THE EFFECTS OF VALUE TRANSFORMATION AND TREND OF SUSTAINABLE DEVELOPMENT ON THE DOMESTIC FOOD CONSUMPTION

SUMMARY OF Ph.D. THESIS

GEORGINA RÁCZ

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1   BACKGEOUND, RESEARCH GOALS

Trends of consumer behaviour are formed by values in several aspects, which are reflected by lifestyle, purchasing behaviour and food consumption behaviour of the individual. Since the end of '80s results of social investigations pointed out that, the status fortifying and demonstrative aspect of consumption have been getting stronger. So the changes of buying decisions are not based on the social stratums, with its conventional meaning, any more, but it represents the values of the individual through the growing effect of subject. Hence values, expressing the subjective judgements of consumers, are the most precise predictors of long term social changes.

Nowadays the concept of sustainable development is the most significant megatrend, which reminds people of the dangers of consumer society and the necessity of a conscious lifestyle to reduce the defects of the waster way of life. According to the definition of sustainable development it represents a social level. Hence the appearance of sustainability based purchasing motivations requires the spread of the idea of sustainable consumption, which can be defined on individual level. Nowadays the mentioned process is significantly characterised by the behaviour of LOHAS (lifestyle of health and sustainability) consumers, because this group takes into consideration the effect of the selected goods/services on environment, health and social justice through them buying decisions. According to the international literature this form of behaviour has been appeared in several markets (for instance fashion, communication), but the strongest impact of this behaviour appeared in food industry. Parallel with them sophisticated product selection comes into view the demand for the certified information, so it is probable that in the viewpoint of buying decision the information search method is getting more important through the practice of purchasing behaviour.

In addition to the above mentioned data the relevancy of my research theme is reinforced by the fact that there are not any sources in the domestic literature, which characterize the behavioural features of the Hungarian LOHAS consumer, but it is certified that the representative consumer trends of sustainability have also appeared separately in Hungary (for example environmental consciousness, health consciousness, ethical values) (Horváth et al., 2005; Hofmeister Tóth et al. 2010; Gulyás 2008; Törőcsik 2007). To predict the wider social changes, on the basis of these processes, it becomes necessary to explore the domestic sustainable value based lifestyle segments, and to model them food purchasing behaviour highlighted the information search stage. According to the above I defined my basic hypothesis as follows: *by the effect of the sustainable consumption based trend the consumer group that characterize the LOHAS behaviour have also appeared in Hungary, the system of the factors which form the segment's behaviour can be summarised in a single model and this system can be handled both on theoretical and practical level.*

Because there are neither any statement list to discover the domestic LOHAS segment, nor a theoretical model that summarize influencing factors of lifestyle and information search behaviour of consumer groups connected to sustainability. According to my basic hypothesis I set five research goals. Based on these goals fourteen hypothesis and four new scientific results were defined (in detailed: Chapter 2. Materials and methods; Sub-chapter 3.4. New scientific results):

G_1: *Exploring the connections between value concepts and the behaviour of consumer groups committed to sustainable consumption, describing the main characters of the sustainability based food consumption behaviour.*

G_2: *Organising the affecting factors of the information search behaviour that precede the food purchasing decision, and summarising the influencing effects of the food labels on the consciousness purchasing decisions.*

G_3: *Based on the introduced theoretical models creating an own model to characterize the information search behaviour throw the food purchasing decisions of the most committed domestic consumer group to sustainability.*

G_4: *Examining the appearance of the values which represent the LOHAS's hybrid lifestyle among the Hungarian population and developing a value list that is suited to measure this specific behaviour.*

G_5: *Scrutiny of the theoretical model.*

G_{5a}: *Verifying the theoretical model, constructing the research model.*

G_{5b}: *Analysis of the connections among the elements of the research model and becoming acquainted with affected structure of the cognitive and influencing factors on the lifestyle and information search behaviour.*

According to the first and second objects the literature review of my dissertation formed a dual structure. To reach the goals of sustainable development which represent a social level, I introduced the principal affecting role of values on consumer behaviour and defined the validity of the concept of sustainable consumption through the connection between culture and values. I summarised the main domestic and international trend of consumer behaviour where I highlighted those processes which connected to LOHAS lifestyle (ethical behaviour, health consciousness, environmental consciousness). The effect of value changing was investigated in the viewpoint of food consumption behaviour, where I also summarised those food categories which could be related to the trend of sustainable consumption among domestic circumstances (G_1). In the second part of the literature review I evaluated the information search behaviour, namely the affecting role of food labels on food purchasing decisions was introduced, where I summarised the marketing functions, the legal regulation and the influencing factors of information search (G_2). The necessity of this structure is enforced by the fact that there are only a few studies (mainly in domestic literature) investigate the information search behaviour. Moreover, according to the mainstream food consumption trends, these publications do not have a standard system.

The structure of my study made it possible that I discuss the models of trend specific behaviour and construct my own theoretical model, which unifies the affecting system of the influencing factors on the lifestyle and on the information search behaviour with the adaptation of the logic system of Pender's Health Promotion model (1987) and Grunert-Will's information search model (2007) (G_3). In my basic hypothesis I defined that the exploration of practical contexts are very important for me, so it becomes necessary, my theoretical model is going to be tested in the viewpoint of sustainability committed consumer groups. Before validation I had to verify the appearance of the LOHAS segment in Hungary, and form a statement list that fit for the measure of LOHAS lifestyle. With the aid of a consecutive qualitative and quantitative (national representative sample) researches I could investigate the lifestyle of the domestic LOHAS consumer, where I also had opportunity to validate my value list (G_4). The results of quantitative research made it possible that I carried out further investigations among LOHAS consumers, hence the scope examination of information search behaviour of consumer groups committed to sustainability and the justification of my theoretical model. For the sake of the above, according to the opinion of Hungarian LOHAS consumer, I investigated the validity of factors summarised by my model among domestic circumstances, where lifestyle based filter questions were used (G_{5a}). Then I evaluated the characteristics of information search behaviour of 'Trend followers', who represents the potential market of sustainable food products, with the method of quota sampling. The quotas were defined according to socio-demography characteristics of the representative data collection, which provided the possibility to also assess results from the point of those consumers who are committed to sustainability and consider belonging principles in their food purchasing decisions to a less extent. The latter mentioned consumers represented a control group in the viewpoint of the information search behaviour influenced by the trend of sustainable consumption (G_{5b}).

Within my research goals fourteen research hypotheses were set up, which made the followings possible: my results can be applied both theoretical and practical in the scientific branch of marketing; to describe the changing consumption samples affected by the trend of sustainable consumption; to predict the long term social changes. I would like to highlight my settings in connection with the need of harmonized activity of social organizations, which shows the transformation of the marketing approach, where the changes of attitude and the wider social interests come to the front despite of sales promotion.
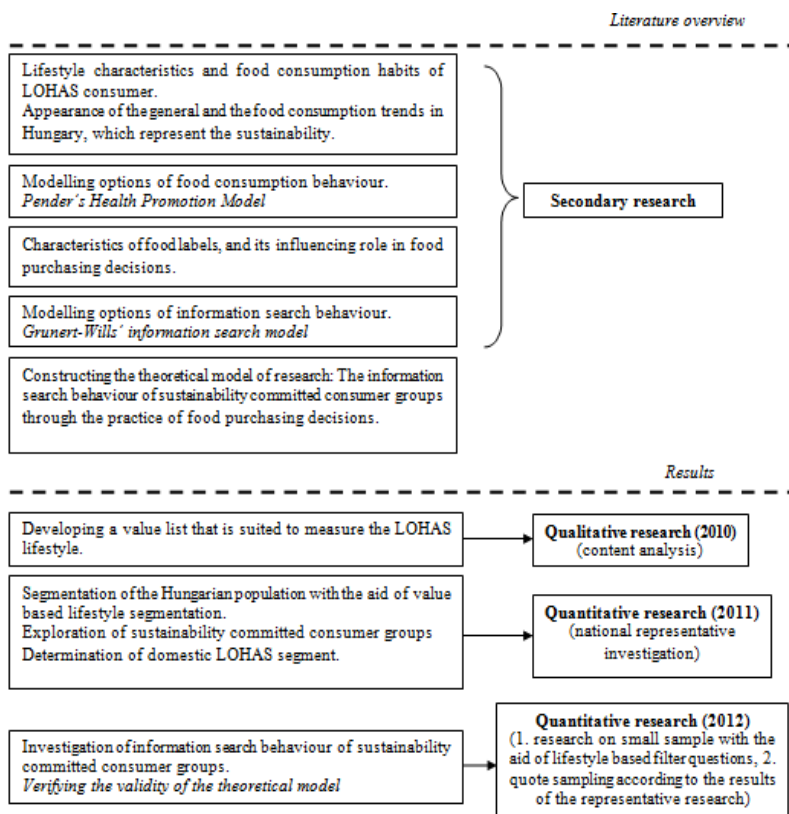
2 MATERIALS AND METHODS

Figure 1: The logical structure of my research
Source: Edited by the author, 2012

Before I introduce my results it is necessary to present the structure of my research and define the most important research methods that are used through my empirical work. To explore the information search behaviour of sustainability committed consumer groups I followed the general, qualitative-quantitative, data collecting structure in my research (Figure 1). The examinations, according to their goals, formed a doubled structure: (1) exploration of the characteristics of LOHAS in Hungary, (2) description of the information search behaviour of sustainability committed consumer groups.

Both mentioned cases two investigations were conducted, hence, as we can see in the sub-passages bellow, in the first part *document analysis and questionnaire-based data recording* (national representative sample) were applied. In the second part I investigated the information search behaviour with the aid of *standardized questioner*, where *lifestyle based filter questions* were used to define the first sample and the *method of quote sampling* was applied to determine the second sample (Figure 1).

2.1 Exploration of LOHAS lifestyle characteristics in Hungary

2.1.1 *Determination of value dimensions of the domestic hybrid lifestyle with the method of content analysis*

I carried out qualitative research in the term of September-October 2010, where the so-called women's magazines were in focus. Through the examination I assumed the follows: one part of the domestic opinion leader media follows the characteristics of the international behaviour trends and discusses issues in the written press that target the interests of future LOHAS consumers. The frequency with which contents in connection with a characteristic of the hybrid lifestyle appear could refer to how open and interested a target group of a magazine is in consumer behaviour of LOHAS. This research refers to my fourth goal (G_4), where I defined my hypothesis according to Table 1 (H_1-H_2). The roles of these assumptions were to prepare my national representative research.

Content analysis was chosen as research method, since it is suitable for discovering the frequency of certain contents in the selected magazines. In the case 144 articles of chosen the newspapers have been examined by the research method of content analysis and the content was assessed along three *main categories*: *health consciousness, environmental consciousness* and *ethical values*. Within the main categories, sub-categories, that based on their contents were able to be assigned to one of the main categories, were identified.

In the analysis two *side-categories* were also examined: *authentic values* and *individualism*. The appearance of these two side-categories received special attention since based on the content of the examined magazines, they show whether Hungarian consumers have a demand for products/services that reflect hybrid values or not.

The analysis has been carried out primarily among women's magazines, where I focused on the general women's magazines with a wider range of topics, and I excluded papers with targeted contents.

Magazines examined are circulated in a printed form on a monthly basis, except for one (*Nők Lapja*). Magazines chosen also have websites with a search box above the printed version. According to these criteria were chosen that 8 magazines (Elle, Joy, Cosmopolitan, Marie Claire, ELITE, Éva Magazin, Glamour, Nők Lapja) of which articles served as a basis of the study

2.1.2 *Examination of the validity of value dimensions represents the domestic hybrid lifestyle on a national representative sample*

According to the results of the qualitative research I prepared my quantitative investigation that based on a statement list with 50 contents. The mentioned list was used at the value based lifestyle segmentation of domestic consumers. In the questioner the following five factors were defined: *environmental consciousness* (10 statements), *health consciousness* (8 statements), *ethical behaviour* (12 statements), *authentic values* (10 statements), *individualism* (10 statements). The opinion of the members of the sample, in connection with the statements above, were measured with five-scaled interval scales, where the two ends got the meaning as follows: 1: hardly true, 5: completely true.

Based on the literature conclusions in connection with the characteristics of hybrid lifestyle and the results of qualitative research, this quantitative investigation also connected to the fourth research goal (G_4), where I set up three assumptions (H_3-H_5) (Table 1).

The data was collected in the frame of Omnibus 2011 survey prepared by Cognative Ltd. in September 2011 by querying 1015 people, who over 15 years old. Sampling was carried out with the method of strict random walking with the help of stratified sampling based on settlements and counties using 111 sampling points. The members of the sample were chosen with the method of birthday key, where people with the nearest next birthday were questioned. According to Microcensus 2006 of KSH data were weighted with the technique of multi-component weighting. Weights were prepared according to the marginalities of gender, age, qualification, region and settlements, hence the sample is representative in the viewpoint of the mentioned variables among Hungarians over 15 years old. The recorded and cleaned data were analysed with the statistical software SPSS 16.0. Missing values were replaced with sample mean in every case. Through data processing beside descriptive statistics bivariate and multivariate correlation assessments were also performed where the methods of cross table, variance, factor and cluster analysis (technique of k-means) were applied. I completed the factor analysis (because of the standardization of means and standard deviations) with the investigation of skewness of factor scores. Through cluster analysis I took into account the meaning of F values, which show the force of the variables in the formation of clusters, so explore those factors that characterized the most homogenous groups (Székelyi-Barna, 2008).

It is important to highlight that 25 factors were examined from the qualitative research based 50 statements. The factor analysis consider it necessary to reduce the variables in the mentioned degree, because only the 25 variables could make a factor structure suited for the criteria of this technique. This fact also refers to that nowadays the appearance of sustainability committed lifestyle in Hungary has not been defined in a completely clear way. Among the values of domestic consumers there are only a few characteristics which connected to the LOHAS lifestyle. Along with the developed factors reliability analysis was carried out to establish further research. Hence I processed the Cronbach-alfa indexes to explore the inner consistency of the determined dimensions.

