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SUSTAINABLE FOOD CONSUMPTION: EXPLORING THE CONSUMER "ATTITUDE – BEHAVIORAL INTENTION" GAP

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ABSTRACT. Although public interest in sustainability increases and consumer attitudes are mainly positive, behavioral patterns are not univocally consistent with attitudes. This study investigates the presumed gap between favorable attitude towards sustainable behavior and behavioral intention to purchase sustainable food products. The impact of involvement, perceived availability, certainty, perceived consumer effectiveness (PCE), values, and social norms on consumers' attitudes and intentions towards sustainable food products is analyzed. The empirical research builds on a survey with a sample of 456 young consumers, using a questionnaire and an experimental design with manipulation of key constructs through showing advertisements for sustainable dairy. Involvement with sustainability, certainty, and PCE have a significant positive impact on attitude towards buying sustainable dairy products, which in turn correlates strongly with intention to buy. Low perceived availability of sustainable products explains why intentions to buy remain low, although attitudes might be positive. On the reverse side, experiencing social pressure from peers (social norm) explains intentions to buy, despite rather negative personal attitudes. This study shows that more sustainable and ethical food consumption can be stimulated through raising involvement, PCE, certainty, social norms, and perceived availability.

KEY WORDS: attitude, behavior, consumer, food, sustainable consumption

1. INTRODUCTION

In the wake of the series of crises within the European agro-food system, culminating in BSE, dioxin, and foot and mouth disease, the general public in Europe became increasingly critical about food quality and safety (Jensen and Sandoe, 2002; Grunert, 2005; Verbeke, 2005). Also, interest in sustainability, sustainable production, and sustainable consumption has increased at all levels of the agriculture and food chain. Achieving sustainable development includes strategies to achieve economic (profit), social (people), and environmental (planet) goals (World Bank, 2003). Sustainable products are products that contribute – through their attributes and consequences – to one or a combination of these aspects (Reheul et al., 2001). The economic

aspect has first of all to do with a fair price for the agricultural producers and affordable consumer prices. The ecological component involves care for the natural environment and livestock production conditions, the living environment in general, and the quality of life for humans. The ecological component refers to sustainability in the strict sense of preserving the environment and sustainable use and management of natural resources. The social component finally concerns an integration of agriculture in the priorities and needs of the society/citizens and an appreciation and support for the agro-food sector from the society as well as from government (a sustainability-supporting policy).

Sustainable consumption is based on a decision-making process that takes the consumer's social responsibility into account in addition to individual needs and wants (Meulenberg, 2003). Everyday consumption practices are still heavily driven by convenience, habit, value for money, personal health concerns, hedonism, and individual responses to social and institutional norms (FSA, 2000; IGD, 2002a, 2002b; SDC, 2003), and, most importantly, they are likely to be resistant to change. Yet, the diversity and complexity of the motivations involved means that in reality there is a considerable scope for change. An important driver for change, particularly with respect to sustainability concerns, is the tendency towards reflexivity within a post-modern society, whereby society and its individuals actively reflect upon existing cultural norms. The reflexive consumer (Giddens, 1991) makes his own individualized risk assessment (Dupuis, 2000), but is not necessarily a social activist. Dupuis (2000) argues that food is a particularly important focus for reflexive consumers, since food consumption is a negotiation about what a person will, and will not, let into his or her body. Furthermore, in the past 10 years, the ethical consumer emerged who perceives a more direct link between what is consumed and the social issue itself. This kind of consumerism mainly incorporates environmental issues but also extends to animal welfare, human rights, and labor working conditions in the third world (Tallontire et al., 2001). In general, the ethical consumer feels responsible towards society and expresses these feelings by means of his purchase behavior (De Pelsmacker et al., 2003). Note that the reflexive consumer is not per definition an ethical consumer. The ethical consumer reflects specifically upon ethical consequences of his or her behavior, while the reflexive consumer is involved with more general cultural norms.

Practice, however, shows that initiatives like sustainable organic food, products free from child labor, legally logged wood, and fair-trade products often have market shares of less than 1% (MacGillivray, 2000). This is at least partly due to the attitude-behavior gap: attitudes alone are often a poor predictor of behavioral intention or marketplace behavior (Kraus, 1995;

Ajzen, 2001). Potential explanations are that price, quality, convenience, and brand familiarity are still the most important decision criteria (Carrigan and Attalla, 2001; Weatherell et al., 2003), while ethical factors are only effectively taken into account by a minority of consumers. Hence, although consumer interest in sustainable products may be growing, sustainable food markets remain niche markets, attracting consumers with a specific profile. In general, the ethical consumer is a middle-aged person with a higher income, who is above average educated, with a prestigious occupation and who is well-informed (Roberts, 1996; Carrigan and Attalla, 2001; Maignan and Ferrel, 2001). Gender does not seem to influence ethical decision-making (Tsalikis and Ortis-Buonafina, 1990; Sikula and Costa, 1994; MORI, 2000). Roberts (1995), and Diamantopoulos et al. (2003) concluded that demographics alone – that are often used as the main market segmentation variables – are not very significant in defining the socially responsible consumer because ethical concern and awareness have become widespread. Roberts (1996) stresses the importance of variables such as relevant attitudes, behavioral, and personality characteristics to identify the possible ethical consumer. A recent study on purchase intentions towards sustainable foods also showed that psychosocial variables like attitudes, beliefs, and subjective norms,[1] more than demographics, independently predict purchase intention for sustainable products (Robinson and Smith, 2002).

