

## **Weight loss for the mind: Consumers' construction of food related health values and their impact on food health behaviour**

Professor Torben Hansen  
Department of Marketing  
Copenhagen Business School  
Solbjerg Plads 3  
2000 Frederiksberg  
Denmark  
E-mail: [th.marktg@cbs.dk](mailto:th.marktg@cbs.dk)

and

Associate professor Thyra Uth Thomsen  
Department of Marketing  
Copenhagen Business School  
Solbjerg Plads 3  
2000 Frederiksberg  
Denmark  
E-mail: [tt.marktg@cbs.dk](mailto:tt.marktg@cbs.dk)

**Abstract:** Consumers may pursue health as a value through their food consumption. However, health may be constructed in various ways and thus have various impacts on nutritional behaviour. This is what this paper sets out to explore. First, we investigate what food related health means to consumers (Study 1). Second, we illustrate how different constructions of food related health affect involvement, and ultimately food health behaviour (Study 2). Study 1 is based on qualitative depth interviews with 16 interviewees, while Study 2 is based on data (n=599) collected from a nationally representative consumer panel. Results show that food related health can be constructed in several different ways and that certain health values have a positive indirect impact on food health behaviour through food health involvement, while others have a negative indirect impact on food health behaviour through food health involvement. Finally, the marketing and policy implications of the results are discussed.

**Key words:** *Nutrition, health, narrative constructions, values, involvement, health behaviour*

## INTRODUCTION

Due to changes in western lifestyles and industry, i.e. the reduction in physical labour and activity, food consumption is a central means to the reduction of weight and pursuit of health. Overweight consumers face increased rates of certain diseases, which include respiratory problems, cardiovascular-related diseases, and some types of cancer (Mokdad et al., 2003). Moreover, in financial terms, weight related diseases burden government health budgets (Roberto et al., 2015). Prior consumer research has investigated how food consumption is spun into consumers' mental and emotional states as well as how it is related to demographic, psychographic behavioural, and situational factors (e.g., Halkier 2016; Chandon & Wansink, 2007; Howlett, Burton, & Kozup, 2008; Hughner & Maher, 2006, Khare & Inman, 2006; Kidwell, Hardesty, & Childers, 2008). In this study, we focus on one of the higher order psychographic factors: values. A value is 'an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence' (Rokeach, 1973, p. 5). Values act as guiding principles in consumers' lives and are relatively stable both across time and across different situational contexts (Kamakura & Novak, 1992). Past research on the relationship between values and food choice (Halkier 2016; Finch, 2005; Dibley & Baker, 2001; Homer & Kahle, 1988; Kropp, Lavack, & Holden, 1999; Lehtola, Luomala, Tuuri, Kauppinen-Räsänen, & Kupiainen, 2008) suggests that values have a positive impact on food product experience and choice if the product is congruent with a value that is central to the consumer. Notably, health appears to be such a value (Luomala, Paasovaara, & Lehtola, 2006).

Picking up on such notions, the purposes of the current research are to (a) provide insight into consumers' construction of health as a value and (b) the way consumers' enact health in their food consumption practices. These purposes are pursued by two studies. First, we investigate various constructions of food related health (Study 1). Second, we investigate how these constructions are enacted in food consumption practices by investigating how they affect involvement, and ultimately consumers' food health behaviour (Study 2). Study 1 is based on qualitative depth interviews with 16 interviewees, whereas Study 2 is based on data (n=599) collected from a web-based questionnaire reflecting the views of a nationally representative consumer panel. Results show that the value of food related health can be constructed in several different ways and that certain health constructions have a positive indirect impact on food health behaviour through food health involvement, while others have a negative indirect impact on food health behaviour through food health involvement. Finally, the managerial and policy implications of the results are discussed.

## STUDY 1

From a health authority perspective, a food item may be deemed unhealthy if it lacks nutritional value. However, consumers may construct health in quite a different way. From a cultural perspective, the interesting question is not whether the consumer's food choice is healthy or unhealthy in an absolute biological sense (if that is at all possible), but rather what health means to the consumer. Study 1 is based on 16 depth interviews (with an even distribution of men and women) conducted with eight interviewees with varied income and educational backgrounds and with eight master students majoring in marketing. All interviewees received a small token of appreciation for their participation in the study. In line with phenomenological interviewing practice (Thompson, Pollio, & Locander, 1994), the focus of the interviews was on eliciting accounts of particular shopping and consumption experiences. In order to ground these themes in episodic and everyday experiences, we asked the interviewees to bring their last three supermarket receipts to the interview, which then served as starting points for discussing their latest food shopping. We also discussed their latest meals and continuously asked interviewees to refer to their prior actual experiences in

order to elicit emic perspectives on lived experience (Thompson, Locander, & Pollio, 1990). The interviews lasted between 45 to 90 minutes. They were audio-recorded and transcribed.

