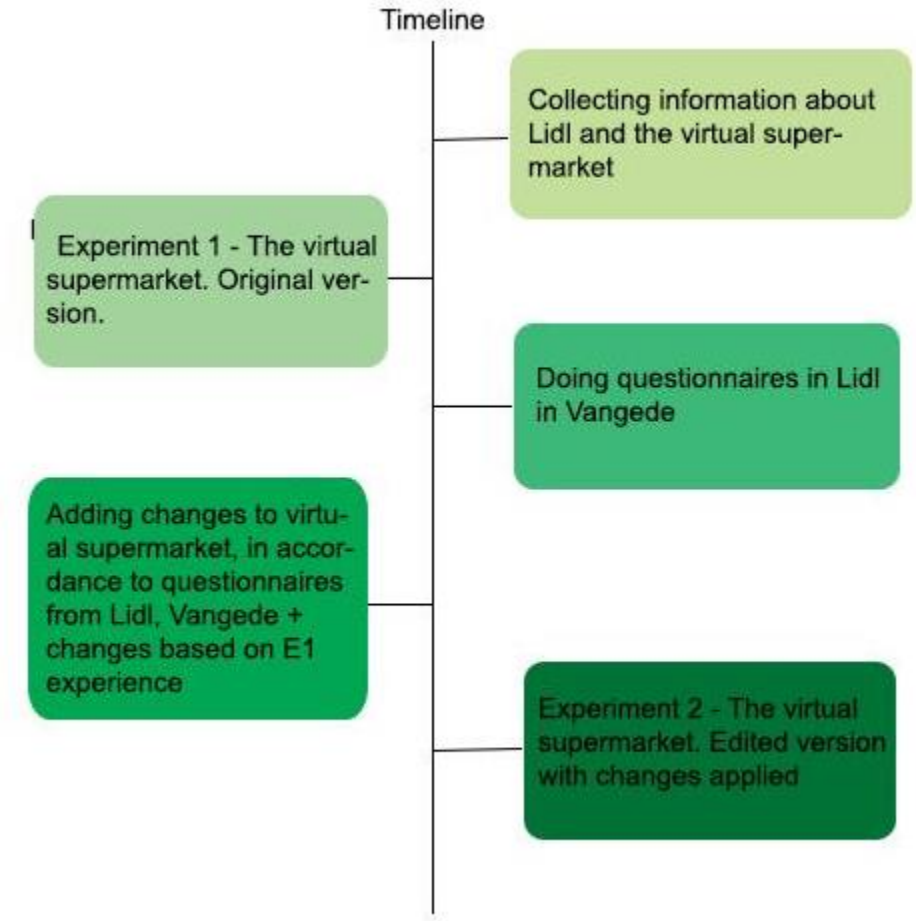

Figure 1 - Timeline

2. Methods

This section explains the methodological approach that was used to address the research question. Both quantitative and qualitative methods were applied, including observations and questionnaires. Observations can be used as an instrument to understand, explore and supplement the information provided by the questionnaires. Furthermore the mixed methods were preferred, because they give an in-depth understanding of the research question (Bryman, 2008). This approach strengthens the validation of data by approaching the field of research from different angles.

The methods were aimed at obtaining a comparable interpretation of the results from E1 at the VS and the results from the questionnaire and observations at the Lidl supermarket. The results were thus used to implement changes in the CoA of the VS for the E2.

2.1 Questionnaires

Two sets of questionnaires were designed to collect empirical data. One set was designed to collect data about the perceptions and behaviors of the customers at Lidl supermarket in Vangede, whereas the other set was designed for the participants in the VS experiment at Aalborg University Copenhagen. The questions were based on the Mediology student thesis (Appendix A), because the project is linked to the study that they conducted. However not all the questions that were used in their thesis were adopted, as only the ones that were found to be relevant were used in this project (Andersen et al, 2014). The customers at Lidl supermarket were asked to answer questionnaires after they had finished shopping. The questions asked involved characteristics such as; the respondents' age, gender, shopping behavior and what influenced their choices. The specific questions were asked to classify the collected data and to ensure validity (Appendix B). Similar questions were asked to the VS experiment participants. The questions asked focused on their experience of using the VS. They were also asked if participants were influenced by the healthy CoA (Appendix C). After collecting all the data from both sets of questionnaires they were applied to excel, and then analyzed using the SPSS statistical software.

2.2 Observations

Observations can provide contextual information that might not be captured by only answering questionnaires (Green and Browne, 2005). That is why they were found to be vital in this project. Therefore they strengthened the data collection by drawing more sense from data in the questionnaires and facilitated further exploration when making changes for E2 in the VS. The observations applied in this project were of unstructured nature, because the project aimed at observing only the issues that were found to be relevant to the evaluation of the results. The observations were made to briefly assess the environment and the arrangement of the CoA at Lidl in Vangede. In the VS the observants examined the participants' actions, the way they made their choices and how the changes in the design influenced the choice.

2.3 The virtual supermarket (VS)

This project was conducted in collaboration with the Mediology students, who created the VS for their bachelor thesis. It was designed to conduct data on consumer behavior. In order to answer the proposed research question, the experimental method was used in this project with focus on the VS. BMC Public Health journal describes virtual supermarket as "*a three dimensional software application with which study participants can shop in a manner comparable to a real supermarket*" (Waterlander et al., 2011, p.2). The objectives for the experiments were to measure how many of the participants choose to use the healthy aisle, and if they even notice the option of a healthy CoA.

In order to use VS in this project a lot of preparation had to be done prior to the experiment. It was decided to conduct two different experiments using the VS. E1 was with the current layout of the Lidl Supermarket in Vangede. Later on, after conducting the questionnaires at Lidl in Vangede with customers, E2 was conducted, with small changes in the CoA to the VS. The location for the experiment was chosen next to the main canteen in the Aalborg University campus in Copenhagen, where many students and teachers cross throughout the day. Two separate dates were chosen for the experiments, as the Mediology students needed some time to apply the suggested changes to the virtual supermarket.

Prior to both of the experiments, posters promoting the experiment were created in Photoshop, in order to attract more participants (Appendix D). These were displayed at the information boards and screens at the school, as well as the university's social platforms. In addition to that, personal social networks were used to increase the number of possible participants outside the university. On the day of E1, the place of the experiment was set up next to the main canteen. Tea and cookies were provided as an incentive for people to participate. Before the experiment was launched, team members assigned themselves to different roles. Two team members were in charge of setting up the equipment on the participants. The equipment included the glove, Oculus Rift glasses and Wii Nintendo controllers as leg sensors. The other team member was in charge of following participant's journey in the VS on the computer screen, while another was inviting people to participate and conducting the questionnaires, when they finished the experiment.

The participants were instructed prior to the experiment, in order to prepare them and to achieve feasible results. Therefore an informational speech was prepared (Appendix E). However, participants were not informed on how to make healthy choices and were not given any leading information towards the project outcome. Furthermore, they were instructed on how to operate within the VS using the glove and leg sensors.

E2 was conducted at the same location, and during the same hours as E1. The same promotional campaigns were used in order to increase the number of participants. After E1, it was known how to correct all the minor complications that appeared during the day, so that this could be avoided for E2. Moreover, an input from the questionnaires conducted in Lidl, Vangede was delivered, where customers pointed out specific suggestions to changes in relation to the healthy CoA. These changes were evaluated and discussed with the Mediology students and were applied to the VS.

2.4 Statistical analysis

For this project 'descriptive statistics' were used as the basis for summarizing the data that is relevant in its characteristics and responses, and the variation seen in the data. This type of statistics was chosen mainly because it summarizes and presents the data. Analysis of the questionnaires started with putting the data into 'SPSS spreadsheet' using 'rectangular structure' inspired by Carlin and Doyle (2000). The *"rectangular structure of subjects (rows) by variables (columns) is a format required for all standard statistical analysis"* (Carlin and Doyle, 2000, p. 270). A coding technique was applied for the data gathered from the questionnaires. Each variable was assigned to a code which was in this case a number, in order to create the frequency tables. In case data was missing, it was assigned to a certain code as well. It is important to note that one of the questions from the questionnaires, regarding the choice of the particular product at the CoA in VS, was taken out. This was done due to the difficulties for participants to read and understand the product labels in the VS. After that, the reduction of the information was performed with a composition of meaningful summaries.

2.5 Nudging

A nudge is described as *"Changing people's behaviour in a predictable way without forbidding any choices"* (Thaler and Sunstein, 2008, p. 6). The point of nudging is to guide people to make healthy decision. This can be done by physically or visually altering the setting in which they make decisions. 'Nudging' is an effective method, because it utilizes the response from the 'automatic-' and 'reflective system'. These are two basic systems that regulates human behavior and decision-making. 'Nudging' includes the subterms 'priming' and the 'spotlight effect'**,** which can also be used to promote certain behavior (Thaler and Sunstein, 2008). The following section will elaborate on all the mentioned terms and how they are applied to the project.

