

Translating barriers into potential improvements: the case of new healthy seafood product development

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Abstract

Purpose: The aim of this study is to explore potential barriers to seafood consumption by young adults and the parents of young children. Knowledge of these barriers will be used to assist the development of new seafood product concepts that fulfil the needs of consumers.

Design/methodology/approach: To gather this information, twenty-eight infrequent consumers of seafood participated in three semi-structured two-hour focus group discussions in Denmark, Norway and Iceland. The results were then linked to the Stage-Gate model for consumer-based new product development (NPD).

Findings: The participants thought of seafood as either healthy or convenient, although there were concerns about the amount of effort required to prepare it. These concerns resulted in an expression of their need for products that are attractive, healthy, palatable, and convenient. In particular, the newly developed products should be accompanied by clear advice on preparation methods and materials. An increase in seafood availability coupled with lower prices would encourage these consumers to add seafood to their diet.

Research limitations/implications: Purchase-point-marketing and habitual behaviour were found to implicitly skew planned behaviour.

Practical implications: Inputs for NPD related to convenience, attractiveness, quality, trustworthiness, knowledge and requirements about seafood preparation are discussed.

Originality/value: The present study combines qualitative methods to lead to practical input for NPD focusing on overcoming the barriers that keep consumers from choosing existing healthy seafood products. The importance of the consumers' confidence in their ability to successfully prepare a seafood meal was revealed and can be used in Stage-Gate based NPD.

Key words: New seafood product development, consumers, seafood, food choice, health, young adults, families with young children.

Paper type: Research paper

Introduction

To combine the diversity of Nordic seafood raw material, the expertise in the production of traditional seafood products and new emerging seafood technologies is an excellent basis for the development of new seafood products to meet consumer's demands. However, new product development (NPD) is a risky activity. This is exemplified by the high percentage of failure (70%) in the NPD process (Cooper, 1999). Nevertheless, examples of the successful use of the stage gate (SG) approach in seafood NPD has recently appeared in the literature (Morrissey, 2006; Sirois, 2006).

The basic principle behind the Stage Gate model (figure 1) is that each stage of the NPD is evaluated to increase the overall NPD success rate. The evaluation of ideas created in the discovery stage and stage 1 takes place in gates 1 and 2. During stage 2 the input given by the consumers is used to build business cases. These cases are then screened in gate 3 and the product development begins. Products passing gate 4 are tested for consumer acceptance. Products that pass gate 5 are launched and the post-launch success rate is then evaluated.

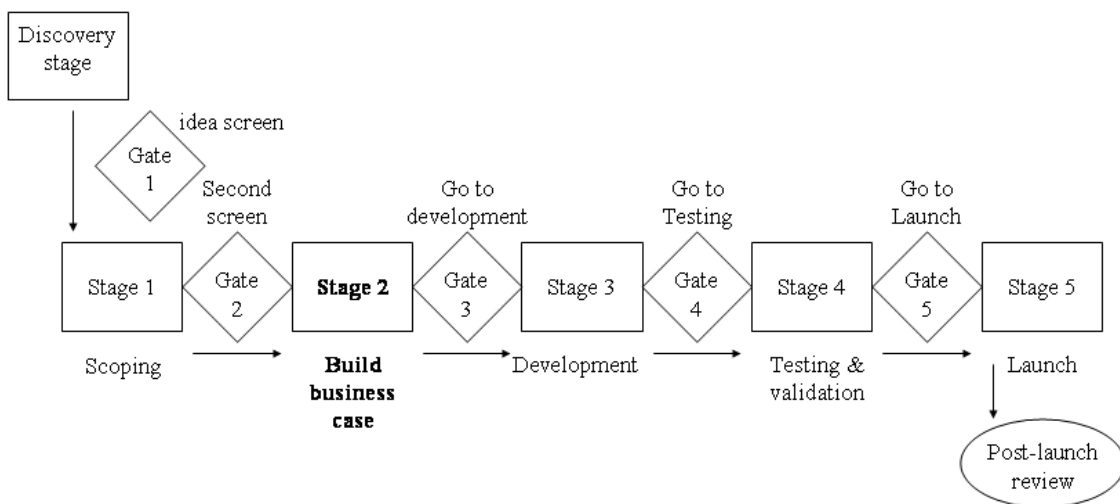


Figure 1. An overview of a typical Stage-Gate[®] system for new product development (Cooper, 2008)

The main purpose of our study was to provide input for future NPD by exploring barriers and opportunities for increasing seafood consumption. To achieve this goal, we utilised focus groups among young adults and families with young children. In our study we wanted to explore the possibilities of using qualitative interviewing techniques as input for NPD of innovative seafood products that may appeal to a particular consumer segment. Thus, our aim was to gain insight into their attitudes towards food, as well as seafood preparation and consumption in order to understand the emphasis they place on eating healthy food products. Ultimately, the results can be used as the first step towards a consumer led NPD (Brunsø and Grunert, 2007) and inspire the design of new healthy seafood product concepts according to Cooper's (2008) Stage Gate approach with particular emphasis on stage 2 (see figure 1).

The Seafood Challenge

Fish and seafood have been repeatedly described as health promoting products (Mozaffarian and Rimm, 2006; Sidhu, 2003). Nevertheless, consumers in Europe do not successfully meet the recommended daily intake levels of two servings of seafood per week (Welch et al., 2002).

Various barriers to the consumption of seafood have previously been identified as: product quality (Verbeke et al., 2007); consumer attitudes (Brunsø, 2003); involvement with seafood (Olsen, 2001); consumer habits (Honkanen et al.2005); beliefs (Verbeke et al., 2005); and convenience (Olsen, 2003; Olsen et al., 2007; Rortveit and Olsen, 2007).

In Nordic countries like Iceland and Norway, fish and seafood used to be the main protein source, especially in coastal regions. Despite historical habits and traditions, the seafood consumption of young consumers is low (Steingrimsdóttir et al., 2002). The development of new innovative Nordic seafood product concepts, targeted towards younger consumers might increase seafood consumption and its associated health benefits.

However, limited research has been performed using qualitative methods to explore these complex issues with a focus on the case of young adults and parents of young children who face barriers in consuming seafood regularly.

The term seafood is used in this paper to encompass wild and farmed, finfish, crustaceans and shellfish, both of marine and freshwater origin in fresh, frozen and processed product forms (Jaffry et al., 2004).

In this paper, a further analysis of the barriers that keep younger consumers and parents of young children below the recommended seafood intake will be presented. This will provide a better understanding on how the existing seafood products can be improved through the NPD process in order to increase their acceptability and attractiveness.

