Explaining organic food choice on the basis of socio-demographics. A study in Portugal and Germany

ABSTRACT

Socio-demographic characteristics of consumers may be of interest for marketers for two basic reasons: their appropriateness to segment markets and their influence on consumer behaviour. Success or failure of organic food is mainly determined by the consumer. Consumers from different countries, with different ages or genders may require different product features and show varying preferences and behaviours.

Therefore, it can be asked, if, in the present context of food markets, consumers' socio-demographic characteristics have an impact on consumer behaviour and, consequently, can be used as an effective criteria to segment markets? This is the question addressed on the present paper, through empirical research on organic food products in two different markets – Germany and Portugal.

From the study could be concluded that there are good reasons for preserving socio-demographic or economic variables in food consumer research. In the research reported in this paper, some of these variables proved to be strongly associated with consumer behaviour relating to organic food products, and to be robust segmentation criteria, with the advantage of being easily identifiable, stable and accessible.

Keywords: Organic food products, consumer behaviour, segmentation, socio-demographics.

1 – INTRODUCTION

The socio-demographic characteristics of consumers may be of interest for marketers for two basic reasons: their suitability to segment the markets and their influence on consumer behaviour.

The market segmentation concept, which was first introduced by Smith (1956), consists on the process of dividing the total market into several, relatively homogeneous, consumer groups, with similar product or service interests and similar needs and desires. In each market, segmentation is an opportunity for identifying consumer groups with greater propensity to undertake a given act (e.g. the purchase of an organic food product or brand) or potentially receptive to a particular brand, product category or marketing communication strategy.

Because segmentation strategies benefit both marketers and consumers, persistently, researchers and firms look for the most adequate bases to divide markets. The classical approaches to segmentation, such as demographic, psychographics and behavioural schemes are well known and used. The popularity of demographic segmentation is related with three different reasons: a) consumer behaviour is often associated with demographic variables (e.g., Baker and Burnham, 2001; Kotler, 2004); b) demographic variables are easier to measure, convenient to collect and cost-effective (e.g., Schiffman and Kanuk, 1999; Wedel and Kamakura, 1999); and c) if the target market is segmented with personality or behavioural type variables, the link back to demographic characteristics is necessary to estimate the size and the instruments needed to reach a certain market (Cavicchi et al, 2005).

However, the use of demographics as segmentation criteria also face high criticism, mainly because, these variables are not considered sufficient to design a sustainable marketing strategy (Lea, 2005; Chryssohoidis, 2005, Yankelovic, 2006; Gonzalez, 2006). Nevertheless, in a comparative evaluation of demographics with psychographic, both exhibited equivalent capabilities to market-segmenting (Lin, 2002).

According to Callingham and Baker (2002), there are many ways of classifying people in order to attempt to understand them and predict their behaviour. The simplest

of these is to take very obvious demographic characteristics, such as age, gender and place of residence, and assume that there are important unifying principles with these groups, which common sense and experience suggest there are. In the description of his model of consumer food choice, Steenkamp, (1997) argued that the influence of socio-demographic factors (e.g., age, education, size of household and employment status) is pervasive, affecting various stages of the consumer decision process. Also Callingham and Baker (2002) and Kearney et al (2000) stated that there is a shared assumption that some form of unifying principle is associated with demographics, which allows them to be used as surrogates for a series of needs associated either with values or with circumstances, and which are useful in prediction.

In summary, it can be asked, if, in the present context of food markets, socio-demographic characteristics still have an impact on consumer behaviour and, consequently, may be used as an effective criteria to segment markets? This is the question addressed on the present paper through empirical research on organic food products (OFP) in two different markets – Germany and Portugal.

Hence, the main research objectives of the present study were: 1) to evaluate the efficiency and efficacy of quantitative variables, such as demographics, to segment OFP markets in Portugal and Germany; 2) to analyse associations of socio-demographic variables and consumer behaviour; and 3) to validate the results with the use of two different samples.

The present paper is organized as follows: after this introduction a brief description of the research methodology is presented in section 2, the empirical results of the study will be analysed in section 3, and some summary conclusions and recommendations will be discussed in section 4. The conclusions will stress the main findings and discuss implications for marketing strategies, particularly relating to the suitability of using consumer socio-demographic characteristics as a basis for organic market segmentation in different countries.

