Consumer driven supply chains: the case of Dutch organic tomato

F. Anastasiadis[1*], Y.K. van Dam[2]

(1. *International Hellenic University, School of Economics and Business Administration, 57001 Thermi, Greece;*

2. *Wageningen University, Marketing and Consumer Behaviour Group, Postbus 8130, 6700 EW, Wageningen, The Netherlands*)

Abstract: Supply chain management refers to the efficient integration of various processes involved in turning resources into consumer products.   Effectiveness of the supply chain is more easily understood in terms of Value Chain Management, and the integration of processes that turn resources into consumer value.   The current paper reports two studies into the value chain of organic produce in The Netherlands.   The paper combines two different research approaches to study which consumer motives and values are the main drivers of organic consumption.   In a qualitative laddering (N=72) study, three distinct groups of motives were identified.   These motives are centred around hedonic, benevolent, and universalist values.   In a quantitative survey (N=1453), the importance of naturalness and environmental friendliness as primary driver for organic was confirmed.   The study reconfirms earlier findings that health and taste are important motives driving organic food consumption, and that next to this environmental friendliness and naturalness are important drivers.   More fundamentally, the consumption value of organic food is strongly related to social and ethical principles and beliefs.   By committing itself to superior ethical performance the organic supply chain could create a competitive advantage that is not easily copied by competing products.

Keywords: organic food, consumer, supply chain, the Netherlands

1   Introduction

Various factors have contributed to the development of organic agriculture, the most important of which being the need for healthy food, the pursuit of a better environment and the uncertainty of the conventional agriculture.   The main principles of organic farming are as follows:

i) it is an ecologically, economically and socially responsible way of farming,

ii) it provides an enduring supply of safe and healthy food and fibers, with the least possible losses of nutrient and energy, and

iii) it provides the least possible negative environmental impacts, and it respects the integrity of

plants, animals and life sustaining soil (Van Bruggen, 2002).

In The Netherlands, organic agriculture has been growing rapidly in the last decade.   The share of organically cultivated area in 2008 was 2.61% of the total agricultural land compared to 1.7% in 2002 (Willer and Yussefi, 2010).   Additionally, the value of organic market in The Netherlands in 2008 was estimated approximately at 537 million Euros, while the spending per capita was 2.1%.   However, the Dutch organic agriculture cannot be considered satisfactory compared to other countries of the European Union.   The total value of the European organic market is estimated at approximately 18,000 million Euros, with the largest markets such as Germany and France estimated at 5,850 and 2,591 million Euros, respectively.   Moreover, The Netherlands holds the seventh position (2.1%) among countries with the highest per capita spending with Denmark (6.7%) being the first, followed by Switzerland (4.9%) and Austria (5.3%) (Willer and Yussefi, 2010).

One of the main bottlenecks that have been identified to explain the stalling conversion to organic agriculture is the lagging consumer demand for organic produce. Thus, the entire supply chain (SC) that fulfils this demand perceives a misleading message, resulting in limited development of the sector.   This study will contribute to understanding (the comparative lack of) Dutch consumer demand for organic produce by investigating the motives underlying this demand. The basic objective is to understand consumer product knowledge and motivations with respect to organic products.   In other words, this research focuses on the consumers' beliefs towards organic products and the factors that influence their decisions on whether or not to purchase organic agricultural products.   This knowledge is essential because it can provide a rough estimation on the parameters that are significant for the consumer and in this way a suitable consumer oriented marketing strategy/managerial implications can be effectively applied.

2   Prior research

Supply chain management refers to efficient integration of several processes such as sourcing and logistics management, as well as coordination and collaboration among all SC stakeholders, including the customers.   This collaborative role is of prominent importance in order to obtain a viable competitive advantage for every actor of the organic food SC (Naspettiet al., 2011). The main reasons for the less than satisfactory performance of the organic food SC are lack of information flow resulting in a lack of alignment between supply and demand (Kottila and Ronni, 2008; Smith and Marsden, 2004).   Furthermore, the kind of information generated at the consumers' level could vary, and this information could reach the various elements of the SC either directly or indirectly.   Hence, the structure of the SC should be mapped, and the required information should be specified for each actor in the chain (Anastasiadis and Poole, 2007).   Key concept in this process is identifying the motives behind any purchase decision regarding organic food.

The globally dominant motive for buying organic food is related to health issues.   In addition to these globally dominant health motives various additional motives are found.   Which motives are found depends on consumer's culture and type of product, but also on the methods (sampling, analysis) employed in the study (Botonakiet al., 2006; Chang and Zepeda, 2005; Chryssochoidis, 2000; Chryssochoidis and Krystallis, 2005; Fotopoulos and Chryssochoidis, 2001; Essoussi and Zahaf, 2008; Zanoli and Naspetti, 2002).   Several key themes with respect to organic food consumption were identified by Hughner et al. (2007) including: (i) health and nutritional concerns, (ii) superior taste, (iii) concern for the environment, (iv) food safety, (v) animal welfare, (vi) support of the local economy, (vii) wholesomeness,   (viii)   nostalgia,   and   (ix) fashion/curiosity.

