

University doctoral (PhD) dissertation abstract

**HEALTH CONSCIOUS NUTRITION EFFECT ON SOFT
DRINK CONSUMPTION**

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1. Purpose and aims

The concomitant phenomenon of the industrialization the technological development and the prosperity of the capitalist societies was the change in people's way and circumstances of life.

The increasing number of processed food and sedentary jobs and the phenomenon of people's physical strain have decreased effects on people's way of life. This change of modern life consequently should infer changes in dietary habits. Otherwise the change of the living conditions together with the traditional nutritional habits could present a negative effect on the organism and people's health.

In the last few decades the number chronic diseases has dramatically increased. The main cause for these diseases is the change in way of life; including rising stress in a fast-paced world and a lack of attention to physical activity and proper nutrition. Nutrition and bad dietary habits have the greatest influence on weight gain and obesity, which are serious public health problems because the increased risk of chronic diseases (like cardiovascular diseases, high blood pressure and diabetes).

Capitalism, agriculture and food production is hard to match. Profit makes capital indifferent to the qualitative aspect of life unless it can make short profit. Rational capitalist will produce unhealthy food as long as it is more profitable than healthy food. Chronic diseases being overweight and obesity highly correlates with lack of physical activity and improper nutrition. The percentage of obese population for some European countries can be seen in *Figure 1*.

In terms of nutrition one major factor is the daily balanced energy intake. Chronic imbalance between energy expenditure and energy intake causes weight gain and obesity. The daily burned, used energy and the energy intake should be in balance continuously.

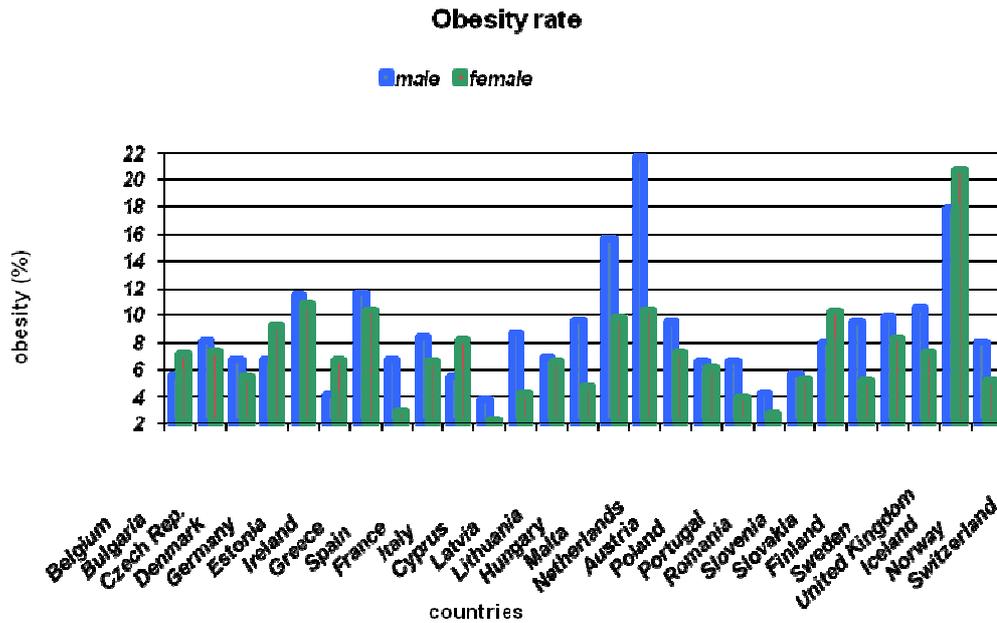


Figure 1: Obesity rate (percentage of the population)
 Source: European Commission [2005]

One of the main sources of the energy is the added sugar, which doesn't contain any micronutrient but calories. Sugar is generally the cheapest and most accessible calorie which can make excessive appetite and quasi addictive. That is why the more sugar we consume the more sugar we want, so more processed food are getting sweeter and sweeter. This opportunity is exploited by the soft drink manufacturers. . Regular soft drink is a really good example for empty calories, sometimes called liquid candy; it contains almost only added sugar and no other micronutrients. It is easy to exceed with even a small amount of additional sugar contained soft drink the level of a daily maximum threshold of WHO recommendation for sugar consumption.

Of course beside the supply it is essential to study characteristics of the demand side, which is the consumer. It is highly recommended to examine the information status of the consumer, how conscious is about the relationship between lifestyle diseases and healthy nutrition. Beside this, it is essential to know about the existence of health consciousness – as consumption influencing factor - that during the mapping of consumer behaviour. If that is exist, how about the correlation level with other influencing factors?