2 – RESEARCH METHODOLOGY

The study presented in this paper was included in a larger study that employed a personal survey to investigate OFP buyers and consumers' characteristics, attitudes, perceptions and behaviour. The focus of this paper is on the relationship between the socio-demographic characteristics of respondents and their behaviour relating to OFP and on the capacity of these characteristics to discriminate between consumer groups.

2.1 – Questionnaire Design

To reach the defined goals, the research had two main phases: an initial qualitative, exploratory phase, followed by a quantitative survey implemented in Portugal and Germany. The review of literature, together with the results of the exploratory study, allowed the design of the consumers' questionnaire summarized in Table 1.

Table 1 – Summary description of the questionnaire

Questions	Type of scale
• **Filter questions** - Gender - District of residence - Degree of OFP knowledge - Age	Nominal
• Beliefs concerning OFP	Likert
• Information sources for belief formation	Importance
• OFP consumption behaviour	Nominal
• Proportion of OFP consumption in specific categories of products	Ratio (%)
• OFP buyer behaviour	Nominal
• OFP expenditure	Ratio (€)
• OFP point-of-purchase	Nominal
• Attributes for point-of-purchase	Importance
• Attributes for OFP buying-decision	Importance
• Motives for OFP non-buying	Likert
• Attitudes towards OFP consumers	Likert
• Attitudes towards OFP products	Likert
• Intentions related to OFP consumption	Nominal
• WTP for specific OFP categories	Ratio (%)
• Life-style	Likert
• Attitudes towards the environment	Likert
• **Socio-demographic characteristics**	
- Household composition	Nominal
- Education level	Nominal
- Average monthly net income of the house-hold	Ratio (€)
- Perceived social-class	Nominal

The questionnaire was written in Portuguese and in German and included 25 main questions of various types. The Likert and importance scales used had five response categories, and the percentage and Euro scales had six, with one meaning less and 6 meaning more of the concept involved in the question. Due to the extension and complexity of the questionnaire, the survey was conducted through face-to-face interviews, with the support of show cards. The questionnaire was first pre-tested with a small number of food consumers and, after revision, on a wider scale.

2.2 – Sample

The information was collected through 419 personal interviews, of which 214 were in Lisbon and 205 in Berlin. The data was collected in Lisbon and Berlin because the area of the study had to be restricted and it was considered that in the two capital cities, which are the two main markets for OFP in each country, would be possible to reach a wider range of respondents.

Therefore, the population under study was the Lisbon and Berlin residents, who conceded a certain amount of knowledge about OFP. A quota sampling procedure was implemented, with gender and age as control variables. Two separate samples were designed for Berlin and Lisbon (Table 2). Respondents from all the main districts in the two cities were included in the sample.

Table 2 – Berlin and Lisbon Samples: Age Group Distribution

	Berlin					Lisbon				
Gender	**18-34**	**35-49**	**50-65**	**+ 65**	**Total**	**18-34**	**35-49**	**50-65**	**+ 65**	**Total**
Male	27	32	25	15	99	35	26	25	15	100
Female	26	30	26	24	106	34	28	28	23	114
Total	53	62	51	39	205	69	54	53	38	214

2.3 – Data Analysis

The questionnaire data was coded and introduced in SPSS version 15. Three different databases were assembled: one for Lisbon respondents, one for Berlin respondents and a third that combined all the respondents. The data analysis consisted

of descriptive statistics (frequencies, mean, and standard deviation) of all the variables measured in the questionnaires.

In order to see if there was any connection between socio-demographic characteristics and OFP related behaviour, a comparison of German and Portuguese consumers, genders, age, education level and income groups was implemented. Significant differences ($p<.05$) between the several groups were analysed with the help of cross-tabulations and chi-square tests for the nominal variables and ANOVA for the metric variables. On a first analysis, the significant differences for all the variables in the questionnaire were measured, after which only the differences for variables concerning OFP related behaviour were considered.

In the present paper, no casual relationships were analysed. Nevertheless, the possible existence of groups of respondents, with different socio-demographic characteristics that show differences in OFP related behaviour, will allow for conclusions about the association of those characteristics with that behaviour. A definite conclusion about the direction of those possible relationships cannot be drawn on the basis of the analysis made in this study. However, given the more permanent and central nature of socio-demographic characteristics, if an association between variables is found, it is only fair to assume that they are the cause of behaviour rather than its effect.