Beginning with consumer culture, First and Brozina (2009) tested in several European countries the influence of cultural dimensions vis-à-vis different motives, confirming the importance only of individualism and assertiveness.   Moreover, a nationwide exploratory survey in Greece illustrated the hierarchy of factors related to purchase decisions of a group characterized as "aware-users" of organic products; 1st personal health (i.e. vitamins and nutrition), 2nd food quality (i.e. appearance, taste), 3rd exploratory buying behavior (i.e. consumers reading labels, seeking info), 4th environmental sensitivity (i.e. recycled packaging) and 5th price sensitivity of organic versus conventional products (Fotopoulos and Krystallis, 2002).   Concerning specific types of products, studies on organic dairy (McEachern and McClean, 2002) and organic meat (McEachern and Willock, 2004) showed that Scottish consumers' purchasing motivations were self-interest-centered (i.e. better taste, safer), rather than altruistic.   Nonetheless, comparisons of organic and non-organic food buyers illustrated cultural differences: in Greece motivational and cognitive discriminating differences have been found between these groups (Fotopouloset al., 2003) while in Australia they were basically the same (Chang and Zepeda, 2005).

Concerning the methodological approach, a variety of different methods have been employed to analyze purchase motivations.   Using data from focus groups

and laddering interviews, Padel and Foster (2005) concluded that apart from health, pleasure, environmental issues, and intention to support local economy were also related to organic consumption. Confirmatory factor analysis (Chryssochoidis and Krystallis, 2005) indicated that internal values (i.e. "self-respect" and "enjoyment of life") were the leading incentives behind the purchase of organic products. Health and safety issues as key motives were also reported from Magistris and Garcia (2008) using structural equation modeling, and Idda et al. (2008) with multiple correspondence analyses. Last but not least, Means-End Chain (MEC) theory has been widely used to analyze purchase motivation, suggesting that consumers primarily were aiming at fulfilling individual values and, to a lesser extent, social values (Makatouni, 2002; Zanoli and Naspetti, 2002).

MEC theory is among several theories in motivational psychology so as to understand how consumers value self-relevant consequences of products. Developed in the 1980's and 1990's, MEC provides insight in cognitive and motivational structures of consumers. MEC presupposes a cognitive structure in which consumer knowledge about products and product attributes is related to consumer's self-knowledge through personal consequences leading to valued end-states (Walker and Olson, 1991; Reynolds and Olson, 2000). The main idea behind this is that products are seen as means through which consumers obtain valued ends (Reynolds and Gutman, 1988).

Several developments on the initial MEC theory have been published, focusing on different aspects of the methodology (see e.g. Langbroek and De Beuckelaer, 2007). Specifically, MEC has been defined as a hierarchy of goals-pleasant consequences to be desired or unpleasant consequences to be avoided-a useful way to differentiate respondents' personal goals from values has been examined by Gutman, "Goals are what respondents want and values are why they want them" (Gutman, 1997: p. 558).

By identifying the personal motives of product used by the consumer, the researcher reveals the meaning that consumers implicitly attach to products (Reynolds and Gutman, 1988; Kelly, 1995). The practical application of MEC theory has found its origin in advertising strategy (e.g. Gengler and Reynolds, 1995; Reynolds and Craddock, 1988; Reynolds and Gengler, 1991; Reynolds and Whitlark, 1995; Reynolds and Rochon, 1991; Valette-Florence and Rapacchi, 1991; Reynolds and Gutman, 1988). In the past decade MECs have found wider application in understanding consumer led product design (Grunert and Valli, 2001; Costaet al., 2004), customer satisfaction (Garbarino and Johnson, 2001), stakeholder research (Wong, 2005), food quality and safety (Grunert, 2005), and consumer motivations for purchasing meat (Flightet al., 2003), vegetables (Kirchhoff et al, 2011), genetically modified food(GMO) (Grunertet al., 2001), organic food (Fotopouloset al., 2003) and fair trade products (de Ferran and Grunert, 2007), as well as reasons to resist products (Kuismaet al., 2007).

3   Research methodology

The conceptual framework of this study is based on the definition of SC (Chopra and Meindl, 2006:p. 3): "*All stages involved, directly or indirectly, in fulfilling a customer request includes manufacturers, suppliers, transporters, warehouses, retailers, and customers.*"

The ultimate objective within the SC function is to understand and respond to a customer's request, by offering superior consumer value (McEachern and Schröder, 2004). In order to deliver this superior consumer value, it is necessary to identify which values underlie consumer preference for organic products, and which are the valued benefits that motivate consumers' decisions to purchase these products. The framework allows for a two-step approach of this issue.

