

Omega-3 health claim in ready meals: Effects on consumers perception in an online concept test and in a home use test

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Introduction

Research on consumer perception of health claims have shown health claims in food product labelling to communicate health effects, but they do not necessarily make the products more appealing from the consumers' perspective. Online testing of concepts may be an attractive option to estimate consumers reaction, but the applicability of online concept testing for innovative and complex products such as functional food products has not been studied. Attention on positive health effects of omega-3 fatty acids has motivated the food industry to incorporate these fatty acids into food products. However, omega-3 fatty acids are prone to oxidation which can have a negative impact on the sensory quality of foods, not the least foods that are heated before consumption, as increased temperature may facilitate oxidation.

The aim of this study was to study the effects of an omega-3 health claim on ready meals on consumer perception in an online concept test and in a home use test with a focus on overall liking, perception of taste and consumers willingness to pay. It was intended to reveal if consumers' perceptions differ in these two research settings and provide understanding of the methods' applicability in functional food product development.

Materials and methods

Online concept test: Respondents' perception of two different convenience ready meals (meal type 1 and 2) with and without an omega-3 health claim was studied via online testing. The questionnaire included descriptions of the product concepts and photos of the products. Respondents were asked questions related to perception of taste on a 7 point Likert scale, and willingness to pay (open question). 3700 letters were sent to a random sample received from Registers Iceland. Respondents were segmented by k-means clustering method on the basis of 39 items mainly related to health, functional foods and food related lifestyle.

Home use test: Participants, recruited via advertisement (n = 120), received two types of convenience ready meals (meal type 3 and 4) enriched with omega-3, either with or without a omega-3 health claim to be consumed within one weeks time. The participants answered questions regarding overall liking on 9 point Likert scale, perception of taste on a 7 point Likert scale and willingness to pay (open question) via web link.

Test products: Two types of omega-3 enriched meals (meal type 3 and 4) were produced for the home use test. Both meal types (400 g portions) were packed in un-labelled commercial packaging. Half of each meal type was labelled only with meal preparation guidelines, ingredients, nutritional value and weight (regular label). In addition to these information, the other half of the meal pack labels also included the health claim „High in omega-3 which contributes to the maintenance of normal vision, brain- and cardiovascular functions“ (health claim label).

Sensory evaluation: The meals for the home use test were evaluated by 7 to 9 trained sensory assessors for meal types 3 and 4 using generic descriptive analysis, with main focus on odours and flavours related to the omega-3 enrichment.

Table 1. Online concept test: comparison of product concepts with and without an omega-3 health claim

	n	taste		willingness to pay	
		F	p	F	p
meal type 1	379	3.404	.066	21.817	.000
meal type 2	379	5.736	.017	64.582	.000

Table 2. Home use test: comparison of products containing labels with and without an omega-3 health claim

	n	overall liking		taste		willingness to pay	
		F	p	F	p	F	p
meal type 3	57	1.875	.150	4.515	.213	.249	.170
meal type 4	55	6.236	.000	.624	.047	1.607	.010

Results

Online concept test returned 379 valid answers. The omega-3 health claim in the online concept evaluation resulted in slightly less positive perceived taste than the baseline concept, but increased willingness to pay (Table 1). Five consumer segments were identified of which health oriented consumers with interest in functional foods appreciated all meal concepts more compared to other segments. Further, they evaluated the omega-3 health claim concepts more positively than the baseline concepts, including perception of taste (Figure 1).

Home use test returned 58 valid results for regular labels and 55 for health claim labels. The tasting of the meals at home resulted in higher overall liking, slightly better perceived taste and more willingness to pay significantly higher price (Table 2) for meal type 4 when the omega-3 health claim was included. Similar trend was seen for meal type 3 though not significant.

Effect of the omega-3 health claim on perception of taste during real tasting was positive, opposite to the online concept evaluation.

Sensory evaluation showed that no off-flavours nor off-odours related to the omega-3 enrichment were detectable in the products.