3 – EMPIRICAL RESULTS

This section will first present an analysis of the discriminating power of the five socio-demographic variables selected for the study, followed by a discussion of the significant differences concerning OFP related behaviour. In both analyses a comparison among the International, the Portuguese and the German samples will be presented.

3.1 – Comparing Socio-Demographic variables as Segmentation Criteria

Table 3, bellow, shows the percentage of variables of the questionnaire that were significantly different between groups, for the five socio-demographic variables. In the first column, the percentages refer to the all set of variables and, in the second column,

only to the 59 selected as OFP related behavioural variables, such as consumption and buying behaviour and respondents expenditure on OFPs.

Table 3 – Differences between groups on the basis of socio-demographics

			All variables - 131			Behavioural variab- 59		
Variable	**Sample**	**Unit**	**5%**	10%	Total	**5%**	10%	Total
Country	de-pt	Count	**89**	5	94	**41**	3	44
		%	**0,68**	0,04	0,72	**0,70**	0,05	0,75
Age	de-pt	Count	**47**	7	54	**15**	4	19
		%	**0,36**	0,05	0,41	**0,25**	0,07	0,32
	de	Count	**59**	8	67	**23**	4	27
		%	**0,45**	0,06	0,51	**0,39**	0,07	0,46
	pt	Count	**21**	14	35	**2**	7	9
		%	**0,16**	0,11	0,27	**0,03**	0,12	0,15
Gender	de-pt	Count	**34**	6	40	**10**	2	12
		%	**0,26**	0,05	0,31	**0,16**	0,03	0,19
	de	Count	**23**	9	32	**6**	3	9
		%	**0,18**	0,07	0,25	**0,10**	0,05	0,15
	pt	Count	**17**	3	20	**6**	1	7
		%	**0,13**	0,02	0,15	**0,10**	0,02	0,12
Education	de-pt	Count	**55**	11	66	**19**	4	23
		%	**0,42**	0,08	0,50	**0,32**	0,07	0,39
	de	Count	**11**	10	21	**3**	3	6
		%	**0,08**	0,08	0,16	**0,05**	0,05	0,10
	pt	Count	**35**	14	49	**13**	7	20
		%	**0,27**	0,11	0,38	**0,22**	0,12	0,34
Income	de-pt	Count	**28**	9	37	**16**	4	20
		%	**0,21**	0,07	0,28	**0,27**	0,07	0,34
	de	Count	**30**	7	37	**11**	3	14
		%	**0,23**	0,05	0,28	**0,19**	0,05	0,24
	pt	Count	**21**	12	33	**11**	7	18
		%	**0,16**	0,09	0,25	**0,19**	0,12	0,31

Legend: de-pt - International Sample; de-Berlin sample; pt-Lisbon sample

As it can be seen from the table "country" is the variable that reveals the highest proportion of significant differences between the groups. Portuguese and German respondents are significantly different in 68% of the variables measured, and this figure is even slightly higher when only the behavioural variables are considered. These differences may be explained by different eating cultures and by different OFP markets. The maturity and dimension of the German OFP market is considerably higher than the Portuguese, which implies a wider and easier access to OFP products in Germany and, consequently, different attitudes and behaviour of consumers. With such a discriminating

power among consumers country can, without doubt, be a very effective segmentation criteria.

That last statement can not be as easily made for the other socio-demographic criteria in analysis. As it can be seen from Table 3, the significant differences range from 45% for age groups in Germany, to 8% for education groups in the same sample. The figures are even lower when only the OFP behavioural variables are analysed.

From the table it can be concluded that gender is the least efficient segmentation variable. Differences between men and women are quite week, independently of the sample or set of variables in analysis. On the other hand, age can be used as criteria to differentiate between groups of respondents, mainly in what respects life-styles and general attitudes, and in Germany, where this criteria ranks first, both in the overall set of variables and in the behavioural set.

People with different levels of education also are significantly different in some of their attitudes, behaviours and other socio-demographic characteristics. However, this may be explained by the fact that the great majority of German respondents had a University degree, while the education groups were more balanced in the Portuguese sample.

