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

Lets have a brief look into how and what do we research!

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	**HOW?**

↓

HAVE?

| Data collection and statistical analysis |
|---|

↓

Report writing, discussion and conclusions, implications	**KNOW?**

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

INFLUENCES ON AND OF CONSUMER BEHAVIOR
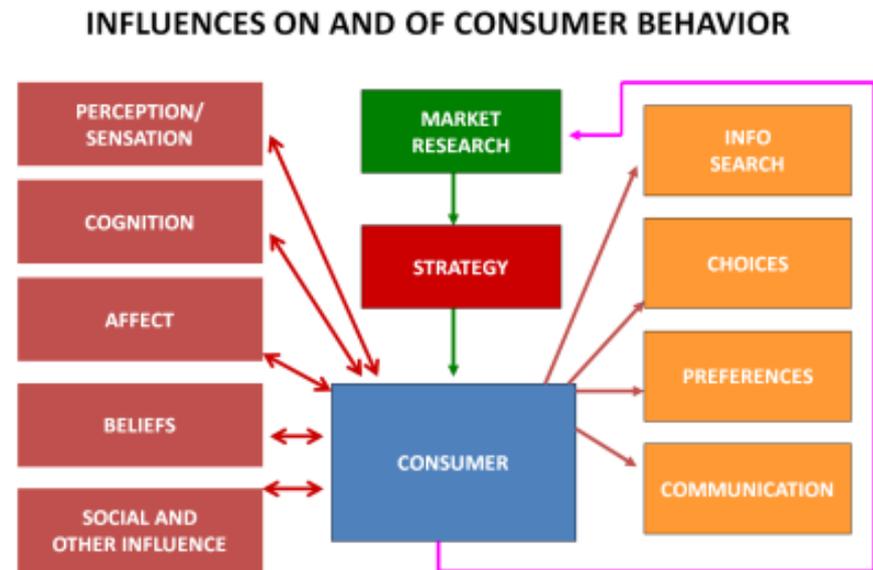
Picture source:
http://www.consumerpsychologist.com/images/intro/consumer_behavior.png

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

Llets 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.

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

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
International Food Information Council: http://ificinfo.health.org

University of Illinois
Functional Foods for
Health Program

C-FAR

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 bra


(See eg: Nayga, R, Lipinski, D, Savur, N, Consumers' Use of Nutritional Labels while Food Shopping and at Home, The Journal of Consumer Affairs, Vol. 32, No. 1, 1998, pp. 106-120

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, recepient and contextual variables have an impact on attitudes toward various objects, issues and people (ie. 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
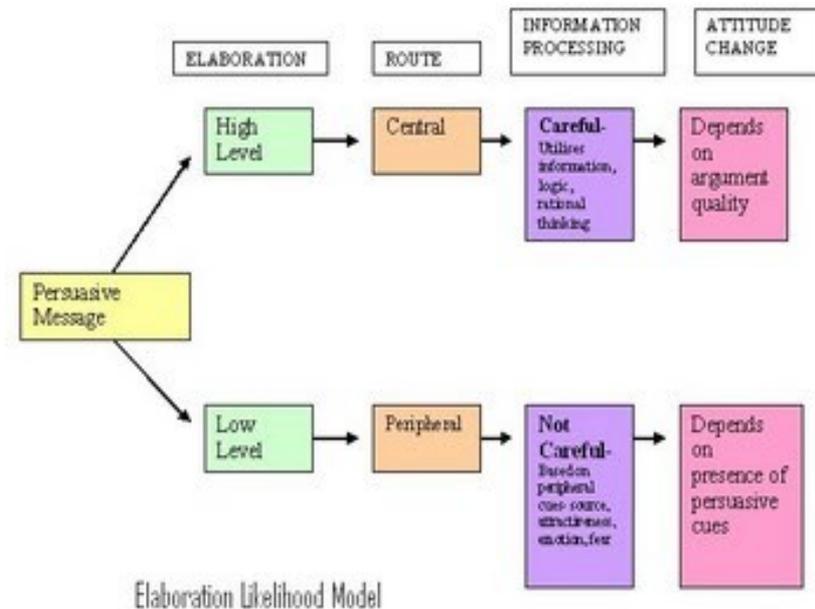
Petty & Cacioppo 1986
Source: Vaughn & Hogg.

