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**THE TWO DIMENSIONS OF FOOD CONSUMER BEHAVIOUR:
HEALTH- AND ENVIRONMENTAL CONSCIOUSNESS**

Thesis of the doctoral (Ph.D.) dissertation

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1. ANTECEDENTS OF THE WORK AND OBJECTIVES

1.1. Actuality and significance of the topic

My dissertation topic is concerned with two increasingly popular megatrends: *health - and environmental awareness*.

In my work I focus on these two highly important and also problem-laden research areas, which are not only relevant globally, or on a national or organizational level, but also at that of consumers.

An increasing number of people are researching these two topics on multiple levels and from different aspects, but usually separately. When writing my dissertation I undertook to examine these two dimensions on the level of consumption, as factors, which influence the consumer concerning their purchases, and not merely present it but compare it, and be willing to explore the relation system between the two values, and their correlation. As this is a large topic, I mainly narrowed down my secondary and primary examinations to the food market.

Health is the greatest value for human beings; however, its role only gains an elevated value at its absence. In my dissertation I call attention to the significance of health awareness.

In Hungary the problem is indicated by the fact that the health status of the Hungarian population has been deteriorating since the late 1960's. At the end of the 20th century this caused a severe demographic crisis, to the extent that by the millennium, that is, in nearly 50 years we have been reduced by more than half a million in numbers in Hungary. (KSH, 2009).

Using our current knowledge people can now do a lot to maintain their health. The 2002 report of the World Health Organization (WHO) calls attention that the relatively small number of preventable risk factors is responsible for the increase of illnesses and premature deaths in a disproportionately large manner. In developed industrial countries - according to estimates - more than 30% of the total illness burden results from smoking, alcohol consumption, high cholesterol levels and obesity. According to the 2004 report of the World Health Organization (WHO) the major importance of health behaviour factors is legitimized by the fact that *a significant proportion of deaths due to leading causes of death is caused by individual behaviour*, and also draws the attention that these behavioural factors can be changed. (WHO, 2004).

The other area of my research is the environment-orientation, environmental consciousness of consumers.

The increasing social and environmental problems are demanding more and more attention worldwide, from which process Hungary is no exception.

Researches examining the principle of individual and common social responsibility, and the related opinion, environmental awareness of different social classes mainly spread in the United States, and later in the countries of the European Union. The main reason is that in the urbanized areas of the developed countries new, special issues arise beside the ones already known (e.g. waste management, air and noise pollution, energy management, biodiversity, water management, etc.). New tasks have emerged, such as environmental problem - oriented town planning, environmental cooperation between towns and regions, development of mutual communication and the development of public environmental awareness.

From this positive process we may conclude that a continuous value change occurs in western society, which may mean the development of a new kind of lifestyle in the consumer society. The long term effect of this is that we can maintain our environmental values for future generations, and they will lead a way of life, which provides safety.

1.2. General objectives of the research

In both my primary and secondary research I especially deal with factors influencing consumer behaviour as health and environmental orientation is now present in their decisions as an increasingly influencing factor.

I deem the summary of theoretical, founding knowledge important; more precisely the attitude of conscious consuming and the detailed description of factors which are influencing food consumer behaviour. I mostly do so using models established by researchers.

In my dissertation, naturally, I will especially discuss the theories of health awareness and environmental awareness and their role concerning consumer behaviour

The main objective of my research is to present the factors influencing food consumer behaviour based on the literature, and its analysis by a series of primary research:

- the two "new" values (health - and environmental awareness) as influencing factors and
- exploring the correlations between these two dimensions.

The two topics chosen are huge and I did not want to give a cursory review of the literature, therefore half of my dissertation contains the theoretical background.

The main objectives of the dissertation

According to my fundamental hypothesis, the consumers' perception of health- and environmental awareness as values may be applied as a segmentation criterion and provides an opportunity to characterize new consumer target groups in the market of food consumers.

In accordance with the fundamental hypothesis, five main research goals were formulated, two of which were connected to the review of literature, while the other three was linked to my empirical studies. These research objectives served as the basis of my research hypotheses and helped gaining new and novel scientific results

The main objectives of the review of professional literature:

O1: Literature summary of the theory of factors influencing the food consumer behaviour.

O2: The theory, location and trends of the two main dimensions of my research field (health- and environmental consciousness) in the area of conscious consuming and the examination of its presence in consumer behaviour.

Main objectives concerning the empiric study:

O3: The study of factors influencing food consumer behaviour, with special regard to the role of health- and environmental awareness with a series of primary research.

O4: Study concerning the degree of health- and environmental consciousness and the exploration of the connection between the two dimensions.

O5: Exploration of the consumer group presenting strong consciousness, tracing their socio-demographical characteristics.

When writing my dissertation, my primary objective was to present the conceptual background of consumer-purchasing behaviour including the characteristics of food consumer behaviour, then to examine the factors influencing the decisions and their impact with the help of the most significant existing models (O1).

This is followed by a theoretical overview of the conscious components, which appear as two new values in our consumer decisions: health -and environmental awareness. My objective here after the presentation of the segments of conscious consumption:

- to characterize health conscious costumers based on the dimensions of health, through factors determining the health behaviour
- then, to summarize the factors influencing environmentally conscious consumers while examining the components and the model of environmental awareness.

Employing earlier research results and the literature I will describe the trends observed in food consumption. Many sources support that the two examined factors influencing conscious consumption are now to be defined as megatrends in the food market (O1, O2).

The main objective I aim to achieve with my series of primary researches is to examine the food consuming habits of domestic consumers and that of the ones living in the capital reflecting on health and environmental consciousness. In order to achieve this I have concluded qualitative and quantitative studies. Based on the results of these I examined food consuming habits and the components, extent of awareness presented in purchases (O3).

My next objective is to examine the relationship between health and environmentally conscious consumption. I have examined this using the correlations of the results gained by factor and cluster analysis. During the collection of secondary sources I did not find data or results, which would suggest that the consumer, who is strongly health conscious, will be strongly environmentally conscious as well and vice versa. I deem it important to examine the relationship of the two factors based on their place and role in the consumer value system.

During my research I also intend to prove that health awareness and environmental awareness, as new, influencing factors in the process of food purchase decision are not independent of each other. There are connection points, overlaps between the clusters and consumer groups developed on the basis of the two segmentation criteria. (O4).

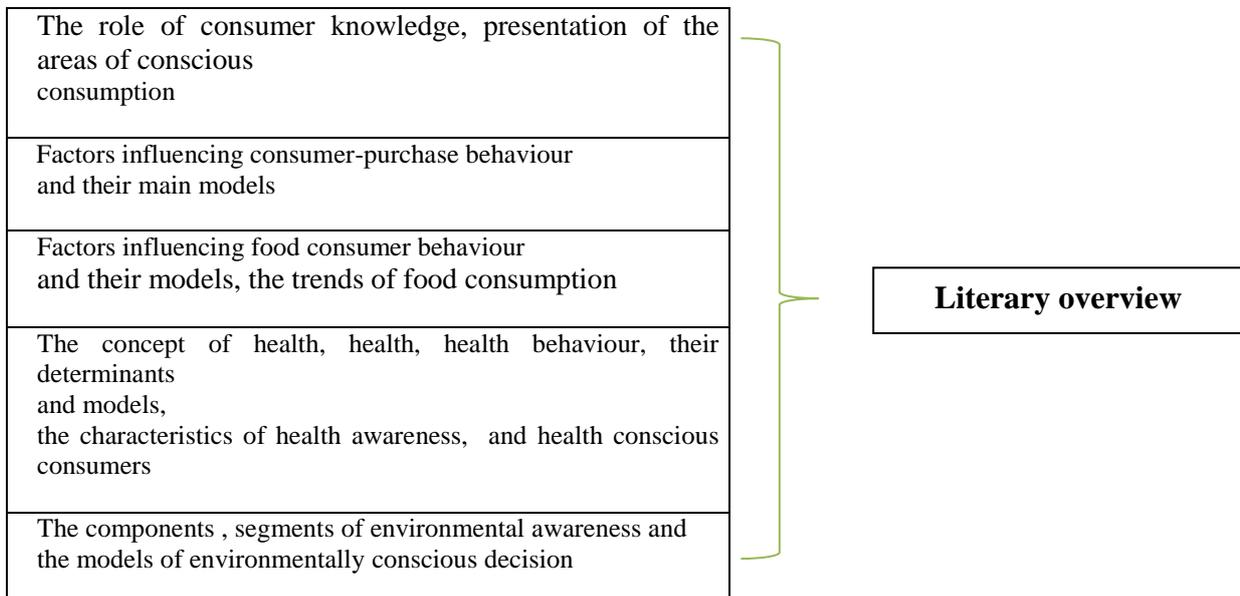
My fifth main objective is to explore the "parameters", socio-demographical data of the consumer group, which proves the "most conscious" on the basis of my studies. This tells us what characterizes really health and environmentally conscious costumers in the food market. (O5).