I concentrate in my research on soft drink market a section of food industry. I examine the role of lifestyle diseases, proper nutrition, food marketing, and the appearance of health awareness in purchase decision process.

The major of my work was conducted on behalf of the Fővárosi Ásványvíz és Üdítőipari zRt., which is the Hungarian settlement of PepsiCo Inc. The aim of my work is basically consumer behaviour analysis of soft drink categories in terms of proper nutrition and health awareness. Non alcoholic beverages are differentiated usually in 3 categories. Namely mineral waters, carbonated soft drinks and fruit drinks. In my research I separate the fruit drinks in two different categories and beside the mineral waters and carbonated soft drinks I examine the category of 100% juices/nectars and not 100% fruit drinks. Because of the fact that ice tea and sport & energy drinks are getting to be a considerable section, I examine them as well. Altogether I differentiate in my computer assisted telephone interview (CATI) research six different soft drink categories. This separation is important on the one hand according to the wish of my support partner the Fővárosi Ásványvíz- és Üdítőipari zRt., on the other hand to my belief distinctiveness can be found with this separation of the soft drink categories. The increasing amount of market share by ice tea and sport & energy drinks is a considerable reason of differentiation. Beside that one of my purposes is to reveal the fact that in consumer's view, how similar or different are the 100% juices/nectars and the not 100% fruit drinks.

The consumer behaviour analyses are primarily based on quantitative research methods. Two market research companies supported me by the data collection of the Hungarian quantitative research. Szinapszis Piackutató és Tanácsadó Ltd. by the CATI data collection with 1000 respondents, and NRC Hungary Ltd., by the online method, sample size 250.

The basic purpose of my research is to promote healthy way of life. I consider revealing beneficial information enhancing public health marketing strategies in order to promote healthy lifestyle. Furthermore my purpose is to disseminate information about proper nutrition, way of life and health conscious behaviour. I aim to build in adequately fluid intake in proper nutrition and through these decreasing the risk of negative health effects. On the whole I aim to decrease the prevalent number of lifestyle diseases, which could save considerable economic and social costs.

According to the above mentioned the aim of my research is to analyse the Hungarian soft drink consumer behaviour regarding to the six categories, which I differentiated previously. Continuously I have a special focus on health factor in purchase decision process. I aim to understand whether health has any influence on the choice of soft drink categories. What is the relation between lifestyle, health conscious way of living and purchase decisions? What is

the Hungarian consumer behaviour in terms of soft drink categories? How important is health awareness in purchase decisions and how strong does it motivate?

For all of these I formulate the following hypotheses in my research:

- *There is no difference between men and women according to the preference and consumption in terms of soft drink categories.*
- *There is no difference among them according to how healthy they consider the soft drink categories.*
- *There is no difference in the preference and consumption of soft drink categories regarding to qualification.*
- *There is no difference in the preference and consumption of soft drink categories regarding to consumer's job type.*
- *There is no difference between job type and qualification about how healthy they consider the soft drink categories.*
- *There is no difference in consumption of soft drink categories regarding the age groups.*
- *There is no difference between age groups, how healthy they consider the different soft drink categories.*
- *It could be determined the most influencing factor of soft drink purchase decision.*
- *Strong, relatively homogeneous groups could be determined regarding way of life and health awareness in view of soft drink purchase. What are the considerable aspects, which are determining these groups?*
- *There is no way to differentiate consumers according to the health awareness content in purchase decision.*

Through my analyses I'm intent on answering the above mentioned hypotheses. After that, according to the answers I formulate conclusions.

2. Material and methods

During my research I apply different methods in terms of healthy nutrition and healthy way of life related to soft drink consumption. The background of the research is substantiated with the detailed examination of the scientific literature. After that the topic related primary research is determining, which is based on own data collection (*Table 1*). These support the new approach and detailed aspects about the concern. Including the primary research we can found the quantitative analyses in terms of the Hungarian population. One computer assisted telephone interview with 1000 respondents and an online questionnaire based on 250 people in the sample. These data were collected with the support of market research.

Table 1: Applied primary researches

sample	sample size	method	type
Hungarian population	1000	CATI	quantitative
Hungarian population	250	internet/web	quantitative

Source: Own development

It is common that we use for considerable type of data collecting methods in marketing and market research. These are namely the computer assisted telephone interview, the personal interview, the regular mail questions, and the online questionnaire.