Methods

The present study is based on qualitative data collection. Therefore, focus group discussions among participants that have experienced the phenomenon (i.e. having barriers to seafood consumption) was considered the appropriate method to use (Mays and Pope, 2000; Endacott, 2008). This method is used because it provides invaluable insight into realistic and complex perceptual matrices that can later be used to explain total behaviours and lead to fruitful conclusions (Draper, 2004; Meyerick, 2006).

In this paper the main findings from three focus group discussions conducted in spring 2008 are presented. The main emphasis of the group discussions was on the attitudes of young adults and parents of young children towards food, cooking and consumption patterns, focusing on seafood.

Participants were recruited by contacting people from a random sample drawn from the national registry and through news items drawing interest in a gift voucher incentive. To participate, subjects had to be actively involved in shopping for and the preparation of the main meal in the household. They had to have a low consumption of seafood, less than two times per week in Norway and Iceland and less than once per week in Denmark, respective to the mean seafood consumption for each country. Consumers that absolutely avoid, dislike or were allergic to seafood were excluded. Additionally, participants were screened out if they were employed in the seafood industry, consumer and sensory research, market analysis, advertising or marketing. Finally, they had to fit in one of the two groups of relevance to the study, the single young adults, aged from eighteen to twenty five, or the parents of young children, with children aged three to thirteen years. This resulted in a group of 28 participants

of which most were undergoing or have completed some post high school education (Table 1).

Table 1.
Description of the participants in the focus groups in the three countries.

Characteristic	# participants		
	Iceland	Norway	Denmark
<i>age (years)</i>			
18-25	-	3	5
26-35	5	1	-
36-45	4	2	3
46-55	2	-	3
<i>gender</i>			
male	4	2	4
female	7	4	7
<i>#children</i>			
0	-	4	4
1	4	-	3
2	3	2	3
≥3	4	-	1
<i>age of youngest child (years)</i>			
<5	6	1	1
≥5-10	3	1	4
≥11-13	2	-	2
<i>seafood consumption (times/month)</i>			
<1	-	3	-
1	2	-	-
2	4	-	3
3	-	1	8
4	5	2	-

All focus groups were conducted during spring of 2008 in Denmark (Aalborg), Norway (Tromsø) and Iceland (Reykjavik). The discussions lasted approximately two hours, were lead by trained focus group moderators and were conducted in the native language of each group. All discussions took place in locations related to the researchers and thus special attention was given to making the participants feel comfortable. A comfortable setting was reached by providing refreshments and arranging the meeting room so that the participants would sit in a circle (Kitzinger, 1995). The discussions followed a semi-structured protocol

which was developed in cooperation between the three research institutes that were involved in the study and was common across countries.

The discussions were divided into four sessions. In the first session, some general aspects of the importance of food, cooking and health were discussed via open questions. In the second session, issues varying from attitudes towards seafood and seafood consumption to preferences about shopping locations were discussed. The third session focused on barriers to the consumption of seafood and possible solutions were raised and discussed. In the final session the aspect of convenience was discussed. During this session the participants aimed to formulate a definition of convenience, which was then linked to eating seafood. An overall opinion on convenient products was compared to their opinion about convenient seafood products. Additionally, they were asked to give their thoughts about positive and negative aspects of seafood and matters that prevent them from eating more seafood, together with possible solutions. Lastly, they were asked for proposals for new convenient seafood products. Combining all these different methods of retrieving data we can assume that the information was verified by means of triangulation (Mays and Pope, 2000; Cohen and Crabtree, 2008).

The discussions were recorded and typed into a transcript by the moderator shortly after they were finished (Rabiee, 2004). Later the data were manually analyzed. The analysis was comparative, with attention given to differences and similarities between the participants within and between the three countries (Mays, 1995). Due to the number of similarities between countries and participants results are mainly presented without a description of their origin. However, an indication of the origin of the data was provided whenever it was judged as appropriate to describe an opinion as country or target group specific (Korzen-Bohr and O'Doherty Jensen, 2005). The researchers involved from each country reported the outcomes of the basic interpretive analyses. Subsequently, these reports were distributed to the researchers in the other two countries for comparative analyses aiming at a cross country discussion and consensus. At this point parts of the data were also analysed by more than one researcher, from different institutes, to ensure the reliability of the results (Mays, 1995; Greenhalgh and Taylor, 1997). The transcripts were read repeatedly and in the process, relevant points and concepts were coded and condensed into interconnected themes. As the interviews followed a semi-structured interview guide the coding process was partially selective from the beginning. Themes that derived from the data were then organized into

three categories: a) concepts, b) product characteristics and c) marketing strategy. These categories were selected because they were considered valuable while building a business case (stage 2, figure 1) within the Stage-Gate model. Furthermore, these specific categories were chosen for their potential to directly inform a consumer oriented NPD. The existing extensive reports are referred to by presenting participants' quotes in the results section.

Results

General aspects

In the first session, the participants discussed that food is in general perceived as important. However, the balance between considering food as a pure energy provider and as something more related to hedonic liking differed among participants. They tended to differentiate between healthy food, pleasant food and convenient food. Many factors can influence the level of involvement in food, cooking and health, but responsibilities that accompany the existence of children in the household increased this involvement the most:

“There are fewer easy solutions after you've had children. Life just...life changes a lot when you have small children who kind of make you structure things much more than you did before.”

In Iceland and Denmark a “consumption circle” was described. The idea of a consumption circle developed because participants mentioned that they tend to prepare the same 10-15 dishes which they “know by heart”, distributed over the whole year. The reason for this habitual consumption circle was the aim to “make their everyday life flow as smoothly as possible”. In Iceland, external factors, such as school meals, had a major influence on the consumption circle:

“I possibly feel like having fish, but my boys have already had fish twice or three times that week [at school], I feel I can't do it to them [to make them eat it more often].”

Some consumers plan for the evening meal while having dinner one day before or “when something has to be taken out of the freezer”. Others decide what to prepare for dinner on their way to the retail store or even in it.

Some participants put an effort into involving their children in the preparation of the meals. They believed that this could be a learning experience for their children, as it was for them. Conversely, others preferred that “children stay out of the kitchen” in order to “get things done quickly”.

The time spent on preparing the main meal varied among participants and situations. The average time spent on preparation of an evening meal was believed to be from 15 minutes to one hour. When “meeting and preparing” a meal with friends or for guests, the preparation of a meal was considered “a project” instead of “just something that needs to be done” and could take longer.