I consider this important, because these two factors are now present as megatrends, therefore they may influence food consumption habits in the long run.

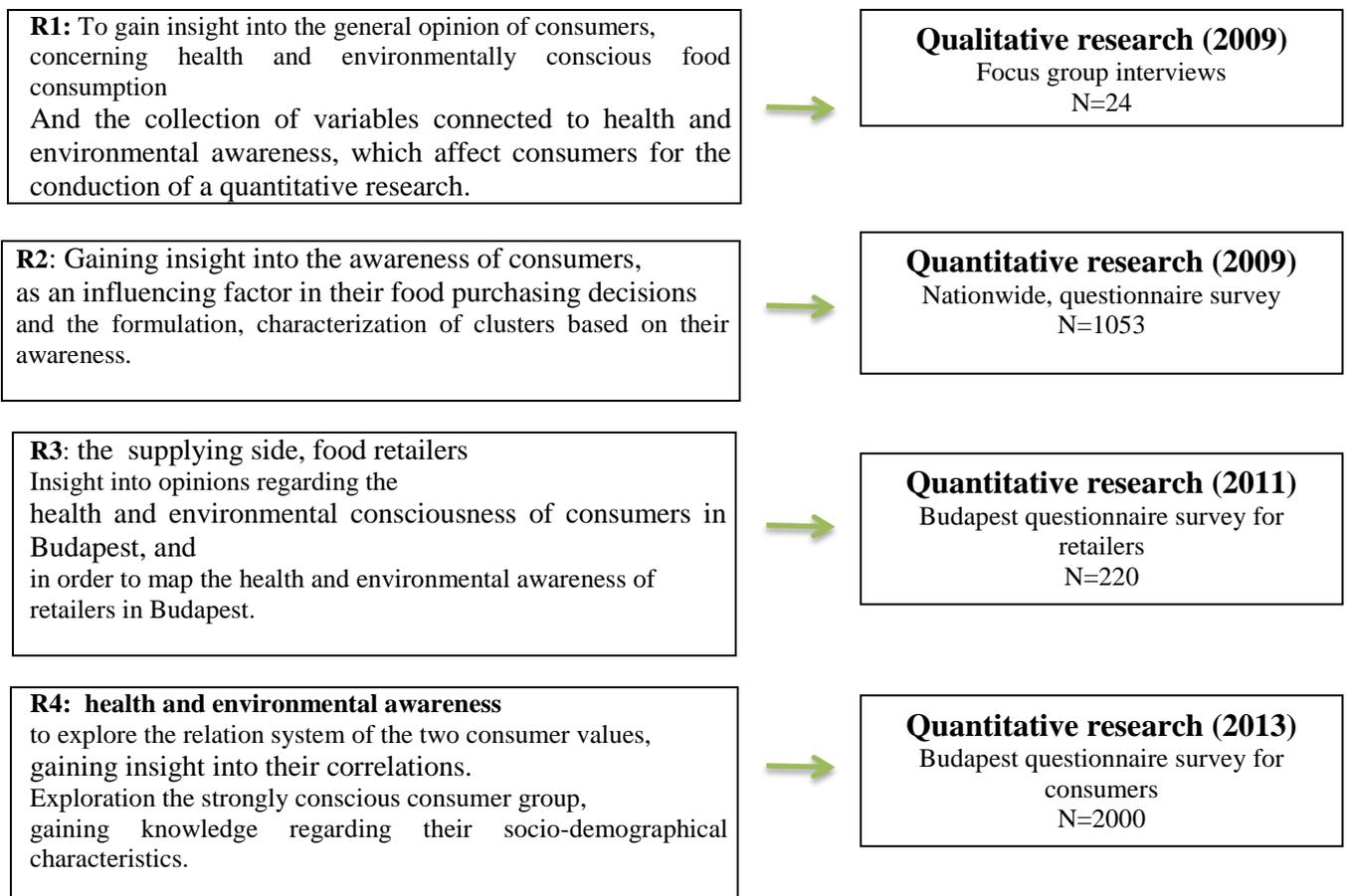
For the faster and easier understanding of my discourse I have illustrated the structure of my research, and also of my dissertation (figure 1).

Figure 1: The logical structure of the research and the dissertation

Literary overview



The primary study



1.3. The phases and objectives of the primary research

Table 1 contains the four implemented phases of my research and the relevant sub-objectives and hypotheses.

Table 1: Systematic figure concerning the series of primary studies

	Research phase	Research duration	Research method applied	Research tools applied	Method of selection	Sample and its size	Location of interviews	Sub-objectives, hypotheses
R1:	Basic qualitative research	March, 2009	focus group interviews	interview scheme	Sample collection on the basis of quota	adult consumers 24 persons	Budapest	O6,O7,O8
R2	Basic quantitative research	June 2009	Verbal interviews	Standard questionnaire	Sample collection on the basis of quota	adult consumers 1053 persons	Nationwide	O9,O10, H1,H2,
R3	Basic quantitative research	May 2011	Verbal interviews	Standard questionnaire	Sample collection on the basis of quota	food retailers in Budapest 220 persons	Budapest	O11,O12 H3,H4,
H3,H4,	Quantitative research	April 2013	Verbal interviews	Standard questionnaire	Sample collection on the basis of quota	adult consumers 2000 persons	Budapest	O9,O10,O13, O14 H1,H5, H6,H7, H8,H9,

Source: own editing

Sub-objectives per research phase

R1 research phase

- O6: Exploring and gaining insight into the general opinion of consumers regarding health and environmentally conscious food consumption.
- O7: Ways of wording used by consumers and the collection of their contents regarding the two areas studied.
- O8: The collection of variables connected to health and environmental awareness, for further quantitative research.

R2 research phase

- O9: An insight into the awareness of consumers as an influencing factor in their food purchasing decisions.
- O10: Exploration and description of consumer groups based on their awareness.

R3 research phase

- O11: Gaining insight into the opinion of the supplying side, that is, food retailers regarding the health and environmental orientation of consumers in Budapest
- O12: the mapping of the health and environmental awareness of retailers in Budapest.

R4 research phase

- O9 and O10
- O13: Collection of the socio-demographical characteristics of highly health conscious consumers.
- O14: The exploration of the relation system of health awareness and environmental awareness, as two consumer values, gaining insight into their correlations.

2. MATERIAL AND METHOD

The main objective of all four data collections was to gain an overview of the role played by health and environmental awareness in the value system of consumers, and to learn in what ways these two values affect us during our food purchases.

It was my special objective to examine whether the two value systems that are becoming more and more important are determinant consumer criteria, which suggests that characteristic groups can be created in the food consumer market. In addition I considered it important to carry out the statistical analysis of the relationship between health and environmental awareness and their impact on one another.

My main objective regarding the qualitative focus group interviews (R1) was to determine the main direction of my research. The subsequent quantitative surveys (R2, R3) made it possible to carry out the broader and more dimensioned analysis.

The first three primary researches supported the fourth (R4) large sample (N=2000) quantitative research, it helped outline and refine the research topic. I only used research R3 as a form of an outlook, where I aimed to learn the opinion and experiences of the supply side, that is, and the retailers regarding conscious food purchase.

During the three quantitative researches I applied a conscious, quote based sampling, and thus I tried to keep the population ratios observed in the sample as well (gender, age group, residence).