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

- Research findings (see eg: Garretson, J.A and Burton, S, Effects of Nutrition Fact Panel Values, Nutrition Claims and Health Claims on Consumer Attitudes, Perception of Disease Related Risk and Trust, Journal of Public Policy and Marketing, Vol.19 (2), 2000, pp. 213 -227)

- 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 ⟶ Aad
Cb ⟶ Ab ⟶ PI
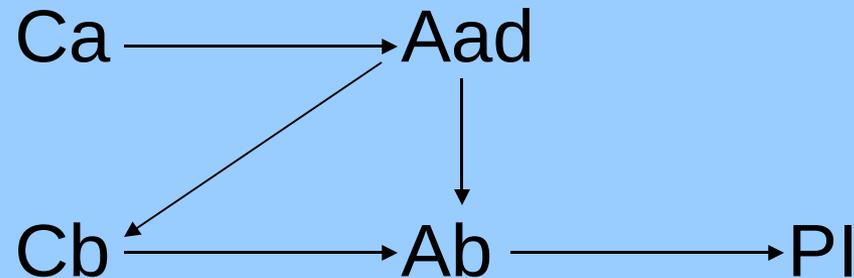
Ca – advertising cognitions, Cb – brand cognitions, Aad – attitude toward ad, Ab – attitude toward brand, PI – purchase intention

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.
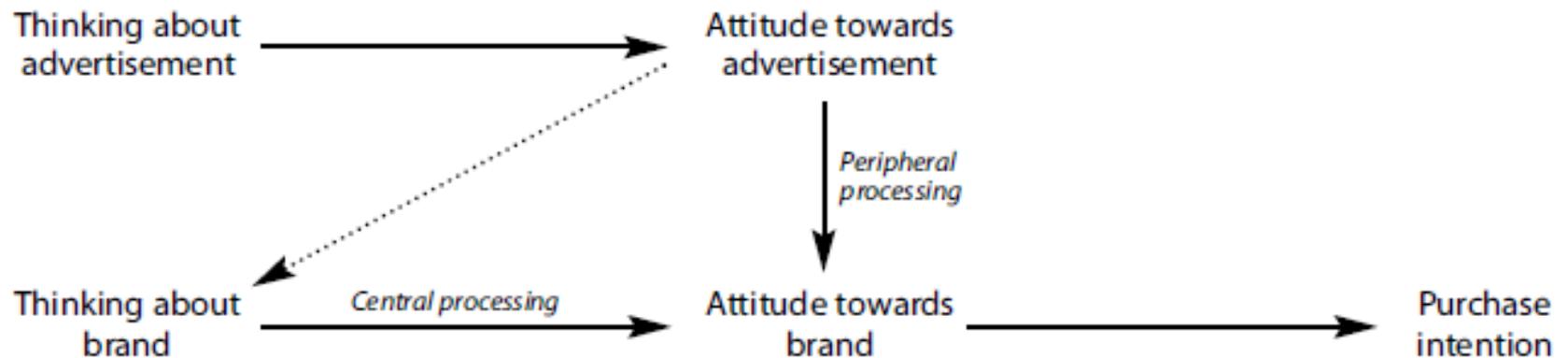
ELM, DMH and ATH

Thinking about advertisement → Attitude towards advertisement

Attitude towards advertisement → (Peripheral processing) → Attitude towards brand

Thinking about advertisement ⟶ Thinking about brand (dotted)

Thinking about brand → (Central processing) → Attitude towards brand

Attitude towards brand → Purchase intention

Figure 1 Model of dual mediation hypothesis (DMH) and affect transfer hypothesis (ATH)

Source: Sicilia, M, Ruiz, S, Reynolds, N,   Attitude formation online, *International Journal of Market Research*, Vol. 48 (2), 2005