Despite several studies reporting on barriers and consumer profiles, there is a gap in thorough understanding of consumer decision-making towards sustainable food consumption. Hence, the objective of the present study is first, to investigate the attitude – behavioral intention gap that often occurs, and second, which factors influence the intention of purchasing sustainable food. We start from the premise that positive attitudes towards buying sustainable food products are not necessarily followed by positive intentions, in contrast with the theory of reasoned action (Ajzen and Fishbein, 1974). The validity of this theory of reasoned action has yet been debated in the specific case of food products (e.g., Kokkinaki and Lunt, 1997). We explore the role of several individual characteristics, like involvement, perceptions, and values, that could explain sustainable consumption patterns in general and the attitude – behavioral intention gap in particular. The final aim is to formulate recommendations for stimulating sustainable food consumption among specific consumer segments. Since it is important to convey messages appealing to consumer attitudes and beliefs about sustainable foods, rather than to specific predetermined socio-demographic

[1] Subjective norms are conceptualized in terms of the pressure that people perceive from important other people to perform or not to perform a specific behavior.

segments (Robinson and Smith, 2002), our results can assist in future attitude-targeted public or private communication efforts to effectively stimulate more sustainable food consumption.

2. THEORETICAL FRAMEWORK

The consumer behavior model introduced by Jager (2000) serves as the basis for a conceptual framework to investigate consumer behavioral intention towards sustainable food products. The three main determinants of behavioral intention with relevance to sustainable consumption are values, needs, and motivations, information and knowledge, and behavioral control (see Figure 1). In this specific study, we investigate involvement and values (''values, needs, and motivations''), uncertainty (''information and knowledge''), and perceived availability and perceived consumer effectiveness (''behavioral control''), on the attitude – behavioral intention gap, respectively.

2.1. *Decision-Making: Attitude and Consumption Behavior*

A positive attitude towards sustainable products is a good starting point to stimulate sustainable consumption. Several studies concentrated on attitudes towards sustainability and sustainable consumption behavior (Shamdasani et al., 1993; Shrum et al., 1995; Verbeke and Viaene, 1999; Chan, 2001; Bisonette and Contento, 2001; De Pelsmacker et al., 2003; Gordier, 2003; Tanner and Kast, 2003). In general, about 30% of the

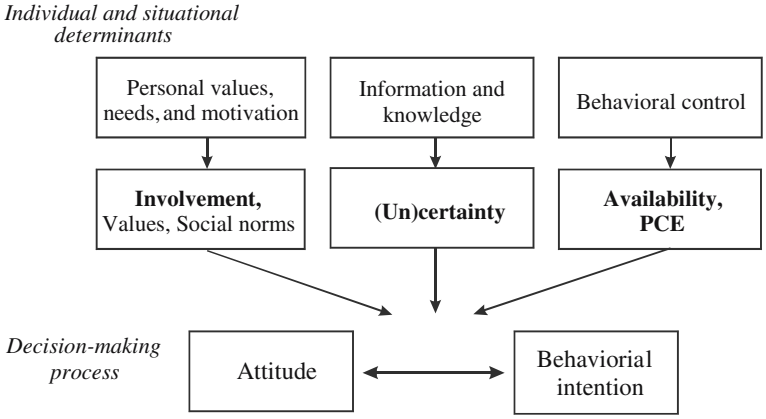

Figure 1. Conceptual framework used to investigate consumer behavior towards sustainable food products Top level: adapted consumer behavior model from Jager (2000); Second level: constructs included in the empirical study; Bold face indicates manipulated constructs in the research design

consumers have a positive attitude towards sustainable consumption (as defined by Reheul et al., 2001). These consumers claim to pay attention to ecological packaging, the origin of the food products, or the absence of genetically modified organisms, and regularly buy sustainable organic food products. They perceive sustainable products to be better with respect to taste, quality, safety, and freshness, and to be more beneficial with respect to human health, the environment, and regional economies. A more negative attitude is found for the attributes price, appearance, convenience, and conservation. However, although people may have a positive attitude, they are largely passive in their role as consumer when it comes to supporting environmental or animal welfare improvements with their available budget (e.g., Grunert and Juhl, 1995).

Different explanations can be suggested for the gap between the positive attitude of consumers and their actual purchase behavior. For example, behavior based on habit or situational factors like promotions can account for the low market share of sustainable products (Minteer et al., 2004). Also, several other individual or situational characteristics could be put forward to explain this gap. Examples are values, knowledge, and perceived behavioral control (Jager, 2000). Consumer purchasing decisions often incorporate a complex variety of motivations that complicates an understanding of particular instances. Specific attitudes may suggest a specific behavior when taken in isolation, but this may not be the case when considering the broader purchase decision. Additional attitudes come into play, moderating behavior, diluting the impact of initial attitudes, and resulting in an alternative outcome.

2.2. *Personal Values, Needs, Motivations, and Involvement*

Human values are referred to as relatively stable beliefs about the personal or social desirability of certain behaviors and modes of existence. Values express the goals/needs that motivate people and appropriate ways to attain these goals/needs. Values can play an important role in the consumer decision process, like product choice and brand choice (Burgess, 1992; Engel et al., 1995). For example, people who adhere to the value ''universalism'' (see Appendix 1) may be motivated to protect the environment and therefore buy environmentally safe products. Values motivate action, giving it direction and emotional intensity (Schwartz, 1994). For instance, Vitell et al. (2001) found that consumers are more guided by principles or values (deontology) than by consequences (teleology) when making ethical decisions. Consumers rated unethical behavior as unethical regardless of whether this behavior had positive (e.g., using an expired coupon) or negative (e.g., switching price tags) consequences for the consumer. In the same

manner, consequences of ethical behavior (either positive, e.g., cashier mistake, or negative, e.g., copying software) were not considered in ethical decisions, instead, consumers based their decision on the ethical value of the behavior itself (either ethical or unethical).