When editing the questionnaires of the surveys I made sure they well fit into the logical curvature of the research. Concerning the quantitative researches the personal interview was performed with the help of a tested, standardized questionnaire.

Along with the few open questions I mostly employed closed questions in the questionnaires, in several cases I used Likert scale statement lists, which show the attitude of the consumer concerning the subject and can be well evaluated using the SPSS program.

The questionnaire used in the two consumer surveys conducted in researches R2 and R4; several questions are identical for the sake of comparison. In order to make consumer (R2, R4) and retailer (R3) answers comparable several statement lists were included both in the questionnaires intended for consumers, and the ones intended for retailers.

I consider it important to mention that based on the experiences gained from my primary studies I came to the conclusion that I want to work with a really appropriate, accurate sample I need to narrow down my research on a regional basis, therefore the ultimate goal of my research became Budapest, where I gained much more accurate results with a sample of 2000 persons.

I analysed the data gained using the mathematical and statistical software: SPSS Statistic 17.0. I used both simple descriptive statistical methods (mean, standard deviation, distribution, cross tabulations, frequency) and multivariate statistical analyses (Chi-square test, analysis of variance, factor and cluster analysis). The aim of the factor analysis was to explore the multi-collinearity between the variables (Sajtos-Mitev, 2007). In order to detect correlation I performed a Bartlett-test and I decided whether they are suitable for factor analysis based on the KMO values. During the clustering process I used the Ward method concerning the R2 research due to the size of the sample, while I used a non-hierarchical method regarding the R4 main research, where I performed (K-means) analyses. During my significance tests I allowed and error probability of $p=5\%$.

I illustrated the research methods, hypotheses in a summary table (Table 2).

Table 2: Summary of research methods

	Research phase and method applied	Research location and date	Sample size and the method of sample selection	Hypotheses of research phases	New/novel scientific results
R1	Basic qualitative research focus group interviews	Budapest March, 2009	adult consumers 24 persons quota based sample collection		
R2	Basic quantitative research verbal interviews	Nationwide June, 2009	adult consumers 1053 persons quota based sample collection	H1: Based on health and environmental awareness consumer groups exhibiting characteristic differences can be explored in the food consumer market. H2: The highest level of awareness concerning food purchases can be observed in the capital.	T1, T2, T4,
R3	Basic quantitative research verbal interviews	Budapest May, 2011	food retailers in Budapest 220 persons quota based sample collection	H3: The food retailers and consumers interviewed only have a cursory knowledge of health and environmental orientation and there is no relevant difference between the awareness of the retailers and their buyers studied. H4: A strong connection (correlation) can be detected between the health and environmentally conscious business policy decisions of retailers.	T1,
R4	Main qualitative research, verbal interviews	Budapest April, 2013	adult consumers 2000 persons quota based sample collection	H1: Based on health and environmental awareness consumer groups exhibiting characteristic differences can be explored in the food consumer market. H5: The values: health awareness and environmental awareness are closely related to one another in the case of consumers, namely that highly health conscious individuals are also strongly environmentally conscious concerning their purchases. H6: A LOHAS consumer group can be clearly detected in the food market along health and environmental awareness. H7: A strong, positive correlation can be detected on the basis of the research between health conscious and environmentally conscious consumer behaviour. H8: According to Katalin Schäfferné Dudás based on the division of conscious consumption, self-conscious consumption dominates more than responsible consumption, thus the adult population of Budapest is more health conscious than environmentally conscious. H9: I assume that the demographic data of the most important consumer groups (clusters) examined from the perspective: awareness- health awareness - environmental awareness are largely identical and show large similarities.	T1, T2, T3, T4, T5,

Source: own editing

3. RESULTS

I will present the results gained with the analysis of research phases and the relevant objectives, hypotheses.

3.1. Primary, qualitative, focus group interviews (N=24)

The aim of the focus group interviews I performed was to get an overview of the general knowledge of consumers, their attitude regarding the topic examined, and to help construct a better questionnaire applied in my large sample research. I specified the objectives of the study earlier as O6, O7 and O8 sub-objectives.

The process of focus group interviews was identical concerning all three groups and was divided into four, distinct units. I performed the coordination of the processes as a moderator. The interviews usually lasted for 1.5 - 2 hours.

The focus group interviews took place between 5 and 13, March, 2009.

As a moderator, I used the topic outline, scenario required for a semi-structured query, which served as a so called guideline.

Characteristics of focus groups

I invited three groups of eight persons to the interview. As my main aim was "only" to see the ideas of consumers in the topic of health and environmental awareness, I had no major expectation regarding the composition of the group. It was a selective aspect that half of all groups shall be female, while the other half shall be male, furthermore that every person is over 18 years old. The members of two groups were average consumers, while I searched for highly health and environmentally conscious consumers for the third focus group.

The results

As qualitative study served only as a fraction of my research series, I will only highlight the main results briefly.

It became clear **from the first two interviews** that awareness primarily means a financial-economical aspect to them, and not a conscious behaviour related to the protection of their health and environment.

The members of the group connected health conscious food purchase to diseases and were more informed in the area than they were concerning the topic of environmentally conscious purchase.

Unfortunately, their environmentally conscious purchasing habits went no further than environmentally friendly and returnable packaging. Typically, they pay no attention to the distance, from which the products were transported to the shop and they are aware of buying many over-packaged groceries. Generally, they do not believe in the origin, quality of bio products, and consider them too expensive.

The third focus group, showing a higher awareness was much more informed, that is, expressly well informed in the topic examined. They consider health and environmentally conscious behaviour to be highly important due to their (future) children. They know more bio product brands and manufacturers, and they also avoid waste, harmful chemicals and compounds. They prefer fresh, domestic products, seasonal food products. After interviewing this group it became even clearer that those who pay attention to their own health, or that of their family and environment also testify of environmentally friendly behaviour.

3.2. Primary, qualitative, nationwide, consumer interviews (N=1053)

I performed the nationwide, questionnaire survey (primary research) in June, 2009, the result of which were 1053 evaluated questionnaires

The research results examined both the food consumption and shopping habits of respondents, but due to spatial limitations I will only present the results of hypotheses briefly.

Awareness and informedness in food purchases

I will present the results of the examined hypotheses: H1 and H2 below briefly.

Table 3: Consumer awareness
Average: residence based and total

residence	extent of consciousness
Budapest	4.11
county seat	3.88
other city	3.93
municipality	3.88
Total average	3.94

Source: own research (2009)

I used a five point Likert scale to query the awareness of consumers (1 - absolutely not true, 5 - absolutely true concerning the respondent.)

Table 3 shows that the residents of Budapest are more conscious costumers than the national average (3.94) with an average value of 4,11. However, there is no appreciable difference between other settlement types.

In addition to this, the value of the Pearson correlation is -0,073 (sig.0,018) concerning the relationship between residence and awareness, therefore we can conclude that there is only a weak, negative correlation between the two variables.

I accepted hypothesis H2, according to which the awareness of the Budapest population is of a higher level than that of other residence types.

Result of the cluster analysis

I firstly identified the food consumer groups gained by factor analysis, then I analysed them using cluster analysis.

I distinguished between the following five consumer groups based on their health and environmental awareness, I have presented the characteristics of these clusters in my dissertation, in a detailed manner.

1. Conscious majority (34,2%)
2. Devotedly conscious devotedly conscious
3. Economic "housewife" (14.0%)
4. Youthfully eclectic (21.7%)
5. Passive (11,7%)

I proved hypothesis H1 with the establishment and description of clusters, which says: Based on their health and environmental awareness, consumer groups exhibiting characteristic differences can be explored in the food consumer market.

3.3. Primary, quantitative, Budapest-wide, retailer interviews (N=220)

I performed the primary questionnaire-based research in Budapest in May, 2011 by interviewing the managers and employees of 220 retail units, which number also gives the size of the sample.

The only condition regarding the selection of retailers was that the retailer should (also) market food products.

Retailer opinions regarding the awareness of costumers

During my research I wanted to learn in detail, which costumers are strongly health and environmentally conscious and which ones are absolutely not.

