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Food-related lifestyle trends in Germany 1993-1996

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Executive summary

1. Lifestyle, the way we define it, deals with how consumers use product attributes to achieve important life values. Food-related lifestyle is a measurement instrument that can be applied to measure consumer lifestyles with regard to the consumption of food products.

2. In 1993 and again in 1996 1000 German consumers in charge of shopping for food and cooking in their own households were interviewed using the food-related lifestyle instrument aiming at detecting trends over the three year period.

3. Assessment of the cross-temporal validity of the data showed that the two sets of data can reasonably be compared as the respondents in the two surveys can be asssumed to have assigned the same meaning to the questionnaire items.

4. Trends were detected at two levels. Analysis of general trends showed that generally German food consumers have become more convenience-oriented and hedonistic in their approach to food, at the expense of aspects that would normally be considered part of more rational consumer decision-making and behaviour. At the same time, security has become a more important purchasing motive, while self-fulfilment and enhancement of social relationships through food are now less crucial.

5. Analysis at the consumer segment level revealed five disctinct segments of food-related lifestyle on the basis of the 1993 data, namely segments of uninvolved, careless, rational, conservative and adventurous food consumers (21%, 11%, 18%, 26% and 23% of the population, respectively). The segments were derived by means of hierarchical cluster analysis. Changes in these segments were investigated in two ways and show results that are very well in line with the general trends that have been observed among German food consumers.

6. Grouping of the 1996 data on the basis of discriminant analysis revealed that the share of careless food consumers in the German population had more than doubled over the period, whereas the share of adventurous food consumer had been reduced by almost fifty percent.

7. In an entirely new segmentation of the 1996 data, again using hierarchical cluster analysis, segments of uninvolved, conservative and adventurous food consumers were identified again. At the same time, three new segments had emerged, namely segments of extremely uninvolved, hedonistic and enthusiastic food consumers.

1. Introduction

It is generally accepted that every producer or marketer of food products should undertake market surveillance activities in order to obtain competitive advantage in a market (Grunert, Hartvig Larsen, Madsen & Baadsgaard, 1996; Grunert & Brunsø, 1993).

Analysis and surveillance of consumers would be a natural part of these activities and would include the gathering of information about attitudes and behaviour relating to both the purchase, the preparation and the actual consumption of food products, among existing and potential consumers of a company's products. Food-related lifestyle is a measurement instrument that can supply this information in a systematic way by analysing consumers at the aggregate level.

The measurement instrument can be used for:

- developing a general understanding of consumers in a market with regard to basic motivations concerning the purchase of food products, general shopping behaviour, preparation methods and how, when and where the food is consumed

- dividing consumers into different consumer segments according to intra-market differences in attitudes and behaviour

- comparing consumers in different markets for example with the aim of detecting cross-national consumer segments

- detecting trends among consumers in a particular market, both as regards general developments and changes in consumer segments

The information gathered can be used not only to get a better understanding of the market, but can also be linked to product-specific surveys, product-concept tests etc. as part of marketing strategy development or when developing new food products.

The aim of this paper is to present results that pertain to the detection of trends among German consumers.

The paper will begin with a brief introduction to the theoretical concepts behind food-related lifestyle and proceed to a description of the actual measurement instrument, followed by a presentation of the results of our study. Finally, conclusions and implications will be presented.

2. The food-related lifestyle approach

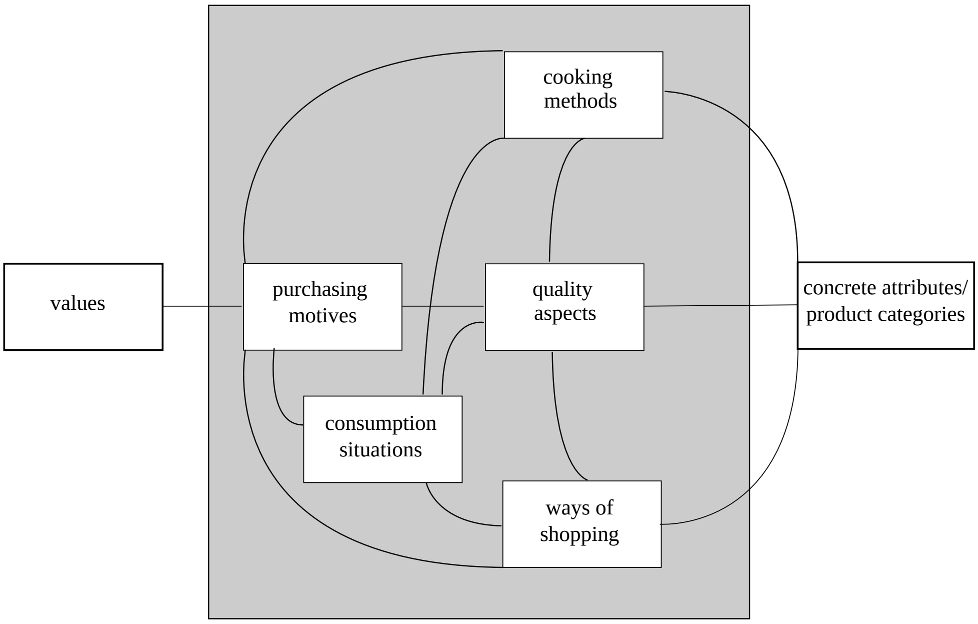
Food-related lifestyle attempts to explain how people use food to achieve basic life values. The approach has its theoretical roots in modern cognitive psychology (eg Grunert, 1990; Peter & Olson, 1993) and especially means-end theory (eg Gutman, 1982), which regards consumer behaviour as motivated by how product attributes are linked to the attainment of personal values in the minds of consumers.

A basic assumption is therefore that human behaviour can be explained by a cognitive paradigm, ie by the interaction of comprehension processes, integration processes and cognitive structure. Moreover, cognitive structures are believed to consist of both declarative and procedural knowledge, where declarative knowledge refers to subjective perceptions of for example the consequences of consuming certain products, whereas procedural knowledge refers to skills for instance about how to obtain or use a certain product. Behaviour is then believed to be motivated by linking knowledge referring to concrete acts or products to abstract cognitive categories referring to values.

Based on these premises consumption-related lifestyle can be defined as *the system of cognitive categories, scripts, and their associations, which relate a set of products to a set of values* (Grunert, Brunsø & Bisp, in press).

Food-related lifestyle is a specification of consumption-related lifestyle to deal solely with the consumption of food. Food-related lifestyle is constituted of five interrelated aspects that cover both the assessment, preparation and actual consumption of food products. A graphic illustration of the concept can be seen in figure 1.

Figure 1. A model of food-related lifestyle



On the basis of these theoretical considerations a measurement instrument was developed that could be used for surveillance of consumers' food-related lifestyle. The instrument was developed in two rounds.

Initially, a pool of items covering the five aspects of food-related lifestyle was established based on inspection of previous studies of consumer attitudes and behaviour in relation to food. Data were then collected in three European countries, and exploratory factor analysis within each of the five aspects was used to detect underlying factors separately for each country. Reliable and cross-culturally stable factors and items were detected by means of Cronbach's alpha and multi-sample confirmatory factor analysis using LISREL (Grunert, Brunsø & Bisp, in press).

The pretest resulted in a questionnaire with 69 items to be measured on 7-point agreement/disagreement scales. In groups of three, the items cover the following 23 dimensions:

Ways of shopping:	Importance of product information Attitudes to advertising Enjoyment from shopping Speciality shops Price criteria Shopping list
Quality aspects:	Health Price/quality relation Novelty Ecological products Taste Freshness
Cooking methods:	Interest in cooking Looking for new ways Convenience Whole family Planning Woman's task
Consumption situations:	Snacks versus meals Social event
Purchasing motives:	Self-fulfilment in food Security Social relationships

In the second round, the questionnaire was applied to nationally representative samples of 1000 consumers in four European countries, among these Germany. The data collected were subjected to multi-sample confirmatory factor analysis using LISREL to further investigate and improve the cross-cultural validity of the instrument (Brunsø, Grunert & Bredahl, 1996). Inspection of the modification indices led to alterations of fifteen questionnaire items and consequently a new version of the measurement instrument.

