



UiT The Arctic University of Norway

Norwegian College of Fishery Science

## **From intention to consumption**

A quantitative study on how Modular Food-Related Lifestyle interfere with Theory of Planned Behaviour when young Norwegian adults intend to consume seafood

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## Abstract

The preconditions for Norwegians to consume seafood might be the best in the world, still, Norwegians do not consume as much seafood as recommended and the consumption has been decreasing steadily over time. Reports by the Norwegian seafood council show Norwegians wish to consume more seafood, despite that, seafood does not end up in their shopping baskets.

Previous studies have looked into how consumer behaviour explains the intention to seafood consumption and suggested for lifestyle to better understand consumption decisions. The purpose of this study was, therefore, by the usage of Theory of planned behaviour (TPB) and Modular food-related lifestyle (MFRL) to investigate the role of lifestyle in the relationship between intention and behaviour in regards to seafood consumption among young Norwegian adults.

A quantitative approach to methodology was used, gathering data through an online survey before analysing it statistically in SPSS. The data gathering gave 227 responses within the target group. Statistical data analysis showed the degree to which a consumer consumes seafood after intending to do so is dependent on the consumer's lifestyle. While MFRL did not have any moderator effect on the relationship between intention and behaviour. The analysis also showed there to be some, yet small, differences between the lifestyle segments when it came to ways of shopping, this can be used as an explanation to the gap between intention and consumption.

**Keywords:** Theory of planned behaviour, Modular food-related lifestyle, Ways of shopping, seafood consumption

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# 1 Introduction

Yearly, the Norwegian Directorate of Health publishes a report accounting for developments in Norwegian food consumption. Reading the report for 2020 is both positive and negative, in regards to sustainable and healthy eating habits (Helsedirektoratet, 2021). Among other things, it shows that the meat consumption curve has flattened out and red meat consumption has declined, Norwegians eat more fruits and vegetables than before, while seafood consumption has been decreasing steadily over time (Helsedirektoratet, 2021). One could put this into the context of an increased interest in plant-based diets. An interest stated to be reasoned by animal welfare, health and environment (Gonera & Milford, 2018).

With health and the environment being good arguments to eat less meat, why are we seeing a decrease instead of an increase in seafood consumption? Seafood is a good and healthy source of protein, and if farmed sustainably and harvested from sustainable stocks the environmental footprint is low making the industry sustainable (Helsedirektoratet, 2017). Norway has strict regulations for marking the origin of food, and seafood produced in a sustainable manner is certified and marked, making it easy for consumers to choose the sustainable option. Yet, Norwegians do not consume as much seafood as is recommended. The Norwegian Directorate of Health has developed a set of dietary advice to facilitate a healthy diet. It is advised to eat seafood for dinner two to three times per week (Helsedirektoratet, 2017), although numbers from 2019 show that on average only 35% of Norwegians do so (Helsedirektoratet, 2020). The issue is even bigger for young adults between 18-34years, numbers show that seafood consumption in this age group has decreased 46% from 2012 to 2017, while the average decrease in the Norwegian population was 17% (Norges Sjømatråd, 2018a).

In 2017 and 2018 a series of consumer surveys were conducted on behalf of the Norwegian Seafood Council to gain a better understanding of Norwegian consumers, their shopping habits, thoughts and associations to seafood (Norges Sjømatråd, 2018a, 2018b). The results of these surveys showed that fish, in particular, is perceived as boring and something you eat because you have to, not because you want to. Consumers under the age of 40 appreciate convenience when preparing dinner, and the decision on what to eat is often made last moment, many also state that they are not confident in preparing fish meals (Norges

Sjømatråd, 2018a, 2018b). Another interesting finding from the surveys was Norwegian consumers do want to eat seafood, yet somehow seafood does not end up in their shopping baskets (Norges Sjømatråd, 2018b). This is interesting as it shows an intention to seafood consumption, how come is the intention not carried out?

## **1.1 Previous studies on the field**

Previous studies can give some indications on what the motives and barriers to consuming seafood are. Olsen's study from 2004, provides an overview of antecedents of seafood consumption and buying behaviour. The study shows that the barriers to seafood consumption are higher than for many other traditional types of food. The barriers are mentioned to be linked to conflicting food preferences within households, and seafood being perceived as high-risk and high-cost products. Further, it shows that seafood consumption is more driven by moral obligation and health involvement and less by taste compared to other food products. The moral obligation to spouse and children when talking about serving healthy meals is pointed out as a reason for seafood consumption being higher among elderly people and families with children than among the younger generation and in single household (Olsen, 2004). Also in a study from 2003, Olsen found a positive relationship between age and frequency of seafood consumption, the reason was believed to be linked to elderly people being more involved in healthy eating. In this study attitudes towards eating seafood were proven as the most important predictor of seafood consumption frequency (Olsen, 2003).

A study from Belgium using theory of planned behaviour (TPB) to look into individual deterrents of fish consumption found favourable attitude towards fish consumption, a high subjective norm and high perceived behavioural control to have a positive impact on fish consumption decisions (Verbeke & Vackier, 2005). Appreciation of the taste was identified as the most important factor to eating fish, followed by the health aspect. Meanwhile, bones and perceptions of price had a negative impact. Habits were also found to play a role in the relationship between intention and behaviour (Verbeke & Vackier, 2005). Honkanen, Olsen and Verplanken, (2005) found habits to be an important factor influencing intention for seafood consumption. They found habits to have a strong relationship with intention, and also to act as a moderator to the relationship between past behaviour and intention.

Convenience, or rather the inconvenience of fish, has also been mentioned in regards to attitudes toward fish consumption and the actual consumption of fish (Olsen, Scholderer, Brunsø & Verbeke, 2007). The inconvenience was related to the time aspect and perceived difficulty of preparing a fish meal. The same study proved fish preparation and cooking skills to predict fish consumption (Olsen et al., 2007). A study on fish consumption among young Icelanders by Thorsdottir et al. (2012) also finds attitude towards fish consumption, social pressure and fish preparation and cooking skills to correlate with fish consumption. Further, they found sensory beliefs, and indirectly with it fish consumption in childhood, as well as health involvement to play a role in attitude towards fish consumption (Thorsdottir et al., 2012). The importance of regular seafood consumption during childhood is confirmed by Birch, Dean, Fazal-e-Hasan and Lawley (2018). They found it to be an important factor together with confidence in selecting and preparing seafood to develop a habit of eating seafood in adulthood (Birch et al., 2018).

Quantitative studies also show the same tendencies, one example is Brunsø, Verbeke, Olsen and Jeppesen's study (2009) investigating motives and barriers of fish consumption among light and heavy users in Belgium and Spain. They saw that the main motives for fish consumption were taste and the health aspect, while the main barriers were identified to be perceptions of price, the smell and the low feeling of satiety compared to meat (Brunso et al., 2009).

Carlucci et al., (2015) reviewed 49 studies covering seafood purchasing behaviour, and the findings do align with the conclusions of the mentioned studies. Carlucci et al. (2015) identified a positive attitude to eating fish as the main driver for fish consumption, habit is also mentioned to play a role in fish consumption. On the other side, sensory disliking of fish, lack of convenience, lack of self-efficacy in selecting and preparing, price and availability mentioned as barriers to fish consumption (Carlucci et al., 2015)

## 1.2 Problem statement

The main focus in most of the previous studies mentioned is somehow linked to the intention to consume seafood. Some of them bring up the gap between intention and behaviour, however, no great emphasis is put on it. Making it an interesting subject to study. To fully understand what happens between intention and behaviour one needs to look into consumer behaviour theory. Ajzen and Fishbein (1980) have suggested the theory of reasoned action to be used to explain the gap between intention and behaviour. In theory of reasoned action Ajzen and Fishbein (1980) explain intention, deriving from attitudes and subjective norms, to be the best predictor of behaviour (De Pelsmacker, Guenes & Van Den Bergh, 2013; Montano & Kasprzyk, 2015). The model was later expanded to the theory of planned behaviour (TPB) (Ajzen & Fishbein, 1985), where perceived behavioural control (PBC) was added to explain situations where consumers are not fully in control over the behaviour (De Pelsmacker et al., 2013; Montano & Kasprzyk, 2015). In TPB attitudes, subjective norms, as well as, PBC are used as antecedents of intention to perform a behaviour in specific situations (Ajzen, 1991). It has been common to base studies on seafood consumption on TPB, or to a modified model inspired by TPB (Birch et al., 2018). Thus, using TPB to understand the gap between intention and behaviour is an intelligible choice.

Some studies have suggested for lifestyle to be implemented to gain a deeper understanding of consumption decisions (Carlucci et al., 2015; Birch et al., 2018). At the same time findings from the Norwegian Seafood Council show that dinner plans often are made last-minute while grocery shopping (Norges Sjømatråd, 2018a, 2018b). Based on these two facts, lifestyle is considered a relevant topic to be studied in regards to Norwegian seafood consumption. Food-related lifestyle (FRL) is a theory commonly used to explain food-related behaviour, as well as being used as a segmentation criteria in consumer marketing (Brunso et al., 2021). Recently an updated development of FRL was published by Brunso et al. (2021), named modular food-related lifestyle (MFRL). The new model is tailored to fit modern consumers, taking into account *food involvement*, *food innovativeness*, and *food responsibility* (Brunso et al., 2021), which makes it natural to base the lifestyle part of this thesis on MFRL.

Thereby, the aim of this study is to investigate the role of lifestyle in the relationship between intention and behaviour in regards to seafood consumption among young Norwegian adults. This will be done on the basis of theory of planned behaviour and modular food-related lifestyle. The following problem statement has been formulated:

*Which role does lifestyle play in the relationship between intention and behaviour?*

To answer the problem statement and to maintain focus while working on this thesis three research questions have been formulated. (1) *Is there any difference in the relationship between intention for seafood consumption and behaviour among the various segments of MFRL?* (2) *Does MFRL act as a moderator to the relationship between intention and behaviour?* And, (2) *How do the various segments of MFRL do their grocery shopping?*

### **1.3 Delimitations and contributions**

To manage writing this thesis within the given timeframe of one semester (30ECTS) some limitations were made. First, in regards to the TPB previous studies have examined how the different constructs influence intention to a great degree. Therefore, this study will only use the concepts from TPB, not the complete theory, and measure intention and PBC as they are believed to best explain behaviour. The focus will rather be on the role lifestyle plays in the relationship between intention and behaviour. Second, it is chosen to target the research on young Norwegian adults between the age of 18 and 34 years, who do not live with parents or have children. Consumers belonging to this group do mainly prepare their own dinner and are not responsible for what should be a healthy diet for children, making it natural to assume them to be in control over their own eating habits.

This study is a contribution to the already existing literature as it aims to investigate the role of lifestyle in seafood consumption, as well as test the validity of the newly published theory of MFRL (Brunsø et al., 2021). The findings will also be relevant for the industry as it provides useful insight to the role of lifestyle in the relationship between intention to seafood consumption and behaviour. This knowledge can be used to create more targeted marketing actions, increasing not only sales for commercial companies but also seafood consumption in

general which low levels are concerning Norwegian health authorities. Enabling to influence the target group to consume more seafood might also be beneficial for the seafood consumption of future generations. As the target group is likely to start a family in near future, influencing them to consume the recommended amount of seafood could make future generations do the same, based on findings from previous studies showing that children who eat seafood regularly are more likely to do so as adults (Thorsdottir et al., 2012; Birch et al., 2018)

## **1.4 Thesis structure**

This thesis is divided into five chapters with several sections. In this first chapter, an introduction to the topic, the research aim and questions as well as the relevance of the study has been presented. In the next chapter, *chapter 2 Theoretical framework*, the theory needed to investigate the problem will be introduced. Then, in *chapter 3 Methodology*, the methodological approach used in this thesis will be presented, validity and reliability will be discussed and it will be shown how the data analysing was done. *Chapter 4 Results*, will then present the results of the data analysing. Before last, in *Chapter 5 Discussion and conclusion* the results will be discussed and concluded on in accordance with the research questions, the theoretical framework and previous studies, the limitations of this study will be commented on as well as suggestions for further studies.

## 2 Theoretical framework

In this chapter theory relevant to answer the research aim and questions will be introduced. First, the theory of planned behaviour will be presented, before food-related lifestyle and modular food-related lifestyle is accounted for. Last, the conceptual framework is illustrated and presented.