Hypothesis of researches exploring the domestic LOHAS segment

Table 1

Research goal	Research hypothesis	New scientific result	Method of data collection	Analysing method
G₄: Examining the appearance of the values which represent the LOHAS's hybrid lifestyle among the Hungarian population and developing a value list that is suited to measure this specific behaviour.	**Qualitative research** *H₁: With the examination of general women's magazines can be defined those categories, which could identify the LOHAS lifestyle characteristics among domestic circumstances.* *H₂: It is possible to determine those magazines which can be highlighted in the viewpoint of LOHAS themes, hence the lifestyle features of the targeted readers refer to LOHAS characteristics.* **Quantitative research** *H₃: The qualitative research based dimensions (health consciousness, environmental consciousness, ethical values, authentic values, and individualism) – referring to hybrid lifestyle – can be separated among domestic consumers, and with the aid of these factors can be formed a statement list suited for the measure of sustainable consumption among domestic circumstances.* *H₄: With the method of value based lifestyle segmentation it is possible to explore the sustainability committed consumer groups, where the LOHAS also appears.* *H₅: The ethical values are the most important factors to separate the LOHAS group.*	*G₂: Developing a value list that is suited to measure the LOHAS lifestyle. According to the mentioned list, developing and characterizing sustainable lifestyle based segments among the Hungarian population.*	Qualitative, Document analysis (N=114) Quantitative, stratified sampling with the method of strict random walking (N=1015) Quantitative, stratified sampling with the method of strict random walking (N=1015)	Content analysis Factor analysis, Skewness Cluster analysis Cross-table analysis, variance analysis

Source: Edited by the author, 2012

2.2 Investigation of the information search behaviour of sustainability committed consumer groups

2.2.1 Discussion of the information search behaviour of the domestic LOHAS segment by means of lifestyle based filter question (validation of the theoretical model)

According to the correlations explored by the national representative research in September 2011, an online data collection was performed between 29th February 2012 and 2nd April 2012. The goal of the investigation was to reach my **G₅ₐ** ("validation of the theoretical model") part of my fifth research objective (**G₅**). In connection with this goal I determined one hypothesis (**H₆**) (Table 3).

To reach my objective I applied a standardized questioner (Table 2), and I defined lifestyle based filter questions. The filter questions were preformed on the basis of the data collection in 2011, which made it possible to reach the Hungarian LOHAS consumers. These questions were evaluated with the aid of six-scaled Likert scale by the answerers, and formed as follows: which statement is the most suitable for the sustainable lifestyle based segmentation of the Hungarian population, how much affected the lifestyle of LOHAS consumers by these factors.

The necessity of the online data collection is justified by the small ratio of the target group in Hungary (almost 8% of the domestic society), because this method provided an easier availability in the viewpoint of LOHAS consumers. In this case the snow ball sampling was used to create the sample. During the period of data collection 900 people visited the website of the questioner, but only 30 visitors met the filter requirements. Because of the explorative nature of the research this size of the sample (30 answers) suited me to validate my theoretical model. It is important to highlight that through the analysis only frequencies and univariate statistics were performed, I did not use correlation assessments. At discussion data play roles in only illustration and the indication of the main characters of information search behaviour of consciousness consumer groups.

There are special features of the research questioner: the first and second questions (behaviour factors) measure the perceived utility and risk by consumers, which based on Horváth's (1996) statement list. This character make it possible to explore the changes of the consumer habits depending on the time, hence to investigate utility and risk sensitivity of sustainability committed

consumer groups, and to compare the mentioned process to the results of a national representative sample. Naturally the difference of basis sample means a limit of this comparison.

Structure of the research questioner

Table 2

Factor of the theoretical model	Subject	Questions*	Level of measure
Modifying factors	Demographical characters	Question 26-37.	nominal scale
	Interpersonal influences	Question 4.	nominal
	Situational factors	Question 21. (2 element)	nominal
	Behavioural factors	Question 1. Question 2. Question 16.	interval and nominal interval nominal
Cognitive factors	Sustainable values	Elements of factors (research in 2011) in question 3., 5., 9., 20.	interval
	Activity related effect	Last elements of question 9., 18., and 20.	interval
	Perceived self-efficacy	Questions 3., 5., 9., 20. excluded statements from factor analysis (research in 2011)	interval
	Perceived statues	Question 25.	interval
	Perceived barriers to action	Question 21. (excluded the last two elements)	interval
Information search model	Search and exposure	Questions 6., 17., 19.	nominal
	Perception	Questions 7., 8., 11., 12., 15.	nominal
	Liking	Question 14.	interval
	Understanding and inferences	Question 13.	interval
	Use	Questions 10., 22., 23., 24.	nominal and scale

Source: Edited by the author, 2012

Question 14 also gives opportunity to compare my results to a national representative sample, because it contains statements created by Szakály (eds. 2011), which investigate the liking of food labels (the limitation of difference of basis sample is also valid). Moreover the characteristics of information search behaviour of consciousness consumers can be partly compared by question 4 (Interpersonal influences) to Horváth's (1996) and Szakály's (eds. 2011) investigations. In connection with food labels question 6 and 12 make it possible that my correlations can be partly evaluated in the viewpoint of Horváth's (1996) results.

2.2.2 Evaluation of the information search behaviour of sustainability committed consumer groups with the aid of quota sampling

In the last part of my thesis, to reach my goal G_{5b} (Table 3) I evaluated the information search behaviour of the segment of "Trend followers", which was defined in the national representative research 2011, through the practice of food purchasing decisions. Nowadays the mentioned segment represents the potential market of sustainability committed consumers in Hungary. To examine the characteristic of "Trend followers" I carried out a data collection by the method of quota sampling between 10th May 2012 and 30th June 2012. Quotas of regions, sex and age were defined according to characteristics of value system based lifestyle segments discovered in a 2011 national representative research. According to the barriers of budget the differential and availability factors were the reason of quota selecting. To examine the information search behaviour the same questioner was used as at the online data collection (without filter questions) (Table 2). This gave opportunity to compare the defined behavioural characteristics of LOHAS to the features of "Trend followers", who is the activatable group in the viewpoint of sustainable consumption. During the period of sampling 221 questioners were registered. Based on the quotas the sample was over represented in seven cases and under represented in six cases, hence to improve the spread it was necessary to weight the sample according to the quotas: sex, age and region.

I assumed that conscious groups can be defined primary by lifestyle characteristics, so to examine the sample in terms mean, standard deviation and relative deviation of the data collection 2011 was also considered important, which show that the data, collected by the method of quota sampling, features not only the lifestyle characteristics of "Trend followers". To improve the sample I carried out cluster analysis with the method of k-means. As a result two groups were defined, and the

lifestyle characteristics of "Trend followers" appeared in cluster 2, while cluster 1 reflects the opinion of "Unconcerned" (compare to consumer groups defined in 2011). The appearance of the second group in the sample is not surprising, since based on socio-demographic characteristics the two segments showed similarity during the representative data recording. According to the specific features of the sample the evaluation of my results will be performed in the viewpoint of these two groups, where I am going to answer eight hypothesises (H_7-H_{14}) in connection with my G_{5b} goal (Table 3).

In connection with both samples formed by lifestyle based filter questions and quota sampling the analysis show a triple structure as follows: (1) description of influencing and cognitive factors, (2) examination the factors of information search model, and the connections between these factors and the influencing and cognitive elements, (3) validation of the structure of information search model. Before I introduce my results it is necessary to determine the features of some analysis methods.

As Table 2 shows, among cognitive factors the effect of sustainable values were appraised, which summarize the following factors of the adaptation of Pender's model: benefits, definitions and importance of sustainable consumption. To determine the mentioned factor I used the validated statement combination of sustainable lifestyle dimensions explored in 2011. Take into consideration that with the method of quota sampling and lifestyle segmentation I separated consumer groups along the sustainable values, so to form the dimensions of sustainable lifestyle the factor analysis would not had been suitable. In this case I employed principal component analysis to reduce the factors and validate the mentioned dimensions. Moreover I set as an aim to define whether cognitive or influencing factors play the primary role in the development of conscious lifestyle, and how can be structured the affecting tore of these factors in the viewpoint of information search behaviour. To determine these processes I applied Exhaustive CHAID analysis, which, like CHAID analysis, is not define barriers in connection with the scale and spread of variables. The output of analysis shows a tree structure, where the hierarchy of independent variables depends on the extent to which level they explain the variance of target variable. (Hámori, 2001)

Furthermore, through the examination, all the skewness of scores of principal component, the cross analysis and the cluster analysis were carried out as we could see in sub-chapter 2.1.2. By other analysis the following methods were employed: metric and non-metric variables – two-tailed t-test or variance analysis, metric and metric variables – linear correlation. To define the strengths of connections between non-metric variables *Cramer V*, between non-metric and metric variables *Eta* and between metric and metric variables *Pearson's correlation* were conducted.

Hypothesis of researches aiming the investigation of information search behaviour of sustainability committed consumer groups

Table 3

Research goal	Research hypothesis	Factor of model	Method of data collection/analysis	New scientific results
G_{5a} "*Verifying the theoretical model, constructing the research model.*"	H_6: *The theoretical model is suited to model the information search behaviour of domestic sustainability committed consumer group. It is assumed that the system of cognitive and influencing factors have an effect on both information search behaviour and lifestyle.*	Influencing factors, cognitive factors, factors of information search model	Quantitative, lifestyle based filter questions (N=30)/univariate statistics , frequencies	S_3: *Introducing an own model, so the systematization of the affecting factors of the committed consumer groups to sustainable consumption on food purchasing decision highlighted the information search behaviour. Investigation of the information search behaviour based on multiple factors, determining the critical influencing elements of the behaviour by means of Exhaustive CHAID analysis.*
G_{5b}: "*Analysis of the connections among the elements of the research model and becoming acquainted with affected structure of the cognitive and influencing factors on the lifestyle and information search behaviour.*"	H_7: *There are structural changes in connection with perceived health risks and perceived utilities depending on time, which influencing the food consumption habits of "Trend followers" to the highest degree.*	Influencing factors: behavioural factors	Quantitative, quota sampling (N=221)/factor and cluster analysis, cross table analysis	S_4: *The exploration of the structural changes of perceived health risks and utilities in connection with food consumption, depending on the time and the effect of sustainability.*
	H_8: *"Trend followers" is characterising an information starving behaviour, which can be followed by the searched and perceived labels by the mentioned group, the demand for enlarging food labels, and by the liking of labels on food packaging.*	Information search model: search and exposure, perception , liking	Quantitative, quota sampling (N=221)/cross table analysis, variance analysis, two-tailed t-test	
	H_9: *"Trend followers" identify the objective meaning of the different labels in the most cases, they have wider knowledge about those.*	Information search model: understanding and inferences	Quantitative, quota sampling (N=221)/ variance analysis, two-tailed t-test	
	H_{10}: *Typically "Trend followers" use the food labels through food purchasing decisions, and this group is able to pay a premium prise for information aiding their decisions suited for their values.* H_{11}: *In connection with sustainable food labels the most reliable qualifying organizations would be NGOs according to the opinion of answerers.*	Information search model: use	Quantitative, quota sampling (N=221)/cross table analysis, variance analysis, two-tailed t-test	S_3: *Introducing an own model, so the systematization of the affecting factors of the committed consumer groups to sustainable consumption on food purchasing decision highlighted the information search behaviour. Investigation of the information search behaviour based on multiple factors, determining the critical influencing elements of the behaviour by means of Exhaustive CHAID analysis.*
	H_{12}: *The wide information search behaviour (according to the logical structure of Grunert-Wills model) appears in connection with examined factors preferred by "Trend followers" to the highest degree, which verifies the primary effect of lifestyle on food purchasing decision.*	Information search model; Likelihood of engaging in sustainable behaviours (adaptation of Pender's model)	Quantitative, quota sampling (N=221)/frequencies , cross table analysis, variance analysis, two-tailed t-test	
	H_{13}: *The cognitive factors have a direct affecting role on both information search behaviour and formation of sustainable lifestyle, while influencing factors manipulate these processes indirectly.* H_{14}: *Nowadays in the viewpoint of food purchasing can be highlighted interpersonal influences and behavioural factors from influencing elements and sustainable values, perceived self-efficacy, perceived barriers to action from influencing factors as the most affecting features.*	Influencing factors, cognitive factors, information search model (the logical structure of theoretical model)	Quantitative, quota sampling (N=221)/Exhaustive CHAID analysis	

Source: Edited by the author, 2012

3   RESULTS

3.1   Results of the literature review

3.1.1   *Changes of food consumption samples reflecting to sustainability, modelling opportunities*

According to the literature, Hungarian food consumer habits have recently been influenced by several trends such as trend of convenience, health and wellness, environmental consciousness, search for experience, ethical consumption and time consciousness (Reynolds-Zayak 2004, Kirig-Lützler 2007, Horváth et al. 2005). At the same time, the idea of sustainability is totalized in the behaviour of LOHAS (Lifestyle of health and sustainability) consumers.

According to the segmentation model of NMI (Natural Marketing Institute) LOHAS is characterized by as follows: the most significant elements of their attitude are the environment, society, and socially responsible management. They are early receivers, and able to influence the opinion, consumer decisions of their families and friends. They are less price sensitive than others and regularly loyal to brands (French- and Rogers, 2006). It is important to note, that LOHAS is committed to the principles of sustainability, which determines their basic values. However, they are not a clear follower of sustainability. Lifestyle and aesthetic are equally important values, they do not refuse hedonism (Kreeb et al., 2008). According to the facts above, LOHAS developed a hybrid lifestyle which is a mixture of different characteristics (for instance search for health and enjoy, individualist but not ego-centric). The strongly value-oriented lifestyle of the new post-modern ethical consumer is characterised by these partly controversial features (Schulz, 2008).

Moreover NMI explored that, parallel with the expansion of LOHAS trend, the food attributes and the manufacturing /growing methods have been becoming more and more dominant decision criteria through the practice of food and beverages purchasing (for example no artificial colours, locally grown, gives to charitable causes) (French-Rogers, 2005). LOHAS consumer is characterized by sophisticated product selection which results in higher purchasing risk and demand for trustworthy information. Food industries supposed to make the whole manufacturing method transparent, which gives the next factors a higher importance: food labels (for instance list of attributes, nutrition value, trademarks); CSR activity of firms, which represents the ethical behaviour for the consumers (French-Rogers, 2005).

There are not any sources in the domestic literature, which characterize the behavioural features and the ratio of the Hungarian LOHAS consumer. According to the international literature, it can be established that, the appearance of LOHAS consumer group – and parallel with it the spread of the principles of sustainable consumption – demands primary the improving of consciousness consumption. In connection with the mentioned process the hybrid lifestyle of LOHAS characterises three main consumer behaviour trends: health consciousness, environmental consciousness, ethical consumption. These trends have been appeared among Hungarian population in all probability (Horváth et al., 2005; Berke, 2004; Dudás, 2006; Hofmeister Tóth et al. 2010; Gulyás, 2008). According to Törőcsik (2007) these trends are featured by consumption of different food types. In the viewpoint of sustainability can be highlighted the followings of Törőcsik's trends: health, science and environment, responsibility (Table 4).