Attitudes and preferences

During the second session the participants reported overall positive attitudes towards seafood. Childhood experiences were thought to influence their present attitudes towards seafood and their seafood consumption. When their past consumption was “almost every day” or “five times a week”, they described having a seafood meal as a negative experience. In this case they would not consume seafood frequently in the present. Moreover, these consumers were careful not to “overdose” their children as their parents sometimes did to them. However, consumers who did not grow up with seafood as part of their childhood ‘consumption circle’ tended to like seafood less than others.

Seafood was associated with both positive and negative aspects, as presented in figure 2.

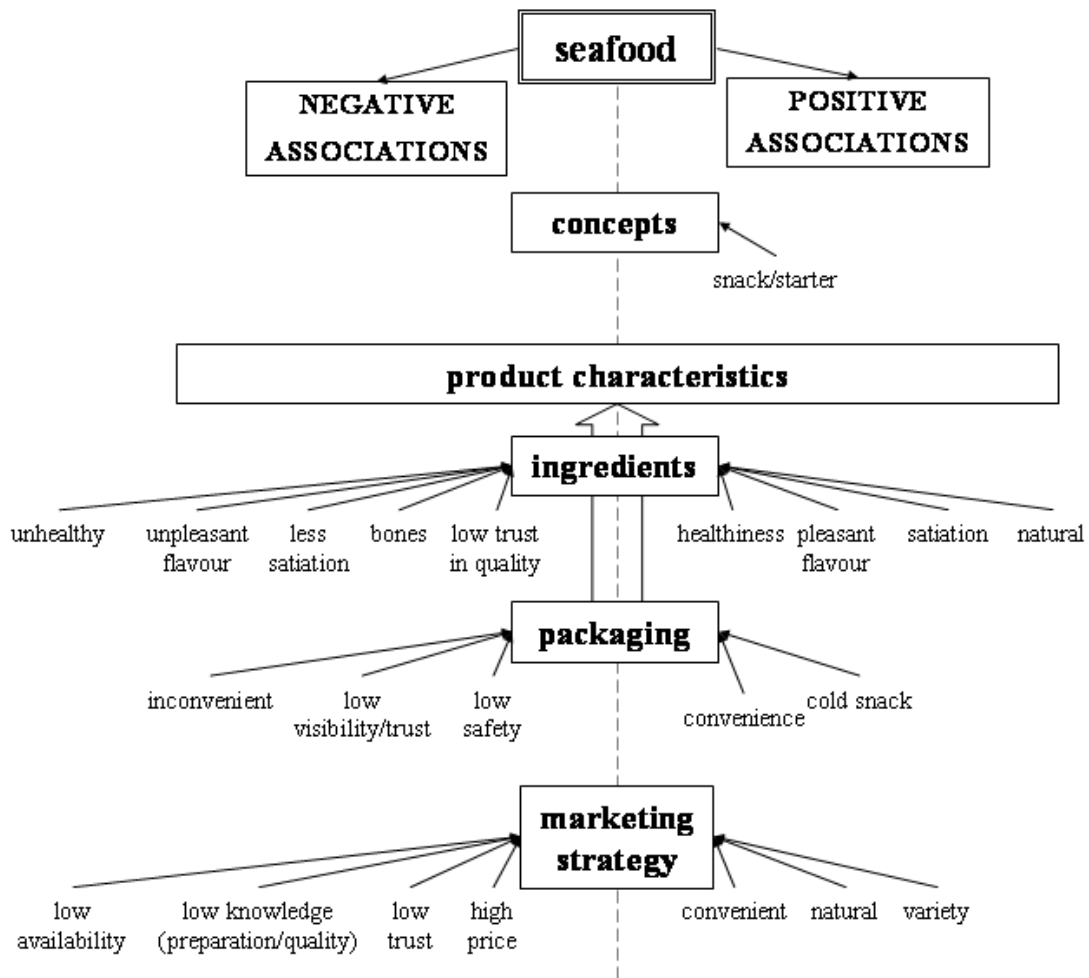


Figure 2. Negative and positive issues associated with seafood.

The results from this consumer study suggest that the most important aspects associated with seafood consumption were high price, healthiness, satiation, convenience, trust in safety, lack of knowledge on ways of judging the product quality and in preparing the product, fish bones, the flavour of seafood and the perceived low availability of good fresh seafood.

The focus group participants had the opinion that seafood could be consumed throughout the week. Lower cost seafood products were used during both lunch and dinner. Products of higher quality and price were considered as something they would have at the weekend, at home or in restaurants.

They mentioned that they were affected by information and marketing campaigns, which they considered inadequate:

“When there is some advertising for fish, I tend to think, well you may try some proper fish tonight instead of all that canned fish, and these are also the situations that tend to catch my attention.”

“You walk through the [supermarket] store and there is nothing that tells you to buy seafood.”

They added that the image of seafood in the supermarkets was not positive. This was in their opinion based on the shelf space designated for seafood and also because of the low quality and appearance of the usually frozen supermarket products. This was the main reason that they buy seafood at specialty shops instead of supermarkets:

“It is way too common that the fish is dry and ugly in the [supermarket] stores.”

Nevertheless, visiting a supermarket was considered a convenient way to purchase various products at once. The participants expressed their need for high quality seafood products in supermarkets.

“If I plan to buy good seafood, I go to the fish monger... I want to be able to buy it in the supermarket, but I can't [because the quality is not sufficient].”

The above results showed that consumers associate seafood to positive and negative aspects that can lead to realistic adaptations of the product design during the NPD process.

Barriers and solutions

In the third session the intention to consume more seafood was discussed. However, some critical issues such as price, availability and the lack of cooking skills functioned as barriers for adding more seafood to their habitual ‘consumption circle’ (Figure 3).

Potential improvements in order to overcome the barriers to seafood consumption are also presented in figure 3. Lower prices, increased knowledge of preparation methods and quality, convenience and accessibility were the aspects that were raised most frequently. As expected, some of the potential improvements for increasing seafood consumption mirrored main barriers.

