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TITTEL:

Change in the Salmon Consumer:

A Study of the Consumer's Product Perception and Consumption Frequency of Salmon

ENGELSK TITTEL:

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Change in the Salmon Consumer:

A Study of the Consumer's Product Perception and Consumption Frequency of Salmon

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ABSTRACT

This article aim to establish how salmon consumption frequency is affected and change over time by viewing the consumers' Perception of salmon, taking into account the consumers' Food-related lifestyle (FRL). This will be investigated by performing a descriptive analysis and multiple regressions. The analyses are applied to three European countries (UK, Germany and France). The share of frequent users increased in all countries. Still, salmon is not the preferred meat-type in any of the countries and salmon's overall position has not been improved. The FRL dimensions only had minor changes in the three mentioned countries. Improved Perception of salmon had an effect on consumption frequency and increased over time, when pooled. Consumption had a positive effect in the Low FRL-group, but no additional effect on Mid- and High group. Frequency of consumption increased over Time for the Low FRL groups with an additional effect for the Mid group in Germany. We contribute to the literature by providing new insight regarding the consumer of salmon in target markets and by illustrating the effect of changes over time.

KEY WORDS: salmon consumption; consumer perception; food-related lifestyle; change over time; market position.

Innhold

Introduction

The seafood market is in a period of immense growth, with an associated increase in consumption. The European market is responsible for 67 per cent of the Norwegian export, and had a growth of 23 per cent in 2015. Farmed salmon is one of the most widely consumed seafood products, but there is not much known about the consumers. The market is rapidly changing and the consumers are increasingly heterogeneous in terms of knowledge and perception. Information about the consumer can be applied to bridge the gap between the consumers' preference and the product delivered by the producer. By studying the salmon consumers, using survey data from two surveys conducted in 2012 and 2016, we will investigate the changes in the consumers in terms of their consumption frequency explained by their Perceptions, accounting for Food-related lifestyle and country difference, and see whether this changes over time. Does the consumers frequency of consumption change over Time? Does the consumers perception of salmon in terms of Convenience, Value and Healthiness affect the consumption frequency, and does this change over Time? Can the consumers be segmented into groups based on their Food-lifestyle, and does the degree of Food involvement conform with the consumption frequency? The analysis performed to study these questions is two-fold, firstly conducting a detailed descriptive summary of the key variables observed in 2012 and 2016 highlighting the changes, secondly analysing hypotheses by regression to empirically test effects in rigorous manners.

We contribute to the literature by providing insight when introducing the comparison of two surveys conducted over the time period of four years, highlighting changes over Time in the dimensions of consumption Frequency, Perceptions, and Food-related lifestyle. The following paragraphs will consist of a report of the salmon industry, theoretical point of departure and conceptual framework. Finally, the results from the descriptive- and the regression analysis will be presented and discussed.

Background

The industry

Salmon is an important part of the seafood industry which is one of the largest export industries in Norway, and it has a significant impact on the Norwegian economy (Statistisk sentralbyrå, 2016b). The stakeholders taking part in the technological development within the industry are widely spread among private, public and scientific institutions (Asche, Roll, &

Tveterås, 2012). The seafood industry is integrated in both Norwegian and global economy, and considered a competitive industry. The objective of the industry is further growth and economical gain(Tveterås et al., 2014). In 2015, the Norwegian parliament issued a decision aiming to provide the seafood-industry with increased flexibility and simplified regulatory framework, which intention is to contribute to increased competitiveness and creation of value (Regjeringen, 2015).

The export of Norwegian seafood had a record setting year in 2016, with substantial increase in both exported value and price (Descriptive table in Appendix (4)). Despite decrease in exported volume, the industry had a considerable total increase in value. The Norwegian salmon export have increased in value from 2013 to 2017 (Statistisk sentralbyrå, 2016a). In 2016, France, Germany and the UK were the largest export markets for Norwegian seafood consumption (Norwegian Seafood Council, 2017b). Statistics from the Norwegian Seafood Council (Norwegian seafood council, 2017a) illustrating household consumption, found that average consumption volume has decreased in France, and increased in UK and Germany from 2012 to 2016.

Historically, several small companies characterized the seafood industry. However, due to consolidation, the industry nowadays consists of fewer and larger corporations with establish systems that allow them to control the entire value chain. The three largest Norwegian companies are Marine Harvest, with 28 per cent of the Norwegian market share and Sal Mar and Leroy Seafood Group with 9 per cent each (Marine Harvest, 2016). The Norwegian industry provides over 46 per cent of the total market for salmon(Marine Harvest, 2016). The industry employed close to 10 000 FTEs in Norway in 2013 and this make it an important contributor to the society (Laks er viktig for Norge, 2014).

In 1969, a technology was introduced that started the industry path which led Norway to be one of the world's largest producers of Atlantic Salmon, alongside Chile and Scotland.
In the last 30 years, the industry has had an enormous growth that can largely be attributed to innovations in a number of areas(Asche et al., 2012). In order to meet the growing demand for salmon, the industry work on improving their product availability, which is partially attributed to the ongoing technological development. The technological advances facilitate an increase production, and aquaculture is currently the fastest expanding global animal food production sector and a key contributor to food security (Marine Harvest, 2016). Due to advances in the

industry, the amount of wild salmon is steadily increasing since most of the fish distributed is farmed (Asche & Bjørndal, 2011).

As salmon is a natural resource, the current technology production is highly exposed to external factors in the environment. Challenges within technology and location sites is mainly due to potential environmental effects such as escaped fish, spread of diseases and ocean floor waste(Fløysand & Jakobsen, 2016). As the industry has reached a level where biological boundaries are being pushed, further growth depends on progress in technology to find ways to preserve the ecosystem(Marine Harvest, 2016).

Salmon as a product

Farmed salmon has become one of the most widely consumed seafood products in the industrialized world, competing in price with beef, chicken and pork **(Asche, 2008**; (Rudd, Pelletier, & Tyedmers, 2011). Salmon is considered a high value product, partially because it's one of the most traded aqua-cultural products (Asche & Bjørndal, 2011). One of the main attributes of salmon, is that it is considered a healthy product, as it consists of many important nutrients, such as a high concentration of Omega 3, vitamin D, and proteins (Matvaretabellen, 2017). There are some pollutants in salmon, but the health benefits of eating salmon are considered greater than the consequences of the pollutants (Borchsenius, 2014).

Salmon is delivered from the industry primarily as a fresh product. The development of products has been limited, and the main final products are still whole or filet salmon distributed fresh, frozen or smoked (Asche, Cojocaru, & Roth, 2016). Over time, salmon product development has led to a differentiated supply of products to satisfy the need for convenience among consumer segments (Marine Harvest, 2016). There is a wide product range delivered from the three main suppliers; Marine Harvest, Sal Mar and Leroy Seafood Group. According to their respective web-pages, their fresh product range consists of whole gutted fish delivered fresh or frozen with head on or off, and assorted types of filets. The secondary products are available in different packaging such as vacuum skin packaged trays, bags and boxes. The processed products are marinated or seasoned, pre-fried, delicatessen products, fresh-fish ready meals and smoked fish.

In the seafood market, smoked salmon has become a frequently consumed product in Europe during the last years and the interest in its quality, its sensory properties and in how these aspects are related to consumers' preferences is increasing **(**Cardinal et al., 2004**;** Piccolo & D'Elia, 2008). Meeting the needs of the consumers is crucial for the industry, and knowledge about the consumers can help to provide needed information that can identify

trends and opportunities as well as requirements for new products for marketing and informational purposes. Each of the suppliers has created a brochure with consumer information, consisting of product information and ways to prepare their products in several levels of difficulty. This in order to market their products and accommodate for different convenience levels (Hallvard Lerøy AS).

Previous consumer research

Several studies have been conducted on the consumers of salmon over the recent years in order to gain knowledge on them. As they are crucial to the industry and little is known. Former research attempted to identify the consumer by differentiate them, based on demographics, perceptions and values, to see whether these things affect their consumption. The market for salmon is considered to be growing, and in research conducted by Asche et al. (2011) demand growth is quantifies and found to be an average per annum of 7.6 per cent over a 14- year period for the EU, and 4,7 per cent for France.

As there is not much literature on change in consumers' preferences over time, nor research conducted on this area. Serelenga and Shin (2007) describe Time-effect as a variable consisting of a number of unobserved factors that if not taken into consideration, can mistakenly be attributed to the different factors accounted for, and the results would be biased (Serlenga & Shin, 2007).

Research by Piccolo and D'Elia (2008) conducted with a modelling approach for assessment of preferences among the consumers, aimed to explain the role of the consumers' covariates (e.g. age, gender, occupation) on the preferences. They found a difference in rating between the covariates, which can be used as estimation of preference for consumer profiles providing potential new purchasers of a food product. Further, Lusk and Briggerman (2009) in their research of consumers' food value system found that average price, taste, nutrition and safety were perceived as most important to consumers, also the consumers were found to be vastly heterogeneous relative to the importance they place on food values. What these studies do not take into account is the heterogeneity and lifestyle difference that exist among the consumers. Rudd et. al. (2011), aimed to identify potential clusters of consumers based on their perception and preference of salmon when looking at the trade-offs that salmon consumers make on attributes of farmed salmon. The findings revealed significant heterogeneity within personal taste and perception among the consumers, and divided them into segments based on their rating of health and environmental risks and benefits, as well as their perceived trade-off on prices and attributes of salmon (Rudd et al., 2011). Lifestyle has

been explored in the literature as a group of factors that can assist in explaining consumer behaviour (Torrissen & Onozaka, 2017), but there has been a demand to capture lifestyle on a more theoretical base. The concept of such intermediary values is deep-rooted in the conceptual framework related to the means-end chain theory (Gutman, 1982), a framework that links people's beliefs about concrete product attributes with the abstract values. Value research, aiming to identify the consumers' food-value systems (Brunsø & Grunert, 1995), argues that a set of core underlying values motivate consumers' purchasing decisions (Lusk & Briggeman, 2009). The Food-related lifestyle, FRL, was first introduced as a tool in the 1990s (Brunsø & Grunert, 1995) to segment consumers into group. It is considered a universal framework and can be implemented cross culturally in order to gain insight. Based on consumers' heterogeneity on both values and attitudes related to food, it can link general cognitive values to specific food choices (Onozaka, Hansen, & Sørvig, 2014). The dimensions are included to enhance the interpretative content of the consumers' decision to consume salmon. Perception consider the product at hand, and the dimensions of Food-related lifestyle view the consumers' lifestyle towards food and therefore is not product-specific.

Onozaka et al. (2014) in a recent study applied FRL to specifically look at salmon consumption, studying the relationship between the consumers of salmons' perception of Healthiness, Value for money and Convenience and the frequency of salmon consumption. A model for food-related lifestyle (FRL) was applied to account for unobserved heterogeneity of the consumer. They found that the perception of Value for money and Convenience had a strong link to consumption frequency, with a high score on the dimensions increasing the consumption frequency. Healthiness was also found to have a modest effect on the consumption frequencies. They also found difference in both Perception and frequency of consumption among the lifestyle segments, thus illustrating how the differentiation of lifestyle adds to the knowledge of the consumers' frequency of consumption. Another study by Torrissen and Onozaka (2017) examined the relationship between salmon and other meat-types by comparing the consumers' quality perceptions and measured their FRL. This study also found difference in perception and preference by the food-involvement scores. Consumers with high FRL-scores rated and preferred salmon over consumers with low scores. Overall, they found that seafood struggled with perceived value for money compared to the terrestrial meat, especially with the low involvement consumers.

Previous research found that there are country based difference in their culture, values and perceptions. A former study on comparing values in different cultures found that when pairwise compared the Japanese differed culturally from the Americans (Oishi et al., 2005). In

examining the role of consumers by country origin, Piccolo and D'Elia (2008) found when including a country effect in their research of the consumers' perception of salmon, the countries differed. They emphasized on different dimension and rated them dissimilarly.

Several studies have been conducted based on the survey from 2012, in France, UK and Germany. They all found different patterns across the countries. Onozaka et al. (2012) found in their study on seafood products that each of the markets they examined had a difference in perceptions, food-related lifestyle groups and consumption rates, and Torrissen & Onozaka (2017) found that their perception of salmon compared to other terrestrial meat-types differed among the countries when based on their perception and placement in different FRL groups.

UK is by previous research established to be a heavy consumer of frozen fish products (Torrissen & Onozaka, 2017), alongside France having advanced offerings of convenient fresh product-forms, still results found low scores on perceived convenience. This may be since part of perceived convenience is based on the consumer's knowledge of cooking (Onozaka et al., 2014). Previous studies Onozaka, et. al., (2014) found that improved perception in healthiness in UK does not increase the consumption frequency, but when adjusting for FRL-groups, consumers in the Low FRL-group consume more when they perceive salmon as healthy. The study also found that perceived value had a positive effect on consumption in the High FRL-group, and perceived convenience in Mid and High FRL-group increased salmon consumption.

Germany is considered price sensitive, a discount retail market dominated by smoked and frozen products, distinct from other large markets. According to previous research Onozaka et. al., (2014), perceived Value and Convenience have a positive effect overall on the salmon consumption frequency. Perceived Value has a positive effect for the Mid, and Low FRL-groups, while perceived Convenience increased the salmon consumption for the High group.

France is considered an established and relatively mature market, and the main market in Europe for the three largest export companies in Norway (Torrissen & Onozaka, 2017)**.** The French are known to have an established food culture, and the most advanced offering of convenient fresh-product forms (Onozaka et al., 2014). French consumers already eat salmon frequently, therefore it may be more difficult to increase consumption frequency through changed perceptions alone. With pooled respondents, all three perceptions have a positive significant effect on the consumption, and when calculating for FRL-groups, the effects were mostly due to the Low FRL-group (Onozaka et al., 2014).

France, Germany and UK are considered developed countries, thus have some commonalities based on the behaviour of their consumer. In developed countries, price, quality and other product-related aspects are all major factors that affect buying behaviour (El-Khatib, 2011).

Models

Conceptual framework

Information about consumers is relevant for the food industry for modifying their product according to the consumers' preference and for the development of new products (Piccolo & D'Elia, 2008), as well as for identifying possible ways to segment the consumers for strategic purposes. It is of interest how consumer preferences are influenced by their perceptions and attitudes (Janssen & Hamm, 2012). A model including the consumers' perception of product quality can be applied in order to bridge the gap between the producer-defined quality and consumer-based quality perception. Modelling the quality perception process offers a useful framework for further exploration of the importance of various quality cues and quality attributes and their interactions (Oude Ophuis & Van Trijp, 1995).

Consumer-satisfaction is said to be the consumer's pre-purchase expectation compared to the level of perceived product performance. These in turn are believed to produce the satisfaction judgment (Bearden & Teel 1983; Oliver 1980; Westbrook 1980a; Westbrook & Oliver, 1991). As the market is swiftly changing, consumers are considered more and more heterogeneous in regards to the underlying effects affecting their perception of salmon (Onozaka et al., 2014). An analytical approach to consumer preference requires an understanding of the consumer's purchasing behaviour, which can be found by studying the consumer's attitudes towards the product, their consumption and their lifestyle emphasizing on how they view food (Jo & Shin, 2017). In our conceptual framework, we focus on consumers´ consumption frequencies, and aim to explain the variation in the target behaviour by perception ratings and lifestyle segmentation.

Traditionally, there are three dimension that can be applied to measure consumption; frequency, quantity and variability (Rehm, 1998). In this study, frequency of consumption is applied as a tool to measure the growth of the salmon industry, when assuming that increase in frequency of consumption by the consumers leads to growth. In order for salmon to be frequently consumed, it needs to become a habit for the consumers to eat salmon. Habit is

considered hard to conceptualize, which is necessary for it to be measured, but Azjen (2002; (Carlucci et al., 2015) consider habits to be behaviour regularly repeated, occurring subconsciously. Existing studies indicate that high fish consumption expresses a pre-existing habit rather than being a result of reason. (Verbeke & Vackier, 2005, Juhl & Poulsen, 2002; (Carlucci et al., 2015). A high frequency of consumption, based on that, can be considered an existing habit for the consumers, and the consumers who eat salmon frequently are considered the main consumers. It is of an obvious interest for the seafood industry to increase the number of frequent consumers, so understanding factors influencing consumption frequencies is important.

A consumer partially bases the decisions to consume on perception of the product in question (Schiffman et al., 2013). Studies have found that consumers' positive attitude towards eating fish strongly correlate with consumption frequency (Rortveit & Olsen, 2009), and perception can be utilised for evaluating attitude (Carlucci et al., 2015). Perception is the process where the individual is exposed to, selects, organises, and interpret (Morschett et al., 2005). The position of salmon in the market can partly be determined based on how salmon is perceived as a product by the consumers. The three predictor-variables, perceptions of Healthiness, Value for money and Convenience are selected for conceptual reasons, and together cover a wide assortment of product evaluation on behalf of the consumer (Candel, 2001). This is supported by findings from previous research. Lusk and Briggerman (2009) found the price and nutrition to be important to the consumers, and Rudd et al. (2011) identified health, and trade-off prices to be important. Recent research on seafood with the same parameters, conducted by Onozaka et. al. (2014), identified that the consumer's perceptions of Healthiness, Value for money and Convenience are considered central in this context.

