

# Analysis of Food Consumption in Hungary

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## Abstract

The background of our research considers consumers' awareness about the contents of their food and investigates the labels and wording on food packaging. The 'organic' labels on this packaging hold different levels of importance for Hungarian people based on their age and social-economic status. This topic will remain highly relevant, since most companies desire to understand the behaviour of their Hungarian consumers. By examining consumers' behaviour patterns and inexpensive marketing tips, companies can consider the most effective method to increase the purchase of their products. As such, consumer behaviour patterns should be researched in the short term based on the use of specific products or on the use of generic brands versus personal preferences. Currently, the roles of health-awareness and cost-consciousness are changing, as are environmental protection regulations and consumers' awareness of the dangers of hazardous substances. The article focuses on the analysis of Hungarian behaviour patterns related to foodstuff grocery consumption. The database was taken from IPSOS Ltd. (N=1038 people), but 883 people were selected from the initial sample, based on inclusive criteria (aged between 18 and 70), while people with extreme incomes were excluded (as outliers).

**Keywords:** food marketing, Hungarian customer, customer behaviour, packaging, label, social-classes

**JEL classification:** A89

## Introduction

With this research would we like to introduce you to our analysis the Hungarian food consumption. How consumers make their decisions and how companies can influence consumer decisions without high expenditures - considering the most effective methods to cross these bridges is an important task for companies. As we know, consumer decisions should be researched in short term, on the levels of specific products or services, or brands versus personal preferences. Nowadays, the roles of health-awareness and cost-consciousness are getting misrated, in addition to environmental protection, and the awareness of hazardous substances.

### *Food consumer habits' analysis*

Food consumption can be determined by different social and demographical factors, values, the cultural level and also the lifestyle of the consumers. Different options and alternatives can be found all around the world, simply because consumers live in different cultures.

The social situation has the most significant role in food consumption, also, according to Gossard and York et al. (2003), in shaping the socialization process of the individual, life experiences, and psychological characteristics. Social conditions are structured, and factors determine the environment in which psychological factors operate.

Many research analyses prove that following the socio-demographical factors, food consumer habits can be defined. According to the research analyses, there are significant differences in food consumption habits related to gender, age and working field. Hayn et al. (2005) determined seven social and economic factors which can affect food consumption. These are: age, social class (which is determined by the income and the work field), education, gender, specifics of the area inhabited, ethnical affiliation, and the lifestyle of the individual. Their research was based only on German literary and empirical research analyses.

Considering the consumer difference by gender, many researches note that there is a significant difference between the food consumption of males and females (Hayn et al. 2005).

Income determines food consumption as an economic and social factor. Many research analyses prove that households are cost-sensitive. This affects the food consumption, as well as purchases (Hayn et al., 2005).

The packing is considered as either irrelevant or less important in terms of the product quality (Horská - Úrgeová - Prokeinová et al., 2011).

Moreover, there are few results of consumer behaviour from our neighbour countries. For example, the Slovak Republic and the Czech Republic have been characterized the group of the East European consumers. In these two countries, the most important subject for the respondents is the food hygiene (N=1162).

Hofmeister – Tóth et al. (2014) also identified that Hungarian households' consumer patterns are determined by many factors, for example, income, demographical factors (more working women, more single income households, higher retired population), and the changes in lifestyle. The indicated factors were also used by our research.

In 2015, another research conducted by 'NRC Piackutató Intézet' (NRC Research Institute) concluded that the attitude value-system of Hungarian food buyers (N=1200) entered a period of change. Hungarian food buyers' attitude has been characterized by 'I look for the cheapest', earlier.

## Methodology

To research target group consumption habits, we used quantitative research techniques, while using the database of Szent István University's Marketing Institute. The initial research contained a 1038 person pattern survey, which we reduced to 883 participants based on their income. The standardized survey was evaluated using the terms of the 'Omnibusz' survey using personal questioning. The data extracted of the surveys was processed with the IBM SPSS Statistics 21 program package.

'How can you reduce the risks of food/nutrition that shapes You and Your family's habits carry? What kind of consumer behaviour describes You and Your family in relation to decreasing the risk of nutrition consumption?' This question consists of 22 items in the 'Omnibusz' survey.

Out of the descriptions gained from the statistical analyses of questionnaire responses, averages, standard deviations, and the frequency are shown. The differences and connections of the groups created during the analyses were examined by multivariate statistical analysis, factor analysis. During the factor

analysis, we were searching for correlate response groups. Then we merged the high number of original factors into lesser factors, so we could work with these, using them as new variables.

During the factor analysis, we presumed the awareness of contents of the food, and the investigation of labels or titles.