### 2.1 Theory of planned behaviour

The theory of planned behaviour (TPB) is a cognitive model used to predict and explain human behaviour in specific situations (Ajzen, 1991). It is based on the constructs of attitudes, subjective norms and PBC as antecedents of intention to perform a behaviour (Ajzen, 1991).

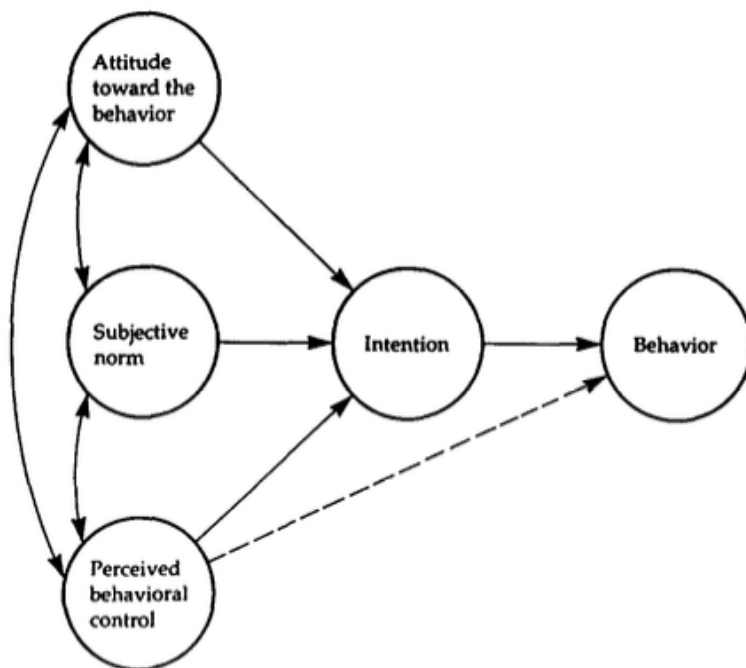


Figure 1 Theory of planned behaviour (Ajzen, 1991, p.182)

Attitude refers to whether the consumer has a favourable or unfavourable evaluation or appraisal of the behaviour (Ajzen, 1991, p.188). According to Ajzen (1991) attitude consist of two components, affective and evaluative. The affective component refers to whether the behaviour will result in positive or negative feeling, while the evaluative component is the perceived costs, risks and benefits attained from performing the behaviour (Verbeke & Vackier, 2005). Subjective norms refer to the perceived social pressure to perform the behaviour (Ajzen, 1991, p.188). Besides, it also includes the consumer's feelings of moral obligation and responsibility to perform the behaviour (Ajzen, 1991; Verbeke & Vackier, 2005). PBC refers to the perceived ease or difficulty of performing the behaviour and it is assumed to reflect on past experience as well as expected obstacles (Ajzen, 1991, p.188). In short, attitudes are about what the consumer believes performing a behaviour will result in for him/her, subjective norms is about how the consumer believes the society expects one to act, and PBC is about whether the consumer believes one is capable of performing the behaviour. To which degree each construct is significant, and its importance to intention varies depending on the situation, the context, and the behaviour to be performed (Ajzen, 1991).

Ajzen (1985) define intentions as the attempt to perform a given behaviour rather than the actual performance of it. Further, he explains them as “the motivational factors that influence a behaviour; they are indications of how hard people are willing to try, of how much of an effort they are planning to exert, in order to perform the behaviour” (Ajzen, 1991, p.181). This meaning, that intentions reflect on the consumers' motivation, their ambition and plan, to perform a behaviour rather than the actual behaviour.

Ajzen (1991, p.181) states that “as a general rule, the stronger the intention to engage in a behaviour, the more likely should be its performance”. Nevertheless, there is an inconsistency between intentions and behaviour. Ajzen and Fishbein (2005, p.189) refer to two independent studies which have shown that as much as 50% tend to not follow through with a given behaviour even if they had intended to. Campbell's study (1963) is used as a possible explanation for this inconsistency. He argues that inconsistency between intention and behaviour arises because people with moderate dispositions tend to display behaviours consistent with the disposition when the behaviour is easy to perform, for example by expressing willingness to perform a behaviour, and not when they are difficult to perform, by



actually performing the behaviour (Ajzen & Fishbein, 2005, p.190). Another explanation for the inconsistency between intention and behaviour is linked to the component PBC which is strongly linked to volitional control (Ajzen & Fishbein, 2005). Together with intention, PBC, can be used directly to predict behaviour (Ajzen, 1991, p.184), making it an important consideration in the inconsistency between intention and behaviour. Volitional control is assumed to moderate the inconsistency in such a manner that the impact of intention on behaviour is stronger with higher actual control (Ajzen & Fishbein, 2005, p.192). Further, Ajzen and Fishbein (2005, p.192) believe that peoples' perception of control over a behaviour reflects their actual control, as of this, one can assume that PBC can be used as a prediction of behaviour. Meaning, if consumers have control over their performance of behaviour they tend to act accordingly to their intentions (Ajzen & Fishbein, 2005, p.192)

A solution to decrease the gap between intention and behaviour is presented by Gollwitzer (1999), who states that intentions have a better chance of resulting in behaviour if the consumers are prompted to form an implementation intention (Gollwitzer, 1999; Ajzen & Fishbein 2005). This can be done by the consumer specifying where, when and how they plan to act to transform intention to behaviour (Ajzen & Fishbein, 2005). Gollwitzer (1999) points to several studies that have proven this strategy to work, by forming an implementation intention consumers tend to act accordingly to their original intention even if faced with tempting distractions, bad habits and competing goals. After having said that, the consumers' intentions to carry out the behaviour need to be strong and they need to be committed to their implementation intentions for it to work (Gollwitzer 1999).

## **2.2 Food-related lifestyle**

In consumer marketing, lifestyle has the last decades been a popular tool for segmentation, mainly using activities, interests and opinions to classify consumers into lifestyle segments (Brunso & Grunert, 1998; Brunso et al., 2021). Lifestyle is by Brunso and Grunert (1998) defined as "a mental construct that explains, but is not identical with, actual behaviour, and define lifestyle as the system of cognitive categories, scripts, and their associations, which relate a set of products to a set of values" (p.146). Further, they state that lifestyle differs from values as values are self-relevant and provide motivation, while lifestyle links products to

self-relevant consequences such as values. Lifestyle goes beyond brands and products as it is can be specific to a product class, such as food (Brunso & Grunert, 1998).

In the nineties the concept of food-related lifestyle (FRL) was developed to be a tool for international segmentation within food-related products (Grunert, 2019). FRL is explained by Brunso et al. (2021, p.1-2) as a cognitive mediator between life values and perception of and behaviour towards concrete food-related objects. FRL attempt to understand differences in how consumers view food and drink as a means by which to attain their basic life values (Brunso et al., 2021). It is based on the idea that consumers buy products they believe will allow them to attain their life values, in other words, a means-end approach used to understand the role of food in the lives of consumers (Brunso et al., 2021).

The FRL model consists of five dimensions to explain behaviour and define lifestyle (Brunso & Grunert, 1998, p.146). *Consumption situations* seeks to understand how and where meals are consummated and how they are spread throughout the day. *Purchasing motives* look into what is expected from a meal and investigates the importance of social aspects around the meal. *Cooking methods* include how the purchased products are transformed into meals, how much time is used for planning the meal and preparing it, and who are involved in the process. *Ways of shopping* investigates how consumers shop for food, how they decide what to shop, where they shop, and how they obtain information about the products in a decision-making process. Last, *quality aspects* refer to attributes applying to food products, such as healthy, natural, fresh, and tasty.

### **2.2.1 Modular food-related lifestyle**

However, Grunert (2019) has criticised FRL for being too complex due to the extent of questions to be asked and analysed, he also points out that the model is no longer up-to-date in regards to important dimensions for a consumer of today, social responsibility and sustainability are mentioned as dimensions that should be accounted for. Based on suggestions from Grunert (2019; 2020) an updated version of the FRL model is being developed, referred to as modular food-related lifestyle (MFRL). MFRL refers to three core dimension *food involvement*, *food innovativeness*, and *food responsibility*, assuming these are enough for a basic segmentation in accordance to consumers FRL and in line with the original

model (Brunso et al., 2021). The idea is that the core dimensions can be supplemented by other more specific add-on modules when needed, such as planning, shopping, product quality and preparation as examples, this makes it possible to tailor the model to the particular need of every application (Brunso et al., 2021).

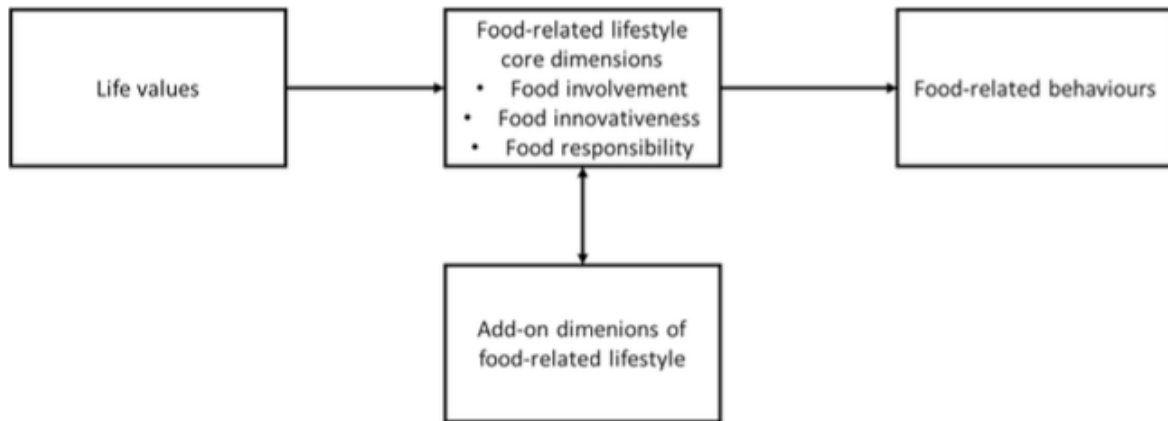


Figure 2 Modular food-related lifestyle model (Brunso et al., 2021, p.3)

*Food involvement* measures the degree to which a consumer involves oneself in the different aspects of food, and how highly they rank food as an important part of their lives. Even though everyone needs to eat, everyone does not hold the same interest in food. And the amount of resources in terms of time and money they put into buying, preparing and eating food is individual (Brunso et al., 2021). *Food innovativeness* measures how adventurous the consumers are in their meals, if they enjoy experimenting with different kinds of food and food cultures, as well as trying new ingredients and flavours. Some look at food as a way of maintaining stability, while others use food to express creativity (Brunso et al., 2021). *Food responsibility* covers to which degree the consumer is concerned about the sustainability of their meals, for example looking into whether they choose food produced with a low environmental impact or not and if the food is produced organically. It should be noted that food responsibility does not distinguish between different aspects of responsibility like ethics and environmental impact (Brunso et al., 2021).

Brunso et al. (2021) identified two main segments and three smaller segments using the core dimensions. For validation and profiling of the segments they tested them to Schwartz ten-

value domains (1992), and self-reported behaviour on shopping, cooking, eating, and meals. The two main segments identified were *adventurous* and *moderate*, while the three smaller segments were *foodies*, *conservative* and *uninvolved*.

The first segment, *adventurous*, scored high on all three core dimensions, in particular food innovativeness. In regards to values, consumers belonging to this segment score high on self-direction and stimulation, and low on conformity. Meaning, their independence is important for them, together with the need for variety and to create and explore new things (Schwartz, 1992). While self-discipline tends to be low, as well as the importance of following social norms (Schwartz, 1992). The adventurous consumer often shops at specialist stores, and only the foodies spend more time in the kitchen, eat more often at restaurants, and eat more fruits and vegetables than them. Adventurous consumers are likely to be younger than others. This segment is alluding to the adventurous segment from the original FRL theory, being described as consumers with a demand for quality, having fun in the kitchen, enjoying new products and meals, and being motivated by the social and self-enhancing aspects of food (Grunert, Brunsø, Bredahl & Bech, 2001; Brunsø et al., 2021).

The second main segment identified is *moderate*, these consumers have average scores on the three core dimensions, and medium level scores on values. In regards to behaviour, they place themselves in the mid-range on the self-reported activities, and their age is also average (Brunso et al., 2021).