The telephone interview is fast and substantially cheaper than the other methods although it is only moderately flexible and the respondents are moderately available. In the end we decided to choose the computer assisted telephone interview method in conjunction with the market research company in order to collect the sample with 1000 respondents. Regarding the controllability and reliability we have recorded the phone calls and the conversation, which can be reviewed any time.

The other method was an online questionnaire used to collect the data of the Hungarian sample with 250 respondents. That was based on a countywide panel database. The use of the online method is reasonable regarding to the nature of conjoint method, the reliability of data and due the control opportunity. The major aspects were speed and cost efficiency, beside the previously mentioned considerations.

The sampling method used in both cases is simple random sample, which is based on panel data. The computer chose the respondents randomly by both methods based on the previously adjusted parameters. These were set up based on determined quotas. Obviously when the respondents refused to answer the computer chose again as long as the sample size reached 1000.

According to the scientific literature overview and my beliefs, soft drink consumption could have speciality regarding the gender, and age. Beside that the availability and the supply of the products are substantial aspects in soft drink consumption as well. In order to reduce the distortion of the database I determined quotas. I took in to consideration for considerable aspects in both cases. The appropriate quotas were determined according to gender, age, settlement type and regional distribution, by using data peculiar to Hungary. The usage of more than these quotas would quite render more difficult the sampling. With this weighting according to quotas, I ensure the best possible usability and information content of the data for presenting the national status. It is also enhancing representativeness of the sample, and anticipates post-weightening. Due to the nature of the survey, we took into consideration the Hungarian population aged between 14 and 65. This restriction is a special wish from the supporter company since they have a special focus on this part of the population.

Including the statistical methods I use beside basic descriptive statistics complex advanced statistical techniques in order to process data as well. Amongst other things I reckon analyses of variance (ANOVA), conjoint analyses, correlation analyses, and principal component analyses.

3. Main findings of the dissertation

The basic framework of my research can be seen on *Figure 2*. The analyses of the examined aspects are conducted totalized and demographically separated as well. Beside that of course in each demographically separated aspect I take in to consideration all soft drink categories distinct.

