Theories of consumer behavior and methodology applied in research of products with H&N claims

Training on theoretical basis and top current methods in food consumer science:

Food products with nutrition and health claims

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Presentation outline

• Part I: General insight into food consumer research

• Part II: Theories and methodology used in consumer research related to food products with N&H claims

• Exercise
Presentation goals: what you may expect to gain at the end

• Reminder of consumer research process
• Reminder of other theories used in food consumption science
• Explanation of theories most frequently referred to in consumer research related to N&H claim products
• Explanation of experimental research design most frequently applied in consumer research related to N&H claim products
General insight into food consumer research

Let's have a brief look into how and what do we research!

Consumers have questions about produce. We're providing answers.
Introducing...FruitandVeggieGuru.com
Part I: How do we research?

- Stepwise research approach (Dr Ivo A. van der Lans)

Why?
- Developing research objectives and questions

What?
- Secondary data collection, theoretical background, research model and hypothesis
- Designing primary research, research strategy, design

Have?
- Data collection and statistical analysis

Know?
- Report writing, discussion and conclusions, implications

Do?
Part I: What do we research?

- Consumer motivation
- Personality: personal characteristics, image
- Consumer perception
- Consumer learning
- Attitude formation and change
- Communication
- Decision making
- Socio-demographic, economic, cultural, psychological factors influencing consumer behavior
- Segmentation

Picture source:
http://www.consumerpsychologist.com/images/intro/consumer_behavior.png
Part I: What theories are applicable? (1/2)

Many theories and models applicable:
• Food choice theories
• Health behavior
• Individual and Collective change
• Quality perception
• Information processing
• Consumer learning
• Communication
• Attitude formation/change
• …

These theories belong to a number of fields:
• Sociology,
• Psychology,
• Economics,
• Marketing
• Health Science
• …
Part I: What theories are applicable (2/2)

• List of theories already explained in the previous training sessions (Kees de Graf and Dr Siet Sijtsema)

• Application tailored nutrition communication
• Health consciousness/Health locus of control
• Food choice questionnaire
• Taste and health attitude questionnaire
• Food neophobia/variety seeking
• Theory of planned behavior
• Stages of change
• Total food quality model
Part II: Consumer research related to food products with N&H claims

Let's have a detailed look into theories and methodology used
Part II: What makes research of food products with N&H claims specific?

- Variety of theories of consumer behavior applicable in scientific research
- Many theories referred to during prior trainings
- Most of them are used for explaining food consumption in general and can also be used in research of products with N&H claims
- Consumer research of products with N&H claims is specific
- Therefore it requires referring to another set of theories related to consumer learning and attitude formation and change
What makes research of food products with N&H claims specific?

• By including a N&H claim manufacturers communicate N&H benefits

• Such a claim can be applied on various food categories (organic, traditional, fruit etc) however here we deal only with functional food

• Consumer research related to this food category focuses on a number issues related to various effects of food labeling relevant for policy makers, consumers and marketers
Examples of Functional Foods

Functional foods are foods that provide health benefits *beyond* (in addition to) basic nutrition. Many foods may be considered functional foods. Below is a sample of some of these foods, the key health components found in the foods, and the potential health benefits.

<table>
<thead>
<tr>
<th>Functional Food</th>
<th>Key Component</th>
<th>Potential Health Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black and green tea</td>
<td>Catechins</td>
<td>Reduce risk for cancer</td>
</tr>
<tr>
<td>Broccoli</td>
<td>Sulfuraphane</td>
<td>Reduce risk for cancer</td>
</tr>
<tr>
<td>Fish</td>
<td>Omega-3 fatty acids</td>
<td>Reduce risk for heart disease</td>
</tr>
<tr>
<td>Fruits and Vegetables</td>
<td>Many different phytochemicals</td>
<td>Reduce risk for cancer and heart disease</td>
</tr>
<tr>
<td>Garlic</td>
<td>Sulfur compounds</td>
<td>Reduce risk for cancer and heart disease</td>
</tr>
<tr>
<td>Oats and oat-containing foods</td>
<td>Soluble fiber beta glucan</td>
<td>Reduce cholesterol</td>
</tr>
<tr>
<td>Purple grape juice</td>
<td>Polyphenolic compounds</td>
<td>Support normal, healthy cardiovascular function</td>
</tr>
<tr>
<td>Soy foods</td>
<td>Soy protein</td>
<td>Reduce cholesterol</td>
</tr>
<tr>
<td>Tomatoes and tomato products</td>
<td>Lycopene</td>
<td>Reduce risk for cancer</td>
</tr>
<tr>
<td>Yogurt and fermented dairy products</td>
<td>Probiotics</td>
<td>Improve gastrointestinal health</td>
</tr>
</tbody>
</table>