As a summary we can say that, the others centred attitude featured by LOHAS lifestyle – true, it is characterising just a little part of the society – has appeared also in Hungarian food consumption. It is reflected by for example among the motivations of bio food consumption, where besides the importance of individual's health becoming more and more essential the ethical factors (protect the environment, protect the animals). This tendency can be also pointed out in connection with the consumption of domestic food products (supporting the local farmers, take environmental issues into consideration). These findings give a higher validity and necessity of the examination of LOHAS concept among Hungarian circumstances.

Furthermore we can say that, the role of information become more and more crucial for the consciousness consumer groups in connection with the early section of purchasing process. Hence, consumers, as same as LOHAS group, requires transparency about food products. The literature review outlined that, this demand for information can be satisfied by food labels. In this process the

independent qualifying organisations get a highlighted role to reduce the uncertainty of consumers and them buying risks caused by lack and authenticity of information.

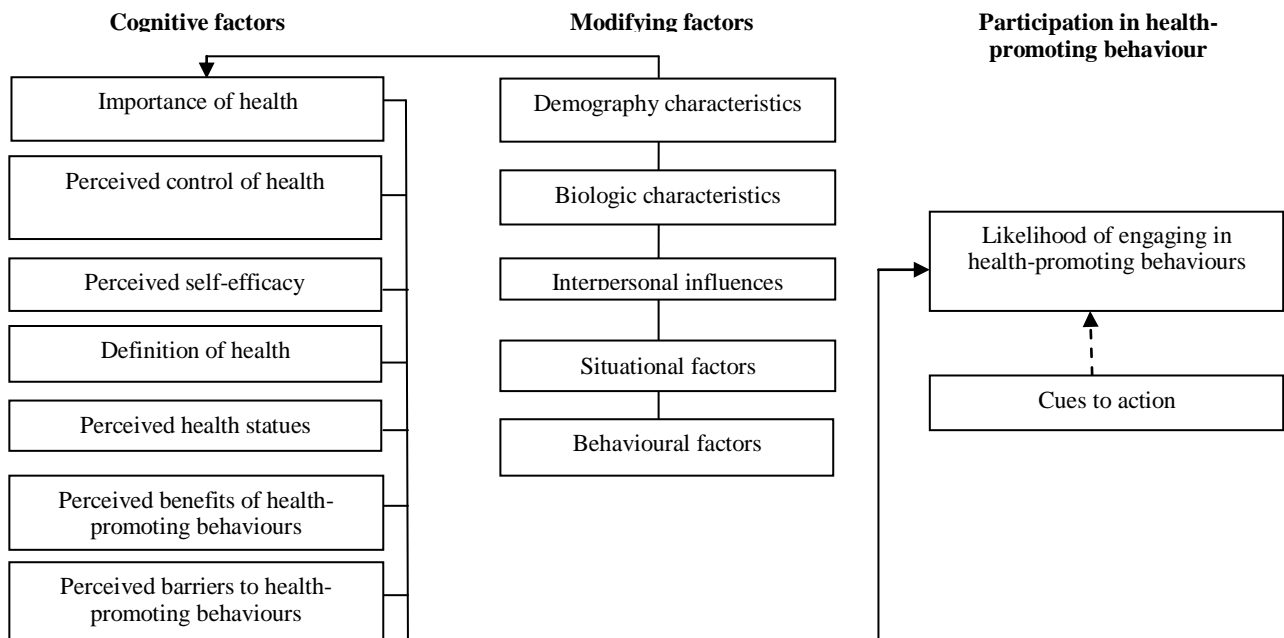**Food types outlining the appearance of sustainable consumption in Hungary**

Table 4

Food consumption trend	Foof type	Primary purchasing motivation	Domestic representatives
Health, science	Functional foods Bio fooods	Protection of individual's health, enjoying value Protection of individual's health, environmental considerations	Szakály Z. (2008), Szakály et al (2008) Steigervald (2009), Fürediné Kovács (2009), Szente (2005), Hofer (2010)
Environment, responsibility	Local food, Slow food, Authentic food Fair Trade, Ethical shopping	Food safety considerations, enjoying value, support of local farmers, environmental considerations, conventional considerations Social considerations	Hámori és Horváth (2009), Szigeti et al. (2009), Szakály (szerk., 2010) Falusi (2008), Barsi Szabó (2005)

Source: Edited by the author, 2012

In the 1970s '80s the so-called value based models of consumer behaviour were appeared in food consumption marketing, which give a high importance to value based lifestyle in connection with the formation of consumer segments (Lehota, 2001a). We can class the following among the mentioned model types: Grunert's Nutrition orientated lifestyle model (Grunert et al., 1996), the Health orientated lifestyle model structured by Abella and Heslin (1994), or Pender's Helath Promotion model (Pender, 1987).

As far as I know, recently there is not any model that would summarise the influencing factors and logical structure of value orientated lifestyle and food purchasing decision process highlighted the section of information search and evaluation of LOHAS consumer group. So according to literature review, I assumed that Pender's Health Promotion model (Figure 2) could provide a strong basic to define the characteristics of mentioned group, and explore them behavioural features in a better way.

Figure 2: Pender's Health Promotion model
Source: Pender, N. F. (1987): Health Promotion in Nursing Practice, 58.p.

The Health Promotion model was developed by Nola Pender in 1987. The model defines the formation of health orientated lifestyle, and summarise factors aiding the improvement or reservation of well-being. Moreover, it is important to note that, the model identify those behavioural factors of the individual which focus on the configuration of health-promoting lifestyle.

This long-term point of view suit for the main goal of LOHAS consumer group: to change the attitudes globally on the basic of the principals of sustainability through the practice of sustainable consumption. It is also essential that the model gives a highlighted importance to the affecting role of individual values, culture and information (Guedes NG et al., 2009), which also have a strong influence on the consumption sample of the examined consumer group. But it is a deficiency that, in the viewpoint of the model adaptation into LOHAS group, according to the inner logic of the model the self-orientated motivations come before the social-orientated motivations.

3.1.2   *The influencing role of food labels on food purchasing decisions, modelling opportunities*

We could see in subchapter 3.1.1., in the viewpoint of the value suited food purchasing decisions of sustainable committed consumers food labels play an important role. Because these kinds of marks transform credence characteristics of goods into information search features (Anderson, 1994; Caswell and Mojduszka, 1996), hence the manufacturing process has become more and more transparent, the circulation of high qualified and safe products have been provided (McCluskey - Jill, 2000). It is also essential, in connection with the affecting role of labels on food purchasing decisions, that, consumers can recognise the objective meaning of food marks, so the labels perform their educative and teaching functions (Cowburn – Stockley, 2005).

Dörnyei and Agárdi (2010) divided the labels on food packaging into the following three dimensions with the method of multidimensional scaling (exploring research): prior knowledge, interest, and reliability (Table 5).

Dimensions of food labels

Table 5

Dimensions	Endpoints of dimensions	Concrete food label
Prior knowledge	1) spontaneous choice (prior knowledge is not necessary) 2) conscious choice (prior knowledge is necessary)	1) „2in1"; „high vitamin and minerals content"; „Hungarian product"; „healthy";"good before date" (it appears only in this dimension) 2) „nutrient content"; „GM free"; „omega3 fatty acids"
Interest	1) self interest 2) common interest 3) non-committal	1) „with antioxidants"; „immunizing"; „light"; „with sweetener"; „new formula" 2) „environmentally friendly packaging"; „fair trade"; „guarantee assurance by the state"; „avoid animal testing"; 3) „brand"; „expiry date"; „ nutrient content"
Reliability	1) reliable 2) unreliable	1) „calorie panel"; „light"; „design" 2) „ guarantee assurance by the state"; „ high vitamin and minerals content"; „fair trade"

Source: Based on Dörnyei-Agárdi, 2010 edited by the author

According to the results above we can say that, significantly those food marks require high prior knowledge and produce consumer uncertainty about reliability of products, which among the consumer trends, introduced in subchapter 3.3.1., can be identified as trend of sustainable consumption. Moreover, it is important to note that, the preference of these labels characterise the dimension of common interest in general, which is one of the main lifestyle feature of LOHAS consumer. Hence dietary labels (because of self interest, these labels requires less prior knowledge and these are more reliable) and some factor of ingredient labels (according to the Hungarian circumstances it can represented by bio character) can be connected to trend of *health consciousness*, at the same time functional, ingredient and manufacturing marks reflect to the trend of *environmental consciousness and responsibility*.

The appearances of mentioned characteristics of food labels are very important, because these prove the emergence of those products in Hungary, which targeting the consciousness consumer groups featured by special demands. To reduce the uncertainty it is necessary to know the exact influencing role of labels on food purchasing decisions and the causes of no using of marks.

It is assumed that, the information search behaviour of the domestic sustainability committed segment can be modelling with the examination of affecting role of food labels on food purchasing behaviour. In the professional literature there are several models in connection with the influencing role of food labels on purchasing decisions (Table 6). Common features of the models are that,

these concentrate only on a separated factor of the consumer behaviour (for instance attitude, perception, learning).

Models of the influencing role of food labels on purchasing behaviour

Table 6

Name of model	Theoretical system	Representers
Theory of costs and benefits	Consumer uses food labels while the realized benefit is higher than the cost of information search.	Stigler, 1961 Nelson, 1970 Avery, 1996
Theory of the costs of information search	There are three types of costs during label using: collection, calculation and interpretation.	Russo, J.E. – Staelin, R. – Nolan, C.A. – Russell, G.J. –Metcalf, B.L., 1986 Guthrie, J.F. – Fox, J.J. – Cleveland, L.E. – Welsh, S., 1995
Prospect theory	How estimate the consumes the bad and good end of the choice.	Kahneman – Tversky, 1979 Burton – Andrews, 1996
The psychological model of information processing activities	It examines three factors: attention, obtaining of attention and coding. The label using is affected not only by attitude and preferences, but the information decoding ability of consumers.	Cole – Gaeth, 1990; Cole – Balasubramian, 1993; Moorman, 1990; Moorman, 1996
Elaboration Likelihood Modell (ELM)	It defines the connection between information processing and attitude. The central way of attitude transformation – conscious collection (appearance of cognitive structure), the peripheral way of attitude transformation – the attitude change is subconscious (highlight the role of apparently unimportant labels).	Bauer – Berács, 2003 Davies – Wright, 1994; Wright, 1997 Petty, R.E. – Cacioppo, J.T. – Schumann, D.,1983
Characteristics theory	Marks are information and at the same time they are product features too. The consumer choices based on the utilities of product features. Grouping of these characteristics: search, experience, credence.	Lancaster, 1991; Nelson, 1970 Darby – Karni, 1973 Bodenstein – Spiller, 1998 Caswel – Mojduszka, 1996 Anderson, S.P. – de Palma, A. – Thisse, J.- F., 1992

Source: Based on Dörnyei, 2010a edited by the author

In my opinion the system of the influencing factors of food labels in connection with purchasing decisions are summarised in the widest way by Grunert-Wills' (2007) model (Figure 3). The structure of the model based on secondary information about food labels of professional literature, and as a result the mentioned authors built a unifying model, which combines *consumer decision making process with attitude formation and change*, so joins classic step models of consumer decision making to effects models of communication.
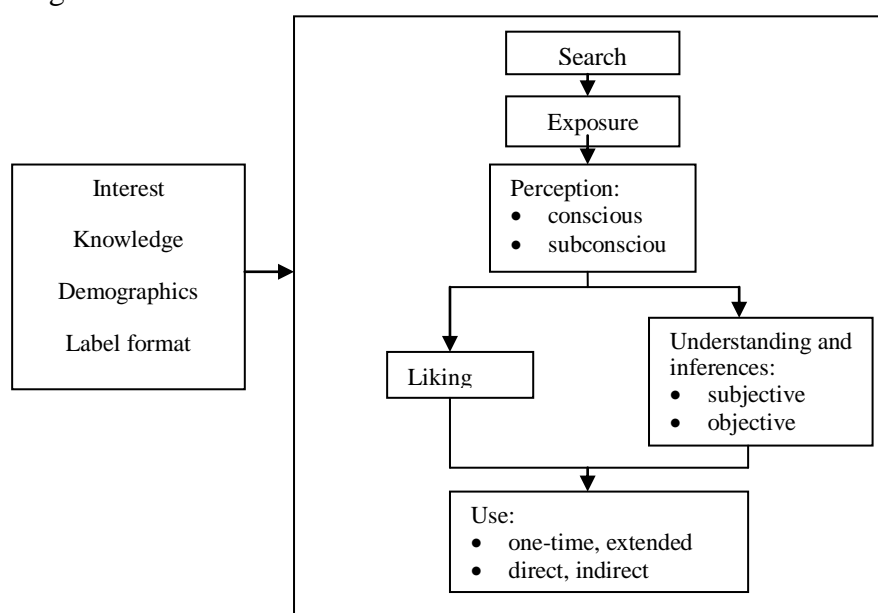

Figure 3: Influencing role of food labels on purchasing decisions
Source: Grunert, K., G. – Wills, J., M. (2007): A review of European research on consumer response to nutrition information on food labels. J Public Health. Nr. 15. 387.p.

3.1.3 *Building the theoretical model of the research*

According to the facts above, we can say that LOHAS consumer in all certainty attributes a highlighted importance to food labels through purchasing decision process. Based on literature review a logical model can be structured, which can characterise the sustainable lifestyle orientated information search behaviour of LOHAS consumer through the practice of food purchasing decisions (Figure 4) with the combination of Pender's Health Promotion model (Figure 2) (because its long term approach and the essential role of individual values in the formation of lifestyle –find more in subchapter 3.1.1) and Grunert-Wills' information search model (Figure 3), and with the modification some factors of the mentioned models. In my view it is necessary to change the following elements compared to the original model structures: (Figure 4)

- Pender's model: withdrawal of biological characters from the analysis. In my opinion this factor is irrelevant in the viewpoint of research; it has rather sanitary aims (for example BMI calculation). The effects of health statues of individual are measured by the being and type of lasting illnesses within demographical features.
- Adaption of Pender's model: I summarized the importance of health, definition of health, perceived benefits of health factors, on the basis of sustainability, into one group, which is called as sustainable values. In my consideration values can reflect these three factors well, and in this structure it is easier to understand the model in the viewpoint of sustainable lifestyle.
- Pender's model: cues to action do not form separated factor, sustainable values also reflect the original meaning of the mentioned element.
- Grunert-Wills' model: I assume connection between liking and understanding, inferences factors. In my belief with the investigation of this connection can be explored those label formats, which give the most essential support to the recognition of objective meanings.