Convenience contains the three dimensions of time saving, energy saving and culinary skills according to Candel (2001). Time refers to time pressure or the lack of time, and the mental and physical effort needed to achieve the end goal, in this context, the consumption of salmon. The dimensions will affect the consumer's motivation to select a product perceived as convenient, but the degree of the effect varies based on the consumer's preference of Convenience (Onozaka et al., 2014). According to Candel (2001). Convenience is also an important determinant for food-related behavior. How processed the meal is, will affect the time and effort consumers spend on preparation. Therefore, the consumer's desire to save time and effort is an incentive for providing convenient products (Torrissen & Onozaka, 2017).

Value for money can be interpreted as the ratio between the price of the product and the utility consumers derive from it. The perceived Value of consumers has been widely described in the literature (Wilson, 1995; Gassenheimer et. al.,1998; Woodruff et al., 2002; Eggert et.al., 2006; Onozaka et. al, 2014), and most definitions and conceptualizations focus on economic worth of tangible outcomes. Value is by such definitions considered a monetary issue (Onozaka et al., 2014). Hansen et al. (2008) found the consumer's perception of Value to be negatively related to the consumers search for options, a behavior opposite of the intention of continuing to consume. Based on this, the consumer's perception of value is of importance in a potential purchase decision, in a decision to continue or quit consuming salmon.

Due to the current state with obesity and health-related diseases occurring in growing numbers, the consumers consider healthy eating habits of great importance. Still, it is found that positive perceived Healthiness alone does not affect purchase behavior, the positive effect is first visible when it interacts with the consumer's interest in healthy eating (Pieniak et al., 2008). With this in mind, the dimension can be further examined when consumers are divided into segments by rating on food-related lifestyle, as health is a dimension in this. Drescher et al. (2009) describes the intention to eat healthy as a function to produce a final good, where healthy food is one of the inputs required to produce the desired level of health commodity. It can be assumed that a consumer is motivated to judge the food regardless of health status or dietary issues. A common opinion in the industry is that salmon as a healthy product has a high effect on the consumption frequency, but resent research found healthiness only to have a modest effect on the consumption frequency (Onozaka et al., 2014).

Originally, the Food-related lifestyle consists of 23 dimensions each explained by 3 statements, but Onzaka et al. (2014) in their research selected seven dimensions that they deemed relevant to seafood consumption behaviour. Mapping the consumers view on the importance of product information, taste, relationship between price and quality, convenience, cooking method, freshness and health. Convenience has a reversed meaning in the context of Food Related Lifestyle where the convenience aspect is less important for consumers with high food involvement, as the preparation is seen as less of a chore than for the other segments. The latent class analysis (LCA) was applied to divide the population into estimated subgroups who had Low, Mid or High food-involvement, which will further be referred to as the Low FRL-group, Mid FRL-group and High FRL-group.

When looking at surveys conducted in both 2012 and 2016 it is possible to identify potential changes in frequency consumption of salmon in that time period. In order to do so, to consider Time a variable is a necessity. As there is little research conducted on this area, there is not much theory to base the assumptions on. The variable Time and its content is not like the other variables linked directly to the consumer. Over the time period relevant to this context, several events have occurred in the consumers surrounding and within the industry. The time-specific effects refer to the aggregate effect of unobserved factors that affect the frequency of salmon consumption. If unobserved factors are not taken into consideration, the effect on frequency can mistakenly be attributed to the different "Perceptions", "FRL" or the socioeconomic factors accounted for, and the results would be biased (Serlenga & Shin, 2007). Within the variable Time, unobserved factors assumed to be accounted for are on-going changes regarding the consumers and the industry. On-going events in the industry are explored in the Background section and include governmental interference, industrial consolidation and innovation that occurred over the last years.

Some of the aforementioned factors are expected to change, while others are considered more stable over time. The food-related lifestyle are intermediary values that relate abstract constructs to specific choice occasions, and as such, FRL values are perhaps stable whereas people's preference ranking of a specific set of foods or food attributes may be more variant (Gutman, 1982). Perception is considered a registration of our surroundings (Bjørklund, 2003), and is by that definition closely related to the products at hand. It is already established that the industry and the product offerings are drastically changing in the seafood markets, thus the perception variables are expected to change.

Empiric model

In order to investigate the relationship between consumption frequency and variables in interest (Perception and FRL), we construct four regression equations.

$$Frequency_C = \alpha + \beta_{1_C} Convenience + \beta_{2_C} 2016 * Convenience + \beta_{3_C} 2016 + \gamma Z_C + \varepsilon \quad (1)$$

$$Frequency_C = \alpha + \beta_{1_C} Value + \beta_{2_C} 2016 * Value + \beta_{3_C} 2016 + \gamma Z_C + \varepsilon \quad (2)$$

$$Frequency_C = \alpha + \beta_{1_C} Healthiness + \beta_{2_C} 2016 * Healthiness + \beta_{3_C} 2016 + \gamma Z_C + \varepsilon \quad (3)$$

$$Frequency_C = \alpha + \beta_{1_C} FRL_M + \beta_{2_C} 2016 * FRL_M + \beta_{3_C} Conveniece * FRL_M + \beta_{4_C} Value * FRL_M + \\ + \beta_{5_C} Healthiness * FRL_M + \beta_{6_C} FRL_H + \beta_{7_C} 2016 * FRL_H + \beta_{8_C} Convenience * FRL_H + \beta_{9_C} Value * \\ FRL_H + \beta_{10} Healthiness * FRL_H + \beta_{11_C} 2016 + \beta_{12_C} Convenience + \beta_{13_C} Value + \beta_{14_C} Healthiness + \\ \gamma Z_C + \varepsilon \quad (4)$$

where Z is a matrix of socioeconomic and demographic controls and C (country) = 1, 2, 3 represent UK, Germany and France, respectively.

The regressions were performed as linear regressions with consumption frequency as the dependent variable, and explained by the three chosen product perceptions, the FRL-groups and Time. Z consists of the socioeconomic variables including education, income and gender. The models control for these variables in order to take into account the variations between the consumers. As one can see, each of the four regression equations was country specific for UK, Germany and France. This is because we expect the relationship between dependent and independent variables to be different across countries.

H1a: Convenience perception positively affect consumption frequencies.
H1b: The effect of Convenience perception differs between 2012 and 2016.
H1c: Time positively affect consumption frequency.

These hypotheses are investigated via Regression Model (1), which includes Convenience, "Time interacted with Convenience" and Time. It is expected that perceived Convenience is positively related to consumption frequency of salmon. Previous research found that the higher perceived convenience salmon has, the more attractive the product is to the consumer (Onozaka et al. ,2014). "Convenience interacted with Time" is expected to have an additional effect due to the expected change in perceptions in a 4-year period. As more convenient products are on the market in 2016, perception of Convenience is expected to increase.

H2a: Value for Money perception positively affect consumption frequencies.
H2b: The effect of Value for Money perception differs between 2012 and 2016.
H2c: Time positively affects consumption frequency.

These hypotheses are tested via Regression Model (2), which includes Value, "Time interacted with Value" and Time. Price sensitivity is present among all consumers, thus their perception of Value is expected to be positively related to consumption frequency. Since Germany is a price sensitive market, "Value" is expected to affect frequency the most in Germany. The price of salmon increased since 2012, and as attitudes are expected to change it is expected that "Time interacted with Value" will have an additional negative effect on salmon consumption frequency.

H3a: Healthiness perception positively affect consumption frequencies.
H3b: The effect of Healthiness perception differs between 2012 and 2016.
H3c: Time positively affect consumption frequency.

These hypotheses are investigated via Regression Model (3), which includes Healthiness, "Time interacted with Healthiness" and Time**.** The perception of Healthiness is expected to be positively related to consumption frequency of salmon, but to have a modest effect compared to the perception of Convenience and Value. "Time interacted with Healthiness" is expected to have an additional effect due to increased information and awareness of health.

H4a: Consumption frequency between the FRL-groups differ.
H4b: Effects of Perceptions (Convenience, Value, Healthiness) on consumption frequencies differ by FRL segments.
H4c: The effect of FRL differs between 2012 and 2016.

These hypotheses are tested via Regression Model (4), which includes the perceptions, FRL-groups, Time as well as the perceptions and "Time interacted" with the FRL-groups. The consumption frequency is expected to be highest for the High FRL-group, second for the Mid-group, and the Low-group consume the least amount salmon. Time, Convenience, Value and Healthiness are predicted to have similar effects as in the previous models, it is expected that increased perception and Time will have an additional effect on the FRL-groups frequency of consumption. Literature and previous studies have found all of the perceptions to have an additional effect on consumption in both the "Mid FRL-group" and "High FRL-group". Improved perception of Healthiness has been found to have an effect on the Low-group consumers in all the target countries. An increase in perception of Value for money and Convenience has previously had a larger effect on the consumption frequency in the Mid- and High-group consumers in UK and Germany. "Time interacted with Mid FRL-group" and "Time interacted with High FRL-group" are not expected to have an additional effect on frequency. No considerable change is expected in the dimensions of FRL given that the values are considered internal and stable. Four years is assumed to be too short to give mentionable changes in the food lifestyle of the consumers. Some of the FRL dimensions are similar to the perception variables and explain similar factors, that may therefore lead to high multicollinearity. The effects are expected to affect the consumers differently in the countries,

and to have the largest effect in UK and Germany, and a smaller effect on the French consumers. This is consistent with the literature and former studies.

The null hypothesis for each regression; if the content variables have no significant effect on the frequency of consumption, the null hypothesis cannot be rejected. The alternative hypothesis; if the variables have a significant effect, the null hypothesis will be rejected. As the regressions are country specific the hypothesis will be tested for each Model and each country.

Data

Survey

The data used in the following analysis is from web-based surveys conducted in 2012 and 2016, designed to observe consumers in three key European markets, UK, Germany and France. The survey was constructed by the research team at UiS, and administered by Survey Sampling International, Inc. using their panel members to mirror the general population. The questionnaires design aim to examine the target consumers FRL, product perception, consumption frequency and demographic information. The sample size collected increased with 200 respondents from 2012 to 2016, due to the additional question screening out the non-consumers in the 2016 survey. To get an evenly distributed sample representing the target population, gender and age was considered the basic variables. The summary of the sample characteristics can be seen in table 1.

The gender distribution in both 2012 and 2016 were evenly distributed in all the target countries with minor changes. The consumers are divided into four age intervals. In 2012, the largest group of respondents were in the age interval 50-69 in the UK and 30-49 in Germany and France. In 2016, most of the participants were in the age interval 30-49 in all countries. Educational level was highest in the UK and France where 60% and 53% had a bachelor degree or more in 2012. In 2016, the participants in Germany with a bachelor degree or more increased with 23% and the two income categories are evenly divided, as are the income groups in the UK. France has the highest number of participants with a bachelor degree or more, represented with 62% of the sample respondents. The median income category is equal for the UK in 2016 and 2012. In Germany and France, the median income has not visibly

changed, but the income groups are more specified in 2016 due to different income categories in the two surveys.

Table 1. Sample characteristics

	Category	UK		Germany		France	
		2012	2016	2012	2016	2012	2016
Gender	Male	46 %	49 %	51 %	49 %	49 %	46 %
	Female	54 %	51 %	49 %	51 %	51 %	54 %
Age	20-29	21 %	22 %	22 %	21 %	26 %	19 %
	30-49	26 %	48 %	48 %	43 %	48 %	49 %
	50-69	39 %	19 %	19 %	26 %	14 %	20 %
	60 and over	14 %	11 %	11 %	10 %	12 %	12 %
Education	Less than bachelor	40 %	49 %	74 %	51 %	47 %	38 %
	Bachelor or more	60 %	51 %	26 %	49 %	53 %	62 %
Median income category		£20K-£30K	£20K-£30K	€24K-€50K	€40K-€50K	€25K-€50K	€30K-€40K
N		495	691	476	684	476	684

Variables

Consumption frequency

The consumption frequency question was asked in the surveys to establish how often the respondents consumed salmon at home during one year. The response options were “About once a week or more”, “About once in two weeks”, “About once a month”, “Every second month”, “2 to 5 times a year” and “Less than once a year or less”. In the descriptive analysis, the frequency consumption of chicken at home is also used as a result to explain the salmons position compared to other meats. The consumers are defined as frequent-, infrequent- or non-consumers in the descriptive analysis. The frequency will be measured in the regression by how often salmon is consumed by respondents in a time-period of one year. In order for the results of the regression to be illustrative we recoded the rating values as followed: about once a week or more, 1 = 52 times a year, about once in two weeks, 2 = 26, about once a month, 3 = 12, every second month, 4 = 6, 2 to 5 times a year, 5= 2 and once a year or less, 6 = 1. In the regressions, the frequency is the dependent variable in order to measure the possible change in frequency with the effect of FRL, perception, the effect of time and the socioeconomic- and demographic variables as controls.

Perceptions

The data from the surveys are able to determine the respondents' perceived attitude and perception towards salmon. Questions regarding the participants' Healthiness, Taste, Availability, Value for money and Convenience perception about salmon, chicken, pork and beef were also asked in the surveys. The perception was rated using a Likert scale ranging from 1 to 7, were 7 was "completely agree" and 1 was "completely disagree". In the descriptive analysis, this data will be analysed to establish the difference in perception between the meat types and to identify the changes of the perception over time. In the regression analysis, the focus will be on the perception of Salmon and include the three chosen perceptions; Healthiness, Value for money and Convenience. Based on the fact that these were utilised in previous studies performed by (Onozaka et al., 2014), and these are all considered to have a noteworthy effect on consumption rate of salmon. Excluding perceived Availability, due to that it is closely related to Convenience, and Taste since this perception is difficult to change or affect for the industry. The purpose of including the selected variables in the regressions is to identify if the consumer's perceptions on salmon affect the consumption frequency. For the sake of the analysis they are rated from 0 to 6, 0 being perceived as extremely poor and 6 perceived as superior. The perceptions are being referred to as Value, Convenience and Healthiness. The summary statistics of product perception and consumption frequency can be seen in table 2.

Table 2. Variable summary statistics of Product Perception and Consumption Frequency.

		2012		2017	
Country		Mean	St. Deviation	Mean	St. Deviation
UK	Annual consumption frequency	14,555	17,339	28,449	18,832
	Perceived Healthiness	4,69	1,559	5,09	1,328
	Perceived Value	2,98	1,651	3,41	1,718
	Perceived convenience	3,68	1,688	4,33	1,592
Germany	Annual consumption frequency	13,27	14,866	24,256	17,385
	Perceived Healthiness	4,65	1,487	4,89	1,466
	Perceived Value	3,73	1,634	3,41	1,700
	Perceived convenience	3,63	1,658	1,66	1,476
France	Annual consumption frequency	15,379	15,748	22,385	17,311
	Perceived Healthiness	4,21	1,554	3,92	1,725
	Perceived Value	2,80	1,497	3,25	1,717
	Perceived convenience	3,70	1,487	4,05	1,739

Food Related Lifestyle

In both surveys, the FRL is established by 21 questions resulting in 7 dimensions, with 3 questions to explain each dimension. The indicator questions are shown in the Appendix. The food related lifestyle dimensions are freshness, health, taste, convenience, interest in cooking, price- quality relationship and importance of product information. Each participant responded to the questions with a 7-point Likert scale ranging from 1 to 7, were 7 represented "completely agree" and 1 represented "completely disagree". The descriptive statistics for the FRL metrics are presented in Table 3. All the dimensions have a positive relationship with food involvement except for convenience, which is assumed to have an opposite relationship. For both the descriptive- and regression analysis, the convenience variable was reversed in order for it to have the correct values compared to the other six dimensions.

Further, in order to get the data from the surveys operationalized to be used in both the descriptive- and regression analysis, the responses from the 21 FRL questions were divided into the 7 dimensions by finding the mean score for each participant based on the three questions for each dimension. The descriptive analysis used the total average score for each FRL dimension to identify differences in food lifestyle between the countries, and to identify possible changes in the consumers' lifestyle from 2012 to 2016. The scores can be seen in Table 3.

For the regression analysis, the seven rating-scores for the dimensions were calculated into one mean score for each of the participants, a total FRL score. The participants were then split into three groups in each country, with the groups defined as Low, Mid and High FRL group, based on their total FRL score. Previous research on FRL (by, Onozaka) used Latent Class Analysis to construct the three FRL groups. For the purpose of this analysis, the groups were formed based on the distribution of respondents found by Onozaka et al. (2014;(Torrissen & Onozaka, 2017). The Low and High group consisting of the bottom and top quartile of respondents, and the remaining 50 per cent were placed in the Mid consumer group. For the purpose of the regressions examining the effect FRL may have on consumption, dummy-variables were created for Mid- and High-FRL group. The dummy variables for the FRL groups represent different segments in the markets based on which lifestyle group they belong to regarding food.