Firstly, an exploratory study, by qualitative means, identifying motives/values behind purchase decision of organic food was employed. Secondly, a survey, by quantitative means, aims to validate the first study's findings and strengthen the parameters related to consumers' attitude. Based on the joint results, a well-supported interpretation of the customers' request would serve as a feedback within the entire SC. An illustration of the conceptual framework is given in Figure 1.
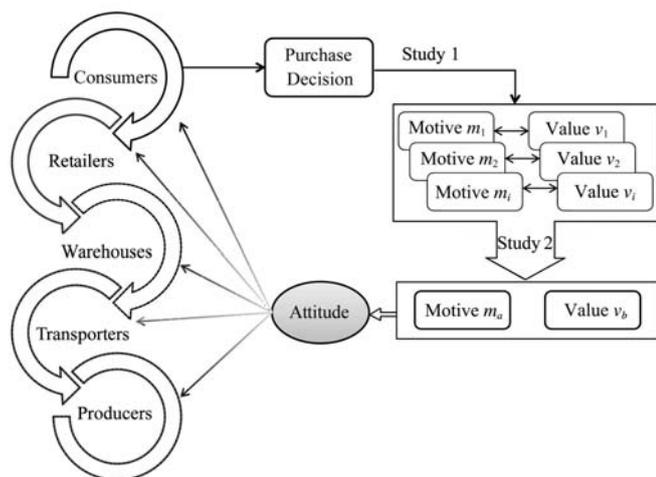
Figure 1   Conceptual framework

3.1   Study 1-exploratory study

The current study applies a laddering approach to analyze the MECs of Dutch consumers in order to reveal the meanings attached by consumers to organic food consumption.

3.1.1   Questionnaire

A computer based questionnaire was used as an instrument to administer the laddering task of the respondents.   Computerization adds advantages of rapid data collection and direct (error free) coding without shorting in the results compared to the paper and pencil methods (Russellet al., 2004).   The electronic questionnaire (e-questionnaire) was programmed in Macromedia Authorware-v6 (Adobe Systems Incorporated, United States).   It is simple to use, challenging and allows for an eliciting section of important product attributes/characteristics and the core-laddering questionnaire for the definition of MEC. Information regarding consumer expertise and experience with respect to organic products was collected as well. The data collection was focused on a specific organic product; tomato was selected due to the fact that it is a commonly used product with great availability (organic and conventional) in the market.

As regards to the questionnaire's environment, there is first an introduction and the description of what the respondent is going to do.   After this introduction the e-questionnaire has three main levels.   At the first level the respondent selects personally relevant attributes from a pre-defined list of tomatoes' attributes that is supplied on screen.   In the second level the respondent selects the

consequences that are related to the attributes that were selected.   The attributes were originally selected from the literature (Johanssonet al., 1999), and tested in a pilot survey along with consequences on a convenience sample of Dutch consumers.   The pilot study ascertains that the attributes and consequences in the survey are the most important, while covering a broad range of Dutch consumers' perceptions.   In the third level the respondent selects the values that are related to the consequences selected in the previous level.   Values were supplied from the value domains of Schwartz (1992) value structure (Table 1).   After the main part demographic information is collected.

Table 1   Motivational domains of values

Value	Domain	Description
Self-direction (SDI)	Individualistic	The motivation for this value type is independent thought and action, derived from the need for mastery and control through choosing, creating, and exploring, and interactional requirements of autonomy and independence. It means to be unconstrained by externally imposed limits.
Stimulation (STI)	Individualistic	Stimulation values are related to the need for variety in order to maintain an optimal level of activation and their motivational goals are excitement, novelty, and challenge in life.
Hedonism (HED)	Individualistic	Closely related to stimulation, this value type is described as representing pleasure and sensuous gratification for oneself.
Achievement (ACH)	Individualistic	This domain is defined by the goal of personal success through demonstrating competence according to social standards and thereby obtaining social approval.
Power (POW)	Individualistic	The central goal of power values is the attainment of social status and prestige, control or dominance over people and resources.
Security (SEC)	Individualistic & collectivist	This motivational domain derives from basic individual and group requirements and repre‑sents the goal of safety, harmony, and stability of society, of relationships, and of self.
Conformity (CON)	Collectivist	Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations and norms, this is the defining goal of this value type.
Tradition (TRA)	Collectivist	The motivational goal of tradition values consists of respect, commitment, and acceptance of the customs and ideas that one's culture or religion imposes on the individual.
Spirituality (SPI)	Collectivist	This domain should encompass all those values that represent the attainment of meaning in life and inner harmony through transcending everyday reality.
Benevolence (BEN)	Collectivist	Benevolence values are motivated by the goal to preserve and enhance the welfare of those people with whom one is in frequent personal contact.
Universalism (UNI)	Individualistic & collectivist	This domain's motivational goal consists of the understanding, appreciation, tolerance, and protection of the welfare of all people and nature.