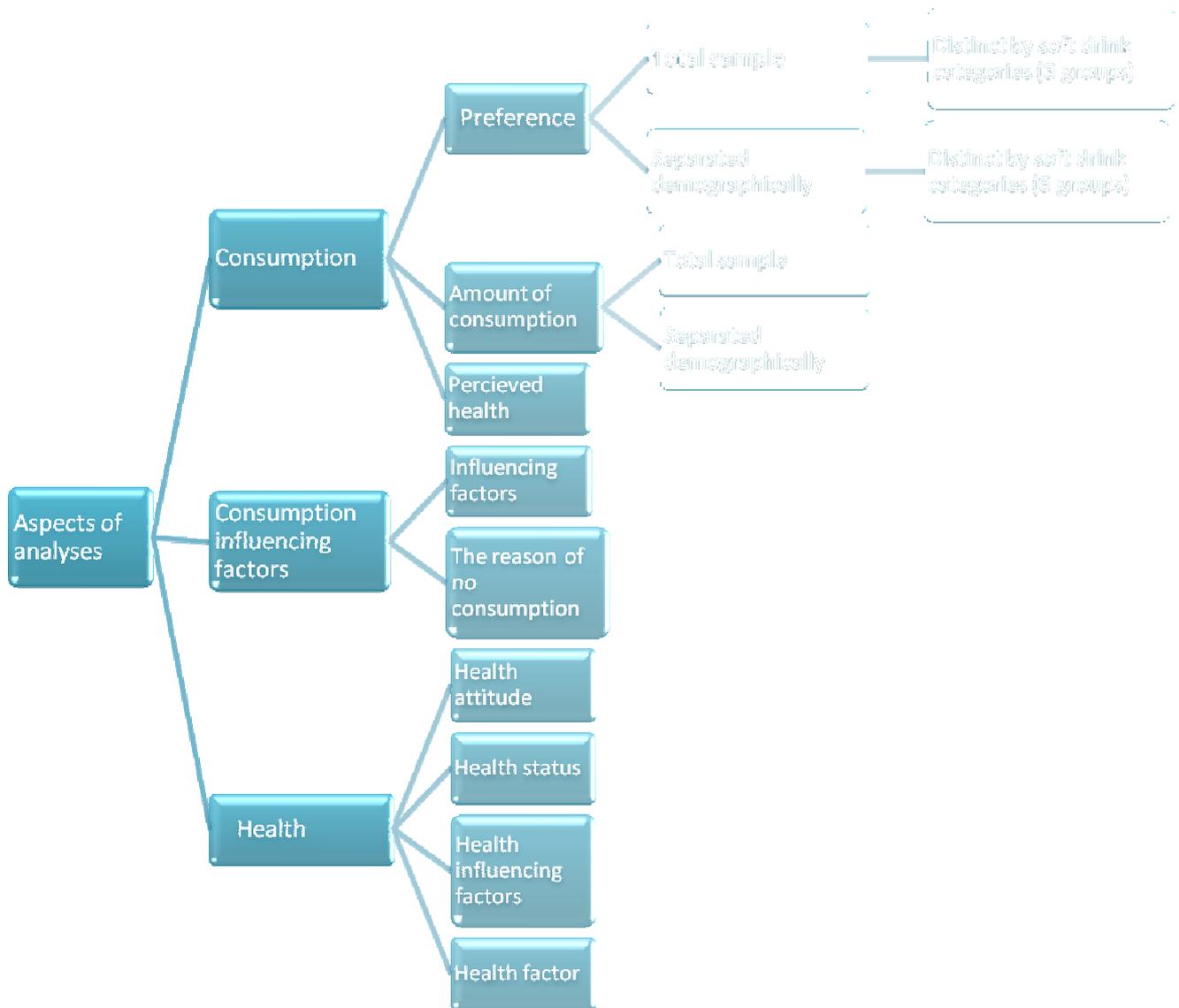


Figure 2: Analyses framework
Source: Own development

During the research I examined the role of health in consumer preference and purchase decision process on soft drink market concentrating on six distinguished soft drink categories. I summarize my statements in the following points.

- According to their attributes and the result of my examination mineral waters are considerably distinguished from the other soft drink categories. All the other soft drinks containing added sugar or other sweetener and flavour is their consumption determining attribute. Among the rest 100% juices/nectars could substantially constitute a different soft drink category. Despite their sugar content 100% juices/nectars represent primarily naturalness and health in the population's view. Including the rest four soft drink categories according to the consumer's opinion not 100% fruit drinks are exemption, which belongs in some cases to the 100% juices/nectars and in other cases they stay closer to the other soft drink categories which containing added sugar or other sweetener. Carbonated soft drinks, ice tea, and sport&energy drinks however are following similar tendencies in consumer's preference.
- Hungarian women are more sensitive to healthy lifestyle. They take that aspect more into consideration during the purchasing process and accordingly develop their consumption (they consume more products that are healthier in their view). According to these women could be an emphasized target group of public health promotive marketing strategies. The conclusions of the gender relating hypotheses are collected in *Table 2*.

Table 2: Conclusions of independent sample t-test in terms of gender related preference correspondence

	according to preference	according to consumption	according to perceived health
	significant difference		
Ice Tea	0	1	1
Carbonated soft drink	1	1	1
100% juices/nectar	1	0	0
Not 100% fruit drink	0	0	1
Mineral water	1	1	1
Sport&energy drink	1	1	1

Attributes indicated with 1 can H_0 be rejected on 5% level, consequently there is a difference between men and women according to their preferences

Source: Own development

- Hungarian population is mostly consistent in soft drink consumption. The soft drink preference the perceived health (how healthy they consider the product) and the amount of consumption are in harmony (people consume the product, which they prefer more and consider them more healthy). The only exemption is in the case of carbonated soft drink, by which the consumption is not consistent. Hungarian population prefer less carbonated soft drink and consider them unhealthy. However in terms of consumption this category is in a leader position together with 100% juices/nectar among sugar and other sweetener content soft drinks.
- It can be stated that the consumption by all the categories is continuously decreasing with the age (*Figure 3.*). This could be explained with the decreasing amount of fluid intake in older age. The only exemptions are mineral waters, which is highly consumed by all age. Mineral waters are considerably dominant on soft drink market. This is a positive result regarding their health effect, and their further promotion in soft drink market is highly recommended.