This is why I have examined the two "extremes" during my interviews, that is, the highly conscious costumers and the ones with low consciousness.

According to 95.5 % of retailers it is rather women, who are **highly conscious costumers**, while 73.6 % claims it is rather the middle-aged (31- 45), furthermore only 55.3% think a high income is necessary, which is a surprising data, 42.9% think that an average income is also sufficient.

The favourite food brands of the highly conscious costumer were mainly trendy brands, supported by devices of marketing communications. In addition to this it is often characteristic of them that they are looking for domestic and bio products.

Based on answers received to the open questions the highly conscious costumers are: well informed, better educated, less price sensitive, choosy, trendy, brand loyal, more purposeful, sporty, balanced, and they carry out purchases in a more considerate and careful manner - the interviewed retailers claimed.

Costumers with **low level or no consciousness** are more likely to be men according to 90,9% of respondents, mostly young, between 18 and 30 years old (45,5%) the other typical age group is that between 46 and 60 years old (31,4 %). According to retailers it is "only" 53.4 % of them, who have a low income.

Costumers with low level consciousness preferred various beer brands, other alcohols, energy drinks, and sweets, and mentioned a large number of retail brands as well.

The respondents characterized costumers with low level health awareness as follows: price sensitive, obese, fast-shopper, uninformed, irresponsible, undemanding, smoker, etc.

Although the opinion of retailers was broadly similar regarding the awareness of their costumers, these are mainly stereotypes.

Based on the above I managed to prove the first part of hypothesis H3, which claims food retailers only have a superficial knowledge concerning the health and environmental awareness of their customers.

In the next subsection I will examine the second part of hypothesis H3 by presenting the results regarding retailer attitude.

Retailer attitude

Part of the questionnaire targeted the typical extent of their consciousness regarding their personal purchases. Based the consciousness demonstrated in their food purchases, they had three categories to choose from concerning, which was the most typical of them. Table 4 contains the results.

Table 4: The gender of respondents and the distribution of their level of consciousness in percentages (N=220)

Gender of respondent	Extent of consciousness			Total:
	I am not a conscious costumer	I am a generally conscious costumer	I am a strongly conscious costumer	
Male	12.5%	75.0%	12.5%	100.0%
Female	15.5%	72.3%	12.2%	100.0%
Total:	14.5%	73.2%	12.3%	100.0%

Source: own research (2011)

Table 5 includes averages received concerning the ten statements that were featured both in the consumer and the retailer questionnaires, employing which I measured their attitude regarding the topic on a Likert scale of 1-5. This list of statements was also featured in the questionnaires of the 2013 consumer survey, thus I also indicated the averages gained then in order to make differences visible.

Table 5: Averages gained from respondents concerning the following statements

Statements (1 - absolutely not true, 5 - absolutely true)	Retailer averages (2011) N=220	Consumer averages (2013) N=2000
I should pay much more attention to healthy nutrition	3.58	3.56
I should buy more health-protective products	3.65	3.54
<i>I always eat healthy</i>	2.81	2.97
I am loyal to brands in terms of food products	3.24	2.99
<i>I am always open for novelties concerning food products</i>	3.88	3.44
I prefer domestic food products	4.02	3.61
<i>I strive to purchase products with recyclable packaging</i>	3.06	2.91
I often purchase bio products	2.28	2.32
<i>I look for environmentally friendly symbols on products</i>	2.84	2.65
I choose products with returnable packaging	2.76	2.87

Source: own research (2011)

Unfortunately the averages gained are not really good. The best average was gained concerning the priority of domestic products. It can also be noticed that bio products, economically friendly emblems and products with returnable packaging are not even preferred by retailers. The situation regarding healthy nutrition is not really good either as the respondent retailers honestly acknowledge that they should pay much more attention to proper nutrition.

Eight of the ten statements are relevant from the aspect of health and environmental awareness. Retailers only show better averages in four out of the eight cases (highlighted by green) than that of the population of Budapest.

Based on the above mentioned data I accept hypothesis H3, because I have proven that the retailers interviewed only have a superficial picture regarding the extent/level of health and environmental orientation of consumers; and there is no relevant difference concerning the awareness examined in retailers and their customers .

The business policy of retail units regarding awareness

One of the questions in the questionnaire contained 15 statements about the retail shop of the respondents, and their procurement decisions made with respect to healthy nutrition and the protection of the environment. They were asked to rate the activity of their shop on a scale of 1-5. (1 - Absolutely not true, 5 - absolutely true)

The factor with the highest average was that they constantly take the demand of costumers into account during their procurements (4.31), which was followed by an average of 4.05 with the claim that shops are loyal to their manufacturers, suppliers, then with an average value of 3.93 they market more and more domestic food products. Keeping the protection of the environment in mind in their work also received a high average (3.75). The role of commercial brands in their shop was least true to the respondents (2.97), the reason for which is, that the majority were independent shops which do not have any own branded products. In addition, the stocking of cheap food products also received a lower average (3.05).

I also examined the correlation between the statements connected to health and environmental awareness (Table 6). This shows that the statements directed at the health and environmental awareness of the procurement policy of retail units almost entirely show a moderately strong, positive correlation ($0,2 < r < 0,7$). In a single case I gained an approximate value of 0.7, which means a strong positive correlation, thus the increasing amount of health protective products shows a strong correlation with the increasing amount of environmentally friendly products.

Table 6: Correlation of variables (Pearson correlation, sig.=0,00, N=220)

	Importance of consumer demands	high quality food products	an increasing number of health-protecting food products	an increasing number of environmentally friendly products	the role of environmental protection	urging healthy nutrition	the importance of environmentally friendly packaging
Importance of consumer demands	1	,198*	,217**	,186**	,331.	,297**	,279**
high quality food products	,198**	1	,420**	,370**	,356**	,456**	,328**
an increasing number of health-protecting food products	,217**	,420**	1	,694**	,413**	,599**	,395**
an increasing number of environmentally friendly products	,186**	,370**	,694**	1	,493**	,531**	,481**
role of environmental protection	,331**	,356**	,413**	,493**	1	,492**	,587**
urging healthy nutrition	,297**	,456**	,599**	,531**	,492**	1	,547**
importance of environmentally friendly packaging	,279*	,328*	,395*	,481*	,587*	,547*	1

Source: own research (2011)

Based on the results indicated in Table 6 I reject hypothesis H4, since mostly "only" a moderate relationship could be traced between health conscious and environmentally conscious business policy decisions.

On the basis of this I reject hypothesis H4, since no strong connection was found between the health conscious and environmentally conscious business policy decisions of retailers.

3.4. RESULTS OF THE MAIN RESEARCH: quantitative, Budapest-wide, consumer interviews (N=2000)

I performed the questionnaire survey (research R4) in the capital in April, 2013 by interviewing adult (over 18 years old) consumers in Budapest, which provided 2000 evaluable questionnaires, which was also the size of the sample.

I analysed the data gained using the mathematical and statistical software: SPSS Statistic 17.0. I used both simple descriptive statistical methods (mean, standard deviation, distribution, cross tabulations, frequency) and multivariate statistical analyses (Chi-square test, analysis of variance, factor and cluster analysis).