Involvement or perceived personal importance is a specific kind of motivation. Involvement is activated when a product, service, or promotional message is perceived as instrumental in meeting important needs, goals, and values. The object is important to the self because it addresses important values and goals in people's life. People are motivated to invest cognitive effort in a decision-making process when they are highly involved, for example, because an important personal need is not satisfied, while habitual behavior occurs when consumers have low motivation (i.e., low involvement) due to satisfied needs (Jager, 2000). Involvement influences the extensiveness of information search, the length of the decision-making process, formation of beliefs, attitudes and intentions, as well as behavioral outcomes, such as variety seeking behavior, brand-switching behavior, brand-commitment or loyalty, frequency of product usage, and shopping enjoyment (Beharrel and Dennison, 1995; Verbeke and Vackier, 2004).

Numerous studies have linked ethical or sustainable behavior to personal values (see Vermeir and Verbeke (2004) for an overview). In general, the values universalism, benevolence, self-direction, honesty, idealism[2], equality, freedom, and responsibility have been linked to sustainable consumption, whereas power, hedonism, tradition, security, conformity, and ambition were associated with less ethical or less sustainable consumption patterns (for an explanation of the values following Schwartz (1992), see Appendix 1). The confirmation of a causal relation between some values, like universalism, and a sustainable consumption pattern implies that promoting the right values through socialization and national institutions can facilitate the achievement of the long-run goal of sustainable consumption (Thogersen, 2001). However, Thogersen (2001) also argues that in the short run, the extent of sustainable behavior depends much more on specific factors, such as habits, specific attitudes, and preferences and on opportunities to engage in sustainable consumption.

2.3. *Information, Knowledge, and Uncertainty*

Access to clear and reliable information is an important factor in the purchase decision process. Studies show that few consumers have a high awareness or comprehension of the real sustainable characteristics of products. The benefits of sustainable products are often poorly communi-

[2] Idealism is the degree to which individuals assume that desirable consequences from specific behaviors can, with the right actions, always be obtained (Forsyth, 1981).

cated to consumers, so that they are unable to make informed purchasing decisions in accordance with their budget and/or conscience. Furthermore, consumers often have limited knowledge of agriculture and its production processes and a lack of insight into the implications of their food purchase decisions on the food supply chain (Dickson, 2001; Verbeke, 2005). The less information available and/or the more complex and contradictory this information is, the more uncertain consumers may be regarding what products to choose. A related issue is that sustainability is a credence attribute, which means that consumers cannot evaluate it personally, though have to put trust in the source that claims sustainability. Uncertainty can lead to the use of social information, which means that consumers will look at other people to get an indication of the best outcome. One way of providing information is through product labeling. However, Verbeke and Viaene (1999) and Verbeke and Ward (2006) found a large contrast between consumer's subjective knowledge and perception of labels versus the exact labeled beef features. In addition, research about the awareness of sustainable labels in general and a specific fair-trade, organic label (Gordier, 2003) and sustainable fruit labels (Vannoppen et al., 2002) revealed that both unaided and aided consumer awareness were very low.

2.4. *Behavioral Control, Availability and Perceived Consumer Effectiveness*

The third potential determinant of consumer decision-making pertains to the availability of sustainable products, which is related to consumer's behavioral control. Behavioral control refers to the ease or difficulty of obtaining or consuming a specific product. Although the motivation to consume sustainable products is high, it may be impossible to do so because of low availability. This problem is related to the scarcity of local food shops or farmers' markets, which often lack the regularity, and convenience demanded by consumers. In addition, ethical products often have limited availability, and are not really visible in the shop, and/or are inadequately promoted (De Pelsmacker et al., 2003). Recent research shows that 52% of consumers were interested in purchasing "earth-sustainable" foods, but did not purchase those foods owing to the perceived barriers of lack of availability, followed by inconvenience and price (Robinson and Smith, 2002). Another aspect related to behavioral control is the perceived consumer effectiveness (PCE), which is the extent to which the consumer believes that his personal efforts can contribute to the solution of a problem. High PCE is necessary to evoke consumers to translate their positive attitudes into actual purchase (Ellen et al., 1991; Berger and Corbin, 1992; Roberts, 1996; Lee and Holden, 1999). Roberts (1996) suggests that in order to motivate behavioral changes, consumers must be convinced that their behavior has an

impact on, for example, the environment or will be effective in fighting environmental degradation or social inequality.

3. RESEARCH METHOD

3.1. *Study Objectives and Design*

The objective of the study is, first, to gain a better insight into sustainable consumption and the influence of several individual characteristics on the attitude and behavioral intention towards purchasing sustainable products. The aim is to assess whether consumers with a high (versus low) level of a specific individual characteristic have a different attitude and behavioral intention towards sustainable products. Second, we investigate whether consumers' level of four individual characteristics, namely involvement, certainty, perceived availability, and PCE, can be influenced by information provision or communication. Respondents were subjected to a specific condition (see further) that resulted in either a low or a high level of the particular individual characteristic.

Where possible, manipulations were used instead of measuring the existing levels of the variables for several reasons. First, manipulations of constructs provide a better way to derive consequences (Iacobucci, 2001). Second, fairly equal groups were needed to ascertain the influence of the constructs on attitudes and behavioral intention. If we measured existing levels of involvement, for example, chances are that a considerable number of the respondents would be rather less involved in regards to sustainable consumption (cf. Dickson, 2001), while few respondents were highly involved. Third, if these individual characteristics associate with sustainable consumption, it is important to be able to manipulate them in order to increase sustainable behavior, for instance through future communications.