Table 3. Mean score for Food Lifestyle Dimensions by country and year.

Food Lifestyle Dimensions	Country	2012		2017	
		Mean	Std. Deviation	Mean	Std. Deviation
Importance of Product Information	UK	4,89	1,30	4,76	1,43
	Germany	4,86	1,36	4,66	1,38
	France	4,72	1,27	5,02	1,32
	Average	4,82	1,31	4,81	1,38
Health	UK	4,93	1,29	5,02	1,32
	Germany	5,35	1,11	5,27	1,33
	France	5,09	1,27	5,45	1,25
	Average	5,12	1,24	5,24	1,30
Price/Quality Relationship	UK	5,78	0,92	5,68	1,11
	Germany	5,77	1,02	5,72	1,05
	France	5,52	1,08	5,47	1,09
	Average	5,69	1,01	5,62	1,08
Taste	UK	5,19	0,82	5,20	0,91
	Germany	5,43	0,88	5,22	0,85
	France	5,18	0,87	5,25	0,86
	Average	5,26	0,86	5,22	0,87
Freshness	UK	5,43	1,12	5,44	1,23
	Germany	5,41	1,28	5,51	1,25
	France	5,18	1,24	5,49	1,19
	Average	5,34	1,22	5,48	1,22
Interest in Cooking	UK	4,64	1,28	4,80	0,85
	Germany	4,36	1,25	4,17	0,88
	France	4,81	1,25	3,97	1,09
	Average	4,61	1,27	4,31	0,94
Convenience	UK	3,44	1,30	3,52	1,34
	Germany	3,31	1,25	3,29	1,33
	France	3,85	1,07	3,31	1,34
	Average	3,54	1,23	3,37	1,34

Time

As the surveys were conducted in 2012 and 2016, a dummy variable, an artificial variable introduced to represent a nominally scaled variable, was created for 2016 in order to differentiate the years. This variable can be perceived as a representation of the 4-year time-period. The consumers answering the questionnaire are not the same in the two surveys, therefore this is not a panel time series, but the time variable will possibly be able to identify the unobserved variables effect on the frequency consumption. The variable is referred to as Time.

Demographic variables

Educational level was a categorical variable in the survey, with 1= Less than High School, 2= High School / GED, 3= Some College, 4= Bachelor, 5=Diploma, 6= Master Degree 7= Doctoral Degree, 8= Professional Degree (JD, MD) We created a dummy for high education, which represents respondents with college education or higher. The Level of income is reported in ranges for each country. Since we are mostly concerned about the relative position of each respondent in income distribution of each country, we constructed indicator variables for income quartiles for each country such that the first quartile is for consumers with Low Income, the second quartile for those with Mid-Low Income, the third quartile for Mid-High Income and the top quartile for the consumers with High Income. The final demographic variable used in the regression is gender, coded as an indicator for male respondent.

Detailed Health Perceptions

In the dataset five statements represented the health effects. The respondents were asked to rate the risks and benefits of consuming salmon on a scale from 1 to 10 in the following criteria; (1) reduce risk for coronary heart disease, (2) reduce risk for certain cancers, (3) improve bone development, (4) stimulates brain development, (5) increase risk for food borne illnesses or food poisoning (6) increase risk for certain cancers. This information is accounted for in the descriptive analysis to identifying why the changes in perceived healthiness occur, but are not incorporated in the regression analysis.

Analysis

Our analysis is two-fold. First, we provide somewhat detailed descriptive summary of the key variables, in order to highlight the changes observed between 2012 to 2016 for each country. Establishing these changes at this point are important for us to be able to properly interpret the regression results. Then, in the subsequent analysis, we run four regression models to empirically test hypothesized effects in rigorous manners.

Descriptive Findings

First, we provide descriptive findings from the survey, focusing on the changes between 2012 and 2016. The focus of the descriptive summary is to investigate the position of salmon in some of the key European markets (UK, Germany and France). Positioning in this context refers to how consumers perceive a product in relation to competing products. In order to provide a point of comparison, some of the summaries are provided in comparison to other

major protein sources (e.g., chicken and beef). By looking at the consumer's perceptions of convenience, healthiness and value as well as taste and availability, the perceived health effects of salmon consumption and segmenting the consumers into groups based on their Food Related Lifestyle. As established in previous research and conceptual framework, the markets are considered so different that direct comparison between countries is not possible. Therefore, each market will be viewed independently.

Perceptions

Figure 1,3 and 5 illustrate average perception scores of salmon in convenience, healthiness, value, taste and availability, by country. Figure 2,4 and 6 illustrate the change in perception for the period.

Figure 1. Consumers' perception (average rating) in UK from 2012 & 2016 of salmon, chicken, beef and pork.

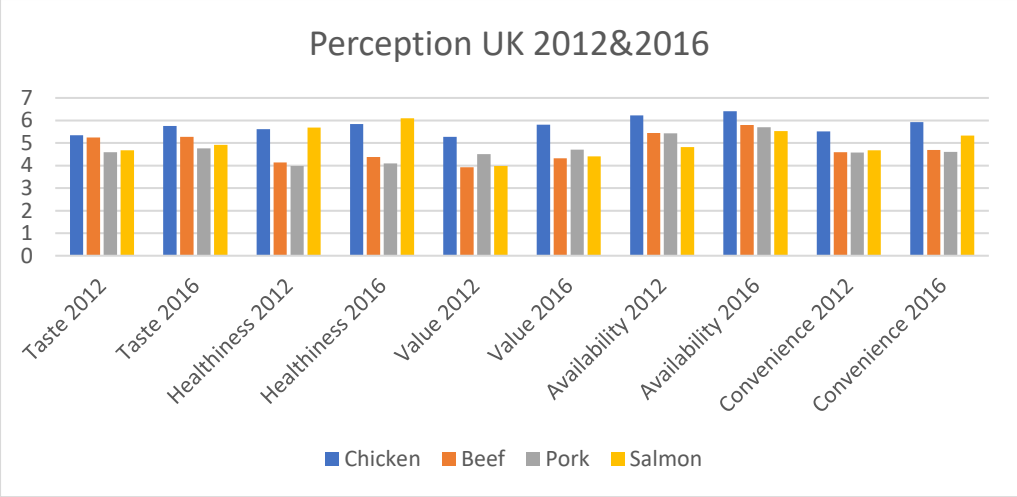


Figure 2. Change in perception (average rating) from 2012 to 2016 of salmon and meat from agriculture in UK.

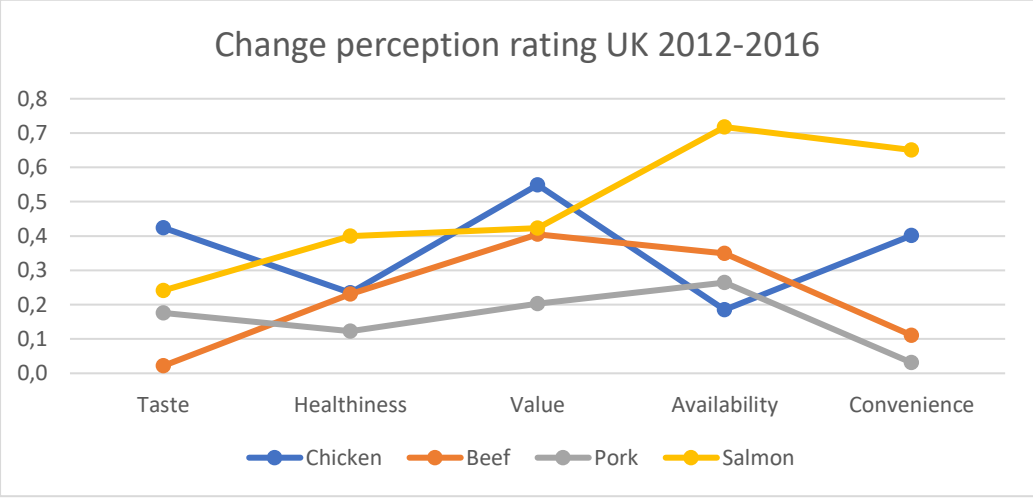


Figure 3. Consumers' perception (average rating) in Germany from 2012 & 2016 of salmon, chicken, beef and pork.

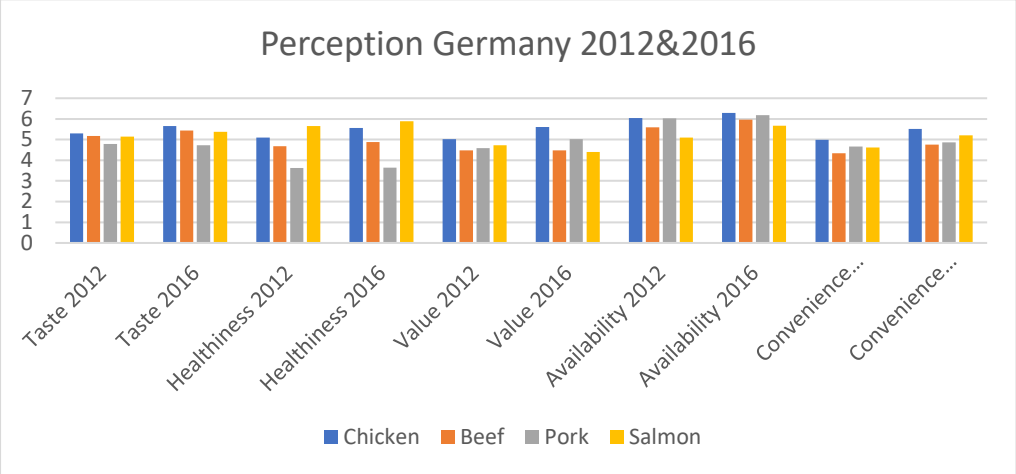


Figure 4. Change in perception (average rating) from 2012 to 2016 of salmon and meat from agriculture in Germany.

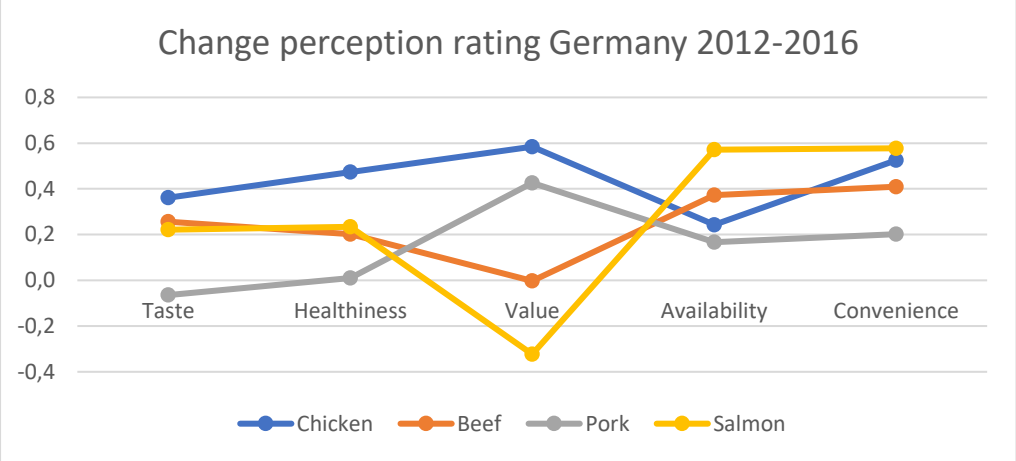


Figure 5. Consumers' perception (average rating) in France from 2012 & 2016 of salmon, chicken, beef and pork.

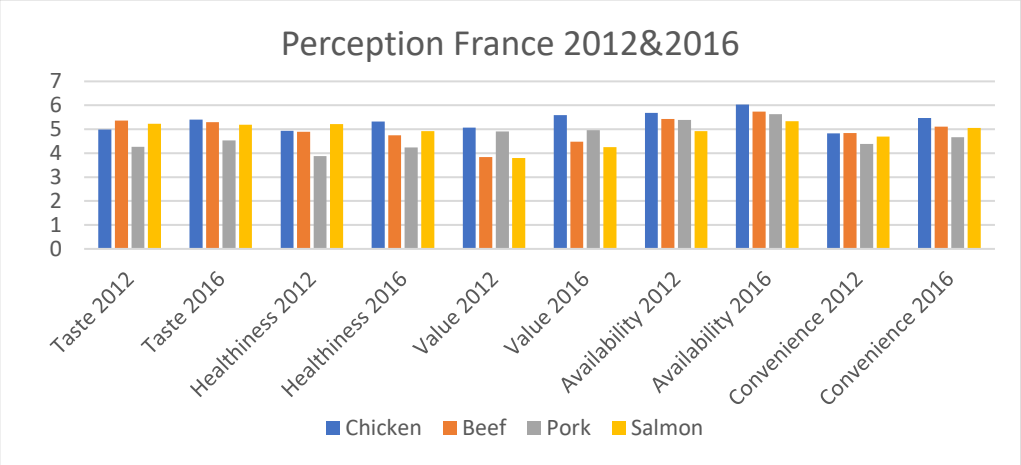
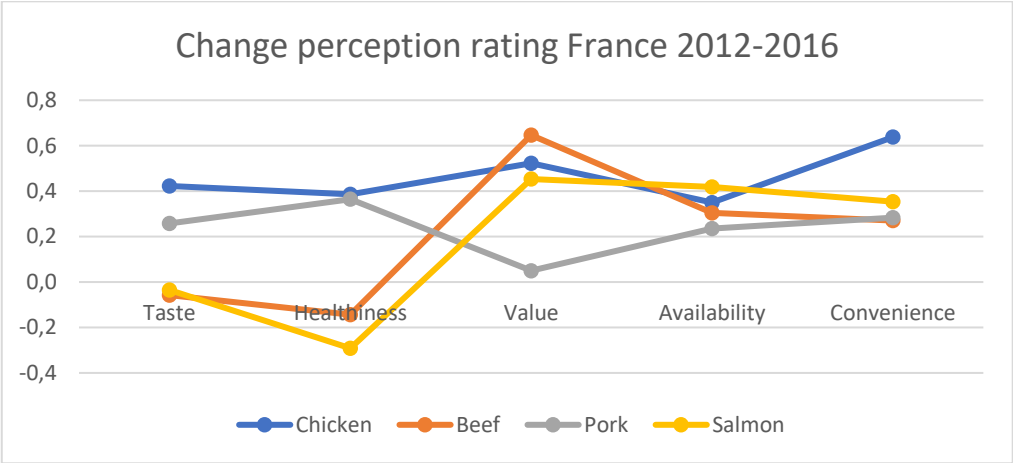


Figure 6. Change in perception (average rating) from 2012 to 2016 of salmon and meat from agriculture in France.



Chicken had the highest Convenience rating in 2012, but salmon had the largest increase in UK and Germany. The difference between chicken and salmon decreased from 2012 to 2016 in UK and Germany, but chicken still have the highest rating.

In perceived Healthiness salmon had the highest score in 2012 in all the countries. In 2016 salmon is rated highest in Germany and UK in 2016 and also had the largest increase in UK. Salmon had a decrease in France (Figure 6) while chicken increased the most in both France and Germany, and have in 2016 a higher rating in perceived healthiness in France.

In perceived value for money salmon had a high average rating in Germany in 2012 second to chicken, but had a decrease while chicken and pork had a high increase (figure 2). In 2016 salmon have the lowest score in Germany. In UK chicken was rated considerably higher than the other meat types. All the types of meat increased in perceived value from 2012 to 2016. Chicken increased the most from 2012 to 2016 (figure 4). Chicken and Pork have the highest perceived value in France in 2012. Beef, chicken and salmon increased their average value rating from 2012 to 2016. Beef and salmon decreased the rating difference compared to pork, but both chicken and pork still have a higher mean score on value perception than salmon and beef (figure 6).

Salmon increase the most in perceived availability in all three countries, especially in Germany and UK. Salmon had the lowest availability rating score in all countries in 2012, and despite the highest increase in 2016, salmon still have the lowest score in perceived availability. Chicken had the highest rating in all countries in 2012 and still has the highest rating in 2016.

Chicken has the highest rating and highest increase in change of perceived taste in all the target countries, chicken also have the highest perceived taste rating followed by beef and

salmon. The taste perception of salmon increased slightly in the UK and Germany with no change in France. Pork has the lowest rating in all the target countries. In Germany, salmon gained on beef and they have equal rating score behind chicken in 2016.

Figure 7. Average score of consumers' overall perceptions in UK, Germany and France for 2012.