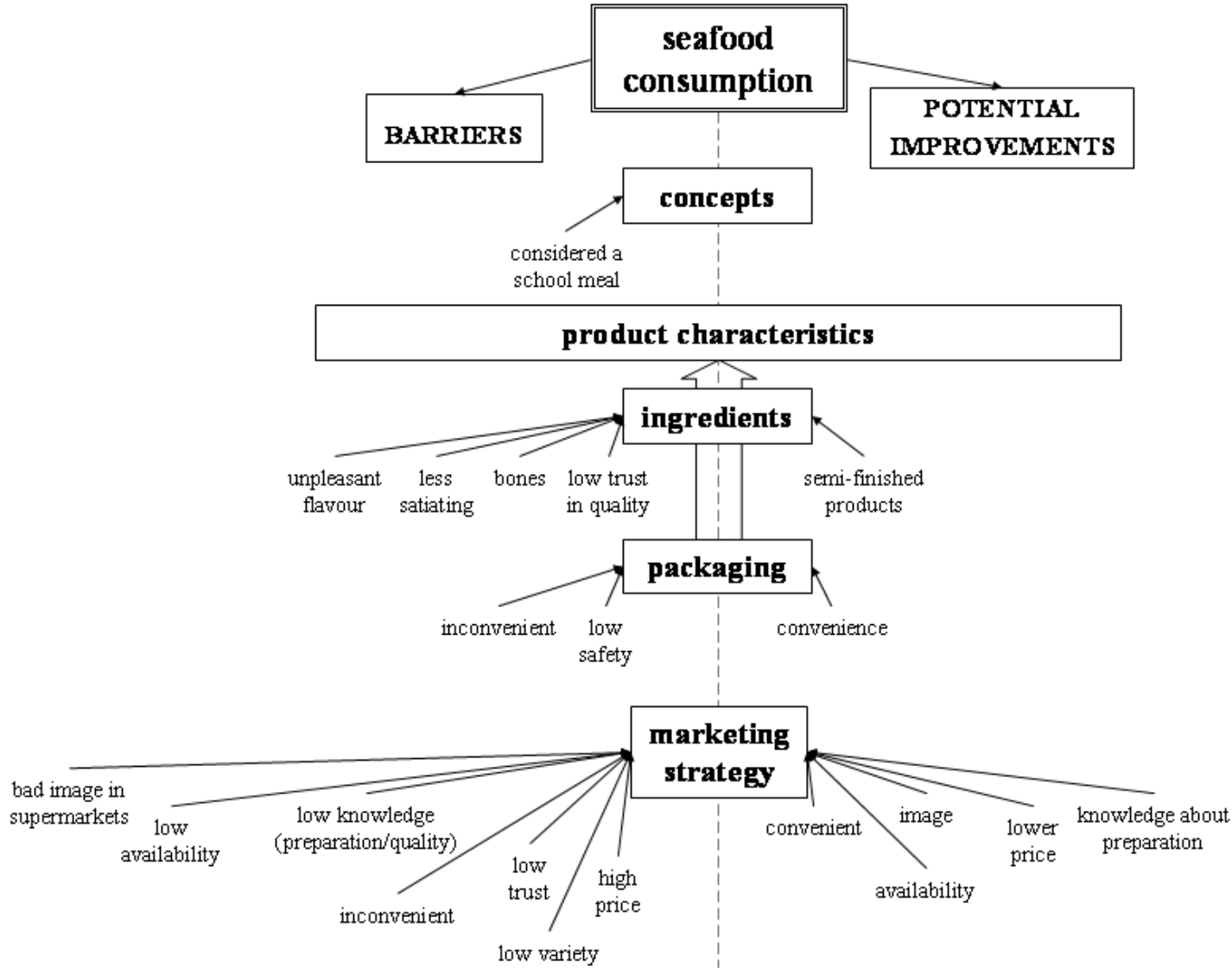


Figure 3. Barriers to seafood consumption and potential areas of improvement.

The relationship between price and quality was repeatedly stressed as a crucial aspect affecting consumers' shopping habits. Consumers also stated that some variation in the quality would be acceptable if it was openly communicated. The price tag functioned as a key indicator of quality:

“In the old days you would get good [quality] fish. Today you don't know how to distinguish... firm flesh and eyes with shine... the quality [markers] have often been cut off.”
Translating all these results into potential improvements indicated promising innovation pathways for NPD.

Convenience

During the fourth session, convenience was strongly linked to the time needed to prepare a meal. Most participants had some experience with convenience products. Some of the participants reported frequent use of convenience products. However, several participants had negative attitudes towards convenience products. If the preparation of a meal was effortless, it could lead to an increase in the guilt related to healthy food habits. A clear distinction between pre-cooked or frozen products and fresh, partly or fully, prepared products was also made. The latter had a much more positive image and many participants were regular buyers of such seafood products.

“I believe that food that has been processed as little as possible is the healthiest.”

Seafood was described as “the ideal fast food when one could keep it simple”. However, it was explicitly described as a food category that does not fit into the “fast food restaurants”. When focusing on more complicated dishes, seafood was considered as a more inconvenient food category than meat.

“A tasty, complex seafood dish takes mostly more time than a complex meat dish.”