The version of the measurement instrument that was developed immediately from the pretest will be called the 'old' version in the rest of the report, whereas the version that was formed after the latest modifications will be referred to as the 'new' version.

3. Aim of the present studies

In 1993 and again in 1996 the food-related lifestyle instrument was applied to nationally representative samples of German consumers.

The studies served several purposes, namely:

- to get a basic understanding of how German consumers use food to achieve basic life values
- to distinguish between segments of consumers based on the existence of different food-related lifestyles within the German population
- to investigate developments over the three year period as regards general trends and changes in lifestyle segments.

4. Data collection

Both studies were based on nationally representative samples of 1000 households, selected by random-route walk procedures. In each household the person with the main responsibility for shopping for food and cooking was asked to complete a questionnaire with the food-related lifestyle items and a number of demographic questions. All questionnaires were completed in the presence of a professional interviewer that could be consulted if needed. The field work was carried out by a local market research company.

The 1993 survey was based entirely on the old version of the measurement instrument, whereas the questionnaire that was used in the 1996 survey covered both the old and the new versions. Technically this was handled by listing the 69 items from the old version and adding the fifteen items that had been modified between the two versions.

Following the collection of the data, individual scales for the 23 dimensions of food-related lifestyle were computed by summing scores on the corresponding items in threes. In the 1996 survey, both ‘new’ and ‘old’ scales were computed, based on responses to the new and old versions of the measurement instrument.

5. Validity and reliability of the measurement instrument

The variation that is found between the two data collections can generally have four possible causes. There may be variation in the data because of:

- sampling error (systematic and random)
- lack of reliability of items and/or scales used to measure the 23 dimensions
- changes in the underlying meanings of the questionnaire items; ie lack of cross-temporal validity
- real changes in consumer scores

Any effect of systematic error was reduced by applying the same survey design in the two data collections, and the random error is also rather limited because of the quite large sample sizes. The cross-temporal validity of the measurement instrument and the reliabilities of the individual items were investigated by means of confirmatory factor analysis using LISREL. Cronbach's alpha was applied to investigate the scale reliabilities. The results of these analyses are presented below.

5.1 Cross-temporal validity and item reliabilities

Cross-temporal validity can be said to prevail when the consumers' understanding and evaluation of the research items have been based on the same, or at least comparable, cognitive processes and structures in the two surveys.

Factor invariance has often been suggested as a validation criteria of measurement instruments in cross-cultural research. Grunert, Grunert and Kristensen (1994) have suggested that several levels of factor congruence can be distinguished and that these levels can be related to various degrees of cultural comparability, from minimal, over weak and strong comparability to weak cultural identity. The framework was developed for application in cross-cultural research, but the same arguments would apply to cross-temporal research. However, in cross-temporal research a higher degree of comparability can generally be expected than in cross-cultural research, because there are no language differences.

The basic argument is that if we have a vector of measures, as in this study, which is taken as an indicator of a smaller set of underlying latent variables, then we have, in LISREL notation,

$$X=\Lambda\xi+\delta$$

and

$$\Sigma=\Lambda\Phi\Lambda'+\Theta\delta$$

with X a vector of measured values, Λ a matrix of factor loadings, ξ a vector of factor scores, δ a vector of error terms, Σ the covariance matrix of the measured values, Φ the covariance matrix of the factor scores, and $\Theta\delta$ the covariance matrix of the error terms. In our studies, the cross-temporal validity of the instrument was tested against the level of strong cultural comparability, which requires that the factor loadings of the items on the 23 dimensions be the same ($\Lambda_{1993}=\Lambda_{1996}$) and that the dimensions correlate in the same way ($\Phi_{1993}= \Phi_{1996}$). This means that the only way the two sets of data can differ is in the scores on the individual items and in item reliabilities.

For each of the five aspects of food-related lifestyle, the items were subjected to this extended form of multi-sample confirmatory factor analysis. The analysis was based entirely on responses to the old version of the measurement instrument.

LISREL reports the goodness of fit index (GFI), the root mean square residuals (RMR), and the chi-square for the entire set of data. GFI should be as close to 1 as possible, whereas RMR should be below .10 before a model is acceptable

(Hildebrandt & Trommsdorff, 1983). At the same time, the chi-square should be sufficiently low. One way of dealing with its vulnerability to sample size is to divide the measure by the degrees of freedom. The resulting value should then be lower than 5.

As can be seen in table 1, the GFIs and chi-square values divided by degrees of freedom are generally very supportive of the level of comparability that it is tested against, whereas the RMR measures are generally above the recommended threshold level. Generally, the fit measures are best for ways of shopping, consumption situations and purchasing motives.

Table 1. Fit measures for strong cultural comparability

	1993		1996		
	GFI	RMR	GFI	RMR	χ^2/df
Ways of shopping	.93	.22	.96	.21	3.39
Quality aspects	.91	.21	.92	.23	5.02
Cooking methods	.92	.28	.94	.30	4.21
Consumption situations	.98	.18	.98	.23	3.57
Purchasing motives	.97	.17	.97	.21	4.33

The fit measures can be supplemented by a closer look at the factor loadings and the individual item reliabilities. These results are elaborated below for each of the five aspects of food-related lifestyle. The estimates are shown in appendix 1.

Ways of shopping. Generally the items load well on the prespecified factors. Two items, which also suffer from low item reliabilities, have poor loadings though. These are “Shopping for food bores me”, used as an indicator of *Enjoyment from shopping*, and “I have a tendency to buy a few more things than I had planned”, used as an indicator of *Shopping list*. Another two items have unsatisfactorily low item reliabilities, namely “I am influenced by what people say about a food product” under *Attitudes to advertising* and “I do not see any reason to shop in speciality food stores” under *Speciality shops*.

Quality aspects. Five of the six dimensions seem to be well described by the underlying items, whereas the items used as indicators of *Taste* do not load quite as well on the factor, indicating that more than one concept is being measured. Two of these items also have low item reliabilities. The reliability of “I try to plan the amounts and types of food that the family consumes” under *Health* is also low, as is the reliability of “Traditional and well-known recipes are indeed the best” under *Novelty:* the latter item probably because of the ambiguity of the word *well-known*, which the respondents may have interpreted both as famous and as familiar.

Cooking methods. The scale for *Whole family* is weak, primarily because of the item “The kids always help in the kitchen; for example they peel the potatoes and cut the vegetables”, which is both low in reliability and loads poorly on the prespecified factor. A major reason for the bad performance of this item is clearly that respondents with no children living at home may have lacked guidelines regarding how to evaluate the item. In addition, the scale for *Interest in cooking is problematic*; the underlying items do not quite load in the same direction, and two items have poor reliabilities. Under *Planning*, the reliability of "What we are going to have for supper is very often a spontaneous decision" is poor and the item does not load quite well either, which may be due to *spontaneous* being an imprecise word. Finally, low reliability is observed for the item "To me, a microwave oven is essential for my cooking" under *Convenience*.

Consumption situations. All items under this aspect load well on the pre-specified factors, whereas the item reliabilities are generally not impressive, which gives room for some item modifications in a future version of the measurement instrument.

Purchasing motives. Again, the loadings on the prespecified factors are fine, while higher item reliabilities would generally be preferred, even though the reliabilities are not critically low.

Taken together, the LISREL analysis largely supports the assumption that the results in the two surveys reflect the same set of meanings, and that differences between 1993 and 1996 can be interpreted as substantial differences. However, the item-specific results also reveal that the questionnaire can still be improved.

5.2 Scale reliabilities

The alterations in the new version of the food-related lifestyle instrument led to new scales for two dimensions under *Ways of shopping*, five dimensions under *Quality aspects* and five dimensions under *Cooking methods*, whereas the items making up the dimensions under *Consumption situations* and *Purchasing motives* were not changed between the two studies. The exact formulations of the new items can be seen in appendix 2.

The reliabilities of both old and new scales were investigated by means of Cronbach's alpha. The results can be seen in table 2.