For the International and the Portuguese sample, income is the variable with less discriminating power between groups of respondents. However, its relative power increases in the German sample and on the behavioural set of variables. Actually, income is associated with a higher percentage of differences in OFP related behaviour than is gender or age.

In conclusion, can be stated that, generally, the criteria linked to individual resources and learning – country, education and income- have a better discriminating power than biological factors, such as gender and age. This is particularly relevant for OFP related behaviour and in the International and Portuguese samples. The behavioural pattern of German consumers is not as clear.

3.2 – Influence of Socio-Demographics on OFP related behaviour

Next, differences between respondent groups, formed on the basis of country, age, gender, education and income level, will be analysed. Differences in several OFP behavioural related variables -knowledge, sources of information for belief formation, consumption and buying behaviour and willingness-to-pay for of OFP - will be explored.

Knowledge about OFPs

Declared knowledge about OFPs showed significant differences between countries and age, education and income groups. The differences in knowledge are more marked in the country comparison than in any other group comparison. Gender is the other extreme, with no significant differences found between the declared knowledge of OFP by the men and by the women in the sample.

The percentage of respondents with low declared knowledge of OFP is higher in Berlin (36.1%) than in Lisbon (17.3%). Yet, it is also in Berlin that a bigger proportion of respondents stated that they had high knowledge about OFP – 11.2% versus 7.9% in Lisbon.

As it would be expected, level of education also has an impact on the declared knowledge on OFP, but only when the International sample or the Portuguese sample are considered. In these cases, people with a first degree or more declared to have high and low levels of knowledge more frequently than people in the other two groups.

Importance of information sources for belief formation

Country, age, level of education and income are all associated with differences on the importance given to different sources of information for OFP knowledge (friends and family, point-of-purchase, advertising, events, and experts).

German consumers attach significantly higher importance to direct information (point-of-purchase information and experts' opinions) than Portuguese consumers. On the other hand, the Portuguese give more importance than Germans to the information they get from advertising (an average of 3,6 versus 2,7). Young respondents (less than

34 years old), on the International sample and on the German sample, tend to attach less importance than older respondents to information from advertising, experts and events.

Additionally, people with primary education or less give more importance to the marketing communication sources: point-of-purchase and advertising. The difference in the importance of advertising is not significant in the Portuguese sample. On the contrary, when the International sample is considered, people with a University degree attach more importance to experts as a source of information (3,73 vs 3.24). Furthermore, it could be concluded that people with lower incomes give less importance to information produced by experts, and people with higher incomes (more than 2500€ net/month/household) to point-of-purchase information. These last differences are not as strong for Berlin respondents.

Consumption behaviour

All the criteria in analysis hold significant differences concerning the proportion of OFP consumers in each group. The proportion of OFP consumers was higher in Berlin than in Lisbon (89,3% versus 79,0%), among German women (94% versus 84% in men), for respondents with a first degree or more (92% versus 70% in the lower levels of education, for the International sample) and with higher levels of income (in the International and in the Portuguese sample). Finally, the proportion of OFP consumers was lower among respondents older than 65 years old than in the other age groups - on average 70% of older respondents were OFP consumers versus 87% on the other age groups.

OFP consumers were asked if they were occasional or habitual consumers, and 76,2% said they were habitual consumers and 23,8% that they were occasional. Significant differences in this behaviour were only found between consumers of the two countries and between age groups. There were more habitual consumers in the Portuguese sample (79,9%) than in the German sample (72,6%) and among the younger OFP consumers in the International sample.

Buying Behaviour

All variables in analysis were associated with significant differences in the proportion of OFP buyers in the various groups. Therefore, it could be concluded that the percentage of OFP consumers is significantly higher in Berlin than in Lisbon (87% vs 66%), increases with greater levels of education- difference that is particularly significant for the group with a first degree. The percentage of OFP buyers also increases with income in the Portuguese and International samples, and it is higher in women than in men in the German and International samples

The amount of spending in OFPs is only significantly different among age and income groups. As would be expected, the amount of spending increases with the increase of income and age, with the only exception of the group with more than 65 years old. The difference is between "less than 25€/month", for the groups that spend less money on OFPs, and "between 25€ and 50€/month", for the groups that spend more.