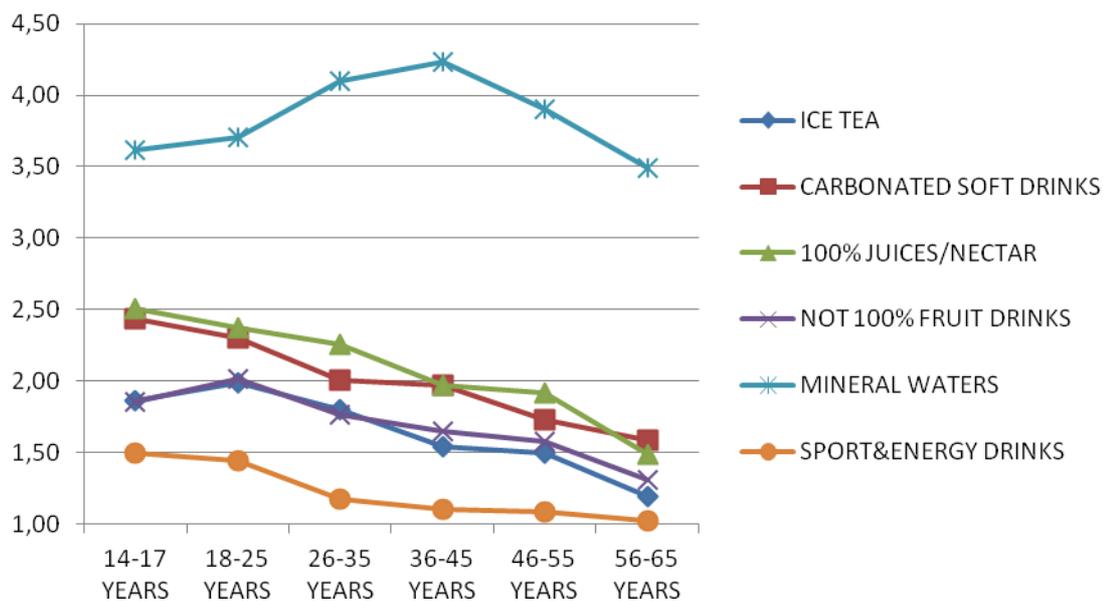


Figure 3: Soft drink consumption by age groups for the Hungarian population (higher value, higher amount of consumption)
Source: Own development

- Well separated consumer groups can be found regarding to the job type. Heavy labourers and students constitute in many cases separate group from the group of light labourers and intellectual workers. Heavy labourers and students tend to consume added sugar or other sweetener content soft drinks. This is in harmony with the finding that health plays less important role by them in consumer decision. Intellectual

workers highly consume 100% juices/nectar. This is also consistent with the finding that they consider this product category considerable healthy, and health plays an important role by them in consumption. It is reasonable to consider intellectual workers as a primary target group for 100% juices/nectar. This applies on students and heavy labourers in terms of added sugar content soft drinks.

- The consumption of Hungarian population can be separated regarding to level of education as well. People with higher education level prefer less the sugar content soft drinks (the only exemptions are 100% juices/nectar). They consume less for example carbonated soft drinks and sport&energy drinks; in the meantime they consider them unhealthier as well. Skilled labourers concern these soft drink categories less harmful. Population with higher education consume more 100% juices/nectar and mineral waters. They consider mineral waters healthier than the rest of the population. The reason of this that by higher educated people health has more important role in purchase decision. They emphasize healthier lifestyle in their life. The population with higher education is more sensitive on health conscious consumption, thus they could be a primary target group of public health promotive campaigns.
- It can be stated in terms of parental effect that in the case of 100% juices/nectar children of higher educated people prefer considerable this category. This means that the parental value and consumption preference appears by children as well. According to these I emphasize the important role of education to develop proper nutrition and healthy lifestyle. This education could appear in public education, parental education and social education as well. The distribution channel of these is media. Education should show responsibility and should be emphasized as well, no matter the distribution channel.
- Health is the most important influencing factor by mineral water purchase decision, which applies on this category in other preference validation as well. It is general in the case of other soft drink categories that flavour is the most determining influencing factor in purchase decision process (*Figure 4*). Mineral waters can be distinguished here, which is important regarding fluid intake and health. Other products play role instead of fluid intake and quenching thirst primary as snack and source of self happiness considering their sugar content. Both role healthiness and snack are

important by 100% juices/nectar, which in this case act like a bridge. It is highly recommended in soft drink marketing actions to consider flavour as a primary aspect.