## Results

### Characteristics of the material

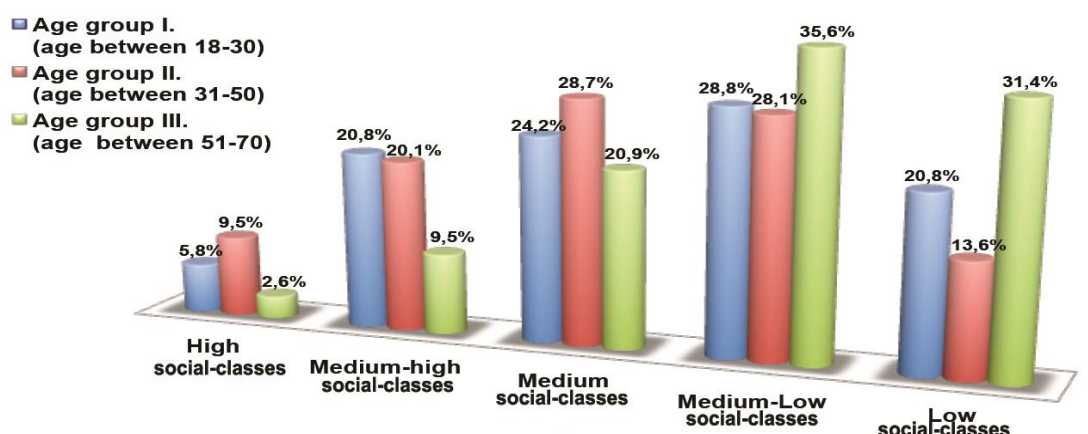
In the survey, a total of N = 1038 people participated, 485 men (46.8%) and 553 women (53.2%). Income of individuals was used as a self-limiting pattern, so that the extreme values, as well as those who have no independent income are excluded after exclusion of people under 18 n=883 people remained in the sample, of whom 426 men (48.2%) and 457 are women (51.8%) is. The oldest participant was 70, while the youngest was 18 years old. The rounded average age was 43 years, the actual value was 42.65 years.

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The sample of our survey has 3 different age groups based on logical - and physiological differences (between 18-30, between 31-50, between 51-70). Furthermore, we separated the participants into different 'social class' groups. The social classification alias 'social classes' includes the following factors: the salary, the job title, the place of the participants' residence, the income per household, and all of technical equipment at the household, as well as the number of children. This distribution of age- and 'social classes' groups can be seen on the following graph.

Figure 1

Characteristics of the sample based on age groups and social-class, n=883 people



Source: Author's illustration

The first graph – 'Figure 1' – clearly shows that the majority of participants can be found in the medium to medium-low categories, mature adults (31-50 years old) and

the 50+ age group (70 years old). In total, 273 people, 30.90% belong to the medium-low category. SPSS has made it apparent to us, based on detailed analysis that they were carried into this group, and their position is lower than qualified where household facilities were backwards.

Summarize the sample based on gender and social/class. Women accounted to 128 people (27.8% increase), while men 145 people (34%) are present in research. The high social-economic classification of women polled 5.7% and 6.6% of men and belongs to the 883-strong sample concerned. The highest value, the majority of participants in the medium-low social status were men (34%), while the women of this medium-low social categories were also the most notable (27.8%). They were followed by the social-class of women in middle third place (26.9%, respectively).

### Principal Component Analysis

The result of the cluster analysis shows our 4 separated components. According to the results of principal component analysis there were 4 components. Therefore, the contents of the components were professionally questioned, so we conducted a Varimax rotation. The 4 component explained 53.52% of the total variance.

Table 1

Results of the Rotated Component Matrix, based on the questionnaire of 'Omnibusz' survey, n=883

First factor: 'Trust in control authorities'	Second factor: 'Information collectors'	Third factor: 'Source'	Fourth factor: 'Thinking clearly'
Trust in the food control system's efficiency.	I get more and more information about food.	I am buying from local producers and processors, rather than food shipped from abroad.	I prefer food produced in a way that requires less water.
Trust in the food control authorities' activities to reduce food risks.	I change my habits of food consumption.	Hungarian food is preferred instead of food of foreign origin.	I prefer food produced in a way that results in low carbon dioxide emissions.
Trust in Hungarian plant and animal health authorities.	I prefer to buy from organic producers.	I buy usual seasonal foods.	I prefer products that are not produced under any industrial conditions.
Trust in the food chain, trading, product identification and tracking system.	I prefer to buy manufacturer branded foods.	I like to buy directly from a producer and/or a manufacturer.	I like to prepare and organize my purchases.
	I pay attention to the product characteristics listed on food labels.	I do not buy cheap groceries from any illegal or suspicious sources.	
	I usually buy supermarket brand food.	I prefer food produced in a conventional way.	
	I like to buy goods that are labeled correctly with geographic origin.		
	I usually shop regularly at the same supermarket.		

Note: The listed factors are caused by the change in behaviour related to risk reduction awareness.

Source: Author's illustration based on own results from the IBM SPSS Statistics 21 program package (2017)

The principal component analysis result of 4 components was separated, based on analyses of the responses. As professional content of the components was difficult to determine, to obtain a clearer structure, that is, achieve a clearer classification, the rotation of Varimax used. The following - 'of the rotated principal component

matrix values statement is the indication of groups' the chart listing the components of the total information content of 53.52% was explained.

Henceforward, the cluster analysis was executed to analyse the relations for decreasing the risks of nutrition consumption of our 883 subjects in detail.

### Cluster Analysis

As the result of the component analysis, we got 4 components, but the 4<sup>th</sup> is not in, which is the answer of 'Purchase on the basis of information technology' ( $F(2,883) = 2.154, p = .117$ ).