3.1.2   Data collection and sampling

The laddering interviews have been conducted on a group of 72 consumers in the city of Utrecht, which locates in the centre of The Netherlands. All respondents were responsible for their household food purchases and they were asked to volunteer for a computer based study.

3.2   Study 2-quantitative survey

Data from the laddering studies were validated by a quantitative survey. The importance of product benefits was measured by 7-point Likert-type on 10 items, in which the importance of product benefits was stated. These benefits included taste, convenience, price, health, environmental friendliness, animal friendliness, naturalness, waste, fair trade, and local production. Values were measured by Schwartz's short value survey (Stern et al., 1999; De Groot and Steg, 2007). In developing the Value-Belief-Norm framework for explaining environmental behavior, Schwartz's (1992) original 11 values have been redefined and simplified (Stern et al., 1993). The scale consists of 13 items that measure biospheric, altruistic, and egoistic values. Biospheric and altruistic values are generally considered to be related to 'universalism' and 'benevolence'. These redefined values have been validated across different countries (De Groot and Steg, 2007). Measuring these three values is more suitable for survey research and therefore these measures have been adopted in the quantitative study.

Apart from these measures, which are related to the consequence and value level of the MEC study, health concern was also measured by a 10-item scale adapted from Moorman (1990; Van Doorn & Verhoef, 2011; Van Dam & Van Trijp, 2011). Data were analyzed by One-Way ANOVA to inspect whether purchasers and non-purchasers of organic tomatoes differ significantly in values and benefits sought.

3.2.1   Data collection and sampling

Quantitative data were collected on a sample of 1,453 members of the GfK-household panel, as part of a larger survey into sustainable consumption (van Dam and van Trijp, 2011). The GfK panel consists of a representative sample of 6,000 households that daily register all purchases by EAN-barcode registration. Apart from this daily registration of food products, panel-members are periodically approached for additional data collection by surveys in both paper and electronic format. After comparison to the purchase data 857 households that purchased tomatoes were maintained. Organic purchase was measured by analysis of the continuously collected purchase data of the respondents. Purchases over a 20 week interval from November 2008 to March 2009 were coded as certified organic or not. The sample consisted of 90% females, which is a reasonable reflection of the main purchasers of vegetables in Dutch households. Average age of the sample was 50 years old. Out of 857 households 10.5% has purchased organic tomatoes.

4   Results

4.1   Exploratory study

The LADDERMAP software developed by Gengler and Reynolds (1993) was used to derive the implication matrices and relevant hierarchical value map (HVM); the main output of the laddering interviews, which is the characterization of a group of respondents (Reynolds and Craddock, 1988). This map is a graphic representation of the most important attributes, consequences and values, and the links among them choosing a cut-off of five. The choice of a cut-off level is needed in order to reduce the complexity of the map, since the distribution of the cell entries in the implication matrix is usually heavily skewed. The cut-off level gives the minimum cell entry in the implication matrix necessary to be represented as a link in the map. There are no theoretical or statistical criteria to guide the selection of the cut-off level. The choice is normally based on an attempt to compromise between retaining meaningful information on one hand and creating a manageable map on the other (Grunert al., 1995). The lowest level of the map represents the most important attributes, the second level the most important consequences that arise from these attributes and on the top there are the most important values that arise from the consequences.

Additionally, arrows in between show the existing links–from the attribute to consequence and from the consequence to value–and the numbers next to each

arrow represent the frequency of the specific link, thus how important this link is.   In a similar way the thickness of each arrow indicates its importance. Finally, next to each attribute, consequence and value,