Table 2. Scale reliabilities

	Old scales 1993	Old scales 1996	New scales 1996
Ways of shopping			
Importance of product information	.58	.69	
Attitudes to advertising	.57	.64	
Enjoyment from shopping	.39	.32	.40
Speciality shops	.56	.61	
Price criteria	.61	.66	
Shopping list	.56	.50	.70
Quality aspects			
Health	.46	.59	.79
Price/quality relation	.47	.64	
Novelty	.58	.68	.63
Ecological products	.70	.74	.82
Taste	.21	.13	.42
Freshness	.58	.77	.72
Cooking methods			
Interest in cooking	.39	.47	.76
Looking for new ways	.79	.84	
Convenience	.51	.60	.81
Whole family	.31	.51	.67
Planning	.55	.61	.65
Woman's task	.77	.81	.79
Consumption situations			
Snacks versus meals	.53	.65	
Social event	.57	.68	
Purchasing motives			
Self-fulfilment in food	.53	.56	
Security	.54	.54	
Social relationships	.62	.70	

As can be seen in the table, the reliabilities of most of the old scales are somewhat better in the 1996 study than in the 1993 study. In fact, only three scales – *Enjoyment from shopping, Shopping list* and *Taste* – have poorer reliabilities in 1996 than in 1993.

Since the LISREL analysis largely confirmed the comparability of the two studies, the differences in scale reliabilities should mostly be regarded as a consequence of sampling and interviewing effects which are unfortunately not further identifiable.

When looking at the reliabilities of the new scales, it becomes clear that the modifications have generally improved the scale reliabilities. This is particularly true for the scales for *Shopping list, Health, Taste, Interest in cooking* and *Convenience*. Whereas the average reliabilities for the 23 old scales are .54 in 1993 and .61 in 1996, the average scale reliability based on the new version of the questionnaire is .67, which is a substantial improvement. However, the scales for *Novelty* and *Freshness* have slightly poorer reliabilities than the old scales, based on the 1996 data. The items used for measurement of these dimensions are therefore subject to further consideration.

6. RESULTS

In the analysis of substantial results, we began by looking at general trends. Different lifestyle segments were then identified and changes in the segments over the three-year period were investigated.

6.1 General trends

General trends in German consumers' food-related lifestyle were investigated by comparing mean scores on the 23 dimensions in the two studies. The comparisons were exclusively based on responses to the old version. Significantly different mean scores were identified by means of t-tests.

In this connection the effect of demographic differences between the two samples was also investigated. Only minor significant demographic differences were found though. Among these is a slightly higher number of single-person households in the 1996 sample than in the 1993 sample. At the same time the respondents of the 1996 sample are slightly lower educated, more of the them work outside the home and household incomes are also a little higher. Appendix 3 shows the complete demographic characteristics of the two samples.

To identify the effect of these demographic changes and separate them from actual lifestyle changes, the demographic variables and a dummy variable for time were regressed on each of the 23 dimensions of food-related lifestyle. The results of the comparisons are shown in table 3.

Table 3. Changes in scale means 1993-1996

	Means 1993	Changes 1993-1996	Changes corrected for demographics
Ways of shopping			
Importance of product information	14.52	-.56**	-.65**
Attitudes to advertising	8.19	2.05**	1.75**
Enjoyment from shopping	9.37	.70**	.60**
Speciality shops	11.76	-.65**	-.59*
Price criteria	15.61	-.44*	-.28
Shopping list	14.27	-.53**	-.44
Quality aspects			
Health	16.44	-1.37**	-1.32**
Price/quality relation	18.21	-.90**	-.88**
Novelty	12.15	-1.43**	-1.78**
Ecological products	14.13	-1.54**	-1.54**
Taste	15.30	-.23	-.28
Freshness	18.90	-1.07**	-1.58**
Cooking methods			
Interest in cooking	11.61	-.40*	-.18
Looking for new ways	12.24	-1.03**	-1.32**
Convenience	7.53	2.64**	2.11**
Whole family	12.60	-.56**	-.39
Planning	12.15	.31	.28
Woman's task	10.31	1.48**	1.82**
Consumption situations			
Snacks versus meals	7.56	1.61**	1.52**
Social event	9.95	.53**	.05
Purchasing motives			
Self-fulfilment in food	15.49	-.85**	-.76**
Security	10.99	1.86**	1.98**
Social relationships	15.77	-1.46**	-1.47**

**: p<.01 *:p<.05

The analyses show significantly different mean scores for most of the 23 dimensions, and, as can be seen in the table, the basic pattern remains the same when the identified changes are corrected for demographic changes. The observed trends are elaborated below, primarily based on the mean scores on the 23 dimensions, secondarily by comparisons of scores on the underlying items.

Ways of shopping. German food consumers have become particularly more positive towards food advertisements. Confidence in food products that have been advertised has increased, as has the use of advertising in the decision-process. The general interest in shopping for food has also increased, and far fewer consumers now state that they are bored with shopping. At the same time German food consumers have become somewhat less interested in actual product information. The importance of the price criterion and usage of shopping lists has decreased, though not significantly when corrected for demographic changes. Attitudes towards shopping in speciality shops have become less favourable, and many consumers no longer see any reason to shop in speciality shops, probably because the expert advice in these outlets is not so valued any more or because of the general inconvenience that is imposed on the food purchases when shopping in the speciality shops instead of in a supermarket. In general, the changes under this aspect indicate that shopping has become more spontaneous and more aimed at creating an experience and has become less of a reason-dominated process.

Quality aspects. The importance of the quality aspects for food purchases has decreased quite considerably over the period, except for taste, where the difference between the 1993 and the 1996 results is not significant. Less importance is attached to health, and fewer consumers for example look for food products without artificial additives. The price/quality relation has also become less crucial, but is still one of the most important quality aspects. At the same time, fewer consumers in 1996 than in 1993 are willing to try out new or ecological food products. The proportion of consumers willing to pay a premium for ecological products has actually decreased from one third to one fifth[1]. Finally, there is less interest in the freshness of the food products. Particularly, the previously overwhelming preference for fresh rather than pre-packaged or preserved food has decreased.

Cooking methods. The interest in cooking has not decreased significantly when the effect of the demographic composition of the 1996 sample is taken into account. A tendency towards less involvement in cooking can nevertheless be observed, as more importance is now being attached to the convenience dimension. More consumers have begun to use ready mixes and frozen foods, just as more consider a microwave oven necessary. At the same time, there is an increased aversion to trying out new recipes, and cooking is again more regarded a woman's job. The family's reduced participation in meal chores is not significant when corrected for the demographic changes, though. The mean score for the dimension concerning planning of the cooking activities has also not changed significantly.

Consumption situations. Consistent with the trend towards convenience in cooking, the tendency towards snacking has also been reinforced over the period. Clearly, more people eat when they feel like it at the expense of fixed meal times. The importance of eating together with friends or family and of eating out has not changed significantly in the German population when the demographic changes are taken into account.

Purchasing motives. As the aspect closest to values, the purchasing motives explain many of the changes that occur within the other aspects. The largest change among the purchasing motives is seen for *Security*. The increased mean

1 Calculated as the proportion of respondents that evaluated the item with either '6' or '7'.

score shows that food has become a more important means of security and tradition than was considered the case in 1993. Self-fulfilment through food, on the other hand, has become less important as a purchasing motive, as has the importance of food for reinforcement of social relationships. Self-fulfilment and social relationships are, however, still the most important purchasing motives.

The overall picture is that of a population that is putting relatively more emphasis on convenience and on the hedonistic aspects of food consumption, at the expense of price, product information, product quality and other aspects which are normally assumed to be part of rational consumer buying behaviour. At the same time there is a clear tendency towards tradition-bound choice of products and cooking methods, which is embedded in the increased importance that is attached to security as a purchasing motive. Importantly, this tendency is partly overruled by the new interest in convenience, which has consumers shop less in specialist shops, increasingly prepare ready-to-eat meals and tend to snack instead of having fixed meals.

6.2 Changes in lifestyle segments

The trends that have been detected so far only reflect changes in food-related lifestyle at a very general level. The standard deviations of the scores on the 23 dimensions indicate, however, that there may well be so large differences in the population that multiple food-related lifestyles can be said to exist.