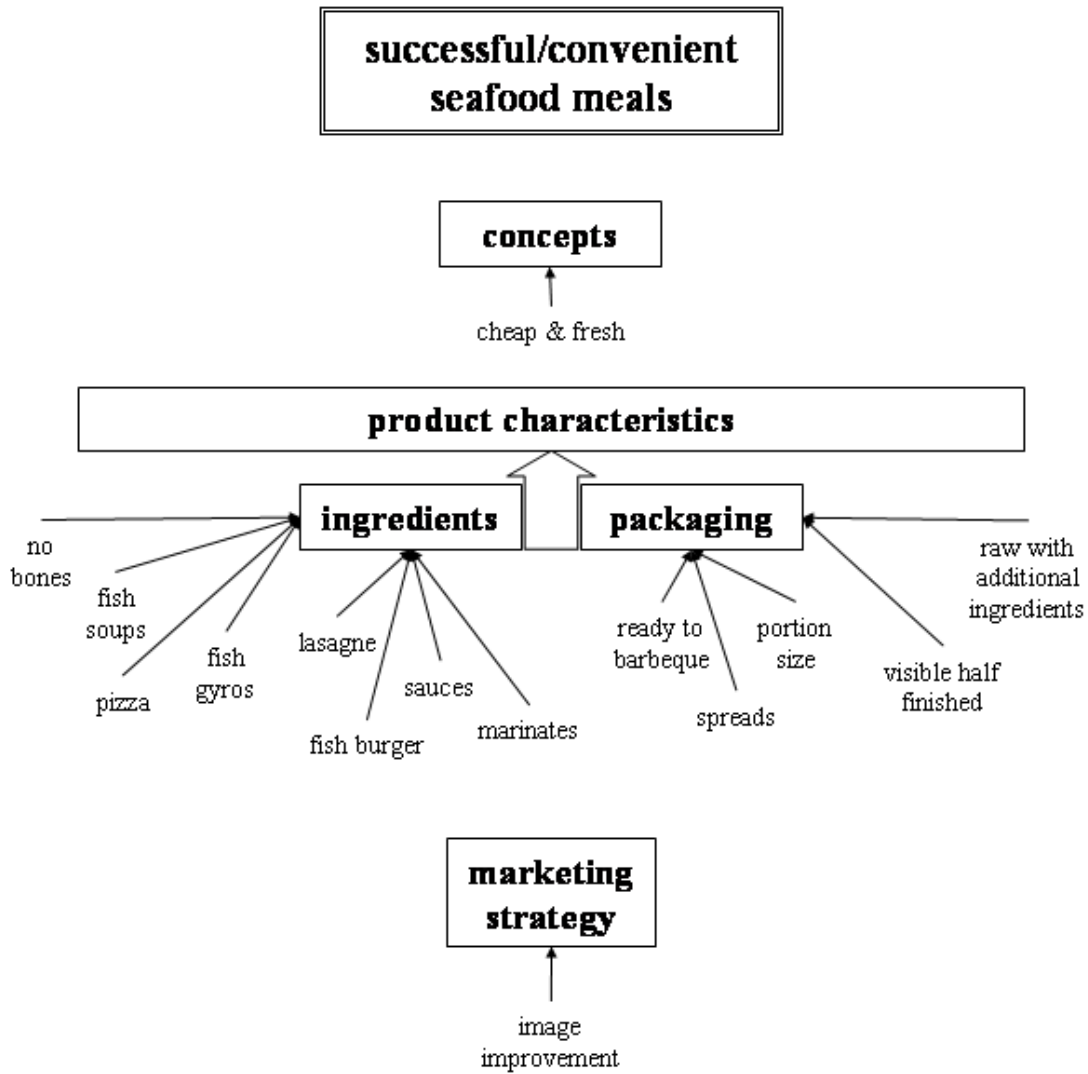


Figure 4. Ideas for acceptable convenient seafood meals.

In general the participants were positive towards convenience products (Figure 4). However there were some differences in how a “good convenient product” was perceived. Some participants did not like the idea of pre-cooked dishes, such as fish lasagne, fish burgers or pizza while others were more open towards this type of product. Although negative attitudes towards some convenience products were reported, it was stressed that these products were an important and popular choice when they tried to balance time, money, knowledge and good taste.

“I do think it is expensive [seafood], don’t know how to cook it in various ways...and therefore end by buying ready-to-cook seafood meals, which I do actually admit is very convenient.”

The participants mentioned that they would prefer convenience products that they could add their “personal touch” to. In this way, they would feel that convenience food could also be “real food” and not only “emergency food”.

The focus group discussions have generated information based upon the participants’ attitudes towards health and healthy food, especially related to the preparation and consumption of seafood. The results showed that the aspects to consider during the generation of the business case for NPD according to the Stage Gate approach can be related to the product characteristics, the marketing strategy and some product concepts (Figure 5). The participants demonstrated a high demand for products that were healthy, attractive, satiating and convenient. The products have to be visible through their packaging and accompanied by clear advice on how to prepare them. Finally, the products should be varied, widely available and not highly priced.

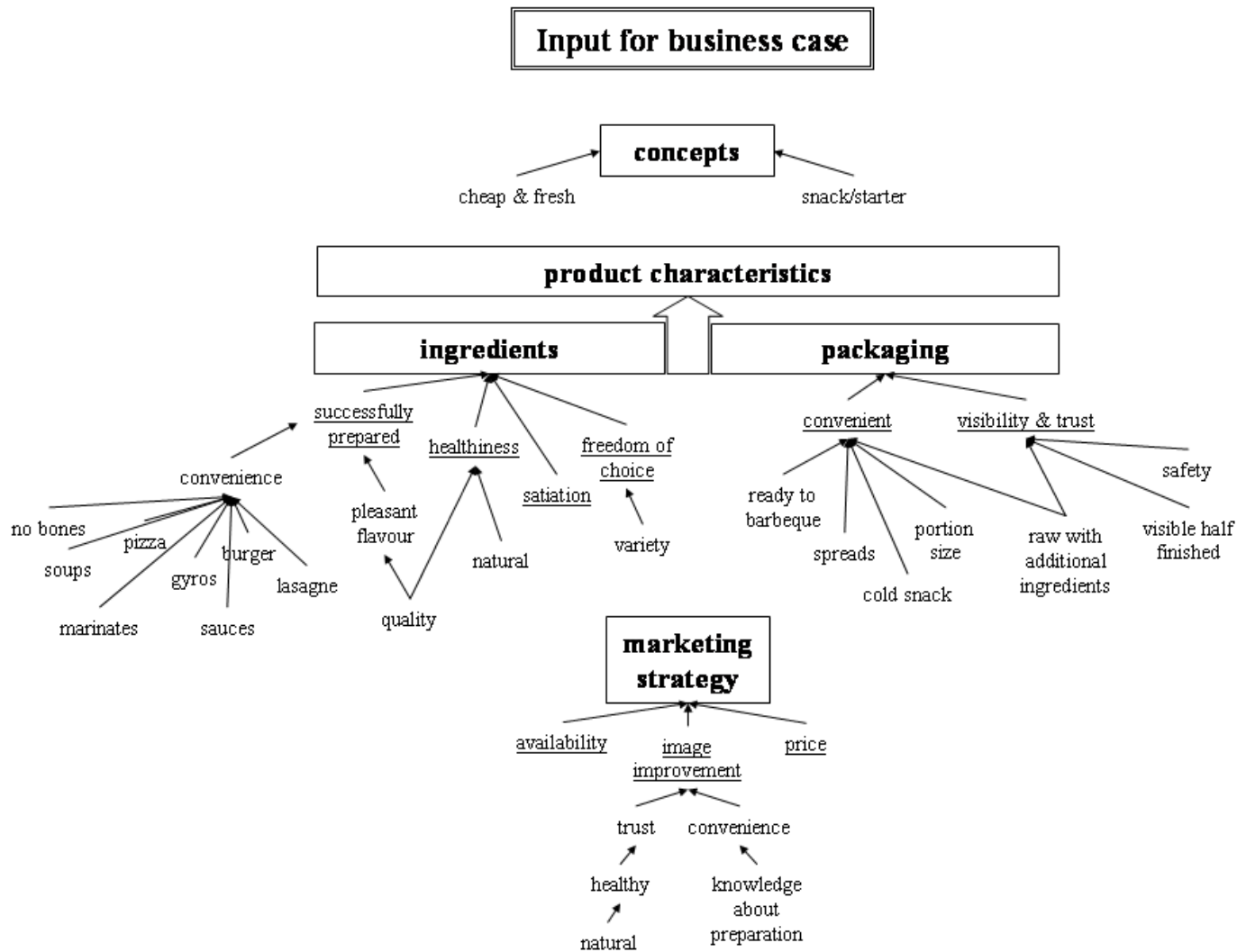


Figure 5. Summarized input for the part of building the business case in the Stage Gate new product development process.