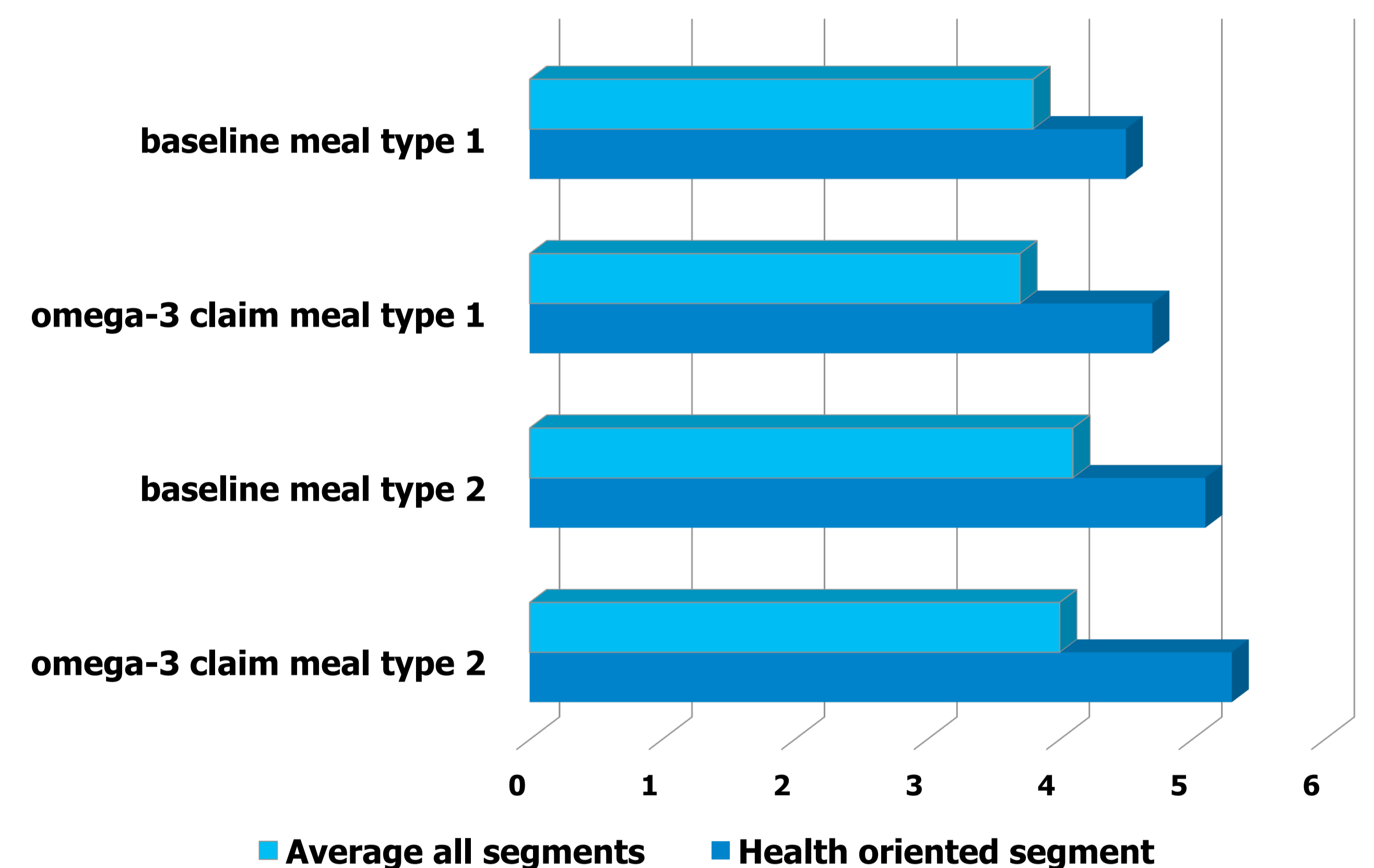


Figure 1. Perception of taste in online concept testing (this product is tasty; 1 = strongly disagree and 7 = strongly agree)

Conclusions

Both methods resulted in increased willingness to pay for omega-3 enriched meals. However, the results from the evaluation of concepts online of products enriched with omega-3 indicated that consumers presume lower liking of taste of enriched products. However, in actual tasting of the products, the consumers did not show lower liking of the taste of the enriched products with the health claim. This indicates that online concept testing can provide valuable information on product's general attractiveness but no definite conclusions on consumers' sensory perceptions can be drawn. Thus, the results produced by the online concept method might be most applicable in screening the most potential product ideas.

Health oriented consumer segment with interest in functional foods is the most promising target group for the functional food products according to online concept testing.

Both methods showed promising results of using omega-3 health claim for ready meals. These results contribute to functional convenience food product development, which requires investments not only in food technology, but also necessitates understanding consumers' perception of products based on different information of health claims.

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