### **Health as balance**

In Loumala et al.'s study of a general health meaning framework, Harmonious Balance stands out as the health meaning category that constitutes the richest and most powerful source of meanings (Loumala et al., 2006, p. 271-272). Supporting this proposition, we also found that the constructing health as balance constitutes a pivotal topic which deserves special attention. According to Thompson and Troester (2002), "the value of harmonious balance is articulated through narratives espousing that well-being is the felicitous outcome of a harmonious balance in one's life and, conversely, that specific illnesses or health problems are symptomatic of an underlying disharmony" (p. 555). Thompson and Troester link this value to the goal of purification which is conceptualised 'as a process of restoring harmony by gradually eliminating or avoiding a myriad of everyday life stresses' (Ibid., p. 556). One of these stresses was identified in our interviews in the following way: "These days, you have to be somewhat healthy" (Lone, 24). And clearly, a harmonious balance in food consumption could ease this stress. As one interviewee coined it: "The sum of all vices is constant" (Steen, 33). In other words, constructing health as balance instead of black and white thinking leaves room for freedom of sinning and personalizing healthy consumption styles. Our interviews illustrated how extreme or puritan attitudes towards food disturb harmonious and thus healthy food consumption.

*As mentioned earlier, my definition of health is [...] to eat things that aren't bad for you, but also not to be too involved. To be morbidly obsessed with this is also unhealthy. (Anders, 24)*

Thus, health can be constructed as a balance, however the question remains *what* the consumer is balancing out in order to achieve this harmonious balance. In our study, two ways of balancing stood out, which we in the follow term 'food calibration' and 'mind/body calibration'.

### *Balancing healthy and unhealthy food: Food calibration*

Food consumers address healthy food consumption by labelling food items as healthy or unhealthy. Even though this does not make sense from a scientific point of view - since any food item can be unhealthy in the long run if it is not supplemented by other food items - the tendency to categorise food items as healthy/unhealthy has also been documented in prior research (Loumala et al., 2006). In our study, interviewees categorised the following as healthy food items: vegetables, fruit, protein, and low fat meat, but also vitamins and sandwiches (as opposed to burgers). Categorised as unhealthy food items are soft drinks, sweets, ice cream, chocolate, junkfood, pizza, food from McDonalds, hotel food, big chunks of fatty meat, butter, cream sauce, French fries but also fried food, food with additives, overdone vegetables, excessive consumption of potatoes, and dishes like pork roasts with potatoes and gravy. Interestingly, the unhealthy foods are described several times in narratives which tap into a Bordieuan understanding of the working class taste in food which he characterised 'above all by freedom.' "Elastic" and "abundant" dishes are brought to the table - soups or sauces, pasta or potatoes' without 'too much measuring and counting' (Bourdieu, 1984, p. 196).

*'Back then I could eat...I would gain weight but it wouldn't make me feel sick...*

*I just kept on eating chocolate and big dirty steaks with an abundance of béarnaise sauce. I just cannot do that anymore'. (Linda, 27)*

Linda has seen the need to change her food consumption and perhaps even curtail her freedom. Similarly, several interviewees report how they reduce their intake of unhealthy nutrition in order to create a healthy balance. For instance Steen says:

*'Yes, I do drink the allowed 15 units a week and use tanning beds. So it is not like.....I want to live healthy but I do not reject all bad things...But things should balance so I mix from all shelves'. (Steen, 33)*

Thus, by linking food restrictions to health as balance some of the lost freedom is regained; in this case because Steen allows himself to 'mix from all shelves'. Other ways of balancing healthy and unhealthy food is to balance light products with products relatively high in fat or to balance out the intake of sweets with an extra intake of fruit or vegetables. The idea that unhealthy food intake may be balanced out by healthy food intake is the overall rationale for all of these strategies.

#### *Balancing mental health and physical health: Mind/body calibration*

This construction of food related health resonates well with a classic but still popular body concept: the Cartesian mind-body dualism (Casotti, 2004; Ecks, 2009). It constructs food related health as a balance between physical and mental health. Niels puts it this way:

*'I am not convinced that being healthy is to be 5 kg below your ideal weight or to exercise every other day. Your food shopping will reflect if you feel good or bad – so if you feel good you buy healthier food' (Niels, 38)*

Niels describes healthy food consumption as a natural consequence of feeling good. Thus, physical health may follow from mental health. However, mental health may also follow from physical health. Anja elaborates on this matter:

*'Health means that you're feeling mentally good, but to feel mentally good you need to be in a physically good condition' (Anja, 29)*

In Anja's (29) case, she reports that she does not necessarily comply with several nutrition recommendations. Still, she also believes that overall this conduct makes her healthier than a constrained and restricted food intake would. Allowing herself to choose freely ultimately makes her 'cells feel good'. Following the principle of feeling good and feeling free to choose whatever you like will ultimately lead to a healthy mind and body. Likewise, in Kasper's (41) case, months before the interview he had based his food intake on the so called 'South Beach

