

Role of health-related claims and symbols in consumer behaviour

Recommendations for the use of methodologies

In work area 3 of the FP7 EU-funded project CLYMBOL (www.clymbol.eu), the objective was to develop scientifically validated, state-of-the-art methods for measuring how health claims and health symbols – in their context – are understood by consumers, and how they affect consumer food purchasing and consumption. A first step was to review available methodologies before we conducted a series of studies in order to evaluate those methodologies in terms of theoretical anchoring and applicability.

In this report, based on the studies we conducted, we have derived recommendations for the use of these methodologies in three contexts: a) routine use by policy and industry, b) in-depth policy-related studies and c) theory-driven consumer science studies.

1 The need for methodologies to measure effects of health claims and symbols

Health claims and symbols are tools for communicating with consumers. Their purpose is to inform consumers about health-related properties of a food product. Food producers decide whether they want to make use of health claims and symbols to promote their products, and public authorities regulate the conditions under which this can be done. Both food industry and regulators have an interest in knowing how these health claims and symbols affect consumers.

The interests of food producers and regulators are not identical. Food producers will be interested in the effect of health claims and symbols on consumers' willingness to buy and willingness to pay for the product. They may also be interested in knowing how consumers interpret the health claims and symbols, and how their interpretations affect the brand or corporate image. Regulators will look at the effects of health claims and symbols from a public health perspective, being interested in whether they



lead to healthier choices and healthier diets. Both will share an interest in knowing how the health claim is understood and whether it is understood correctly.

Consumer scientists are interested in providing stakeholders with methodologies that can be used to measure the effects of health claims and symbols, and they are, beyond measuring the effect of any particular claim or symbol, interested in understanding the underlying mechanisms that lead to these effects.

In the CLYMBOL project, we have screened and tested methods for measuring the effects of health claims and symbols on consumer understanding, on purchasing and on consumption. In the present document, we summarize major conclusions and turn them into recommendations for use of these methods. As noted above, we expect that different stakeholders will have different questions they want to have answered with regard to the effect of health claims and symbols, and we therefore organize this document around three groups of stakeholders – consumer scientists, food industry, and regulators. We start with consumer scientists, because they want methods for a broad range of purposes, and this gives us an opportunity to briefly review the methods tested in CLYMBOL. We then proceed to discuss recommendations for industry and regulators.

2 Recommendations for use in consumer science

In consumer science, it is common to analyse the effects of on-pack information – including health claims and symbols – from a hierarchy of effects perspective, and this has also guided the approach used in CLYMBOL. A sequence of three types of effects is distinguished: on understanding, on purchasing, and on consumption. By *understanding* we refer to the way in which a consumer attaches meaning to a health claim or symbol by interpreting the health claim or symbol on the basis of his or her previous knowledge. By *purchasing* we mean the process leading to a transaction where the product carrying the health claim or symbol is bought. By *consumption* we mean the way in which the product purchased enters and possibly changes the eating pattern of the person or household who bought the product. In the following, we will briefly go through the three types of effects and summarize major conclusions about the usefulness of various methods for measuring these effects.



2.1 Understanding

Two types of methods for measuring understanding have been tested in CLYMBOL, the CUT method and the laddering method, the latter in two variations: soft and hard laddering (for details, see deliverable 3.2). These methods have been selected because they are well-established in consumer science, they were expected to supplement each other, and they are able to capture the constructive nature of understanding – the fact that understanding always rests on connecting the message to be understood with the consumer’s previous knowledge, in this way constructing a meaning of the message. The CUT method has been developed specifically to measure understanding of health claims, and it is a survey technique consisting of two open-ended questions that can be integrated into an online survey, asking the respondent to explain in own words what the product does and how it works. The answers are content analysed and coded. Laddering is an interview technique uncovering consumer preferences for certain product attributes by making explicit how these are, in the consumer mind, linked to self-relevant consequences and values. In the context of health claims and symbols, it can be used to see how a health claim leads consumers to infer attributes that characterize the product, and their convictions on what consequences these attributes may have for themselves. Laddering can be implemented in different ways – soft laddering is a face-to-face personal interview, whereas hard laddering is an online version where respondents type in their answers.

The results showed that both types of methods are able to capture the ways in which consumers attach different meanings to various versions of health claims, and that the results supplement each other. The major strength of the CUT method is that it allows a classification of consumers into the three categories: safe, risky or other, depending on the extent to which the meaning they attach to the health claim is or is not in accordance with the scientific dossier behind the health claim. Figure 1 (from deliverable 3.2) shows an example of a CUT result for various versions of a health claim on betaglucan. One can see, for example, how the number of consumers classified as ‘risky’ changes dramatically when a general health claim is added to the authorized betaglucan claim.



