

# Consumer demand for organic foods – attitudes, values and purchasing behaviour

By Mette Wier and Laura Mørch Andersen, AKF - Institute of Local Government Studies, Denmark.

The Danish market for organic foods is relatively mature, meaning that it does not suffer seriously from the supply shortages and barriers, which dominate most of the markets outside Denmark. The well-functioning Danish market makes it possible to collect and analyse reliable data on purchases. In an ongoing study we analyse consumer demand for organic foods in Denmark. The project is part of the Danish DARCOF centre and participating institutions include AKF, University of Copenhagen, GfK Denmark and CIRED, France. Our study distinguishes itself by being based on observations of stated as well as actual purchasing behaviour. The project applies information at the individual household level (utilising panel data of 2000 households' daily purchases of a large number of organic as well as conventional foods during 1997-2001), which makes a detailed and informative approach possible. In addition, the modelling is supported by a questionnaire, surveying households in the very same panel (response rate 77%) for information on attitudes, stated values and food habits. Description of project, data and full questionnaire is available at [www.akf.dk/organicfoods](http://www.akf.dk/organicfoods). In this paper, we identify important characteristics of consumers with high propensity to purchase organic foods, with special attention to the importance of valued organic product attributes.

## *Are organic buyers different?*

In this study, we compare organic buyers with non-buyers, to identify main differences between the two groups. We define buyers as consumers holding an organic budget share (all food types) higher than 2.5%, following the definition of "medium- and heavy users" applied in other Danish studies (Økologisk Landsforening, 2002; GfK Danmark, 2001). Not surprisingly, organic buyers are more health concerned, more focussed on residues, animal welfare, and environmental attributes, less focussed on low prices, and more often they prefer domestic products, compared to non-buyers. Origin is important to most consumers, and 72% would rather buy conventional domestic fruit and vegetables than organic foreign fruit and vegetables. Thus, the origin attribute commonly overrules the organic attributes – this holds to a higher degree for non-buyers, though. Buyers are more often members of organisations protecting nature and organisations protection animal welfare, and they recognize and notice the Nordic Swan Label (an environmental label) more often than non-buyers. In the main, we find that organic buyers also behave (and think) more environmentally friendly in other areas.

## *Danish organic label*

The national Danish organic label is well known – 93% of all consumers recognise it. In general, people have a good understanding of the organic rules. However, consumers in the main believe that the label is more comprehensive than it actually is. Surprisingly, there are almost no significant differences in knowledge of the rules behind the organic label between buyers and non-buyers. Most consumers (59%) have general confidence in Danish products with the Danish organic label – only 29% have general confidence in foreign products carrying the same label, though. Around half of the consumers believe that the rules are good enough to ensure animal welfare, nature and health. Only few consumers (12-13%) disagree in these statements. Trust in organic products without the label is low – especially, for foreign products.

## *Perception and valuation of organic good attributes*

Consumers may hold **use values**, such as utility from taste, health and/or freshness, i.e. private good attributes which can only be enjoyed by actually consuming (eating) the product. **Non-use values** are in our study **public good** values related to improved environment and/or animal welfare.

According to consumers' own statements, non-use values are assigned around twice as much weight on the "importance scale" compared to use values. This result holds for specific product types, as well as for organic goods in general. Comparing specific use and non-use value types reveal that environmental and

animal welfare attributes are equally important. For use values, health attributes are most important, taste second most important, and finally freshness the least important.

Before jumping to the conclusion that people purchase organic foods from environmental and animal welfare concern reasons, it may be useful to do some additional analyses. To find out what these findings means for actual willingness to pay on the real market, we combine information on stated values for organic goods in general with actual purchase behaviour. And very interesting, households having both types of values also hold highest organic budget share on the real market. Consumers can be divided in 4 groups, as shown in Figure 1: The majority – two thirds of all consumers – acknowledges and value organic goods for their non-use values (environmental or animal welfare attributes), as well as for their use values (health, taste or freshness attributes). Highest propensity to purchase organic is found in this group (average organic budget share 5.5%). The second group is households having non-use values only, constituting 16% and holding an average organic share of 2.5%. Households having no values whatsoever constitute another 16% – this group holds an average organic share of 1.2%. The fourth group, households having use values only, is negligible (1%). These results suggest that non-use benefits are generally acknowledged, but only those having use values in addition, actually purchase organic to a high degree. Thus, households having both types of values purchase more than twice as much organic food than households having non-use values only. And again, these households (having non-use values only) purchase more than twice as much organic foods than households having neither use nor non-use values. The very same pattern can be observed when looking at specific product groups.