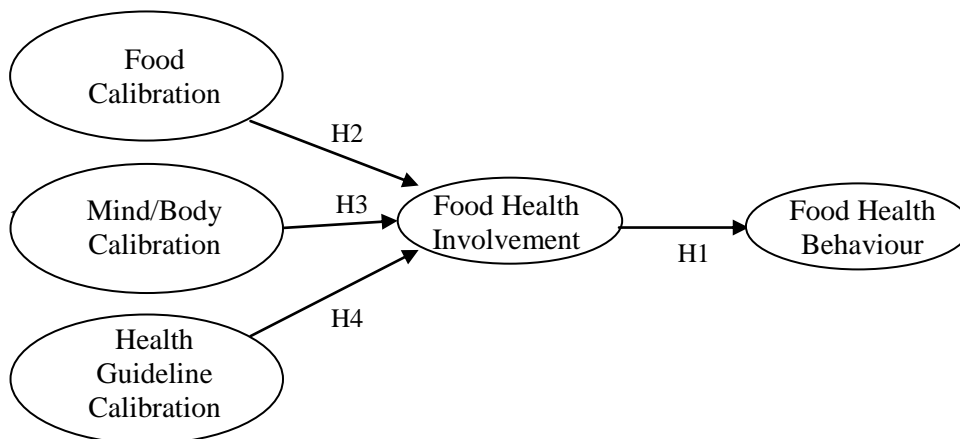
Diet'. At the time of the interview, he reports his great satisfaction and sense of well-being that he has achieved through the diet. However, he also reports eating more potatoes than recommended in the diet because 'he likes potatoes'. Kasper demonstrates that despite his predilection for potatoes being more in line with the Health Authorities' recommendations than the 'South Beach Diet', ultimately what counts for him is feeling good about his food choices

## STUDY 2

### Conceptual model and research hypotheses

In addition to the two health values identified in Study 1, Health Authorities also promote a more 'official' construction of food related health, which we in the following term 'health guideline calibration', and which we also includes in our conceptual model (Figure 1). In the conceptual model, food health involvement is expected to mediate relations between health values and food health behaviour. This expectation is based on prior research suggesting that higher level factors like values are guiding, but not determining behaviour directly (Thompson & Troester, 2002). Instead, 'actual selections of behaviour result from concrete motivations in specific situations which are partly determined by prior beliefs and values of the actor' (Williams, 1979, p. 20). In concordance with this reasoning, concrete motivations, like health motivation, have been found to be linked to most health behaviours (cf. Moorman & Matulich, 1993). In consumer research, such motivations are also referred to as certain states of involvement; in this case health involvement (Beatty, Kahle, & Homer, 1988). Thus, we propose a theoretical hierarchical model, which flows from abstract health values to midrange health involvement and, finally, from midrange health involvement to more concrete food health behaviour.

Figure 1. Conceptual model



### *Food health involvement and food health behaviour*

Food health involvement is conceptualised as the degree of personal importance and relevance a consumer attaches to healthy food consumption (cf. Beatty et al., 1988; Zaichowsky, 1985). As a consequence, highly involved consumers carry out more comparisons between different offers to ensure the best preference fit and are more willing to

spend time to find preferred products (Franke et al., 2009). Following from this, if consumers find healthy food consumption to be of high relevance and importance, they are likely to make a significant effort to shop for and consume healthy meals. Notably, this proposition is consistent with past research on the link between health involvement and food consumption (e.g., Olsen 2003). We hypothesise as follows.

H1: Food health involvement is positively related to food health behaviour.

#### *Food calibration*

Food calibration is conceptualised as pursuing food related health by consuming a supposedly healthy mixture of healthy and unhealthy food. It is in line with classical dietetics, focusing on harmony in all life practices and the right relational measure of every element (Falk, 1996). We term this belief about food related health ‘food calibration’. If food related health is constructed as food calibration this may have a negative impact on food health involvement, since the perceived risk of making a wrong food choice, i.e. eating unhealthy food, can always be evened out by eating something healthy in return. Thus, perceived risk which is known as one of the key drivers of involvement (Mitchell, 1999) may be reduced. Hence, we hypothesise:

H2: Food calibration is negatively related to food health involvement.

#### *Mind/body calibration*

Mind/body calibration is conceptualised as the belief that food related health is created by calibrating physical health with mental health and well-being (see also Luomala, Paasovaara, & Lehtola, 2006). If food related health is constructed as mind/body calibration this may have a positive impact on food health involvement, since it requires consumers to be in touch with and willing to be highly aware of both their physical and mental needs. Ultimately, this will most likely increase the relevance for them to address these needs and thus increase food health involvement. Thus, we hypothesise:

H3: Mind/body calibration is positively related to food health involvement.