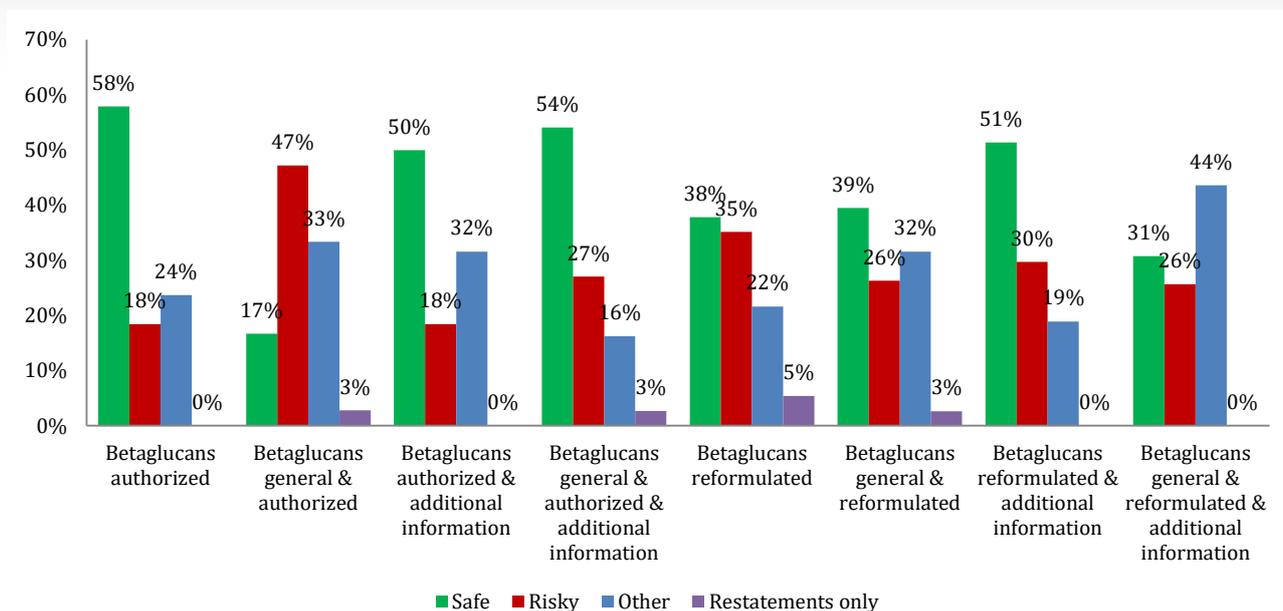


Figure 1: Example of CUT result

Laddering, on the other hand, allows us to trace the inferences consumers make and thus allows a deeper insight into *why* different versions of the same health claim lead to different forms of understanding. Figure 2 (from deliverable 3.2) shows how consumer inferences from a betaglucan claim change when additional information (explaining that betaglucan is a form of fibre, and how it affects the blood glucose level) is added to the basic claim. One can see how this leads to a host of additional relevant consequences perceived by the consumer, and also how consumer motivation to process the claim raises due to the link to happiness/satisfaction. In addition, we see that the laddering method allows us to trace not only inferences resulting from the content of the health claim, but also inferences resulting from the way it is presented, for example inferences about the length of the text provided.





Figure 2: Changes in inferences from only the authorized betaglucan claim to adding additional information

We can thus conclude that both the CUT and the laddering method can generate useful insights into consumer understanding of health claims and symbols. The CUT method is useful in establishing



proportions of people making safe, risky or other inferences, whereas the laddering method is useful in showing how these changing inferences come about.

2.2 Purchasing

Six methods have been investigated to measure purchasing. They can be ordered in terms of their proximity to the actual transaction, as in figure 3. Transactional data exists only when products carrying a claim or symbol are actually on the market, and they may not always be available.