there is a number which represents the actual number of respondents (how many from the 72) who have selected at least one time this particular attribute, consequence or value (Figure 2).
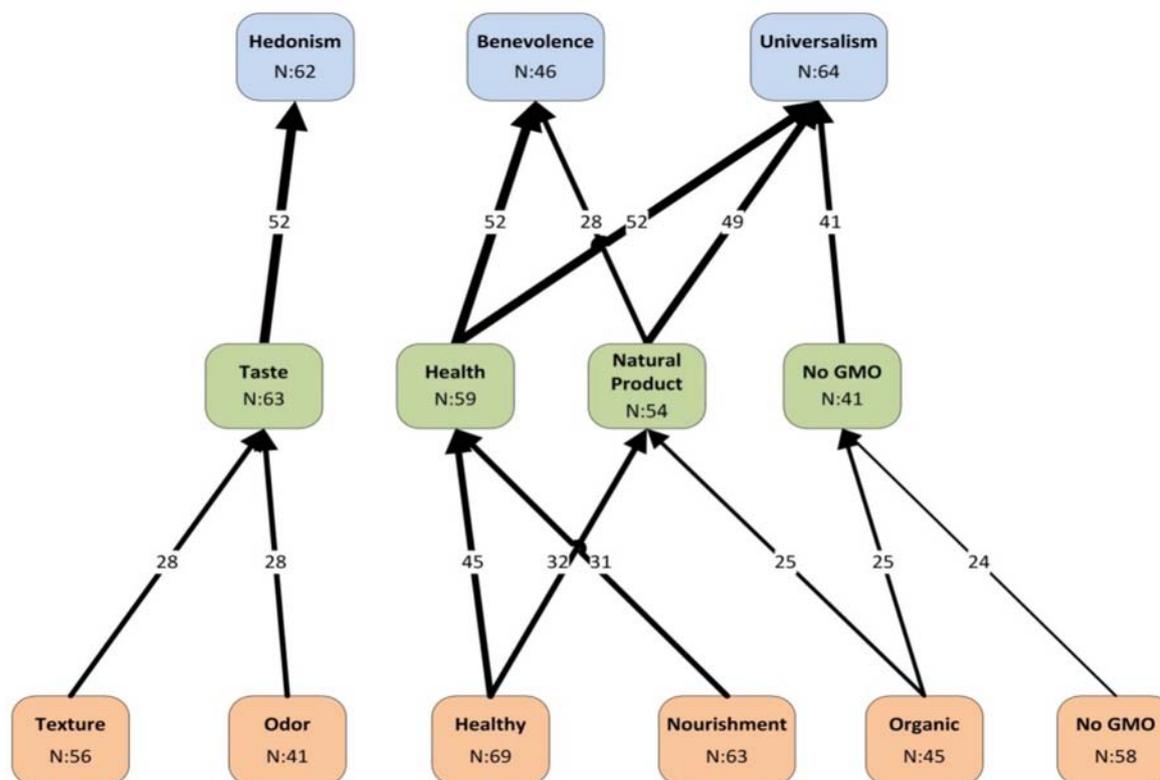
Figure 2   Hierarchical Value Map (cut-off=5)

The HVM shows three distinct MECs.   On the left hand side there is a "*tastechain*" linking the attributes 'texture' and 'odor' to the consequence 'taste' and the value 'hedonism'.   At the right hand side there is a "*GMO chain*", linking the attributes 'organic' and 'not-GMO' to the consequence 'no-GMO' and the value 'universalism'.   In the middle the HVM is dominated by two interlinked chains linking attributes to values 'universalism' and 'benevolence'.   One chain links the attributes 'healthy' and 'nourishment' to the consequence 'health' and the values 'universalism' and 'benevolence'. The other, links the attributes 'healthy' and 'organic' to the consequence 'natural product' and the values 'universalism' and 'benevolence'.   A closer look at some key constructs shows that the attribute 'organic' is linked to two consequences that are equally prominent: 'natural product' and 'no-GMO'.   Furthermore, both of these links are the least prominent at this level of the HVM.   At the consequence level the HVM demonstrates

that the core benefits of organic tomatoes are 'taste', 'health', 'natural product' and 'no-GMO'.

4.2   Results Quantitative Survey

Stated importance of seven product benefits is significantly different between purchasers and non-purchasers.   Purchasers of organic tomatoes consider environmental friendliness, local production, naturalness, and health more important compared to non-purchasers. Non-purchasers in turn consider price more important. Fair-trade and animal welfare – though not related to tomatoes - are also considered more important by purchasers compared to non-purchasers (Table 2).

Apart from confirming the role of "naturalness" in the HVM (Figure 2), this suggests that purchasers of organic tomatoes are driven by general sustainability concerns. As expected from the MEC-analysis, the importance of health is only marginally different between both groups. The importance of taste, like convenience and waste does

not differ between purchasers and non-purchasers, confirming the result in the HVM that taste (in its relation to organoleptic attributes and hedonic values) is not related to the "organic" Means-End Chain. It should be noted that non- GMO was not measured as a benefit, because GMO tomatoes are not available in Netherlands and it was considered not feasible to actively ask for non-GMO as a benefit.

Table 2   Difference in benefits sought, between purchasers and non-purchasers of organic tomatoes

Importance of	F	Sig.	Mean non-purchaser	Mean purchaser
Environmental Friendliness	13.765	0	4.56	5.03
Local production	10.574	0.001	3.91	4.40
Naturalness	8.019	0.005	4.60	4.98
Fair trade	7.441	0.007	4.45	4.83
Price	7.079	0.008	5.61	5.28
Animal Welfare	7.002	0.008	4.59	4.97
Health	6.510	0.011	5.72	5.98
Taste	2.405	0.121	5.89	6.04
Convenience	2.345	0.126	4.71	4.51
Waste	0.633	0.427	4.58	4.69

Finally, the comparison of Values between purchasers and non-purchasers of organic tomatoes shows only a significant difference in Biospheric value orientation (Table 3). Both groups did not differ in health concern ($p = 0.28$). All things considered, results from the quantitative survey confirm that core elements of the HVM (Figure 2) are more important for purchasers compared to non-purchasers of organic tomatoes.