2.5.1 ‘Reflective-’ and ‘automatic system’

As mentioned in the previous section, humans have two cognitive systems responsible for decision-making - the ‘automatic-’ and ‘reflective system’. The ‘reflective system’ is deliberate and self-conscious. It is usually enabled when the need to reflect on more difficult tasks occurs, such as calculating or making important life changing decisions (Thaler and Sunstein, 2008). The ‘automatic system’ (also referred to as the ‘lizard’) is intuitive and often triggered subconsciously. This system is operating when dealing with a task that is deeply embedded in human behavior, such as smiling, talking or brushing the teeth. While the ‘automatic system’ is the one responding to nudging strategies, ‘priming’ is the concrete stimuli induced to change behavior (Thaler and Sunstein, 2008).

A chore like grocery shopping is for most people a common part of life, which is why it is handled by the ‘automatic system’. This is beneficial to the project, because the ‘automatic system’ can be manipulated by visual impressions. Visually highlighting or ‘priming’ the objects that are intended to promote healthy behavior is adequate (Thaler and Sunstein, 2008). The ‘priming’ technique was applied to the VS E2 by making the healthy CoA visually appealing in compliance with customers’ perception of health (Appendix B). The changes to the design included an extension of the actual checkout with a physical and visual emphasis on fruit and vegetables, and increased use of the color green on the design. According to Thaler and Sunstein (2008) it is possible to further promote the healthy behavior by simply asking customers if they intend to do a specific thing. This could include subtle signs hanging from shelves asking if they have purchased their daily amount of fruit and vegetables.

2.5.2 Spotlight effect

Customers, who are under the impression that picking a chocolate bar from the unhealthy CoA is not well seen, while shopping with children, imagine that the people surrounding them are under the same impression, even though that’s not the case. The same applies if customers pick an apple, instead of the chocolate bar, where the impression is, that an apple is a healthier choice. A study done by Coop (2013), shows that a quarter of the Danish population rate candy and sweets as the most embarrassing product to purchase.

The scenario from Coop (2013) is an example of what Thaler and Sunstein (2008) defines as the ‘spotlight effect’, which causes people to behave according to the imagined impressions of others. In relation to this project, changing the design of the CoA and making the customers more aware, which CoA is the healthy, can serve as a ‘spotlight effect’. The use of ‘spotlight effect’ would influence the outcome of consumer choice, since it can be perceived as a deliberate action to be either healthy or unhealthy.

3. Theory

The following section is a presentation of the theories that were applied to the project and how each of them contributed to the final results. This includes the 'Public Health Nutrition cycle' which serves as a general frame for the project and a step-by-step guide to implement health interventions.
Through the use of the 'situational analysis' and the included actor mapping (Clarke, 2005), the following section also includes an elaborate examination of which actors have influence on the project.
Going forward the Design Model (Riis, 2001) will be used to analyze the design of the CoA at Lidl supermarket in Vangede and how the visual impression influence the customers.

3.1 Actor Mapping

The primary goal of the project is to increase the possibility that customers of Lidl will use the healthy CoA, by revamping it to look more inviting. Providing changes to a well-established setting like a CoA in a supermarket, will not only influence the customers and staff of the supermarket, but also include multiple less visible actors. These actors can still be of equal significance, in terms of how they can impact the project results. Changing a setting can alter the dynamics between actors, making their behavior inconsistent or unpredictable. This would be the case if the customers dislike the changes Lidl makes to the design, and as a result take their shopping elsewhere.

3.1.1 Situational analysis

Applying the 'situational analysis' (Clarke, 2005) initiates an extensive use of situational mapping to get an organized overview of data. The data represents what actors are involved, how they are related and how they influence the project. Clarke suggests a simple way to make a general frame of reference for the project: "*Where in the world is this project?", "Why is it important?"* and *"What is going on in the situation?"* (Clarke, 2005, p. 86). Answering these questions made a useful starting point for further mapping and analysis. It also included a reflective process, revolving around the project not having to rely on external actors that could potentially prohibit initiatives or halt the progress. Given the nature and content of the project, it was necessary to cooperate with people that have extensive knowledge on how to use the VS and the decision makers at Lidl. Despite the initial goal not to rely on external actors, the project still depended on numerous external actors.

'Situational mapping' is a general mapping approach with three subcategories: 'messy-', 'ordered-', and 'relational maps' (Clarke, 2005). Each map is applied differently and with a separate purpose, but can

collectively address the complexity of who and what are influencing the project through a visual overview (Clarke, 2005).

3.1.2 Messy map

A ‘messy map’ was created to act as initial brainstorm session seen in Figure 2. According to Clarke (2005) it can be problematic to structure the initial process, because it limits how open-minded the process is, which may very well have been the case with the ‘messy map’, leading to debates instead of accepting the suggestions.

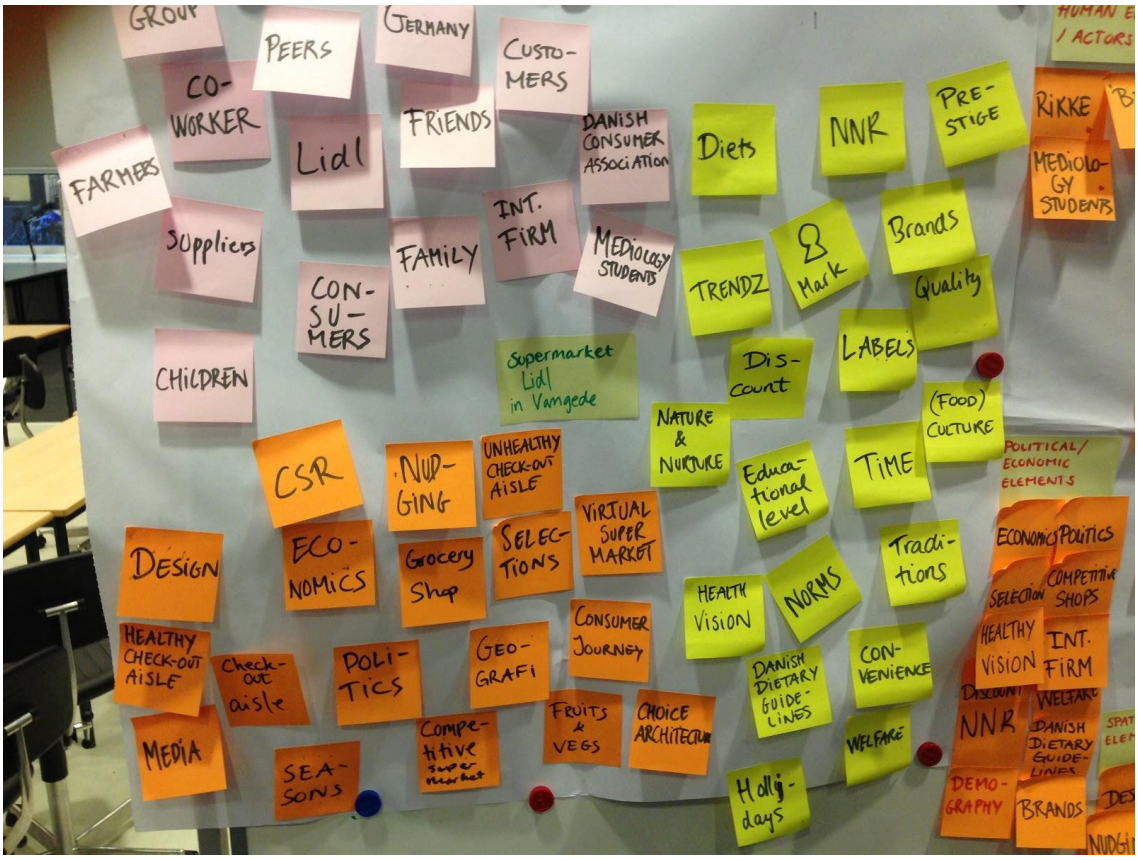

Figure 2 - Post-it notes with different colors. Orange represent non-human, pink is human and yellow is discourses.

3.1.3 Ordered map

The ‘ordered map’ is based on the previous ‘messy map’ but further elaborated by the categories suggested by Clarke (2005). The categories are not mandatory and it is logic to only apply the ones that fit the project or even apply new suitable ones. The purpose is to group the actors in a way that makes sense to the project.

Categorizing the actors via the 'ordered map', is a way of qualifying the insight and decision making on what actors to include and why to consider them. Furthermore, it enables a reflective process of the actual content of the actors, which makes it clearer how they act. Many actors of different significance and variety are a part of the project, including friends, family, media, food culture and more, but most prominently the customers of Lidl, Lidl supermarket, design and the CoA. These actors are collective the primary foundation of the project, based on their amount of importance and ability to influence the outcome.

It is not always obvious what to consider as an actor, but with the categories it was possible to identify that the actual CoA and design intervention was significant actors to consider.