Lifestyle segments 1993

The data that were collected in 1993 were subjected to hierarchical cluster analysis by Ward's method, based on scores on the 23 dimensions of food-related lifestyle. A five cluster solution was chosen based on the interpretability of the clusters and by inspecting leaps in the distance measures. Analysis of variance verified that the mean scores were significantly different on all dimensions among the clusters.

Profiles of the clusters, or segments as we will call them, were derived by comparing the mean scores on the dimensions for each segment with the population mean scores on the same dimensions. The procedure resulted in segments of uninvolved, careless, rational, conservative and adventurous food consumers (21%, 11%, 18%, 26% and 23% of the population respectively).

The segments are outlined below.[2]

Uninvolved food consumers. Of the five segments, the uninvolved food consumers are the ones least interested in food. They are quite indifferent to shopping for food and are only slightly interested in the actual product characteristics. Cooking does not interest them at all. The only aspects of food they devote attention to are price, convenience and the social aspect. Their food-related lifestyle is clearly marked by the fact that they hardly ever use food to achieve basic life values. What these consumers want to achieve in their lives, they reach through other channels than food.

2 Grunert and Brunsø (1994) have published a more thorough description of the segments that were identified of the 1993 study.

There are more men among these consumers than in any of the other segments, and there are more single person households. On average, the uninvolved food consumers are also somewhat younger than the population in general. More of them are well-educated, more work full-time and more live in metropolitan areas.

Careless food consumers. On the face of it, the careless food consumers resemble the uninvolved food consumers; they are not particularly interested in food either, and food is not important for them as a means of achieving basic life values. However, the careless food consumers are not as price sensitive as the uninvolved food consumers and they shop much more spontaneously. The far most important product characteristic is novelty; these food consumers are very tempted by new products, as long as they do not require extensive cooking procedures or new cooking skills.

The careless food consumers are also relatively well-educated and they have the highest average incomes of the five segments. Like in the previous segment, men are over-represented and the average age is lower than the population mean.

Conservative food consumers. To the conservative food consumers, food is a very important means of reaching stability and security, and this is directly reflected in other aspects of their food-related lifestyle. Both shopping and cooking are planned in advance, new products and recipes are consciously avoided, and meals are preferably eaten at home. After familiarity, the most important product characteristic is the taste. Self-fulfilment in food and enhancement of social relationships are not important purchasing motives for these consumers.

The conservative food consumers have the highest average age of all segments. Household sizes are small, and few have children living at home. Housewives are heavily over-represented, and most household incomes are relatively low. More than in the population in general are poorly educated, and more than in any other segment live in rural districts.

Rational food consumers. Food is also an important part of these consumers' lives. They consider food essential for achieving self-fulfilment, security and social relationships. This leads to an interested, critical shopping behaviour, which is characterised by a strong interest in product information, price, and major product quality aspects such as healthiness and ecology. New products are not interesting as such, as they are to careless food consumers, but are valued to the extent that they also represent improvements in the valued product characteristics. Generally, innovation is expected more from cooking than shopping.

As in the conservative segment, there are more women among the rational food consumers, more are poorly educated and they are somewhat older than the population in general. At the same time, more live in families with children.

Adventurous food consumers. The adventurous food consumers are more involved in food than the other segments, and to them food serves as a means of obtaining social relationships and self-fulfilment. They do not enjoy shopping, but nevertheless take an interest in the various shopping and quality aspects. This group sticks out most in relation to cooking methods; cooking is a constant strive for new experiences and challenges and is a task in which the whole family participates.

Like the careless food consumers, the adventurous food consumers are well-educated and have quite high household incomes. In addition, they have the highest average household sizes and many have children living at home. The average age of these consumers is low.

Changes in these lifestyle segments over the period were investigated in two ways. First, changes in the relative sizes of the five segments were examined, then possible changes in the composition of segments within the population were analysed with the aim of detecting new lifestyle segments.

Changes in relative segment sizes

Changes in the relative sizes of the five lifestyle segments were investigated by classifying the data from the 1996 survey into the five segments by means of discriminant functions obtained by a discriminant analysis of scores on the 69 food-related lifestyle items in the 1993 survey. The classification of the 1996 data was based on scores on the 69 items representing the old version of the food-related lifestyle instrument. The resulting segment sizes are shown in table 4.

Table 4. Changes in relative segment sizes, 1996 segments based on discriminant analysis (old scales)

	1993 – %	1996 – %[3]
Uninvolved food consumers	21.3	19.8
Careless food consumers	11.1	24.6
Conservative food consumers	18.0	20.5
Rational food consumers	26.2	22.7
Adventurous food consumers	23.4	12.3

The analysis reveals two major changes; the number of careless food consumers has more than doubled over the period, and the segment of adventurous food consumers has been reduced to nearly half size. The segment of rational food consumers has also decreased somewhat in size, while the proportions of uninvolved and conservative food consumers in the population have practically not changed.

These trends are very well in line with the general trends that were observed over the period. Both the increase in the number of careless food consumers and the decrease in the number of adventurous food consumers reflect the tendency towards convenience and the reduced involvement in food.

Even though segments with the same relative profiles have thus been identified in the two sets of data, the absolute scores on the 23 dimensions of food-related lifestyle may differ as a consequence of the general changes in food-related attitudes and behaviour. Mean scores on the 23 dimensions were therefore compared between each of the segments in 1993 and 1996. Significantly different mean scores were detected by t-tests. The results are shown in appendix 4.

3 The segments were tested by means of analysis of variance for their ability to show different scores on the 23 dimensions of food-related lifestyle. The analysis showed significantly different mean scores on all dimensions.

For the *uninvolved food consumers* mean scores have changed for 12 of the 23 dimensions over the period. As in the population in general, the interest in convenient cooking has become far greater, and snacking has become more widespread. Except for a small rise in the importance of taste to these consumers and a slightly increased use of shopping lists, the changes are very well in line with the changes that were observed at population level.

Mean scores have changed on 13 dimensions for the *careless food consumers*. Their attitudes towards advertisements for food have become much more favourable, but at the same time the various quality aspects have become even more unimportant. The interest in new products has also cooled down somewhat, but novelty is, not forgetting, still important for these consumers. As with the uninvolved food consumers the interest in convenience foods and snacking have increased quite a lot.

For the *conservative food consumers* mean scores have only changed significantly on five dimensions. Even these consumers who generally abhor quick and easy cooking have become more favourable towards convenient cooking, and they also seem to be catching up on snacking. Ecological food products have even less interest now than in 1993, while interest in food advertisements has been reinforced. Finally, the importance of price has become more important for the consumers when they go shopping for food, which is not in line with the general trend.

Significantly different mean scores can be observed on 15 dimensions for the *rational food consumers*. The changes are all in line with the general pattern. Among the major changes are that the emphasis on food advertising has increased, that these consumers are now even more keen on shopping for food, and that they use shopping lists to a lesser extent now than in 1993. Several quality characteristics of food products have become less important. As with the three previous segments, convenient cooking and snacking have become more widespread. Security has become more important as a buying motive at the expense of self-fulfilment and social relationships.

For the *adventurous food consumers* changes can only be observed on three of the 23 dimensions. The interest in ecological food products has decreased, whereas the interest in quick and easy cooking methods has increased, though not to the same extent as for the uninvolved, careless and rational food consumers. Finally, security has become somewhat more important, though it is still not a significant purchasing motive.

Lifestyle segments 1996

The classification of the 1996 data by means of discriminant analysis took its starting point in segments derived from the 1993 data and does therefore not take into account that this specific segment solution is not likely to be optimal for other sets of data as regards the ability of the segments to account for differences in the scores on the 23 dimensions. An entirely new classification of the 1996 data was therefore carried out by means of hierarchical cluster analysis. As in the 1993 survey, the analysis applied Ward's method to cluster the data based on scores on the 23 dimensions of food-related lifestyle. This not only ensures an optimal cluster solution but also allows a comparison of the two sets of segments. The analysis was based on the new version of the measurement instrument.

After inspection of the distance measures and based on the interpretability of the clusters, a six-cluster solution was chosen. Three segments had profiles so similar to profiles of segments that were identified in the 1993 study that they were given the same names. Thus, segments of uninvolved, conservative and adventurous food consumers were re-identified. Three segments appeared to be new, namely segments of extremely uninvolved, hedonistic and enthusiastic food consumers. The six segments are characterised below based on their mean scores on the 23 dimensions relative to the population mean scores. The mean scores are shown in appendix 5. Table 5 shows the relative sizes of the segments.