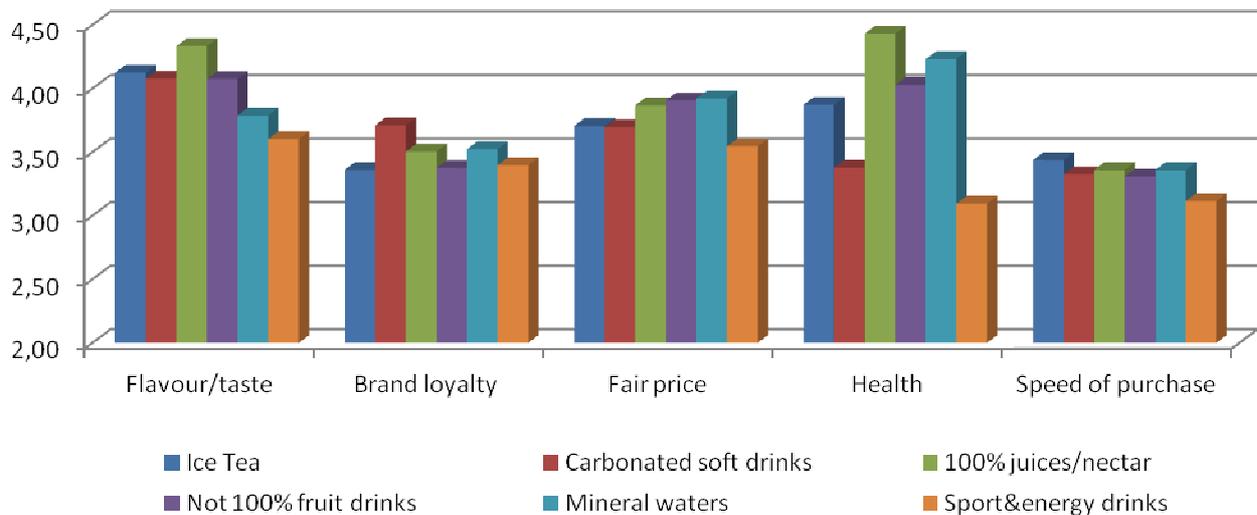


Figure 4: Importance of decision influencing factors during purchase (5 point Likert scale, 5: really important)

Source: Own development

- Carbonated soft drinks and sport&energy drinks behave specially. Flavour is the first by decision preference; the second are brand and price. Brand doesn't play such a considerable role by other products. Brand is a determining attribute by these products, which is a result of a previously developed long process. This should be considered for the companies; keep and enhance the role of their brand. Health is not an important factor by these products. The majority of the population consider these products unhealthy however they consume them. The rich or lack information of the consumers don't cause change in consumption. People, who like these products and loyal to their brands will consume them. Obviously there is a considerably smaller consumer groups in the case of sport&energy drinks. Accordingly this group is easier able to be determined and targeted.
- This is consistent with the fact that according to the consumer's opinion, reasons if they don't like to consume a product are unhealthy and bad taste attributes. Or they don't like the taste of the product, or if health is an important aspect for them to decide what to drink, that could keep the consumer on a lower level to consume products are harmful on health.

- It can be stated as well that according to the additional research examined carbonated soft drinks (*Table 3*), brand plays an important role by this product category. Other similar important aspect is sugar content. Considerably concern consumers about the product's sugar content. Sugar and calorie content are important factors in consumption, thus emphasizing these in product promotions are reasonable. It is recommended to promote low sugar and low calorie content soft drinks.

Table 3: Estimated utility levels regarding carbonated soft drinks

		Estimated utility	Std. Error
<i>Trademark</i>	Low level private brand	-1,640	0,102
	Medium level regional brand	0,272	0,102
	International premium brand	1,368	0,102
<i>Sugar content</i>	Zero sugar only artificial sweetener	0,163	0,102
	Less sugar with few artificial sweetener	0,260	0,102
	100% sugar no artificial sweetener	-0,423	0,102
<i>Price</i>	140 HUF	-0,111	0,088
	190 HUF	-0,221	0,176
	240 HUF	-0,332	0,264
(Constant)		5,221	0,190

Source: Own development

- It can be proved that between coffee consumption Body Mass Index and perceived stress in everyday life are mutual enhancing relationship. The exceeded level of each three factors could affect negatively on health. These factors have even stronger effect on older age, which appears in health status as well.
- It can be found that the appearance of healthy lifestyle in purchase decision by women is stronger. This aspect is even stronger in older age as well. People with only elementary school and skilled labourer concerning less about this than higher educated people.

Beside that intellectual workers pay more attention on healthy way of life than people with other type of job. These results are consistent with the previously mentioned. These findings appear in consumer decision through the choice of adequate soft drink product as well. It can be seen that the aspect of health has considerable role in consumer decision. Based on this well separated consumer groups can be developed. I

highly recommend the popularization of health consciousness in soft drink marketing, since it is a growing concern by consumers.

- Four considerable consumer characterizing and separating aspects were developed with principal component analysis (*Table 4*). Low calorie-intake, where the low-energy consumption is substantial. The lack of chronic disease, which separate consumers according to the existence or non existence of the disease. The priority of naturalness, where important aspects are natural resources, vitamins, and preservation of health. At last is way and rush of life, which separate consumers good regarding these aspects as well.