Theoretical model (G_3), based on above, is structured by the logic follows: (1) parallel with the logical system of Pender's Health Promotion model modifying factors have a secondary effect both on formation of sustainable lifestyle and information search behaviour, which influencing these elements through the filter effect of cognitive factors; (2) the sustainability committed lifestyle of the individual influences the information search behaviour, hence it results a wider information demand. (3) The conscious food purchasing decision is realized through the defined structure, as an outcome of information search mechanism (Figure 4).
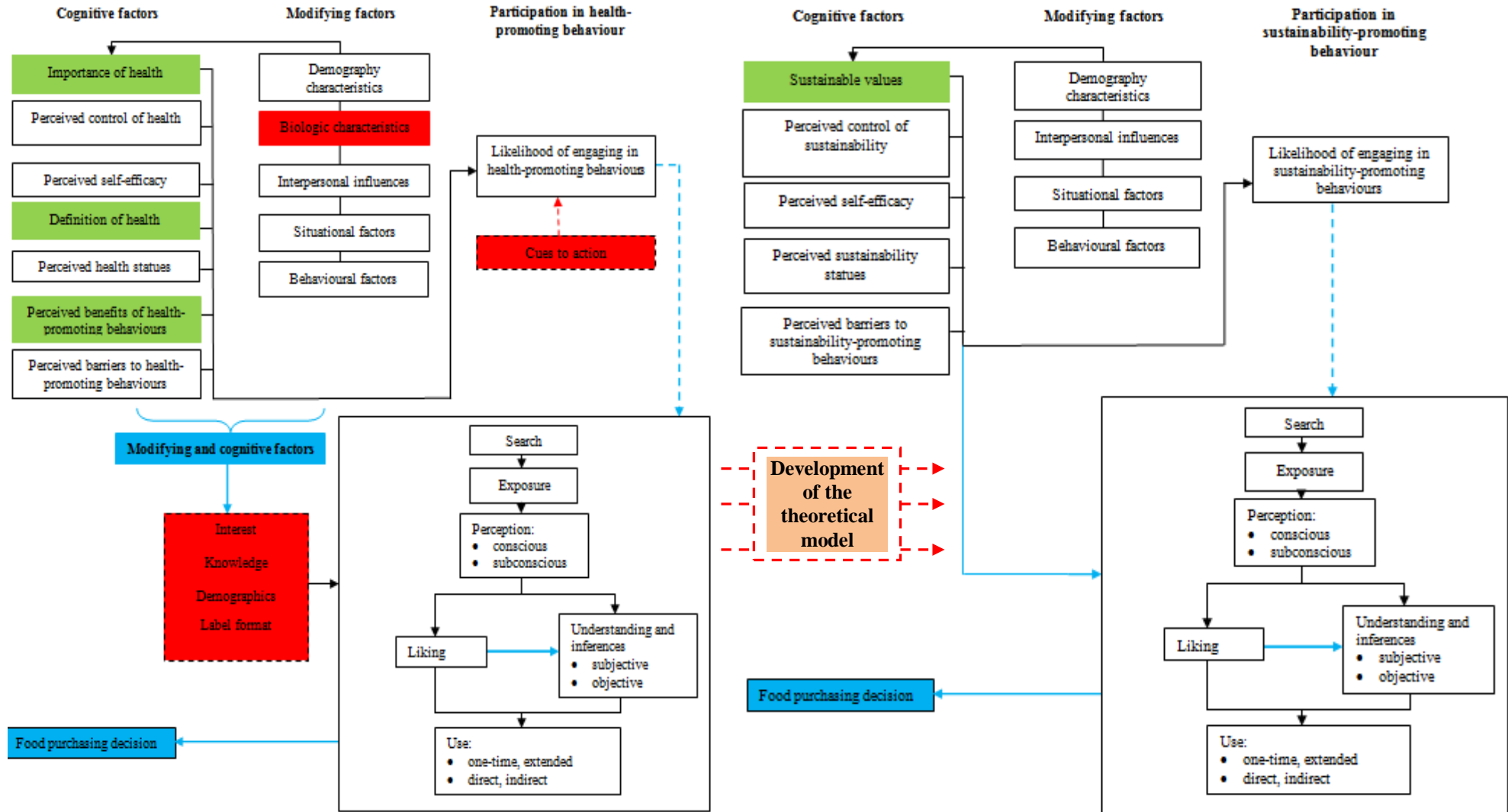
Figure 4: Information search behaviour of sustainability committed consumer groups through the practice of food purchasing
Source: Edited by the author, 2011

3.2 Main results of researches aiming the exploration of LOHAS segment

3.2.1 *Results of qualitative research*

According to chapter "Materials and methods", the qualitative research connect to my fourth goal (G_4). So it outlines the factor of sustainable values of the theoretical model (Figure 4.). As a result I determined three main- and, within those, two side-categories to characterise the hybrid lifestyle of LOHAS consumer. The three main categories represented the following structure: health consciousness, environmental consciousness, ethical values; while the two side categories summarized authentic values and individualism.

The results of qualitative research referred to that, subjects representing the hybrid lifestyle are very popular among the readers of domestic women magazines, because the examined dimensions are regularly published according to the connections in what follows: (G_4, H_1)

- *health consciousness:* food components (vitamins, fats etc.); lifestyle (preventive behaviour, consumption of nature- and bio products ect.); risk sensitivity (health risks, infected food products ect.);
- *environmental consciousness:* lifestyle (recycling, selective waste collection, etc.); environmental problems (climate change, environmental pollution etc.); products (seasonal foods, buying environmental friendly products etc.); methods (conscious education, eco-friendly technology);
- *ethical values:* support (donations, voluntary etc.); social problems (mistreatment of women, consumer society etc.); representatives/methods (conscious child raising, campaigns etc.); rolls of women/men (successful women, fatherhood etc.); consumption (fair trade, buying non-animal tested products etc.); role of companies (charity, work conditions etc.);
- *authentic values:* product statements (knowledge of signs, trademarks etc.); lifestyle (market purchases, respect of traditions etc.); product characteristics (country of origin, natural ingredients etc.),
- individualism: product characteristics (brand, fashion etc.); purchaser characteristics (carrier, self-expression etc.).

Based on the publishing frequency of the themes above, the examined magazines can be classified into a concrete structure. According to this construction the lifestyle characters of domestic LOHAS consumer were outlined, where I used the features of target groups of the examined magazines. In accordance with my result we can say that: (G_4, H_2)

- Nők Lapja and Elle magazines are the main representatives of contents on domestic hybrid lifestyle, since they are present at almost all main- and side-categories.
- Marie Claire places a special emphasis on ethical values, while in terms of environmental consciousness Éva Magazin is also among the leaders.
- Glamour rather shows the two side-categories.
- Contents on hybrid lifestyle appear in Joy, Cosmopolitan and ELITE the least.

It is important to highlight that the examined magazines target similar reader segments in terms of socio-demographic factors (e.g. income above average, middle and high level education, metropolitans, etc.), but there are differences among the lifestyle attributes and profiles of the magazines.

Therefore, examining the lifestyle attributes of these magazines' target group, based on the statements above, the claim is that contents expressing a hybrid lifestyle (primarily Nők Lapja, Elle; secondarily Marie Claire, Glamour, Éva Magazin) targets mainly those women, to whom family, just as self-realization and self-expression have a significant role in their lives. Besides, they live active community life, they search for the new and maintaining traditions as well as spirituality are important to them. All in all, in their everyday lives they consider not only their own interests, but also the impacts of their activities and purchasing decisions on the socio- and eco-environment. Topics discussed in the magazines are also diverse and not only the individual is in focus.

Target group lifestyle characteristics of magazines that give the lowest preference to contents describing the lifestyle of LOHAS consumers concentrate only to the individual and self-realization, individual goals come to the front compared to wider social interests. It also appears in the topics of mentioned magazines, since their common characteristic is that they write about

fashion and stars, more precisely about the latest trends and self-realisation supporting behavioural elements.

Based on the above, one part of Hungarian female consumers has a demand for contents on the LOHAS lifestyle. According to the statements on magazines examined, these consumers are probably prosperous, family-oriented, highly qualified, metropolitan women who live a socially active life, are open to the new, and above self-realisation, traditions and spirituality are also important to them.

3.2.2 Results of qualitative research aiming sustainable value based lifestyle segmentation

Appearance of sustainable values among Hungarian consumers

The validity of the qualitative research based theoretical dimensions, hence the appearance of sustainable values among domestic population were examined with the technique of factor analysis. The results prove that, the value structure referring to hybrid lifestyle can be defined among Hungarian consumers, in which the sustainable values have a highlighted role. According to the results of factor analysis the value structure of the domestic consumers, compared to the original concept, shows several specific features. One of these characteristics is that the health and environmental consciousness values compose a common factor. So these behaviours are strongly connected to each other among the values of Hungarian consumers. The another important feature that is worth mentioning is that the arrangement of ethical values into factors within lifestyle patterns of domestic consumers was based on whether the consumers consider themselves competent from the aspect of the given statement. Hence in the viewpoint of sustainable consumption the value structure of Hungarians can be defined as follows: (**G₄, *H₃***)

Factor 1 – Individualist values (explained variance: 19.9%): Factor 1 summarise those elements, which could represent the individualist behaviour. According to the skewness we can say that the spread of the factor is somewhat skew to the right (Skewness= -0.092), so this dimension is rather characterising the behaviour of Hungarian consumers.

Factor 2 – Values of health and environmental consciousness (explained variance: 19.6%): The second factor defines statements connected to values of health and environmental consciousness. The factor is considerably skew to the right (Skewness= -0.332), so this dimension is strongly affecting the value structure of the domestic population.

Factor 3 – Authentic values (explained variance: 4.8%): The third factor represents the authentic values, which refer to the national engagement and the desire of safety of the consumers. The examination of skewness (Skewness= -0.497) shows that the scores of factor are considerably skew to the right. Hence consumers think this dimension also true to themselves.

Factor 4 – Ethical values (competence values) (explained variance: 3.1%): ethical values (refer to behaviour), which can be identify as the consumers own competence (for instance voluntary, donations) connected to Factor 4. The skewness of spread demonstrates that (Skewness= 0.480) these competence values are not have a strongly effect on behaviour of Hungarian consumers.
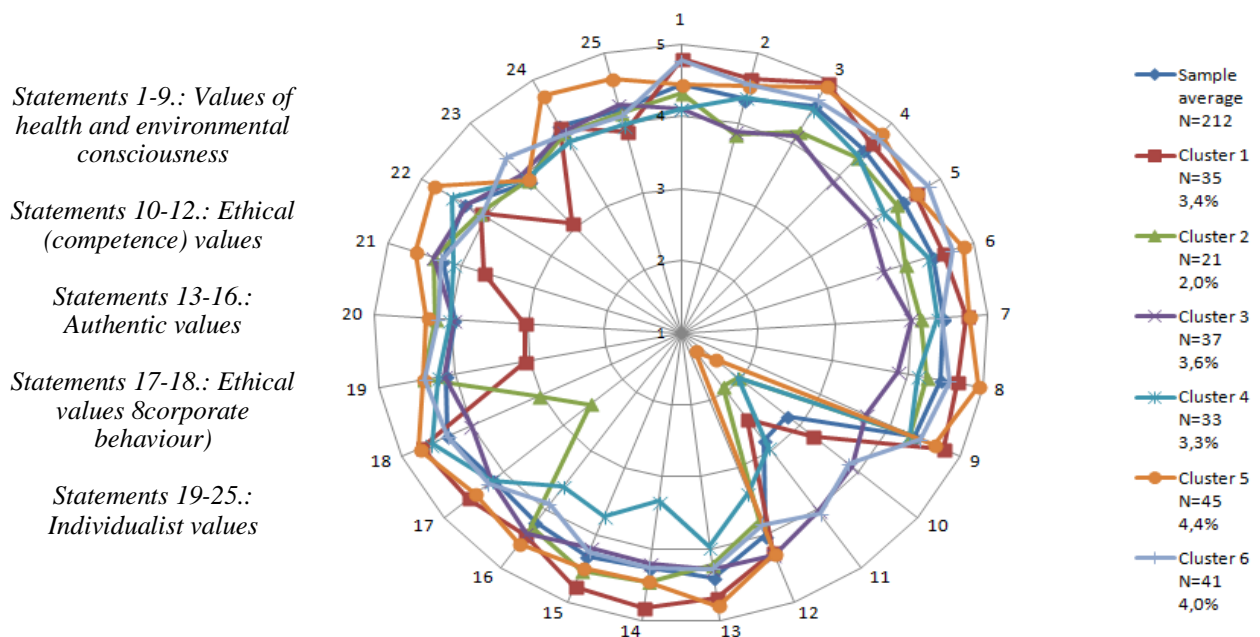
Factor 5 – Ethical values (corporate behaviour) (explained variance: 3.1%): The fifth factor summarize two elements, which characterise the consumer judgements about corporate behaviour. So these ethical values are externals in the viewpoint of consumers, are not connected to them own competences. The skewness of the spread (Skewness= -0.503) indicate that, as we could see at Factor 1., 2. and 3., these dimension is rather influencing the behaviour of the domestic population, so others ethical actions are very important to the Hungarians.

As a summary we can say that factors referring to hybrid lifestyle and sustainability have been separated in the value order of domestic population. The skewness of scores of factors comparing to each other, shows that ethical (competence) values have the weakest effect on behaviour of Hungarian consumer. On the other hand ethical (corporate behaviour), authentic and health and environmental consciousness values are very important to us. Individualism is standing between the mentioned two endpoints, so it is thought to be true less than Factor 2., 3. and 5., but it is much more characterising the behaviour of domestic consumer than Factor 4.

Sustainable values based lifestyle segments

After the factor analysis was performed, a cluster analysis was carried out to create the value-based lifestyle segmentation of Hungarian consumers. With regard to the large number of sample (N=1015), k-means method was use for the analysis. The following groups were specified by the k-means procedure: Cluster 1: Health conscious elderly (17.0%); Cluster 2: Trend followers (21.0%); Cluster 3: Health and environmental consciousness consumers with national commitment (27.0%); Cluster 4: Unconcerned (19.0%); Cluster 5: Disappointed pessimist (16.0%) (G_4, H_4).