Incorporating the values that were presented above into NPD is an approach to the way the consumers formulate their needs, from an abstract level to a concrete one.

Discussion

The central aim of this study was to gain insight into the attitudes and behaviour of young adults and parents of young children in addition to exploring the barriers and opportunities for seafood consumption. Some of the results presented in the present paper are in agreement with previous findings. However, new notions were extracted from the interaction between the participants. The results were used as input for NPD according to the Stage Gate approach to inspire the design of new healthy seafood product concepts.

Health related food-choices

The participants linked food with their health and discussed the trade-off between health and convenience. They reported feelings of guilt that accompanied their choices for a meal focused more on convenience than on healthiness. This type of guilt is not a new notion (Soetens et al., 2008; Wardle and Solomons, 1994), but the participants talked about it as leading them to new insights. They indicated that when a product was convenient, they were suspicious about its quality and healthiness. Information about the quality and the healthiness of a convenient product would improve its image and increase their willingness to choose the product. Seafood products were purchased from supermarkets and fish mongers. Seafood meals were considered to be attractive and fresh and could be purchased from a canteen or a restaurant. Most participants were aware of the positive health benefits of seafood. The general idea that “seafood is good for you” was present and led to willingness to consume more seafood (Roosen et al., 2007). However, the final choice for seafood was not necessarily made due to discrepancies between planned and actual behaviour (Köster, 2009). The latter resulted in a feeling of guilt about not being cautious with regards to personal health, together with the feeling of being inconsistent with their knowledge (Paisley et al., 2001). Feelings of a lack of time to prepare a meal are probably an indication of food being a lower priority than work, education and hobbies (Jabs et al., 2007).

Seafood was strongly associated with healthiness but also led to negative associations. Across the three countries the participants mentioned poor access to seafood of high quality, the high

price of seafood and insecurity related to their own cooking skills and in judging what good quality seafood is. This finding is in agreement with a previous study in Norway (Myrland et al., 2000).

It was shown that convenience and availability alone could not persuade the participants into purchasing a product even though they were willing to do so. Trust in the quality and their cooking skills would increase the market potential of healthy seafood products.

Children and childhood

A factor that strongly influenced the choice of a seafood meal was the presence of children in the household. It was believed that “good habits” should be taught to and performed with the children, which involved healthy eating (Fiates et al., 2008). Parents of young children indicated that it is difficult to convince their children to eat seafood. Peer influence at school leads to children adopting a negative attitude towards seafood and finally to refusal to consume it (Ross, 1995). Once they express their dislike of seafood at the dinner table, their pre-school siblings start mirroring the negative attitude towards seafood (Barthomeuf et al., 2009). Parents then decrease the frequency of seafood meals due to this rejection. Additionally they are not willing to prepare something during a busy day and then receive negative feedback (Jabs et al., 2007).

Past exposure and habits influenced their present food choice behaviour positively and negatively. Regular past consumption increased their liking of and trust in, seafood products. However, high exposure resulted in product boredom (Köster and Mojet, 2007). Hence, it can be concluded that both high and low consumption of seafood during childhood had a negative influence on the consumption in later life (Fox and Ward, 2008) and finding a good balance in the frequency of serving seafood is a challenge for the parents of young children.

The input given from this part of the discussion led to a conclusion about NPD aiming at consumers in their childhood. The group discussed that the opinion of the parents is not only related to their caring attitudes towards their children, but is also dependent on their own past experiences. A successful product should be developed on the basis of parents’ confidence in a successful meal that would not bore their children in the long term.

“Consumption circle” of familiar recipes

During qualitative analysis, the concept of a consumption circle was used to describe the consumption and eating habits of participants. The participants described the common practice of having 10-15 dishes that are randomly prepared during the year. It appeared that seafood does not play a major role in the consumption circle. In order to increase seafood consumption the challenge is to break into this habitual circle. This concept provided practical insight on the previously presented issue of the strength of habit in food choice behaviour (Honkanen et al., 2005).

One of the main messages extracted from the focus groups was that an improvement of the image and an increase in the availability of seafood could increase intake. Sources of promotional information were explicitly mentioned as a reason for remembering to purchase more seafood. There was a general agreement that more promotional strategies would lead to an increase in the consumption of seafood and seafood products. As participants primarily select their main meal during shopping, the results indicated that more seafood promotion at the purchase points could be a way to influence consumer choices.

Based on the discussions, seafood was considered to be a product that is too expensive to risk preparing inappropriately. Hence, information about the preparation method and the choice of additional ingredients or accompaniments would increase the marketability of new healthy seafood products. The participants were willing to add more seafood to their consumption circle and they would act accordingly if they had access to healthy and convenient seafood products of guaranteed high quality (Pieniak et al., 2007).

The participants showed an overall preference to be reminded at the purchase points of new recipes and guided on how to prepare them to break out of their long trusted habits. There was a demand for new products that would simply describe the necessary steps to a successful meal on the packaging.

Concluding remarks

We can conclude that healthy eating requires some complex choices (Brug et al., 1995), especially when it comes to seafood. However, the participants discussed the need for a

balance between health, pleasure and convenience. Light-users of seafood from countries with traditionally high seafood consumption face barriers related to the price and quality of their traditional seafood products. The group suggested that promotional material would assist them in staying consistent with their intended food choice behaviours. The promotional material should offer information on preparation methods at the purchase point. Eventually, this additional information will redirect their attention to food choices which are based on their knowledge on health.

A potential limitation of the current study may be the inability to control for an optimal group dynamic. It was considered that involving two groups of consumers, i.e. young adults and families with young children, may lead to a loss of discussion points that could arise if the groups discussed seafood separately. However, the interesting suggestions that could be elicited from the interaction of the groups have led to the final choice of groups (Kitzinger, 1995; Greenhalgh and Taylor, 1997). Moreover, the fact that participants could describe the phenomenon of interest in the present study from various perspectives was considered to be utterly beneficial (Collingridge and Gantt, 2008). Another possible limitation was the external validity of our findings. It is generally considered that results of qualitative research should not be used to formulate generalised conclusions for the general public. However, it is considered an extremely valuable method for retrieving realistic, real-life data. Information from focus group discussions can help guide efforts to quantify behaviour and also help to interpret the findings (Draper, 2004; Meyerick, 2006).

Using qualitative consumer data as input for NPD is not as common as in other fields of research (Van Kleef et al, 2005a, b). However, a careful exploration of the consumers' discussions on the subject of our interest provides valuable input. Analysing the information that is provided by the consumers can lead to a better understanding of the current market situation (Søndergaard, 2005; Søndergaard and Harmsen, 2007). In addition, the consumer perspectives are captured without being directed by pre-selected items of a questionnaire. This information can then be used as the voice of the consumer when ideas for new products are generated.