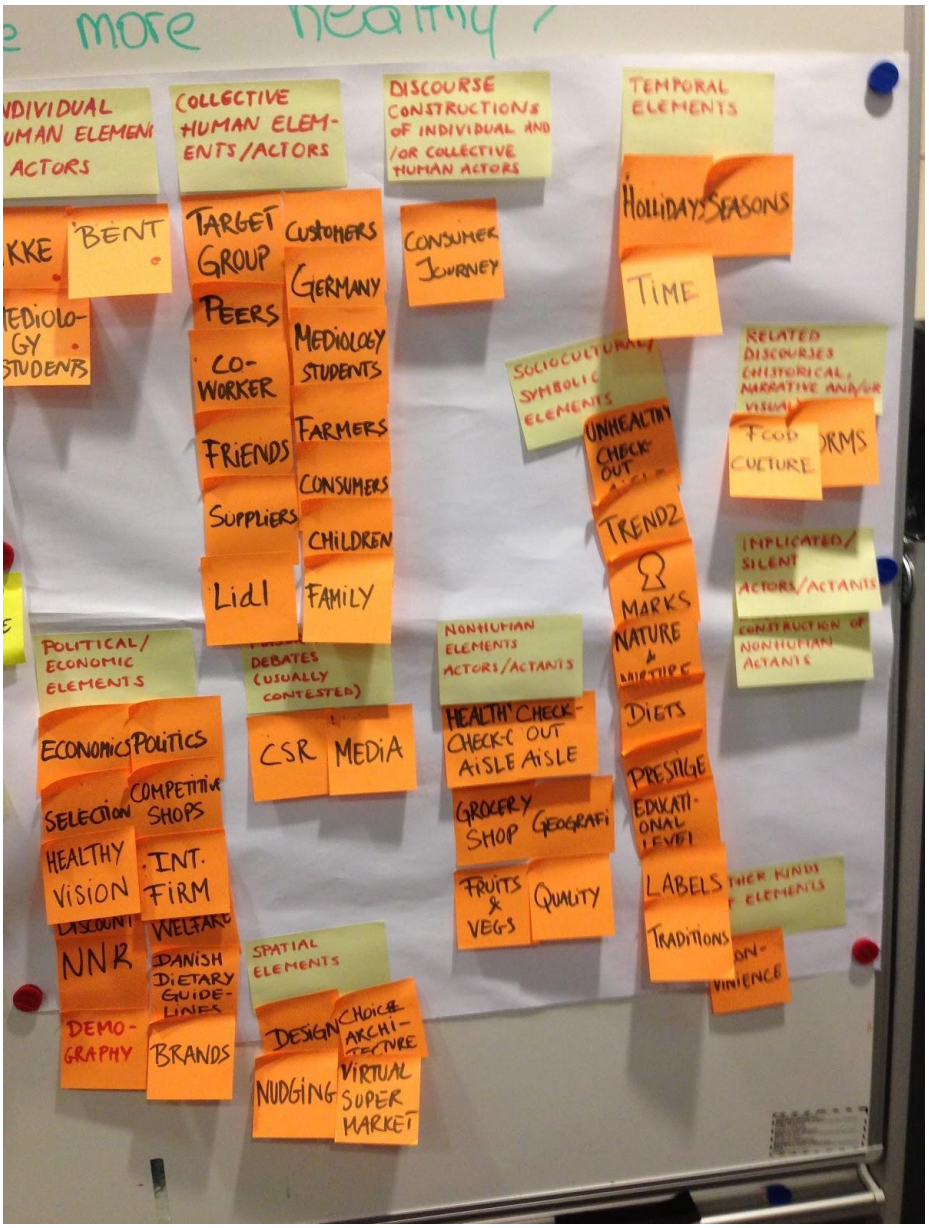

Figure 3 - 'ordered map' showing selected actors in specified categories.

3.1.4 Relational map

With the third and final map, 'relational map', it is possible to outline the relation and mutual influence between the actors (Clarke, 2005). In practise this is done by drawing a line between the actors. By color coding the drawn lines, it is possible to determine the extent and strength of the relation between the actors (Clarke, 2005). As with the 'ordered map', having a 'relational map' allows for more qualified decision-making. Lidl is in nature a hierarchical structured company, with a large dissemination and many branch offices throughout Denmark and Europe. It is beneficial for them to have a code that ensures a specific store layout, regardless of which Lidl is visited. As noted from the interview with Lidl's communication manager, Rikke Brandes, making changes to just one Lidl influences the customer relation and how Lidl as a brand is perceived. Therefore it has to be approved by the space manager, economist and procurement officer and not just the local branch office manager (Appendix F). From this analysis, a strong and mutual relation between Lidl and their customers was determined as the customers are almost always influential as they can choose to not spend their money.

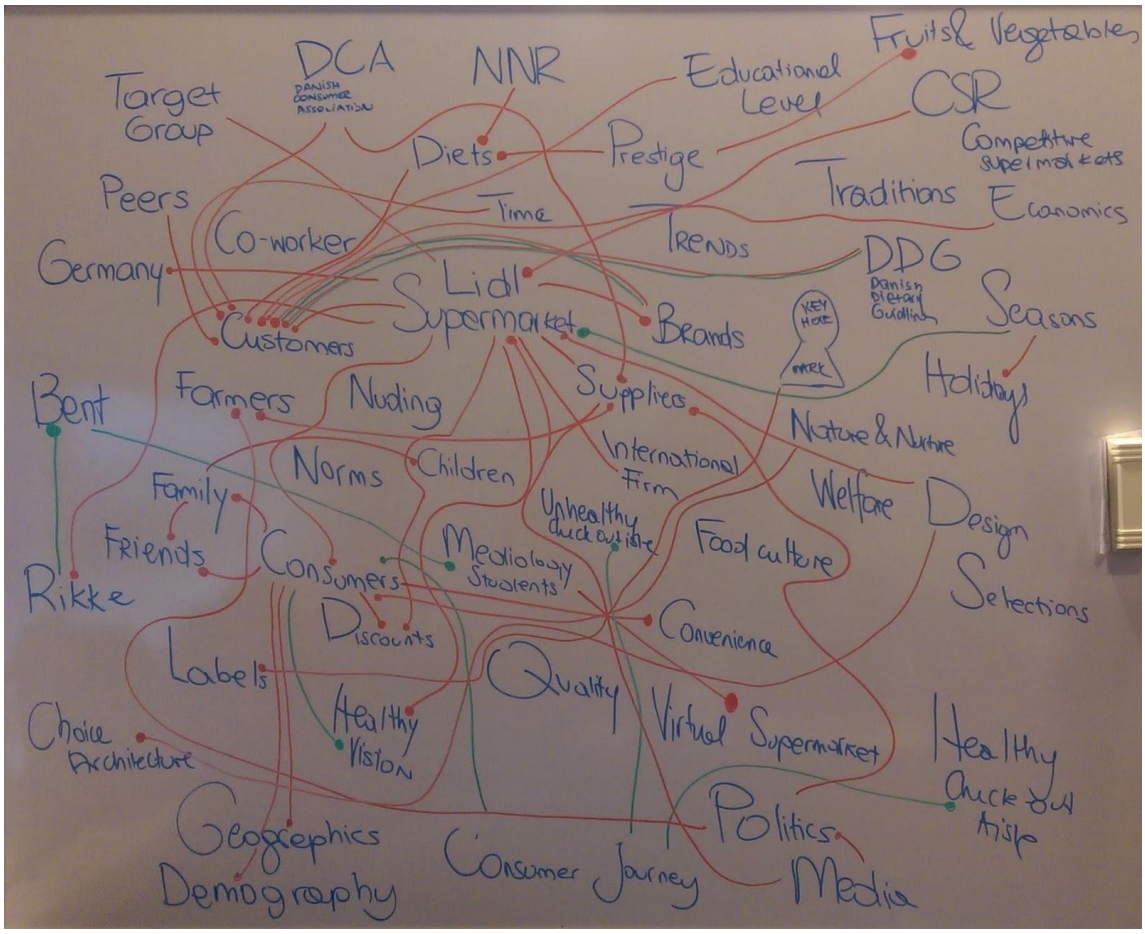

Figure 4 - 'Relational map' showing the relation between actors. Red represents a strong relation, while a green line is weaker.

3.2 Hermeneutics

In this project, hermeneutics was used as a basis to understand the perspectives of consumers' shopping behavior and preferences at the CoA in a supermarket setting. In regard to hermeneutics, people are self-interpreting, it is therefore vital to understand their considerations so that the study can derive meaning and construct reality from the collected data (Koch, 1996). Furthermore, the understanding emerged from interpreting the questionnaires and observations. This was done by changing the consideration of the phenomenon as whole and also integrating it to the individual parts.

Hermeneutics recognizes that the researcher brings predetermined knowledge and assumptions into the research process, which may pose bias on the findings (Bryman, 2008). Therefore when developing the questionnaires an initiative was made to ensure that there is room for the perspectives of the participants in order to minimize bias and assumptions of the researchers. In addition, good research requires consistency that needs to be displayed in the questionnaires (Bryman, 2008). Therefore in regard to that all participants were asked similar questions without rephrasing. Furthermore, the questionnaires were not self-completed in order to minimize misinterpretation of the questions by the participants, especially for the VS.

Questionnaires are a good tool to measure the reliability and validity of the empirical data (Bryman, 2008). To ensure reliability the questions asked were consistent; also E1, E2 and the questionnaires in Lidl were conducted at the same time of the day. The major concern was to obtain the same results from all the participants and the customers. Furthermore, validity was obtained by asking questions regarding the reason for choosing the particular CoA, the visuality of the healthy CoA and the influence of the available health options.