Among the groups above, the values of 'Trend followers' conforms the most to the hybrid lifestyle characteristics of LOHAS consumer. They are health and environmental conscious and in the case of ethical values they attach importance not only to social-centred corporate behaviour but also to competence values (such as voluntary, purchasing of products not tested on animals). Another feature of this consumer group is that they can be regarded as the most individualist segment of all, while they also consider authentic values as important. According to *socio-demography characters*, members of the upper (35.1%) and upper-middle (32.0%) social classes are over represented, such as households with more than 100.000 Ft net monthly average income (33.9%). Among the age groups the proportion of 15-24 years old people is the most determining (30.8%), while people over 65 years represent only 9% of the segment. In the viewpoint of urbanization and regions the appearance of metropolitans (29.0%) and mixed urbans (25.9%), and of the residents of Central Region (include Capital) (31.4%) and Northern Great Plant (31.0%) are the most significant. Furthermore the dominance of higher and middle educated (29.0% and 33.6%), and working people (26.2%) can be highlighted. Investigating the occupation independents/self employed (42.9%), white collar workers (33.7%) and students (36.9%) got into the examined cluster. According to the commitment to sustainability[1] of the consumers the members of the group can be characterised with middle (32.7%) and high (37.6%) commitment, while non-committed people are significantly under represented (10.6%, s. adj. res.: -6,4%).

Statements 1-9.: Values of health and environmental consciousness

Statements 10-12.: Ethical (competence) values

Statements 13-16.: Authentic values

Statements 17-18.: Ethical values 8corporate behaviour)

Statements 19-25.: Individualist values

Diagram 1: Profile of sub-clusters within the group of 'Trend followers'
Source: Research by the author, 2011, N=212 (subsample of the entire population represented 1015 people) (level of measure: 1-5 interval scale)

It is important to note that, segment of 'Trend followers' has not been able to regard as fully committed LOHAS consumer yet, as the judgement of ethical (competence) values indicates a critical issue in their case. The result of detailed analysis show that they rather uninterested than committed to the elements of this dimension. Therefore, the opinions of the consumers in the

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[1] Cumulative index developed by Cognative Ltd.

'Trend followers' group were examined more thoroughly in the frame of further segmentation within the given sub-sample.

Six consumer sub-groups could be distinguished within the segment of 'Trend followers' (Diagram 1), two of which are sub-clusters (Sub-cluster 3 and 6, Diagram 1.) that considerably overvalued the ethical (competence) values in comparison to the group average. These two sub-clusters considered the group of values representing the hybrid lifestyle characteristic to the LOHAS consumer as true to themselves. Their proportion in comparison to the entire sample was 4.0% and 3.6%. The two sub-clusters differed slightly in the judgement of the values representing each lifestyle dimensions, however, this difference was not considerable (G_4, H_5).

It can be stated that the rate of consumers keeping the criteria of sustainable consumption more or less in mind in Hungary today is 21.0% (the potential market) which is represented by the group of 'Trend followers'. The LOHAS segment can be identified within this group, which can be distinguished most clearly on the basis of ethical (competence) values and whose rate within the entire population of Hungary is 4-8%.

3.3 Examination of information search behaviour of the sustainability committed consumer groups through the practice of food purchasing decisions

As it was introduced in chapter 'Materials and methods' the evaluation of the information search behaviour of sustainability committed consumer groups followed a triple structure in both relevant research (lifestyle based small sample and research carried out with the method of quote sampling): (1) characterising modifying and cognitive factors; (2) investigation of the factors of information search model and exploration the connections between the mentioned elements and modifying and cognitive factors; (3) logical structure of information search model. In the follows I summarize the most important connections explored through the validation of theoretical model and the investigation of the logical structure of research model.

3.3.1 Validation of the theoretical model with the aid of small sampled quantitative research carried out by lifestyle based filter questions

I assumed that the theoretical model is suited to model the information search behaviour of domestic sustainability committed consumer group (G_{5a}, H_6), so structure of the factors represented by the model did not need modification. This hypothesis is supported by the results of the small sampled quantitative research, thus these consequences pointed out that the system of modifying and cognitive factors with high probability has an important role both engaging to sustainable lifestyle, and influencing the information search behaviour. It is essential to highlight that, the results are based on exclusively the examination of frequencies, and other uni-variate statistics, because the small number of the sample did not make it possible to investigate the relations.

According to the facts above, the effect of cognitive and modifying factors on lifestyle is proven by the changes of behaviours depending on the time and the trend of sustainability. Hence alternative information sources (for instance family, labels on packages, internet) have become more important for LOHAS consumer, while TV advertisements have been pushed into the background (in comparison with the results of Szakály eds., 2011 and Horváth, 1996). Between the changes of the method of information search the more conscious lifestyle also predict the transformation of perceived health risks and utilities through food consumption. Thus it is possible that within health risks defined by Horváth (1996) could get a more essential importance the factor of environmental and technical risk and risks connected to the consumption of pleasure goods, while the restructure of the risks of traditional food consumption is to be expected. Less considerable but similar processes can be predicted in connection with the changes of perceived utility. So it is assumed that, food components (vitamins, additives etc.) have become more important, while the significant of external factors of quality (for instance freshness) stay on the same level.

The influence of cognitive and modifying factors on information search behaviour can be also expected, where Table 7 summarise the most essential processes.

The effects of cognitive and modifying factors on the information search behaviour

Table 7

The most essential cognitive and modifying factors influencing search and exposure	
Modifying factors	**Effecting factors**
Demography characteristic	age, education, urbanization, occupation, income, lasting illness, size of household, marital statues
Interpersonal influences	information on packaging, doctor/family doctor, independent control authorities, internet, social spirit/experience, school/education, family/friends, recommendations of traders
Situational factors	price
Behavioural factors	environmental and technical risks, risks of traditional food consumption, risks of consuming pleasure goods, lifestyle risks, internal components of quality, external components of quality, time (comfort of home), subjective factors of quality
Cognitive factors	**Effecting factors**
Sustainable values	individualism, values of health and environmental consciousness, ethical (competence) values, ethical (corporate behaviour) values, authentic values
Perceived control of sustainability	perceived control of responsible behaviour for health, environment and society
Perceived self-efficacy	water saving, selective waste collection, refuse the free plastic bags, fighting against waster lifestyle, use of natural detergents, importance of family, purchasing local products, reduced car usage, importance of spiritual peace, active social connections, judgement of corporations
Perceived sustainability statues	statues of environment, presence of social responsible behaviours
Perceived barriers to sustainability-promoting behaviours	time, quantity of information, availability of information, reliability
The most essential cognitive and modifying factors influencing perception	
Modifying factors	**Effecting factors**
Demography characteristic	age, urbanization, income, education, lasting illness
Interpersonal influences	professional journals, information on packaging, communication activity of food-stores, recommendations of traders, social spirit/experience, school/education, doctor/family doctor
Situational factors	price
Behavioural factors	environmental and technical risks, risks of traditional food consumption, lifestyle risks, internal components of quality
Cognitive factors	**Effecting factors**
Sustainable values	individualism, values of health and environmental consciousness, authentic values
Perceived control of sustainability	perceived control of responsible behaviour for health, environment and society
Perceived self-efficacy	water saving, selective waste collection, refuse the free plastic bags, fighting against waster lifestyle, importance of family, purchasing local product, importance of spiritual peace
Perceived sustainability statues	statues of environment and health, presence of social responsible behaviours
Perceived barriers to sustainability-promoting behaviours	quantity of information, availability of information, reliability, time
The most essential cognitive and modifying factors influencing liking	
Modifying factors	**Effecting factors**
Demography characteristic	size of household, presence of child, age
Interpersonal influences	doctor/family doctor, family/friends, recommendations of traders, professional journals
Situational factors	price
Behavioural factors	environmental and technical risks, risks of traditional food consumption, subjective factors of quality, internal components of quality
Cognitive factors	**Effecting factors**
Sustainable values	individualism, values of health and environmental consciousness, ethical (corporate behaviour) values, authentic values

Perceived control of sustainability	perceived control of responsible behaviour for health, environment and society
Perceived self-efficacy	water saving, selective waste collection, refuse the free plastic bags, fighting against waster lifestyle, importance of family, purchasing local product, importance of spiritual peace, judgement of corporations
Perceived sustainability statues	statues of environment and health, presence of social responsible behaviours
Perceived barriers to sustainability-promoting behaviours	quantity of information, availability of information, reliability

The most essential cognitive and modifying factors influencing understanding and inferences	
Modifying factors	**Effecting factors**
Demography characteristic	lasting illness, gender
Interpersonal influences	doctor/family doctor, school/education, recommendations of traders
Situational factors	price
Behavioural factors	risks of traditional food consumption, risks of consuming pleasure goods, lifestyle risks, subjective factors of quality
Cognitive factors	**Effecting factors**
Sustainable values	individualism, values of health and environmental consciousness, ethical (competence) values, ethical (corporate behaviour) value
Perceived control of sustainability	-
Perceived self-efficacy	importance of family, purchasing local product, importance of spiritual peace, donation of people with bad destiny, judgement of corporations, acceptance of other people, importance of quality and taste
Perceived sustainability statues	-
Perceived barriers to sustainability-promoting behaviours	quantity of information, availability of information, reliability (in connection with the ethical and environmental friendly labels)

The most essential cognitive and modifying factors influencing use	
Modifying factors	**Effecting factors**
Demography characteristic	age, income, lasting illness, gender
Interpersonal influences	information on packaging, communication activity of food-store, internet, social spirit/experience, school/education, family/friends, recommendations of traders, professional journals
Situational factors	number of retails (availability)
Behavioural factors	environmental and technical risks, risks of traditional food consumption, risks of consuming pleasure goods
Cognitive factors	**Effecting factors**
Sustainable values	individualism, ethical (competence) values, ethical (corporate behaviour) value
Perceived control of sustainability	perceived control of responsible behaviour for health, environment and society
Perceived self-efficacy	purchasing bio products, reduced car usage, searching nutrition information, prefer chemical free products
Perceived sustainability statues	statues of environment and health, presence of social responsible behaviours
Perceived barriers to sustainability-promoting behaviours	quantity of information, reliability

Source: Research by the author, 2012, N=30

The validation of the theoretical model also pointed out that factors of Grunert-Wills' model were effective, and the original structure is suitable for characterising the information search behaviour of domestic LOHAS segment. On the other hand, it is worth examining the connections between liking and understanding, inferences, which in the model are not directly defined, but it helps to discover those information that play the most important role in value suited food purchasing decisions. In this case the most essential results can be summarised as follows:

- in the most cases search for different labels resulting the perception of bio and Hungarian Product trademarks. It is refers to that in Hungary the mentioned two product characters could provide the basis of sustainable consumption.

- Information quantity in connection with the internal component of food products influencing the most perception of calorie/energy content and carbohydrate content. In this case it is necessary to improve the knowledge of the consumers about objective meaning of food labels, because the investigation of the mentioned two characters through food purchasing decisions is not enough to build a healthy menu.
- About liking of labels can be highlighted the influence of reliability factor, thus LOHAS consumers are rather sceptical about the authenticity of perceived food labels. Hence the educative/teaching function of labels also gets a higher importance; so the role of educative campaigns becomes more significant in connection with the conscious food consumption.
- In the view point of time pressure it is necessary to optimize the quantity of food labels which could give consumers an opportunity to make fast and comprehensive decision. In this case labels on the front of food packaging get an essential meaning, because those can simplify the comparison of food products. However these information can be misleading in several time, so it is worth highlighting the quantity of components (for example GDA panel on the front package), not only concentrate on the advantages of goods.
- In connection with qualifying authorities we can say that consumers rather uncertain about the types of organisms given in the questioner, but they did not give alternative options. Among the given organisations the state played the most significant affecting role in the use of labels. In my opinion – take the uncertainty of consumers into account – it is worth certifying the labels on food packaging with harmonized activities of different authorities. The bigger control, which also would appear in the certifying process – could reinforce the certainty of consumers about different food labels.

According to the result the research model is suited for the examination of food purchasing behaviour of conscious consumer groups highlighting information search process. The opinion of LOHAS group pointed out that the structure of Grunert-Wills' model was valid in connection with the sustainability committed consumer groups, and the cognitive and modifying factors, defined by Pender's Health Promotion model, complete it well, gave an alternative meaning to the characteristics of information search behaviour.

3.3.2 Characterization of the information search behaviour of sustainability committed consumer groups with the aid of quantitative research (method of quota sampling)

The investigation of information search behaviour of sustainability committed consumers groups parallel with the special features explored at LOHAS group in several cases. So the meticulous information search process before the purchasing decision also appears which is reinforced by the explored differences between the two examined groups: 'Trend followers' and 'Unconcerned' (G_{5b}, H_8-H_{10}) (Table 8). We can meet the dominance of 'Trend followers' all of the factors of information search model: search, perception, liking, understanding and use. Hence the well developed and optimized food labels can support the values suited food purchasing decisions of 'Trend followers'.

It is true that the opinion of the two group show statistical significant differences only in connection with the quantity of extra price of sustainable labels (Table 8), but according to the results of literature review and small sampled research, which highlighted the importance of reliability to influence purchasing decisions, it is necessary to define the most trustworthy certifying authority. The biggest ratio of the sample would put trust in the certifying process controlled by an NGO, so trademarks/certifications developed by the mentioned organization would be the most reliable for them (G_{5b}, H_{11}). It is important to note that, besides this unambiguous dominance, my results forecasting that through the development of sustainability certifying uniform labels it is better to encourage the common controlling activities of the different organisations (producer, state, NGOs), which can inspire confidence among the most critical consumers.

Information search characteristics of 'Trend followers' and 'Unconcerned'

Table 8

	Trend followers	Unconcerned	Lack of dominance
Search	Bio product; Produced in Hungary; All (environmental friendly labels); Way of storage; Environmental friendly producer; Chemical free farming; Lent hog transportation; Transportation tools; Free from preservatives and colour matters; Free form artificial additives; Component list	Do not know (ethical labels); Do not know (environmental friendly labels); Price; Nutrition information	Time of manufacturing/warranty; GMO free; Country of origin; Brand; Trademark/certification; Statements about consume advantages; Non animal tested product; Donating charity and caritative goals; Supporting sport events; The producer does not exploit its employees; Product with Fair Trade logo; The producer meet its duties defined by the low; Producer got prices form NGOs; Producer plays an active role in social events
Perception	Environmental friendly product; Hungarian Product; Quality food from Hungary; Saturated/unsaturated fatty acid content; Total fat and fat content; Sugar content; Carbohydrate content; Calorie/energy content	None (Trademarks); Heart Protective Food Product; None (nutrition information)	Hagyományos-Ízek-Régiók (traditions, tastes and regions) ; Minőségi Magyar Sertéshús (Hungarian high quality pork); Fair Trade product; Bio product; Update; Weight balance; Protein content; Dietary fibre content; Sodium content
Liking	I prefer the nutrition recommendations on food packaging/label. Nutrition recommendations would have to appear on the front of packaging. I check information on the back of the packaging before purchasing. I read information on the front of packaging before purchasing. Contents would have to list on the back of the packaging. The information on labels are useful for me.	There is no sense in checking labels on packaging.	Numbers and letters on labels are too small. I am not sure all of contents are listed on labels. The front of the packaging is needed only short recommendations. Regularly I read only the bigger information on labels.
Understandings	Chemical content on packaging (sodium-hydrogen-carbonate) provide me important information. Appearance of Kj/Kcal content helps me to develop my optimal daily menu. I avoid purchasing food reach in saturated fatty acids. It makes me easier the choice among different food products, if nutrition information is marked with a unified 100 g quantity. In the viewpoint of balanced nutrition, it is necessary to the nutritive value is also defined per doses on the packaging of food products. I prefer purchasing food reach in unsaturated fatty acids. It is not problem to convert Kcal into Kj. With the appearance of RDA on food packaging I can develop easily my optimal daily menu. Product with high sodium content contains too much salt.	-	If the fat content in a product is reduced, people can consume higher quantity without put on any weight.
Use	Use of nutrition labels through purchasing new brand; Acceptance of a higher price	I never check nutrition information. Less than 5% extra price is accepted for the unified sustainability certifying label	Use of nutrition labels through purchasing healthy and unhealthy believed food. Development of the sustainability certifying unified labels. Qualifying authority of the sustainable label.