Values and social norms were measured (not manipulated) because values and social norms are inherent in each person and are almost impossible to change or manipulate, especially in the short term. Values and social norms are deep-seated ideas and motivations that are relatively stable over a consumer's life span. Social norms were specifically included because of their function as a determinant of behavioral intentions in the theory of reasoned action, and because previous research has shown that social norms influence behavioral intention towards sustainable products (Robinson and Smith, 2002). Identifying values or social norms that are associated with high/low sustainable consumption could help us explain why some consumers are (un)willing to invest in a sustainable future, hence providing policy makers with the necessary information about which values/social norms to express in their communications.

3.2. *Materials*

Previous research showed that consumers become more involved with a product or service when the personal consequences are highlighted and the importance of the product is emphasized (cf. Engel et al., 1995). Consequently, we manipulated involvement by presenting half of the respondents an article describing the potential benefits of sustainable products for the consumer (e.g., safety, health, taste, and quality), the environment (e.g., less pollution), and the society (e.g., lower unemployment, fair trade). The other respondents received an article that was similar as far as length, writing style, and difficulty but discussed a tourist national park. The aim was that respondents who read the article about sustainability would become more involved in regard to the subject, while the other respondents retain their inherent (i.e., predominantly low, cf. Dickson, 2001) involvement level in regards to sustainability.

To manipulate perceived availability, certainty, and PCE, three informational messages that respectively stress the availability, certainty, and PCE of sustainable products were constructed. The case of organic dairy products with the fictive brand name ''Le Fermier'' was used. Dairy products were chosen because they are one of the most frequently purchased organic products (Cera-foundation, 2001). In the ''high availability'' message, respondents were informed that Le Fermier products are widely available, while websites and free phone numbers were provided to check for the nearest-by selling point of Le Fermier products. In the ''high certainty'' message two existing, well known labels were shown – one organic and one social label – that supposedly provide the consumer with certainty that Le Fermier products are indeed ecologically and socially sound. The ''high PCE'' message contained a short statement that informed the respondents that they can contribute to a better world by reacting to unfair or unsustainable actions. An example was given where pressure exerted by consumers led to better prices and working conditions for Chiquita banana growers in Latin America. Finally, a ''control'' message was created where no information about availability, certainty, and PCE was provided.

Existing scales for measuring involvement and PCE (Roberts, 1996) were used. A scale to test the perceived availability (three items) of Le Fermier products was constructed. For example, respondents had to indicate on a 7-point scale to what degree they thought that Le Fermier products are easy to find in their neighborhood. In order to assess certainty, respondents were asked to indicate how certain they were about 5 items on a 6-point scale (e.g., ''How certain are you that Le Fermier products are ecologically and socially sound?''). Social norms were measured with the scale previously

used by Verbeke and Vackier (2004)[3] in the theory of planned behavior. The Schwartz list of values (1992) was used to determine consumer values (See appendix for scale items and definitions). Finally, attitudes toward (buying) Le Fermier products and behavioral intentions were determined by using existing classical scales.

3.3. *Data Collection*

The sample for this study consisted of 456 youngsters following higher education in the age group 19–22 drawn from the population of Flanders, Belgium. The rationale for focusing on this population is threefold. First, we chose this uniform group because we wanted to rule out possible interference from classical socio-demographic variables like age, income, or social class. Previous research discovered that age, income, and social class influence attitude and behavioral intention in regards to sustainable consumption (e.g., Roberts, 1996). Second, youngsters constitute the consumers of the future, who should be capable of making a difference in the next half-century.[4] They are likely to take their habits into their older age and therefore provide policy makers with ample possibilities to create sustainable food consumption habits within the population. Third, we deliberately chose higher educated youngsters because they supposedly have some awareness on the concept of sustainability. If respondents do not know the concept of sustainability, attitudes (positive or negative) and behavioral intentions (high or low) might be non-existing, making it impossible to categorize respondents according to their attitude/behavioral intention. Furthermore, it would be quite difficult for lay people to answer the questions about perceived availability, certainty, and PCE in the case of sustainable products.

The questionnaire consisted of one text (increasing involvement or neutral text), one informational message (control or one that either stimulates perceived availability, certainty, or PCE), and numerous items to be scored on interval scales. In addition, questions about gender, place of residence, and awareness of sustainable aspects of food consumption were included. Respondents first answered the demographic and awareness

[3] This multi-item 7-point interval scale assesses respondent's agreement on statements like "My family/friends/partner think(s) that I should eat/buy sustainable dairy products" and "Government/doctors and nutritionists/the food industry stimulate(s) me to eat/buy sustainable dairy products."

[4] An anonymous referee remarked that there is potential bias because students may not buy food for themselves, or may not see themselves efficaciously able to buy for themselves, and hence rarely even think of sustainability issues except in the far-off abstract. This potential bias was limited through focusing on attitude and behavioral intention, instead of on real marketplace behavior – which some students indeed may not have – and through including perceived consumer effectiveness as a potential determinant of attitude and behavioral intention.

questions and completed the Schwartz value questionnaire. Next, respondents were instructed to carefully read the magazine article about sustainable consumption or the text about a tourist national park, and to complete the involvement questions. Finally, one of the four informational messages for Le Fermier dairy products was shown and the respondents were instructed to complete the questions dealing with attitude, behavior, certainty, availability, social norms, and PCE. The different versions of the informational message were randomly assigned to the respondents. Each message was shown to an equal number of respondents.