The *conservative* segment scores low on the core dimensions of innovativeness and responsibility, and high on food involvement. In terms of values conservative consumer score low on stimulation, and high on hedonism, security and conformity. Showing that variation and novelty are not of high importance for these consumers, they rather appreciate enjoying a clean and healthy life by self-discipline, smooth interactions, and stability (Schwartz, 1992). Like adventurous consumers, conservatives often shop at specialist stores. They spend more time in the kitchen than most others and do not eat out that frequently. Conservative consumers have a higher average age than the other segments, except uninvolved consumers. This segment is also aligned with one of the segments from the original FRL theory, where the conservative consumers are characterised by denouncing innovation in food products and

meals, a conservative approach to cooking, and a demand for quality products (Grunert et al., 2001; Brunsø et al., 2021).

The *uninvolved* segment scores low on the three core dimensions. When speaking of values this segment is low on stimulation, self-direction and hedonism while being high on security, conformity and tradition. This meaning that safety and stability are important for them, together with following social norms and seeking acceptance among their peers (Schwartz, 1992). Uninvolved consumers do not eat often at restaurants and tend together with conservative consumers to be older than the others. The uninvolved segment can also be found in the original FRL theory, being described as not caring much about anything regarding food and a high incidence of snacking and convenience food (Grunert et al., 2001; Brunsø et al., 2021).

Last, the *foodies* score high on all three core dimensions and they score high on the values self-direction, stimulation and hedonism, while security, tradition and conformity are low. Similar to the adventurous consumers their independence is important for them, together with the need for variety and to create and explore new things, while self-discipline is low, as well as the importance of following social norms (Schwartz, 1992). Unlike the adventurous segment, foodies also tend to emphasise pleasure and enjoying life, in general, more and place lower value on safety and stability (Schwartz, 1992). Foodies often shop online, and in specialist stores, and they eat most frequently at restaurants, spend the most time in the kitchen and eat more fruits and vegetables than the other segments. Together with the adventurous consumers, foodies are significantly younger than the others (Brunsø et al., 2021).

## 2.3 Conceptual framework

Based on the knowledge obtained from the TPB (Ajzen, 1985; 1991) and MFRL (Brunso et al., 2021), as well as the problem statement, a conceptual framework has been developed (figure 3). It will act as a framework in the further process of solving the problem statement and answering the research questions. The conceptual framework originates from theory stating that intention and PBC are the strongest indicators of behaviour. It includes MFRL as a moderator to the relationship between intention and behaviour, to investigate if it moderates the relationship in any way.

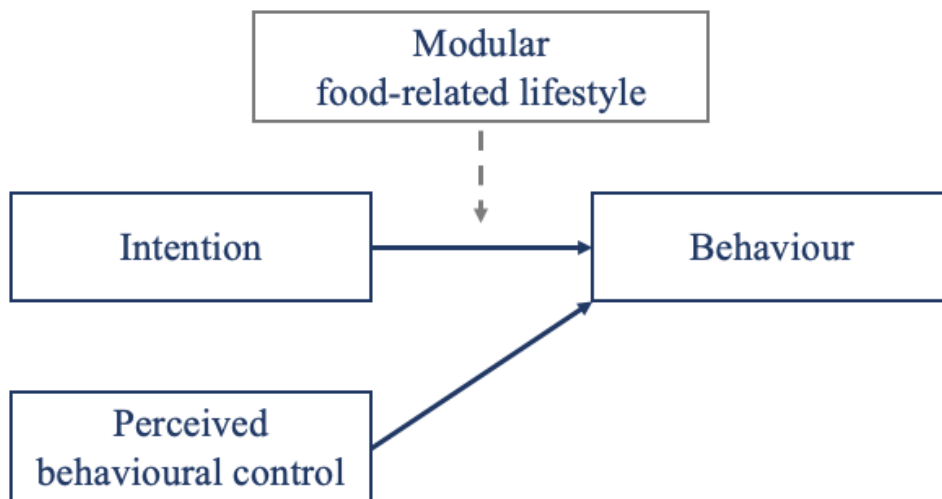


Figure 3 Conceptual framework, self-provided

### 3 Methodology

The methodology part of this thesis is based on Gripsrud, Olsson and Silkosets (2016) theories on methodology and data analysis, and structured accordingly to their research process model (figure 4). To complement Gripsrud et al. (2016), Saunders, Lewis and Thornhill (2009) will be used for the theoretical part, and Field (2013) as a guide in the statistical analysing of data.



Figure 4 The research process (Gripsrud, Olsson & Silkoset, 2016, p.39)

Part one and two in the research process model are already accounted for and presented in chapter 1.2 problem statement. Hence, this chapter will include which research design was chosen, how data was collected and analysed, before chapter 4 will present the results of the data analysis. Validity and reliability will also be discussed in this chapter.

#### 3.1 Research design

A research design is a general guide on how the study plans to answer the research questions (Saunders et al., 2009). In the early stages of planning, the inspiration for this thesis was gained from reading previous studies on seafood consumption. Later, existing theory, as well as, previous studies were used to develop the research aim, formulate a problem statement and in creating the conceptual framework.

The nature of the research aim in this study is deductive, as it wishes to test if a theory can be proven empirically (Saunders et al., 2009), further, the study wishes to describe the relationship between variables and determine the causal relationship between them.

Therefore, a *descripto-explanatory* design is used, combining descriptive and explanatory design (Saunders et al., 2009). A descriptive design is a quantitative design commonly used when the researcher has knowledge of the problem and the research aims to describe a

situation within a given subject, for example, describe the relationship between variables (Gripsrud et al., 2016). While an explanatory design is used when the study aims to explain the causal relationship between variables (Saunders et al., 2009). In combining these two, the study will be able to both describe and explain the relationship between the variables. It is therefore essential to understand the variables. Consequently, chapter 2 Theoretical framework was included, focusing on TPB (Ajzen, 1985) and MFRL (Brunso et al., 2021), both to understand and define the variables, and also to ground the research in theory, enabling the results to be compared and discussed in light of academia.

### **3.2 Data collection**

Gripsrud et al. (2016) distinguish between primary and secondary data. Primary data are collected for a specific study with the aim to answer the research questions, while secondary data are obtained through other sources, such as literature and big data, normally when it is hard to collect enough primary data. It is more time consuming and costly to use primary data as one has to collect the data oneself, concurrent, the data is more valuable as the validity of the gathered data is higher since it is tailored to answer the research questions (Gripsrud et al., 2016). Primary data is normally divided into qualitative and quantitative data, where qualitative data is used for in-depth information, while quantitative data is translated into statistics and numbers (Gripsrud et al., 2016). In deductive studies, a quantitative approach to data gathering is most commonly used (Saunders et al., 2009).

The main tool for quantitative data gathering is survey questionnaires as they allow to collect a large amount of data from a sizeable population in an economical way, at the same time as they make analysing the data easier when all respondents answer the same standardised questions (Saunders et al., 2009). A population is the sum of all individuals the study wish to say something about (Gripsrud et al., 2016, p.166). When collecting the data from a population there are two main categories of sampling techniques, probability sampling and non-probability sampling. Probability sampling is when each individual in a population has the same chance to be asked to answer, while non-probability sampling is when some individuals from the population do not have a chance to answer (Gripsrud et al., 2016). If one wish to generalise the findings for the whole population probability sampling is preferred, yet, this requires knowledge and access to the whole population. Making non-probability



sampling more frequently used for data collection in larger populations (Saunders et al., 2009).

In this study primary data was used to answer the research questions, while secondary data was used in the development of the research aim and problem statement. It is a quantitative study using an anonymous online survey for data collection. The target population is defined to be young Norwegian adults between the age of 18-34years, without children and not living with their parents. Given the size of the population, and the difficulty of identifying each individual belonging to it, non-probability sampling was used for data collection. The online survey was developed using the webpage Nettskjema licensed through UiT, before being distributed in a variety of Facebook groups believed to attract the population. It was focused on gathering answers from all areas of Norway to make the results more generalisable despite non-probability sampling being used. The goal was to collect a minimum of 100 responses from the target population. Based on numbers from Statistics Norway, the target population is believed to consist of approximately 800 000 individuals (SSB, 2021). Saunders et al. say that for a population of this size the sample should be 384 to be able to generalise the findings with a confidence level of 95% (2009, p.219). Despite this, a minimum of 100 was decided based on the available resources for writing this thesis.

### **3.3 Survey design**

It is important to ensure that the data collected is the one required to answer the research questions (Saunders et al., 2009). At the same time, it is important to limit the number of questions only to the most necessary ones as consumers are more likely to contribute to and complete a short survey (Saunders et al., 2009).

The survey consisted of three kinds of questions, first, the respondents were asked to answer demographic questions. These questions were formulated as filter questions for it to be easy to sift out respondents not belonging to the target population when analysing the data, hence, questions like “age,” “do you have kids living with you” and “how is your living situation” were included. Where in Norway the respondent lived and gender was also asked to get an indication of the variance in answers in regards to the population. Then, questions were asked

to measure the empirical aspects, such as intention, and the dimensions of MFRL, these are accounted for and explained further in the next section, 3.3.1 Operationalization. Last, questions to measure behaviour were asked. For this, it would have been optimal to send a follow-up questionnaire to the respondents one week after the original being submitted to ask if they had consumed seafood the last week. Nevertheless, due to strict personal data handling regulations, and the necessity to report the gathering of personal data 30 days prior to the survey being conducted it was not possible.

In TPB it is suggested that behaviour is guided by attitudes, norms and PBC (Honkanen et al., 2005), yet some studies have proven evidence that past behaviour can be used as a prediction for behaviour (Ajzen, 2011). In some cases, when included in the analysis past behaviour outranks intention and PBC as the strongest indicator of behaviour, even making intention and PBC insignificant when tested in a regression analysis (Ajzen, 2011). Based on this it can be possible to measure behaviour from past behaviour. Therefore, to measure behaviour respondents were asked to answer how many times they had seafood for dinner the previous seven days and the previous month.

The survey was originally formulated in English before being translated to Norwegian. The translation and understanding of the questions were then reviewed by two peers before publishing. The full survey is included in appendix 1.

### **3.3.1 Operationalization**

As we in this study wish to describe and explain relationships between variables it is necessary to translate the theoretical terms being used to empirical measurements, this process is called operationalization (Gripsrud et al., 2016, p.129). Operationalization was done accordingly to theory and previous studies based on the same theoretical framework. Two to five variables were included for each theoretical term wished to be measured, by doing this the full aspect of the terms are included and eventual errors of single indicators are avoided. The variables were formulated as statements and as the level of measurement Likert-scale was used. Likert-scale is commonly used in rating questions, asking the respondents to rank how strongly they agree or disagree to statements on a set scale (Saunders et al., 2009, p.378). In

this study respondents were asked to answer to which degree they agreed or disagreed with the given statements on a scale from 1 to 7, 1 indicating strongly disagree and 7 indicating strongly agree.

Indicators measuring modular food-related lifestyle was adopted from Brunsø et al. (2021), they had suggested five variables to measure each of the three core dimension. As the theory is recently published, all 15 variables were included in the survey as a contribution to test the validity of them.

To measure ways of shopping five variables were used. Four of them were adapted from studies of Scholderer, Brunsø, Bredahl & Grunert (2004) and Arenas-Gaitán, Peral-Peral & Reina-Arroyo (2021). While one indicator was made for this study in particular and was based on assumptions made from the findings of the Norwegian Seafood Councils surveys (Norges Sjømatråd, 2018a, 2018b).

Two theoretical terms from TPB were measured, intention and PBC. Intention using two variables and PBC using three variables, all adapted from studies by Verbeke & Vackier (2005), and Nystrand & Olsen (2020).

The variables used, the translation to Norwegian and which study each is adopted or adapted from are included in appendix 1.