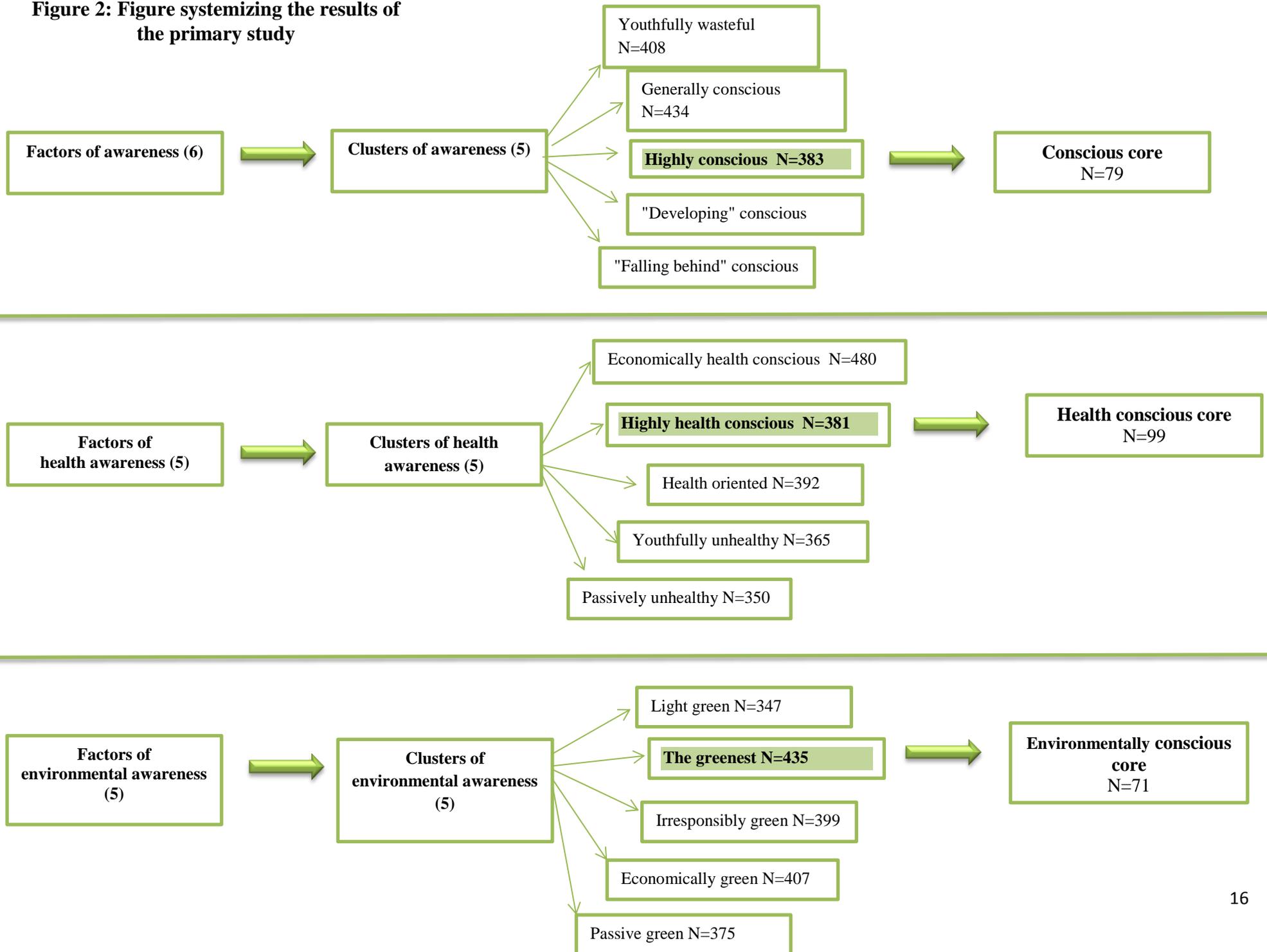
I performed a factor analysis with 22 variables for awareness, then, adding 15 variables for health and 15 for environmental awareness.

Then I made three factor analyses applying the K-means method using the factors gained. Concerning the so called (total) awareness, with the joint examination of health awareness and environmental awareness, I expressly looked for clusters related to health awareness, and then I separated consumer groups on the basis of environmental awareness.

This was followed by choosing the three segments exhibiting the strongest awareness from the consumer groups gained as the result of all three clustering, and clustered these further applying the K-means method to find the most conscious consumer groups within the conscious groups: the so called "core". I looked for correlations between the demographic characteristics of these three "core clusters" (conscious core, health conscious core and environmentally conscious core). For the transparency of the progress of my research I edited its systematic figure (Figure 2).

Finally, I tried to find overlaps, correlations comparing the results (clusters) of the three main clustering, and the structure between consumer segments along the two values studied: health and environmental consciousness.

Figure 2: Figure systemizing the results of the primary study



3.4.1. Factor analyses

Correlations between the factors of the three analyses

I performed the cluster analysis concerning the whole of the research (hereinafter referred to as the factors of awareness), and I also evaluated the two main areas of my research separately, as the result of which I gained the factors of health awareness and environmental awareness. When examining awareness I used 22 variables and 6 factors.

In my study narrowed down to health awareness I examined 15 variables and creating 5 factors, meanwhile I also managed to distinguish between 5 factors concentrating on environmental awareness, also using 15 variables.

I used a principal component analysis with Varimax rotation for the analysis, but I also run the data through several other methods (maximum likelihood analysis, alpha method) which clearly confirmed the results.

I worked with a linear Pearson-type correlation, which demonstrates the connection between the two variables. The correlation of conscious and environmentally conscious factors is shown in the following table. I highlighted strong correlation values with green and moderate ones with grey.

Table 7: The value and significance of correlation coefficients between the factors of consciousness and the factors of environmental awareness.

Factors of environmental awareness		1. Environment-oriented	2. Conscious shopping	3. Thrift	4. Economic aspects	5. Habits
1. Environment oriented	Correlation	,928**	,033	,072**	-,116**	,080**
	Sig.	,000	,149	,001	,000	,000
2. Economic aspects	Correlation	,032	,851	,007	,470	,027
	Sig. (2-tailed)	,152	,000	,747	,000	,237
3. Insalubrity	Correlation	,074**	,106**	,023	-,287**	-,031
	Sig. (2-tailed)	,001	,000	,313	,000	,169
4. Health-oriented	Correlation	,237**	,007	,087**	,016	-,419**
	Sig. (2-tailed)	,000	,761	,000	,486	,000
5. Fashion-oriented	Correlation	,157**	,082**	-,092**	-,170**	,052*
	Sig. (2-tailed)	,000	,000	,000	,000	,023
6. Thrift	Correlation	-,012	-,147**	,930**	,248**	,098**
	Sig. (2-tailed)	,583	,000	,000	,000	,000

*. Correlation is significant at the 0.05 level (2-tailed).

**.. Correlation is significant at the 0.01 level (2-tailed).

Source: own research (2013)

The data show that the factors: environmental orientation (0.928) and thrift (0.930) are present in both analyses and demonstrate a strong positive correlation. A strong correlation can be observed between economic aspects and conscious purchases as well (0.851).

Table 8: The value and significance of correlation coefficients between the factors of consciousness and the factors of health awareness.

Factors of health awareness		1. Economic aspects	2. Insalubrity	3. Fashion oriented	4. Health oriented	5. Environmental factor
1 Environment oriented	Correlation	-,045*	,034	,084**	,149**	,755**
	Sig. (2-tailed)	,044	,128	,000	,000	,000
2. Economic aspects	Correlation	,918**	,038	,082**	-,055*	,050*
	Sig. (2-tailed)	,000	,092	,000	,014	,026
3. Insalubrity	Correlation	-,060**	,978*	-,031	,001	,053*
	Sig. (2-tailed)	,008	,000	,165	,977	,018
4. Health oriented	Correlation	,103**	,076**	,321**	,743**	-,049*
	Sig. (2-tailed)	,000	,001	,000	,000	,030
5. Fashion-oriented	Correlation	-,089**	-,025	,821**	-,063**	-,027
	Sig. (2-tailed)	,000	,272	,000	,005	,228
6. Thrift	Correlation	,209**	-,061**	-,195**	,372**	-,031
	Sig. (2-tailed)	,000	,007	,000	,000	,168

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Source: own research (2013)

The data in Table 8 show, that the factors: environmental orientation (0.755), economic considerations (0.918), insalubrity (0.978), health orientation (0.743) and trend orientation (0.821) are all present as factors in both analyses and show a strong, positive correlation with one another.

Overall, we can conclude, that while the factors of awareness show a strong correlation with the factors of health awareness in all five cases, only three strong correlations can be found in the case of environmentally conscious factors.

It can be concluded concerning the sample examined, that is, the adult population of Budapest, that they are more health conscious than environmentally conscious in their purchasing decisions, which fact is proved by the results displayed in tables 7 and 8.

In my review of the literature I wrote about the areas of conscious consumption in a detailed manner. Here I presented Katalin Schäfferné Dudás' division on conscious consumption, distinguishing between two main areas.