4. EMPIRICAL FINDINGS

4.1. *Construct Validity and Descriptive Statistics*

Data analysis methods include ANOVA[5] and correlation analyses. Preliminary construct reliability checks showed that all constructs displayed ample reliability with Cronbach's alpha exceeding 0.60 for all scales (Table 1). First, we tested whether our manipulations of involvement, perceived availability, certainty, and PCE led to heightened levels of the individual variables. Consumers who read the high involvement text about sustainable consumption were afterwards effectively more involved with sustainable consumption compared to consumers who read the text about the tourist national park ($p < 0.05$). Furthermore, consumers who received the message that should enhance the perception of availability, reported a higher level of perceived availability compared to consumers who received other messages ($p < 0.001$). Contrary to our expectations, consumers who received the messages that should have stimulated PCE and certainty, did not report a higher PCE and certainty compared to consumers who received the other messages. This indicates that our manipulations of PCE and certainty did not work as intended.

Next, consumers where classified as either high or low on a particular individual characteristic. A similar procedure was applied to the Schwartz value types. Note that we only describe those Schwartz values that triggered significant results, more specifically, universalism and power. Mean attitudes towards buying Le Fermier products were 5.09, while mean behavioral intentions were 4.19, both on a 7-point scale. The correlation between attitude towards sustainable consumption and behavioral intentions is strongly positive ($r = 0.67$, $p < 0.001$). Mean levels for the individual

[5] Analysis of Variance is a statistical technique for examining the differences among means for two or more populations. A F statistic tests for the null hypothesis that the category means are equal in the population. The p-value indicates the probability of rejecting a null hypothesis that is in fact true, i.e., concluding that the means are different whereas they are in fact equal.

Table 1. Construct reliability statistics (Cronbach alpha value).[a]

Construct	Alpha values
Decision-making or individual/situational characteristics	
Involvement towards sustainability	0.65
Attitude towards buying	0.80
Intentions to buy	0.92
Perceived Availability	0.80
Perceived Certainty	0.85
Perceived Consumer Effectiveness	0.72
Social norms	0.61
Universalism	0.86
Power	0.73

[a] Cronbach's Alpha is a measure of internal consistency, which provides information about the reliability of a multi-item scale. Values exceeding 0.6 indicate internal consistent scales, in other words, all items incorporated in the scale measure the same underlying construct.

characteristics were the following: involvement ($M = 4.81$), perceived availability ($M = 3.58$), PCE ($M = 4.47$), social norms ($M = 3.89$), universalism ($M = 3.93$), power ($M = 3.46$), all measured on a 7-point scale, and certainty ($M = 3.49$), measured on a 6-point scale.

4.2. *Bivariate Analyses*

First, we investigated differences in attitude and behavioral intentions depending on consumer's level of individual characteristics (Table 2). Attitudes and behavioral intentions are stronger among highly involved consumers, more certain consumers, consumers with higher PCE, with higher perceived availability, and with stronger social norms. Attitudes towards buying sustainable Le Fermier products are also higher among consumers with higher universalism and lower power values. However, behavioral intentions do not differ depending on consumer's level of universalism and power.

Next, four groups of respondents were identified based on attitude towards buying (low, high) and intention to buy sustainable Le Fermier products (low, high) using median split.[6] The amount of respondents and

[6] Respondents are assigned to one of two possible groups based on the median, which is the value above which half of the values fall and below which half of the values fall. Respondents scoring below the median are assigned to the "low" group; respondents scoring above the median are assigned to the "high" group.

Table 2. Mean attitude towards buying and mean behavioral intentions for low versus high involvement, perceived availability, certainty, PCE, social norms and values levels ($n = 456$).

		Attitude towards buying Mean (S.D)[a]	Behavioral intention Mean (S.D)
Involvement	Low	4.77 (1.15)	3.84 (1.42)
	High	5.41 (1.05)	4.49 (1.43)
	F-stat	39.06***	23.65***
Certainty	Low	4.67 (1.17)	3.55 (1.40)
	High	5.40 (1.01)	4.65 (1.32)
	F-stat	50.52***	73.15***
Availability	Low	4.95 (1.14)	3.84 (1.49)
	High	5.22 (1.11)	4.49 (1.37)
	F-stat	6.13**	22.89***
Perceived consumer	Low	4.81 (1.21)	3.79 (1.48)
effectiveness	High	5.39 (0.98)	4.50 (1.30)
	F-stat	30.19***	37.82***
Social norms	Low	4.83 (1.25)	3.78 (1.47)
	High	5.32 (0.99)	4.53 (1.37)
	F-stat	20.93***	30.65***
Universalism	Low	4.99 (1.21)	4.10 (1.49)
	High	5.19 (1.05)	4.24 (1.43)
	F-stat	3.58*	1.02
Power	Low	5.25 (1.06)	4.30 (1.43)
	High	4.98 (1.13)	4.12 (1.45)
	F-stat	6.11**	1.77

[a] Standard deviation or a measure of dispersion around the mean, expressed in the same unit of measurement as the observations. In a normal distribution, 68% of the cases fall within one standard deviation of the mean and 95% of the cases fall within two standard deviations.

relevant demographics per group are presented in Table 3. In general, women have significantly more positive attitudes towards buying Le Fermier products ($p < 0.001$) and higher intentions to buy ($p < 0.001$) as compared to men. No differences are found in attitudes and intentions for respondents who live in the city versus the countryside or for respondents who differed in claimed awareness of sustainability. We also asked our respondents to what extent they had knowledge of sustainable consequences of food products (on a 7-point scale). High knowledge of the sustainable character of food consumption tended to be associated with a high behavioral intention ($p = 0.10$).