#### *Health guideline calibration*

The two constructions of food related health described illustrate how beliefs about the nature of this construct may vary and how they may be different from health authorities’ constructions of food related health. In Denmark, which is the site of the study, the Danish Veterinary and Food Administration promotes complying with several food consumption guidelines (e.g., eat 6 fruits and vegetables a day) as healthy food behaviour (DVFA 2010). If consumers construct food related health in accordance with the Health Authorities’ guidelines, this may have a positive impact on food health involvement, since they risk being unhealthy if they fail to comply. Following from this, perceived risk may be increased and so will their involvement in selecting the right food items (Mitchell, 1999). Therefore, we hypothesise as follows.

H4: Health guideline calibration is positively related to food health involvement.

## Methodology

### *Measurements*

Multiple item 7-point Likert scales (1=disagree totally; 7=agree totally) were applied for each of the five theoretical constructs used in this study. The final items for each construct are summarised in the appendix. While most of the constructs were based on input obtained from the qualitative study and the pretest (see above) in measuring ‘food health involvement’, we draw on Beatty and Talpade (1994) and Beatty et al. (1988). Food health behaviour was assessed as the extent to which the consumer on average has a healthy food intake. This measure is similar to measures used in past studies on food choice decision making (Moorman & Matulich, 1993). Food health behaviour was a self-reported measure in which respondents were asked to report their own behaviour. Even though previous consumer research has applied self-reported dietary behaviour measures (Moorman & Matulich, 1993) and even though self-reported (health-related) responses are believed to be accurate in most studies (Patrick et al., 1994), self-reported measures imply the risk that respondents may be inclined to underestimate unhealthy behaviours. Thus, in order to cross-validate our dietary choice quality measure respondents were asked to state their weight and height, which allows for a calculation of their body mass index (BMI);  $BMI = \text{weight (kg)} / \text{height}^2 \text{ (m}^2\text{)}$  (WHO, 2006b). The official belief is that an unhealthy diet is positively linked to obesity (WHO, 2004) and thus a negative correlation between food health behaviour and BMI should be expected; although one should bear in mind that other factors, such as physical activity and genetic aspects, are also known to influence BMI (Eek & Östergren, 2007). The correlation between these two variables was  $-.12, p < .01$ ; indicating that our food health behaviour measure is valid. The constructs that emerged from our depth interviews and our literature review were pretested in order to provide an initial verification of the measurement scales. 110 undergraduate and graduate students, all associated with a large Business School, and members of the researchers’ networks were contacted for the purpose of pretesting the applied constructs. This resulted in a usable sample of 53 on which base the concepts were refined. The conducted item purification procedure (Brockman & Morgan, 2006) deleted one item from the measurement scales. With this item deleted, all constructs showed Cronbach alphas  $>.70$  and all inter-item and item-to-total correlations were significant at the .01 level. The deleted item is marked in the appendix.

### *Data collection*

The data collection was carried out by the market research agency Gallup using its online consumer panel consisting of approx. 30,000 Danish consumers. A sample ( $n=718$ ) with representativeness of the Danish population on gender, age, educational level, and household income was drawn from the consumer panel and contacted. Respondents were drawn to be representative of consumers aged 18+ and were screened such that only consumers who regularly carry out food shopping were included. A sample of 599 valid cases was obtained. Of the respondents, 53.9% were women, the average household size was 2.3, and the average age was 51.5 years and ranged between 18-88 years with a fairly normal spread. We investigated whether our sample ( $n=599$ ) deviates from the Danish population (aged 18-88) on gender, educational level and income level. The conducted  $\chi^2$ -tests produced all p-values  $>.30$ , suggesting that our sample reflects the Danish population on the investigated criteria.

## Results

### *Specification of the investigated model*

The conceptual model in Figure 1 was translated into a Lisrel model consisting of a measurement part (confirmatory factor analysis, CFA) and a structural equation part (simultaneous linear regression). The relationships between the variables were estimated by maximum likelihood estimation.

### *Validation of the measurement model*

The measurement model yields a chi-square of 617.38 (d.f.= 142,  $p < .01$ ). The root mean square error of approximation (RMSEA=.075), the comparative fit index (CFI=.91) and the normed fit index (NFI=.89) show an acceptable degree of fit of the measurement model (Bagozzi & Yi, 1988; Browne & Cudeck, 1993). The composite reliabilities all exceeded .70 indicating a good reliability of each of the measured constructs. Convergent validity of individual constructs in the model is confirmed to an acceptable degree because the mean of the squared factor loadings is greater than .5 for all constructs except for food calibration, which however showed a marginally acceptable value of .42 (Table 2).