3.3 The 'public health nutrition cycle'

This project is based on the 'public health nutrition cycle' (Perez-Cueto and Reinbach, 2014). It is one of the components of the three pillars of the IFS approach, 'Public Health Nutrition' (Aalborg University, 2012). The 'public health nutrition cycle' is being used to locate important steps in order to do an intervention of the problem being stated in the introduction of the report.

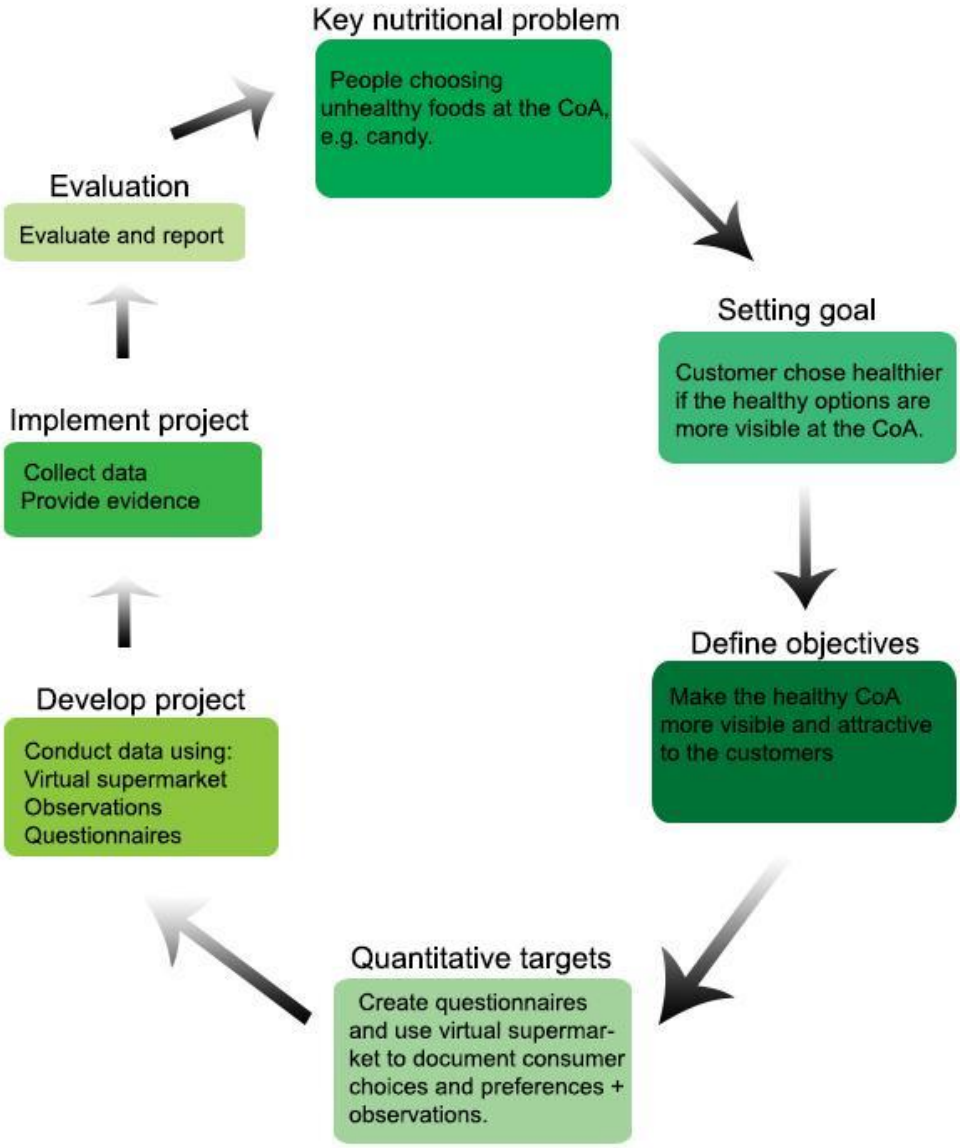

Figure 5: Public health nutrition cycle (Perez-Cueto and Reinbach, 2014)

3.4 The seven steps in the 'public health nutrition cycle'

1. The first step in the 'public health nutrition cycle' is to find a key nutritional problem. In this case the focus is on the customers choosing unhealthy products at the CoA at the supermarket Lidl.
2. Secondly, the solution to the problem is that the customers choose healthier when making the healthy CoA more visible for the customers.
3. Making the healthy CoA's more visible for the customers is the objective for this project.
4. A further utilization of this public health nutrition cycle is to make sure that the project has elements which can be measured. In this case, what can be measured are the questionnaires from the VS and the actual supermarket in Lidl in Vangede. The answers from the questionnaires in this case are used as a tool for creating the visual changes in the VS. Observations are made to collect additional information about Lidl and the VS.
5. By using the answers from respectively the VS and Lidl, the new design for the CoA has been created.
6. Then the new design is being tested in the VS with new participants. In that way it is possible to measure if the customers have experienced a difference in discovering the healthy CoA.
7. Lastly is the evaluation and the making of the report of this project. By evaluating and reporting the research it is possible to find if it is relevant for Lidl in Vangede to actually make visual changes of the CoA in order for the customers to notice the healthy CoA.

(Perez-Cueto and Reinbach, 2014)

3.5 The 'design model'

The visual changes of the healthy CoA are developed from the analysis of the actual CoA in Lidl in Vangede. In order to do the analysis, the 'design model' by Riis (2001) is being used. It is one of the components of the three pillars, 'Food and Design' (Aalborg University, 2012).

The design of Lidl is analyzed from the view of the customers and the researchers investigating the CoA. Elements from the form, function and technique have been found and been used to elaborate on the healthy CoA in order to find a new design for it and make the healthy CoA more visible for the customers.

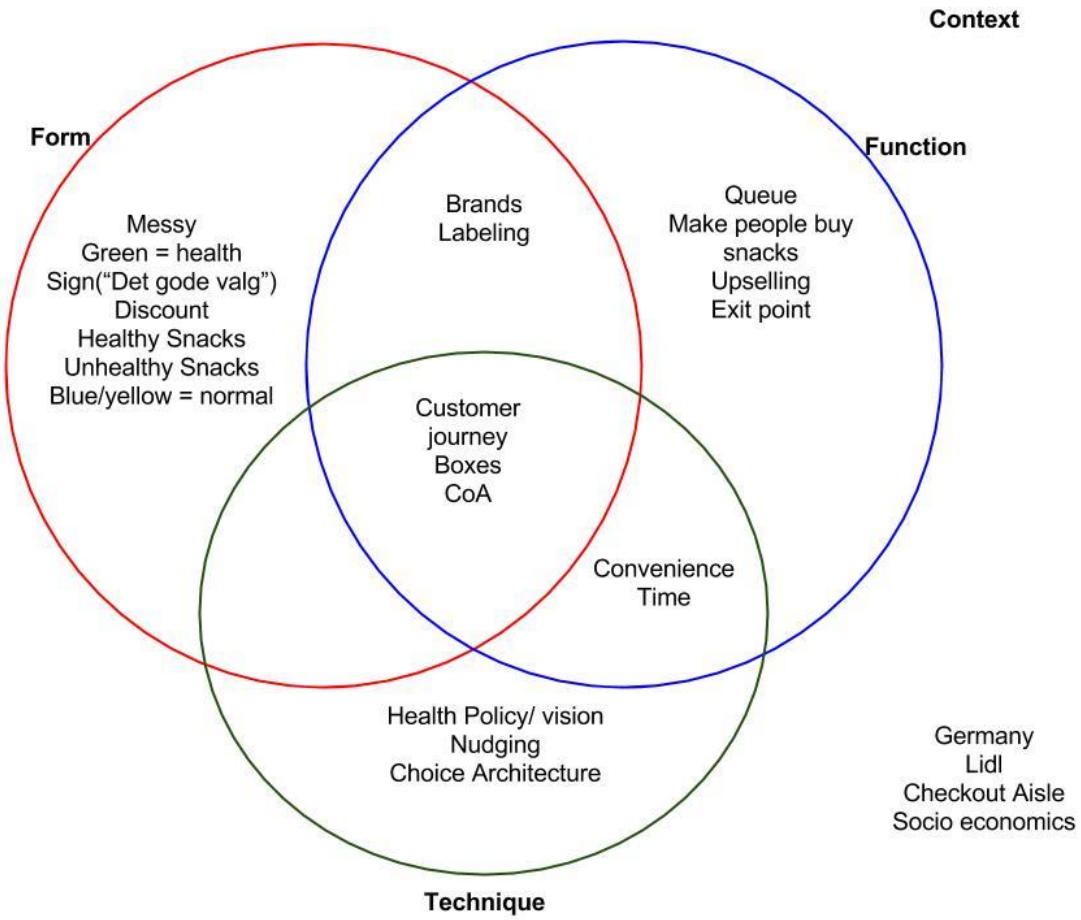

Figure 6 - The 'design model' (Riis, 2001)

After analyzing the design of the CoA in Lidl, questionnaires about the healthy CoA have been conducted and the customers suggestions for changes have been made in the virtual supermarket.

4. Findings

4.1 Questionnaire from Lidl in Vangede

20 questionnaires were conducted at Lidl supermarket in Vangede, which consisted of 50% males and 50% females.