Table 5. Relative sizes of segments, as identified by hierarchical cluster analysis on 1996 data (new scales)

	%
Extremely uninvolved food consumers	16.4
Uninvolved food consumers	16.2
Hedonistic food consumers	18.0
Conservative food consumers	11.3
Adventurous food consumers	21.4
Enthusiastic food consumers	16.7

Extremely uninvolved food consumers. The consumers in this segment are the ones least interested in food of the six segments, and food is not at all considered a relevant means for achieving basic life values. These consumers enjoy neither shopping nor cooking and do not take any interest in the quality of the products they buy, except the taste. The price and other product information are not taken into consideration. No consumers favour convenience foods as much as the extremely uninvolved food consumers; cooking should be simple and easily dealt with. In line with that, these food consumers are also more in favour of snacking than proper meals.

The extremely uninvolved food consumers have a clear demographic profile. The segment has the highest proportion of men of the six segments, more live in single person households, and the average age is far below the population mean. They are slightly better educated than the population as a whole, and more work full-time or are students.

Uninvolved food consumers. These consumers have the same lifestyle characteristics as the uninvolved food consumers that were defined in the 1993 study. They are uninvolved in most aspects of food, and their purchasing motives are weak. However, the uninvolved food consumers are not quite as uninterested in food as the extremely uninvolved food consumers. When they go shopping they do take an interest in the price and the taste of the offered food products. They are not too keen on cooking, and snacking is more widespread than in the population as a whole. Although still low, their interest in product information and in the different aspects of product quality is also somewhat higher than is the case with the extremely uninvolved food consumers.

The demographic characteristics of these consumers do not differ greatly from the population characteristics. However, more have children than in the population in general and more live in the country. Thus, as regards the demographic criteria, this segment of uninvolved food consumers differs somewhat from the uninvolved food consumers identified in the 1993 sample.

Hedonistic food consumers. As the name indicates, these consumers are the ones that care most about the hedonistic aspects of shopping for food and cooking. They enjoy shopping, willingly in speciality shops, and are positive towards advertisements for food. At the same time they are uninterested in price and planning of shopping activities. They are not much preoccupied with the quality of the food products, either. The most important quality aspect looked for in a food product is novelty, which is also an important aspect of the cooking process. When cooking, convenience is also more important to these consumers than to the population in general, and the family quite often participates in the preparation of the meals. Of all the segments, the hedonistic food consumers snack the most and eat out or together with friends most often. They do not differ from the population in general as regards the purchasing motives.

The hedonistic food consumers stand out on three main demographic variables: more of them work full-time, more are salaried employees, and household incomes are higher than in the population in general.

Conservative food consumers. Security is a very important purchasing motive for these consumers, just as it was for the conservative food consumers that were identified in the 1993 study, and with whom these consumers share the main characteristics. Both shopping and cooking are planned in advance, new products and recipes are avoided, cooking is definitely regarded a woman's job, and meals are eaten at fixed hours and most often at home without guests. In the purchasing situation, the price of the products is an important choice criterion as is familiarity with the offered food products.

Demographically, these consumers have the same main characteristics as the conservative food consumers of the 1993 sample. There are more women than in any other segment, they have the highest average age of all segments, the lowest education level, the lowest household incomes and the highest proportion of people outside of the work force.

Adventurous food consumers. This segment generally has the same characteristics as the adventurous food consumers that were identified in the 1993 study. They are highly involved consumers with self-fulfilment and reinforcement of social relationships as powerful purchasing motives. They oppose food advertisements but check product information labels and have positive attitudes towards shopping in speciality shops. The quality of the food products is crucial in all respects. Cooking involves the whole family, and new preparation methods, simple or complicated, are often tried out. The importance of the social aspect is also obvious as regards the consumption situations; the family eats together at fixed mealtimes, and often with friends or outside of the home.

The main demographic characteristics of the adventurous food consumers that were identified in the 1993 sample also apply to these consumers. They are relatively young, well-educated and have high incomes. More than in the population as a whole live in families with children.

Enthusiastic food consumers. No other consumers are as involved in food as these consumers. The enthusiastic food consumers look for special offers in adverts and write shopping lists before they go shopping either in supermarkets or in speciality stores. They are extremely interested in product information and also in most of the quality aspects. Only novelty and taste do not get more attention than in the population in general. Cooking is also planned in advance and is generally regarded a woman's job. The enthusiastic food consumers have more positive attitudes towards new preparation methods than the population in general, and they are more in favour of quick and easy ways of cooking. Snacking is seen somewhat more than in general, and meals are regarded a social event more often than in the population in general.

Among these consumers there are almost as many women as among the conservative food consumers and they are rather poorly educated. In addition, the enthusiastic food consumers are slightly older than the population in general, but more of them have children living at home. Household incomes are higher than in the population in general.

Comparing the six segments with the segments that originate from the 1993 survey, it becomes clear that differences exist in the relative sizes of segments that have been characterised as similar. To investigate the accordance between the segmentation of the 1996 data by cluster analysis and the classification made by discriminant analysis, a cross-tabulation of the two solutions was made. The results can be seen in table 6.

Table 6. Accordance between 1996 segments based on hierarchical cluster analysis (new scales) and based on discriminant analysis (old scales). Row totals=100%

Cluster analysis	Discriminant analysis – type of food consumer				
type of food consumer	Uninvolved 19.8%	Careless 24.6%	Conservative 20.5%	Rational 22.7%	Adventurous 12.3%
Extremely uninvolved 16.4%	30.4	50.4	18.4	.8	-
Uninvolved 16.2%	38.7	26.6	16.9	12.1	5.6
Hedonistic 18.0%	11.6	55.1	2.2	24.6	6.5
Conservative 11.3%	4.4	3.3	85.6	6.7	-
Adventurous 21.4%	24.4	6.1	1.2	23.8	44.5
Enthusiastic 16.7%	7.0	7.0	25.8	57.8	2.3

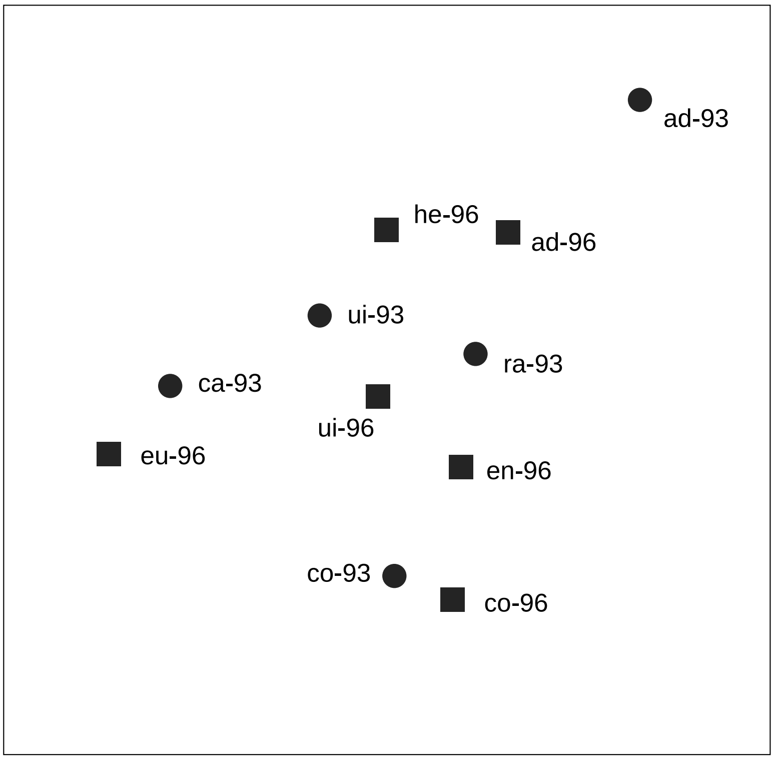
The results give a more thorough understanding of the new segments that were identified in the 1996 sample by means of cluster analysis. The contingency table shows that the extremely uninvolved segment is largely composed of consumers identified as careless or uninvolved food consumers in the classification by discriminant analysis. The uninvolved food consumers also cover a great deal of consumers labelled as uninvolved or careless in the classification by discriminant analysis, but the segment does, however, also include some conservative and rational consumers as defined by that classification. The major part of the hedonistic food consumers is constituted of careless food consumers as defined by the discriminant analysis and, perhaps somewhat unexpected, also quite a number of rational food consumers. The segment of conservative food consumers is very homogeneous with regard to coverage of segments classified by the discriminant analysis; 86% are also identified as conservative by that method. The adventurous segment is almost twice as big in the new cluster solution compared to when the consumers are classified by means of discriminant analysis, and most consumers identified as adventurous by the discriminant analysis are actually re-identified as adventurous in the segmentation by cluster analysis. In addition, a number of uninvolved and rational food consumers are included in the segment. The major part of the enthusiastic food consumers, finally, are constituted of consumers labelled as rational food consumers in the discriminant analysis, and they also count quite many conservative food consumers.