Table 3. Size and demographic characteristics of consumer segments ($n = 456$).

	Attitude towards buying	
	Low	High
Intention to buy		
Low	n = 169	n = 43
	49.7% women	58.1% women
	33.9% urban	34.9% urban
High	n = 80	n = 164
	67.5% women	71.8% women
	36.3% urban	38.3% urban

No differences were found for consumers who had either high or low attitudes.

As shown in Table 3, majorities of consumers have either a low attitude and low behavioral intention or a high attitude and high behavioral intention, in line with consumer behavior theory. However, also a considerable amount of our respondents have opposing attitudes and intentions. Some consumers ($n = 43$, 9.4%) feel strongly positive towards buying sustainable Le Fermier products, while they are not planning to engage in this purchase. On the other hand, some consumers ($n = 80$, 17.5%) are planning to buy these sustainable dairy products, even though they do not feel very positive. To explain these inconsistencies, differences in terms of involvement, perceived availability, certainty, PCE, social values, and values between the four different groups are scrutinized.

Table 4 displays the mean scores and associated statistics on the individual characteristics for the respondents belonging to the four attitudes – behavioral intention segments as introduced in Table 3. Consumers who have positive attitudes towards buying sustainable products and who display high behavioral intentions have the highest involvement level. These consumers apparently value sustainable consumption most strongly. Those with low attitudes and low behavioral intentions are least involved with sustainable products, although their score of 4.64 still denotes belief that sustainable consumption can have substantial personal health, environmental, or social benefits. Consumers who intend to buy Le Fermier (irrespective of their attitude) are not strongly convinced that these products are easily available[7] but they do rate the availability higher as compared to the consumers with a low level of intention. Also, consumers

[7] The fact that perceived availability is evaluated rather low is logical since subjects were presented a fictive or non-existing brand of sustainable dairy products.

Table 4. Mean scores for individual characteristics of consumer segments; means with different subscripts (a, b, c, d) in one row or in one column are significantly different using *F*-test statistics.[a]

	Low attitude towards buying	High attitude towards buying
Involvement		
Low intention to buy	4.64 a	4.88 b
High intention to buy	4.72 a	5.04 b
Perceived availability		
Low intention to buy	3.24 a	3.31 a
High intention to buy	3.83 b	3.88 b
Certainty		
Low intention to buy	2.09 a	3.43 b
High intention to buy	3.64 c	4.04 d
Perceived consumer effectiveness		
Low intention to buy	4.19 a	4.42 b
High intention to buy	4.51 c	4.74 c
Social norms		
Low intention to buy	3.60 a	3.95 b
High intention to buy	4.13 c	4.07 b,c
Universalism		
Low intention to buy	3.73 a	4.33 b
High intention to buy	3.95 a	4.01 a,b
Power		
Low intention to buy	3.59 a	3.31 a
High intention to buy	3.59 a	3.33 a,b

[a] *F*-statistics result from Analysis of Variance (see also footnote 5).

who do not intend to buy Le Fermier believe that the product is not easily available even if they have a positive attitude towards buying the product. In other words, consumers can have a positive attitude towards buying sustainable products but not intend to do so because they think the product is not easily available. Note that it was previously indicated that perceived availability can easily be influenced through information provision.

Certainty levels differ between all segments. Consumers who have high positive attitudes and behavioral intentions display the highest certainty level that Le Fermier is indeed sustainable, while consumers with lower attitudes and intentions display significantly lower certainty levels. Consumers with high intentions to buy Le Fermier have the highest PCE scores irrespective of their attitude level. Within the group of consumers with low

intentions to buy, PCE differs between those consumers with low versus high attitudes towards buying. The highest score for social norms is observed for consumers with low attitude and high intentions. This indicates that social norms, or willingness to comply with the opinions of others, explain why some consumers intend to buy sustainable products despite having rather low personal attitudes towards buying sustainable products. Finally, universalism differs depending on attitude within the low intention segments, whereas power differs depending on attitude within the high intention segments.

5. DISCUSSION

This empirical study indicates that young consumers in Belgium are rather highly involved with sustainable food consumption (hence, contradicting Dickson, 2001). Our finding confirms previous research on adolescent's perspectives of environmental impacts on food by Bisonette and Contento (2001). Furthermore, consumers with high involvement have more positive attitudes and are more willing to purchase sustainable products. In addition, the manipulation of involvement contributed to increased involvement levels of consumers. Hence, confronting consumers with the benefits of sustainable consumption yields higher personal importance attached to sustainability.

Respondents in general believe that an individual consumer can contribute to protecting the environment and improving producer's welfare (contrary to Roberts, 1996). Furthermore, consumers who believe in their personal consumer effectiveness are more positive towards sustainable products and have more intentions of purchasing them. Our manipulation of PCE did not make consumers believe stronger in their personal ability to make a difference. Possibly the example provided (Chiquita banana) was too distant to really be of concern for Flemish consumers. An example of local farmers who ultimately benefit from sustainable product sales or local nature reserves that are saved or recovered thanks to local consumption patterns might have worked better. Another potential explanation is that PCE may be strongly inherent to a person (like values and social norms) and hard to change in the short term.