To learn more about functional foods, log on to these web sites:

University of Illinois Functional Foods for Health Program:  [www.ag.uiuc.edu/ffh](http://www.ag.uiuc.edu/ffh)
International Food Information Council: [http://ificinfo.health.org](http://ificinfo.health.org)
Part II: Products with N&H claims – food consumer science interest

Broad field of research dedicated mostly to explaining how N&H claims and Nutrition Fact Panes influence:

1) Consumers perception (perceived importance of the nutrient, perception of disease risk), health beliefs, nutrition awareness and knowledge, label understandability and usage

2) Trust in N&H claims, product evaluations, manufacturers’ credibility, attitudes toward the brand and purchase intention

3) Actual consumption (raises the question of obesity)
Part II: Products with N&H claims – food consumer science theoretical background

Consumer learning and attitude formation and change

- Economic search for information
- Elaboration Likelihood Model
- Expectancy value theory
- Dual mediation hypothesis
- Other relevant theories: Hierarchy of effects models – AIDA, Prospect theory, Schema congruity theory, Affect transfer hypothesis, Framework of how low fat nutrition claims influence consumption
Part II: Economic model of search for information

• Economic model of search for information (Stigler, 1961): consumer will continue to acquire and process information so long as the cost of additional acquisition and processing do not outweigh the potential benefits. The amount of search varies among individuals due to their expenditure level on commodity, the cost of search and perceived benefits.

• Cost of search is tied to consumers’ time. They have to invest time in finding information. As time is a limited resource they will have to reallocate it from other everyday duties. Connected to it are their opportunity costs – lost wages, sacrificed leisure activities.
Economic search for information: a framework in context of N&H products

Nutrition claims and health claims convey messages that may initiate further search for information.

Additional information may be obtained from Nutrition Fact Panel and/or other explanations (claim, disclaimers, references etc) provided on the food packaging.

The question is will the consumers decide to use those information prior to making their choice on particular food product or brand?

Part II: Elaboration likelihood model

• Belongs to theories of consumer learning and attitude formation and change (Petty and Cacioppo, 1986)
• Explains how the classic source, message, recipient and contextual variables have an impact on attitudes toward various objects, issues and people (i.e. How external and internal variable have an impact on evaluative (good vs bad) and non-evaluative (likely vs non likely) judgements.
• The theory articulates a finite number of ways in which variables can have their impact on judgments, it also specifies when variables take on these roles, as well as the consequences resulting from these roles.
Elaboration likelihood model

- ELM uses dual routes (central and peripheral) to explain attitude change (persuasion) based on different degrees of elaborative information processing activity.
- Suggests that a person’s level of involvement during message processing is critical in determining which route to persuasion is likely to be effective.
Elaboration likelihood model

**Explanation in context of products with N&H claims:**

- Purchase of product with N&H claim perceived of a high risk (high involvement condition): people will be more willing to expand their cognitive effort required to process the message arguments. They will follow central route and base their attitude or choices on the message arguments (Nutrition Pact panel).
- Purchase of product with N&H claim perceived of a low risk (low involvement condition) they follow the peripheral route and rely more heavily on other message elements (visualized and verbalized benefits: pictures, models, claims).
Elaboration likelihood model
Elaboration likelihood model


• Not all N&H claims involve equal degrees of elaborative information processing activity. Perceived importance of a claim will affect further search for information.

• Two nutrient claims *Low fat* and *High in fiber* are perceived not equally diagnostic.