Carbonated soft drinks and sport&energy drinks are sensitive on low-energy consumption with a negatively. Consequently people who consider low energy consumption in decision will not choose these products.

In terms of naturalness and preservation of health with consumption of 100% juices/nectar and mineral waters have positive relation, contrary with carbonated soft drinks. People who consider naturalness and preservation of health in consumption will drink or 100% juices/nectar or mineral water, and possibly not carbonated soft drink.

Table 4: Rotated component matrix of principle component analysis

	Components			
	Lifestyle disease	Naturalness, preservation of health	Low-calorie intake	Way and rush of life
Did you or do you still suffer under – chronic disease	0,828	-0,096	0,035	-0,136
High blood pressure	0,785	-0,088	0,047	-0,206
Cholesterol concerns	0,657	0,034	-0,004	-0,019
cardiovascular disease	0,656	-0,034	0,094	0,106
Diabetes	0,531	-0,029	-0,132	0,011
I consume products, which contain lot of vitamins	-0,042	0,821	-0,105	-0,022
I do pay attention not to consume unhealthy soft drinks	-0,052	0,756	0,175	-0,034
I purchase soft drinks, which – contain only natural resources (organic)	-0,061	0,741	-0,161	0,070
Consider low-sugar content	0,016	0,149	0,842	0,004
Low-energy product	-0,019	-0,316	0,761	0,049
Prevalence of coffee consumption	0,034	-0,045	0,104	0,732
Body Mass Index	-0,280	-0,006	-0,097	0,616
Stress in everyday life	0,030	0,043	0,013	0,547

Source: Own development

It is highly recommended to use these determining aspects considering the category characteristics to develop soft drink marketing strategies.

It is worthy in any case to consider the previously enumerated statements and recommendations in social aspect. In company's aspect is worthy to build these aspects in soft drink category's evaluating process and marketing. Probable it will be possible the exploitation of new market niche through introduced pioneer product alternatives targeted well separated consumer needs and consumer groups.

4. New and newish result of the dissertation

The new and newish results of the dissertation do I collect in the following points:

- I do state that men and women are well separated in terms of soft drink consumption. Women pay more attention on health aspect during purchase decision; the role of health is more determining by them. Their preference and consumption are in accordance with these. They prefer and accordingly consume more products, which they consider healthier.
- I ascertain that education level is a good soft drink consumer separating aspect. Higher educated people consider health aspect more important, which appears in their consumption and preference. This group prefer more mineral waters and 100% juices/nectar, which they consider healthier. The aspect of health is less important in consumption by less educated people.
- Strong accordingly with these I ascertain that type of job is an influencing aspect as well. Health conscious decision is more important for intellectual workers. They consume considerably more products, which they consider healthier. The consumed amount of carbonated soft drinks is higher by heavy labourers, which they consider unhealthier themselves.
- There is an increasing role of health conscious decision by aging population and the consumption of high added sugar and calorie content soft drinks is constantly decreasing by them.
- Flavour/taste is the most important decision aspect in terms of soft drink consumption.
- I did develop four substantial consumer characterizing and separating aspects:
 - Low calorie-intake, where low-energy consumption is determining
 - Lack of chronic disease, which separate consumers according to the existence or non existence of the disease
 - The priority of naturalness, where important aspects are natural resources, vitamins, and preservation of health
 - At last way and rush of life, where Body Mass Index is essential

5. The applicability of results in practice

The fundamental aim of my dissertation is to analyse the consumer behaviour on soft drink market. I analyse consumer behaviour regarding different aspects in order to separate heterogeneous and homogeneous consumer groups. I examined the consumers beside the classical, well known aspects in this field regarding a new factor health, healthy nutrition and the influencing power of healthy way of life.

Health, healthy way of life, and proper nutrition in everyday life are getting more important in the last few years. Obviously this aspect appears in food industry as well, where in many cases marketing strategy on emphasizing product's health content is essential. The role and the emphasizing of this aspect are interesting in more aspects. One is marketing and economic aspect, since consumers pay even more attention on health in purchase decision. It is worthy to consider, if this aspect cause well separated consumer groups. Properly targeted marketing strategy could cause competitive advantage in food industry in the very segment, and companies could possibly gain unexploited market niche. Through these food companies could gain economic benefits.

The preservation of health and proper nutrition promotion could cause economic benefits on national level beside the economic benefits of business sphere and companies. In the last few years considerable amount of research was concerning with the relation between proper nutrition, healthy way of life, and health status. It was proved in many cases that there is a relation between proper nutrition, way of life and the probability of certain disease's prevalence.