### **3.4 Reliability and validity**

In order to assess study quality and if it measures what it is intending to, one usually refers to reliability and validity (Gripsrud et al., 2016). Reliability addresses the extent to which a research will result in the same when conducted several times (Gripsrud et al., 2016). Saunder et al. (2009, p.156) present three questions to be asked to assess a research's reliability. "(1) Will the measures yield the same results on other occasions? (2) Will similar observations be reached by other observers? And (3) is there transparency in how sense was made from the raw data?" To ensure reliability when surveys are used for data collection it is important to

describe how the data was collected, this included how operationalization was done, which form of sampling was used and how the data were analysed (Gripsrud et al., 2016). At the same time, some factors might lower the reliability of a research. Robson (2002) have identified four of these. The first is *subject or participant error*. The timing and of when you ask someone to respond to a survey, and the mood of the respondent might influence the answers given. This can be avoided by offering the respondents the possibility to answer the survey at a neutral timing. Second, is *subject or participant bias*. Respondents might be answering what someone is expecting them to answer, or what they believe to be the right answer. To avoid this the researcher can make sure the answers will be given anonymously, and also having in mind that some respondents might not have answered truly. Third, is *observer error*. This normally occurs in surveys conducted orally, where the interviewer does not answer the questions in the same way or even asks different questions. Observer error is relatively easy to avoid by having a high degree of structure in the interview guide. Last, is *observer bias*. It occurs as there is always a risk of the data collector misinterpreting the replies. This is avoided by making sure the data collector and the respondent interpret the questions asked the same way, and by asking follow up questions if one is unsure if the answer is interpreted correctly. (Robson, 2002).

Validity “is about the extent one measures what one wants to measure” (Gripsrud et al., 2016, p.61). It can be divided into two groups, external and internal validity. External validity refers to which degree it is possible to transfer the results to a similar setting, often also referred to as generalizability (Gripsrud et al., 2016). While internal validity indicates if the causal relationship measured is true, or if there might be other factors influencing the relationship (Gripsrud et al., 2016). To ensure validity there are several forms of it one should consider. *Content validity* refers to the extent to which the method of measurement covers the full content of the theoretical term investigated. Basing the operationalization on previous studies is commonly used to ensure content validity. *Construct validity* regards the extent to which the measurement measures the presence of the constructs intended to measure, if indicator measuring the same are correlating (convergent validity) and if indicators not meant to measure the same have a low degree of correlation (discriminant validity) (Saunders et al., 2009; Gripsrud et al., 2016). Making sure the terms measured are operationalized appropriately will contribute to a high level of construct validity (Gripsrud et al., 2016). *Face validity* refers to the degree to which it is agreed that the method used is the logical one to use

(Gripsrud et al., 2016). Basing the method on previous studies and questioning scholars within the field about their understanding of the ways of measurement will ensure face validity (Gripsrud et al., 2016). *Statistical validity* tells if the conclusions made can be proven statistically (Gripsrud et al., 2016). To achieve statistical validity the key is to analyse the data using the correct statistical methods (Gripsrud et al., 2016).

### **3.4.1 Reliability and validity in this study**

In terms of this study, there are factors contributing to a high level of reliability and validity at the same time as some factors have a negative impact. The research is highly transparent, giving a clear picture of how and why the research was conducted, the author has also paid attention to the factors that might lower reliability as presented by Robson (2002). The survey was distributed online making it possible for respondents to answer it whenever convenient for them, the answers were given anonymously, and all respondents answered the same survey. These facts contributing to higher reliability. On the other side, non-probability sampling being used as sampling method influences reliability negatively.

When considering the validity of the study the design of the survey should be mentioned as it contributes positively. The indicators used for empirical measurements were adapted and adopted from previous studies, peers have reviewed the survey and the statistical data analysing is based on theory. As one of the theories used (MFRL) is newly published and the indicators have not been validated in more than one study, one cannot be 100% sure of the validity of the indicators measuring MFRL. Brunsø et al. (2021) have also stated that they are working on add-on modules to MFRL, they were however not yet published when working on the conceptual framework of this thesis. Therefore, the add-on module used to understand the role of shopping behaviour is based on ways of shopping from the original FRL model and is not been validated in accordance to MFRL. Also, there should be placed a question mark in the way behaviour is measured and how it impacts the validity of this study.

## **3.5 Data analysis**

In this section, the methods used for data analysing will be presented, as well as errors to be aware of in statistical data analysing. The data was analysed in several steps, using Microsoft Excel, mainly for data cleaning and descriptive analysis, and IBM SPSS Statistics (SPSS) for the inferential analysis.

As the questions used in the survey are relatively long, making it challenging to easily differentiate them in software and creating tables with, they have been given shortenings. The shortenings and the question they represent are all listed up in appendix 1.

### **3.5.1 Statistical analysis errors**

In statistical analysis we test if something has an effect on the population we are studying, meaning there are two possible outcomes. What we are testing have an effect on the studied population, or it does not have an effect on the studied population (Field, 2013). While doing so, there are two types of errors that might occur type I and type II errors. Type I error occurs when a true null hypothesis ( $H_0$ ) is rejected, while type II error occurs when a false  $H_0$  is accepted (Field, 2013; Gripsrud et al., 2016).

Within marketing, the relative importance of these errors is low compared to other fields of study such as medicine, as the consequences of accepting a false  $H_0$  or rejecting a true  $H_0$  can be said to be unimportant in the large context (Gripsrud et al., 2016). As of this, it is chosen to do the statistical analysis to a significance level of  $\alpha=0,05$ . Interpreting results with a  $\alpha$  level of 0,05 or lower as significant.

### **3.5.2 Descriptive statistics**

Descriptive statistics were used for several reasons in this study. The population was examined to determine if the sample was representable counting the frequency of gender and area of residence. It was also used to calculate the means and standard deviations (st.dev.) of ways of shopping when looking into how the different segments did their grocery shopping. Boxplots were also used to visualize the difference in ways of shopping between the segments.

### 3.5.3 Factor analysis

Factor analysis is a statistical method suitable to analyse and understand the structure of a set of variables (Gripsrud et al., 2016). In factor analysis, the aim is to explain the maximum amount of common variance in a correlation matrix by using explanatory constructs. For the different variables to be significant Field recommend the factor loadings to be greater than 0,4 (2013). To improve the interpretability of the factor loadings rotation is used, this way the large factor loadings are maximized and the small minimized (Field, 2013). There are two types of rotations, orthogonal and oblique rotation. Oblique rotation is commonly used when correlation between variables is expected and permitted (Field, 2013). While orthogonal rotation is used to spread the variables more greatly to the factors (Field, 2013). The most commonly used orthogonal rotation method is varimax which tries to load few variables with a high factor loading to each factor (Field, 2013; Gripsrud et al., 2016).

In this study factor analysis was included to test the validity of MFRL, the rotation method used is varimax. 15 variables meant to measure the three dimensions of MFRL was analysed to three factors. Cronbach's alpha was used to check how closely related the variables for each factor were. When measuring Cronbach's alpha an acceptable value should be above 0,7, yet not to close to 1 (Gripsrud et al., 2016, p.215). A low value indicates the variables to not be measuring the same factor or component, while a value equal or close to one indicates the variables to be measuring the same aspect of a factor or component (Field, 2013).

### 3.5.4 Principal component analysis

Principal component analysis (PCA) is used when it is needed to combine several variables into one component (Field, 2013). As of this, PCA can be referred to as a data reduction method (Gripsrud et al., 2016). PCA tries to explain the maximum amount of total variance in a correlation matrix by transforming the variables into linear components (Field, 2013, p.667). Also in PCA rotation is used for the same reasons as in factor analysing. The formula used to calculate a component is:

$$\text{Component}_i = b_1 * \text{variable}_1 + b_2 * \text{variable}_2 \dots + b_n * \text{variable}_n$$

PCA was in this study included to create the variables Intention and PBC, which were used as independent variables to be tested on the dependent variable behaviour in a regression analysis. As an initial test run of the analysis showed variables loading highly at several components oblique rotation using direct oblimin was used. Two variables measuring intention and three variables measuring PBC were analysed to two components. Cronbach's alpha was used to check how closely related the variables for each component were. Acceptable Cronbach's alpha values are the same as for factor analysis.

$$\mathbf{Intention} = b_1 * \text{Intention1} + b_2 * \text{Intention2}$$

$$\mathbf{PBC} = b_1 * \text{PBC1} + b_2 * \text{PBC2} + b_3 * \text{PBC3}$$

PCA was also used to calculate the components involvement, innovation and responsibility from MFRL, which were needed to create the MFRL moderator variable for the regression analysis.

$$\mathbf{Involvement} = b_1 * \text{Involvement1} + b_2 * \text{Involvement2} + b_3 * \text{Involvement3} \\ + b_4 * \text{Involvement4} + b_5 * \text{Involvement5}$$

$$\mathbf{Innovation} = b_1 * \text{Innovation1} + b_2 * \text{Innovation2} + b_3 * \text{Innovation3} \\ + b_4 * \text{Innovation 4} + b_5 * \text{Innovation5}$$

$$\mathbf{Responsibility} = b_1 * \text{Responsibility1} + b_2 * \text{Responsibility2} + b_3 * \text{Responsibility3} \\ + b_4 * \text{Responsibility4} + b_5 * \text{Responsibility5}$$

### 3.5.5 K-means clustering

In marketing, clustering is used as a method to gain a better understanding of consumers (Gripsrud et al., 2016). In a cluster analysis, the aim is to identify the most important defining properties, which then are used to categorize consumers into meaningful segments (Gripsrud



et al., 2016). This way it is possible to categorize respondents with similar answers to the same segments. Cluster analyses can be done in a hierarchical and non-hierarchical manner. In hierarchical clustering, one divides the data into groups until one is left with clusters that are significantly different from each other (Gripsrud et al., 2016). While in non-hierarchical clustering the researcher decides on the number of clusters wanted to be obtained and the data is split into the sat number of clusters (Gripsrud et al., 2016). K-means clustering is an often-used method of non-hierarchical cluster analysis using means to find groupings, the K represents the number of clusters wished to be obtained. If the analysis does not result in meaningful groupings, the K should be changed before the analysis is run again (Gripsrud et al., 2016).

K-means clustering was included in this study to recreate the segments of MFRL, clustering the respondents based on the components of MFRL. The mean for each factor of MFRL was calculated and used as a base to run the analysis, as the data was already standardized to values between 1-7 it was chosen not to scale it. The K value was set to 5 based on the original five segments of MFRL, the groupings were then checked with the MFRL segments. The initial run with K=5 gave a good result and made it possible to identify the segments defined in MFRL. When doing a K-means cluster analysis in SPSS one can choose to simultaneously run an ANOVA to test if the components had a significant impact in the creation of the clusters, which they all had. Still, it was chosen to try with K values at 4 and 3 to check if it gave an even better result, without any effect.

### **3.5.6 Regression analysis**

Understanding the relationship between variables and how they interfere is a valuable skill in marketing. A commonly used method for this is regression analysis (Gripsrud et al., 2016). In regression analysis, one uses one or several independent variables to predict the dependent variable and causation between the variables (Field, 2013; Gripsrud et al., 2016). In this study the aim was to check two independent variables on a dependent variable, making multiple regression suitable.

In the first run intention and PBC were used as independent variables on the dependent variable behaviour, but PBC showed not to be significant. As of this, and the results of the PCA of Intention and PBC it was decided to leave out PBC from the rest of the regression analysis. Therefore, linear regression was used to investigate the relationship between the independent variable intention and dependent variable behaviour. This was done independently for all MFRL segments, and also including MFRL as a moderator to the relationship between intention and behaviour to see if it had any impact on it. Durbin-Watson test was included to test for autocorrelation in the residuals. The test gives a value between 1-4 where 2 equals no autocorrelation, a high value indicating a negative correlation and a low value a positive correlation between residuals (Field, 2013). Some say a value between 1,5-2,5 is acceptable, however, Field (2013) argue for values between 1-3 to be non-problematic.

## 4 Results

In this chapter, the results from the data analysis will be presented before the key findings are summarized.

### 4.1 Data cleansing

Before initiating the data analysis the data should be looked through, missing values should be dealt with and variables should be prepared for analysing, this process is called data cleansing (Gripsrud et al., 2016).

The online survey had resulted in a total of 292 responses, after removing responses not belonging to the target population (not being within the target age-group, living with parents and having children) the number of responses (N) was 227. As the respondents were forced to answer all questions before moving on, and all had completed the full survey there were no missing values.

In the survey two questions of past behaviour were used to measure behaviour, these were combined into a new variable behaviour which was used as the dependent variable in the regression analysis. To make a standardized value for the two questions the answers were ranked on a scale from 1-5 as illustrated in table 1.