Implications for research and practice

Considering the increasing need for innovative seafood products that focus on healthiness, convenience, palatability and food preparation knowledge, an overall improvement in the image of seafood is required.

On a theoretical level, various new issues can be extracted from these results for use in further exploration and possible quantification. Promising issues for further research are: a) past and habitual behaviour, b) the interaction between time perception and convenience, c) perception of safety and trust with respect to risk factors and transparent communication, d) the image of healthy products that are influencing health behaviour and finally e) the interaction between age and household size. Furthermore, the gap that is left from psychological attitudinal models of the past (Ajzen, 1991) could be the main focus of further research. In all three countries implicit factors like past experiences and situations where choices were made quickly appeared to have an impact on the present liking and consumption level of seafood. These behaviours might have been overlooked if the intention to behave in a socially desirable manner was not explored. Further qualitative and quantitative exploration of the steps in food choice that are made between the intention to behave in one way and the actual behaviour is needed.

On an applied level, our results were used as an input for NPD according to the Stage Gate approach. The results inspired the design of new healthy seafood product concepts such as fish fillets from one or a mix of species, in improved packaging with appropriately targeted package information. Our results suggest that the image and availability of seafood products needs to be improved in order to attract consumers to incorporate a seafood meal into their habitual consumption circle. The participants showed a high demand for a variety of healthy products and would like to be advised on how to prepare them properly. They indicated that convenient products would be a choice that they would make for a weekday meal. The products would preferably be visible in their packaging, trustworthy and would demand some preparation effort, to decrease the guilt feelings that are related to convenience and the responsibility for the health of their family or themselves. The interest in being involved in the preparation of the meal is in line with the findings of Larson et al. (2006). Nevertheless, weekend meals were accepted as being more complicated and demanding, but consumers would like to have appropriate advice and recommendations accompanying the product.

The successful interaction of the participants in the focus groups was confirmed by several results being in agreement with the existing literature. However, new and useful insight into the interaction between freedom of choice of a food product that consumers would confidently prepare and eventually add to their habitual consumption circle was given. The latter can also be used in the further steps of Stage-Gate based NPD and inform the design of a product concept test of which the results will be reported in the future.

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References

- Ajzen, I. (1991), "The Theory of Planned Behaviour", *Organizational Behavior and Human Decision Processes*, Vol. 50 No. 2, pp. 179-211.
- Barthomeuf, L., Rousset, S. and Droit-Volet, S. (2009), "Emotion and food: Do the emotions expressed on other people's faces affect the desire to eat liked and disliked food products?", *Appetite*, Vol. 52 No. 1, pp. 27-33.
- Brug, J., Debie, S., van Assema, P. and Weijts, W. (1995), "Psychosocial determinants of fruit and vegetable consumption among adults: Results of focus group interviews", *Food Quality and Preference*, Vol. 6 No. 2, pp. 99-107.
- Brunso, K. (2003), "Consumer research on fish in Europe", In J. B. Luten, J. Oehlenschlaeger and G. Olafsdottir (Eds.), *Quality of fish from catch to consumer: Labelling, monitoring and traceability*, Wageningen Academic Publishers, Wageningen, pp. 335-344.
- Brunso, K. and Grunert, K. G. (2007), "Consumer attitude measures and food product development", In H. MacFie (Ed.), *Consumer-led food product development*, Woodhead publishing ltd, Cambridge, pp. 197-222.
- Cohen, D.J., Crabtree, B.F. (2008), "Evaluative criteria for qualitative research in health care: controversies and recommendations", *Annals of Family Medicine*, Vol. 6 No. 4, pp. 331-339.

- Collingridge, D.S. and Gantt E.E (2008), "The quality of qualitative research", *American Journal of Medical Quality*, Vol. 23 No. 5, pp. 389-395.
- Cooper, R. G. (1999), "From experience - The invisible success factors in product innovation", *Journal of Product Innovation Management*, Vol. 16 No.2, pp. 115-133.
- Cooper, R. G. (2008), "Perspective: The Stage-Gate (R) idea-to-launch process-update, what's new, and NexGen systems", *Journal of Product Innovation Management*, Vol. 25 No.3, pp. 213-232.
- Draper, A. K. (2004), "The principles and application of qualitative research", *Proceedings of the Nutrition Society*, Vol. 63 No.4, pp. 641-646.
- Endacott, R.R.N. (2008), "Clinical research 4: Qualitative data collection and analysis", *International Emergency Nursing*, Vol. 16, pp. 48-52.
- Fiates, G. M. R., Amboni, R. D. M. C. and Teixeira, E. (2008), "Television use and food choices of children: Qualitative approach", *Appetite*, Vol. 50 No.1, pp. 12-18.
- Fox, N. and Ward, K. (2008), "Health, ethics and environment: A qualitative study of vegetarian motivations", *Appetite*, Vol. 50 No. 2-3, pp. 422-429.
- Greenhalgh, T. and Taylor, R. (1997), "How to read a paper: Papers that go beyond numbers (qualitative research)", *BMJ*, Vol. 315, pp. 740-743.
- Honkanen, P., Olsen, S. O. and Verplanken, B. (2005), "Intention to consume seafood--the importance of habit", *Appetite*, Vol. 45 No.2, pp. 161-168.
- Jabs, J., Devine, C. M., Bisogni, C. A., Farrell, T. J., Jastran, M. and Wethington, E. (2007), "Trying to Find the Quickest Way: Employed Mothers' Constructions of Time for Food", *Journal of Nutrition Education and Behavior*, Vol. 39 No. 1, pp. 18-25.
- Jaffry, S., Pickering, H., Ghulam, Y., Whitmarsh, D. and Wattage, P. (2004), "Consumer choices for quality and sustainability labelled seafood products in the UK", *Food Policy*, Vol. 29, pp. 215-228.
- Kitzinger, J. (1995), "Qualitative Research: Introducing focus groups", *BMJ*, Vol. 311, pp. 299-302.
- Korzen-Bohr, S. and O'doherty Jensen, K. (2005), "Heart disease among post-menopausal women: Acceptability of functional foods as a preventive measure", *Appetite*, Vol. 46, pp. 152-163.
- Köster, E. P. (2009), "Diversity in the determinants of food choice: A psychological perspective", *Food Quality and Preference*, Vol. 20 No. 2, pp. 70-82.