Differences in the point-of purchase for buying OFP were also revealed for all the criteria under scrutiny. However, once again, the most striking difference was between consumers in the two countries. Portuguese consumers tend to buy OFP more in hypermarkets (62,3% vs 2,3% for German buyers), while German consumers tend to buy more frequently than the Portuguese in all other types of outlets, which are, by order of importance for German consumers: specialized shops; supermarkets; traditional grocers; health shops; and herb shops. These differences strongly reflect the differences in the food distribution systems of the two markets; while in Lisbon the majority of the food purchases are done in hypermarkets, with the gradual disappearance of the small food commerce, in Berlin this type of commerce is still well alive and popular.

Willingness-to-pay for OFPs

On average, consumers were willing to pay 10% more (scale value of 2) for OFP than for conventional food products. However, this percentage was highly variable among categories of products, Portuguese and German consumers and different income

categories – the only variables with an impact on WTP. Portuguese consumers were more willing to pay than Germans for almost all OFP categories –except for poultry and milk and dairy, where no significant differences were found. The Portuguese WTP was maximum for fruits and vegetables (2,58 versus 2,19 for the German WTP) an minimum for wine (1,91 vs 1,46).

When the International sample is considered, the WPT for fruits and vegetables, eggs, meat and olive oil increases with the increase in income. For the German sample these differences are only significant for eggs and meat, and for the Portuguese sample eggs and wine.

4 – CONCLUSIONS AND RECOMMENDATIONS

From the data analysis presented in the previous section can be concluded that country is the demographic variable with the strongest discriminating power. Respondents of the two countries revealed significant differences in broad and specific OFP related attitudes and behaviour and in the other measured socio-demographic characteristics.

Hence, in spite of different studies (e.g. Schmidhuber and Trail, 2006; Gracia and Albisu, 2001) predicting the convergence of the European diets, the present research revealed that country borders are still highly related with food consumption, particularly of OFPs, and make for sound segmentation criteria for the organic food market. The differences between the behaviour of respondents in the two countries are probably related with differences in their culture, particularly in what concerns eating habits, but also with resources availability and market maturity.

Gender and age are criteria that do not strongly differentiate between consumers. This result is in line with some authors' opinion (e.g. Blackwell et al, 2006; Solomon et al, 2006) that, in modern societies, differences in consumer behaviour are better explained by constructs such as values and life-styles than by traditional demographic factors. Education and income in spite of having, on average, a better discriminating power, than the above two criteria, still, in some situations are shown to be week

segmentation criteria. This is especially true to the education criteria in Germany and the income criteria in Portugal.

Nevertheless, consumers and non-consumers of OFP and buyers and non-buyers of OFP are significantly different in what concerns all criteria in analysis. So it can be stated that socio-demographic characteristics of consumers influence, to some extent, their behaviour. However, these variables are not associated with amount of spending and WTP for OFP (except for income) or with frequency and proportion of OFP consumed.

Additionally, the significant differences between groups of consumers had, roughly, the same pattern in the three samples, which confirms the validity of the results. Nevertheless, some differences in patterns were also found, more specifically, a higher importance of age and a lower importance of education in the Berlin sample. Generally, the differences between groups are more expressive for the International sample than for the two country samples. This may be explained by two factors: first, with more respondents smaller differences in their replies are revealed and second, the International sample gathers the differences between the respondents in the two countries, which were the more significant.

In conclusion, it can be stated, as was also shown by Dagevos and Van-Gaasbeek (2000), that there are good reasons for preserving socio-demographic or economic variables in food consumer research. In this study they proved to be robust segmentation criteria (particularly country of residence), with the advantage of being easily identifiable, stable, accessible, and cost-efficient (Wedel and Kamakura, 1999). Therefore, as Dagevos and Van-Gaasbeek (2000) argued, to use a mixture of traditional, quantitative, segmentation criteria and qualitative criteria, such as attitudes or life-styles, to explain differences between groups of consumers in food related issues, is probably the best approach for marketing research and practice. This approach enables marketers to know who the consumers in different market segments are, but also to understand why they behave the way they do.

Finally, it must be noted that the non-statistical nature of the sample limits the conclusions of the present study. Nevertheless, it should also be emphasised that the

dimension of the quota sample employed, and the use of two different country samples, allows for some generalisation of the results, particularly to other European OFP markets. However, generalisations for other categories of products must be done with care, since the needs and motives underlying consumer behaviour can be very different for different categories of products.

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