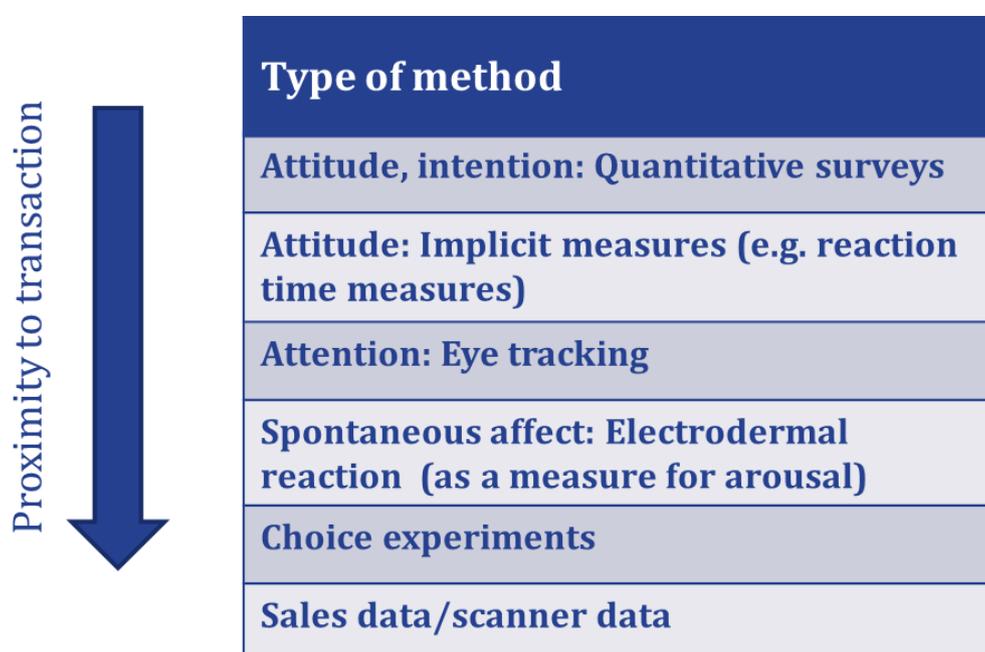


Figure 3: Methods for measuring purchasing

Quantitative surveys can be used to measure attitude to and intention to buy the product carrying a health claim or symbol. Attitudes and intentions are predictors of actual behaviour, but their explanatory power is limited and there is a danger of overestimating consumer interest. Implicit attitude measures – which measure attitudes without the respondent being asked to actually verbalize an attitude – are useful in those cases where the answers otherwise may have been subject to a social desirability bias, which we believe will not usually be the case when dealing with health claims and symbols.

Eye-tracking is a measure of attention and can hence be used to investigate whether the health claim or symbol does attract consumer attention. More importantly, attention is a predictor of choice, and research carried out in task 3.3 (details available in deliverable 3.3) indeed confirm that the impact of health claims on purchase are mediated by attention, as shown in figure 4. Eye-tracking can be used both in the lab and in the field.

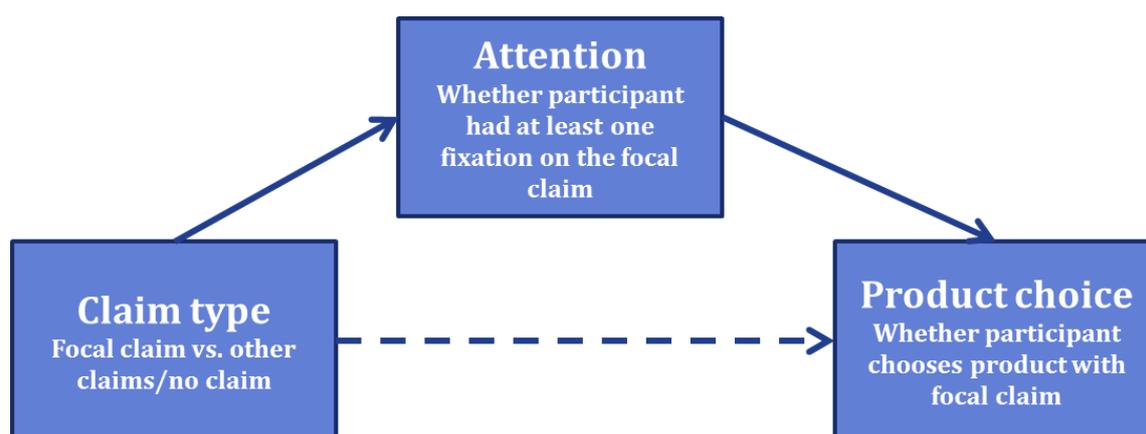


Figure 4: Mediation of effect of health claim on product choice by attention, as measured by eye tracking

Products and their elements result in spontaneous affect on the consumer side, and this affect is another mediator of the effect of product elements – potentially including health claims and symbols – on purchase. Spontaneous affect can be measured by electrodermal reaction, and again the technique can be used both in the lab and in the field. Research results from task 3.2 suggest, though, that the spontaneous affect resulting from health claims and symbols is limited.