10% of the customers noticed the healthy CoA and 90% did not notice. The average age of the customers who noticed the healthy CoA was 35 and 44 for those who did not notice. 75% did the shopping alone.

40% believe that a healthy CoA would have a high influence on their choice of primary shopping outlet and 45 % believe that having a healthy option would have a low influence on their choice.

55% of the customers chose the CoA randomly and 25% chose the one with the shortest queue. 15% chose the CoA because it was the only one open, and 5% chose because of other reasons. None chose CoA because it was healthy.
The most common keywords the customers used to describe their perception of a healthy CoA was; green, organic, fresh, vegetables, fruits, no candy, green department, openness.

4.2 Questionnaire from the Virtual supermarket

For E1, there were 40 participants, which consisted of 55% males and 45% females. For E 2, there were seven participants, which consisted of 57,1% males and 42,9% females. The average age for E1 was 27 and 22 for E2. 12,5% of the participants of E1 had children, and no one from E2 had children. Educational background was distributed within four options, 42,5% bachelor's degree, 47,5% master's degree , 2,5% PhD and 2,5% associate professor in E1, and two options for E2 were 85,7% bachelor's degree and 14,3% master's degree.

When asked about their shopping behavior, in E1 it was distributed within two options, 'alone' 72,5% and 27,5% 'accompanied by someone'. For E2, the same two options were applied and 71,4% shopped 'alone' and 28,6% shopped 'accompanied by someone'.

Participants were asked to provide a reason for their choice of CoA. In E1, 37,5% chose the easiest or nearest aisle, 17,5% chose randomly, 17,5% chose it because it had healthy options, 25% provided other reasons. In E2, 71,4% chose the easiest aisle, 28,6% provided other reasons.

In relation to the participants' notion of the healthy aisle in E1, 60% did not notice and 40% noticed. In E2, 28,6% noticed the healthy CoA and 71,4% did not notice the healthy CoA.

During the experiments, it was noted which CoA was chosen by the participant. For E1 70% chose the healthy CoA and 27,5% chose the unhealthy CoA, 2,5% appeared under missing data due technical issues. In E2, 42,9% chose the healthy CoA and 57,1% chose the unhealthy CoA.

Participants were asked if having the option of healthy CoA's, would influence their perception of Lidl's health strategy in a positive or negative way, or have no influence at all. In E1 82,5% were influenced positively, 5% would be influenced negatively and 12,5 would not be influenced. In E2 85,7% would be influenced positively, 14,3% would not be influenced.

4.3 Changes applied to the virtual supermarket

There were a few changes that were implemented on the VS according to the suggestions given by the customers during the questionnaires in Lidl, as well as observations made during E1.

A new start destination had to be implemented in the VS, as it was more convenient for the participants to start in the middle of the store, instead of the main entrance, as he or she was only required to choose one item from the CoA, and not from the rest of the store. This lead to some confusion in E1, but the changes resolved the issue (See figure 7 + 8).

Figure 7: Example of initial starting location in the virtual supermarket.

Figure 8: Example of new start location in the virtual supermarket.

Furthermore, some of the apples had an unnatural pink color and for several of the participants, this distracted them and the intention of measuring their consumer behavior was compromised (See Figure 9).

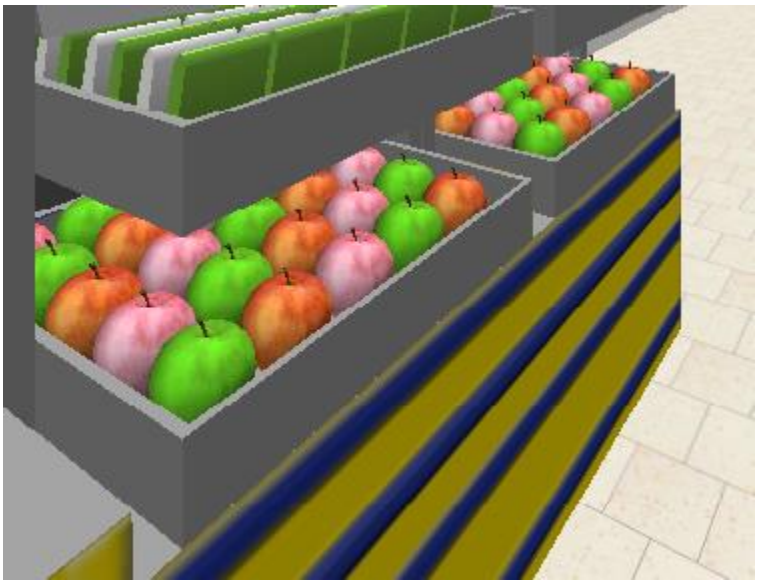

Figure 9: Example of pink apples in the first edition of the virtual supermarket.

Based on the questionnaires conducted at Lidl in Vangede, further changes were requested. Customers wished for more fruits and vegetables at the CoA's and some signs promoting the healthy CoAs.

5. Analysis

The analysis is divided in the questionnaires and observations from the actual Lidl in Vangede and the questionnaires and observations from the VS. It is divided to get a better overview of the two different questionnaires, and will then be combined in a discussion afterwards.

5.1 Questionnaires and observations from Lidl in Vangede

There was little focus on the healthy CoA in Lidl in Vangede, seen from the perspective of the customers. But Lidl, as a company, actually has a strong focus on health and sustainability. They are ranked as number one Danish supermarket, at the organization Green Peace, focusing on Marine Stewardship Council (MSC) branding among others (Lidl, 2014 B). Some of the customers questioned at Lidl, mentioned that they want the healthy CoA to be more visible. That is why it is interesting to investigate how customers perceive the healthy CoA.

The results show that none of the customers chose the CoA because it was healthy and only 10% of the customers noticed the healthy CoA. From observations at the CoA in Lidl, there were different objects blocking the view of the CoA, so it was very hard for the customers to recognize which CoAs were healthy and which ones were not. There could be many reasons regarding the design of the healthy CoA that influenced consumer choice. As introduced by Riis (2001), form, function and technique are the key aspects of design. Thus, the lack of coherence between the form, function and technique of the healthy CoA could be one of explanations for consumers' response.

According to the questionnaires, none of the customers chose the healthy CoA because of the healthy products, but because they did not think about it or because it was the only CoA open or had the shortest line. This indicates that Lidl does not communicate the visibility of the healthy CoA in a way the customers notice it. At the same time it seems that the customers are more focused on getting to the CoA and out of the supermarket faster. This is interesting, as 40% of the customers said that having a healthy CoA would have high influence on their choice of supermarket. Therefore expecting that the customers would have shown more interest in the healthy CoA. This questionnaire indicates that customers are very interested in the healthy CoA or at least the idea of the healthy options. But when they are at the end of the shopping routine it seems like all they really want is to get out. These findings serve as an excellent example of the two cognitive systems 'automatic' and 'reflective' analyzed by Thaler and Sunstein (2008). As it seems that customers are using their 'automatic system' for choosing the CoA, and they use

their ‘reflective system’ when asked to elaborate on their choices in the questionnaire. The use of these two cognitive systems could explain why consumers choose the CoA randomly, though the idea of the healthy CoA is highly supported by them. One of the reasons on why the customers are very focused and just want to get out the fastest, could be due to the fact that 75% of the customers shop by themselves and does not so easily get distracted by what is on the shelves, as when for example shopping with children.
45% of the customers said that the healthy option would have no effect on their choice of supermarket, but the fact that 40% wanted healthier options also might affect the ones who did not see it as the main factor in the choice of supermarket.

Observations at the supermarket showed that the products at the CoA were hidden behind a large refrigerator. It contained soft drinks, a shelf with magazines and a large shelf with toys for kids, and therefore made it uncertain whether you chose the healthy or unhealthy CoA. This may explain why the majority of our participants chose the CoA’s by random, and why none chose it because it contained healthier products.
Some of the customers claimed that the placement of the products in Lidl appeared unappealing due to the packaging design and messiness meaning too much was put on the shelves, as seen in Figure 10 (Appendix B)

Figure 10 - The design of a regular CoA

Most of the customers wanted more vegetables and fresh fruit at the CoA, if Lidl should appear as a healthier supermarket. They also suggested to put more green colors at the healthy CoA, to make it more visible. At the time of the collection of data in Lidl the most available CoA was the one that had healthy products on one side and unhealthy products on the other side. So people still had the choice of buying unhealthy snacks. Some of the customers suggested excluding all of the unhealthy products at the CoA, then it might appear healthier.
Lidl already has products that are considered healthier compared to the regular CoA products such as granola bars, organic dried fruit and nuts. But the problem is that the customers did not notice it.

5.2 Questionnaires and observations from the virtual supermarket

The results from the two experiments conducted using the VS were very different from each other. The sample size in E2 was significantly smaller, due to technical issues with the equipment, and the experiment could not be continued throughout the announced time.

In E1 70% of the participants chose the healthy CoA, though the majority chose it because it was the easiest choice or the nearest. It was also observed that their choices were influenced by unnatural colors of the apples, as well as a missing cashier at the cash register. Furthermore it was observed that whenever the starting location was different, this could influence their choice of CoA, as they would pick the nearest or easiest CoA. Even though changes to the design of the CoA were applied, it did not make the healthy CoA more noticeable to the participants in E2, as 71,4% did not notice the healthy CoA.
According to the questionnaires from both experiments, the majority of the participants would be influenced positively on Lidl's health strategy by having the option of a healthy CoA.