Through decreasing the level of lifestyle diseases can be save considerable amount of costs regarding the whole society, the state, and the economy. The major amount of these could occur through the decrease of medical costs. Beside this I reckon the most important social benefit of preventing lifestyle disease would be to preserve people's health and proper lifestyle.

The results of my research could be used in practice in many ways considering the fact that this issue as previously mentioned could reduce economic and social costs. In corporate view through considering health as consumption influencing factor in purchase decision beneficial market niche could be exploited. In order to achieve this mapping the Hungarian soft drink market the consumer preferences and separate different consumer groups mainly focusing on health could provide beneficial information to develop properly targeted marketing strategy of the companies. The relationships regarding gender, education level, job type, and age are beneficial for marketing of soft drink categories. Beside this the four developed consumer influencing aspects are substantial as well.

In other aspect considering primarily social factor and people's health the results of my dissertation could provide an adequate basic for achieving better targeted health marketing aims through public health programmes on national level. Based on these achievable are the health promotion, encouraging proper nutrition, the decrease of chronic diseases primarily obesity, in this way enhancing population's health.

6. Publications in terms of the dissertation

Scientific book/book chapter

1. **Lőrinczi K., Bács Z., Nagy A. Sz.** (2011, confirmation letter): Hungarian consumer behaviour analysis in terms of healthy nutrition, In: Baourakis, G. et al., (Eds.), A resilient European food industry in a challenging world, Nova Science Publishers, NY, USA, 2011

Scientific Journals

2. **Lőrinczi K.** (2009): Health factor in food consumption, In: Journal of Agricultural Sciences, University of Debrecen, 2009
3. **Lőrinczi K.** (2009): Health factor in soft drink consumption, German example, Abstract, Agroinform Publishing House, pp 41-44, 2009

Scientific Journal in Hungary with summary in foreign language

4. **Lőrinczi K.** (2010, confirmation letter): A magyar lakosság szénsavas üdítőkre vonatkozó preferenciái az egészség tekintetében, Gazdálkodás, LIV. évf., 6., 2010

Conference presentation with full paper

5. **Lőrinczi K.** (2008): Healthy nutrition and food consumption, Agrarian Perspectives XVII. "Challenges for the 21st century", Czech University of Life Sciences Faculty of Economics and Management, Czech Republic, 2008
6. **Lőrinczi K.** (2009): Soft drink consumption analysis, Think Together 2009 the international Ph.D. research conference, Czech University of Life Sciences Faculty of Economics and Management, Czech Republic, 2009
7. **Lőrinczi K., Bács Z., Nagy A. Sz.** (2009): Hungarian consumer behaviour analysis in terms of healthy nutrition, 113th EAAE Seminar: A resilient European food industry and food chain in a challenging world, Mediterranean Agronomic Institute of Chania (MAICh), Chania, Crete, Greece, 2009
8. **Nagy A., Dékán T., Lőrinczi K., Pető K.** (2009): Minimum economic scale of an efficient farms in dairy industry, 113th EAAE Seminar: A resilient European food industry and food chain in a challenging world, Mediterranean Agronomic Institute of Chania (MAICh), Chania, Crete, Greece, 2009

Conference presentation with full paper in Hungary

9. **Lőrinczi K.** (2009): Health factor in soft drink consumption, German example, AVA Congress 4, International Congress on the Aspect and Visions of Applied Economics and Informatics, University of Debrecen, Centre for Agricultural Sciences and Engineering, Faculty of Agricultural

Economics and Rural Development, Hungary, 2009

10. **Lőrinczi K.** (2009): Health factor in soft drink consumption, 2nd International Economic Conference, Kaposvár University, Hungary, 2009

Conference presentation in Hungary with abstract in foreign language

11. **Lőrinczi K.** (2008): Egészségtudatos trendek hatása az élelmiszerfogyasztásra, XIV. Ifjúsági Tudományos Fórum, Pannon Egyetem, Keszthely, 2008

Conference presentation with abstract

12. **Lőrinczi K.** (2008): Health concerns effect on food consumption, In Book of Abstract, 43rd Croatian & 3rd International Symposium on Agriculture pp. 167, University of Zagreb, Croatia, 2008

Poster presentation

13. **Lőrinczi K.** (2008): The effect of health conscious trends on food consumption, In Programme and Abstract Book, XIIth Congress of the European Association of Agricultural Economists pp. 289, Semico, Belgium, 2008
14. **Lőrinczi K.** (2009): Consumer behavior analysis in terms of healthy nutrition in Hungary; Proceedings; International Conference on Applied Economics 2009; pp 873; TEI of Western Macedonia Press; 2009