Just short of measuring actual transaction in the store, purchase can be measured by choice experiments. In all those situations where there is an interest in investigating the purchase of products with health claims or symbols that are not (yet) on the market, this will be as close as one gets to a real transaction. Even when a product is on the market, transactional data may not be available, and a choice experiment is the closest alternative to it. Choice experiments also allow us to control for a range of factors that are bound to vary in a real store. Choice experiments can be designed in many different ways, most notably in the design of the choice set and in whether the choice involves an actual monetary transaction or not.

2.3 Consumption

Just as when measuring purchasing, measures of consumption differ in how close they are to actual consumption. Actual consumption can be measured only when consumption takes place under controlled conditions, i.e. in a lab setting, where quantities consumed can be measured by, for example, weighing food before and after consumption. Other measures are dependent on the consumer reporting their consumption. This can be done in many different ways. Some methods require the consumer to report their consumption almost concurrently with the eating, like when recording their diet by photographs or by a detailed dietary record that may involve weighing ingredients. Other measures are recall-based and vary in the amount of detail that the respondent is required to report.

Aside from the instrument used to record consumption, a major distinction is whether consumption effects are to be established under experimental conditions or in the field. Under experimental conditions, an experimental group is exposed to the health claim or symbol, whereas the control group is not, and effects on consumption can be established by comparing the groups. Research carried out in task 3.4 indicates that consumption effects of health claims will be observable in experimental settings only in very specific cases, like when a health claim has high relevance and can relieve a felt barrier to restrain eating of the carrier product. Most health claim/carrier combinations are not of this kind, and consumption effects, if any, will be small and not easily detected. In this case, consumption effects are more likely to be found in epidemiological research, where purchasing and consumption behaviour are studied by surveying large samples of people. The problem with this type of research is that while epidemiological studies measuring dietary intake are common, they do not usually include purchasing data that allow inferences on whether people have been exposed to health claims on the products they consume.

3 Recommendations for use by industry

We envisage three major questions that industry may want to have answered concerning the effect of health claims and symbols on consumers: how to document that a claim/symbol is understood as required by the regulation, how to develop claims/symbols that trigger consumer choice, and how to find claims that can support CSR policy and brand/corporate image.



3.1 How to document that a claim or symbol is understood, as required by the regulation

We recommend that this question is answered using the CUT method. The CUT method leads up to a classification of consumers as safe, risky or other, depending on their way of reacting to the claim, and the share of consumers classified as safe is as close as we can get to a quantification of consumer understanding. Which share of consumers is regarded as satisfactory in terms of understanding by the 'average' consumer is, of course, a question of judgement. The CUT method can easily be applied to large samples and can hence be applied both to the population in general and to specific target groups, like those consumers at which the product with the claim is directed. Furthermore, the CUT can investigate understanding of the claim/symbol in the context of other stimuli present on the food label, pre-empting possible reservations about the validity of the measure when claims/symbols are embedded in the context of other marketing-related stimuli.

3.2 How to develop claims that trigger consumer choice

From an industry perspective, claims and symbols are a selling tool, and claims and symbols contribute to sales targets by conveying information to consumers that lead to consumer inferences which contribute to consumer intentions to buy the product. It is common in the analysis of the effects of market communication to apply a hierarchy of effects framework, and we also propose here that the way in which claims and symbols can trigger consumer choice is looked at by analysing the sequence of *attention-inferences-choice*.

As noted above, getting consumers to pay *attention* to the claim or symbol is a prerequisite of the claim/symbol having any effect on consumer choice. We recommend investigating the attention-getting properties of claims and symbols by means of the eye-tracking method, which gives reliable and valid insight into the extent to which claims and symbols indeed attract attention. Eye-tracking can be used in lab settings, where different variations of a claim in different contexts can be tested against each other for their attention-getting properties, and in store settings, emulating real-world shopping situations.

Inferences from claims and symbols can be analysed using the laddering method, which provides transparency in the process by which consumers infer (or do not infer) self-relevant consequences from a claim/symbol. Also here, different variations of a claim can be tested against each other in order to find those claims that have the highest relevance for consumers. Laddering comes in different versions,



and for routine applications we recommend the cheaper online hard laddering version, whereas for in-depth studies we recommend face-to-face soft laddering.

Choice can be analysed by choice experiments in the lab or by the analysis of transactional data. Whenever a product is not yet on the market, choice experiments provide a good proxy to the actual consumer decision, as they can be framed by a realistic context and can include real monetary transactions if willingness to pay is a major issue. Once the product is on the market, we recommend the use of transactional data, such as retailers' scanner data or consumer panel data, if such data is accessible. In order to isolate the effect of the claim or symbol, it is necessary, though, to correct for other major factors impacting on consumer choice, like price and promotions.