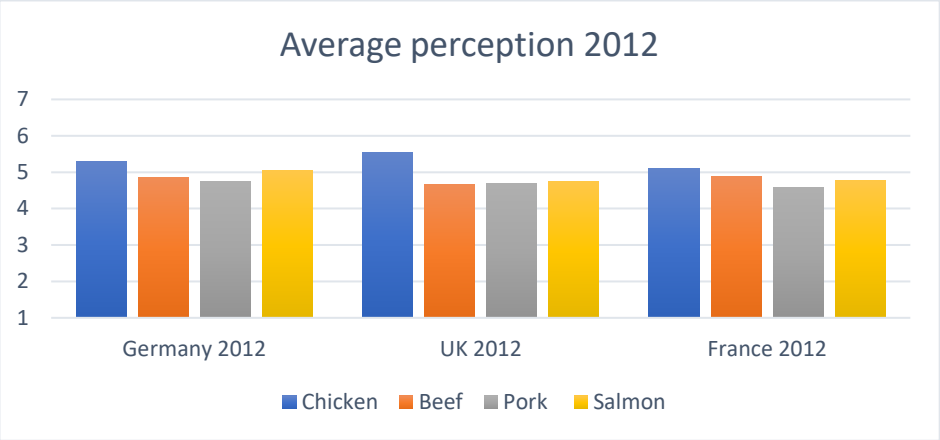


Figure 8. Average score of consumers' overall perceptions in UK, Germany and France for 2016.

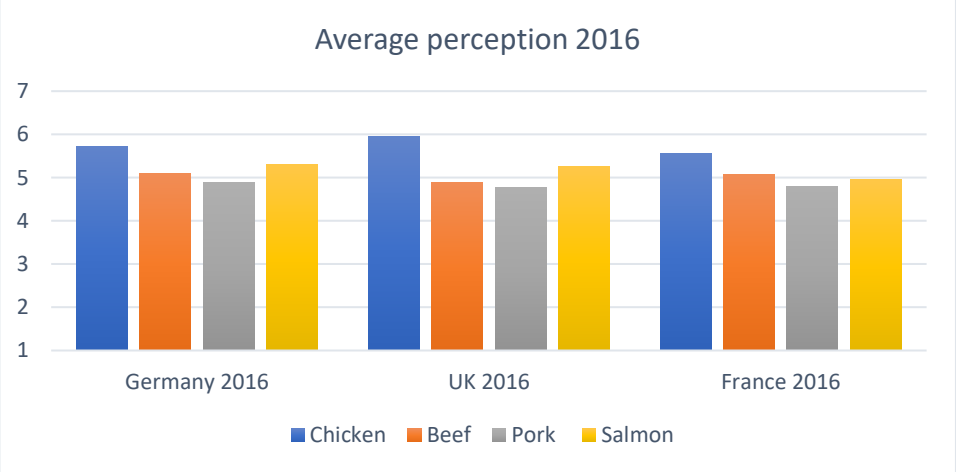
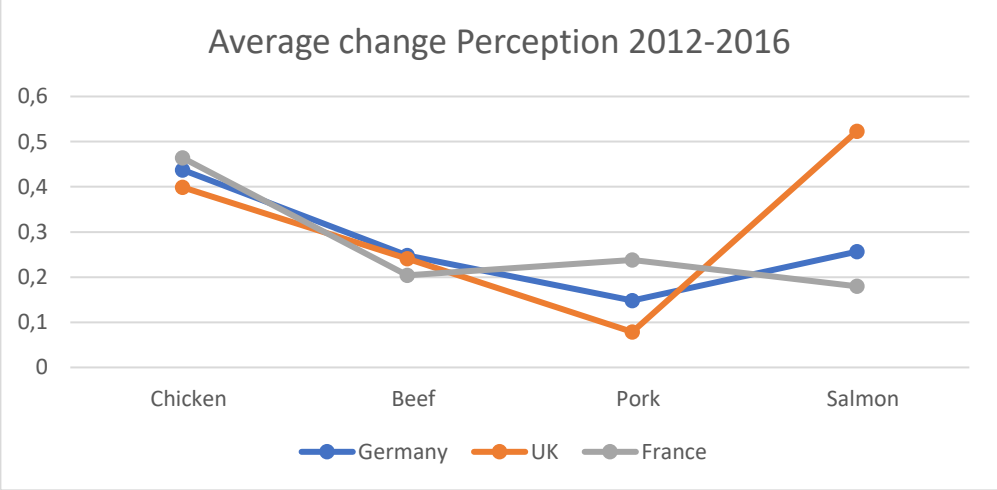
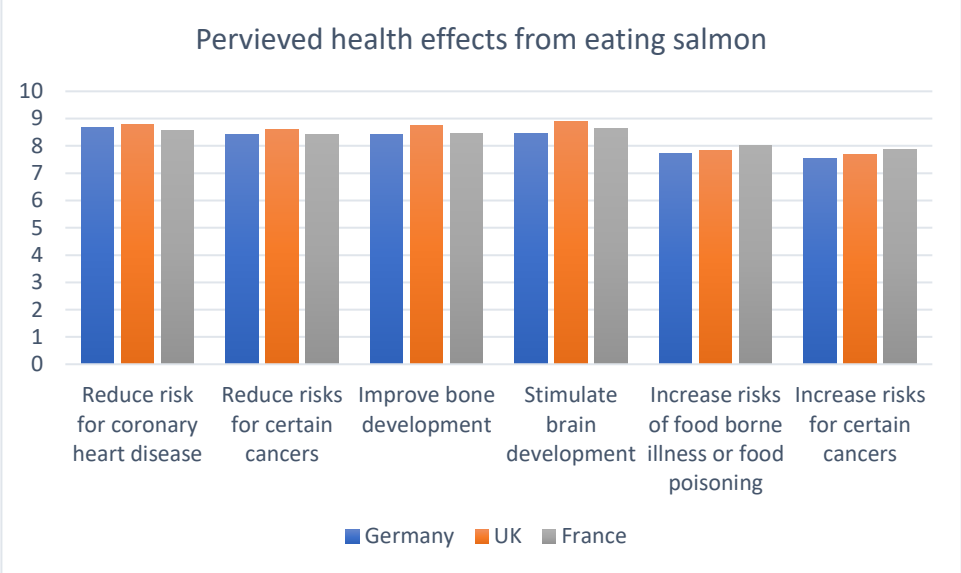


Figure 9. Change in overall perception (average rating) from 2012 to 2016.



The scores on perceived health effect of salmon consumption is somewhat contradictory. France has the highest score on perceived health risks of salmon consumption, while UK have the highest score on health benefits (figure 10). The countries all have consistently high scores on health benefits, only varying between 8,4 to 8,9 with the same on the health risks between 7,5 to 8.

Figure 10. Perceived health benefits of eating salmon agriculture in Germany, UK and France in 2016.



Consumption Frequency

Findings of the consumers´ chicken and salmon consumption at home, first an overall consumption then consumption by product type.

Figure 11. Share of consumers who consume salmon at home in 2012 and 2016 in UK.

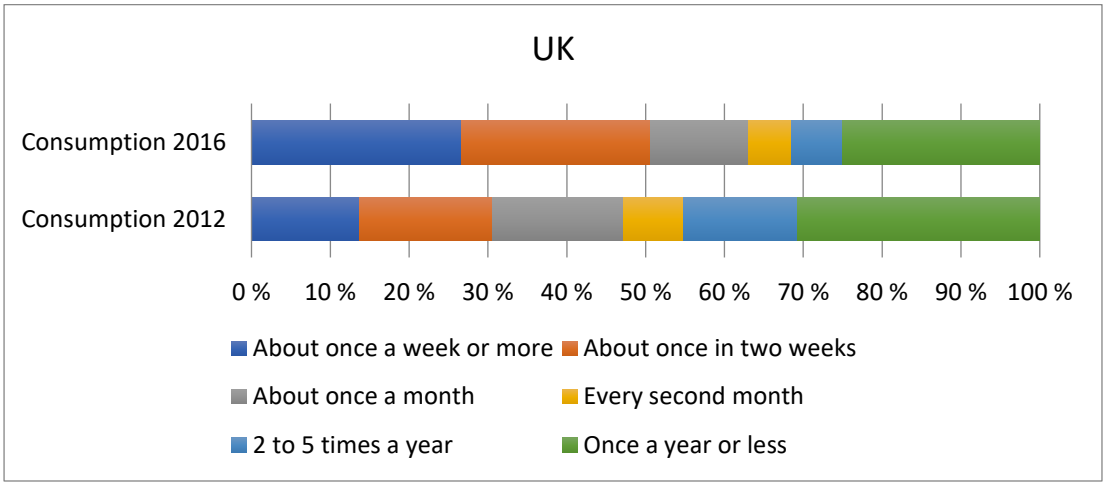


Figure 12. Share of consumers who consume salmon at home in 2012 and 2016 in Germany.

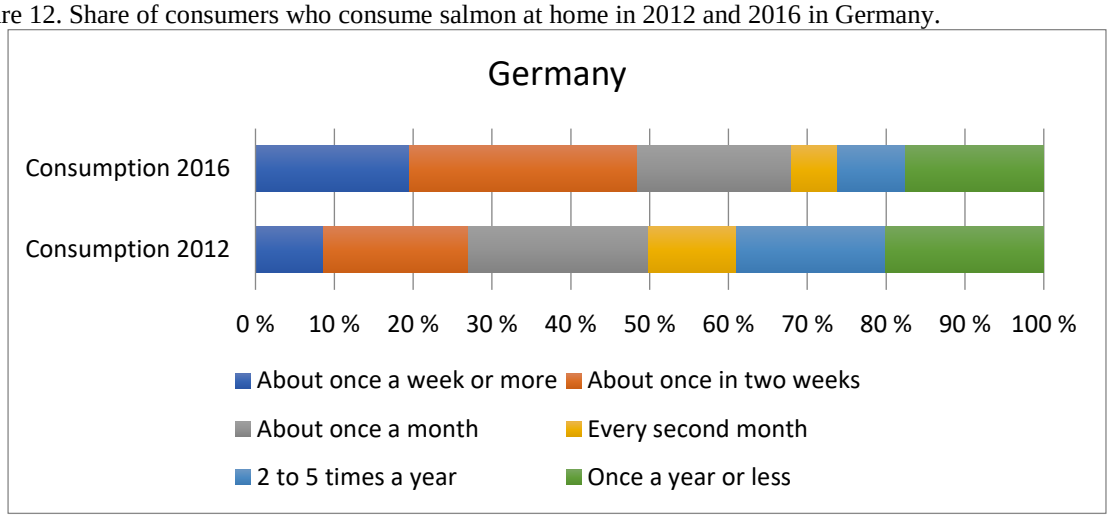
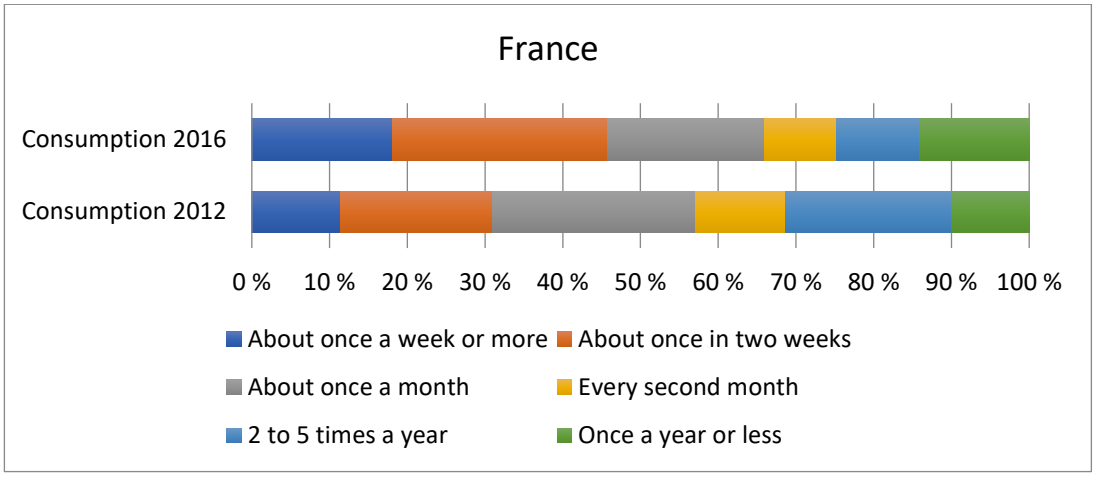


Figure 13. Share of consumers who consume salmon at home in 2012 and 2016 in France.



Salmon had a big increase in frequent consumers, who are those who consume salmon "About once a week or more" and "About once in two weeks", in all countries. Germany and UK had the biggest increase, increasing the frequent user group from 27 per cent to 48 per cent in Germany and 31 per cent to 51 per cent in UK in 2016. France also had a big increase in frequent consumers from 31 per cent to 46 per cent In 2016, UK have the biggest share of frequent consumers followed by Germany. France have the lowest share of frequent consumers, but also the lowest share of non-consumers, unlike UK who have the highest share of Non- users.

Even though the increase in frequent user of salmon was large in all countries, the descriptive analysis found that chicken still has a much larger share of frequent users in all countries.

The consumption frequency of non-consumers of salmon and the reasons why they do not eat salmon.

Figure 14. Share of consumers who eat and do not eat salmon in 2016 in France, UK and Germany.

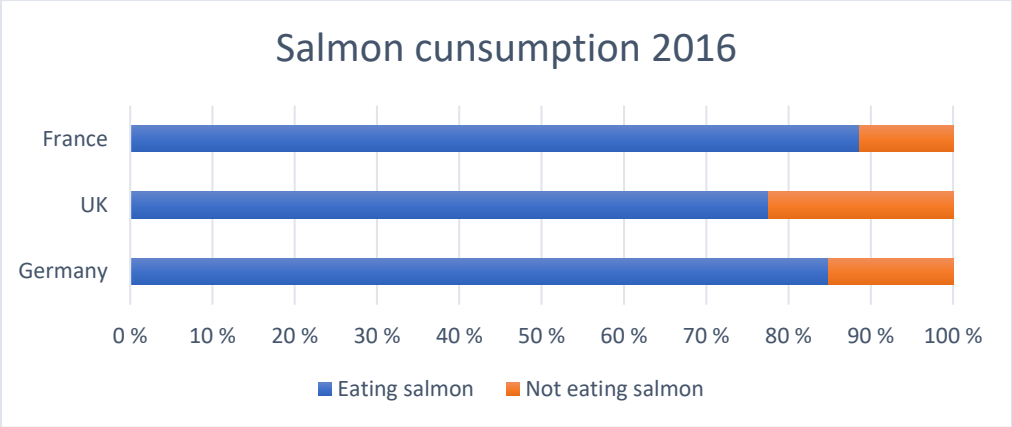


Figure 15. Reasons consumers do not eat salmon in UK in 2016.

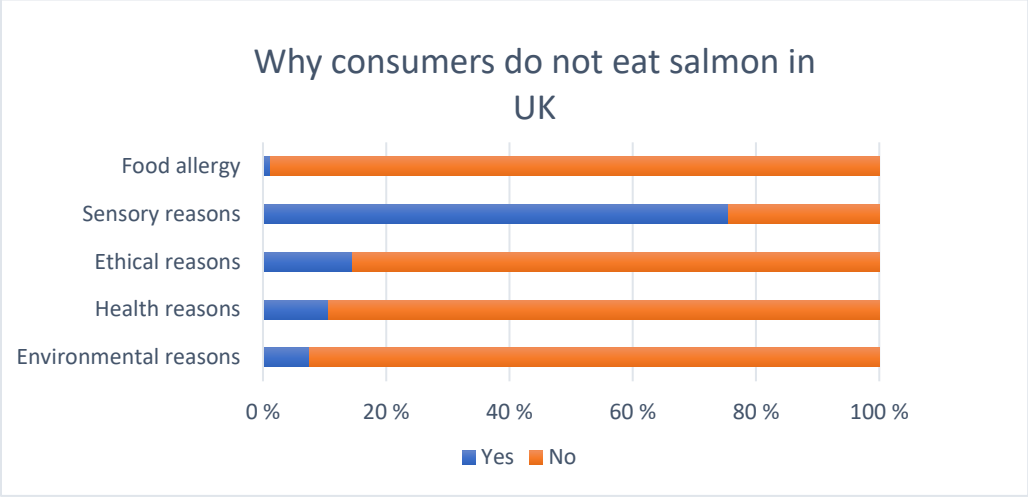


Figure 16. Reasons consumers do not eat salmon in Germany in 2016.