- Self-conscious consumption: individuals who are more likely to bear their own interests in mind, in which group the author classified health awareness.
- And responsible consumption: the individual is mindful of the interests of others as well, the author classified environmental awareness into this group.

Therefore, based on the results shown in tables 7 and 8

I accept hypothesis H8, which says:

According to Katalin Schäfferné Dudás based on the division of conscious consumption, self-conscious consumption dominates more than responsible consumption, thus the adult population of Budapest is more health conscious than environmentally conscious.

Table 9 examines the linear correlation between the factors of health and environmental awareness. This provides an answer to my hypothesis: H7.

Table 9: The value and significance of correlation coefficients between the factors of health awareness and the factors of environmental awareness.

Factors of health awareness		1. Environment-oriented	2. Conscious shopping	3. Thrift	4. Economic aspects	5. Habits
1. Economic aspects	Correlation	,045*	,627**	,139**	,693**	-,009
	Sig. (2-tailed)	,047	,000	,000	,000	,700
2. Insalubrity	Correlation	,150**	,088**	-,061**	-,184**	-,071**
	Sig. (2-tailed)	,000	,000	,007	,000	,002
3. Fashion-oriented	Correlation	,296**	,151**	-,224**	-,127**	-,069**
	Sig. (2-tailed)	,000	,000	,000	,000	,002
4. Health oriented	Correlation	,229**	,044	,519**	-,149**	-,302**
	Sig. (2-tailed)	,000	,051	,000	,000	,000
5. Environmental factor	Correlation	,646**	,131**	,061**	-,178**	,107**
	Sig. (2-tailed)	,000	,000	,007	,000	,000

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

Source: own research (2013)

These data also prove that no strong correlations can be observed between the two value systems, only a moderately strong correlation can be mentioned. Only one case shows a strong relationship, namely in case of economic aspects $r = 0.693$.

The rejection of hypothesis H7 is also supported by Pearson's correlation coefficient of health and environmental awareness, which also shows a moderate relationship ($r = 0,574$) (Table 10).

Table 10: Correlation and significance of environmental awareness and health awareness (N=1983)

Correlation			
		environmentally friendly behaviour, environmental awareness	extent of health awareness
environmentally friendly behaviour, environmental awareness	Pearson Correlation	1	,574**
	Sig. (2-tailed)		,000
	N	1983	1983

** . Correlation is significant at the 0.01 level (2-tailed).

Source: own research (2013)

*On the basis of the results of table 9 and the correlation coefficient. $r = 0,574$
I reject hypothesis H7 because no strong, positive correlation was found between health conscious and environmentally conscious consumer behaviour on the basis of the research.*

3.4.2. Cluster analyses

I chose the K-means non-hierarchical method as the method of cluster analysis, because due to the large sample size (N=2000) hierarchical analysis is not recommended (Sajtos-Mitev, 2007).

Finally, including the whole of the research material I created five clusters with the employment of the six factors of awareness gained earlier.

In the research narrowed down to health awareness I successfully distinguished between five consumer clusters on the basis of the five factors created, then I also gained 5 distinct clusters concentrating on environmental awareness (Figure 2).

Using the three types of cluster analysis I will present a total of 15 clusters in my dissertation in a detailed manner (with this I proved hypothesis H1 again). Furthermore, "breaking down", further clustering the clusters showing the highest awareness I gained three so called "cores", sub-clusters and characterized them from a socio-demographical aspect, which sub-clusters are the following:

1. "Conscious core" cluster (N=79)
2. "Health conscious core" cluster (N=99)
3. "Environmentally conscious core" cluster (N=71)

In my work, my aim was to explore and describe this new, highly conscious consumer group. On the basis of my secondary and primary research I think that the cluster I called "**conscious core**" is identical with the segment denominated as the **LOHAS** (Lifestyles of Health and Sustainability) group.

Therefore I accept hypothesis H6, according to which the presence of a LOHAS consumer group can be found clearly in the food market along health and environmental awareness.

Comparison of the most conscious so called "core" clusters.

The so called "core" clusters were born as a result of the further clustering of the most conscious clusters. My research objective was to get to know these groups, which show the highest awareness better, and explore their socio-demographic data.

In table 11 the demographic data of the three groups created within the category showing strong awareness are indicated, with which I completed my objective O13 and wish to prove hypothesis H9.

Table 11: Demographic data of "core" clusters exhibiting strong awareness

	Conscious core N=79 (%)	Health conscious core N=99 (%)	Environmentally conscious core N=71 (%)
Gender			
Male	31.6	32.3	29.6
Female	68.4	67.7	70.4
Age group			
18-30 years old	17.7	20.2	18.3
31-45 years old	46.8	44.4	36.6
46-55 years old	20.3	24.2	28.2
Educational attainment			
elementary school	0.0	0.0	0.0
vocational schools, trade schools	3.8	2.0	2.8
secondary school	19.0	16.2	16.9
currently in high education	5.1	8.1	9.9
high education degree	72.2	73.7	70.4
Occupation			
employee	55.3	53.1	53.6
entrepreneur	36.8	40.8	34.8
retired	5.3	3.1	4.3
Average monthly net income			
75-100 thousand HUF	11.8	5.4	10.1
100-150 thousand HUF	26.3	27.2	24.6
Above 150 thousand HUF	56.6	62.0	55.1
Budapest residential districts			
Inner districts	72.2	68.7	77.5
Outer districts	27.8	31.3	22.5
Number of households			
single person household	12.7	8.1	8.5
2 person household	24.1	25.3	26.8
3 person household	24.1	24.2	19.7
4 person household	30.4	33.3	28.2
5 person household	7.6	9.1	14.1
6 and more person household	0.0	0.0	2.8

Source: own research (2013)

The data clearly show, that individuals with the highest health awareness and strongest devotion to their environment had similar demographic data.

Therefore I accept hypothesis H9, in which I assume that the demographic data of the most important consumer groups (clusters) examined from the perspective: awareness- health awareness - environmental awareness are largely identical and show large similarities.

The relation system between the three consumer groups gained by cluster analysis.

I examined hypothesis H5 by the "overlap" of consumer groups gained from the three types of clustering. I aimed to show that strongly health conscious consumers are also strongly environmentally conscious.

To prove this I used the overlap "meeting point" of the three cluster types. The following tables indicate the distribution of joint cluster members in percentages. The highlighted fields indicate the relevant, joint segments.

Table 12: The connection of conscious and health conscious cluster members, their distribution in percentages

		Clusters of health awareness					Total
		1. average	2. highly conscious	3. health urging oriented	4. youthfully unhealthy	5. passively unhealthy	
Clusters of awareness	1. wasteful	1.2%	10.5%	1.2%	40.7%	46.3%	100.0%
	2. average	40.6%	29.5%	5.5%	11.5%	12.9%	100.0%
	3. highly	2.3%	33.7%	48.3%	14.9%	8%	100.0%
	4. developing	42.0%	18.9%	15.8%	12.9%	10.3%	100.0%
	5. passive	35.7%	6%	33.9%	11.9%	17.9%	100.0%
Total:		24.4%	19.4%	19.8%	18.6%	17.7%	100.0%

Source: own research (2013)

Table 13: The connection of conscious and environmentally conscious cluster members, their distribution in percentages

		Clusters of environmental awareness					Total
		1. light green	2. the greenest	3. irresponsible green	4. economically green	5. passive	
Clusters of awareness	1. wasteful	7.8%	5.6%	64.2%	20.3%	2.0%	100.0%
	2. average	32.0%	22.8%	14.1%	9.2%	21.9%	100.0%
	3. highly	14.1%	40.7%	9.1%	15.4%	20.6%	100.0%
	4. developing	19.2%	27.4%	8.7%	39.4%	5.3%	100.0%
	5. passive	12.9%	13.2%	1.3%	18.9%	53.8%	100.0%
Total:		17.7%	22.2%	20.3%	20.7%	19.1%	100.0%

Source: own research (2013)

Table 13 indicates the relations between the clusters of consciousness and environmental consciousness, and their points of intersection. Here there are fewer, but more concrete overlaps than in the previous table.