3.3 How to find claims that can support CSR policy and brand/corporate image

Apart from triggering consumer choice, health claims and symbols may also be used in order to build up or strengthen health-related associations to the corporate or product brand. This may, from an industry point of view, be desirable because it can influence consumer choices at a later point of time, or it can be in support of corporate CSR policy, where being linked to specific health-related issues can be desirable even if this does not lead to specific product choices.

When the interest lies in analysing how health claims and symbols result in belief formation in the mind of consumers, we recommend using of the laddering method. As explained above, the laddering method allows to us trace the inference-making process in the consumer mind in reaction to health claims and symbols, showing how consumers construct connections between the health claim or symbol and self-relevant consequences and values.

4 Recommendations for use by regulators

We believe that regulators are interested in answering three types of questions regarding consumer reactions to health claims and symbols: a) is the claim understood by the 'average consumer' or will consumers be misled, b) how can the understandability of health claims and symbols be improved, and c) will the health claim/symbol lead to healthier choices. In addition, regulators may be interested in supply side effects, like effects on product innovations and product reformulations. Such effects, which have been documented for example for the Choices logo in the Netherlands, are outside the scope of



CLYMBOL. Likewise, we will in this deliverable not address possible public health effects that go beyond the behavioural level, for example questions on whether the introduction of certain health claims indeed alleviates a certain nutrient deficiency.

4.1 Is the claim understood by the ‘average consumer’ or will consumers be misled?

As noted above, we recommend the CUT method for investigating whether consumer understanding of a claim is compatible with the scientific dossier, as it leads to quantifiable results showing how big a share of the population in a specific target group can be regarded as ‘safe’ with regard to the inferences made. However, from a regulator perspective, understanding may have a broader meaning than whether the consumer understanding is compatible with the scientific dossier. Consumers may interpret the health claim in line with the scientific dossier, but may erroneously believe that the claim is or is not relevant for them. Laddering data can give an indication on whether a claim is believed to be relevant, as it will show whether and to which extent consumers link the claim to self-relevant consequences and value. However, if the personal relevance question is central, one may want to supplement the measure of understanding with a quantitative measure of relevance.

4.2 How can the understandability of health claims and symbols be improved?

When trying to find ways to improve the understandability of health claims – e.g., by reformulation or by giving additional information – applying the CUT method is not enough, as it does not allow insights into *why* some claim versions are better understood than others. In this case, laddering can be a helpful tool by allowing to trace how consumer inferences change when wording is changed, added or omitted. Laddering is a qualitative technique, but results can be quantitatively validated in larger samples using techniques like the Association Pattern Matrix.

4.3 Will the health claim/symbol lead to healthier choices?

From a public health perspective, ‘healthier choices’ does not only – or necessarily – imply choosing the product carrying the health claim. From a public health perspective, effects on healthier choices also involve avoiding less healthful products, reshuffling demand between product categories, and possibly making more healthy choices generally because of increased health consciousness.

When focussing on the choices made with regard to the product carrying the health claim, we recommend a combination of eye-tracking and choice experiments. As argued above, eye-tracking measures attention to the claim or symbol, which is a prerequisite for any other claim effects and a

mediator of the effect of the claim or symbol on choice. We recommend to evaluate choice effects themselves by choice experiments, as regulators may not have access to transactional data.

As for the other types of effects – on choice of other products, on consumption at category level, on health consciousness – we believe that the effect of individual claims on specific carrier products will be small, and that an analysis of these effects will require data that can relate the pattern of incidence of health claims and symbols on the product assortment to changes in purchase patterns and food intake. Such data is not presently available. While many countries routinely measure food and dietary intake, the resulting data usually do not have enough data at the product level that could enable linking them to the incidence of health claims and symbols. This is an area for further development.

5 Perspectives

Health claims and symbols are, at the EU level, a relatively new phenomenon, and there is no tradition for systematically measuring their effects on consumers. The regulation is relatively new, and products carrying health claims are in many cases still in the introduction phase. There have not yet been any high profile cases where evidence on the effects of health claims would be required either in court or for policy reformulations. But there is no doubt that such cases will arise and we need to be prepared with a toolbox of methods.

CLYMBOL has tried to provide such a toolbox, and the present document gives recommendations on the use of the various tools for different purposes. While CLYMBOL has applied scientific scrutiny to the methods, their usefulness in applied settings has still to be seen, and the present document may need revision in a number of years based on the experiences made up to this date.