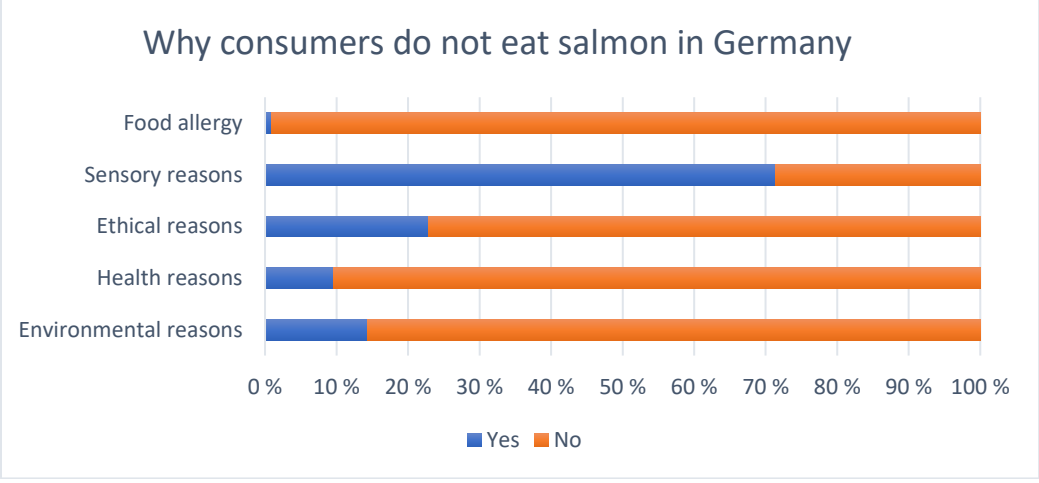
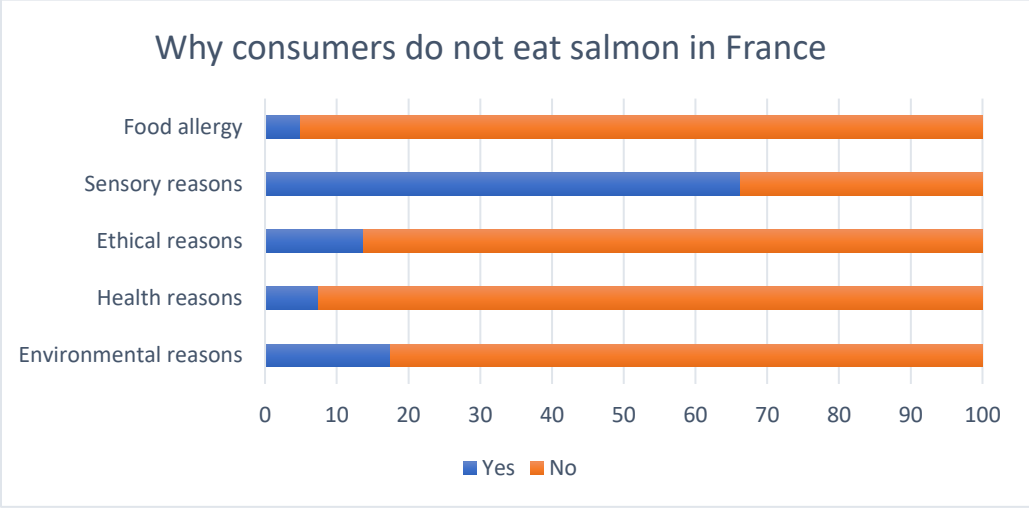


Figure 17. Reasons consumers do not eat salmon in France in 2016.



France with 89 per cent has the lowest share of non-consumers followed by Germany with 85 per cent and the UK with 78 per cent, and reversed the biggest share of salmon consumers followed by Germany and UK. Sensory reasons are the main reason to not eat salmon in all countries.

Frequency of salmon consumption by product type based on freshness, packaging and where it is sold, for consumption at home among salmon consumers. In this context, those who consume 2-3 times a month or more are considered frequent consumers.

Figure 18. Share of consumers who consume salmon by type of product in UK 2016.

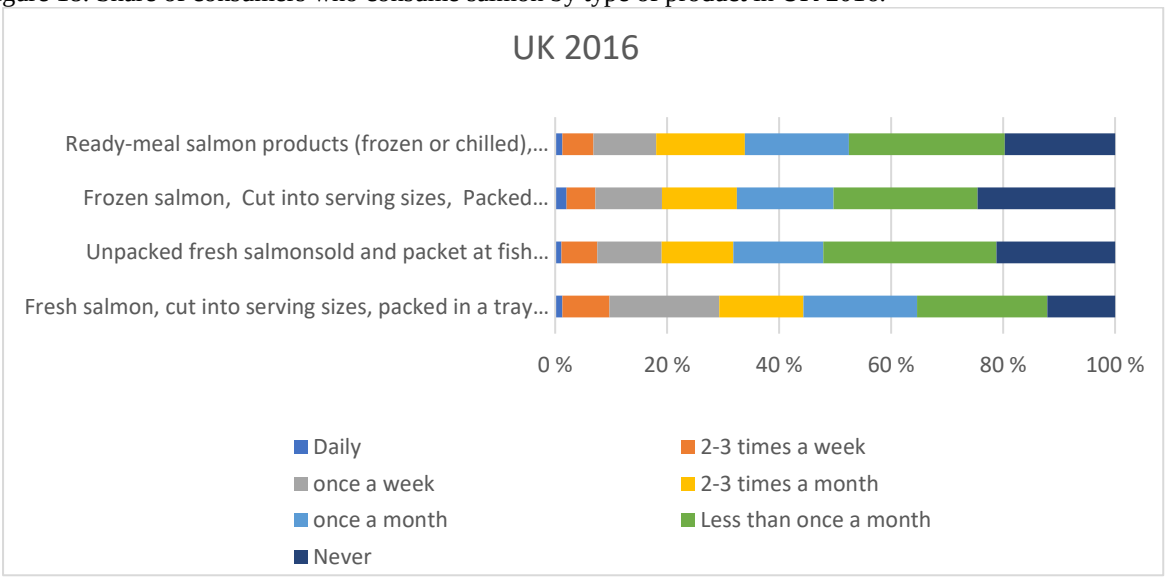


Figure 19. Share of consumers who consume salmon by type of product in Germany 2016.

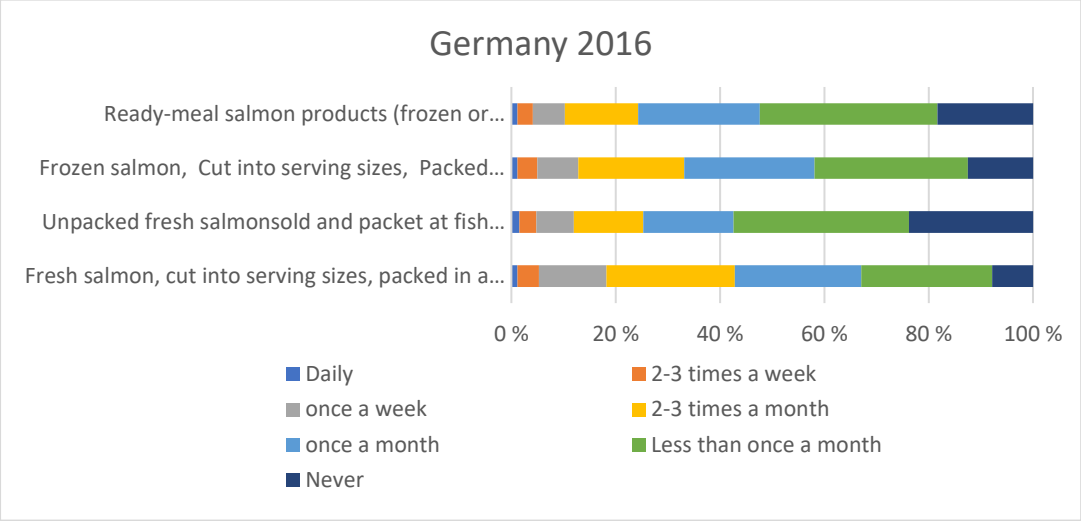
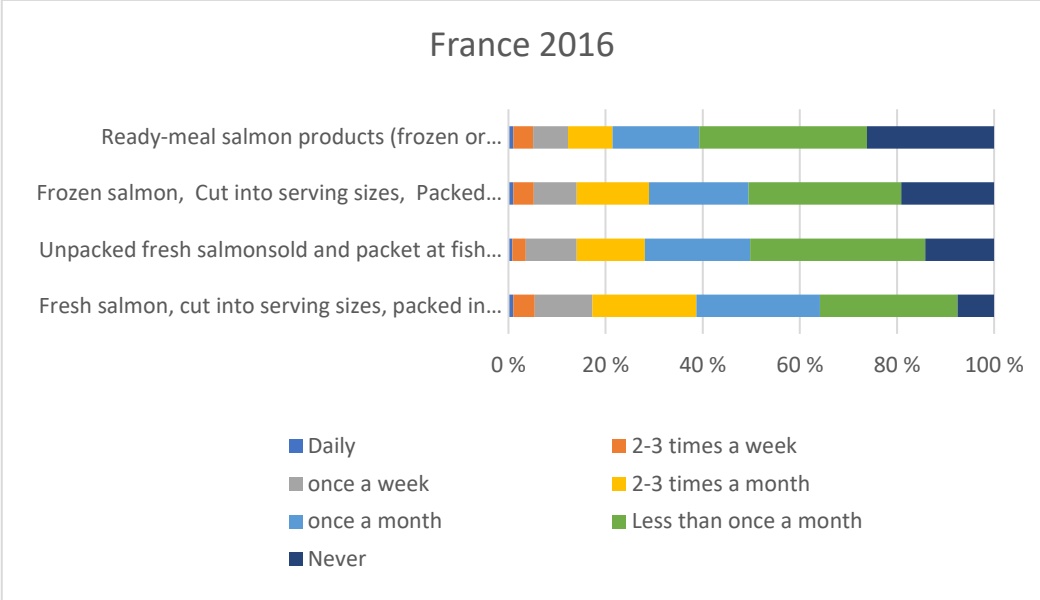


Figure 20. Share of consumers who consume salmon by type of product in France 2016.



"Fresh salmon, cut into serving sizes, packed in a tray wrapped in plastic" has the highest share of frequent consumers in all countries, with 38 per cent in France, 44 per cent in Germany and 42 per cent in UK (figure 16, 17, 18). In Germany and France, the product "Frozen salmon, cut into serving sizes, packed individually in a vacuum plastic or together in a plastic bag" has the second highest share of frequent consumers with 32 per cent and 28 per cent. In UK, the product "Ready-meal salmon products (frozen or chilled, sold in supermarkets" have the second highest share of frequent consumers with 33 per cent.

When salmon consumption is divided into product types, the consumers who consume salmon about once in two weeks or more are considered frequent users.

Figure21. Share of consumers who consume salmon by type of product in UK in 2016

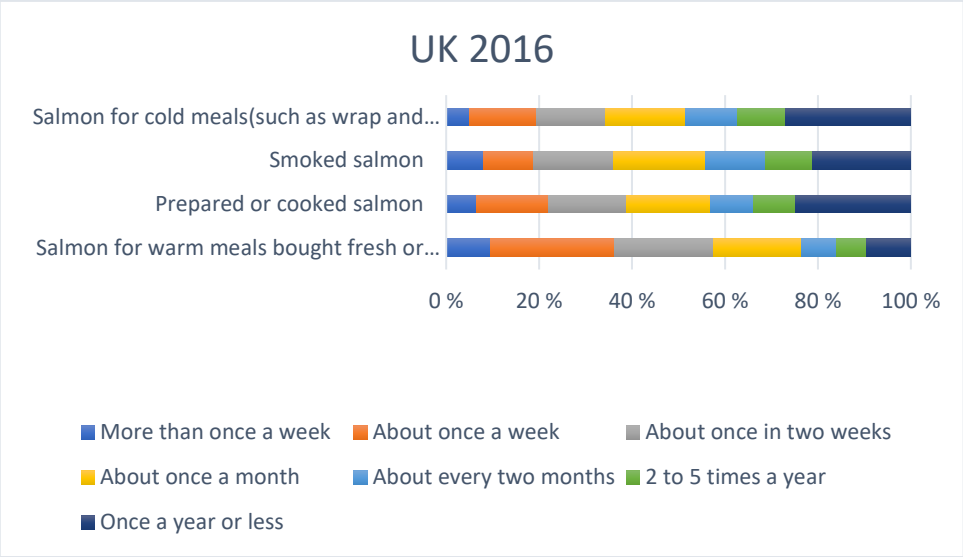


Figure 22. Share of consumers who consume salmon by type of product in Germany in 2016

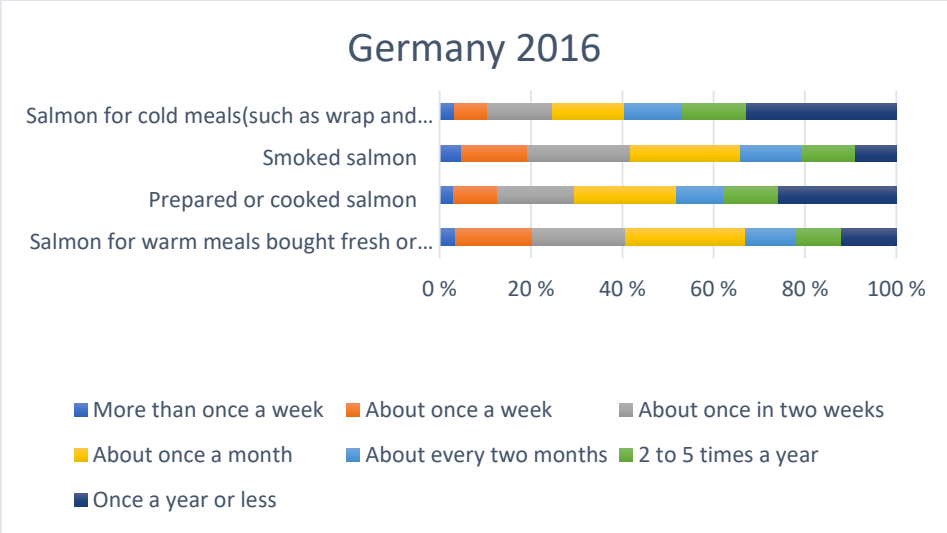
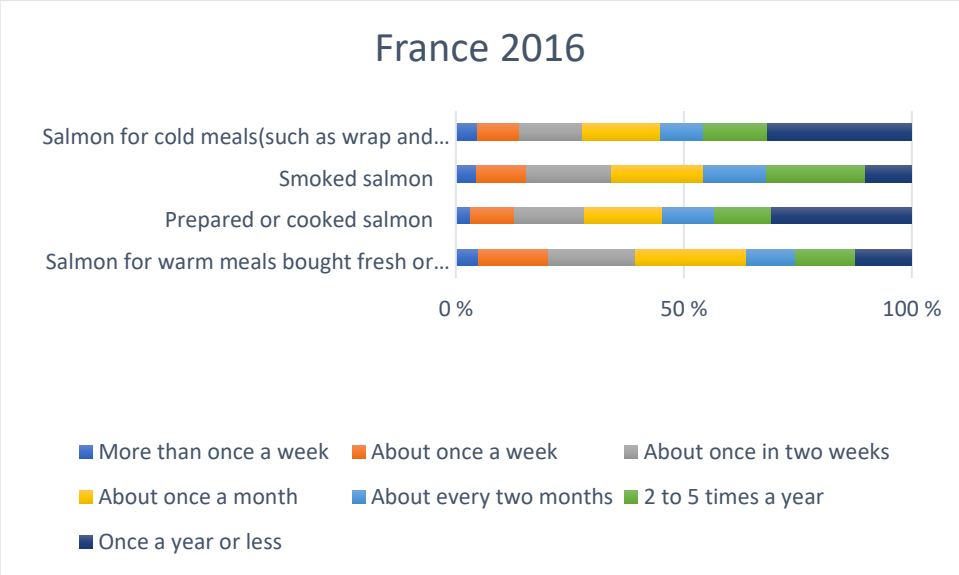


Figure 23. Share of consumers who consume salmon by type of product in France in 2016.



The product "Salmon for warm meals" have the highest share of frequent consumers in both UK with 58 per cent and France with 39 per cent, followed by the product "smoked salmon" with 34 per cent in France and "prepared or cooked salmon" with 39 per cent in UK. In Germany, the product "smoked salmon" have the highest share of frequent users with 42 per cent, closely followed by the product "Salmon for warm meals" with 41 per vemt.

FRL, food related lifestyle

There has been a marginal change in mean score in either of the dimensions in Germany and the UK, that also have very similar scores and development in all the FRL dimensions both years. In France, there has been a decrease in "interest in cooking" from a score of 4,8 in 2012 to 4 in 2016. Convenience also decreased from 3,9 in 2012 to 3.3 in 2016.

Overall the countries have consistently high scores in the aspects of "price/quality relations", "freshness", "health" and "taste", rated 5 or higher for all countries in 2016. "Convenience" was rated lower in all the target countries in 2016, varying between a score of 3,3 to 3,9 between the countries, with the lowest rating in Germany. "Interest in cooking" was rated as 4,8 in France and UK and as 4,2 in Germany in 2016. France and UK had the highest overall FRL rating with a score of 4,9 followed by Germany with an average score of 4,8 in 2016.