I analyse the relationship between health awareness and environmental awareness similarly (Table 14).

The greenest environmentally conscious segment covers half of the highly health conscious group (49.6%). Naturally I also used the data with regard to environmentally conscious factors, according to which, the most health conscious cluster only makes up 43.5% of the greenest group. These data support the rejection of hypothesis H5.

At the beginning of my research I estimated this overlap to be at least 75%, however, based on the data, these two strongly conscious groups "only" cover one another in 43-49%.

Table 14: The connection of health conscious and environmentally conscious cluster members, their distribution in percentages

		Clusters of environmental awareness					Total
		1. light green	2. the greenest	3. irresponsive green	4. economically green	5. passive	
Clusters of health awareness	1. average	21.8%	20.1%	1.3%	28.2%	28.7%	100.0%
	2. highly conscious	15.5%	49.6%	26.2%	3.4%	5.2%	100.0%
	3. health oriented	20.4%	25.0%	2.8%	16.5%	35.3%	100.0%
	4. youthfully unhealthy	11.3%	3.0%	29.7%	46.2%	9.9%	100.0%
	5. passively unhealthy	18.1%	11.8%	49.7%	7.5%	12.9%	100.0%
Total:		17.7%	22.2%	20.3%	20.7%	19.1%	100.0%

Source: own research (2013)

Therefore I reject hypothesis H5 according to which: health awareness and environmental awareness are closely related to one another in case of highly conscious consumers, that is, individuals who are highly health conscious are also highly environmentally

In table 15 I summarized the hypotheses examined and their results.

Table 15: Summary of the hypothesis, result

HYPOTHESIS		STATUS
H1:	Based on health and environmental awareness consumer groups exhibiting characteristic differences can be explored in the food consumer market.	approved
H2:	The highest level of awareness concerning food purchases can be observed in the capital.	approved
H3:	The food retailers and consumers interviewed only have a cursory knowledge of health and environmental orientation and there is no relevant difference between the awareness of the retailers and their buyers studied.	approved
H4:	A strong connection (correlation) can be detected between the health and environmentally conscious business policy decisions of retailers.	rejected
H5:	The values: health awareness and environmental awareness are closely related to one another in the case of consumers, namely that highly health conscious individuals are also strongly environmentally conscious concerning their purchases.	rejected
H6:	A LOHAS consumer group can be clearly detected in the food market along health and environmental awareness.	approved
H7:	A strong, positive correlation can be detected on the basis of the research between health conscious and environmentally conscious consumer behaviour.	rejected
H8:	According to Schäfferné Dudás Katalin based on the division of conscious consumption, self-conscious consumption dominates more than responsible consumption, thus the adult population of Budapest is more health conscious than environmentally conscious.	approved
H9:	I assume that the demographic data of the most important consumer groups (clusters) examined from the perspective: awareness- health awareness - environmental awareness are largely identical and show large similarities.	approved

3.5. New/novel scientific results

T1. I proved that in the value system of the adult population in Budapest health awareness is present to a greater extent concerning food purchases, than environmental awareness

During my empiric research I performed three types of factor analysis. I examined the factors gained using the Pearson-correlation. Based on the results I gained we can conclude, that the factors of awareness show a strong, positive correlation with the factors of health awareness in five cases out of six, while in the case of environmentally conscious factors, only three strong correlations can be found.

T2. I identified the variables involved in health and environmentally conscious food purchase, determined segments based on the individual preferences and explored their characteristics.

In my secondary research I identified the factors, variables involved in health and environmentally conscious food purchases. Then, as the result of my empirical research I managed to establish - by three types of clustering - the consumer clusters, which can be viewed as distinct segments along the two dimensions examined.

I have detailed the socio-demographic differences demonstrated by the segments, and the characteristic features present in food purchasing patterns.

With further clustering I managed to find the groups exhibiting the highest awareness, exploring their typical socio-demographical characteristics.

T3. I explored the sub-segments (so called "core" clusters) exhibiting the highest awareness, then characterized them using basic and descriptive variables.

In my research I established the variables examined on the basis of three criteria, and performed three types of clustering accordingly. I selected the most conscious consumer group from each of the three clustering and applied further clustering on them. This way, I got relatively small groups, but managed to explore the "parameters" of the most conscious members, their demographic data, and the similarities between the three "core" clusters.

T4. I learnt the correlations between health conscious and environmentally conscious food consumption and the strength of their relationship.

In my main research I intended to prove that health awareness and environmental awareness, as new, influencing factors in the process of food purchase decision are not independent of each other. I found the connection points and overlaps between the clusters, consumer groups on the basis of the two segmentation criteria using a novel methodological solution-.

T5. I successfully verified the presence of a LOHAS group in Budapest, and also estimated its proportion.

In my review of the literature I presented the so called LOHAS (Lifestyles of Health and Sustainability) group, as a segment with new values and strongly conscious consumption. In the Budapest sample I purposefully searched for, then I clearly pointed out the segment, which showed a high degree similarity to the characteristics of the LOHAS group and named this segment as the "conscious core" cluster. Approximately 4% of the sample fell into this consumer group in Budapest.

4. CONCLUSIONS AND SUGGESTIONS

I detailed the main topics of the dissertation, that is, health and environmental consciousness in separate chapters. My aim was to learn the role of the two conscious components in the consumer behaviour, and purchasing decisions in the literature. I narrowed down my secondary research to food purchases.

Employing earlier research results and the literature I collected the trends observed in food consumption. (O1, O2).

I connected three main objectives to my empiric research series (O3, O4, and O5).

The main objective I aim to achieve with my series of primary researches is to examine the food consuming habits of domestic consumers and that of the ones living in the capital reflecting on health and environmental consciousness. In order to achieve this I have concluded qualitative (R1) and quantitative (R2, R4) studies. Based on the results of these I examined food consuming habits and the components, extent of awareness presented in purchases (O3). In addition I created distinct consumer segments based on their consciousness employing cluster and factor analysis (**hypothesis H1 justified**).

Based on the results gained it became clear, that no relevant differences can be found concerning the different settlement types regarding conscious food purchases, but it has been proved, that the population of the capital shows a higher extent of consciousness in the research area investigated (**hypothesis H2 justified**).

In research phase R3 I examined the opinions of the supply side, namely the retailers. As a primary research it gave me a better picture about the consciousness of costumers.

It was proven, that the food retailers in Budapest only have a superficial knowledge concerning the extent of the costumers' awareness, and although retailers are aware of the importance of health and environmental protection, they do now show higher awareness in their own purchases than their costumers (**hypothesis H3 justified**).

I have also examined the decisions of retailers regarding business politics and procurement from the aspect of health and environmental awareness. I assumed that the two factors are in a strong correlation with one another during their decisions. However, "only" a moderate correlation was found between the two values (**hypothesis H4 not justified**).

I intend to prove that health awareness and environmental awareness, as new, influencing factors in the process of food purchase decision are not independent of each other. There are connection points, overlaps between the clusters and consumer groups developed on the basis of the two segmentation criteria. (O4).

Therefore as the main ridge of research R4 I examined the existence, of health and environmentally conscious values, their connections and role in costumer decisions. I have examined this using the correlations of the results gained by factor and cluster analysis.

However the value of the Pearson correlation "only" indicated a moderate, positive relation ($r=0,574$) concerning health awareness and environmental friendly behaviour variables included in my research Surprisingly, only one strong relation was traceable between the five-five factors of health and environmental awareness, I typically gained moderate correlations. This also shows that there is no strong connection of value systems between health and environmental awareness in case of the respondents (**hypothesis H7 not justified**).

In my review of the literature I presented Schäfferné Dudás Katalin's division of conscious consumption (2010), where the author distinguished between two main areas.

- Self-conscious consumption: individuals who are more likely to bear their own interests in mind, in which group the author classified health awareness.
- And responsible consumption: the individual is mindful of the interests of others as well, the author classified environmental awareness into this group.