In implementation of this project, ideas, methods and theories about nudging were used as introduced by Thaler and Sunstein (2008). There was a significant focus on changing the healthy CoA in VS in order to see possible changes in consumer behavior. As Thaler and Sunstein claim "*the power of these small details comes from focusing the attention of users in a particular direction.*" (2008, p.3) In order to understand the power of small details in the CoA the attention was focused on consumer suggestions and thoughts on the current looks of healthy CoA in Lidl, Vangede. After that, the focus was to investigate what kind of changes in behavior would the new looks of the healthy CoA had on the participants in E2. Data collected from E2 states that 85.7% of participants thought that the concept of the healthy CoA would have a positive influence of their choice of a supermarket, in this case Lidl.

Additional information was collected during the questionnaires with the participants, where they expressed some additional comments to the experiment. Some participants stated that Lidl's health strategy would make them feel that Lidl is more conscious of their customers by providing healthy CoA. Furthermore, several participants claimed that they would definitely purchase more healthy groceries if it was visible for them in the CoA. However, other participants also pointed out that they would prefer to have a free choice and not being forced into the choices that they make in the CoA. This particular comment from the participant strongly relates to the 'libertarian paternalism' introduced by Thaler and Sunstein (2008). 'Libertarian paternalism' supports the freedom of choice as well as an effort to make it easier for people to choose their own way (Thaler and Sunstein, 2008). Other participants elaborated on what could be placed on the healthy CoA, for example having ecological, quality products, that are nicely presented. The overall opinion of the participants in the experiments suggests that the looks of the products and how they are presented plays an important role in consumers' choices.

6. Discussion

6.1 Participants/customers

The characteristics of the groups of consumers participating in the questionnaires in Lidl, and participating in the experiments were quite different. Data collection in Lidl Vangede provided a significantly higher participant age, than the experiments with the VS. However, this provides an even more diverse scope of the population that is analyzed in this project. It is important to point out age as a significant factor that might suggest possible difference in consumer shopping habits. As well as differences in educational background that might influence consumer's perception on the definition of health.

6.2 Healthy/unhealthy

Similar findings describing what is healthy and unhealthy in consumers perception were found when comparing the results from the questionnaires collected in Lidl Vangede and the questionnaires from two experiments with VS. In all the questionnaires, consumers mentioned the need for more fresh fruit and vegetables, and less unhealthy options as chips and candy at the CoA. However, during the observations in Lidl Vangede, there was no fresh fruit found in the healthy CoA. This leads to the assumption that Lidl's actual healthy CoA does not match with the customers' expectations regarding the products placed in the healthy CoA. Furthermore, the absence of fresh fruits in the healthy CoA during the observation in Lidl, Vangede, suggests possible gaps in relation to Lidl's proclaimed image of a healthy CoA. The

questionnaires collected in Lidl provided an insight on how customers would imagine the looks of the healthy CoA. This is where consumers expressed their associations regarding the healthy CoA with green colors and openness.

6.3 Consumer perceptions

All data collections with Lild in Vangede and in virtual supermarket focused on finding out consumer's perceptions on healthy CoA. The questionnaires from Vangede revealed that there was a small amount of customers who noticed the healthy CoA. However, almost half of the customers mentioned that they would be inclined to do the shopping at a supermarket that gives such an option. This leads to the understanding that customers were not able to recognize the healthy CoA presented in Lild. Nevertheless, the data collected from both questionnaires in Lidl and questionnaires in VS experiments makes it clear that the main factor guiding consumer choice of the CoA is the easiest accessibility of it.

6.4 Bias

6.4.1 In general

The difference in age group between the customers at Lidl and the participants from VS, could bias the obtained results since the average age of the customers at Lidl was 43, where the average age in the VS was 27 in E1 and 23 in E2. These different age groups might have different perceptions, preferences and behaviors. In addition 20 customers at Lidl supermarket answered the questionnaires, whereas 40 and 7 participants for E1 and E2 respectively participated. The numbers of the participants are not equal, this could affect the data representativeness. Furthermore, the two locations for collecting data could also have biased the results because the setting of the data collection was different. The customers at Lidl were within their shopping environment. Whereas the participants for VS were at a university and most of them were in an environment where they on the way to the canteen.

6.4.2 The questionnaires at Lidl

Data collection was conducted from 11:00hrs to 14:00hrs. The results might be different if the data collection was done at any other time of the day.

6.4.3 The Virtual Supermarket

The significant difference in the sample size between the two experiments does not provide a valid approach to compare the two experiments. Furthermore, there were some technical issues with the

equipment that kept interfering with the experiments. The technical problems were the main reasons for the smaller number of participants in E2.

It is important to point out the difference between consumer behavior in the virtual setting and in the real life setting, where real life involves real money and products compared to the virtual one (Waterlander et al., 2011).

The experiments were dependent on other people, like the Mediology students who helped to set it up. There were also some communication problems, where the changes that were supposed to be made in the VS were interpreted differently by the Mediology students compared to the initial suggestions. Even though E1 gained a significant amount of attention from the university students and faculty, majority was not that interested in the VS, as their goal was to try the Oculus Rift glasses, which is widely used in gaming.

Finally, it has to be mentioned that limited time was the main disadvantage for this project. External actors as Lidl representative and Mediology students, were often unavailable and were limiting the progress of the project. However, without these actors the project could not have been completed.

The initial day for E1 was postponed as there were some technical issues with the software and the computers not having the right outputs. If this was taken into account prior to the experiment, the delay could have been avoided.

7. Conclusion

The aim of this project was to investigate if the changes applied to the healthy CoA, guides the consumers to make healthier choices. Furthermore, it aims to establish the importance of actors and non-human actors in relation to influencing consumer behavior in a grocery shopping setting. Empirical data was collected in Lidl supermarket in Vangede, and two separate experiments were carried out using the virtual supermarket, in order to resolve the research question.

Due to a small sample size in the second experiment, which was conducted in order to measure if the changes applied to the healthy CoA would make customers chose the healthy CoA, the comparison of the data from the two experiments were compromised. Therefore the data from the VS may not be considered representative and valid to compare to the questionnaires conducted at Lidl.

Overall, people chose the shortest line or closest CoA, or simply were not aware of the healthy CoA. The empirical data from this project suggests, that in order to guide customers to choose the healthy CoA, Lidl must emphasize its focus on it and increase its attractiveness.

In order to produce representative documentation, it is necessary to investigate on a larger scale to document how consumers react to the implementation of the healthy CoA initiative.

7.1 Perspectivation

The VS could be a tool for the designers, choice architects or graduates from Integrated Food Studies who want to work with supermarket landscapes without having to actually do it in real life. This would allow them to be more creative, since there are no boundaries, and create more imaginative layouts because they will not have to worry about the cost of implementation. It would also be possible for Lidl to have models of each of their stores made up in the VS and have a small team of designer, choice architects or graduates from Integrated Food Studies sitting at the headquarters of Lidl and being able to create custom layouts to each supermarket or just those who have certain needs. People responsible would be able to take the layouts from certain stores and have people put the Oculus Rift and have them try it and then do further interviews with the customers. This would mean that the program would have to be heavily developed so that it could be used by someone who only have basic computer skills.

7.2 Reflections

It could be speculated that Lidl deliberately choose to describe the CoA, as a 'healthier choice', and not the 'healthy choice', since they know the products they sell at the healthier CoA, might be perceived as healthy. One might disagree that the products sold at that healthier CoA are actually healthy.

Since Lidl sells the products only as healthier, compared to the CoA with sweets and candy, they do nothing wrong, but the customers might misinterpret the statement and believe that only healthy products are sold at that particular aisle.

This might not contribute to the prevention of nutrition related diseases as it was intended. As one could tend to consume healthier products, with good conscious, in amounts that could contain even more calories and sugars.

When looking for information and looking up different Lidl supermarket, we found that the layout of the CoA in Lidl in Rødovre, is very similar to the changes implemented in the E2 of the VS.

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Appendices

APPENDIX A - Questionnaire Mediology Thesis

Question 1: ”Current time” (Hvad er klokken).

Question 2: ”Age” (Alder).

Question 3: ”Gender” (Køn).

Question two and three are meant as way of segmenting the data. the first and third question will not be asked but simply noted by the test conductor.

Question 4: ”I normally shop” (Jeg handler normalt). where the test participants has the following options:

• Alone(Alene)

• Together with kids (Sammen med børn)

• Both alone and together with kids(B ̊ade alene og sammen med børn)

Question 5: ”How would you compare the experience of shopping in the virtual supermarket with the real supermarket?”
(Hvordan vil du sammenligende oplevelsen at hande i det virtuale supermarked med det virkelige supermarked?). This question the subject have to answer on a scale of six, with ”very different(stor forskel)” in one end and ”very similar(ingen forskel)” in the other end. and is meant to give an idea about how big the subject feel the difference is compared to when they normally shop.