*Table 2. Confirmatory factor analysis results*

Construct/indicator	Standardised factor loading <sup>a</sup>	Critical ratio	Composite reliability	Extracted variance
<i>Food calibration</i>				
X1	.64	-	.75	.42
X2	.59	10.89		
X3	.72	12.14		
X4	.64	11.48		
<i>Mind/body calibration</i>				
X5	.60	-	.86	.62
X6	.84	15.18		
X7	.85	15.28		
X8	.83	15.10		
<i>Health guideline calibration</i>				
X9	.74	-	.86	.62
X10	.79	18.42		
X11	.77	18.01		
X12	.85	19.78		
<i>Food health involvement</i>				
X13	.70	-	.82	.54
X14	.79	17.14		
X15	.85	17.57		
X16	.56	12.55		
<i>Food health behaviour</i>				
X17	.51	-	.78	.55
X18	.90	11.41		
X19	.77	11.15		

<sup>a</sup> One item for each construct was set to 1.

In order to investigate discriminant validity, the method proposed by Fornell and Larcker (1981) was initially applied. According to this method, the extracted variance for each individual construct should be greater than the squared correlation (i.e., shared variance) between constructs. An examination of Table 3 shows that the non-diagonal entries do not



exceed the diagonals of the specific constructs and thus no single violation of the conditions for discriminant validity can be detected.

*Table 3. Discriminant validity of constructs*

Construct	1	2	3	4	5
1. Food calibration	.42				
2. Mind/body calibration	.19	.62			
3. Health guideline calibration	.04	.27	.62		
4. Food health involvement	<.01	.31	.38	.54	
5. Food health behaviour	<.01	.21	.17	.52	.55

*Notes:* Diagonals represent average amount of extracted variance for each construct.

Non-diagonals represent the shared variance between constructs

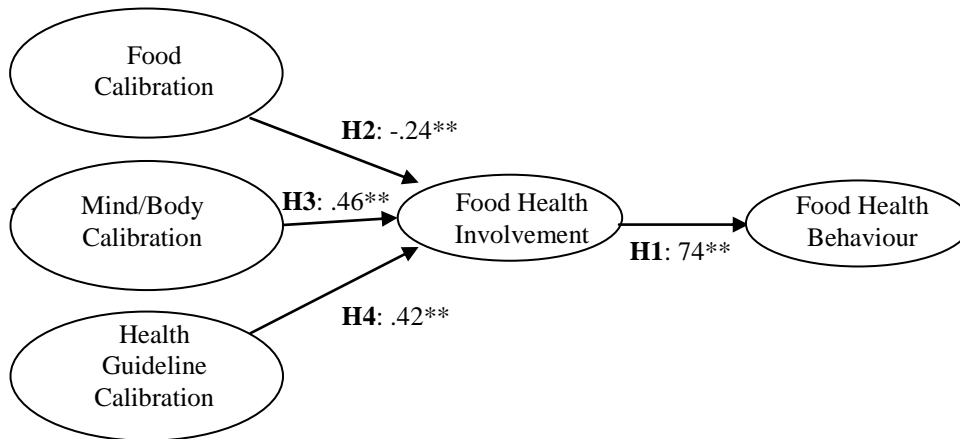
(calculated as the squares of correlations between constructs).

These considerations indicate that the constructs do exist and that they are tapped by the measures used. Moreover, to further test discriminant validity, we compared the baseline measurement model to alternative models where covariances between pairs of constructs were constrained to unity (Anderson & Gerbing 1988). In every case, the restricted model had a significant ( $p < .05$ ) poorer fit than the unrestricted model suggesting sufficient discriminant validity. We used a CFA approach to Harmon's one-factor test as a diagnostic technique for assessing the extent to which common method bias may pose a serious threat to the analysis and interpretation of the data (Kandemir, Yaprak, & Cavusgil, 2006; Ramani & Kumar, 2008). The single latent factor accounting for all the manifest variables yielded a chi-square value of 2383.02 (d.f.=152,  $p < .01$ ). A chi-square difference test between the chi-square values of the two models suggested that the fit of the one-factor model was significantly worse than the fit of the five-factor model ( $\Delta\chi^2=1765.64$ ,  $\Delta$ d.f.=10,  $p < .01$ ) indicating that the measurement model was robust to common method variance.

#### *Validation of the structural model and hypotheses testing*

The applied fit measures indicate that the specified path model provides an acceptable fit to the data ( $\chi^2=622.40$ ; d.f.=145; CFI=.91; NFI=.89; RMSEA=.074). Standardised beta-coefficients from the estimated structural model are reported in Figure 2.

Figure 2. Structural equation modelling results



\*\* Significant at the 1% level.

H1 proposed that food health involvement would be positively related to food health behaviour. This proposition was supported ( $\beta = .74$ ,  $p < .01$ ). H2 was also supported in the study, as food health involvement is negatively affected by food calibration ( $\beta = -.24$ ,  $p < .01$ ). Moreover, H3 was supported since mind/body calibration positively affects food health involvement ( $\beta = .46$ ,  $p < .01$ ). Finally, H4 was supported, as health guideline calibration positively affects food health involvement ( $\beta = .42$ ,  $p < .01$ ).