Table 1 Standardized values for behaviour

<b>How many times did you eat seafood for dinner the previous seven days?</b>		<b>How many times did you eat seafood for dinner the previous month?</b>	
<i>Original</i>	<i>Ranked value</i>	<i>Original</i>	<i>Ranked value</i>
Never	1	Never	1
1	2	1-4	2
2	3	5-8	3
3	4	9-12	4
More than 3 times	5	More than 12 times	5

Then the mean ranked value of how many times the respondent has had seafood for dinner the previous week and month was calculated and used as the variable behaviour.

$$\mathbf{Behaviour} = (\text{Ranked seafood consumption week} + \text{Ranked seafood consumption month}) / 2$$

For k-means clustering variables for each dimension of MFRL were needed. The mean for the variables measuring each dimension was calculated to represent the dimension.

$$\mathbf{Involvement} = (\text{Involvement1} + \text{Involvement2} + \text{Involvement3} \\ + \text{Involvement4} + \text{Involvement5}) / 5$$

$$\mathbf{Innovation} = (\text{Innovation1} + \text{Innovation2} + \text{Innovation3} + \text{Innovation4} \\ + \text{Innovation5}) / 5$$

$$\mathbf{Responsibility} = (\text{Responsibility1} + \text{Responsibility2} + \text{Responsibility3} \\ + \text{Responsibility4} + \text{Responsibility5}) / 5$$

## 4.2 Descriptive statistics

Table 2 illustrates the frequency and percentage of gender and area of residence. It shows a relatively low number of male responses (24%) in comparison to female responses (75%). All areas of Norway are covered, yet, there are relatively few responses from Midt-Norge (10) and Østlandet (27).

Table 2 Descriptive statistics

<b>Gender</b>	<i>Frequency</i>	<i>Percent</i>
Female	170	75 %
Male	55	24 %
Other	1	0,4 %
Do not wish to answer	1	0,4 %
<i>SUM</i>	227	100,0 %
<b>Area of residence</b>		
Østlandet	27	12 %
Vestlandet	73	32 %
Sør-Norge	59	26 %
Midt-Norge	10	4 %
Nord-Norge	58	26 %
<i>SUM</i>	227	100 %

## 4.3 Factor analysis: MFRL

Table 3 represents the factor analysis of MFRL.

Factor 1 involvement, shows all factor loadings within the acceptable level of 0,4, loading highest on involvement2 and involvement4. Cronbach's alpha is 0,872. Meaning all variables are suitable to describe involvement.

Table 3 Factor analysis MFRL

<b>Rotated factor loadings</b>			
	<b>Involvement</b>	<b>Innovation</b>	<b>Responsibility</b>
<b>Involvement 1</b>	0,654		
<b>Involvement 2</b>	0,826		
<b>Involvement 3</b>	0,598		
<b>Involvement 4</b>	0,874		
<b>Involvement 5</b>	0,496		
<b>Innovation 1</b>		0,615	
<b>Innovation 2</b>		0,849	
<b>Innovation 3</b>		0,835	
<b>Innovation 4</b>		0,810	
<b>Innovation 5</b>		0,764	
<b>Responsibility 1</b>			0,899
<b>Responsibility 2</b>			0,836
<b>Responsibility 3</b>			0,802
<b>Responsibility 4</b>			0,915
<b>Responsibility 5</b>			0,649
Cronbach's alpha	0,827	0,905	0,913
Explained variance (%)	11,781	23,276	34,679
<i>Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization</i>			

Factor 2 innovation, show all factor loadings within the acceptable level of 0,4, loading all variables above 0,6. Cronbach's alpha is 0,905. Meaning all variables are suitable to describe innovation

Factor 3 responsibility, show all factor loadings within the acceptable level of 0,4, loading all variables above 0,6. Cronbach's alpha is 0,913. Meaning all variables are suitable to describe responsibility.

### 4.3.1 Principal component analysis: MFRL

The steps to obtain factor loadings and component loadings in SPSS are similar, therefore to create the components for MFRL the loadings from the factor analysis were used.

$$\text{Involvement} = 0,654 * \text{Involvement1} + 0,826 * \text{Involvement2} + 0,598 * \text{Involvement3} + 0,874 * \text{Involvement4} + 0,496 * \text{Involvement5}$$

$$\text{Innovation} = 0,615 * \text{Innovation1} + 0,849 * \text{Innovation2} + 0,835 * \text{Innovation3} + 0,81 * \text{Innovation4} + 0,764 * \text{Innovation5}$$

$$\text{Responsibility} = 0,899 * \text{Responsibility1} + 0,836 * \text{Responsibility2} + 0,802 * \text{Responsibility3} + 0,915 * \text{Responsibility4} + 0,649 * \text{Responsibility5}$$

### 4.4 Principal component analysis: Intention and PBC.

Table 4 and 5 represent the PCA of intention and PBC.

Table 4 PCA intention and PBC, 1st run

Rotated component loadings 1 <sup>st</sup> run		
	Intention	PBC
Intention 1	0,931	
Intention 2	0,950	
PBC 1	0,940	
PBC 2	0,706	0,599
PBC 3		0,961
<i>Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization</i>		

As shown in table 4, the first run of PCA did not load the variables to the intended component. Especially PBC1 and PBC2 were problematic. It was therefore decided to drop them and do a second run.

Table 5 PCA intention and PBC, 2nd run

<b>Rotated component loadings 2<sup>nd</sup> run</b>		
	<b>Intention</b>	<b>PBC</b>
<b>Intention 1</b>	0,973	
<b>Intention 2</b>	0,966	
<b>PBC 3</b>		1
Cronbach's alpha	0,937	-
Explained variance (%)	66,1%	29,9%
<i>Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization</i>		

As illustrated in table 5 leaving out PBC 1 and PBC 2 resulted in an interpretable result that is suitable to calculate the components two components intention and PBC.

$$\mathbf{Intention} = 0,973 * \text{Intention1} + 0,966 * \text{Intention2}$$

$$\mathbf{PBC} = 1 * \text{PBC3}$$



## 4.5 Cluster analysis

The cluster analysis resulted in 5 clusters, all were identifiable with the segments from MFRL. All variables have been significant in the creation of the clusters (ANOVA significance level  $<,001$ ). The clusters, which segment they represent and the mean values for each dimension of MFRL are illustrated in table 6.

Table 6 Cluster analysis MFRL

Cluster	N	Segment	Involvement		Innovation		Responsibility	
			Mean	St.dev.	Mean	St.dev.	Mean	St.dev.
Cluster 1	33	Conservative	4,82	1,08	2,03	0,88	5,18	0,84
Cluster 2	42	Uninvolved	4,99	1,06	3,06	0,8	2,27	0,81
Cluster 3	60	Adventurous	5,86	0,84	5,67	0,67	5,73	0,6
Cluster 4	56	Moderate	5,74	0,73	4,45	0,62	4,2	0,56
Cluster 5	36	Foodies	6,31	0,67	6,13	0,6	2,98	0,9
ANOVA significance level			$<,001$		$<,001$		$<,001$	

## 4.6 Regression analysis

As mentioned in the previous chapter 3 Methodology, an initial check of the multiple regression analysis showed PBC not to be significant resulting in PBC being left out from further analyses, this is illustrated in table 7.

Table 7 Initial regression analysis

		Standardized beta	T-value	Significance
<b>Constant</b>	0,694		3,597	$<,001$
<b>Intention</b>		,659	13,201	$<,001$
<b>PBC</b>		,094	1,883	0,61
$R^2=,472$ . adj. $R^2=,467$				
F-value 99,977 sign. $<,001$				
Durbin-Watson test = 1,659				
Dependent variable: Behaviour				
Independent variable: Intention and PBC				

### 4.6.1 Regression analysis cluster 1 Conservative

Table 8 Regression analysis cluster 1 Conservative

	Standardized Beta	T-value	Significance
<b>Behaviour regressed cluster 1 Conservative</b>			
<b>Intention</b>	0,84	8,629	<,001
R <sup>2</sup> =,706 Adj. R <sup>2</sup> =,697		Dependent variable: Behaviour	
F=74,468, Sign. of F = <,001		Independent variable: Intention	
Durbin-Watson test =1,784			
<b>Behaviour regressed cluster 1 Conservative with moderator effect</b>			
<b>Intention</b>	1,535	1,995	,056
<b>MFRL</b>	-,002	-,016	,987
<b>Intention * MFRL</b>	-,708	-,900	,376
R <sup>2</sup> =,726 Adj. R <sup>2</sup> =,698		Dependent variable: Behaviour	
F=25.654, Sign. of F = <,001		Independent variable: Intention, MFRL and Intention*MFRL	

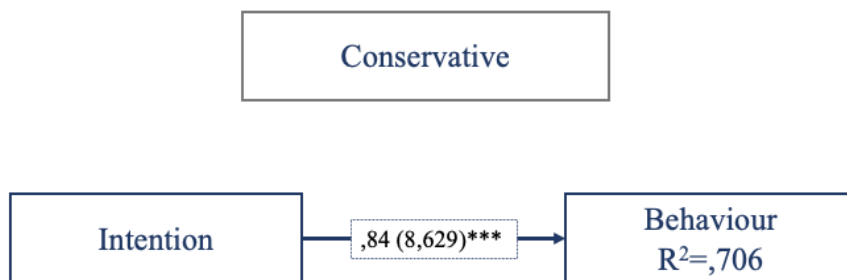


Figure 5 Relationship between variables, cluster 1

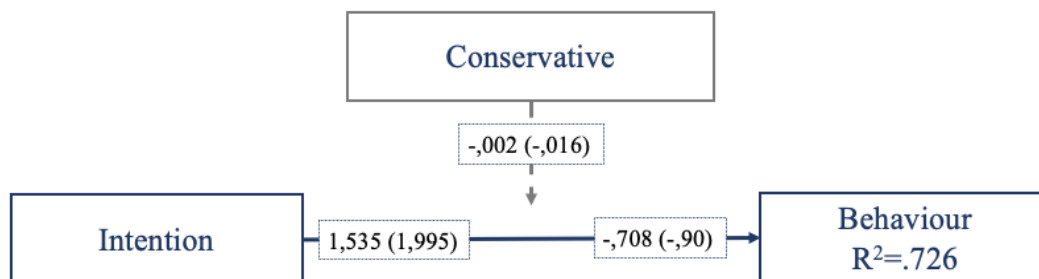


Figure 6 Relationship between variables moderator effect included, cluster 1

\*  $p < ,10$ . \*\*  $p < ,05$ . \*\*\*  $p < ,01$ .

Before the moderator is added the regression analysis for cluster 1 conservative is significant ( $<,001$ ), so is the independent variable intention ( $<,001$ ), the Durbin-Watson test is also within an acceptable level (1,784).  $R^2$  shows us that intention can be used to explain 71% of behaviour for this segment (table 8; figure 5).

After adding MFRL as moderator the regression analysis is still significant ( $<,001$ ) but none of the variables are.  $R^2$  shows that with the moderator effect added 73% of behaviour can be explained by intention, which is a relatively small increase from the first regression run (71% to 73%). MFRL have a negative impact on the relationship between intention and behaviour (table 8; figure 6).