Table 3   Comparison of Values between purchasers and non-purchasers of organic tomatoes

Value score	F	Sig.	Mean non-purchaser	Mean purchaser
Bioshperic	8.803	0.003	4.35	4.77
Altruistic	1.267	0.261	5.00	5.14
Egoistics	0.212	0.645	2.06	2.01

5 Discussion

Certain aspect of the motivations behind organic food purchase could be utilized in different ways by stakeholders in the organic food industry. First of all, retailers could associate the suggested consumers' attitude to a clear demand indication and reformulate their marketing mix accordingly. By incorporating consumer insights into their strategy, retailers could align both products and prices to customer's requests. Information with respect to product attributes, such as naturalness, should be utilized for adjusting the positioning of organic food products. Furthermore, demand indication of the organics category will enable a more effective collaboration with all the organic SC actors, thus minimizing total SC response time and out of stock on the shelf.

In addition, at the wholesale level, sustainability concerns should be adapted, aiming at greening key processes like storage, transportation and packaging. Energy management systems within the warehouses will make the storage more environmental friendly while significantly reduce costs. In a similar way, effective use of the most appropriate transportation mode will not only reduce the mileage and CO_2 emissions, but also will reduce the cost. For instance, wherever appropriate, sea transportation should be the primary mode, followed in turn by rail, highways and air. Green packaging is the most obvious aspect towards the attempt to adopt customers' sustainability concerns. Marketers and manufacturers should focus on reduce packaging, use environmental friendly materials (e.g. biodegradable materials) and recycle whenever it is not possible to reuse packaging.

Finally, producers by accessing directly – and not through the SC – information regarding the customer's request could be able to enhance those product attributes that are important for the end user of their produce. For example, more environmental friendly techniques could be adopted. By comparing what the regulations are suggesting and consume energy in a more sustainable manner, it would increase the green image of their products. Overall, the entire organic food SC could improve its efficiency by aligning specific demand aspects with different supply functions, based on insights from the consumers' perspective.

6 Conclusions

There are three main outcomes from the current research. Firstly, a key finding is that organic food

purchasers are basically driven by generic sustainability concerns such as environmental friendliness and naturalness.   Secondly, the study confirms previous findings (e.g. Essoussi and Zahaf, 2008; Zanoli and Naspetti, 2002) that health is an important motivation for purchasing organic produce.   Thirdly, taste and hedonic motivation with respect to organic food consumption, eventually is not as significant as suggested initially by the exploratory study.   As a result, a clearer picture regarding which motives are the main drivers in the Dutch organic SC, could be drawn.   The fundamental characteristic of the refined consumers' profile is strongly related to basic social and ethical principles and beliefs, and to typical consumer behavior (i.e. care about health).   Thus, organic food purchasers do not just follow a current trend; on the contrary, they have a clear philosophy with strong grounds.

Over and above, the key conclusion of the current study is the shifting from the Supply Chain Management concept to Value Chain Management and eventually, highlighting the need to move to more customer-based strategies.   The significance of the fundamental findings of this study, e.g. consumers' sustainability concerns, should lead upper management not only to consider "greening" their supply chains from a holistic perspective, but also aim to gain competitive advantages by creating added value in every supply chain's activity they are "greening".   Focusing on Value Chain Management and being consumer-based could increase the competitive positioning of organic produce.   Organic produce offers consumers the joint values of hedonism (personal indulgence), as well as benevolence and universalism (self-transcendence).   These values can be satisfied by the combined benefits of taste, health and ethical soundness.   Supply chains that convincingly create those values for consumers are rewarded by reaping added value from consumers.

Finally, this study sheds light on areas of further research, which are mainly derived from the limitations of the current study: i) to apply the conceptual framework at a set of organic products, ii) to validate implications by researching SC actors and iii) to expand this research to more countries.   Obviously, the contribution of such an attempt towards an integrated and greener food SC is conclusive.

Acknowledgements

References

Anastasiadis, F. and N. Poole.   2007.   Supply Chain Inefficiencies in Greek Organic Food Industry: the Role of Information Flows.   Adding Value to the Agro-food Supply Chain in the Future Euromediterranean Space, the 103rd EAAE Seminar.   Barcelona.

Botonaki, A., K. Polymeros, E. Tsakiridou, and K. Mattas.   2006.   The role of food quality certification on consumers' food choices.   *British Food Journal*, 108(2): 77.

Chang, H. S. and L. Zepeda.   2005.   Consumer perceptions and demand for organic food in Australia: Focus group discussions.   *Renewable Agriculture and Food Systems*, 20(3): 155-167.

Chopra, S. and P. Meindl.   2006.   *Understanding the supply chain, supply chain management: strategy, planning and operation*, Prentice Hall.

Chryssochoidis, G.   2000.   Repercussions of consumer confusion for late introduced differentiated products.   *European Journal of Marketing*, 34(5/6): 705-722.