#### *Mediating effects and competing model*

The indirect effects (i.e., through involvement) of food calibration ( $\beta = -.18$ ), mind/body calibration ( $\beta = .34$ ), and health guideline calibration ( $\beta = .32$ ), on food health behaviour were all significant at the 1% significance level. A competing model (model 2), in which the three constructs were allowed to affect food health behaviour both directly and indirectly through involvement, was also specified. The  $\chi^2$  statistics for the two models was not statistically different ( $\Delta\chi^2 = 5.03$ ; d.f. = 3,  $p = .17$ ) indicating that the three additional paths included in model 2 does not significantly improve model fit. Moreover, the three health constructions did not influence food health behaviour ( $p$ -values  $> .10$  in all cases) supporting the hypothesised full mediation model (Figures 1 and 2).

## DISCUSSION

Health is a many-faced value. Depending on its construction, it will affect health involvement and, ultimately, health behaviour in different – even opposing – ways. This knowledge is of pivotal importance to health authorities and marketers of health products, since the promotion of food related health may bring about unintended consumer responses if it is based on counterproductive health constructions. Our results suggest that the construction of food related health as calibrating the intake of healthy and unhealthy nutrients may be a counterproductive health construction as it negatively influences food health behaviour through food health involvement. This means that health constructed as calibrating healthy and unhealthy food may ultimately cause malnutrition. Based on our interviews, we suggest that this effect is due to the fact that it may evoke a compensatory perspective on food

consumption. Compensatory consumption takes place when negative aspects of consumers' lives are compensated for by the consumption of certain types of products. If nutritional guidelines evoke a compensatory view on food consumption, eating unhealthily can be viewed as being acceptable, since it can be compensated for by consuming healthy food as well. There are several nutritional guidelines that may foster such food health constructions; for instance, the British Food Standards Agency's 'Eat-Well-Plate' (Food Standards Agency, 2010a). The Eat-Well-Plate illustrates a recommended healthy balance between the amounts of foods from different food categories; including a category for 'Food and Drinks High in Fat and/or Sugar' in which, among others, sweets, soft drinks, and chocolate are displayed. Unfortunately, the size of the plate is not indicated in the illustration. This means, in principle, that a healthy balance could be maintained even if the intake of sweets, soft drinks and chocolate was to increase as long as the intake of other foods increases accordingly. All in all, both health authorities and marketers should be aware of how they promote food related health, since compensatory perspectives on food consumption may lead consumers to believe that they can always make up for unhealthy food choices. This in turn lowers the perceived risk of making wrong nutritional choices and thus has a negative impact on health involvement and, ultimately, health behaviour.

We suggest that health authorities and marketers can address this challenge in mainly two different ways. First, they can adjust their promotion of a balanced diet so that it highlights the non-compensatory aspects (i.e. eating a minimum amount of healthy foods recommended, eating no more than a maximum of unhealthy foods allowed (Food Standards Agency, 2010b)). Such rather unambiguous instructions may reduce compensatory consumption. Second, health authorities may promote alternative constructions of food related health that foster health involvement and, ultimately, health behaviour. In line with the recommended promotion of non-compensatory guidelines, our results indicate that stressing construction of health as corresponding with nutritional guidelines has a positive effect on health involvement and, ultimately, health behaviour. Moreover, construction of food related health as both physical and mental well-being may indeed have a positive impact on food health involvement and food health behaviour. Health as a balance between physical and mental well-being is thus also worth stressing in dietary health campaigns. We attribute this result to the fact that the experience of food-related physical and mental well-being requires a certain amount of awareness, which is translated into food health involvement. Food health involvement can also be considered an important resource in grocery shopping, which is often carried out under severe time constraints and in an increasingly complex choice environment with all the different brands, products, and nutritional information available (Donaldson, 2006). Highly involved consumers are more likely to overcome these obstacles since they are willing to invest resources into choosing the right products (Franke et al., 2009).