To further investigate the similarity of the two sets of segments, correlations between the mean scores of the segments on the 23 dimensions of food-related lifestyle were computed and entered into a non-metric MDS algorithm for graphic presentation. The procedure resulted in the diagram that can be seen in figure 2. The closer the segments are placed to each other in the diagram the more they resemble each other.

By and large the horizontal axis of the diagram can be interpreted as an involvement axis, ie the further to the right, the higher the involvement in food. The vertical axis, on the other hand, primarily describes the degree of innovation looked for in food, ie the higher a segment is located in the diagram, the greater the willingness to try new foods, experiment in cooking, etc.

The diagram shows that segments that have been given the same names are actually quite similar to each other as regards their relative profiles. As a result, the conservative food consumers are placed quite close to each other at the bottom right of the diagram, while the adventurous food consumers are found next to each other in the upper right corner of the diagram. The uninvolved food consumers, finally, are located relatively close to each other more in the middle of the diagram. As expected, the extremely uninvolved food consumers are placed at the bottom left quadrant, whereas the enthusiastic food consumers are placed to the right of the diagram, in between conservative and rational food consumers. The hedonistic food consumers are placed in the same quadrant as the adventurous food consumers, but do not range as high on either the innovation or the involvement dimensions. The careless food consumers are located quite close to the extremely uninvolved food consumers, but are not placed quite as low in the diagram, indicating that they are more keen on new products and innovation in food consumption than these food consumers.

Figure 2. MDS configuration of segments profiles



eu = extremely uninvolved; ui = uninvolved; ca = careless; he = hedonistic; co = conservative; ra = rational; ad = adventurous; en = enthusiastic food consumers; 96 = cluster analysis on basis of 1996 data; 93 = cluster analysis on basis of 1993 data

7. CONCLUSIONS AND IMPLICATIONS

The primary aim of this paper has been to present results that relate to the detection of food-related lifestyle trends among German consumers. The analyses were based on data collected in 1993 and 1996.

Initially, a framework developed to assess the comparability of cross-cultural data was applied to investigate the cross-temporal validity of the data. The analysis largely supported the fact that the results of the two studies tapped on the same cognitive processes and structures, and that as a result the data could be compared and trends detected.

Substantial trends in food-related lifestyle were then investigated both with regard to general changes in the German population and to changes at the level of lifestyle segments.

On a general level, the results showed that German consumers have become more conscious about convenience and hedonism both in their general shopping activities, in their choice of food products, and in how the food is prepared and consumed. At the same time security has gained in importance as a purchasing motive so that German consumers are now less willing to experiment with new products or more advanced ways of cooking.

These results have clear implications for marketers of food products to the German market. One basic lesson that can be learned is that consumers' food-related lifestyle is not static, but rather changes over time as a result of changes in the consumers' general lifestyles and attitudes. More specifically, the increased interest in convenience and in the hedonic aspects of food consumption suggest that marketers should generally give a higher priority to these aspects, both in product development and general marketing strategies. However, despite these general trends, the market is undoubtedly best understood and approached when it is investigated at the level of individual consumer segments.

Based on the 1993 study, distinct segments of uninvolved, careless, conservative, rational and adventurous food consumers segments were identified. The segments revealed that rather large differences existed in the population with regard to food-related lifestyle. Whereas neither the uninvolved nor the careless food consumers are very interested in the various aspects of food consumption, the conservative, rational and adventurous food consumers are all highly involved food consumers with strong, but varying purchasing motives. How these lifestyle segments had developed until the 1996 study was investigated by analysing changes in the relative sizes of the segments and possible changes in the composition of segments within the population.

The results of these analyses clearly mirrored the general trends that had been identified. In relative sizes the careless consumers that were identified in the 1993 study had more than doubled in number in the 1996 study, reflecting the increased interest in convenience, while the number of adventurous food consumers had been reduced by nearly fifty percent, reflecting the reduced involvement in product quality and a weakening of self-fulfilment and social relationships as purchasing motives.

The analysis of possible changes in the composition of segments in the population involved performing a new segmentation of the consumers based on the 1996 data. Again, segments of uninvolved, conservative and adventurous food consumers were identified, whereas extremely uninvolved, hedonistic and enthusiastic food consumers emerged as new consumer segments. The extremely uninvolved food consumers are the ones least interested in food in the German population, whereas the enthusiastic food consumers are the opposite extreme. The hedonistic food consumers are not particularly involved in food consumption, but are very conscious about the more pleasurable and hedonistic aspects that can be combined with shopping for food, cooking and eating.

The detection of food-related trends on a given market provides valuable information to producers and marketers of food products about new market opportunities that result from the emergence of new consumer segments. The present composition of market segments on the German market will have to be taken into account by marketers of food products in the following way.

One group of consumers, namely the extremely uninvolved food consumers, are so indifferent to shopping for food and cooking that only convenience and secondly taste are relevant purchasing criteria. This segment is therefore best served with tasty convenience foods. Due to the low involvement in the individual products, no brand-loyalty can, however, be expected from these consumers, but they may still be a rather attractive segment because of their low price sensitivity.

Some of these arguments also hold for the uninvolved food consumers. They should also be approached with tasty foods that do not require advanced cooking methods, but, importantly, these consumers also check the price of the products, which poses further requirements for marketers of food products to this segment.

The hedonistic food consumers are not brand-loyal food consumers, but their relatively high household incomes make them a particularly interesting segment, nevertheless. The marketer that takes up a challenge with these consumers would particularly have to satisfy a strive for new experiences and convenience. The chances of success with the segment are likely to grow with the use of advertising.

The conservative food consumers are probably the least interesting segment to any producer and marketer of food products to the German market. The purchasing power of these consumers is very low, and the price of the food products is a decisive purchasing criterion. In addition, these consumers are not at all receptive to new products. To a food marketer, the only positive aspect about these consumers is probably that they only constitute a small part of the population.

With self-fulfilment and reinforcement of social relationships as important purchasing motives, the adventurous food consumers are best served with food products that provide new experiences and that otherwise live up to high quality demands on ecology, freshness, healthiness, price/quality relation and taste. These consumers are well off, and the price is not a major concern though not completely unimportant either. Advertising is not favoured or consciously used by these consumers to guide their food purchases, and marketers are more likely to succeed if an effort is put into basic product information.

The enthusiastic food consumers, finally, resemble the adventurous food consumers in their interest in product quality and generally high involvement in shopping for food and cooking. Novelty is not a decisive purchasing criterion however, but these consumers are nevertheless willing to try new products if they seem promising and will read or watch advertisements to investigate interesting new products. With these consumers a marketer of food has good chances of creating loyal customers for products that otherwise live up to the decisive criteria.

Several scientific implications can also be drawn from the study. The study is the first in which trends have been systematically detected on the basis of the food-related lifestyle instrument. The LISREL analysis indicated that the cross-temporal validity of the data was quite high, but also left room for further improvement on some of the questionnaire items. The substantial results obtained as regards both general trends and trends in lifestyle segments appear to be highly interpretable and stable, which indicates that the food-related lifestyle instrument can be considered a good platform for investigating changes in consumer lifestyles in relation to food consumption. The analyses also point to a methodological problem, however. The statistical methods at hand necessitated that changes in the consumer segments had to be investigated in two rounds, as changes in relative sizes of segments and in segment profiles could not be investigated simultaneously. Some work therefore remains to be carried out to investigate new methods for identifying statistically significant lifestyle trends at the segment level.