Chryssochoidis, G. and A. Krystallis.   2005.   Organic consumers' personal values research: Testing and validating the list of values (LOV) scale and implementing a value-based segmentation task.   *Food Quality and Preference*, 16(7): 585-599.

Costa, A. I. A., A. Dekker, and W. M. F. Jongen. 2004. An overview of means-end theory: potential application in consumer-oriented food product design. *Trends in Food Science & Technology,* 15(7-8): 403-415.

de Ferran, F. and K. G. Grunert. 2007. French fair trade coffee buyers' purchasing motives: An exploratory study using means-end chains analysis. *Food Quality and Preference*, 18(2): 218-229.

De Groot, J. I. M. and L. Steg. 2007. Value orientations and environmental beliefs in five countries. *Journal of Cross-Cultural Psychology*, 38(3): 318-332.

Essoussi, L. H. and M. Zahaf. 2008. Decision making process of community organic food consumers: an exploratory study. *Journal of Consumer Marketing*, 25(2): 95-104.

First, I. and S. Brozina. 2009. Cultural influences on motives for organic food consumption. *EuroMed Journal of Business*, 4(2): 185 - 199.

Flight, I., C. G. Russell, I. Blossfeld, and D. N. Cox. 2003. From sensory attributes to marketing hooks: using laddering to understand consumer perceptions of red meat. *Food Australia*, 55(9): 418-424.

Fotopoulos, C. and G. Chryssochoidis. 2001. Factors affecting the decision to purchase organic food. *Journal of Euromarketing*, 9(3): 45 - 66.

Fotopoulos, C. and A. Krystallis. 2002. Purchasing motives and profile of Greek organic consumer: a countrywide survey. *British Food Journal*, 104(9): 730-765.

Fotopoulos, C., A. Krystallis, and M. Ness. 2003. Wine produced by organics grapes in Greece: using means-ends chains analysis to reveal organic buyers' purchasing motives in comparison to non-buyers. *Food Quality and Preference*, 14: 549-566.

Garbarino, E. and M. S. Johnson. 2001. Effects of consumer goals on attribute weighting, overall satisfaction, and product usage. *Psychology & Marketing*, 18(9): 929-949.

Gengler, C. E. and T. J. Reynolds. 1993. *Laddermap: a software tool for analyzing laddering data*. Camden, New Jersey: Means-End Software.

Gengler, C. E. and T. J. Reynolds. 1995. Consumer understanding and advertising strategy-analysis and strategic translation of laddering data. *Journal of Advertising Research*, 35(4): 19-33.

Grunert, K.G. 2005. Food Quality and Safety: consumer perception and demand. *European Review of Agricultural Economics, 32(3): 369-391*

Grunert, K. G., S. C. Grunert, and E. Sorensen. 1995. *Means-end chains and laddering: an inventory of problems and an agenda for future research*. MAPP working paper 34, Aarhus School of Business(Centre for Market Surveillance, Research and Strategy for the Food Sector).

Grunert, K. G., L. Lahteenmaki, N. A. Nielsen, J. B. Poulsen, O. Ueland and A. Astrom. 2001. Consumer perceptions of food products involving genetic modification-results from a qualitative study in four Nordic countries. *Food Quality and Preference*, 12(8): 527-542.

Grunert, K. G. and C. Valli. 2001. Designer-made meat and dairy products: consumer-led product development. *Livestock Production Science*, 72(1-2): 83-98.

Gutman, J. 1997. Means-end chains as goal hierarchies. *Psychology and Marketing*, 14(6): 545-560.

Hughner, R. S., P. McDonagh, A. Prothero, C. Shultz, and J. Stanton. 2007. Who are organic food consumers? A compilation and review of why people purchase organic food. *Journal of Consumer Behaviour*, 6(2-3): 94-110.

Idda, L., F. A. Madau, and P. Pulina. 2008. *The motivational profile of organic food consumers: a survey of specialized stores customers in Italy*. XIIth Congress of the European Association of Agricultural Economists - EAAE 2008 Congress. Ghent (Belgium), August 26-29, 2008.

Johansson, L., A. Haglund, L. Berglund, P. Lea, and E. Risvik. 1999. Preference for tomatoes, affected by sensory attributes and information about growth conditions. *Food Quality and Preference*, 10(4-5): 289-298.

Kelly, G. A. 1995. *The Psychology of personal constructs*. New York, W.W.Norton & Co, Inc.

Kirchhoff, S., H. Smyth, J. Sanderson, Y. Sutlanbawa, and K. Gething. 2011. Increasing vegetable consumption: a means-end chain approach. *British Food Journal.* 113(8): 1031-1044.

Kottila, M. R. and P. Ronni. 2008. Collaboration and trust in two organic food chains. *British Food Journal*, 110(4/5): 376 - 394.