## References

- Anderson, J. C., & Gerbing, D. W. (1988). Structural Equation Modelling in Practice: A review and Recommended two-step Approach. *Psychological Bulletin*, *103*(3), 411-423.
- Bagozzi, R.P., & Yi, Y. (1988). On the Evaluation of Structural Equation Models. *Journal of the Academy of Marketing Science*, *16*, 74-94.
- Baron, R., & Kenny, D. (1986). The Moderator–Mediator Variable Distinction in Social Psychological Research. *Journal of Personality and Social Psychology*, *51*, 1173–1182.
- Beatty, S.E., & Talpade, S. (1994). Adolescent Influence in Family Decision Making: A replication with Extension. *Journal of Consumer Research*, *21*(2), 332-341.
- Beatty, S. E., Kahle, L. R., & Homer, P. (1988). The Involvement-Commitment Model: Theory and Implications. *Journal of Business Research*, *16*(2), 149-167.
- Bordieu, P. (1984). *Dinstinction: A Social Critique of the Judgement of Taste*. London: Routledge.
- Brockman, B. K., & Morgan, R. M. (2006). The Moderating Effect of Organizational cohesiveness in Knowledge Use and New Product Development. *Journal of the Academy of Marketing Science*, *34*(3), 295-307.
- Browne, M.W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K.A. Bollen, & J.S. Long (Eds.), *Testing Structural Equation Models* (136–162). Beverly Hills, CA: Sage.
- Casotti, L. (2004). Conflicts Between Pleasure, Aesthetics and Health in Food Consumption: An Exploratory Study in Brazil. *Journal of Marketing Management*, *20*, 545-557.
- Celsi, R.L., & Olson, J.C. (1988). The Role of Involvement in Attention and Comprehension Processes. *Journal of Consumer Research*, *15*(2), 210-224.
- Chandon, P., & Wansink, B. (2007). The Biasing Health Halos of Fast-Food Restaurant Health Claims: Lower Calorie Estimates and Higher Side-dish Consumption Intentions. *Journal of Consumer Research*, *34*(3), 301-314.
- Dibley, A., & Baker, S. (2001). Uncovering the Links between Brand Choice and Personal Values among Young British and Spanish Girls. *Journal of Consumer Behaviour*, *1*, 77-94.
- Dickson, P.R., & Sawyer A.G. (1990). The Price Knowledge and Search of Supermarket Shoppers. *Journal of Marketing*, *54*, 42-53.
- Donaldson, R.H. (2006). The Great Food Debate. *Food Marketing*, *July*, 12-23.
- DVFA (2010). The Danish Veterinary and Food Administration’s food guidelines. Retrieved from <http://www.altomkost.dk>
- Ecks, S. (2009). Welcome Home, Descartes! Rethinking the Anthropology of the Body. *Perspectives in Biology and Medicine*, *52*(1), 153-158.
- Eek, F., & Östergren, P.O. (2007). Factors Associated with BMI Change over Five Years in a Swedish Adult Population. Results from the Scania Public Health Cohort Study. *Scandinavian Journal of Public Health*, *37*(5), 532-544.
- Falk, P. (1996). Expelling Future Threats: Some Observations on the Magical World of Vitamins. In S. Edgell, K. Hetherington, & A. Warde (Eds.), *Consumption Matters* (183-203). Oxford: Blackwell Publishers.
- Finch, J.E. (2005). The Impact of Personal Consumption Values and Beliefs on Organic Food Purchase Behaviour. *Journal of Food Products Marketing*, *11*(4), 63-76.
- Food Standards Agency (2010a, August 10). The Eat Well Plate. Retrieved from <http://www.food.gov.uk/images/pagefurniture/ewplatelargefeb10.jpg>

- Food Standards Agency (2010b, August 10): Eight Tips for eating well. Retrieved from <http://www.eatwell.gov.uk/healthydiet/eighttipssection/8tips/#cat294297>
- Fornell, C., & Larcker, D.F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18(1), 39-50.
- Franke, N., Keinz, P., & Steger, C. (2009). Testing the Value of Customization: When Do Customers Really Prefer Products Tailored to Their Preferences? *Journal of Marketing*, 73(5), 103-121.
- Halkier, B. (2016), *Consumption Challenged*, Taylor & Francis: New York.
- Homer, P.M., & Kahle, L.R. (1988). A Structural Equation Test of the Value-Attitude-Behaviour Hierarchy. *Journal of Personality and Social Psychology*, 54, 638-646.
- Howlett, E., Burton, S., & Kozup, J. (2008). How Modification of the Nutrition Facts Panel Influences Consumers at Risk for Heart Disease: The Case of Trans Fat. *Journal of Public Policy & Marketing*, 27(1), 83-97.
- Hughner, R.S., & Maher, J.K. (2006). Factors that Influence Parental Food Purchases for Children: Implications for Dietary Health. *Journal of Marketing Management*, 22, 929-954.
- Kamakura, W.A., & Novak, T.P. (1992). Value-System Segmentation: Exploring the Meaning of LOV. *Journal of Consumer Research*, 19, 119-131.
- Kandemir, D., Yaprak, A., & Cavusgil, S.T. (2006). Alliance Orientation: Conceptualization, Measurement, and Impact on Market Performance. *Journal of the Academy of Marketing Science*, 34(3), 324-340.
- Khare, A., & Inman, J. J. (2006). Habitual Behavior in American Eating Patterns: The Role of Meal Occasions. *Journal of Consumer Research*, 32(4), 567-575.
- Kidwell, B., Hardesty, D.M., & Childers, T.L. (2008). Emotional Calibration Effects on Consumer Choice. *Journal of Consumer Research*, 35, 611-621.
- Kropp, F., Lavack, A.M., & Holden, S.J.S. (1999). Smokers and Beer Drinkers: Values and Consumer Susceptibility to Interpersonal Influence. *Journal of Consumer Marketing*, 16, 536-537.
- Lehtola, K., Luomala, H.T., Tuuri, H., Kauppinen-Räsänen, H., & Kupiainen, T. (2008). Consumers' Experience of Food Products: Effects of Value Activation and Price Cues. *Journal of Customer Behaviour* 7(1), 19-29.
- Luomala, H.T., Paasovaara, R., & Lehtola, K. (2006). Exploring consumers' Health Meaning Categories: Towards a Health Consumption Meaning Model. *Journal of Consumer Behaviour*, 5(May-June), 269-279.
- Mitchell, V.W. (1999). Consumer Perceived Risk: Conceptualisations and Models. *European Journal of Marketing*, 33 (1/2), 163-95.
- Mokdad, A.H., Ford, E.S., Bowman, B.A., Dietz, W.H., Vinicor, F., Bales, V.S., & Marks, J.S. (2003). Prevalence of Obesity, Diabetes, and Obesity Related Health Risk Factors. *Journal of the American Medical Association*, 289 (January), 76-79.
- Moorman, C., & Matulich, E. (1993). A Model of Consumers' Preventive Health Behaviors: The Role of Health Motivation and Health Ability. *Journal of Consumer Research*, 20(2), 208-228.
- 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*, 14(april), 199-209.
- Patrick, D.L., Cheadle, A., Thompson, D.C., Diehr, P., Koepsell, T., & Kinne, S. (1994). The Validity of Self-Reported Smoking: A Review and Meta-Analysis. *American Journal of Public Health*, 84(7), 1086-1093.