To explore this further, we perform a regression analysis, using each household's stated importance (5 points scale) of various use and non-use attributes for organic goods in general to explain the household's average annual organic budget share for all food types. The model explains average organic budget share for each household, 1997-2001, using stated values (use and non-use values), a variable measuring health risk perception in relation to pesticide residues, main stated purchasing barriers and various socio-demographic variables as explanatory variables. The barriers are introduced to measure importance of lack of trust and lack of interest: some consumers, assigning values to organic product attributes, may at the same time be unresponsive and uninterested when it comes to actual shopping behaviour, because they are not really dedicated or because they do not really trust organic goods after all. Trust is divided in two variables, one measuring lack of trust in organic control and one measuring lack of trust in any health effect from eating organic foods. Finally, we control for the effect from household characteristics, such as income (approximated by total food expenditure), geography, age of the oldest person in the household, presence and age of children, and education level of most educated person in the household.

Doing the regression analysis, it becomes evident that the propensity to purchase organic increases significantly with the weight assigned to *use values*. The weight assigned to non-use values is much lower and not significant. That is, acknowledgement of non-use values cannot explain actual purchasing behaviour, but the contribution from use values can. Thus, we can conclude that even though households assign highest values to the non-use attributes, it is the valued *use attributes* that makes them buy organic foods.

### *The importance of household characteristics*

Our results suggest that differences in organic shares across households to a large extent are related to specific household characteristics. Higher disposable household income (approximated by total food expenditure), age and education level all significantly increase organic budget share, as does the presence of children younger than 15 years. Very remarkable, the presence of children aged 15 to 20 years (living at home) has the opposite effect: the presence of older children reduces organic shares. This difference suggests that health and taste concern is more prevalent for parents having younger children.

All barriers significantly reduce organic shares and concern about health risk from eating foods with pesticide residues increases organic budget share significantly. Geography is significantly influencing organic shares too. Household organic shares are higher in urban areas, especially in the capital area – lowest shares are observed in western rural areas.

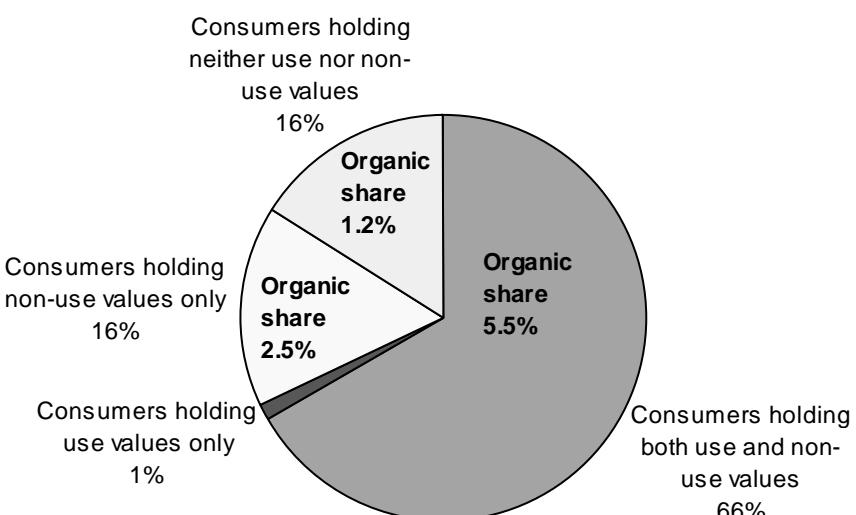
## **References**

GfK Danmark (2001): GfK ConsumerScan. Den økologiske forbruger 2000 (in Danish), Copenhagen.

Økologisk Landsforening (2002): Forbrugernotat 2002 (in Danish). Århus.

Forslag til illustration:

Figure 1. Distribution of consumers by stated values and organic budget shares



En tabel med regressionsresultater vil muligvis gøre det nemmere at forstå teksten om regressionsanalysen, men det er måske for teknisk til målgruppen.

	All	Std. dev.
	Parameter	
Intercept	<b>2.40</b>	0.93
Use value fra q23	<b>1.06</b>	0.11
Nonuse value fra q23	0.07	0.11
No trust in control (q28_13)	<b>-0.89</b>	0.17
No interest (q28_14)	<b>-0.68</b>	0.19
No trust in health effect (q25_06)	<b>-0.91</b>	0.18
Not enough knowledge (q28_05)	<b>-1.20</b>	0.17
Concern about pesticide residues (q04_05)	<b>0.85</b>	0.15
1997 is base		
1998	0.48	0.39
1999	0.61	0.39
2000	0.39	0.38
2001	0.51	0.36
Capital	<b>1.89</b>	0.36
East	0.59	0.34
Westcity	<b>1.38</b>	0.34
West rural is base		
Highest level of further education, missing or none is base		
Short	<b>0.80</b>	0.29
Medium	<b>1.95</b>	0.30
Long	<b>1.72</b>	0.48
Age of the oldest person (categories)	<b>0.20</b>	0.10
Dummy for children between 0 and 14 years	<b>0.86</b>	0.31
Dummy for children between 15 and 20 years	<b>-0.85</b>	0.34
Ln(Weekly food consumption per consumption unit (in 1000 DKK))	<b>0.93</b>	0.27
<i>Number of regressors</i>	21	
<i>Number of parameters</i>	22	
<i>Error degrees of freedom</i>	3343	
<i>Number of observations</i>	3364	
R2	0.216	