Consumers do not really believe that Le Fermier sustainable dairy products are easily available. One possible explanation for the low perception of availability could be the overall picture that is associated with sustainable products. The general public believes that sustainable products are difficult to obtain and this image will not easily be shattered. Consumers probably expect that they will have to drive to a farm on the countryside or to a

specialized shop to find sustainable products. Our results confirmed that higher perceived availability associates with more positive attitudes and intentions towards buying sustainable products. In addition, we found that perceived availability could indeed act as a barrier for sustainable consumption intention. Consumers who believe that sustainable products are less available intend less to purchase these products, even though they have positive attitudes. However, we were able to increase the perceived availability of consumers by simply providing them with an Internet address and telephone number. Even though consumers have to make some effort to find out where to purchase Le Fermier products, consumers did rate Le Fermier products as more highly available after being confronted with this information.

Consumers somewhat believe that Le Fermier products promote sustainability regardless of our manipulation of certainty. Certainty about sustainability claims associates with more positive attitudes and stronger intentions to buy these products. However, the labels included in our messages did not increase perceptions of certainty. This is unexpected since the sustainable organic label used is well known. Maybe this label is mainly associated with healthier food rather than with a more sustainable production method. The other label – focusing on social aspects of sustainability – is less present in daily purchase situations, which might have hindered the confidence attached to the label. Another potential explanation is that our results confirm previous studies that indicate the relative impotence of food labels with respect to improving consumer's perception on credence attributes.

Furthermore, consumers in general are not really strongly convinced that friends or family want them to buy sustainable products. This implies again that sustainable consumption in Flanders is not a general goal or ideal. We found that consumers, who adhere to higher social norms concerning sustainable products, have more positive attitudes and intentions towards sustainable products. Our results also confirm that consumers who score high on universalism and low on power have more positive attitudes towards sustainable products.

The empirical findings indicate that sustainable products can be promoted to the broader public through specific communication efforts that lower perceived barriers to consumption. Previous research suggests that sustainable consumption should not be promoted on the basis of the goodness of being an ethical consumer, norms, collective rationality, or environmental ethics, since the ethos of environmentalism or sustainable consumption cannot compete with the consumption ethos (Ger, 1999). Our results show that the value of sustainable products could be directly promoted by emphasizing personal relevance and importance to the individual (i.e., increasing consumer involvement), informing consumers about

product availability, informing consumers about their possible effectiveness, or increasing the social norms associated with sustainable consumption.

In order to promote sustainable consumption, people could also opt to influence consumer values. However, value-based policy proposals that respond to an alleged need to change basic "consumerist" values are hard to realize and call for a long-term approach. Consumers do not change their values on a day to day basis. Behavior-based solutions that emphasize the need for social and institutional changes that facilitate environmentally sounder consumer behaviors on a case-by-case basis are much more feasible (Goodwin et al., 1997).

Consumers are clearly not a homogenous group, and raising their awareness of the issues involved within food production needs to be targeted accordingly. In our research, we identified four different consumer segments based on attitude and behavioral intentions. The segments differ with respect to many individual characteristics. Following these characteristics, we can recommend different strategies to more effectively reach the different consumer segments. Consumers who think it is very positive and meaningful to buy Le Fermier products and indicate that there is a good chance that they will buy Le Fermier products are generally more involved with sustainable consumption. Based on this consumer profile, we argue that communication towards them should focus on the rightness of their behavior. Marketers or policy makers could cheer their efforts and emphasize all the benefits that are associated with sustainable consumption, both for themselves as individual consumers and for the broader environment and society.

Consumers who do not feel positive or sensible about buying Le Fermier products and who do not intend to buy these products are less involved with sustainable consumption. They have a neutral position on the perception of consumer effectiveness and are uncertain that Le Fermier products are really sustainable. They also believe that Le Fermier products are not easily available in their neighborhood. Probably the most effective strategy would be to envisage a change of these consumers' values from an emphasis on power and authority to striving for a better world, but this long-term goal would be hard to realize (cf. Goodwin et al., 1997; Thogersen, 2001). A more feasible short-term strategy could be to enhance involvement of these consumers by stressing the personal benefits of sustainable products, with a focus on "selfish" needs. Individualistic needs, such as security about health consequences, hedonistic needs, and the need for economic reasoning could be used to stimulate sustainable consumption among this consumer segment. In addition, availability, PCE, and certainty should be underlined, since these consumers poorly rate these constructs.

The two remaining segments (together accounting for more than one quarter of the sample) display conflicting attitudes and behavioral intention,

hence illustrating the existing attitude – behavioral intention gap. Some consumers have a very positive attitude towards buying Le Fermier products, but are not intending to buy these products. The most plausible explanation for this inconsistency is their idea that Le Fermier products are not easily available in their neighborhood. The most straightforward strategy to stimulate these consumers to buy sustainable food is by stressing and demonstrating the availability of sustainable products. As mentioned before, providing a telephone number or Internet address could yet be sufficient to win them over. Even more effective would be to organize a better supply of sustainable products in supermarkets. Furthermore, communication could stress the reliability of labels, as these features are not strongly believed in. In addition, communication can try to increase consumers' PCE, as these consumers only moderately believe that one person can make a difference. Finally, increasing their involvement could lead them to display more effort to search for the availability of sustainable products.

Finally, some consumers do not feel positive about buying Le Fermier products, but nevertheless claim it is very probable that they will buy these products. Data show that this inconsistency is to be understood in terms of their belief about social norms. These consumers believe that their friends and family find it fairly important that they buy sustainable products. Most likely, they intend to buy Le Fermier products for social desirability reasons. A potentially successful strategy is to underline and confirm the social norms and pressure from peers that these consumers are subject to. A perhaps more controllable strategy would be to also increase these consumers' personal involvement level.