- Köster, E. P. and Mojet, J. (2007), "Boredom and the reasons why some new food products fail", In M. Hal (Ed.), *Consumer-led food product development*, Woodhead publishing ltd, Cambridge, pp. 262-280.
- Larson, N. I., Perry, C. L., Story, M. and Neumark-Sztainer, D. (2006), "Food preparation by young adults is associated with better diet quality", *Journal of the American Dietetic Association*, Vol. 106 No. 12, pp. 2001-2007.
- Mays, N. (1995), "Qualitative Research: Rigour and qualitative research", *BMJ*, Vol. 311, pp. 109-112.
- Mays, N. and Pope, C. (2000), "Qualitative research in health care. Assessing quality in qualitative research", *BMJ*, Vol. 320, pp. 50-52.
- Meyerick, J. (2006), "What is good qualitative research? A first step towards a comprehensive approach to judging rigour/quality", *Journal of Health Psychology*, Vol. 11 No. 5, pp. 799-808.
- Morrissey, M. (2006), "Culinary based product development for seafood and the stage gate principle", *The Third SEAFOOD Conference*. Tromsø, Norway.
- Mozaffarian, D. and Rimm, E. B. (2006), "Fish intake, contaminants, and human health - Evaluating the risks and the benefits", *Jama-Journal of the American Medical Association*, Vol. 296 No. 15, pp. 1885-1899.
- Myrland, Ø., Trondsen, T., Johnston, R. S. and Lund, E. (2000), "Determinants of seafood consumption in Norway: lifestyle, revealed preferences, and barriers to consumption", *Food Quality and Preference*, Vol. 11 No. 3, pp. 169-188.
- Olsen, S. O. (2001), "Consumer involvement in seafood as family meals in Norway: an application of the expectancy-value approach", *Appetite*, Vol. 36 No. 2, pp. 173-186.
- Olsen, S. O. (2003), "Understanding the relationship between age and seafood consumption: the mediating role of attitude, health involvement and convenience", *Food Quality and Preference*, Vol. 14 No. 3, pp. 199-209.
- Olsen, S. O., Scholderer, J., Brunsø, K. and Verbeke, W. (2007), "Exploring the relationship between convenience and fish consumption: A cross-cultural study", *Appetite*, Vol. 49 No. 1, pp. 84-91.
- Paisley, J., Sheeshka, J. and Daly, K. (2001), "Qualitative Investigation of the Meanings of Eating Fruits and Vegetables for Adult Couples", *Journal of Nutrition Education and Behavior*, Vol. 33 No.4, pp. 199-207.

- Pieniak, Z., Verbeke, W., Scholderer, J., Brunsø, K. and Olsen, S. O. (2007), "European consumers' use of and trust in information sources about fish", *Food Quality and Preference*, Vol. 18 No. 8, pp. 1050-1063.
- Rabiee, F. (2004), "Focus-group interview and data analysis", *Proceedings of the Nutrition Society*, Vol. 63 No. 4, pp. 655-660.
- Roosen, J., Marette, S., Blanchemanche, S. and Verger, P. (2007), "The effect of product health information on liking and choice", *Food Quality and Preference*, Vol. 18 No. 5, pp. 759-770.
- Rortveit, A. W. and Olsen, S. O. (2007), "The role of consideration set size in explaining fish consumption", *Appetite*, Vol. 49 No. 1, pp. 214-222.
- Ross, S. (1995), "Do I really have to eat that?": A qualitative study of schoolchildren's food choices and preferences", *Health Education Journal*, Vol. 54 No. 3, pp. 312-321.
- Sidhu, K. S. (2003), "Health benefits and potential risks related to consumption of fish or fish oil", *Regulatory Toxicology and Pharmacology*, Vol. 38 No. 3, pp. 336-344.
- Sirois, M. (2006), "Proven methods of developing successful new value added seafood products in an ever changing market place", Paper presented at the 2nd TAFT meeting, Quebec, Canada.
- Soetens, B., Braet, C., Van Vlierberghe, L. and Roets, A. (2008), "Resisting temptation: Effects of exposure to a forbidden food on eating behaviour", *Appetite*, Vol. 51 No. 1, pp. 202-205.
- Steingrímisdóttir, L., Þorgeirsdóttir, H. and Ólafsdóttir, A. S. (2002), "Könnun á mataræði Íslendinga 2002: Helstu niðurstöður", *Rannsóknir Manneldisráðs Íslands V*, from: <http://www.lydheilsustod.is/media/manneldi/rannsoknir/skyrsla.pdf> (accessed 28 March 2008)
- Søndergaard, H. A. (2005), "Market-oriented new product development. How can means-end chain approach affect the process?", *European Journal of Innovation Management*, Vol. 8 No. 1, pp. 79-90.
- Søndergaard, H. A. and Harmsen H. (2007), "Using market information in product development", *Journal of Consumer Marketing*, Vol 24 No. 4, pp. 194-201.
- Van Kleef, E., Van Trijp, H.C.M., and Luning, P. (2005a), "Consumer research in the early stages of new product development: a critical review of methods and techniques", *Food Quality and Preference*, Vol. 16, pp. 181-201.

- Van Kleef, E., Van Trijp, H.C.M., and Luning, P. (2005b), “Functional food: health claim-food product compatibility and the impact of health claim framing on consumer evaluation”, *Appetite*, Vol. 44, pp. 299-308.
- Verbeke, W., Sioen, I., Pieniak, Z., Van Camp, J. and De Henauw, S. (2005), “Consumer perception versus scientific evidence about health benefits and safety risks from fish consumption”, *Public Health Nutrition*, Vol. 8 No. 4, pp. 422-429.
- Verbeke, W., Vermeir, I. and Brunso, K. (2007), “Consumer evaluation of fish quality as basis for fish market segmentation”, *Food Quality and Preference*, Vol. 18 No. 4, pp. 651-661.
- Wardle, J. and Solomons, W. (1994), “Naughty but Nice - a Laboratory Study of Health Information and Food Preferences in a Community Sample”, *Health Psychology*, Vol. 13 No. 2, pp. 180-183.
- Welch, A., Lund, E., Amiano, P., Dorronsoro, M., Brustad, M., Kumle, M., Rodriguez, M., Lasheras, C., Janzon, L., Jansson, J., Luben, R., Spencer, E.A., Overvad, K., Tjønneland, A., Clavel-Chapelon, F., Linseisen, J., Klipstein-Grobusch, K., Benetou, V., Zavitsanos, X., Tumino, R., Galasso, R., Bueno-de-Mesquita, H.B., Ocké, M.C., Charrondière, U.R. and Slimani, N. (2002), “Variability of fish consumption within the 10 European countries participating in the European Investigation into Cancer and Nutrition (EPIC) study”, *Public Health Nutrition*, Vol 5, pp. 1273-1285.