The result of the correlation analysis of the factors is, that while the factors of awareness show a strong, positive correlation with the factors of health awareness in five cases, in the case of environmentally conscious factors, only three strong correlations can be found. The qualitative research also proved that self-conscious consumption characterizes the respondents more. Thus, we can conclude that currently self-conscious consumption is more typical of the Budapest population than responsible consumption (**hypothesis H8 justified**).

It already turned out during the factor analysis that the sample is characterized by well-defined factors. My assumption was also supported by the fact that the consumer groups gained from the three types of cluster analysis showed truly different characteristics in the field of conscious purchases, and were well characterized demographically as well. (**hypothesis H1 justified**).

One of my other assumptions was that the values: health awareness and environmental awareness are closely related to one another in the case of highly conscious consumers, namely that highly health conscious individuals are also strongly environmentally conscious concerning their food purchases. When formulating my hypothesis I assumed an overlap of 75% between the highly health conscious and highly environmentally conscious consumer clusters. However, this ratio turned out to be "only" 43-49% (**hypothesis H5 not justified**).

My final main objective is to explore the "parameters", socio-demographical data of the consumer group, which proves the "most conscious" on the basis of my studies. This tells us what characterizes really health and environmentally conscious costumers in the food market. (O5).

In my review of the literature I presented the so called LOHAS group, as a segment with new values and strongly conscious consumption. I looked for them purposefully in the Budapest sample. The "conscious core" cluster I found presented a high degree similarity with the characteristics of the LOHAS group (**hypothesis H6 justified**).

It became clear from the data that the individuals characterized by the strongest health awareness and the strongest devotion to the environment had very similar demographic data based on the comparison of the three "core" clusters (**hypothesis H9 justified**).

During my studies it was proven that the role of health and environmentally conscious values in the value system of the Budapest population concerning food consumption is only moderate. Using multiple clustering I found that 4+ of the adult population of Budapest belongs into the strongly health and environmentally conscious group.

A large amount of time and effort is still needed in order to achieve the change of approaches desired in this area as well. Consumer awareness should be raised by further regulations, effective communication, and the provision of information. The education of children and their orientation concerning the topic is a crucial institutional and family responsibility.

The practical applicability of main dissertation results:

- I consider it important to research the changes in consumer habits as the two megatrends presented will be more and more determinant regarding food consumption and offer for a long term. It is important for manufacturer and producer companies to know and prepare for the change in purchasing habits in a proactive manner.
- An estimation can be performed based on the segments established during the research regarding the size of the target groups of manufacturers and retailers, and the determination of their characteristics.
- My research findings may help marketing experts active in the food market to define their market development, market expansion opportunities and in their marketing activities adjusted to the need of target markets.
- My research results will also be used by health and environmentally oriented non-governmental organizations.
- I am confident, that I can assist in the work of my fellow instructor colleagues with the theoretical, summarizing part of my dissertation and the results of my research.

The main guidelines for the continuation of the research

- The basic thrust of the research is a nationwide survey performed with a similar methodology.
- More kinds of qualitative techniques should be applied to a greater extent in order to get an accurate outline of the subjective value judgement of consumers.
- It would constitute as the development of my research if beside the segmentation based on demographical foundations other value system based lifestyle segmentation processes would also be applied.
- The establishment of a statement list measuring health and environmental awareness on the level of the individual.
- Furthermore, the creation of the total explanatory model of consumer behaviour, where health and environmental awareness are present together, in a more emphasized manner.

5. LIST OF PUBLICATIONS CONNECTED TO THE TOPIC

1. Scientific articles

Scientific articles published in a foreign language

BRÁVÁCZ I. (2014): Examination of environmentally conscious consumer groups on the Hungarian food market, *Economists' Forum*, (Scientific Journal of the Hungarian Economists' Society of Romania) Vol. XVII, No. 118, 2014/3. June, ISSN 1582-1986, 41-53 p.

BRÁVÁCZ I. (2013): Results of Research about Consciousness of Foodstuff Consumers in Hungary, *International Journal of Business and Social Research (USA)* Vol 3, No 9 (2013) September, Print ISSN 2164-2540 (Online ISSN 2164-2559) , 1-7 p.

Scientific articles published in Hungarian

BRÁVÁCZ I. (2014): Kereskedői attitűdök a tudatos élelmiszervásárlással kapcsolatban (Dealer's Attitudes Towards Conscious Foodstuff Purchasing), *Élelmiszer, Táplálkozás és Marketing Folyóirat*, X. évfolyam I/2014. szám, ISSN 17863422, 39-45p.

BRÁVÁCZ I. (2013): Kutatási eredmények az élelmiszerkereskedők attitűdjeiről című tanulmány befogadásra került az *AGORA BGF-KVIK tudományos folyóiratába* (*Scientific Journal of the BBS CCCT*) ISSN: 1789-2643

BRÁVÁCZ I. (2013): Egy primer kutatás eredményei a fogyasztói környezettudatosságról (Results of a primary research about the environmental consciousness of consumers) címmel az *Információs Társadalom Társadalomtudományi Folyóirat*, 2013. XIII. évfolyam 2. szám, ISSN 1587-8694, 68-76 p

2. Presentations at scientific conferences and publications in a conference volume

In a foreign language

BRÁVÁCZ I. (2012): The Experience of Food Retailers about Consumers' Health and Environmental Awareness , *Innovative Information Technologies in Agriculture Informatics Conference* 21 - 22. September, 2012, Debrecen, Hungary
ISBN 978-615-5094-08-8 CD-ROM version ISBN 978-615-5094-07-1, 176-183 p.

BRÁVÁCZ I. (2011): Results of Cluster Analysis for Foodstuff Consumers, *Innovative Information Technologies in Agriculture, Agricultural Informatics 2011 Conference*, 11-12. November 2011, Debrecen ISBN 978-615-5094-05-7, 95-100 p.

BRÁVÁCZ I. - KOZÁR L. (2011): Health and environmental consciousness in foodstuff consumption in Hungary, „ *A tudomány és az oktatás a tudásközpontú társadalom szolgálatában*” III. Nemzetközi Tudományos Konferencia, Selye János Egyetem, Szlovákia, Komárno, 2011. szeptember 5-6. ISBN 978-80-8122-017-3, 814-820 p.

BRÁVÁ CZ I. – HARDICSAY P. (2011): Stimulation of Innovative Approach and Creativity of Organisations with Development of Logical Ability
„People and the Value of an Organization” Conference, Poland, Czestochowa, 16 – 17 June 2011. ISBN 978-83-61118-39-8, ISSN 1428-1600, 209-220 p.

BRÁVÁ CZ I. (2011): Health Conscious Foodstuff Consumption in Hungary,
Spring Wind 2011 Conference, Association of Hungary PhD and DLA Students,
Pilisvörösvár, 2011. április 15-17. ISBN 978-615-5001-33-8, 45-52 p.

BRÁVÁ CZ I. (2010): How Health-conscious Are We in Dining? - Segments in the Domestic Foodstuff Market "*Hitel, Világ, Stádium*" *Nemzetközi Konferencia NYME*, Sopron , 2010. November 03. ISBN 978-963-9883-73-4, 126-132 p.

BRÁVÁ CZ I. (2010): Consumer consciousness and awareness in domestic foodstuff market, "*Hitel, Világ, Stádium*" *Nemzetközi Konferencia NYME*, Sopron, 2010. November 03. ISBN 978-963-9883-73-4, 172-178 p.

In Hungarian

BRÁVÁ CZ I. (2014): A környezettudatosság szintjei és mértéke – egy primer kutatás tapasztalatai címmel a *Kulturális és társadalmi sokszínűség a változó gazdasági környezetben tanulmánykötetben*, II. IRI Társadalomtudományi Konferencia NOVÉ ZÁMKY, 2014. április 25-26. International Research Institute, Komarno, ISBN: 978-80-89691-10-4, 193-200 p.

BRÁVÁ CZ I. (2014): A hazai élelmiszervásárlók tudatosságának „sokszínűsége”- azaz élelmiszer fogyasztói klaszterek ismertetése, *Multidiszciplináris kihívások Sokszínű válaszok, BGF KVIK KÖT Tanulmánykötete* 2013/3. ISBN: 978-963-7159-67-1, 19-27 p.

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