CONCLUSIONS

A substantial number of studies show that consumers value the ethical aspects in a product, that attitudes are quite favorable, but also that behavioral patterns are not fully consistent with attitudes. In this study, we explored the attitude – behavioral intention gap by analyzing consumer attitudes and purchase intention for sustainable dairy products, which have several attributes to which a consumer pays attention: price, brand, convenience, package, ingredients, taste, and, maybe, also the presence of a credence attribute like sustainability. We investigated the impact of individual and situational characteristics, more specifically involvement, perceived availability, perceived certainty, PCE, values, and social norms, on consumers' attitudes, and intentions towards sustainable products.

The absence of a measure of actual behavior and the limited and specific sample are obvious limitations of our study. Actually, the utilization of a

fictive brand/product and the experimental study design prohibited us from measuring real behavior. However, we argue that behavioral intention and behavior are strongly, though never perfectly, correlated. Our specific interest was devoted to the previous link in the decision-making process, namely the link between attitudes and behavioral intention. We also acknowledge that in real life purchase situations, a lot of other factors can influence the decision-making process of sustainable products. In addition to other individual characteristics, situational and product-related factors will obviously play an important role and require attention in future research.

The findings of this study yield public policy and marketing recommendations for stimulating sustainable food consumption among the young, who can reasonably be assumed to constitute the main market of sustainable food products in the future. This study provides a first glance at the complex decision-making process towards sustainable products by investigating some of its important influencing factors. Individual characteristics like involvement with sustainability, certainty with respect to sustainability claims, and perceived consumer effectiveness have a significant positive impact on attitude towards buying the products, which also correlates strongly with intention to buy. Low perceived availability of sustainable products explains why for some consumers intentions to buy remain low, although their attitudes might be positive. For other consumers, experiencing social pressure from peers (social norm) explains intentions to buy, despite rather negative attitudes. Linking values as specified in the value theory of Schwartz (1992) with intention to buy sustainable products shows that universalism and power significantly differed between respondents with low and high attitudes. Furthermore, this study shows that more sustainable and ethical food consumption can be stimulated through raising involvement, PCE, certainty, social norms, and perceived availability. Most importantly, this study demonstrated that some of these key determinants, namely involvement, perceived availability, and perceived consumer effectiveness, can be successfully influenced through communication efforts and the provision of information, which is an effort that can be taken up by any stakeholder involved with sustainable food chains.

APPENDIX

Schwartz List of Values (1992)

Power: social status and prestige, control or dominance over people and resources

○ Social power (control over others, dominance)
○ Wealth (material possessions, money)
○ Social recognition (respect, approval by others)
○ Authority (the right to lead or command)
○ Preserving my public image (protecting my "face")

Achievement: personal success through demonstrating competence according to social standards

○ Ambitious (hardworking, aspiring)
○ Influential (having an impact on people and events)
○ Capable (competent, effective, efficient)
○ Intelligent (logical, thinking)
○ Successful (achieving goals)

Hedonism: pleasure and sensuous gratification for oneself

○ Pleasure (gratification of desires)
○ Sexuality (a satisfying sex life)
○ Enjoying life (enjoying food, sex, leisure, etc.)
○ Spoil oneself (doing pleasant things)

Stimulation: excitement, novelty and challenge in life

○ An exciting life (stimulating experiences)
○ A varied life (filled with challenge, novelty, and change)
○ Daring (seeking adventure, risk)

Self-direction: independent thought and action- choosing, creating, exploring

○ Freedom (freedom of action and thought)
○ Self-respect (belief in one's own worth)
○ Creativity (uniqueness, imagination)
○ Independent (self-reliant, self-sufficient)
○ Choosing own goals (selecting own purposes)
○ Curious (interested in everything, exploring)

Universalism: understanding, appreciation, tolerance, protection for the welfare of all people and for nature

○ Equality (equal opportunity for all)
○ A world at peace (free of war and conflict)
○ Unity with nature (fitting into nature)
○ Wisdom (a mature understanding of life)
○ A world of beauty (beauty of nature and the arts)
○ Social justice (correcting injustice, care for the weak)

○ Broad-minded (tolerant of different ideas and beliefs)
○ Protecting the environment (preserving nature)

Benevolence: preservation and enhancement of the welfare of people with whom one is in frequent personal contact

○ Mature love (deep emotional and spiritual intimacy)
○ True friendship (close, supportive friends)
○ Loyal (faithful to my friends, group)
○ Honest (genuine, sincere)
○ Helpful (working for the welfare of others)
○ Responsible (dependable, reliable)
○ Forgiving (willing to pardon others)

Tradition: respect, commitment and acceptance of the custom and ideas that traditional culture or religion provide the self

○ Respect for tradition (preservation of time-honored customs)
○ Moderate (avoiding extremes of feeling and action)
○ Humble (modest, self-effacing)
○ Accepting my portion in life (submitting to life's circumstances)
○ Devout (holding to religious faith and belief)

Conformity: restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms

○ Politeness (courtesy, good manners)
○ Self-discipline (self-restraint, resistance to temptation)
○ Honoring of parents and elders (showing respect)
○ Obedient (dutiful, meeting obligations)

Security: safety, harmony, and stability of society, of relationships, and of the self

○ Sense of belonging (feeling that others care about me)
○ Social order (stability of society)
○ National security (protection of my nation from enemies)
○ Reciprocation of favors (avoidance of indebtedness)
○ Family security (safety for loved ones)
○ Healthy (not being sick physically or mentally)
○ Clean (neat, tidy)

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