• Prospect theory: value associated with a perceived loss is greater or more salient than value associated with a gain (Tversky and Kahneman 1981)
Part III: Expectancy value theory

- EVT (Fishbein, 1970, Fishbein and Ajzen, 1975): explains and predicts individual’s attitudes toward objects and actions. Later expanded into TRA and TBP.
- Attitudes are developed and modified based on assessments of beliefs and values.
- Three components: 1) response to information through developing a belief 2) assigning value to each attribute that the belief is based on 3) an expectation is created or modified based on result of calculation of beliefs and values

$$A = \sum_{i=1}^{n} b_i v_i$$
Expectancy value theory

Explanation in context of products with N&H claims:

*Attitudes toward an object are a function of the desirability of perceived consequences that might occur.*

Example:

For the claim Low Fat one may expect not to be tasteful. If a person values the perceived taste of the food low (not desirable) he/she may have negative expectation of the food experience. On contrary, if the perceived food attribute (taste) is positive and highly valued it will lead to positive expectation which may be proved or challenged through his/hers real experience with the food.
Expectancy value theory

Research interest

Expectancy value theory implications for advertisers:
Food advertising claims consistent with product attributes/benefits that are desirable and highly valued by consumers are the most persuasive.

Alternative: Schema congruity theory
Advertising claims that are incongruent with the typical product category schema are more persuasive than a claim matching the product schema as long as the extreme incongruity between the product and the advertising claim can be avoided.
Expectancy value theory vs. Schema congruity theory
Will a nutrition/health claim really lead to product trial, purchase, consumption?
Part II: Dual mediation hypothesis

- Credited to Mackenzie and Lutz, 1980s
- Examines structural relationships among three constructs: attitude toward the ad (Aad), attitude toward the brand (Ab) and purchase intention (PI), most frequently used for measuring communications effectiveness

Ca – advertising cognitions, Cb – brand cognitions, Aad – attitude toward ad, Ab – attitude toward brand, PI – purchase intention
Dual mediation hypothesis

• Application in research of N&H claim products

• Attitude toward the ad (claim), which is affected by ad related cognitions, has a direct impact on attitude toward a brand (using the claim) further leading to formation of purchase intentions. Additionally, Aad also affects brand cognitions thus indirectly influencing Ab and PI.

• Linked to ELM: Dual Mediation Hypothesis vs. Affect transfer hypothesis.
Figure 1  Model of dual mediation hypothesis (DMH) and affect transfer hypothesis (ATH)

Part II: Methodology applied in consumer research related to products with N&H claim

- Focus groups
- In depth interviews
- Content analysis
- Survey
- Experiment
Experimental design

• Experiments are used to measure casual relationships of independent and dependent variables. Independent variables are manipulated through allocating experimental subjects into two or more experimental groups.

• Experimental group receives experimental treatment. The dependant variables (eg. Aad, Ab, PI) are measured according to various experimental treatments or in an absence of it (control group).

• Experiments can be: field experiments, laboratory experiments, quasi experiments
Experimental design – Examples from studies related to N&H claim products


Independent variable: use of four different levels of health claims (i.e. qualified claims) plus no claim control condition

Dependant variables: attitude toward the product, confidence in the information on health claims and perception of health benefits

Mock-up package produced + instrument (questionnaire related to dependent variables)
Findings

Consumers are not able to distinguish between the four levels of health claims.

However, the level D receives the lowest evaluations as the consumers do not perceive the product to be healthful when the disclaimer explicitly says there is little scientific evidence about the health benefit claimed.
Tips: how to organize an experiment

• Field experiments: eg. in a shopping mall
• Laboratory experiments: eg. Classroom, family open house
• By mail (similar to mail survey, just mock products/ads are delivered together with a survey)
• Quasi experiments (do not fulfill all the internal validity requirements, eg. Experimental subject not randomly assigned, real (not a mock up) material used etc).
Summary

Part I:
• Consumer research process and most relevant theories in food consumption science

Part II:
• Consumer learning and attitude formation theories most frequently referred to in consumer research related to N&H claim products
• Methodology applied in consumer research related to N&H claim products - Experimental research design