#### 4.6.2 Regression analysis cluster 2 Uninvolved

Table 9 Regression analysis cluster 2 Uninvolved

	<i>Standardized Beta</i>	<i>T-value</i>	<i>Significance</i>
<b>Behaviour regressed cluster 2 Uninvolved</b>			
<b>Intention</b>	,556	4,231	$<,001$
$R^2=,309$ Adj. $R^2=,292$ $F=17,902$ , Sign. of $F = <,001$ Durbin-Watson test =2,329		Dependent variable: Behaviour Independent variable: Intention	
<b>Behaviour regressed cluster 2 Uninvolved with moderator effect</b>			
<b>Intention</b>	,310	,330	,743
<b>MFRL</b>	,131	,588	,560
<b>Intention*MFRL</b>	,232	,236	,815
$R^2=,339$ Adj. $R^2=,287$ $F=6,510$ , Sign. of $F = ,001$		Dependent variable: Behaviour Independent variable: Intention, MFRL and Intention*MFRL	

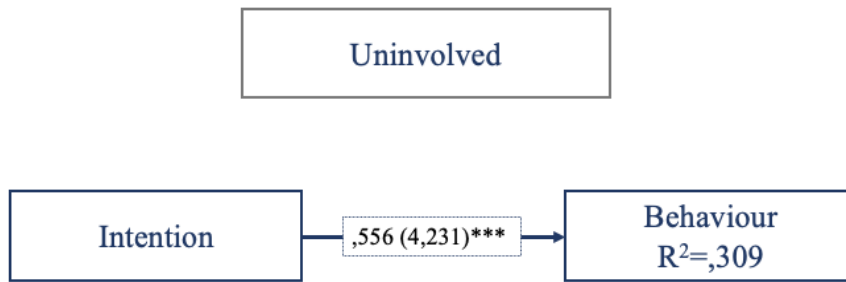


Figure 7 Relationship between variables, cluster 2

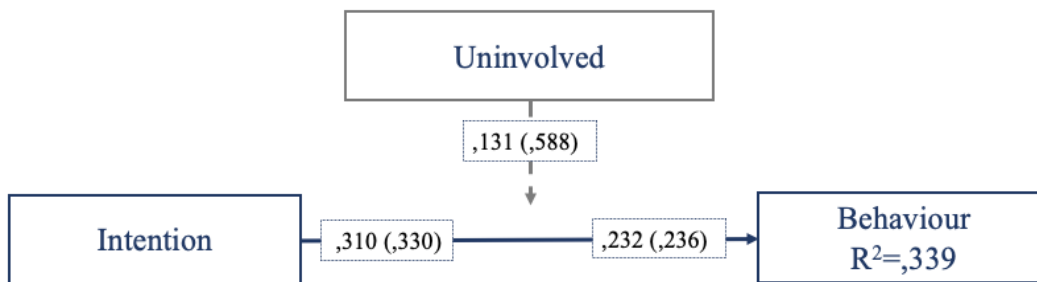


Figure 8 Relationship between variables moderator effect included, cluster 2

\*  $p < ,10$ . \*\*  $p < ,05$ . \*\*\*  $p < ,01$ .

Before the moderator is added the regression analysis for cluster 2 uninvolved is significant ( $<,001$ ), so is the independent variable intention ( $<,001$ ), the Durbin-Watson test is also within an acceptable level (2,329).  $R^2$  shows us that intention can be used to explain 31% of behaviour for this segment (table 9; figure 7).

After adding MFRL as moderator the regression analysis is still significant ( $,001$ ) but none of the variables are.  $R^2$  shows that with the moderator effect added 34% of behaviour can be explained by intention, which is a relatively small increase from the first regression run (31% to 34%). MFRL have a positive impact on the relationship between intention and behaviour (table 9; figure 8).

### 4.6.3 Regression analysis cluster 3 Adventurous

Table 10 Regression analysis cluster 3 Adventurous

	Standardized Beta	T-value	Significance
<b>Behaviour regressed cluster 3 Adventurous</b>			
<b>Intention</b>	,748	8,579	<,001
R <sup>2</sup> =,559 Adj. R <sup>2</sup> =,552		Dependent variable: Behaviour	
F=73,603, Sign. of F = <,001		Independent variable: Intention	
Durbin-Watson test =1,329			
<b>Behaviour regressed cluster 3 Adventurous with moderator effect</b>			
<b>Intention</b>	-,168	-,107	,915
<b>MFRL</b>	-,166	-,609	,545
<b>Intention*MFRL</b>	,957	,586	,560
R <sup>2</sup> =,562 Adj. R <sup>2</sup> =,539		Dependent variable: Behaviour	
F=23,970, Sign. of F = ,001		Independent variable: Intention, MFRL and Intention*MFRL	

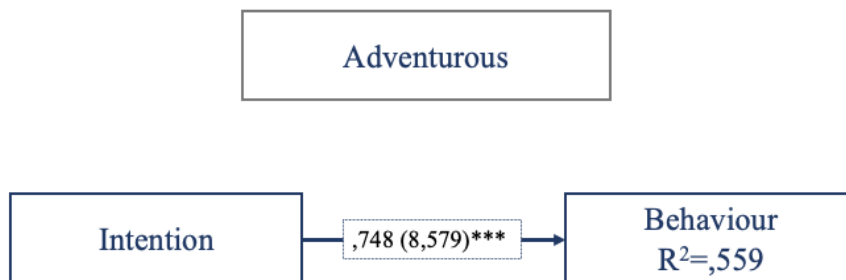


Figure 9 Relationship between variables, cluster 3

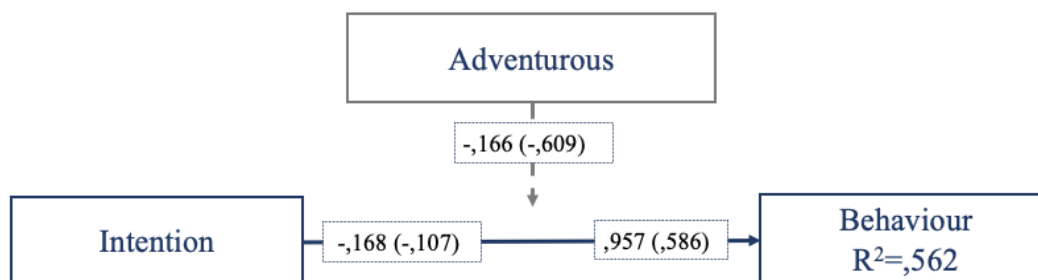


Figure 10 Relationship between variables moderator effect included, cluster 3

\*  $p < ,10$ . \*\*  $p < ,05$ . \*\*\*  $p < ,01$ .

Before the moderator is added the regression analysis for cluster 3 adventurous is significant ( $<,001$ ), so is the independent variable intention ( $<,001$ ), the Durbin-Watson test is also within an acceptable level (1,329).  $R^2$  shows us that intention can be used to explain 56% of behaviour for this segment (table 10; figure 9).

After adding MFRL as moderator the regression analysis is still significant ( $,001$ ) but none of the variables are.  $R^2$  shows that with the moderator effect added 57% of behaviour can be explained by intention, which is a relatively small increase from the first regression run (56% to 57%). MFRL have a negative impact on the relationship between intention and behaviour (table 10; figure 10).

#### 4.6.4 Regression analysis cluster 4 Moderate

Table 11 Regression analysis cluster 4 Moderate

	<i>Standardized Beta</i>	<i>T-value</i>	<i>Significance</i>
<b>Behaviour regressed cluster 4 Moderate</b>			
<b>Intention</b>	,62	5,811	$<,001$
$R^2=,385$ Adj. $R^2=,373$		Dependent variable: Behaviour	
F=33,767, Sign. of F = $<,001$		Independent variable: Intention	
Durbin-Watson test =1,408			
<b>Behaviour regressed cluster 4 Moderate with moderator effect</b>			
<b>Intention</b>	2,525	1,403	,166
<b>MFRL</b>	,336	,795	,430
<b>Intention*MFRL</b>	-2,021	-1,050	,299
$R^2=,406$ Adj. $R^2=,371$		Dependent variable: Behaviour	
F=11,828, Sign. of F = $,001$		Independent variable: Intention, MFRL and Intention*MFRL	

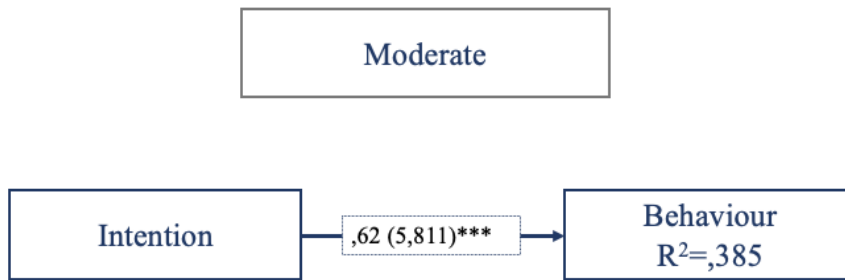


Figure 11 Relationship between variables, cluster 4

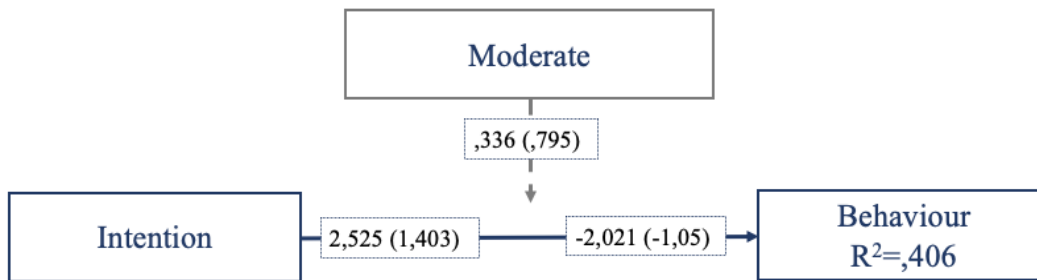


Figure 12 Relationship between variables moderator effect included, cluster 4

\*  $p < ,10$ . \*\*  $p < ,05$ . \*\*\*  $p < ,01$ .

Before the moderator is added the regression analysis for cluster 4 moderate is significant ( $<,001$ ), so is the independent variable intention ( $<,001$ ), the Durbin-Watson test is also within an acceptable level (1,408).  $R^2$  shows us that intention can be used to explain 39% of behaviour for this segment (table 11; figure 11).

After adding MFRL as moderator the regression analysis is still significant ( $,001$ ) but none of the variables are.  $R^2$  shows that with the moderator effect added 41% of behaviour can be explained by intention, which is a relatively small increase from the first regression run (39% to 41%). MFRL have a negative impact on the relationship between intention and behaviour (table 11; figure 12).

### 4.6.5 Regression analysis cluster 5 Foodies

Table 12 Regression analysis cluster 5 Foodies

	Standardized Beta	T-value	Significance
<b>Behaviour regressed cluster 5 Foodies</b>			
<b>Intention</b>	,574	4,085	<,001
R <sup>2</sup> = ,329 Adj. R <sup>2</sup> = ,310		Dependent variable: Behaviour	
F = 16,689, Sign. of F = <,001		Independent variable: Intention	
Durbin-Watson test = 1,567			
<b>Behaviour regressed cluster 5 Foodies with moderator effect</b>			
<b>Intention</b>	1,461	,932	,358
<b>MFRL</b>	,090	,237	,814
<b>Intention*MFRL</b>	-,935	-,550	,586
R <sup>2</sup> = ,345 Adj. R <sup>2</sup> = ,284		Dependent variable: Behaviour	
F = 5,621, Sign. of F = ,003		Independent variable: Intention, MFRL and Intention*MFRL	

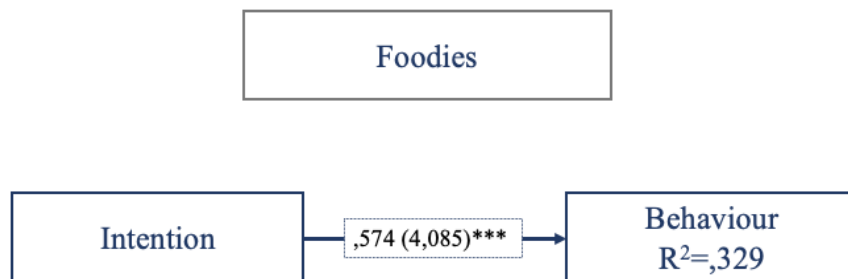


Figure 13 Relationship between variables, cluster 5

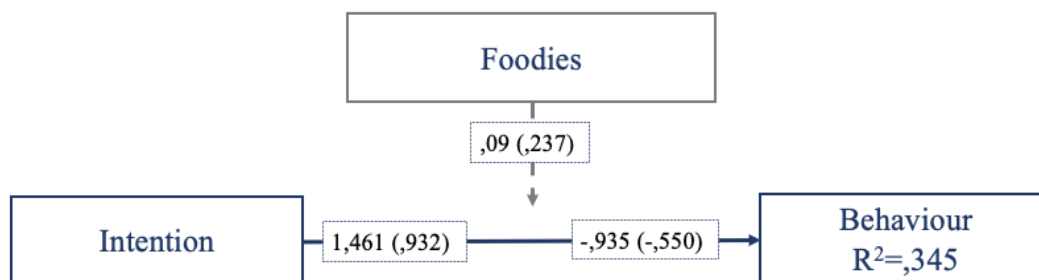


Figure 14 Relationship between variables moderator effect included, cluster 5

\*  $p < ,10$ . \*\*  $p < ,05$ . \*\*\*  $p < ,01$ .