Source: Research by the author, 2012; N=221, (level of measure: 1-5 interval scale and nominal)

If we examine the logical structure of Grunert-Wills' information search model, we can explore also the dominance of 'Trend followers' (G_{5b}, H_{12}), because in several cases those labels have the most importent influencing affect on information search behaviour, that preferred by 'Trend followers', while the information search process of 'Unconcerned' is less wide (Table 9). It is proved that lifestyle, as the literature revive forecasted, plays a significant role in information search process before the concrete purchasing decision. Hence sustainability committed consumer groups actually have a wider information need, and them food choice is very meticulous.

The most influencing factors of information search behaviour

Table 9

	Trend followers	Unconcerned	Lack of dominance
Search and perception	Free from artificial additives, Tools of transportation, Length of transportation, Chemical free farming, Way of storage, All (environmental friendly labels), bio product as an ethical character	Do not know (environmental friendly labels), Do not know (ethical labels)	Country of origin, Trademark/certification, Product with Fair Trade logo, Law suited operation
Perception and liking	Environmental friendly product, Calorie/energy content, Carbohydrate content, sugar content, Full fat and fat content, Saturated/unsaturated fatty acid content	None (trademark), None (nutritive value label)	Hungarian Product, Protein content, Dietary fibre content, Sodium content
Perception and understanding	Calorie/energy content, Carbohydrate content, sugar content, Full fat and fat content, Saturated/unsaturated fatty acid content	None (nutritive value label)	Hungarian Product, Protein content,, Sodium content, All (nutritive value label)
Liking and understanding	Usefulness of information on labels; Reading information on the front of packaging; Reading information on the back of packaging, Liking of nutrition recommendations	There is no sense in checking labels on packaging.	-
Liking and use	Usefulness of information on labels; Reading information on the front of packaging; Reading information on the back of packaging, Liking of nutrition recommendations	Size of letters and numbers, There is no sense in checking labels on packaging.	Reading the bigger information.
Understanding and use	Usefulness of chemical contents; Development of the optimal daily menu with the aid of Kj/kcal content, Avoiding saturated fatty acids; Quantities per 100g; Quantities per doses, Prefer food reach in unsaturated fatty acids, Ability to convert Kcal into Kj, Development of the optimal daily menu with the aid of RDA	-	-

Source: Research by the author, 2012, N=221 (level of measure: 1-5 interval scale and nominal)

The facts above are reinforced by the investigation of the strength of connections among examined factors. It is establish that correlations, defined through the investigation of the logical structure of Grunert-Wills' model, are characterised by weak and semi-strong connections, where dominance of weak correlations appears between the following model elements: search and perception; perception and liking. This tendency shows an opposite practice as we go towards the closing factor of the information search process. Thus correlations between perception and understanding, liking and use, liking and understanding, understanding and use rather reach the *semi-strong* level. As a conclusion we can say that the *critical factor* of the information search process is the *perception*, which *influencing use primarily through understanding*. In this case liking has an additive role, where effects of unified formats and the place of labels providing fast comparison (for instance front package) can be highlighted.

So the logical structure of information search model is suitable for determinate the behaviour of sustainability committed consumer groups among domestic circumstances. To get a scope examination about the *research model*, it is necessary to explore the effects of cognitive and modifying factors both on the lifestyle and information search process (G_{5b}, H_{13}). The results demonstrate that value based lifestyle segments ('Trend followers' and 'Unconcerned') directly formed along cognitive factors, where the following elements had the biggest effect on the lifestyle: individual values, values of health and environmental consciousness, authentic values (influencing role of sustainable values); importance of a conscious lifestyle to reduce environmental pollution, information of the nutrition label on food packaging (effect of perceived self-efficacy); perceived control of responsible behaviour for environment and ethical activities (perceived control of sustainability). On the other hand modifying factors, mainly through the filter influence of sustainable values, played an indirect role in transformation of behaviour: low number of retails

selling environmental friendly products (situational factor); education (demography characteristic); bio as environmental friendly product feature (behavioural factor).

The effect of cognitive and influencing factors on information search process shows a different structure than above. Based on the results of Exhaustive CHAID, elements examined in stages of information search are classified into four groups: (1) Primary influencing role of cognitive factors is the most significant, (2) the role of influencing factors is the most significant, (3) the effect of influencing factors is important, but the cognitive structure also appears to be influential, (4) no dominance of examined factors appears (Table 10).

System of factors influencing information search behaviour

Table 10

	Search and discovery	Perception	Preference	Interpretation and conclusions	Usage
Cognitive dominance (Group 1)	-	Hungarian product, Spontaneous recognition of nutritional value	Reading the information on the front side of the package, Nutritional recommendations on the front side, Reading information on the package is senseless	Usefulness of chemical ingredients written on the package	Reading nutritional value only on unhealthy food and non-readers
Dominance of influencing elements (Group 2)	Country of origin, Nutritional value information, Preservatives and colour-free products, Chemical-free farming, Length of transportation route, Statement proving the environmentally friendly status of production plant, All of them_environmentally friendly signs, Produced in Hungary, Animal testing free products, Producer meet legal requirements	Heart friendly, Environmentally friendly product, Total fat and fat content, None-of them_nutritional value, Environmentally friendly (mentioned spontaneously)	Ingredients should be listed on the back side of the package, Necessity of short recommendations on the front, Reading only the biggest information on the labels	preference of value expressed per 100 grams 100 g-ban	Readers of nutritional value information if they buy a new brand or products considered to be healthy, Introduction of standard signs for sustainability, Level of premium price
Appearing cognitive structure (Group 3)	List of ingredients, Transportation vehicles, Bio product	Calorie/energy content, Carbohydrate content	Fonts and numbers on labels are small, I cannot believe that all ingredients are listed on the label	Showing kj/kcal units of measure helps, importance of values expressed per portion, Knowledge of kj/kcal conversion rate, demand for GDA on the package, Product with high level of Na contains too much sodium	All-the-time readers of nutritional value, Willingness to pay a premium price
Lack of dominance (Group 4)	Date of manufacture/Expiry date, Price, Artificial additives free product, Method of storing, I don't know_environmentally friendly signs, I don't know_ethical signs	Trademark (mentioned spontaneously), KMÉ – Quality food from Hungary, Sugar content, Saturated/unsaturated fatty acid content	Reading the information on the back of the package, I like if there are nutritional recommendations o the package	I avoid buying food rich in saturated fatty acids, "Preference of unsaturated fatty acids, Accurate knowledge of what the adjunct "reduced" means	Issuing organization (signs for sustainability)

Source: Research by the author, 2012, N=221 (level of measure: 1-5 interval scale and nominal)

We can see in Table 10 that in connection with *search and exposure* model element in the most cases the influencing role of modifying factor is dominant, in which can be highlighted the interpersonal influences factor (use of different information sources) and behavioural factors (prior knowledge about environmental issues; perceived utility). It is important to note that in this case impressions of perceived self-efficacy, perceived barriers to sustainability-promoting behaviours and sustainable values are the most essential among cognitive factors, however here the examined factor has an indirect influencing role, which can be defined through the filter effect of modifying factors. At the *perception* of trademarks the Hungarian Product trademark is the one which is directly affected by cognitive factors while modifying factors show an indirect connection. This

finding is very important because, parallel with the literature review, points out that the mentioned product feature get a highlighted character in the sustainability based food purchasing decisions because of the direct influencing role of values. In connection with the perception of nutrition information can be highlighted the following elements: perceived barriers to sustainability-promoting behaviours, perceived self-efficacy, perceived control of sustainability as cognitive factors; and behavioural factors, interpersonal influences as modifying factors. Hence the mentioned elements form the perception of nutrition information in the most cases (Table 11).

Examining *liking and use* model factor from cognitive factors can be also highlighted the effect of sustainable values, perceived control of sustainability and perceived self-efficacy, while among modifying factors demography characteristics, interpersonal influences and behavioural factors are the most important. According to the most essential cognitive and modifying factors *understanding* shows a different sample then above. In connection with cognitive factors besides perceived self-efficacy, the perceived control of sustainability also become a strong behaviour transforming element, while among modifying factors the effects of perceived utilities and risks and the interpersonal influences are the most essential (Table 11) (G_{5b}, H_{14}).

Structure of the most significant cognitive and modifying factors in connection with information search process

Table 11

	Modifying factors	Cognitive factors
Search	**Interpersonal influences:** TV programmes/advertisements, opinion of doctors/family doctors, information on packaging, school/education, independent control authorities **Behavioural factors:** people with high perceived utility; bio as an environmental friendly feature; recyclable packaging, local and chemical free farming, fresh food products, train as a transportation tool	**Sustainable values:** individualism, values of health and environmental consciousness, authentic values **Perceived self-efficacy:** movements of health and environmental consciousness behaviours; movements of ethical and authentic behaviours **Perceived barriers:** time pressure; quantity, reliability and availability of information
Perception	**Demography characteristics:** lasting illness, region, occupation **Interpersonal influences**: professional journals/daily papers/magazines; information on packaging, internet, independent control authorities, opinion of doctors/family doctors, school/education, family/friends, social spirit/experience **Behavioural factors:** Sensitivity of technological risks, People with the highest risk sensitivity	**Sustainable values:** individualism, values of health and environmental consciousness, authentic values **Perceived self-efficacy:** movements of health and environmental consciousness behaviours; movements of ethical and authentic behaviours **Perceived control of sustainability:** changes of environmental statues, promoting social responsibility, influencing health statues
Liking	**Demography characteristics:** lasting illness, age, education, occupation **Interpersonal influences:** information on packaging, recommendations of traders, independent control authorities **Behavioural factors:** Sensitivity of traditional lifestyle risks, People with the highest risk sensitivity, people with high perceived utility, transportation by boat, chemical free farming	**Sustainable values:** values of health and environmental consciousness, authentic values **Perceived self-efficacy:** movements of health and environmental consciousness behaviours; movements of ethical and individual behaviours **Perceived barriers:** time pressure; quantity, reliability and availability of information
Understanding	**Interpersonal influences:** independent control authorities, opinion of doctors/family doctors, school/education, information on packaging **Behavioural factors:** People with the highest risk sensitivity, people with high perceived utility	**Perceived self-efficacy:** movements of health and environmental consciousness behaviours; movements of ethical and authentic behaviours **Perceived control of sustainability:** promoting social responsibility
Use	**Demography characteristics:** lasting illness, gender, region, age, education **Interpersonal influences:** independent control authorities, , opinion of doctors/family doctors, school/education, social spirit/experience	**Sustainable values:** authentic values, ethical values (corporate behaviour), values of health and environmental consciousness **Perceived self-efficacy:** movements of health and environmental consciousness behaviours; movements of ethical and authentic behaviours

Source: Research by the author, 2012, N=221 (level of measure: 1-5 interval scale and nominal)

As a summary, in contrast with my assumption, we can establish that, nowadays the information search behaviour of conscious consumer groups, apart from some exceptions, is directly driven by modifying factors, so the food consumption behaviour can be strongly influenced by external elements. This conclusion reinforce the fact that information search behaviour of conscious domestic consumer groups is developing and these consumers do not show stable food purchasing patterns suited to their value system.

Results, summarized in Table 11, also point out that – as it is forecasted by other studies – in connection with the changes of food purchasing decisions labels on packaging get a highlighted role. In this case it is important to take into consideration the expectations of consumers, introduced

above, through the developing process of food labels. The demand on safety and value suited food products, besides the role of interpersonal influences, is also shown by the growing importance of behavioural factors (perceived health risks and perceived utilities). At the same time the mentioned risks and utilities have been transformed against the effects of time and trend of sustainable consumption, as it is explored also at LOHAS consumers. About health risks it can be established that the negative lifestyle results are connected to food consumption habits by sustainability committed consumer groups, so they show higher sensitivity about health effects of different food components. On the other hand in connection with perceived utility, besides the external factor of quality (for instance freshness) and nutrition components (for example protein content), subjective factors of quality (for instance sight and environment of foods, preparing time) have been getting a more significant meaning through purchasing decisions ($\mathbf{G_{5b}}$, $\mathbf{H_7}$).

Conclusions about perceived risks and utilities are significantly featured by the behaviour of 'Trend followers', thus, it is true that nowadays food purchasing decisions of sustainability committed consumer groups can be strongly influenced by external elements, it is necessary to take into consideration that these external information are handled in a critical way. So elements seemed to be incredulous and difficult to understand could result the rejection of purchasing plan.

3.4 New scientific results

$\mathbf{S_1}$*: Exploration of the connections between the food consumption trends and information search behaviour in the respect of the LOHAS lifestyle.*

On the basis of national and international literature I introduced the domestic food consumption trends which predicting the appearance of LOHAS lifestyle, and, through the significant importance of confidential factor, I determined the characteristics of information search behaviour, that preceding food purchasing decision, against the trend of sustainability. Through the logical structure of Grunert-Wills' model I established the main influencing factors, defined by the domestic and international literature, of behaviour. As far as I know such a scientific study in the domestic literature has not been published yet, thus this summarising part of my thesis can be considered as new scientific result.

$\mathbf{S_2}$*: Developing a value list that is suited to measure the LOHAS lifestyle. According to the mentioned list, developing and characterizing sustainable lifestyle based segments among the Hungarian population.*

Based on the literature review and the results of qualitative research I developed a statement list that suited to measure the LOHAS values based lifestyle. This list separates five dimensions in the viewpoint of hybrid lifestyle: individualism, health and environmental consciousness, authentic values, ethical (competence) values, ethical (corporate behaviour) values. The validity of the value list was examined both in the representative research and the quoted investigation, where the inner consistency of the factors proved to be suitable.