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APPENDIX 1. ESTIMATED FACTOR LOADINGS AND RELIABILITIES BASED ON MULTI-SAMPLE LISREL ANALYSIS FOR STRONG CULTURAL COMPARABILITY

Ways of shopping	Load-ings	Reliabilities	
		'93	'96
Importance of product information			
To me product information is of major importance. I need to know what the product contains.	1.00	.22	.21
I compare labels to select the most nutritious food.	1.79	.57	.45
I compare product information labels to decide which brand to try.	1.67	.49	38
Attitudes to advertising			
I have more confidence in food products that I have seen advertised than in unadvertised products.	1.00	.44	.38
I am influenced by what people say about a food product.	.51	.13	.12
Information from advertising helps me to make better buying decisions.	1.15	.61	.51
Enjoyment from shopping			
Shopping for food bores me.	1.00	.01	.00
I just love shopping for food.	8.90	.59	.68
Shopping for food is like a game to me.	7.60	.33	.25
Speciality shops			
I do not see any reason to shop in speciality food stores.	1.00	.14	.11
I like buying food products in speciality food stores where I can get expert advice.	1.90	.52	.41
I like to know what I am buying, so I often ask questions in stores where I shop for food.	1.76	.47	.35
Price criteria			
I always check prices, even on small items.	1.00	.48	.41
I notice when products I buy regularly change in price.	.57	.19	.19
I watch for ads in the newspaper for store specials and plan to take advantage of them when I go shopping.	1.25	.61	.44
Shopping list			
Before I go shopping for food, I make a list of everything I need.	1.00	.82	.82
I make a shopping list to guide my food purchases.	1.05	.87	.79
I have a tendency to buy a few more things than I had planned.	.01	.00	.00

Quality aspects	Load-ings	Reliabilities	
		'93	'96
Health			
I try to plan the amounts and types of food that the family consumes.	1.00	.12	.10
To me the naturalness of the food that I buy is an important quality.	1.57	.51	.39
I try to avoid food products with additives.	1.46	.37	.33
Price/quality relation			
I always try to get the best quality for the best price.	1.00	.48	.35
I compare prices between products variants in order to get the best value for money.	.88	.22	.17
It is important for me to know that I get quality for all my money.	.72	.28	.37
Novelty			
I love to try recipes from foreign countries.	1.00	.73	.61
I like to try new foods that I have never tasted before.	.78	.54	.43
Traditional and well-known recipes are indeed the best.	.36	.14	.09
Ecological products			
I always buy organically grown food products if I have the opportunity.	1.00	.64	.54
I prefer to buy natural products, ie products without preservatives and additives.	.60	.33	.29
I don't mind paying a premium for ecological products.	.98	.60	.50
Taste			
I find the taste of food products important.	1.00	.11	.09
Tasty foods are also healthy and nutritious.	.48	.01	.01
I really enjoy good food.	1.48	.27	.33
Freshness			
I prefer fresh products to canned or frozen products.	1.00	.35	.31
It is important to me that food products are fresh.	.96	.55	.57
I prefer to buy meat and vegetables fresh rather than pre-packed.	1.01	.47	.48

Cooking methods	Load-ings	Reliabilities	
		'93	'96
Interest in cooking			
I deliberately avoid complicated recipes.	1.00	.12	.16
At home we usually get quickly prepared meals rather than more carefully prepared meals.	1.37	.46	.35
I have better ways to spend my time on than doing grocery shopping and cooking.	.71	.13	.10
Looking for new ways			
I like to try out new recipes.	1.00	.69	.63
I look for ways to prepare unusual meals.	.98	.67	.54
Recipes and articles on food from other culinary traditions make me experiment in the kitchen.	.93	.59	.49
Convenience			
I use a lot of frozen foods in my cooking.	1.00	.64	.59
To me, the microwave oven is essential for my cooking.	.47	.10	.11
I use a lot of mixes, for instance baking mixes and powder soups.	.78	.37	.36
Whole family			
The kids always help in the kitchen; for example they peel the potatoes and cut up the vegetables.	1.00	.06	.06
My family helps with other mealtime chores, such as setting the table and washing up.	2.85	.39	.31
When I do not feel like cooking, I can get one of the kids or my husband to do it.	2.51	.31	.25
Planning			
What we are going to have for supper is very often a spontaneous decision.	1.00	.16	.12
Cooking needs to be planned in advance.	1.45	.41	.29
I always plan what we are going to eat a couple of days in advance.	2.06	.59	.45
Woman's task			
I consider the kitchen to be the woman's domain.	1.00	.73	.65
It is the woman's responsibility to keep the family healthy by serving a nutritious diet.	.99	.73	.62
Nowadays the responsibility for shopping an cooking lies with the husband as much as the wife.	.61	.36	.28

Consumption situations	Load-ings	Reliabilities	
		'93	'96
Snacks versus meals			
I eat before I get hungry, which means that I am never hungry at meal times.	1.00	.43	.34
I eat whenever I feel the slightest bit hungry.	.89	.33	.24
In our house, nibbling has taken over and replaced set eating hours.	.86	.30	.31
Social event			
Going out for dinner is a regular part of our eating habits.	1.00	.69	.60
We often get together with friends to enjoy an easy-to-cook, casual dinner.	.66	.28	.22
I do not consider it a luxury to go out with my family having dinner in a restaurant.	.73	.30	.23

Purchasing motives	Load-ings	Reliabilities	
		'93	'96
Self-fulfilment in food			
Being praised for my cooking ads a lot to my self-esteem.	1.00	.44	.37
Eating is to me a matter of touching, smelling, tasting and seeing, all the senses are involved. It is a very exciting sensation.	.56	.22	.18
I am an excellent cook.	.79	.33	.30
Security			
I dislike everything that might change my eating habits.	1.00	.26	.23
I only buy and eat foods which are familiar to me.	.99	.25	.19
A familiar dish gives me a sense of security.	1.28	.42	.29
Social relationships			
I find that dining with friends is an important part of my social life.	1.00	.36	.29
When I serve a dinner to friends, the most important thing is that we are together.	.85	.38	.31
Over a meal one may have a lovely chat with friends.	1.09	.59	.49

Appendix 2. New questionnaire items

Old items are listed in plain, new items are in *italics*.

Ways of shopping

Enjoyment from shopping

Shopping for food bores me. *I don't like shopping for food.*

Shopping list

I have a tendency to buy a few more things than I had planned. *Usually I do not decide what to buy before I go shopping.*

Quality aspects

Health

I try to plan the amounts and types of food that the family consumes. *I prefer to buy natural products, ie products without preservatives.*

Novelty

Traditional and well-known recipes are indeed the best. *The recipes which I usually use for my cooking are indeed the best.*

Ecological products

I prefer to buy natural products, ie products without preservatives and additives. *I make a point of using natural or ecological products.*

Taste

Tasty foods are also healthy and nutritious. *When cooking I first and foremost consider the taste.*

I really enjoy good food. *It is more important to choose food products for their nutritional value rather than for their taste.*

Freshness

It is important to me that food products are fresh. *I don't buy food products that do not look completely fresh.*

Interest in cooking

I deliberately avoid complicated recipes. *I like to have ample time in the kitchen.*

At home we usually get quickly prepared meals rather than more carefully prepared meals. *Cooking is a task that is best over and done with.*

I have better things to spend my time on than doing grocery shopping and cooking. *I don't like spending too much time on cooking.*

Convenience

A microwave oven is essential for my cooking. *We use a lot of ready-to-eat foods in our household.*

Whole family

The kids always help in the kitchen; for example they peel the potatoes or cut up the vegetables. *The kids or other members of the family always help in the kitchen; for example they peel the potatoes or cut up the vegetables.*

Planning

What we are having for supper is very often a spontaneous decision. *What we are having for supper is very often not decided until the very last minute.*

Woman's task

Nowadays the responsibility for shopping and cooking lies with the husband as much as with the wife. *Nowadays the responsibility for shopping and cooking should lie with the husband as much as with the wife.*