- Ramani, G., & Kumar, V. (2008). Interaction Orientation and Firm Performance. *Journal of Marketing*, 72(1), 27-45.
- Roberto, C., Swinburn, B., Hawkes, C., Huang, T. T-K., Costa, S.A., Ashe, M., Zwicker, L., Cawley, J.H., Brownell, K.D. (2015), Patchy progress on obesity prevention: emerging examples, entrenched barriers, and new thinking, *The Lancet*, 385(9985), 2400-2409.
- Rokeach, M. (1973). *The Nature of Human Values*. New York: Free Press.
- Thompson, C.J., Locander, W.B., & Pollio, H.R. (1990). The Lived Meaning of Free Choice: An Existential-Phenomenological Description of Everyday Consumer Experiences of Contemporary Married Women. *Journal of Consumer Research*, 17(3), 346-361.
- Thompson, C.J., & Troester, M. (2002). Consumer Value Systems in the Age of Postmodern Fragmentation: The Case of the Natural Health Microculture. *Journal of Consumer Research*, 28(March), 550-571.
- WHO (2004, August 10). Global strategy on diet, physical activity and health. Retrieved from <http://www.who.int/dietphysicalactivity/strategy/eb11344/en/index.html>
- WHO (2006a). Fact sheet N°311, September 2006
- WHO (2006b, August 10). BMI classification. Retrieved from [http://www.who.int/bmi/index.jsp?introPage=intro\\_3.html](http://www.who.int/bmi/index.jsp?introPage=intro_3.html)
- Williams, R.M., Jr. (1979). Change and Stability in Values and Value Systems: A Sociological Perspective. In M. Rokeach (Ed.), *Understanding Human Values Individual and Societal* (15-46). New York: Free Press.
- Zaichkowsky, J.L. (1985). Measuring the Involvement Construct. *Journal of Consumer Research*, 12(3), 341-352.

## Appendix

---

### Items used to measure the constructs used in the study

---

#### *Food health involvement*

- X1 I'm usually bored when I listen to discussions about health\*
- X2 Eating healthy is not important to me\*
- X3 In general, I'm very interested in healthy food products
- X4 Living a healthy life is very important to me

#### *Food calibration*

Food related health means:

- X5 a good balance between healthy and unhealthy food
- X6 that I eat both healthy and unhealthy food
- X7 that my unhealthy diet is supplemented with healthy food
- X8 that I compensate for eating unhealthy food by eating healthy otherwise

#### *Mind/Body calibration*

Food related health means:

- X9 feeling good about what I eat
- X10 that my body and soul are in balance
- X11 that both my body and soul are well
- X12 that my diet takes both my body and soul into account

#### *Guideline calibration*

Food related health means:

- X13 following the official dietary guidelines
- X14 eating '6-a-day'
- X15 consuming food in accordance with the food pyramid
- X16 that my food consumption is in accordance with the National Board of Health's recommendations

#### *Food health behaviour*

- X17 On average, I believe that my intake of drinks is healthy
  - X18 On average, I believe that my food intake is healthy
  - X19 In general, my daily diet follows nutritional recommendations
  - All in all, I don't believe that I have a healthy diet \* #
- 

\* Item reverse coded.

# Item deleted.