Figure 24. Consumers' scores on the seven different dimensions of FRL, measured by mean score in UK in 2012 and 2016.

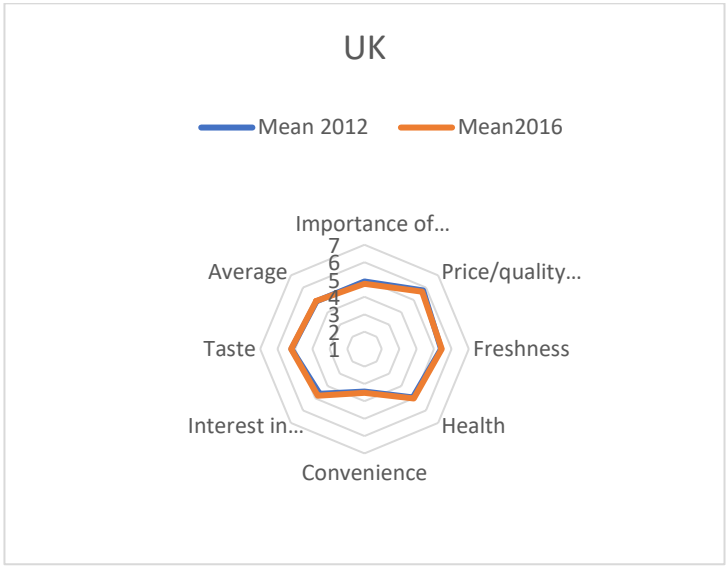


Figure 25. Consumers' scores on the seven different dimensions of FRL, measured by mean score in Germany in 2012 and 2016.

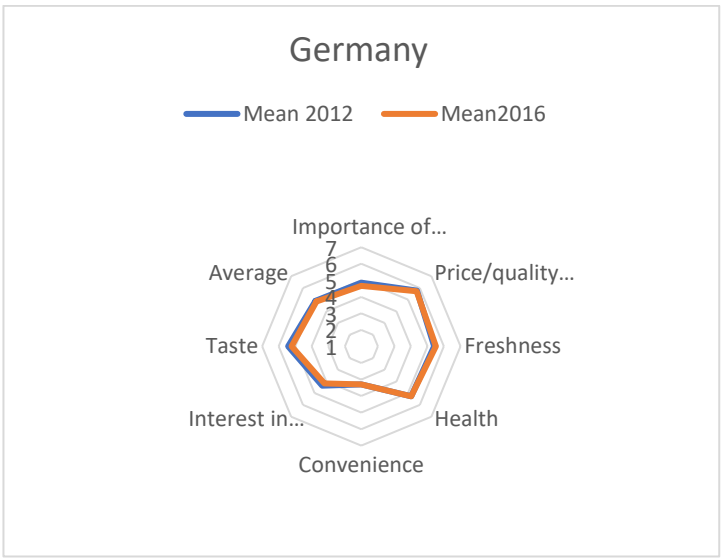
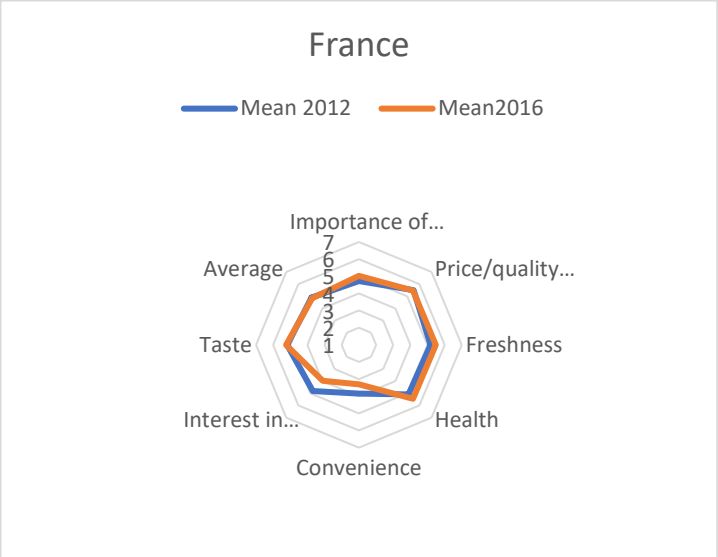


Figure 26. Consumers' scores on the seven different dimensions of FRL, measured by mean score in France in 2012 and 2016.



Regression Analysis

Based on the regressions accounted for in the empirical model, the purpose is to explore the relationship between the increase in consumption frequency in the target countries; UK, Germany and France by looking at the perception genres of healthiness, value and convenience. As well as the consumers' placement in the FRL groups and interceptions between certain variables.

Regression model 1

The estimation results are shown in Table X. The coefficient for consumer's Convenience perception (β_1) was positive and significant in all the countries. In UK, estimated β_1 was 3,69, indicating that the expected change in consumption frequency is 3,69 times more each year for each one-point increase in perceived Convenience in 2012. In Germany, estimated $\beta_1$was 2,35, so that frequency of consumption is expected to increase for each one-point increase in perceived convenience. In France estimated β_1 was 2,46.

"Time interacted with Convenience" represent the change in the effect from 2012 to 2016, represented by the coefficient β_2. There was only a significant change in the German consumers' where the estimated β_2 was -3,88. The negative effect in β_2 illustrates that the increase in perceived Convenience rating will negatively affect the frequency of consumption.

β_3 illustrates the effect of Time from 2012 to 2016, and the estimated effects had significant positive effects in both UK and Germany. The highest effect in Germany, were estimated β_3 of 22,63 indicates an average increase in consumption of 22,63 times more a

year in 2016 compared to 2012. In UK, the estimated β_3 was 8,57. The variable Time had no significant effect on the French consumers' frequency of consumption, so there was no change in the frequency of consumption from 2012 to 2016.

Perception of Convenience positively affected the consumption frequency in all countries, "Time interacted with Convenience" negatively affected consumption frequency in Germany. Time positively affected consumption in UK and Germany. The hypothesis H1a, H1b and H1c are therefore rejected in Germany, H1a and H1c are rejected in UK and H1a rejected in France.

Table 4 Consumption Frequency Regression 1 Estimation Results

Regression 1	**UK**	**Germany**	**France**
(Constant)	-2,07	2,76	4,14
Convenience	3,69***	2,35***	2,46*
Time interacts with Convenience	,38	-3,88***	,15
Time	8,57***	22,63***	4,24
Controls	✓	✓	✓
R Square	0,23	0,14	0,11

*, **, and *** indicates significance at p<0,10, p<0.05 and p<0.01, respectively

Control variables include gender, income and education.

Regression model 2

Regression Model 2 aims to explore the relation between the consumption frequency and the consumers' perception of Value. To explore if perceived Value from salmon as a product has a significant positive effect in all the countries. See table 5 for estimated results. The estimated β_1 for the UK consumer is 3,52, and is the expected change in consumption frequency when perceived Value has a 1-point increase in 2012. In Germany, the estimated β_1 is 2,41 and that is the expected increase in 2012. In France, the estimated β_1 is 2,49.

The "Time interacted with Value" had no significant effect on the consumers in either of the countries, so there was no change in the effect from 2012 to 2016.

The effect of the time period from 2012 to 2016 represented by estimated β_3 for the variable "Time" had a significant positive effect on the consumer in all of the countries. The estimated β_3 in UK was 13,97, an increase in consumption frequency from 2012 to 2016. In Germany, estimated β_3 was 11,8, and in France the estimated β_3 was 5,23.

Perception of Value positively affected the consumption frequency in all countries, "Time interacted with Value" had no additional effect. Time positively affected consumption in UK, Germany and France. The hypothesis H1a and H1c are therefore rejected in UK, Germany and France.

Table 5 Consumption Frequency Regression 2 Estimation Results

Regression 2	**UK**	**Germany**	**France**
(Constant)	1,46	2,77	6,23
Value	3,52***	2,41***	2,49***
Time interacts with Value	-,75	-,03	-,07
Time	13,97***	11,80***	5,23**
Controls	✓	✓	✓
R Square	0,21	0,16	0,11

*, **, and *** indicates significance at p<0,10, p<0.05 and p<0.01, respectively

Control variables include gender, income and education

Regression model 3

The consumer's perception of Healthiness has a positive significant effect on both the German and English consumers. Estimated results are shown in Table 6. The estimated β_1 for UK was 2,86, representing the change in consumption frequency for each 1-point increase of perceived Healthiness. In Germany, estimated β_1 was 1,94 for the equivalent effect. The estimated β_1 for France was -0,18 so there is expected a slight negative effect in the consumption frequency when perceived Healthiness rating increase by 1-point in 2012.

"Time interacted with Healthiness" only had a significant effect on the German consumer, where estimated β_2 was 1,3, as an increased effect from 2012 to 2016.

The effect of the time period from 2012 to 2016 represented by the variable Time had a significant effect in UK and France, where estimated β_3 in UK was 11,63 so the frequency of consumption increased with 11,63 in 2016. Estimated β_3 in France was -0,85 which is a slight decrease in consumption. The German consumer's consumption was not significantly different in 2016.

Perception of Healthiness positively affected the consumption frequency in UK and Germany, while it had a negative effect in France. "Time interacted with Healthiness" only had an additional effect in Germany. Time positively affected consumption in UK, and had a

slight negative effect in France. The hypothesis H1a is therefore rejected in UK, Germany and France. H2b is rejected in Germany and H2c is rejected in UK as it has a positive effect and with a negative effect France.

Table 6 Consumption Frequency Regression 3 Estimation Results

Regression 3	**UK**	**Germany**	**France**
(Constant)	-1,65	2,23	4,45
Healthiness	2,86***	1,94***	-,18***
Time interacts with Healthiness	,09	1,30*	,04
Time	11,63***	4,00	-,85***
Controls	✓	✓	✓
R Square	0,18	0,15	0,10

*, **, and *** indicates significance at p<0,10, p<0.05 and p<0.01, respectively

Control variables include gender, income and education

Regression model 4

The heterogeneity of the consumers' effect on consumption frequency is examined by accounting for a possible effect of the Food-related lifestyle segments. Estimated results are shown in Table 7. As the estimated β_1 is not significant in any of the countries, the frequency of consumption of a person in the FRL Mid-group is not different from the consumption of a consumer in the Low-group in 2012.

"Time interacted with FRL Mid-group" was significant in Germany, with an estimated β_2 of 5,27, which is the expected additional consumption of a person in the Mid-group in 2016. The estimated coefficients of β_2 in UK or France were not significant.

In "Convenience interacted with the FRL Mid-group", the estimated β_3 was not significant in any of the countries. Therefore, there is no change in consumption for a person in FRL Mid-group based on their rating of perceived Convenience, compared to consumers in Low-group.

In "Value interacted with the FRL Mid-group", estimated β_4 was not significant in UK, Germany or France.

The FRL High-group had no significance in estimated β_5 in any of the target countries. The frequency of consumption of a person in the FRL High-group is not different from the consumption of a consumer in the Low-group.

"Time interacted with the FRL High-group" had no significant estimated β_6 in either of the countries, so there was no additional consumption for a consumer is in the High-FRL group in 2016 compared to consumers in the Low-group. "Convenience interacted with FRL High-group" estimated β_7, was not significant in UK, Germany or France. "Value interacted with FRL High-group", estimated β_8, was not significant in any of the countries.

Time was significant in all of the target countries. In UK, the estimated β_9 was 7,79 so Low-group consumers in UK had an additional consumption in 2016. In Germany, estimated β_9 was 8,04 so the Germans had additional consumption in 2016. The French equivalent had a estimated β_9 of 3,89.

The effect of Convenience on consumption is significant in UK and France. In UK with an estimated β_{10} of 2,47 representing expected change in consumption when perception of Convenience increase by 1-point. In France, the estimated β_{10} is 1,76 with an equivalent effect.

The effect of perceived Value has a significant effect on frequency of consumption in all of the target countries. In UK, with estimated β_{11} being 1,44, it is the expected change in frequency of consumption when the perception of Value increases by one unit for Low-group consumers. In Germany, estimated β_{11} is 2,14 and in France the estimated β_{11} is 1,45, having the equivalent effect for the Low-group.

The variables of perception of Healthiness and "Healthiness interacted with the food-related groups Mid and High" was not included in the analysis. This due to the fact that when they were included, they were not significantly explaining the consumption frequency in any variable in any country.

There is no significant difference in the consumption frequency between the FRL groups in either of the countries, therefor we cannot reject H4a. There is no significant difference in consumption frequency between the FRL groups when effect of the Perceptions is included, the null hypothesis for H4b cannot be rejected in any of the countries. Time had an additional effect on consumption frequency in Mid-group in Germany, thus the null-hypothesis for H4c there.

Table 7 Consumption Frequency Regression 4 Estimation Results

Regression 4	**UK**	**Germany**	**France**
(Constant)	-2,79	2,53	,93
FRL Mid Group	-1,56	1,94	2,84
Time interact with FRL Mid Group	1,00	5,27**	-,10
Convenience interact with FRL Mid Group	,47	,62	-,58
Value interact with FRL Mid Group	,19	-,53	,76
FRL High Group	-,079	-2,75	-,39
Time interact with FRL High Group	4,89	5,39	1,66
Convenience interact with FRL High Group	,15	-,03	,83
Value interact with FRL High Group	,39	1,36	-,38
Time	7,79**	8,04***	3,89**
Convenience	2,47**	-,19	1,76**
Value	1,44*	2,14***	1,45**
Controls	✓	✓	✓
R Square	0,254	0,185	0,134

*, **, and *** indicates significance at p<0,10, p<0.05 and p<0.01, respectively

Control variables include gender, income and education

Discussion

Frequency

The increase in frequency consumption has led to an increased number of frequent consumers of salmon. As habit is considered behaviour regularly repeated by the consumers, this increase can lead to consumption of salmon becoming a habit for more consumers. Frequent users are considered the main customer group, the industry seemed to attain a larger customer group in the studied time period. In order for the industry to accommodate to the consumers of salmon, and hopefully increase their customer group further, they need to know what drives their consumption so that they can adapt and adjust accordingly.

Time

The increase in frequency of consumption over the time period confirms that the seafood industry is in a period of immense growth. Time had a positive effect on consumption in most of the contexts, and accounted for a sizable part of the change in consumption frequency from 2012 to 2016. The factors considered under the dimension Time have a positive effect, which

is equivalent to the result with an increase in frequency of consumption for all the target countries.

The effect of Time had a large impact on the consumers in the UK, where frequency of consumption increased vastly. This indicates a large increase in share of consumers in this market, conforming with the statement for expected growth. Salmon as a product seems to convert into a more common protein source in the UK, with high increase in frequent consumer.

In Germany, the frequency of consumption increase extensively with Time, and the share of frequent users grew accordingly. As salmon is consumed more often, it appears that Germany is moving towards being a more established market alongside UK and France.

The increase in consumption due to the effect of Time is lowest with the French consumers, which is expected as this is considered the most established market. Further increase is considered more challenging in the established market. France has the lowest share of frequent consumers, which is surprising as one would expect the most mature and established market to have the largest share of frequent users. However, they may consume more salmon volume-wise.

The estimated share of the population consuming salmon in 2016 is highest in France, followed by Germany, and the UK has the lowest share of consumers. The UK is the market with the largest growth potential, as over 20 per cent of the population are estimated to not eat salmon. In Germany, 85 per cent of the population is estimated to consume salmon, a larger share than in the UK which is considered a more established market. This indicates that salmon as a product has increased in popularity among the average consumer in Germany. Despite the smallest increase in consumption, France have the highest share of consumers, consistent with France being a mature and established market. However, over 10 per cent are non-consumers so there is potential for growth. This was expected as the growth in UK and Germany was predicted by both literature and previous studies to be larger than the growth in France (Asche, 2011).

As the effect of "time" is found to have a different impact in the countries and the contexts, this suggest that the unobserved factors affect the markets differently, either due to dissimilar surroundings or characteristics. Innovation and technology may have contributed to an improvement in product and thereby affected the consumers to consume more salmon. These are factors that cannot be identified in this context, but Time account for the unobserved factors in the analysis.

Perception

Perception of convenience was found to increase the consumers' frequency of consumption in all the target countries. The effect of perceived perception was quite similar, but had a slightly larger effect on consumers in the UK, followed by France and Germany.

Perceived Convenience is somewhat based on the consumers' knowledge of cooking, and is assumed to save the consumers both time and energy. Both dimensions are considered a limited resource by consumers today, and consumers make decisions regarding their use of time and energy when purchasing and consuming products. The three markets all appear to value Convenience highly when rating, and consuming salmon. This indicates that consumers of salmon do not want to spend time and effort, or do not have the cooking skills needed to prepare salmon. The fact that consumers base their consumption to such a degree on Convenience, indicate that those who consume salmon do not want to spend time or effort in preparing it.