APPENDIX 3. DEMOGRAPHIC PROFILES OF THE TWO SAMPLES

		1993-%	1996-%
Sex	male	22.6	22.0
	female	77.4	78.0
Partner**	yes	73.5	67.9
	no	26.5	32.1
Age	-25	10.7	10.6
	26-40	34.9	38.4
	41-55	27.6	25.0
	56-70	19.6	19.0
	71-	7.2	7.0
Household size**	1 person	19.0	24.9
	2 persons	33.6	33.5
	3 "	19.7	18.6
	4 "	19.7	16.1
	5+ "	7.8	6.9
Income**	<1,800 DEM/month	23.7	15.2
	1,800-3,499 DEM/month	39.9	34.8
	3,500-5,499 DEM/month	25.9	36.7
	>5,500 DEM/month	10.4	13.3
Children**	yes	45.2	40.7
	no	54.8	59.3
Education**	Hauptschule	36.9	46.6
	Realschule	23.2	22.7
	Ober	12.3	11.7
	Abitur	27.6	19.0
Work frequency**	full	26.1	31.8
	reduced	19.0	19.5
	not working	54.9	48.8
Profession**	self-employed	17.1	12.7
	salaried employees	56.7	57.8
	workers	18.6	23.8
	student	7.7	5.7
Town size**	<20,000 inhabitants	47.0	40.5
	20,-100,000	16.3	23.2
	100,-500,000	15.1	13.3
	>500,000	21.5	22.9
State	Schleswig-Holstein, Hamburg, Bremen, Niedersachsen	15.5	15.7
	Nordrhein-Westfalen	21.8	20.3
	Hessen, Rheinland-Pfalz, Saarland	13.3	14.2
	Baden-Württemberg	12.3	10.1
	Bayern	14.4	15.1
	Berlin	4.3	4.8
	Mecklenburg-Vorpommern, Brandenburg, Sachsen	9.2	12.8
	Sachsen-Anhalt, Thüringen	9.2	7.4

**: p<.01

APPENDIX 4. MEAN SCORES IN 1993 AND 1996 FOR THE SEGMENTS RESULTING FROM THE HIERARCHICAL CLUSTER ANALYSIS ON 1993 DATA. (MIN. 3; MAX. 21)

	Uninvolved food consumers		Careless food consumers		Conservative food consumers	
	1993	1996	1993	1996	1993	1996
Ways of shopping						
Imp. of product info.	13.59	13.48	11.42	11.54	13.39	13.83
Att. to advertising	8.79	10.03**	7.84	10.72**	9.14	10.39**
Enj. from shopping	8.67	8.63	10.18	10.46	8.89	9.32
Speciality shops	9.44	9.22	10.47	9.89	11.11	10.47
Price criteria	15.89	15.57	11.57	12.32	15.60	16.64*
Shopping list	13.49	14.03*	10.32	11.06	15.24	14.73
Quality aspects						
Health	15.44	14.43	13.07	11.77**	16.53	15.83
Price/quality relation	17.76	17.63	15.57	14.29**	18.60	18.73
Novelty	11.31	9.75**	13.47	10.90**	7.17	6.67
Organic products	13.09	12.26	12.26	11.23*	12.88	11.33**
Taste	14.18	14.87*	14.64	13.84*	16.49	16.19
Freshness	18.34	17.26**	16.14	13.11**	19.35	19.13
Cooking methods						
Interest in cooking	9.80	9.84	11.72	10.84*	11.05	11.55
Looking for new ways	9.31	8.51*	11.61	10.53*	7.32	6.90
Convenience	8.31	10.86**	9.33	11.59**	6.49	8.31**
Whole family	12.86	12.60	9.89	10.43	10.77	10.73
Planning	9.80	11.13**	9.80	10.58	14.28	14.57
Woman's task	7.05	7.92*	11.29	12.17	15.87	16.61
Consumption situations						
Snacks versus meals	8.39	9.46*	8.55	10.72**	6.20	7.21**
Social event	10.47	10.81	10.96	11.51	7.22	7.20
Purchasing motives						
Self-fulfilment in food	13.83	13.16	13.31	12.60	16.09	15.40
Security	10.12	12.10**	9.25	11.98**	14.67	15.32
Social relationships	16.33	14.95**	14.85	13.37**	12.44	11.73

*: p<.05 **: p<.01

	Rational food consumers		Adventurous food consumers	
	1993	1996	1993	1996
Ways of shopping				
Imp. of product info.	17.25	16.95	15.01	16.24
Att. to advertising	8.28	10.85**	7.34	18.04
Enj. from shopping	10.17	11.27**	9.38	14.89
Speciality shops	14.63	13.73*	11.74	12.77
Price criteria	17.38	16.40**	15.37	15.18
Shopping list	16.38	15.28**	14.04	18.82
Quality aspects				
Health	18.65	17.22**	16.66	16.24
Price/quality relation	19.36	18.43**	18.28	18.04
Novelty	12.85	12.15	15.65	14.89
Organic products	16.50	14.74 **	14.36	12.77**
Taste	15.99	15.50	14.89	15.18
Freshness	19.83	18.78**	19.35	18.82*
Cooking methods				
Interest in cooking	11.99	11.57	13.02	13.20
Looking for new ways	14.52	14.24	16.88	16.78
Convenience	7.39	10.19**	6.76	8.70**
Whole family	13.24	13.27	14.55	14.63
Planning	15.06	14.58	10.78	11.27
Woman's task	12.63	13.08	5.75	6.36
Consumption situations				
Snacks versus meals	7.91	9.51**	7.13	7.75
Social event	9.87	10.91*	11.24	12.21
Purchasing motives				
Self-fulfilment in food	17.04	16.11**	15.91	16.10
Security	12.18	13.45**	8.31	10.26**
Social relationships	16.97	15.67**	17.02	16.73

APPENDIX 5. MEAN SCORES ON THE 23 DIMENSIONS OF FOOD-RELATED LIFESTYLE FOR SEGMENTS RESULTING FROM THE HIERARCHICAL CLUSTER ANALYSIS ON THE 1996 DATA (MIN. 3; MAX. 21)

	Extremely uninvolved food consumers	Conservative food consumers	Adventurous food consumers	Hedonistic food consumers	Uninvolved food consumers	Enthusiastic food consumers
Ways of shopping						
Imp. of product info.	9.46	14.04	14.80	13.75	13.60	17.35
Att. to advertising	9.58	9.90	8.01	11.62	9.87	12.60
Enjoy. from shopping	7.53	9.96	9.74	11.52	9.53	11.65
Speciality shops	7.58	10.40	12.67	12.38	9.20	12.67
Price criteria	12.70	17.47	14.99	13.28	15.60	17.21
Shopping list	11.75	16.19	16.74	13.88	15.87	16.24
Quality aspects						
Health	11.34	16.14	17.02	14.36	14.61	17.98
Price/quality relation	15.27	18.84	17.95	14.95	17.55	19.05
Novelty	8.22	6.52	13.46	12.53	10.33	10.76
Organic products	8.13	9.93	13.40	13.29	11.22	13.87
Taste	15.75	15.59	15.53	13.54	15.70	14.73
Freshness	13.80	19.07	18.72	14.68	16.41	18.84
Cooking methods						
Interest in cooking	7.72	15.93	14.29	11.55	11.64	14.12
Looking for new ways	6.18	6.69	14.69	12.95	9.78	12.54
Convenience	13.66	8.47	7.91	11.82	10.01	11.11
Whole family	10.15	8.98	13.79	12.53	9.91	11.51
Planning	9.12	16.52	13.33	11.65	12.18	14.68
Woman's task	10.35	16.68	6.59	11.45	10.48	14.68
Consumption situations						
Snacks versus meals	10.45	6.08	7.12	11.43	9.64	9.84
Social event	9.81	6.07	11.86	13.08	8.55	11.42
Purchasing motives						
Self-fulfilment in food	10.49	15.82	15.86	14.24	13.81	16.48
Security	12.66	15.58	10.24	13.15	11.99	15.15
Social relationships	12.76	11.48	16.60	14.45	15.39	15.40