Before the moderator is added the regression analysis for cluster 5 foodies is significant ( $<,001$ ), so is the independent variable intention ( $<,001$ ), the Durbin-Watson test is also within an acceptable level (1,567).  $R^2$  shows us that intention can be used to explain 33% of behaviour for this segment (table 12; figure 13).

After adding MFRL as moderator the regression analysis is still significant ( $,003$ ) but none of the variables are.  $R^2$  shows that with the moderator effect added 35% of behaviour can be explained by intention, which is a relatively small increase from the first regression run (33% to 35%). MFRL have a negative impact on the relationship between intention and behaviour (table 12; figure 14).

## 4.7 Ways of shopping

Table 13 Descriptive statistics for ways of shopping in relation to segments

Segment	WOS 1		WOS 2		WOS 3		WOS 4		WOS 5	
	Mean	St.dev.	Mean	St.dev.	Mean	St.dev.	Mean	St.dev.	Mean	St.dev.
Conservative	5,36	1,90	2,91	2,00	3,67	1,84	3,24	1,64	3,39	2,16
Uninvolved	4,55	1,94	3,38	1,87	4,60	1,79	4,05	1,50	2,67	1,74
Adventurous	5,15	1,96	3,10	1,74	4,40	1,59	3,98	1,73	4,15	1,75
Moderate	5,50	1,62	2,50	1,71	4,38	1,57	3,82	1,67	2,57	1,65
Foodies	4,56	2,28	2,89	1,97	4,17	1,82	3,83	1,91	3,56	2,25

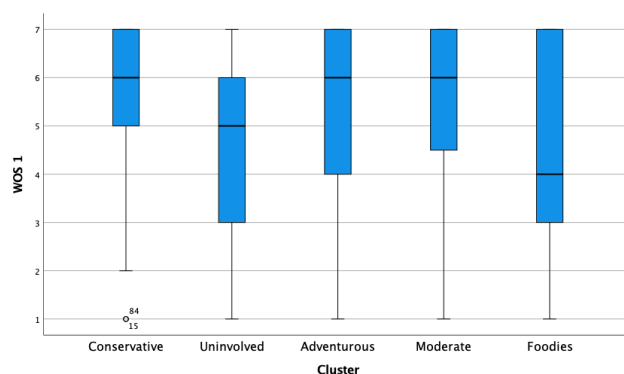


Figure 15 Boxplot WOS 1 - cluster

Having a list of what you need to buy is about equally important to conservative, adventurous and moderate consumers. The uninvolved and foodies do place some importance on making shopping lists, still it is not as important to them as for the three other segments (table 13; figure 15).

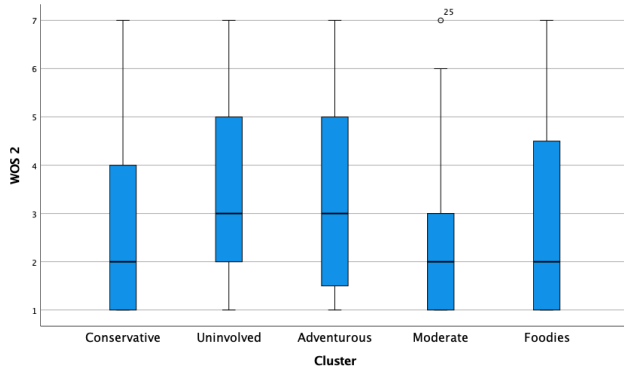


Figure 16 Boxplot WOS 2 - cluster

Ending up buying more than you had planned for is not that common for the segments, a little more for uninvolved and adventurous consumers than for the others (table 13; figure 16).

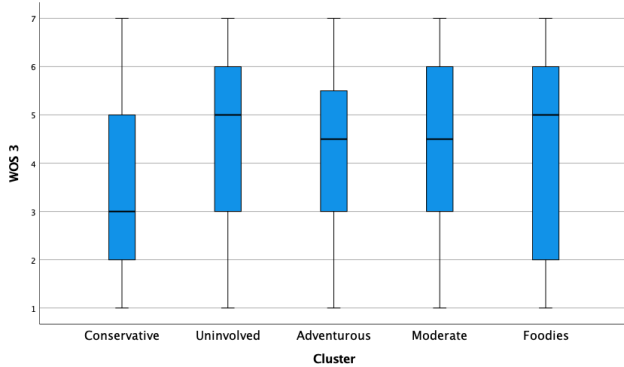


Figure 17 Boxplot WOS 3 - cluster

Buying other things than one had planned for, on the other hand, is more common among all segments. Compared to the other segments, a little less common among the conservative consumers (table 13; figure 17).

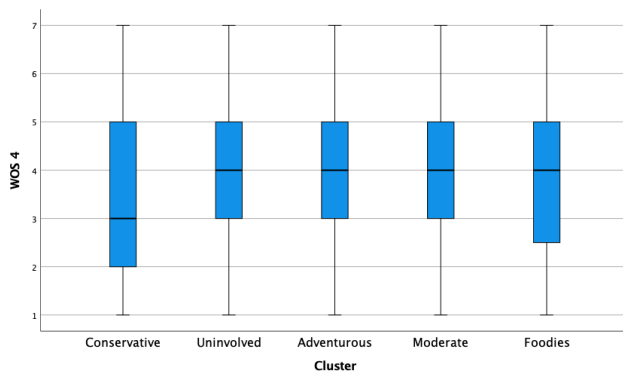


Figure 18 Boxplot WOS 4 - cluster

Most consumers are neutral to comparing product information when deciding which brand to buy, the exception is the conservatives who place less importance on this than the rest (table 13; figure 18).

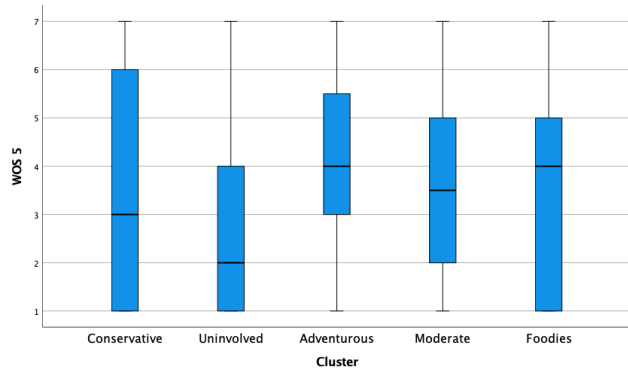


Figure 19 Boxplot WOS 5 - cluster

Consumers normally decide what to buy before going to the store, yet this is where the difference between the segments is most visible. The adventurous consumers tend to be slightly more adventurous, more often not deciding what to buy before being in the store than the rest. The standard deviation is slightly higher here than on the other variables measuring ways of shopping,

showing that the variation within the segments is also quite large (table 13; figure 19).

## 4.8 Key findings summarized

To sum up the results of the data analysis, comments will be made on the factor analysis used to validate MFRL, the cluster analysis, regression analysis and the descriptive statistics of ways of shopping.

The factor analysis of MFRL was able to validate the variables from Brunso et al. MFRL theory (2021), indicating the variables used as appropriate to measure the different components of MFRL. Cluster analysis gave five significant clusters, which did match the segment profiles from Brunso et al. (2021).

The regression analysis with moderator effect included showed that the regressions themselves are significant, however, the interaction from the moderator is not. Hence, MFRL does not act as a moderator to the relationship between intention for seafood consumption and behaviour. The regression analysis without the moderator effect added gave significant interpretable results. Both the regression and the independent variable were significant in all segments. Showing there to be some difference between the segments when it came to the degree to which intention for seafood consumption influenced behaviour. Intention explains behaviour the most for conservative (71%) and adventurous consumers (56%), and the least for uninvolved consumers (31%). For moderates, intention can explain 39% of behaviour and 33% for foodies. For all segments intention influence behaviour positively.

Last, the descriptive statistics of Ways of shopping show relatively small differences between the segments when it comes to how they do their grocery shopping.

## 5 Discussion and conclusion

In this chapter, the results from the data analysis will be discussed in accordance with the research questions, the theoretical framework and previous studies.

### 5.1 The relationship between intention and behaviour

The regression analyses showed MFRL to not act as a moderator to the relationship between intention for seafood consumption and behaviour. Nevertheless, the results also showed that the relationship differs between the segments. As to ways of shopping, the variation between the segments was low, yet, one could see some differences.

The consumers with the smallest gap between intention for seafood consumption and behaviour belong to the conservative segment, intention explaining 71% of behaviour. Similar to uninvolved consumer this could be explained by the way this segment shop for food, although, of opposite reasons. Conservative consumers use shopping lists more frequently than the other segments, and they tend to buy what they had planned. In chapter 2, theoretical framework, we stated that intention was a consumers' motivation, ambition and plan, to perform a behaviour. Conservative consumers making a plan on what to buy in the grocery store and maybe more important sticking to the plan while shopping can therefore be the explanation to why this segment has the smallest gap between intention and behaviour. This does align with Gollwitzer's study on implementation intention (1999).

Unsurprisingly the degree to which intention for seafood consumption explained behaviour was lowest for the uninvolved consumers, intention only explaining 31% of behaviour. Uninvolved consumers place low importance on food in general (Brunso et al., 2021), and this can be seen in the way uninvolved consumers shop for food. They do not make shopping lists as often as the other segments, and they also tend to buy other things than planned. The combination of this can be used as a possible explanation for the large gap between intention and consumption. These consumers place great importance on safety and stability (Brunso et al., 2021), which can indicate habit to be at least of some importance to them which again could make it hard to influence these consumers to eat more seafood than they already do. On

the other side, they tend to place importance on following social norms (Brunso et al. 2021). With the degree to which Norwegian health authorities place on the importance of seafood consumption, and previous studies mentioning social pressure as a motivation factor for seafood consumption (Olsen 2004; Verbeke & Vackier, 2005; Thorsdottir et al., 2012) in mind it is strange that these consumers do not carry out their intention more frequently, yet this could boil down to who these consumers identify themselves with, in regards to social norms.

For foodies, who also have a relatively large gap between intention and behaviour (33%), their low self-discipline (Brunso et al., 2021) could be used as an explanation. Making them unlikely to carry out what they intend to. The same goes for adventurous consumers, even though they have a slightly higher percentage of behaviour being explained from intention (56%). The fact that adventurous consumers have a higher likelihood to carry out their intention for seafood consumption to behaviour might be explained by ways of shopping, where we can see that adventurous consumers are more likely to make a shopping list than foodies. Again something that can be associated with Gollwitzer study (1999).

Overall, we have detected that lifestyle does have a role in the relationship between seafood consumption and behaviour, this is proven by the degree to which intention can be used to explain behaviour for the various segments. We have also seen that even if the differences between segments is low, it does make sense to use ways of shopping to explain the degree to which intention explains the behaviour. This is shown for example by the segments with the smallest gap between intention and behaviour using shopping lists more frequently than the others. Making a list of what to buy can be interpreted as a way to implement an intention, which does match with theory saying that consumers who have a clear implementation intention are more likely to carry out a behaviour (Gollwitzer, 1999).

Previous studies have stated social pressure to be a motive for seafood consumption (Olsen 2004; Verbeke & Vackier, 2005; Thorsdottir et al., 2012). In this study, the role of social pressure or social norms has not been measured and tested statistically, still, based on the segment profiling from Brunso et al. (2021) some knowledge of the consumers' values in

regards to following social norms is obtained. And it has not been possible to see any connection between the importance of following social norms and the degree to which there is a gap between intention and behaviour. On the other side, this study has not analysed the consumption frequency between segments and the level to which intention can explain behaviour does not say anything about it, therefore we cannot make any direct comment on whether following social norms and feeling social pressure influences the frequency of seafood consumption, only that it does not seem to play a role in the relationship between intention and behaviour for the various segments.

## **5.2 MFRL and Covid-19**

The factor analysis of MFRL was included to validate the measurements of MFRL, with no intention of discussing the results if shown significant. Nevertheless, as this study has shown, one does not always act as intended. The results of the factor analysis and the factor loadings compared to the factor loadings from Brunsø et al. (2021) showed some interesting tendencies in light of the ongoing pandemic, Covid-19. A virus causing respiratory infections, ranging from light colds to serious illness and in some cases death, and is transmitted mainly through close contact (FHI, 2021a). The data for this study was gathered in March 2021, about one year after the Norwegian outbreak of Covid-19. While Brunsø et al. did their data gathering between 2017 and 2019, before the virus spread. Making it natural to look at the pandemic as a reason for the difference in factor loadings.