When consumers consider this to be important when choosing protein source, salmon is not the product preferred. Salmon is the second most preferred protein source in the UK and Germany in the context of perceived Convenience, and in France it is the third most preferred.

Convenience is assumed to be closely related to Availability. Availability is how available the product is to the consumers when purchasing, while convenience is related to preparation of the product. If salmon is not available for the consumers, they may take it into account when evaluating the convenience of salmon. The perception of availability is high in all countries, so this may contribute to the positive effect perceived convenience have on the consumption frequency.

The UK has the highest frequency of ready-meal salmon products consumption among the countries. If many consumers eat ready-meals products, they may perceive salmon as more convenient and also have the knowledge of existing ready-meals products of salmon. This may be a reason why perceived convenience affect the salmon consumption more in UK than in Germany and France.

Salmon is perceived as a convenient product in Germany but the perception of convenience only had an additional negative effect on the frequency of consumption in Germany in 2016. Thus, Convenience has close to no effect in 2016. It would seem that Convenience is not an important factor for consumption anymore, and that the German consumers may wish to spend more time and effort on preparing salmon in 2016.

For the consumers who value convenience it is important that the consumers are adequately informed of the convenience of the product so that their knowledge is correct. As convenient products are already on the market, the challenges for the industry are more based on the dissemination of the products convenience, rather than producing a more convenient product.

The rating of perceived Convenience of salmon as a product increased in 2016 and salmon, as a result, strengthened its position. This will have an effect on the consumers who prefer convenient products. The findings of Convenience in this survey support the fact that Convenience still is an important contributing factor for exploring salmon consumption. However, the decrease in Germany implies that Convenience no longer is an important factor for increase in consumption.

Perceived Value for money increased the consumption frequency in UK, Germany and France. Previous research found the consumer's perception of Value to be related to the consumers' intention of continuing to consume. With the current consumers' perception of Value, they will most likely continue their consumption and not search for options to salmon, thus assuring more frequent customers to the industry.

Based on the fact that Germany is a price sensitive market, it was expected that the value perception would have the highest effect in that market, however the effect was quite similar in all countries. There seem to be a commonality between the markets, that they all are price sensitive. Products providing high value for money, should therefore be the focus of the salmon industry in all markets.

The interaction of "time" with the consumer's perception of perceived Value had no significant additional effect on the consumers in either of the countries. If anything, the effect could have decreased as the product price increased. An increased perception of Value is found even though the price increased. That implies that the consumers find perceived Value of salmon to increase more than the price. The consumers must consider salmon a better product. Salmon must most likely have high scores on other attributes as well, in order to be perceived as a product of good value. Germany is known to be a price sensitive market and the price increase may be the reason why the descriptive analysis found a decline in the value perception of salmon.

Increased perception of Healthiness had an effect on the frequency of consumption in all of the target countries, but not all of them were positively related to frequency. In the UK and

Germany, the consumption rate increased based on the consumers' perception of Healthiness, and in France the consumption had a slight decrease. The increase in consumption in the UK and Germany tells us that one of the reasons for the consumers to eat salmon here is based on their aim to eat healthy. This is coherent with the increased focus on healthy eating. Consumers probably choose to consume salmon when aiming to eat healthy, as salmon is considered the healthiest protein source in the UK and Germany. The size of the effect was somewhat expected and can be considered to validate that the consumer's perception of healthiness alone cannot ensure increased consumption. They need to have an intention of eating healthy in order for it to have an effect. Consumers in the UK and Germany seem to have an intention on eating Healthy.

The French consumers were found to eat less salmon the healthier they considered it to be, but the effect is marginal and with the highest rating on Healthiness the consumption would decrease with less than once a year. A possible reason is that the consumers who consider salmon a healthy product, also consider other meat-types such as chicken to be healthy, and choose to consume that option instead. This is supported by the fact that chicken in France in 2016, is considered healthier than salmon. When marketing and presenting salmon as a product in France, the industry may choose other attributes to highlight in order to increase consumption. Salmon is already considered a healthy product in all the target countries.

Due to the lack of effect in France this may no longer be considered a universal factor affecting the frequency of consumption.

The consumers perceived health effects of eating salmon show that consumers in the UK, Germany and France perceived both health benefits and health risks to be quite high when consuming salmon. The results are contradictory, as consumers normally would either find consumption to enhance or decrease their health. The increase in the salmon production and availability is a result of technological advances affecting both the surrounding environment and the final product. The contradictory findings may be due to consumers' torn opinion regarding this, implying that the production process may affect the perception of salmon's healthiness.

Only German consumers eat more salmon in 2016 due to higher perceived Healthiness. They consider salmon as a healthier product in 2016 and this imply that the German consumers desires to eat healthier, and choose for this purpose to consume salmon more often.

Food Related Lifestyle

The consumers within the Low-group in Food-related lifestyle consumed more salmon in 2016 compared to 2012 in all countries. The size of the effect is large in the UK and Germany, and slightly lower in France.

As France is considered the most mature market, thus the lower increase was expected. The salmon industry is considered to be growing, so a total increase in consumption from 2012 to 2016 was expected and is consistent with former research and literature. There has been an increase in frequent consumers of salmon in UK, Germany and France. The consumers in the Low FRL-group had a lower consumption frequency in 2012, thus the growth potential is larger in this segment and the results are expected. The results indicate that the salmon industry need to accommodate the consumers with low food-involvement, as several of the frequent consumers are placed in this lifestyle section. The group is characterised by a low interest in food and wanting more convenient products. Product development and marketing should take this into account.

Improving perceived perception of Convenience will increase consumption frequency in the UK and France among the consumers in the Low FRL-group. The effect was similar across the UK and France, where those who think that salmon is convenient eat salmon more frequently. Convenience is considered an important factor to the consumers with low food-involvement. This increase in frequency may be due to more convenient products presented to the market during this time.

Perception of Value for the consumers in the Low-group are found to have a positive significant effect in all the target countries. The effect is larger in Germany than in the UK and France. The results, and the effect being larger in Germany was expected as Germany is considered a price-sensitive market. The consumers in all the countries with low scores in Food-related lifestyle are assumed to have little interest in food, however, with Value being a monetary issue, this perception is considered important for all consumers. There has been a decrease in the perception of Value in Germany, so the fact that the effect is larger now than in former research is somewhat surprising.

Time, Convenience and Value do not provide an additional effect for the consumers in the Mid- and High FRL-group compared to Low FRL-group with one exception, consumers in the Mid FRL-group in Germany eat more salmon in 2016 than the Low- and High FRL group.

The findings indicate that there are no differences between the effects the perceptions have on the groups. The lack of difference between the FRL-groups in perception of Convenience may be due to that consumers have the same attitude when it comes to importance of Convenience when considering salmon as a product. The lack of difference between the FRL-groups in perception of Value, may be due to that monetary issues are equally present for all consumers. However, the groups may have heterogeneous effect on consumption frequency when seen with other product perceptions.

Time only had an additional effect in Germany for the Mid FRL-group where consumption increased. As Germany is considered a market that is growing, an increase in consumption was expected for all FRL-groups, with an additional effect for Mid- and High-group. This indicates that German consumers with a Mid food-involvement increase consumption additionally. Salmon is considered a healthy, high value product consistent with the Mid-group preferences. However, the absence of additional effect in the other countries and any effect for either country in the High-group is unexpected.

The lack of difference between the groups are surprising results, as previous research and literature found different patterns across the FRL segments. As the FRL- groups are developed to identify consumer segments, the lack of difference indicates that in this context, the consumers in the different groups have the same consumption frequency.

FRL is a measure of consumers' general food involvement, not their perception of salmon as a product, and may therefore not be adequate to identify peoples' salmon consumption frequency. This may be a reason for the lack of difference between the groups. Even if a consumer has a high food involvement, it is not said that they eat salmon more often. The reason why there are no differences between the FRL-groups may be that Mid- and High FRL-group will care more about other perceptions not accounted for.

Since the FRL does not account for socioeconomic or demographic factors e.g. income and age, their perception of Value and Convenience may not be associated with their lifestyle but more their life-situation. There may be differences in the consumers' income-level and time on their hands due to a busy life, that may separate them more in relation to consumption frequency, thus explain more than the level of their food-involvement.

The findings of the regression analysis consider salmon a separate product, but in order to fully understand the position of Salmons in the market the results need to be pooled with competing protein sources. Therefore, the results from this section are limited and not an accurate illustration of the position of Salmon.

Conclusion

The number of frequent consumers increased in all countries. In the period from 2012 to 2016, the salmon industry gained customers in all the target countries. The variance in the consumers is confirmed by the findings in this study, and they are found to weigh the dimensions of perceptions differently across the countries, thus supports previous findings that the markets should be viewed separately. Time had the biggest effect on frequency, out of all the variables considered. Thus, it would be helpful for the salmon industry to identify the unobserved factors in order to learn more about their main export markets. In order to study both volume and frequency further research could include a more product specific measure for the frequency, this also provides an additional dimension to gain awareness of the most preferred products for the different consumers.

The improved Perception of Salmon had an effect on consumption frequency and increased over time when pooled. Salmon is not the preferred meat-type in any of the countries, and salmon's overall position has not been improved in the time period. Therefore, the salmon industry must aim to further improve consumers Perception of salmon as a product. The perceptions did not have much change in effect over Time. This implies that the assumption that attitudes towards salmon are easily changed is incorrect, or that the salmon industry has not accomplish to affect the consumers´ perception. Perception of Convenience Value and Healthiness provide insight on the consumers´ frequency and are to be considered important factors to explain consumption. However, their impact differs between the countries. All Perception have a positive effect in the UK, while the Germans are affected by Value and Healthiness. In France, Value and Convenience positively affect the consumption frequency. The positive effect of Convenience indicates that salmon has become a more convenient product for the consumers. Convenient products are already on the market, the challenges for the industry are more based on the dissemination of the products convenience, rather than producing a more convenient product. Monetary issues are current in all the target countries, and the consumers´ perception of Value is therefore considered to provide useful insight. For salmons perceived Healthiness to affect the frequency of consumption, it needs to be related to each consumer’s desire to eat healthy, which is present in the UK and Germany. The perception of salmon as a healthy product may be difficult for the salmon industry to change due to the already high perceptions. The salmon industry should therefore look for other important attributes of salmon to market in order to increase the consumption frequency.

The FRL dimensions only had minor changes in all the countries from 2012 to 2016. There was a positive effect in the Low FRL-group when seen in context with the perceptions, with no additional effect on the Mid- and High FRL-group. Frequency of consumption increased over Time for the Low FRL-groups in all the countries with an additional effect for the Mid-group in Germany. FRL is considered to add additional knowledge on the consumers' heterogeneity, but it is found in this study that the FRL-groups does not internally differ for each market. In this context, FRL is not an adequate tool for segmenting the markets. Based on these findings, the salmon industry should target the salmon consumers in the same way.

To gain insight, further research should try to obtain more in-debt knowledge of the dimension Time and identify the changes within the variable that is affecting the frequency. The perceptions of Convenience, Value and Healthiness explained consumption frequency differently in all the target countries, and may still be considered important factors when attempting to explain consumption frequency. However, only Value was present in all the countries, further research should therefore apply additional Perceptions to get an exact image of the populations. The food related lifestyle must be further researched for the FRL groups to explain more of the consumption. In order to identify segments, the FRL could be combined with socioeconomic and demographic variables or seen up against other Perceptions considered more important by the Mid- and High FRL-groups.

This article contributes to the literature by providing insight on the salmon consumers. Second, explaining their frequency of consumption by applying perceptions of salmon and accounting for the consumers Food-related lifestyle. Third, highlighting changes in consumers and their consumption frequency that occur over Time, while accounting for unobserved factors.

Appendix.

1. Food-Related Lifestyle Dimensions indicator questions

PI1. To me product information is of high importance. I need to know what the product contains. (1)

PI2. I compare labels to select the most nutritious food. (10)

PI3. I compare product information labels to decide which brand to buy. (4)

PQ1. It is important for me to know that I get quality for all my money. (3)

PQ2. I always try to get the best quality for the best price. (21)

PQ3. I compare prices between product variants in order to get the best value for money. (5)

FR1. I prefer fresh products to canned or frozen products. (9)

FR2. It is important to me that food products are fresh. (12)

FR3. I prefer to buy meat and vegetables fresh rather than pre-packed. (14)

HL1. I try to avoid food products with additives. (15)

HL2. I prefer to buy natural products; i.e., products without preservatives. (18)

HL3. To me the naturalness of the food that I buy is an important quality. (11)

CV1. We use a lot of ready-to-eat foods in our household. (6)

CV2. Frozen foods account for a large part of the food products I use in our household. (17)

CV3. I use a lot of mixes, for instance baking mixes and powder soups. (19)

CK1. I don’t like spending too much time on cooking (R). (7)

CK2. I like to have ample time in the kitchen. (13)

2. Survey from 2012 and 2016

2012

Norway Positioning Survey EN

We are conducting a study to learn more about people's shopping and eating habits, and would like to ask some questions about you.

In this survey, we mostly ask what you do and what you think. There is no right or wrong answers--just try to answer as best as you can.

The answers you provide will be kept in strict confidenciality and anonimity.

Thanks for your help!

First, we would like to ask you about your habits on shopping for food, cooking, and eating.

For each statement, please read and choose one number that fits you the best, from 1 (completely disagree) to 7 (completely agree).

1. To me product information is of high importance. I need to know what the product contains.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

2. I find taste in food products important.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

3. It is important for me to know that I get quality for all my money.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

4. I compare product information labels to decide which brand to buy.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

5. I compare prices between product variants in order to get the best value for money.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

Please read each statement and select the response that fits you the best for each statement.

6. We use a lot of ready-to-eat foods in our household.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

7. I don't like spending too much time on cooking.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

Norway Positioning Survey EN

8. When cooking I first and foremost consider taste.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

9. I prefer fresh products to canned or frozen products.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

10. I compare labels to select the most nutritious food.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

Please read each statement and select the response that fits you the best for each statement.

11. To me the naturalness of the food that I buy is an important quality.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

12. It is important to me that food products are fresh.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

13. I like to have ample time in the kitchen.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

14. I prefer to buy meat and vegetables fresh rather than pre-packed.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

15. I try to avoid food products with additives.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

Please read each statement and select the response that fits you the best for each statement.

16. It is more important to choose food products for their nutritional value rather than for their taste.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

Norway Positioning Survey EN

17. Frozen foods account for a large part of the food products I use in our household.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

18. I prefer to buy natural products (products without preservatives).

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

Please read each statement and select the response that fits you the best for each statement.

19. I use a lot of mixes, for instance baking mixes and powder soups.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

20. Cooking is a task that is best over and done with.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

21. I always try to get the best quality for the best price.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

22. I am not willing to go an extra effort to find lower prices.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

23. I grocery shop at more than one store to take advantage of low prices.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

24. The money saved by finding low prices is usually not worth the time and effort.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

25. I would never shop at more than one shop to find low prices.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

26. The time it takes to find low prices is usually not worth the effort.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

Norway Positioning Survey EN

Now we would like to ask about your chicken consumption.

27. How often do you eat chicken at home?

- ◯ About once a week or more
- ◯ About once in two weeks
- ◯ About once a month
- ◯ Every second month
- ◯ 2 to 5 times a year
- ◯ Less than once a year or less

28. How often do you eat the following at home?

	More than once a week	About once a week	About once in two weeks	About once a month	About every two months	2 to 5 times a year	Less than once a year or never
Chicken for warm meal prepared at home	◯	◯	◯	◯	◯	◯	◯
Chicken for warm meal bought seasoned/marinated	◯	◯	◯	◯	◯	◯	◯
Prepared (cooked) chicken	◯	◯	◯	◯	◯	◯	◯

Other (please specify)

29. How often do you eat chicken away from home (for example, in restaurants and cafeterias)?

- ◯ About once a week or more
- ◯ About once in two weeks
- ◯ About once a month
- ◯ Every second month
- ◯ 2 to 5 times a year
- ◯ Less than once a year or less

Now we would like to ask about your salmon consumption.

30. How often do you eat salmon at home?

- ◯ About once a week or more
- ◯ About once in two weeks
- ◯ About once a month
- ◯ Every second month
- ◯ 2 to 5 times a year
- ◯ Less than once a year or less

Norway Positioning Survey EN

31. How often do you eat the following at home?

	About once a week or more	About once in two weeks	About once a month	Every second month	2 to 5 times a year	Less than once a year or never
Fresh or frozen salmon fillet for warm meal	◯	◯	◯	◯	◯	◯
Prepared (cooked) salmon	◯	◯	◯	◯	◯	◯
Smoked salmon	◯	◯	◯	◯	◯	◯
Salmon sushi	◯	◯	◯	◯	◯	◯

Other (please specify)

What do you think of the current selection of various salmon products available? Please read each statement and answer with the scales from 1 (strongly disagree) to 7 (strongly agree).