I defined five segments among the domestic population over 15 years old with the aid of value based lifestyle segmentation (representative sample). Consumer groups were characterised by lifestyle and socio-demography features. I proved that LOHAS consumers appeared also in Hungary, but, take into consideration the small ratio of the mentioned group, 'Trend followers' represents the potential market of sustainable food products.

$\mathbf{S_3}$*: Introducing an own model, so the systematization of the affecting factors of the committed consumer groups to sustainable consumption on food purchasing decision highlighted the information search behaviour. Investigation of the information search behaviour based on multiple factors; determining the critical influencing elements of the behaviour by means of Exhaustive CHAID analysis.*

On the basis of the connections explored in literature review I developed my own research model, which connecting influencing factors of sustainability promoting lifestyle with the information search behaviour in the viewpoint of food purchasing decisions. The small sampled quantitative research proved the model validity, but the quota sampling investigation pointed out that, while from the perspective of lifestyle succeed the indirect effect of cognitive factors, in connection with

information search behaviour this correlation was not true. So based on the results I restructured my research model (Figure 5), because nowadays modifying factors has the indirect effect on information search behaviour of conscious consumer groups among national circumstances.

Through the empirical research those cognitive and modifying factors were defined, which play the most significant influencing role in the formation of information search behaviour. On the basis of the behaviour influencing role of cognitive and modifying factors within the stages of information search behaviour I classified the food information, which can support the development of an efficient positioning strategy.

S₄: The exploration of the structural changes of perceived health risks and utilities in connection with food consumption, depending on the time and the effect of sustainability.

Using Horváth's (1996) statement list I established that health risks and utilities perceived by consumers have restructured against sustainability during more than a decade. The results highlight those food characters that nowadays play an essential role in the judgement of the effect of food products on health, and prove that style and aesthetic have been become a significant purchasing criteria also among domestic consumers committed to sustainability.
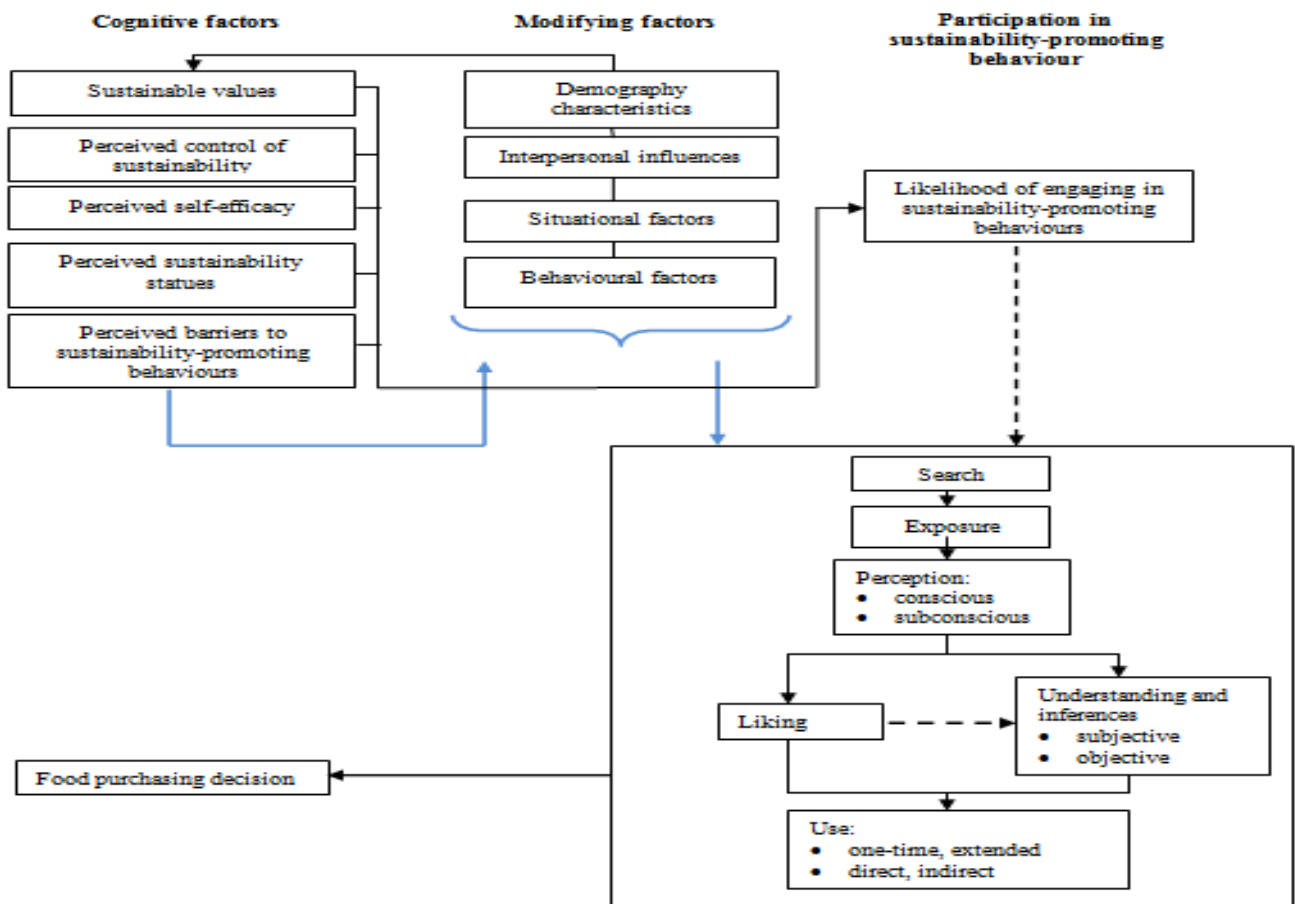

Figure 5: Information search behaviour of sustainability committed consumer groups through the practice of food purchasing
Source: Edited by the author, 2012

▮ logical structure of factors influencing lifestyle
▮ logical structure of factors influencing information search behaviour

4   CONCLUSIONS AND RECOMMENDATIONS

According to the professional literature nowadays the Hungarian food consumption trends are driven by trend of convenience, trend of health and wellness, trend of environmental consciousness, trend of search for joy, trend of ethical consumption and trend of time consciousness (Reynolds-Zayak 2004, Kirig-Lützler 2007, Horváth et al. 2005) in the most significant way. On the other hand social centred way of life is represented by the thought of sustainability, so it requires the spread of trend of sustainable consumption, which is characterized by individuals. On the basis of international literature LOHAS consumer can be defined as the most committed group to the mentioned trend, who, suited to its hybrid lifestyle features, takes into consideration not only environmental, social and economical results of his/her food purchasing decision, but self-expression, style and aesthetic are also essential purchasing criteria for them. So food products are evaluated by a doubled scale, where both the social and self-centred motivations show a highlighted buying criterion.

Despite of the fact that in domestic literature cannot be found such a study which would characterises the lifestyle features of LOHAS, the effects of trends above are proven both in connection with the changes of common values and the transformation of food consumption samples. Among food consumption trends summarized by Törőcsik (2007b) in connection with sustainability can be highlighted the trend of *health, science* and *environment, responsibility*, where the influencing role of the before mentioned trend is characterised by the purchasing motivations of functional and bio food product, while the latter is represented by the preference of domestic, local and fair trade products. On the other hand literature review pointed out that the social-centred lifestyle could not be generalized by the whole Hungarian society, because this behaviour characterised by only a small part of domestic consumers. Thus the self-centred motivations through food purchasing decisions are rather dominant in Hungary. (*G_1, S_1*)

As the conscious consumer groups have been getting stronger both the motivations of food consumption and the most essential nutrition features of purchasing decisions have transformed. As a result of the trend of health consciousness the nutritive characters of food products, the food safety, and the hygienic requirements are getting a more essential importance, while trend of environment, responsibility is reinforcing the significance of farming/processing technologies, and origin through purchasing decisions. On the other hand in connection with different labels it is important to note that it will only reach the adequate effect on consumer behaviour, if it fulfils its teaching and education function, thus the individual can recognise the objective meaning of the label. Based on the results of literature review it can be established that domestic consumers are not know the objective meaning of food labels in several cases, which refers to introducing problems. Alternatively this uncertainty can be resulted by the number of labels, so consumers cannot gather wide range of information before purchasing decision because of the lack of unified, sustainability proving labels and the use of several label formats, if we take into account also the limiting role of time. (*G_2, S_1*)

So we can say that the food purchasing decision of sustainability committed consumer groups is influenced by several factors, where appears such food characters, which nowadays have not been able to well generalized and controlled yet among national circumstances (for instance CSR activity, ecological farming). Modelling of the mentioned consumer behaviour is made more difficult by the fact that there are not any models in the professional literature that would summarize the influencing factors of LOHAS promoting lifestyle and its information search behaviour. Despite of above on the basis of literature research I could develop a model, which, according to influencing factors, connects the lifestyle with information search behaviour. I built my model along with the logical structure of Pender's Health Promotion Model (1987) and Grunert-Wills' information search model (which is also a theoretical model, have not been tested by empirical research), that summarize the system of influencing factors both of information search behaviour and lifestyle Figure 4). (*G_3, S_3*)

Because there are not any studies in the professional literature which would characterise the lifestyle features of the domestic LOHAS segment with the aid of empirical research, it was necessary to explore the national behavioural characters of the mentioned segment before I would have tested my theoretical model. To reach this goal I carried out qualitative research, where I examined eight women magazines with the method of document analysis. As a result of my

empirical investigation fives dimensions was separated: *individualism, health consciousness, environmental consciousness, authentic values and ethical values*, which, according to my assumption, can completely characterise the domestic LOHAS lifestyle. (*H_1 accepted, G_4, S_2*) The validity of the defined dimensions is reinforced by the fact that the investigated magazines can be classified by them as follows: publishing the widest range of contents referring to hybrid lifestyle (Nők Lapja, Elle); publishing a huge number of LOHAS themes (Marie Claire, Glamour, Éva Magazin); publishing the lowest contents about sustainable lifestyle (Cosmopolitan, Joy, ELITE). The examination of the groups targeted by the magazines, in the viewpoint of sustainable consumption, is also resulted that lifestyle and values play the primarily affecting role in behavioural changes. Hence it was found out that the domestic LOHAS group, with a high probability, can be characterised by the following lifestyle features: importance of family and self-expression; active communal life; acceptation of innovations; and at the same time appeared the respect of traditions and the importance of spiritualism, which characters have already represents by itself the LOHAS lifestyle features defined by literature review. (*H_2 accepted, G_4, S_2*)

By means of statement list structured by the document analysis in the frame of a national representative research (quantitative research) the validity of sustainability based theoretical dimensions were tested among domestic consumers in 2011. The result pointed out that values representing hybrid lifestyle of LOHAS have also appeared among the Hungarian consumers, and formed well separately factors. However the structure of dimensions show differences compared to the results of qualitative research: *individual values, health and environmental consciousness values, authentic values, ethical (competence) values, ethical (corporate behaviour) values*. Thus values of health and environmental consciousness connect to each other among the values of domestic consumers, while ethical values separated from each other on the basis of that whether those represent behaviours connected to the consumers own competence (for example voluntary, donation of NGOs), or characterised the judgement of corporate behaviour (for instance suitable work conditions, donation of caritative goals). So the qualitative research based statement list, which was restricted by results of quantitative investigation, is suitable to explore the appearance of sustainable consumption among national circumstances that was reinforced by examinations of reliability. (*H_3 accepted, G_4, S_2*)

Based on result above, to define the domestic consumer groups committed to sustainability I executed a value based lifestyle segmentation, where I structured fives well separately segments: *(1) Health conscious elderly (17.0% of the Hungarian population over 15 years old); (2) Trend followers (21.0% of the Hungarian population over 15 years old); (3) Health and environmental consciousness consumers with national commitment (27.0% of the Hungarian population over 15 years old); (4) Unconcerned (19.0% of the Hungarian population over 15 years old); (5) Disappointed pessimist (16.0% of the Hungarian population over 15 years old)*. I also defined the lifestyle and socio-demographical characteristics of the mentioned segments, where as a result I found out that group of 'Trend followers' represented the LOHAS lifestyle in the most significant way. However this segment cannot be regarded as completely committed to sustainability, because about ethical (competence) values it is rather uninterested. For this reason I carried out the secondary segmentation of the mentioned group, in which I identified six sub-groups. It is important to note that while the groups formed by primarily segmentation separated by individualist values, the sub-groups were established on de basis of ethical (competence) values, which were highlighted in the viewpoint of LOHAS lifestyle. (*H_5 accepted, G_4, S_2*) According to the importance of the latter mentioned values two sub-clusters can be underlined: sub-cluster 6 (4.0% of Hungarian population above 15 years old) and sub-cluster 3 (3.6% of Hungarian population over 15 years old). Hence the ratio of LOHAS segment is almost 8.0% in Hungary, where the most committed consumer groups to sustainable lifestyle represents the 4.0% of the domestic society. (*H_4 accepted, G_4, S_2*)

So the proportion of consumers committed completely to sustainability is very low, but the appearance of them predict that the adaptation of sustainability based producing and farming methods by food industries will indicate the key of market success in the future. On the other hand these technologies represent the source of extra profit in competitive markets nowadays, because group of 'Trend followers' is also characterising LOHAS lifestyle features, it shows weaknesses only about the importance of ethical (competence) values. Hence this segment symbolizes the

potential market of sustainable food products nowadays, but the demands of them have not completely satisfied yet.

The results, besides them practical significance, also provide the realization of my **G₅** research goal, thus the investigation of my theoretical model. The theoretical model validated by small sampled quantitative research (**G₅ₐ**), in which to reach the LOHAS consumer group lifestyle based filter questions were applied. In this case the effect of cognitive and modifying factors on lifestyle was proven by the changes of behaviours resulted by the influencing role of time and trend of sustainability. Hence for LOHAS consumers alternative information sources (for example family, labels on packaging) are getting more important, and the transformation of perceived health risk and utilities can be also forecasted.