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

Paper: Hooker, N.H, Teratanavat, R, "Dissecting Qualified Health Claims: Evidence from experimental studies", *Critical Reviews in Food Science and Nutrition*, Vol. 48, 2008, pp. 160-176
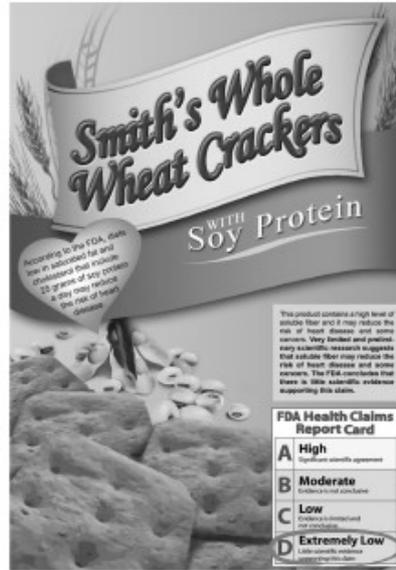
Independent variable: use of four different levels of health claims (i.e. qualified claims) plus no claim control condition

Dependant variables: attitude toward the product, confidence in the information on health claims and perception of health benefits
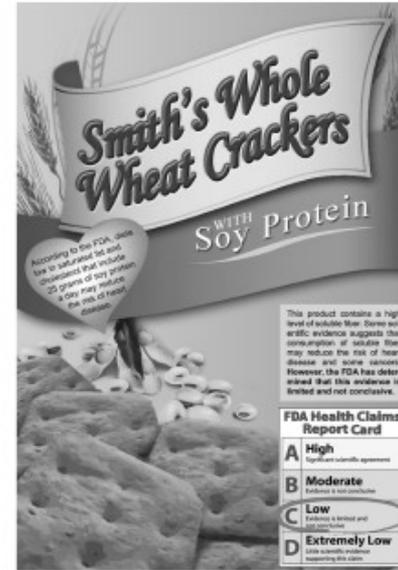
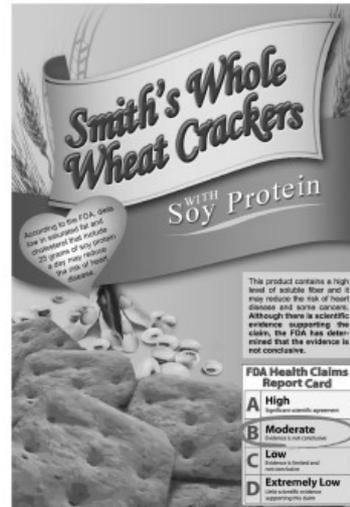Mock-up package produced + instrument (questionnaire related to dependent variables
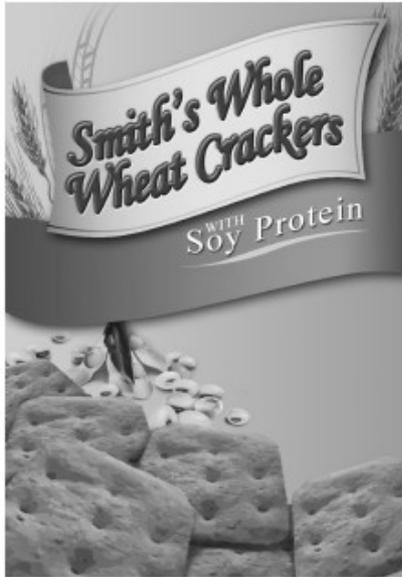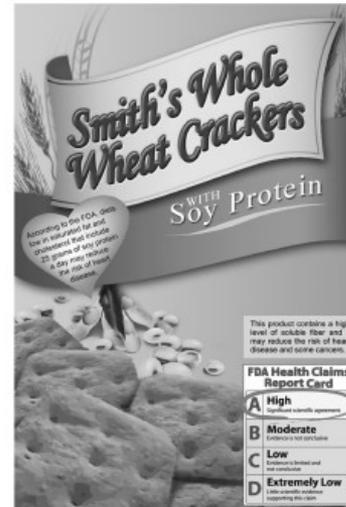
Control (No Claim)

Level D

Level C

Level B

Level A

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 the 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