32. When buying salmon, I find the assortment of available products to satisfy my needs.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

33. Whatever the occasion is, there is usually a wide range of salmon product alternatives to choose from.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

34. My experience is that for any kind of hot meal, there is a salmon product that can be chosen.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

35. Salmon only comes in a limited number of product variations.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

36. How often do you eat salmon away from home (for example, in restaurants and cafeterias)?

- ◯ About once a week or more
- ◯ About once in two weeks
- ◯ About once a month
- ◯ Every second month
- ◯ 2 to 5 times a year
- ◯ Less than once a year or less

Norway Positioning Survey EN

Now, we would like to ask you how you rate some meat products.

37. How would you rate each of the following meat category in terms of five criteria; "good taste" "healthiness" "value for money" "convenience" and "Availability" in a scale of 1 (extremely poor) to 7(superior)?

	Good Taste	Healthiness	Value for money	Convenience	Availability
Chicken					
Pork					
Beef					
Salmon					

38. Have you bought seafood products from Norway before?

- ◯ Yes
- ◯ No
- ◯ Don't know/Not sure

39. Have you bought salmon products from Norway before?

- ◯ Yes
- ◯ No
- ◯ Don't know/Not sure

Now we would like to ask you what you think of a country, Norway. Please answer as best as you can.

For each statement, please answer using the scales from 1 (completely disagree) to 7 (completely agree).

40. I believe that Norway...

	(Completely disagree)1	2	3	4	5	6	7 (Completely agree)
has very good welfare system.	◯	◯	◯	◯	◯	◯	◯
is a county producing high-quality products.	◯	◯	◯	◯	◯	◯	◯
has a low level of literates.	◯	◯	◯	◯	◯	◯	◯
has a free-market system.	◯	◯	◯	◯	◯	◯	◯
is a very democratic country.	◯	◯	◯	◯	◯	◯	◯
is a country with a high level of technological research.	◯	◯	◯	◯	◯	◯	◯
has a civilian non-military government.	◯	◯	◯	◯	◯	◯	◯
has a low standard of living.	◯	◯	◯	◯	◯	◯	◯
has high labor costs.	◯	◯	◯	◯	◯	◯	◯
has a high level of industrialization.	◯	◯	◯	◯	◯	◯	◯
has a highly developed economy.	◯	◯	◯	◯	◯	◯	◯

Norway Positioning Survey EN

Now we would like to ask what you think of seafood products from Norway. Please answer as best as you can.

For each statement, please answer using the scales from 1 (completely disagree) to 7 (completely agree).

41. I believe that seafood products from Norway...

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
are reliable.	◯	◯	◯	◯	◯	◯	◯
are expensive.	◯	◯	◯	◯	◯	◯	◯
are associated with low status.	◯	◯	◯	◯	◯	◯	◯
have excellent finish.	◯	◯	◯	◯	◯	◯	◯
are not dependable.	◯	◯	◯	◯	◯	◯	◯
are up-market products.	◯	◯	◯	◯	◯	◯	◯
have excellent quality.	◯	◯	◯	◯	◯	◯	◯
are produced with advanced technology.	◯	◯	◯	◯	◯	◯	◯
are innovative.	◯	◯	◯	◯	◯	◯	◯
are worth taking pride in buying.	◯	◯	◯	◯	◯	◯	◯
are supported by a lot of advertising.	◯	◯	◯	◯	◯	◯	◯
have recognizable brand names.	◯	◯	◯	◯	◯	◯	◯

In following questions, please select one answer that fits you the best, using the scale from 1 (completely disagree) to 7 (completely agree).

42. If I were to buy fish for dinner today, I would probably buy Norwegian Salmon.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

43. I will probably not buy Norwegian Salmon in the near future.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

44. Buying Norwegian Salmon is not an option for me.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

45. I do not have much experience in purchasing products like Norwegian Salmon.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

Norway Positioning Survey EN

46. The decision to purchase Norwegian Salmon involves a fairly high risk.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

47. Evaluating such fish products is not very easy.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

48. I am somewhat sceptical to the quality of Norwegian Salmon.

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
Click one	◯	◯	◯	◯	◯	◯	◯

49. I believe that Norwegian salmon...

	(Completely Disagree) 1	2	3	4	5	6	7 (Completely Agree)
seems to be a good buy when buying fish.	◯	◯	◯	◯	◯	◯	◯
is not widely accepted in British households.	◯	◯	◯	◯	◯	◯	◯
is a very good product compared to salmon from other countries.	◯	◯	◯	◯	◯	◯	◯
seems to give value for the money.	◯	◯	◯	◯	◯	◯	◯
is a serious challenge to fish products currently found in British supermarkets.	◯	◯	◯	◯	◯	◯	◯
is a popular supplement to the food habits of British consumers.	◯	◯	◯	◯	◯	◯	◯
has a good reputation compared to salmon from competing countries.	◯	◯	◯	◯	◯	◯	◯
has a good reputation in the market in general.	◯	◯	◯	◯	◯	◯	◯
holds a low quality level.	◯	◯	◯	◯	◯	◯	◯
is a fairly cheap alternative compared to other, similar products.	◯	◯	◯	◯	◯	◯	◯
is only liked by marginal number of consumers.	◯	◯	◯	◯	◯	◯	◯
has a good reputation among my colleagues and friends.	◯	◯	◯	◯	◯	◯	◯

Now, we would like to ask some questions about you. Please be assured that the information you provide us here is kept with strict confidenciality and will not be traced back to you.

Norway Positioning Survey EN

50. Are you ...

- ◯ Female
- ◯ Male

51. What is your civil status?

- ◯ Married
- ◯ Single
- ◯ Divorced
- ◯ Widowed
- ◯ Domestic partner/Cohabitants

52. What is your age?

Choose one from the menu

53. What is your completed years of education?

Choose one from the menu

54. What is your cultural background? Please select all that apply.

- ☐ Western Europe
- ☐ Eastern Europe
- ☐ Africa
- ☐ Middle East
- ☐ Asia
- ☐ North America
- ☐ South America
- ☐ Oceania
- ☐ Other

55. Including yourself, how many people live in your household?

Choose one from the menu

56. How many children between age 0 and 12 live in your household?

Choose one from the menu

Norway Positioning Survey EN

57. What is your household's annual income before tax? Please choose one category that fits the best.

Choose one from the menu

58. If you have any comments regarding the survey, please type in the box below.

Address screen out

The address is incorrect and should be checked

Introduction

We are conducting a survey to learn more about people's shopping and eating habits, and would like to ask some questions about you.

In this survey, we mostly ask what you do and what you think. There is no right or wrong answers--just try to answer as best as you can.

The answers you provide will be kept in strict confidentiality and anonymity.

Thanks for your help!

How often do you (yourself, not other members of the household) go to grocery shopping?

Never
Less than Once a Month
Once a Month
2-3 Times a Month
Once a Week
2-3 Times a Week
Daily

Which of the following apply to you the best? Please select one.

I eat chicken and salmon
I eat chicken but **never** salmon
I eat salmon but **never** chicken
I **never** eat chicken or salmon

Reason not to eat salmon

What is the reason that you do not eat salmon? Tick all that apply.

Environmental reasons

Health reasons

Ethical reasons

Sensory reasons (do not like the taste, texture, etc.)

Food allergy

Chicken consumption

How often do you eat each of the following types of chicken at home?

	Frequency						
	More than once a week	About once a week	About once in two weeks	About once a month	About every two months	2 to 5 times a year	Once a year or less
Chicken for warm meals bought unseasoned	○	○	○	○	○	○	○
Chicken for warm meals bought seasoned/marinated	○	○	○	○	○	○	○
Prepared (cooked) chicken	○	○	○	○	○	○	○
Chicken with cold meals (such as salad and sandwiches with chicken)	○	○	○	○	○	○	○

Chicken consumption mobile

How often do you eat each of the following types of chicken at home?

- Chicken for warm meals, bought unseasoned

▾

- Chicken for warm meals, bought seasoned/marinated?

- Prepared or cooked chicken

- Chicken for cold meals (such as salad and sandwiches with chicken)

Overall chicken consumption

Overall, how often do you eat chicken at home (including all types of chicken)?

About once a week or more
About once in two weeks
About once a month
Every second month
2 to 5 times a year
Once a year or less

Product Perception

In general, how would you rate chicken, beef, pork and salmon in terms of "**good taste**" in a scale of 1 (extremely poor) to 7(superior)?

Chicken	1
Beef	1
Pork	1
Salmon	1

In general, how would you rate chicken, beef, pork and salmon in terms of **"healthiness"** in a scale of 0 (extremely poor) to 7(superior)?

Chicken	1
Beef	1
Pork	1
Salmon	1

In general, how would you rate chicken, beef, pork and salmon in terms of **"convenience"** in a scale of 0 (extremely poor) to 7(superior)?

Chicken	1
Beef	1
Pork	1
Salmon	1

In general, how would you rate chicken, beef, pork and salmon in terms of **"value for money"** in a scale of 0 (extremely poor) to 7(superior)?

Chicken	1
Beef	1
Pork	1
Salmon	1

In general, how would you rate chicken, beef, pork and salmon in terms of **"availability"** in a scale of 0 (extremely poor) to 7(superior)?

Chicken	1

Beef	1
Pork	1
Salmon	1

Food Involvement Scale

Please read the following statement and select a number from 1 (strongly disagree) to 7 (strongly agree) that fits you the best.

1. To me product information is of high importance. I need to know what the product contains.

2. I find taste in food products important.

3. It is important to me to know that I get quality for all my money.

4. I compare product information labels to decide which brand to buy.

5. I compare prices between product variants in order to get the best value for money.

Please read the following statement and select a number from 1 (strongly disagree) to 7 (strongly agree) that fits you the best.

6. We use a lot of ready-to-eat foods in our household.

7. I don't like spending too much time on cooking.

8. When cooking I first and foremost consider taste.

9. I prefer fresh products to canned or frozen products.

10. I compare labels to select the most nutritious food.

Please read the following statement and select a number from 1 (strongly disagree) to 7 (strongly agree) that fits you the best.

11. To me the naturalness of the food that I buy is important quality.

12. It is important to me that food products are fresh.

13. I like to have ample time in the kitchen.

14. I prefer to buy meat and vegetables fresh rather than pre-cooked.

15. I try to avoid food products with additives.

Please read the following statement and select a number from 1 (strongly disagree) to 7 (strongly agree) that fits you the best.

16. It is more important to choose food products for their nutritional value rather than for their taste.

17. Frozen foods account for a large part of the food products I use in our household.

18. I prefer to buy natural products (products without preservatives).

19. I use a lot of mixes, for instance, baking mixes and power soups.

Please read the following statement and select a number from 1 (strongly disagree) to 7 (strongly agree) that fits you the best.

20. Cooking is a task that is a best over and done with.

21. I always try to get the best quality for the best price.

Demography

As a last step, we would like to ask some questions about you. Please be assured that the information you provide us here is kept with strict confidentiality and will not be traced back to you.

Are you...

Male

Female

What is your civil status?

Married

Divorced

Separated

Widowed

Domestic partners/cohabitants

Never married

What is the highest level of education you have completed?

Less than High School

High School / GED

Some College

2-year College Degree

4-year College Degree

Masters Degree

Doctoral Degree

Professional Degree (JD, MD)

What year were you born?

How many children between age 0 and 12 live in your household?

What is your postal code?

6. What is your combined annual household income before tax (in GBP)?

Comments

If you have any comments, please provide them in the box below.

Reason not to eat chicken

What is the reason that you do not eat chicken? Tick all that apply.

Environmental reasons
Health reasons
Ethical reasons
Sensory reasons (do not like the taste, texture, etc.)
Food allergy

Salmon consumption mobile

How often do you eat each of the following types of salmon at home?

- Salmon for warm meals, bought fresh or frozen

- Prepared or cooked salmon

- Smoked salmon

- Salmon for cold meals (such as wrap and sushi)

Salmon Consumption

How often do you eat each of the following types of salmon at home?

	Frequency						
	More than once a week	About once a week	About once in two weeks	About once a month	About every two months	2 to 5 times a year	Once a year or less
Salmon for warm meals, bought fresh or frozen	○	○	○	○	○	○	○
Prepared (cooked) salmon	○	○	○	○	○	○	○
Smoked salmon	○	○	○	○	○	○	○
Salmon with cold meal (such as wrap and sushi)	○	○	○	○	○	○	○

Overall salmon consumption

Overall, how often do you eat salmon at home, including all types of salmon)?

About once a week or more

About once in two weeks

About once a month

Every second month

2 to 5 times a year

Once a year or less

Product experience

Here, we will provide you some descriptions on specific salmon products. Do you eat the type of product at home?

Please consider the following product:

- Fresh salmon
- Cut into serving sizes
- Packed in a tray wrapped with plastic

Do you eat this type of salmon product at home?

Never

Less than Once a Month

Once a Month

2-3 Times a Month

Once a Week

2-3 Times a Week

Daily

Please consider a following product:

- Unpacked fresh salmon
- Sold at fish counter in supermarkets
- Can be cut into the sizes you like by fish mongers
- Packed at the counter

Do you eat this type of salmon product at home?

Never
Less than Once a Month
Once a Month
2-3 Times a Month
Once a Week
2-3 Times a Week
Daily

Please consider the following product:

- Frozen salmon
- Cut into serving sizes
- Packed individually in a vacuum plastic or together in a plastic bag

Do you eat this type of salmon product at home?

Never
Less than Once a Month
Once a Month
2-3 Times a Month
Once a Week
2-3 Times a Week
Daily

Please consider the following product:

- Ready-meal salmon products (frozen or chilled)
- Sold in supermarkets

Do you eat this type of salmon product at home?

Never
Less than Once a Month
Once a Month
2-3 Times a Month
Once a Week
2-3 Times a Week
Daily

Salmon type

Please select descriptions that fit the kind of salmon you eat at home, from the item list below, and drag them into the box to the right. Select as many descriptions as you see fit.

Items	Descriptions that fit the kind of salmon you eat
Alaskan	
Norwegian	
Chilean	
Scottish	
Wild-caught	
Farmed	
Sashimi grade	
Sustainably fished	
Organic	
Do not know	

Health benefits

A regular **salmon** consumption would...

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Reduces risk for coronary heart disease	○	○	○	○	○
Reduces risks for certain cancers	○	○	○	○	○
Improves bone development	○	○	○	○	○
Stimulates brain development	○	○	○	○	○
Increases risks of food borne illness or food poisoning	○	○	○	○	○

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Increases risks for certain cancers	○	○	○	○	○

A regular **chicken** consumption would...

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Reduces risk for coronary heart disease	○	○	○	○	○
Reduces risks for certain cancers	○	○	○	○	○
Improves bone development	○	○	○	○	○
Stimulates brain development	○	○	○	○	○
Increases risks of food borne illness or food poisoning	○	○	○	○	○
Increases risks for certain cancers	○	○	○	○	○

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3. Cut points for the Food Lifestyle Dimensions

Cut points for the Food Lifestyle Dimensions by Food Lifestyle Segments, Country and year (Reference = *Low* Segment)

Country		2012		2017	
		Lower	Upper	Lower	Upper
UK	*High* Segment	5,57	6,76	5,62	6,67
	Mid Segment	4,57	5,57	4,57	5,62
Germany	*High* Segment	5,67	6,86	5,57	6,71
	Mid Segment	4,57	5,67	4,57	5,57
France	*High* Segment	5,48	7,00	5,52	6,52
	Mid Segment	4,57	5,48	4,62	5,52

4. Household consumption

Household Consumption for the UK, Germany and France provided by Europanel, Norwegian Seafood Council. From 2010 to 2016, by volume tonnes.

Country	**Volume tonnes**	2010	2013	2016	Change 2010-13	Change 2013-16
UK	Salmon (Total)	43116,34	49042,22	55632,73	5925,87	6590,51
	Salmon Natural Fresh (Total)	19367,95	23725,13	26473,43	4357,18	2748,30
	Salmon Natural Frozen (Total)	3270,85	1573,06	1834,48	-1697,79	261,42
	Salmon Smoked (Total)	6404,04	7267,41	8432,76	863,37	1165,34
Germany	Salmon (Total)	45557,71	53017,30	57673,39	7459,59	4656,09
	Salmon Natural Fresh (Total)	5200,48	6702,65	12567,33	1502,17	5864,67
	Salmon Natural Frozen (Total)	12807,34	14073,13	14445,35	1265,79	372,22
	Salmon Smoked (Total)	20946,48	26307,80	25236,63	5361,32	-1071,18
France	Salmon (Total)	73154,01	72404,89	62558,54	-749,12	-9846,35
	Salmon Natural Fresh (Total)	26841,13	27952,85	21634,88	1111,72	-6317,97
	Salmon Natural Frozen (Total)	10475,12	9419,59	7917,29	-1055,53	-1502,30
	Salmon Smoked (Total)	23456,72	21688,75	18614,44	-1767,97	-3074,31

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