The frequency based examination, in addition to the affecting role of cognitive and modifying factors on lifestyle, also established that the mentioned variables are influencing the information search behaviour too, so it is not necessary to modify the factor structure of my theoretical model. Furthermore it is also an essential result that the information search behaviour of conscious consumer groups can be characterised well by Grunert-Wills' model, so it is not a good cause to change the logical structure of my theoretical model either. (***H₆ accepted, G₅ₐ, S₃***)

To explore the effective connections (**G₅ᵦ**) I carried out another quantitative research with the method of quota sampling in 2012, in which the entire population was represented by the group of 'Trend followers' as the potential consumers of sustainable food products in Hungary. According to the socio-demographical characters of the mentioned group in the sample appeared the group of 'Unconcerned' explored by the representative research in 2011. So it is gave me the opportunity to investigate the information search behaviour in two respects. The research verified more features characterised by LOHAS consumers. Hence it is proven that health risk and utilities perceived in connection with food consumption have gone through a structural change against time and trend of sustainability, where group of 'Trend followers' was characterised by the highest sensitivity about perceived risks and utilities. (***H₇ accepted, G₅ᵦ, S₄***) It is worthy to highlight the system of subjective quantity factors that appearance confirms that the effect of hybrid lifestyle of LOHAS consumer succeeds through the food purchasing decisions of sustainability committed consumer groups, consequently the style and aesthetic are also very important buying criteria.

So for the consumers committed to sustainability, according to Anderson's (1994) theory, all of the experience, the search and the credence characters of products are getting important, in which the last mentioned factor represents the most critical element of food purchasing decision. Thus the meticulous information search behaviour of 'Trend followers' and the highlighted role of labels on packaging through buying decisions have been typified, which creates the fallowing requirements about food industries: objective information on producing/farming technologies and food components, transparency, naturalness (chemical free and artificial additive free farming etc.), high quality, social responsibility. These conclusions are reinforced by the correlations given by the investigation of Grunert-Wills' model. So about the searching and perceiving process of the two examined groups and the preferred labels by 'Trend followers' and 'Unconcerned' there are several differences (Table 8).

The investigation of the perceiving process also point out the meticulous information search procedure of 'Trend followers', because this group is significantly perceives trademarks of *Hungarian Product, environmental friendly product and Quality food from Hungary* in a higher rate, while 'Unconcerned' rather prefers the *Hearth protecting label* through buying decisions, perception of *other trademarks* are not characterised by the mentioned group. There is a similar tendency about nutrition information labels. It is true that 'Unconcerned' searches for the mentioned label by them own account, but through the perceiving process the affecting role of nutrition information on purchasing decisions does not essential. On the other hand for the sustainability committed consumer groups these labels have a highlighted importance, but the use of these labels rather connects to the development of a special died, which shows the lack of knowledge about balanced nutrition (Table 8).

In addition to above investigating the liking model factor it is turned out that 'Trend followers' took into consideration both labels on the front and on the back of the packaging through the practice of food purchasing decisions, and significantly thought them useful. In contrast the buying decisions of 'Unconcerned' less driven by labels and the checking of information on packaging rather thought to be senseless. Furthermore results explored that the nutrition recommendations assigned to be a

highlighted role by conscious consumers, which can support the value suited purchasing decision in the most essential way, if those are on the front of the package. (***H8 accepted, G5b, S3***)

Through the review of professional literature it was turned out that labels could only influence the consumer behaviour, if the person knew them objective meanings, so the label fulfils its teaching/educating function. Highlighting the importance of the mentioned task in the logical structure of Grunert-Wills' model also appears the understanding and inferences factor as affecting element of use. Similarly to above the results of the research prove that sustainability committed consumer group of 'Trend followers' both has a higher information need through food purchasing decisions and realises the correct meaning of labels on packaging compare to 'Unconcerned' (Table 8). (***H9 accepted, G5b, S3***) It is important to note that in this case the amplification of knowledge about the realistic meaning of labels is also characterizing. Because it is proved that, however, 'Trend followers' are well informed; they rather recognise the correct senses of labels; this group also has difficulties to identify the differences between sodium and salt content. Hence, for food industries, it has a high significance that in addition to different information on packaging are stated, the introduction would be supported by educating campaigns, which makes it possible to avoid the lack of purchasing caused by misunderstand information. This conclusion is reinforced by explored correlations in connection with use. It is established that the biggest rate of the sample significantly check nutrition information (41.2%), if they purchase new brands, so through repeated buying they do not make decisions based on the nutrition information, but according to the brand. So the understanding essentially influences the formation of brand loyalty and the avoidance of given brands. This behaviour is also characterised by 'Trend followers' committed to sustainability.

As we could recognise about the search factor, a high proportion of the sample (88.2%) would demand the introduction of sustainability proving unified labels, which would reduce time of information search, and would provide food purchasing decisions suited to the values of consumers. It is true that both examined segments would consider the mentioned labels to be necessary, significantly 'Unconcerned' would buy product with sustainable information only in that case if its price increased less than 5% compared to the ordinary food products. (***H10 accepted, G5b, S3***) On the other hand the acceptance of labels is influenced by not only the price but the confidential factor, thus the consumer's judgement of qualifying organisation is an also important element. My result show that both 'Unconcerned' and 'Trend followers' would have confidence in the qualifying activity of on NGO in the highest ratio. (***H11 accepted, G5b, S3***) In my opinion it would be the best option, if the different type of organisations cooperated with each other, so the state, the companies and the non-profit organisations implement a common qualifying process.

The characteristics above predict that sustainable lifestyle has a highlighted role in the use of labels on food packaging. To prove this correlation I investigated the connections between the factors of information search model, and then I defined the strengths and the directions of explored relations. The results established that the logical structure of Grunert-Wills' model was suitable for modelling the information search behaviour through food purchasing decisions, where that information show the highest number of positive connections, which characterised by the information search behaviour of 'Trend followers' (Table 9). (***H12 accepted, G5b, S3***) Moreover the evaluation of the strengths of relations pointed out that perception factor represented the critical element of information search behaviour, which produced its effect through the model factor of understanding and inferences. For this reason the format and comparability (demand for unifying) of labels on packaging (unit, RDA) significantly influences the food purchasing decisions of sustainability committed consumer groups.

So it is established that the consumers committed to sustainability have a higher information demand in Hungary, the placing of labels on food packaging, which suitable for them values, can make them committed to a products. The development of optimal marketing strategy to reach the target group is very important for food industries, if we take into consideration the market potential of 'Trend followers'. According to data of KSH the domestic population spent 160.255 Ft/ head for food products in 2010 (www.ksh.hu, 2010), thus group of 'Trend followers' represents a market potential more than 286 milliard Ft within the Hungarian society over 15 years old (www.ksh.hu, 2012).

To develop a successful marketing strategy, however, the understanding of information search process is not enough, it is necessary to explore the influencing factors of that. The logical structure of cognitive and modifying factors is aiming at this investigation in my basis research model, where

the most significant effects were characterised by CHAID analysis. The results prove that, according to my assumptions, the value based lifestyle segments were directly featured by cognitive factors. On the other hand the information search behaviour of sustainability committed consumer groups shows a different prospect. On the basis of the results of exhaustive CHAID analysis the elements of information search can be divided into four groups: (1) primary influencing role of cognitive factors is the most significant, (2) the role of influencing factors is the most significant, (3) the effect of influencing factors is important, but the cognitive structure also appears to be influential, (4) no dominance of examined factors appears (Table 10). Take into consideration the mentioned groups the dominant of the second is highlighted nowadays, so based on the determination of Fern (2007 in Szakály, 2008) the consumer orientation can be experienced rarely through the information search behaviour of conscious consumers. Their buying motivations are rather driven by the product and advantage orientation. Thus food consumption behaviour can be strongly influenced by external factors. (***H_{13} refused, G_{5b}, S_3***)

This conclusion made it necessary to restructure my starting-model, Figure 5 shows the final form of the model, and thus lifestyle is directly influenced by cognitive factors, while information search behaviour is affected indirectly, through the logical structure of modifying factors, by them. On the other hand it is important to highlight my experiences about negative statements connected to information search behaviour (for instance there is no sense to check labels on packaging; I never take into consideration the nutrition information), because in connection with them within liking and use factors the essential effect or the characterisation of cognitive factors could be leant. So based on the results of CHAID analysis we can say that cognitive factors are those, which can encourage the information search, thus these elements are suited to develop the value based food purchasing decisions (consumer orientation). But nowadays the realization of the mentioned process has been hindered yet. Primarily the social regulating systems and companies are responsible for breakdown of barriers, because from the viewpoint of information search behaviour interpersonal influences and behavioural factors are highlighted within modifying factors. Hence besides the ordinary communication channels the affecting role of subjective information sources on purchasing decisions is getting more essential (for example school/education, family/friends, social spirit/experience). Moreover health risks, perceived utilities through food purchasing and prior knowledge for the sake of the recognition of objective meaning are also becoming significant (Table 11). Within cognitive factors sustainable values and perceived self-efficacy are dominant, but perceived barriers to sustainability promoting behaviours are also significant influencing factors of purchasing decisions. In this case the role of time, the limited amount of information, the availability of information and the reliability is getting a higher importance. (***H_{14} accepted, G_{5b}, S_3***)

Thus the roots of value based information search behaviour have already appeared among the Hungarian population, to become this process universal primarily that is necessary to break down the mentioned barriers. In this case food labels get a highlighted role, so that interpersonal factors, which shows a strong behavioural influencing role within all stages of Grunert-Wills' model. Hence the introduction of labels suited to the demand of conscious consumer groups (for instance taking into consideration the qualifying authority, the format, the placing, and the objective information) plays a significant role in the market success of food products produced in a sustainable way.

I do not think it good to separate the marketing theory form practice. That is why I strived for that the theoretical results of my empirical researches can be applied also in practice, and define the real market effects of explored correlations. I believe that consequences, found out by the investigation of my research model and its logical structure, have significant meaning both for theoretical and practical specialists. Because it is proved that the closing up consume influencing international trends are becoming more dynamic among national circumstances. Take into consideration the facts above closing the chapter I draw up the following recommendations:

Recommendations in the viewpoint of search and educational methodology:

R₁: As the influencing role of subjectivity on food purchasing decisions have come to the front, the ordinary, social class based segmentation methods cannot provide the exploration of the real consumers of a given product/product type. So it is necessary to use value based lifestyle segmentation methods, adopt and develop scales suited to measure individual values, which can predict social changes in the most correct way.

R₂: Naturally the investigation of the cognitive structures of consumers requires the changes of applied methodical and technical elements. Necessity of quantitative researches is incontestable, but to identify correctly the subjective values of consumers the qualitative techniques must have to get a higher importance than it has nowadays. Moreover it is worthy to use the less universal segmentation techniques (for instance CHAID, MDS). In my opinion with the aid of mentioned techniques the logical structure of motivations that hide behind the realized behaviour can be characterised in a more acceptably way.

R₃: Recommendations above must have to appear among the educational methods, because we, academics are responsible for the training of specialists, who are able to understand and measure the freshest market trends.

Recommendations for the practice:

R₄: In practical viewpoint within my conclusions must be highlighted that the roots of sustainable value based consumption have appeared among Hungarian consumers, but the characterisation and spread of this kind of view in daily food consumption meet with difficulties. So it becomes necessary to the social systems will be gone by the demands of consumers, thus the new expectations will be satisfied. This is the way to reach the practical utilization of theory of sustainable development, which is dealt with a highlighted importance on international level.

R₅: Within the communication strategy of food industries labels on packaging must have to get a significant position, because these items got an essential influencing role through my research. Thus it is thought to be practical to optimize the quality and quantity of labels and introduce the unified markings that prove the sustainability of the product.

R₆: The introduction of new labels also must have to be carried out with social cooperation, so, to sustainable markings will be accepted by consumers, it is necessary to the state, the producer and the non-profit organisations corporate with each other through the qualifying activity (confidential factor). In the viewpoint of the success of companies it is also significant to widen the knowledge of consumers about the objective meaning of labels, because it is proved that subjective opinions can result the rejection of brands, while the values suited information are the keys to develop brand loyalty.

R₇: To food industries can maintain their market positions in the future they must have to take into consideration the following factors: objective information about the producing/farming processes and food components, transparency, naturalness (chemicals free and artificial additives free farming etc.), high quality, social responsibility (put CSR activities in the strategy plan). Application of these principles (modifying factors) both result to sustain the market share and play role in the changes of consumers' views. Hence, through individual values (cognitive structure), the ratio of consumers prefers sustainable food product can be enlarged.

Recommendations considering further researches about the investigated theme

R₈: In order to the sustainable value based lifestyle segmentation, it is necessary to improve my statement list. In this case that is a very important task to widen the number of ethical factors both on national and international level.

R₉: The research model was tested on the basis of sustainable values by the behaviour of two consumer groups. In my opinion it is worthy to carry out a national representative data collection, which can give the opportunity to investigate the information search behaviour of other consumer groups explored by my study.

R₁₀: In addition to CHAID analysis it is thought to be important that the stages of information search behaviour and the different label types will be examined with the method of multidimensional scaling in the viewpoint of the dimensions of cognitive and modifying factors in the future.

5   THE MOST SIGNIFICANT PUBLICATIONS OF THE AUTHOR

I. Scientific articles

Scientific articles published in foreign language
1) **Ágnes Horváth – Georgina Rácz (2009):** The appearance of conscious consumer groups in Hungary, How do value changes and sustainable development trends affect, *Regional and Business Studies*. 1(2). Kaposvár University, Faculty of Economic Science, Kaposvár ISSN 1789-6924. 1-21.p.
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2) **Reicher Regina Zsuzsánna – Rácz Georgina:** LOHAS témák megjelenése az offline és online magazinokban. (in eng.: Appearance of LOHAS themes in offline and online magazines) *Gazdaság és Társadalom*. ISSN 0865-7823. *Under publication.*
3) **Rácz Georgina – Gyenge Balázs**: Az észlelt egészségügyi kockázatok és hasznosság változása az idő és a fenntarthatóság trendjének függvényében. (in eng.: The changes of perceived health risks and utilities depending on the time and the effect of sustainability) *Élelmiszervizsgálati Közlemények*. HU ISSN 0422-9576. *IF 0,040. Under publication.*

II. Lectures at scientific conferences published in conference publications

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2) **Ágnes Horváth – Georgina Rácz (2010):** LOHAS, the value orientated lifestyle, *6th International Conference for Young Researchers*, 4 - 6 October, 2010, Gödöllő, Hungary. ISBN 978-963-296-193-0. 115-121.p.
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4) **Fehér Euridiké – Rácz Georgina (2012):** Cultural effects on the consumers' judgement of food labels. *7th International Conference for Young Researchers*, 4 - 6 October, 2010, Gödöllő, Hungary. 2012. november 12-14. ISBN 978-963-269-319-4, 44-54.o.
5) **Fehér Euridiké – Rácz Georgina (2012):** External effects on culture, as an influencing factor of food consumption. *The 1st Multidisciplinary Academic Conference*, Prága, 2012. december 6-7. "Multidisciplinary academic research 2012", ISBN 978-80-260-2184-1. CD elérési út: E:\\ Articles\MAC12044

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