Kuisma, T., T. Laukkanen, and M. Hiltunen. 2007. Mapping the reasons for resistance to Internet banking: a means-end approach. *International Journal of Information Management*, 27(2): 75-85.

Langbroek, I and A. D. Beuckelaer. 2007. Between-method convergent validity of four data collection methods in quantitative means-end-chain research. *Food Quality and Preference,* 18(1):13–25

Magistris, T. D., and A. Gracia. 2008. The decision to buy organic food products in southern Italy. *British Food Journal*, 110(9): 929-947.

Makatouni, A. 2002. What motives consumers to buy organic food in the UK? Results from a qualitative study. *British Food Journal*, 104(3/4/5): 345-352.

McEachern, M. G. and P. McClean. 2002. Organic purchasing motivations and attitudes: are they ethical? *International Journal of Consumer Studies*, 26(2): 85-92.

McEachern, M. G. and J. A. Schröder. 2004. Integrating the

voice of the consumer within value chains: a focus on value-based labeling communications in the fresh-meats sector. *Journal of Consumer Marketing* 21(7): 497-509

McEachern, M. G. and J. Willock. 2004. Producers and consumers of organic meat: a focus on attitudes and motivations. *British Food Journal*, 106(7): 534-552.

Moorman, C. 1990. The effects of stimulus and consumer characteristics on the utilization of nutrition information. *Journal of Consumer Research*, 17(3): 362-374.

Naspetti, S., N. Lampkin, P. Nicolas, M. Stolze, and R. Zanoli. 2011. Organic supply chain collaboration: a case study in eight EU countries. *Journal of Food Products Marketing*, 17(2-3): 141-162.

Padel, S. and C. Foster. 2005. Exploring the gap between attitudes and behaviour: Understanding why consumers buy or do not buy organic food. *British Food Journal*, 107(8): 606-625.

Reynolds, T. J. and A. B. Craddock. 1988. The Application of the Meccas model to the development and assessment of advertising strategy–a case-study. *Journal of Advertising Research*, 28(2): 43-54.

Reynolds, T. J. and C. Gengler. 1991. A strategic framework for assessing advertising-the animatic vs finished issue. *Journal of Advertising Research*, 31(5): 61-71.

Reynolds, T. J. and J. Gutman. 1988. Laddering theory, method, analysis, and interpretation. *Journal of Advertising Research*, 28(1): 11-31.

Reynolds, T. J. and J. C. Olson. 2000. *Understaing consumer decision making: the means-end approach to marketing and advertising strategy.* Mahwah (NJ): Larence Erlbaum

Reynolds, T. J. and J. P. Rochon. 1991. Means-end based advertising research-copy testing is not strategy assessment. *Journal of Business Research*, 22(2): 131-142.

Reynolds, T. J. and D. B. Whitlark. 1995. Applying laddering data to communications strategy and advertising practice. *Journal of Advertising Research*, 35(4): 9-17.

Russell, C. G., I. Flight, P. Leppard, J. A. V Pabst, J. A. Syrette, and D. N. Cox. 2004. A comparison of paper-and-pencil and computerised methods of "hard" laddering. *Food Quality and Preference*, 15(3): 279-291.

Schwartz, S. H. 1992. Universals in the Content and Structure of Values: Theoretical Advances and Empirical Tests in 20 Countries. *Advances in Experimental Social Psychology*. P. Z. Mark, Academic Press. Volume 25: 1-65.

Smith, E. and T. Marsden. 2004. Exploring the 'limits to growth' in UK organics: beyond the statistical image. *Journal of Rural Studies*, 20: 345-357.

Valetteflorence, P. and B. Rapacchi. 1991. Improvements in means-end chain analysis- using graph-theory and correspondence-analysis. *Journal of Advertising Research*, 31(1): 30-45.

Van Bruggen, A. 2002. *Organic Agriculture*. Wageningen University.

van Dam, Y. K. and H. C. M. van Trijp. 2011. Cognitive and motivational structure of sustainability. *Journal of Economic Psychology*, 32(5): 726-741.

Van Doorn, J. and P. C. Verhoef. 2011. Willingness to pay for organic products: differences between virtue and vice foods. *International Journal of Research in Marketing*, 28(3): 167-180

Walker, B. A. and J. C. Olson. 1991. Means-end chains-connecting products with self. *Journal of Business Research*, 22(2): 111-118.

Willer, H. and M. Yussefi. 2010. *The World of Organic Agriculture. Statistics and Emerging Trends 2010.* Bonn Germany, International Federation of Organic Agriculture Movements (IFOAM).

Wong, B. 2005. Understanding stakeholder values as a means of dealing with stakeholder conflicts. *Software Quality Journal*, 13(4): 429-445.

Zanoli, R. and S. Naspetti. 2002. Consumer motivations in the purchase of organic food: A means-end approach. *British Food Journal*, 104(8): 643-653.