Question 6: ”If there was any difference(s), what did you feel they were?”(Hvis der var forskelle, hvad følte du de var?). For this question the subject will have the option of answering what they fell like if anything. this used to pinpoint any issues that might be in the prototype that has not be identified before hand.

Question 7: ”Which cash register did you choose in the simulation?” (Hvilken kasse valgte du inde i simulationen?). The two options will simply be presented as option left or right, which will be the two only cash register open in the supermarket.

Question 8: ”Was there any particular reason why you chose that cash register in the virtual supermarket?” (Er der en bestemt grund til du valgte den kasse?). The subjects will have the following option when answering:

• Random (Tilfældigt)

• Because it was the Unhealthy cash-register (Fordi det var den usunde kasse)

• Because it was the Healthy cash-register (Fordi det var den sunde kasse)

• It was fastest to get to (Det var den hurtigeste at komme til)

• Other (Andet)

Question 9: ”In the real supermarket why did you choose that particular cash register?” (Hvorfor valget du den kasse som du gjorde i det rigtige supermarket?) the subjects will have the following options to choose from:

• Random (Tilfældigt) go to Question 11

• Shortes line(Fordi der var kortest kø) go to Question 11

• It was open(Fordi kun den havde åben) go to Question 11

• Because it was the Healthy cash-register(Fordi det var den sunde kasse)

• Other(Andet) go to Question 11

Question 10:”How did you feel about the selection of healthy oriented products at cash-register?” (Hvordan følte du udvalget af varer var ved den sunde kasse?) The subject have the following options:

• The selection was adequate (Den har et passende udvalg)

• The selection was not insufficient (Der er fåalille et udvalg)

• There where products that didn’t belong. Please write which(Der er varer der ikke burde være der. Skriv gerne hvilke)

• Some products where missing (Nogle produkter mangler. Skriv gerne hvilke)

Question 11:”Closing comments” (hvis man har nogle endelige kommentarer kan de nævnes nu). The subject has the option of giving additional comments on whatever the they may feel relevant to mention.

APPENDIX B - Questionnaire for Lidl supermarket

Spørgsmål 1:

- Tidspunkt:

Spørgsmål 2:

- Alder:

Spørgsmål 3:

- Køn:

Spørgsmål 4:

- Har du børn?

Spørgsmål 5:

"Jeg handler normalt"

- Alene
- Med børn
- Både alene og med børn

Spørgsmål 6:

Hvorfor valgte du den kasse som du gjorde?

- Tilfældigt
- Fordi der var kortest kø
- Fordi det var den eneste kasse åben
- Fordi det var den sunde kasse
- Andet:

Spørgsmål 7:

Lagde du mærke til den sunde kasse?

- Ja
- Nej

Spørgsmål 7a:

I tilfælde af du brugte den sunde kasse…

Påvirkede den dig til at købe anderledes end du ville ved en "normal" kasse?

Hvis ja, på hvilken måde?

Spørgsmål 7b:

Hvordan følte du udvalget af varer var ved den sunde kasse?

- Tilstrækkeligt
- Utiltrækkeligt
- Der var varer der ikke burde være der. Hvilke?
- Nogle produkter der mangler. Hvilke?

Spørgsmål 7c:

Hvilken rolle synes du tilbudet om en sund kasse spiller i din opfattelse af LIDL?

Spørgsmål 8:

I hvilken grad ville en sund mulighed hos kassen påvirke dit valg af supermarked?

Spørgsmål 9:

Hvordan synes du et sundt supermarked ser ud? (farver, reklamer, opbygning etc.)

APPENDIX C - Questionnaire for virtual supermarket experiment 1 + 2:

Questionnaire Virtual Supermarket

Participant number _____

Question 1: Age _____

Question 2: Gender _____ (M/F) Educational background_____

Question 3: Do you have children? Yes ___ No ___

Question 4: I normally shop:
• Alone
• Together with kids
• Both alone and together with kids
Other _____

Question 5: In the supermarket why did you choose that particular cash register?
• Random
• Because it was the Healthy cash-register
• Other _____

Question 6: Did you notice the healthy checkout aisle? Yes ___ No ___

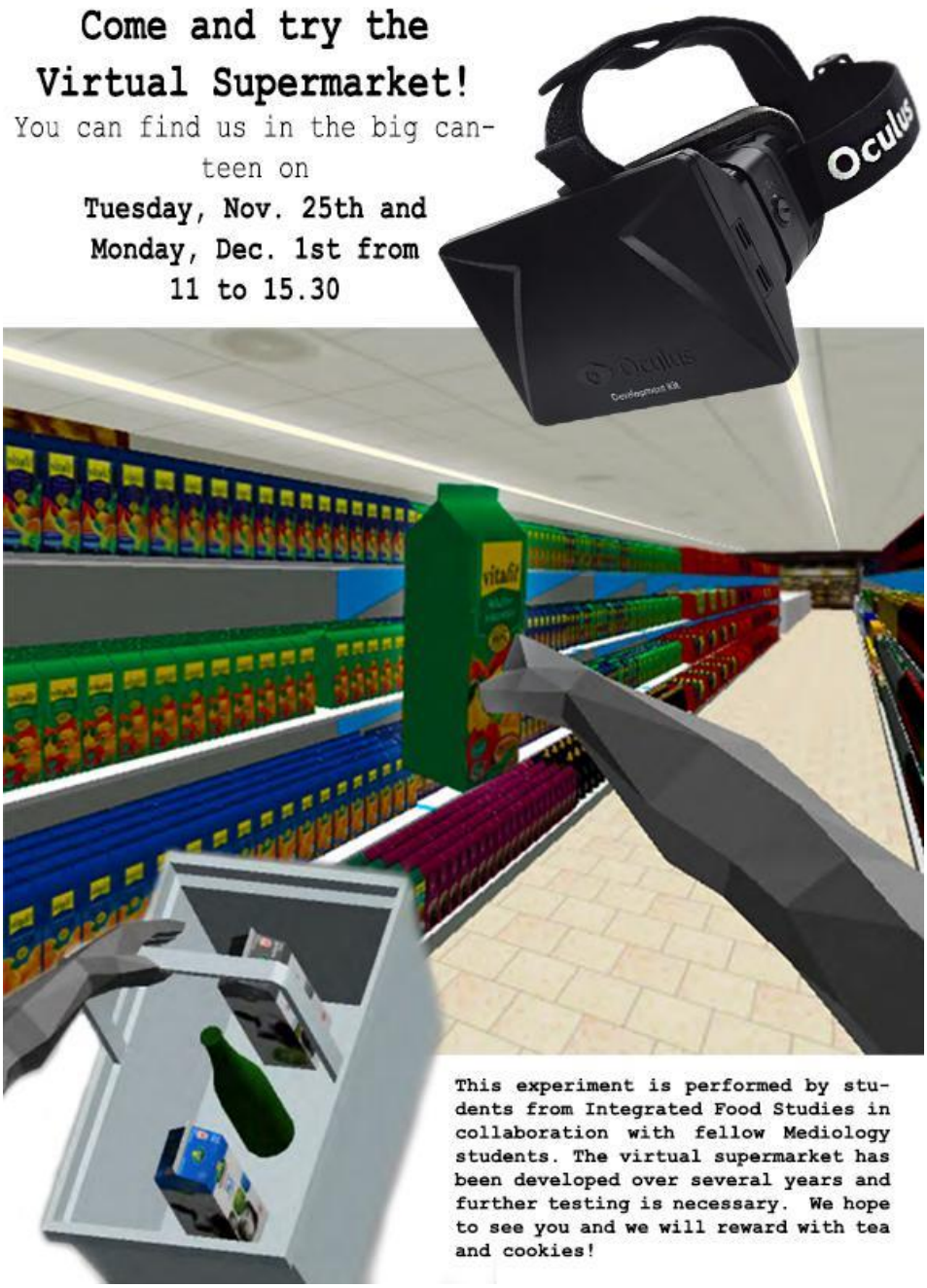
Question 7: In case you used the healthy check out aisle, did the healthy options have an influence?
Yes ___ No ____
Additions_____

Question 8: What role do you think offering a healthy check out option plays in consumers perception of LIDL and its CSR (Company Social Responsibility) strategy:

- Does not influence ___
- Influence in a positive way ___
- Influences in a negative way ___

APPENDIX D

Poster was created to promote the experiment. The posters were put on announcement boards as well as screens around the campus.



Questionnaires

APPENDIX E

Introduction speech for participants in Virtual Supermarket

"We are doing an experiment in the virtual supermarket, using the Oculus Rift glasses in order to document consumer behaviour and choices. Basically you are requested to pick out one item of choice from the CoA you may desire. You're not limited on time and dizziness may occur."

APPENDIX F

Rikke's interview (just some parts)

S - Hvem har autoritet til at ændre designet i butikkerne, og ved kasselinjerne?

(...)

S - Hvis der skal laves ændringer, hvem er det der tager de beslutninger?

R - Det er jo et samspil imellem flere afdelinger, kan man sige, hvor der er nogle indkøbere inde over, der vælger produkterne til linjen, dér, og så har vi jo en spacemanager der sidder og placerer varerne, kan man sige, i rækkefølge, og så skal der jo også være noget økonomi i det, så man kan egentlig sige... så det er flere områder der er inde over sådan nogle beslutninger.