What we can see is that for variables measuring innovation all except one loaded higher than reported by Brunsø et al. (2021). This increase in innovativeness among consumers can be explained by Covid-19, as we have seen a change in habits since the outbreak in early 2020. It is for example reported that consumers spend more time in the kitchen, making homemade meals from scratch (Aale Hægermark, 2020; Stranden, 2021). Consumers also claim to have improved their cooking skills and become more innovative in the kitchen since the start of the pandemic (Stranden, 2021).

In regards to the variables measuring involvement most were relatively similar to the results from Brunsø et al. (2021), still one variable is worth mentioning. Involvement 5 “Eating and

food is an important part of my social life” has a factor loading of 0,496 in this study, while in the study by Brunsø et al. the factor loading is 0,810 for the same variable (2021). As social distancing has been one of the main actions of preventing Covid-19 from spreading (FHI, 2021b), one could assume this variable to be influenced by it. As consumers have been advised against socialising, it is easy to assume they do not put much importance on factors measuring social life.

When looking at responsibility all variables have a higher factor loading than in Brunsø et al. (2021). This can be due to the pandemic has made consumers more aware of sustainability and the origin of food (Stranden, 2021). Yet, it is relevant to mention the difference in the age of the target population in this study and Brunsø et al. (2021). While this study has focused on young adults between the age of 18 and 34, the respondents in Brunsø et al. came from all age groups from 18 years and up (2021). Sustainability is more important for younger generations. This is for example shown in the sort of investments they make. A report by KPMG from 2019 shows that millennials (born between 1981 and 1996) are more interested in making sustainable investments than older generations (KPMG, 2019). The higher interest for sustainability could be translated into ranking responsibility as more important than older age groups do, explaining the difference in factor loadings in this study and Brunsø et al. (2021)

### **5.3 Conclusion to the research questions**

The aim of this study was by the usage of theory of planned behaviour and modular food-related lifestyle to investigate the role of lifestyle in the relationship between intention and behaviour in regards to seafood consumption among young Norwegian adults.

To answer the research questions; (1) there is a difference in the relationship between intention for seafood consumption and behaviour among the various segments of MFRL. (2) MFRL does not act as a moderator to the relationship between intention for seafood consumption and behaviour. And last (3) there are relatively low differences between the segments of MFRL when it comes to the way they do their grocery shopping, the small



difference there is, shows that consumers who plan their shopping have a smaller gap between intention and behaviour than those who do not plan.

## **5.4 Implementation and further studies**

The conclusion to the research questions shows that even though MFRL, and with that lifestyle, does not play the role as moderator to the relationship between intention for seafood consumption and behaviour, the degree to which a consumer actually consumes seafood after intending to do so is dependent on the consumer's lifestyle. Understanding the concept of lifestyle and the lifestyle segments could therefore be a valuable tool in increasing seafood consumption, as the various segments are likely to not react to the same marketing efforts.

In regards to marketing and influencing consumers to follow up on their intention to consume seafood, one should in further studies look into what consumers who originally intended to consume seafood but did not do so chose to eat instead. Based on this study, the reason for this can vary depending on lifestyle segment. Hence, knowing how the different segments act and think would be a valuable asset in regards to creating a marketing strategy. The approach one should take would be different based on the reason why intention is not transferred to behaviour. For example, if the reason for consumers not having seafood for dinner is that they found something "better" to cook while grocery shopping, one should look into the convenience of products and placement in the store. While, if the reason for consumers having something else for dinner is as they could not find seafood with the preferred quality one should rather look at seafood is distributed, product variety and price.

To better understand the gap between intention and behaviour. A next step would be to investigate MFRL in regards to the full TPB model, looking into how the relationship between variables differs between the MFRL segments. This would give a better understating of the difference between segments, and also be valuable in the development of marketing actions.

To be able to discuss more in regards to previous studies on seafood consumption it would in further studies be interesting to look at the consumption frequency for the various segments of MFRL, and if they intended to consume seafood or not. This would make it possible to comment more in-depth on the degree to which intention explained behaviour.

## **5.5 Limitations**

First, I would like to once again mention there to be some issues in regards to the validity and reliability of this thesis, I have however already accounted for them in section 3.3, reliability and validity. Still, to emphasise it, I would like to mention the way behaviour was measured not to be as good as it could have been. By using past behaviour as an indicator of behaviour, the validity of this study is weakened to a great degree making it somehow problematic to generalise the findings. The study was conducted on a relatively small target group, therefore the findings cannot be generalised to a larger context.

In terms of limitations of this study they mainly originate from the lack of time resources. Consumer behaviour is a complex field to study and there are many factors that should be accounted for. One of the main challenges in doing this study and writing the thesis has been to limit myself not to get overenthusiastic when creating the online survey and analysing the data. This might have caused me to miss out on some possible results that would have been interesting and relevant to include. Nevertheless, I know that to fully understand the nature of seafood consumption, years should be granted to the research. I view this study as my academic contribution to the field.

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# Appendix 1 – survey questionnaire

## Demographic questions

English		Norwegian	
<b>Age</b>	Younger than 18years Between 18-34years Older than 34years	<b>Alder</b>	Under 18år Mellom 18-34år Over 34år
<b>Gender</b>	Female Male Other Do not wish to answer	<b>Kjønn</b>	Kvinne Mann Annet Ønsker ikke oppgi
<b>Where in Norway do you live?</b>	Nord-Norge Sør-Norge Østlandet Vestlandet Midt-Norge I do not live in Norway	<b>Hvor i Norge bor du?</b>	Nord-Norge Sør-Norge Østlandet Vestlandet Midt-Norge Bor ikke i Norge
<b>Do you have kids living with you</b>	Yes No	<b>Har du hjemmeboende barn?</b>	Ja Nei
<b>How is your living situation?</b>	I live alone I live with my boyfriend/girlfriend/spouse I live with friends/in a shared housing I live with my parents Other - specify	<b>Hvordan er din bosituasjon?</b>	Jeg bor alene Jeg bor sammen med samboer/ektefelle Jeg bor i kollektiv/sammen med venner Jeg bor sammen med foreldrene mine Annet - Spesifiser



## Operationalization

*On a scale from 1-7 where 1 is totally disagree and 7 is totally agree, how much do you agree on the following statements?*

Shortening used in data analysing	English	Norwegian translation	Based on
<b>MFRL Involvement</b>			
Involvement 1	I just love good food	Jeg elsker virkelig god mat	Brunso et al., 2021
Involvement 2	Eating and drinking are a continuous source of joy for me.	Å spise og drikke er en kontinuerlig kilde til glede for meg	Brunso et al., 2021
Involvement 3	Decisions on what to eat and drink are very important for me.	Hva jeg spiser og drikker er viktige valg for meg	Brunso et al., 2021
Involvement 4	Food and drink is an important part of my life.	Mat og drikke er en viktig del av livet mitt	Brunso et al., 2021
Involvement 5	Eating and food is an important part of my social life.	Mat og spising er en viktig del av mitt sosiale liv	Brunso et al., 2021
<b>MFRL Innovation</b>			
Innovation 1	I like to try new foods that I have never tasted before.	Jeg liker å prøve mat jeg ikke har smakt tidligere	Brunso et al., 2021
Innovation 2	I love to try recipes from different countries.	Jeg elsker å prøve ut oppskrifter fra ulike land	Brunso et al., 2021
Innovation 3	Recipes and articles on food from other culinary traditions encourage me to experiment in the kitchen.	Oppskrifter og artikler om mat fra andre kulturer oppmuntrer meg til å eksperimentere på kjøkkenet	Brunso et al., 2021
Innovation 4	I like to try out new recipes.	Jeg liker å prøve ut nye oppskrifter	Brunso et al., 2021

Innovation 5	I look for ways to prepare unusual meals.	Jeg er alltid på utkikk etter uvanlige matretter å prøve ut	Brunso et al., 2021
<b>MFRL Responsibility</b>			
Responsibility 1	I try to choose food produced with minimal impact on the environment.	Jeg prøver å velge matvarer produsert med et lavt miljøavtrykk	Brunso et al., 2021
Responsibility 2	I am concerned about the conditions under which the food I buy is produced.	Jeg bekymrer meg over forholdene maten jeg kjøper er produsert i	Brunso et al., 2021
Responsibility 3	It is important to understand the environmental impact of our eating habits.	Det er viktig å forstå miljøavtrykket til våre spisevaner	Brunso et al., 2021
Responsibility 4	I try to choose food that is produced in a sustainable way.	Jeg prøver å velge mat som er produsert på en bærekraftig måte	Brunso et al., 2021
Responsibility 5	I try to buy organically produced foods if possible.	Jeg prøver å kjøpe økologisk mat når det er mulig	Brunso et al., 2021

*On a scale from 1-7 where 1 is totally disagree and 7 is totally agree, how much do you agree on the following statements?*

Shortening used in data analysing	English	Norwegian translation	Based on
<b>MFRL Ways of shopping</b>			
WOS 1	Before going out shopping, I make a list of all I need.	Før jeg drar på butikken lager en handleliste med alt jeg behøver	Arenas-Gaitán, Peral-Peral & Reina-Arroyo, 2021  Scholderer, Brunso, Bredahl & Grunert, (2004).
WOS 2	I have a tendency to buy a few more things than I had planned.	Jeg ender ofte opp med å kjøpe mer enn jeg planla	Arenas-Gaitán, Peral-Peral & Reina-Arroyo, 2021

			Scholderer, Brunso, Bredahl & Grunert, (2004).
WOS 3	I have a tendency to buy other things than I had planned	Jeg ender ofte opp med å kjøpe andre ting enn jeg planla	Egen komponert/own
WOS 4	I compare product information labels to decide which brand to buy.	Jeg sammenligner innholdsfortegnelsen og næringsinnholdet på matvarer for å bestemme hvilket produkt jeg skal kjøpe	Arenas-Gaitán, Peral-Peral & Reina-Arroyo, 2021 Scholderer, Brunso, Bredahl & Grunert, (2004).
WOS 5	Usually I do not decide what to buy until I am in the shop	Vanligvis bestemmer jeg meg ikke for hva jeg skal kjøpe før jeg er på butikken	Scholderer, Brunso, Bredahl & Grunert, (2004).

*On a scale from 1-7 where 1 is totally disagree and 7 is totally agree, how much do you agree on the following statements?*

Shortening used in data analysing	English	Norwegian translation	Based on
<b>TPB Intention</b>			
Intention 1	I plan to eat functional foods regularly	Jeg planlegger å spise fisk eller sjømat til middag minst 1 gang neste uke	Nystrand & Olsen, 2020 Verbeke & Vackier, 2005
Intention 2	The chance that I eat fish in the next 2 weeks is high	Sannsynligheten for at jeg spiser fisk eller sjømat til middag minst 1 gang i neste uke er høy	Verbeke & Vackier, 2005
<b>TPB PBC</b>			
PBC 1	If it were entirely up to me, I am confident that I would be able to eat functional foods regularly	Om det hadde vært opp til meg er jeg helt sikker på at jeg hadde spist fisk eller sjømat til middag minst 1 dag i uken	Nystrand & Olsen, 2020

PBC 2	I can make many different meals with fish	Jeg kan lage flere forskjellige matretter med fisk og sjømat	Verbeke & Vackier, 2005
PBC 3	Fish is easily available for me.	Det er lett å få tak i fisk og sjømat	Verbeke & Vackier, 2005

## Behaviour

English		Norwegian	
<b>How many times did you eat seafood for dinner the previous seven days?</b>	Never	<b>Hvor mange ganger har du spist fisk eller sjømat til middag de siste syv dagene?</b>	Aldri
	1		1
	2		2
	3		3
	More than 3 times		Mer enn 3 ganger
<b>How many times did you eat seafood for dinner the previous month?</b>	Never	<b>Hvor mange ganger har du spist fisk eller sjømat til middag i måneden som var?</b>	Aldri
	1-4		1-4
	5-8		5-8
	9-12		9-12
	More than 12 times		Mer enn 12 ganger