English:

S - Who has the authority to change the design in the stores and the CoA?

(...)

S - If changes have to be applied, who is making the decisions?

R - It is a collaboration between several departments, you can say, where there is some buyers, who chose the products for the aisle, and then we have a spacemanager who place the products, in sequence, and

also, there have to be some economy in this as well... so, it is several departments who have to be involved when making these decisions.

Statistics from Lidl supermarket questionnaires:

Frequency Table

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	21	1	5,0	5,0	5,0
	24	1	5,0	5,0	10,0
	25	1	5,0	5,0	15,0
	27	1	5,0	5,0	20,0
	28	1	5,0	5,0	25,0
	40	1	5,0	5,0	30,0
	41	2	10,0	10,0	40,0
	43	1	5,0	5,0	45,0
	44	3	15,0	15,0	60,0
	45	2	10,0	10,0	70,0
	47	1	5,0	5,0	75,0
	49	1	5,0	5,0	80,0
	50	1	5,0	5,0	85,0
	65	2	10,0	10,0	95,0
	72	1	5,0	5,0	100,0
	Total	20	100,0	100,0	

Statistics

		Age	Gender	Children	Shop	Notice	Aisle	SupermarketInfluence
N	Valid	20	20	20	20	20	20	17
	Missing	0	0	0	0	0	0	3
Mean		43,00	1,50	1,35	1,40	1,90	1,75	1,53
Median		44,00	1,50	1,00	1,00	2,00	1,00	2,00
Mode		44	1[a]	1	1	2	1	2
Std. Deviation		13,742	,513	,489	,754	,308	1,070	,514
Variance		188,842	,263	,239	,568	,095	1,145	,265
Range		51	1	1	2	1	4	1
Minimum		21	1	1	1	1	1	1
Maximum		72	2	2	3	2	5	2

a. Multiple modes exist. The smallest value is shown

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	10	50,0	50,0	50,0
	Female	10	50,0	50,0	100,0
	Total	20	100,0	100,0	

Children

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	13	65,0	65,0	65,0
	No	7	35,0	35,0	100,0
	Total	20	100,0	100,0	

Shop

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Alone	15	75,0	75,0	75,0
	With kids	2	10,0	10,0	85,0
	Both	3	15,0	15,0	100,0
	Total	20	100,0	100,0	

Notice

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	10,0	10,0	10,0
	No	18	90,0	90,0	100,0
	Total	20	100,0	100,0	

Aisle

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Random	11	55,0	55,0	55,0
	Shortest	5	25,0	25,0	80,0
	Open	3	15,0	15,0	95,0
	Other	1	5,0	5,0	100,0
	Total	20	100,0	100,0	

Supermarket Influence

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High	8	40,0	47,1	47,1
	Low	9	45,0	52,9	100,0
	Total	17	85,0	100,0	
Missing	System	3	15,0		
Total		20	100,0		

Report

Age

Notice	Mean	N	Std. Deviation
Yes	34,50	2	13,435
No	43,94	18	13,820
Total	43,00	20	13,742

Statistics from virtual supermarket questionnaires:

Experiment 1:

Statistics

		Participant Age	Participant Gender	Number of children	Educational Background	I normally shop
N	Valid	39	40	40	38	40
	Missing	1	0	0	2	0
Mean		27.44	.45	6.88	2.63	8.28
Median		24.00	.00	7.00	3.00	8.00
Mode		23	0	7	3	8
Std. Deviation		8.494	.504	.335	.675	.452
Variance		72.147	.254	.112	.455	.204
Range		36	1	1	3	1
Minimum		20	0	6	2	8
Maximum		56	1	7	5	9

Statistics

		Reason for choice of checkout aisle	Notice healthy aisle	Consumer perception of Lidl's health strategy	Choice of checkout aisle
N	Valid	39	40	40	39
	Missing	1	0	0	1
Mean		12.23	15.60	17.93	20.28
Median		12.00	16.00	18.00	20.00
Mode		11	16	18	20
Std. Deviation		1.158	.496	.417	.456
Variance		1.340	.246	.174	.208
Range		3	1	2	1
Minimum		11	15	17	20
Maximum		14	16	19	21

Participant Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20	2	5.0	5.1	5.1
	21	4	10.0	10.3	15.4
	22	4	10.0	10.3	25.6
	23	9	22.5	23.1	48.7
	24	1	2.5	2.6	51.3
	25	3	7.5	7.7	59.0
	26	3	7.5	7.7	66.7
	27	1	2.5	2.6	69.2
	28	2	5.0	5.1	74.4
	29	1	2.5	2.6	76.9
	30	1	2.5	2.6	79.5
	33	1	2.5	2.6	82.1
	34	1	2.5	2.6	84.6
	35	1	2.5	2.6	87.2
	37	1	2.5	2.6	89.7
	38	1	2.5	2.6	92.3
	49	1	2.5	2.6	94.9
	50	1	2.5	2.6	97.4
	56	1	2.5	2.6	100.0
	Total	39	97.5	100.0	
Missing	System	1	2.5		
Total		40	100.0		

Participant Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	22	55.0	55.0	55.0
	Female	18	45.0	45.0	100.0
	Total	40	100.0	100.0	

Number of children

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	12.5	12.5	12.5
	No	35	87.5	87.5	100.0
	Total	40	100.0	100.0	

Educational Background

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	BA	17	42.5	44.7	44.7
	MA	19	47.5	50.0	94.7
	PhD	1	2.5	2.6	97.4
	Associate Professor	1	2.5	2.6	100.0
	Total	38	95.0	100.0	
Missing	999	2	5.0		
Total		40	100.0		

I normally shop

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	alone	29	72.5	72.5	72.5
	alone and with someone	11	27.5	27.5	100.0
	Total	40	100.0	100.0	

Reason for choice of checkout aisle

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	easiest/nearest	15	37.5	38.5	38.5
	random	7	17.5	17.9	56.4
	other	10	25.0	25.6	82.1
	healthy choice	7	17.5	17.9	100.0
	Total	39	97.5	100.0	
Missing	999	1	2.5		
Total		40	100.0		

Notice healthy aisle

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	16	40.0	40.0	40.0
	No	24	60.0	60.0	100.0
	Total	40	100.0	100.0	

Consumer perception of Lidl's health strategy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no influence	5	12.5	12.5	12.5
	positive influence	33	82.5	82.5	95.0
	negative influence	2	5.0	5.0	100.0
	Total	40	100.0	100.0	

Choice of checkout aisle

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Healthy	28	70.0	71.8	71.8
	Unhealthy	11	27.5	28.2	100.0
	Total	39	97.5	100.0	
Missing	999	1	2.5		
Total		40	100.0		

Experiment 2:

Statistics

		Participant Age	Number of children	Participant Gender	Educational Background	I normally shop
N	Valid	7	7	7	7	7
	Missing	0	0	0	0	0
Mean		22.43	.00	.43	2.14	4.29
Median		22.00	.00	.00	2.00	4.00
Mode		20[a]	0	0	2	4
Std. Deviation		2.225	.000	.535	.378	.488
Variance		4.952	.000	.286	.143	.238
Range		5	0	1	1	1
Minimum		20	0	0	2	4
Maximum		25	0	1	3	5

Statistics

		Reason for choice of checkout aisle	Notice healthy aisle	Consumer perception of Lidl's health strategy	Choice of checkout aisle
N	Valid	7	7	7	7
	Missing	0	0	0	0
Mean		7.29	9.71	11.86	14.57
Median		7.00	10.00	12.00	15.00
Mode		7	10	12	15
Std. Deviation		.488	.488	.378	.535
Variance		.238	.238	.143	.286
Range		1	1	1	1
Minimum		7	9	11	14
Maximum		8	10	12	15

a. Multiple modes exist. The smallest value is shown

Participant Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20	2	28.6	28.6	28.6
	21	1	14.3	14.3	42.9
	22	1	14.3	14.3	57.1
	24	1	14.3	14.3	71.4
	25	2	28.6	28.6	100.0
	Total	7	100.0	100.0	

Number of children

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	7	100.0	100.0	100.0

Participant Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	4	57.1	57.1	57.1
	Female	3	42.9	42.9	100.0
	Total	7	100.0	100.0	

Educational Background

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	BA	6	85.7	85.7	85.7
	MA	1	14.3	14.3	100.0
	Total	7	100.0	100.0	

I normally shop

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	alone	5	71.4	71.4	71.4
	alone and someone	2	28.6	28.6	100.0
	Total	7	100.0	100.0	

Reason for choice of checkout aisle

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	easiest	5	71.4	71.4	71.4
	other	2	28.6	28.6	100.0
	Total	7	100.0	100.0	

Notice healthy aisle

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	28.6	28.6	28.6
	No	5	71.4	71.4	100.0
	Total	7	100.0	100.0	

Consumer perception of Lidl's health strategy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no influence	1	14.3	14.3	14.3
	positive influence	6	85.7	85.7	100.0
	Total	7	100.0	100.0	

Choice of checkout aisle

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Healthy	3	42.9	42.9	42.9
	Unhealthy	4	57.1	57.1	100.0
	Total	7	100.0	100.0	