Table 2

Results of Cluster Analysis, n=883

	Clusters			
	<b>1<sup>st</sup> cluster (n=327)</b>	<b>2<sup>nd</sup> cluster (n=115)</b>	<b>3<sup>rd</sup> cluster (n=280)</b>	<b>4<sup>th</sup> cluster (n=161)</b>
First component	0,38522	-1,28486	-0,61285	0,99009
Second component	0,70184	-0,72725	0,12597	-1,24742
Third component	0,39188	1,18255	-0,808	-0,09577

Source: Author's illustration based on own results from the IBM SPSS Statistics 21 program package (2016)

The 1<sup>st</sup> component is based on trade behaviour forms judged by outer authorities. Variables of the component are characterized mainly by demand for information, and trust towards the independent and controlling authorities. The previous informing – on the basis of the statement – extends to the system of the product-identification, and is the follow-up of the supply chain. It is relatively easy to drop out from the circle of trust for Hungarian food customers. The basic pillars of keeping confidence are provided by being independent, active on both national and international levels, being fast and having effective network authorized systems, controlling authorities and proper functions of Hungarian plant and animal health authorities.

The second component contains forms of purchase behaviour according to notation. Variables of this component are also determined by demand for information of Hungarian food customers, but it appears firstly as a way to satisfy lack of information related to their health consciousness. The variable is also determined by attention paid to the label, brand, buying from directly from the producer/manufacturer, health consciousness, as well as location and origin. The second basic pillar of confidence in our case is providing the proper information, the identification, the control, location and origin of foodstuffs. These could not be fulfilled without an effective controlling system, independent authorities and other related systems.

The third component contains the behaviour patterns which form upon food source-related confidence. The elements of the proper food source are the confidence towards local and national manufacturers, and quality satisfying Hungarian demands, and also access to the manufacturer and producer, as well as always providing nearly the same quality of food, and the usage of known ingredients, and traditional technologies. The habits, the seasonality, and the behaviour form around price and quality, which also belongs to the confidence in the source.

The fourth component was less popular amongst the participants. The behaviour

patterns that form upon food-technology are related primarily to the environmental consciousness of Hungarian food consumers. Considering the water usage during food processing, and support for food produced in smaller industries are also important aspects, which influence national food consumers in the form of a higher demand for information. This component was excluded, so the extended explanation of result has been rejected. Beyond this, the statements related to the customers' preparedness and organization of buying also belong to component No.4.

In the case of the second and third clusters the 52,5% and 45 % of individuals belong to the first three (high, average high and average) socio-economic statuses.

## Discussion

The ratio of each social class sees in the next table under the name of 'differences between clusters based on age, gender and social-class'. There was a statistically significant difference between 4 clusters ( $X^2(12) = 45.060$ ,  $p < .001$ ). The 1st cluster was the 'wealthiest'.

The 57.6 % of the subjects are in the medium, medium high social classes. The 'poorest' people are in the 4<sup>th</sup> cluster with 33.6 %. In the first 3 social classes high, medium high, medium observed frequencies was 52.5% in the 2nd cluster and 45% in the 3rd cluster. The buyers 'shopping attitude is strongly determined by both confidence towards judgement of the independent, outer authority and labelling information and trust in source of supplement.

The analysis of the clusters based on age groups. The age groups ratio was non-significant, there is no difference between the 4cluster ( $X^2(6) = 7378$ ,  $p = .287$ ). The three age groups (18-30, 31-50, 51-70 ages) have almost the same result in the 4 cluster.

There is a significant difference ( $X^2(6) = 8881$ ,  $p = .031$ ) between the gender ratios in the clusters however this result should be professionally questioned.

In this research forms to reduce the risks associated with food behaviours were analysed. The investigation based on the question 'forms to reduce the risks associated with food behaviours' the content of the four components is presented below.

## Conclusion

Summarize, the statements of the 'Omnibusz'survey have been analysed, which intended to identify 4 variables of behaviour forms related to food risk increment. The statements listed in the analysed field 4 components were formed as follows:

1. There are control authorities who are reliable and guarantee the high quality products for the consumers (for example: Hungarian Authority for Consumer Protection or other food and chemical industrial laboratories).
2. The food processing facilities are accredited, recorded, and given a certificate (for example: certificate of bio- or organic production, etc.)
3. Based on the origin of purchase.
4. Purchase on the basis of information technology.

After the analysis of these components, the first 3 components fit into the model, because after the statistical analysis, the clustering variable 'buying health consciousness on the basis of food-technology' is not significant ( $F(2,883) = 2,154$ ,  $p = .117$ ).

Another representative research by NRC Piackutató Intézet (NRC Research Institute) and also our research results support are each other on a theoretical level in terms of definition of behaviours forms of Hungarian food customers, as well as in

proper satisfaction of their growing demand towards information. On the basis of examining the answers of the research in 2014 and in 2013, the price-sensitive customer fallen backwards as a layer of conscious customers appeared, who have been influenced by higher quality and proper price-value rate during food shopping.

Neither result could be completely similar, because there are many market changes on every year, which can influence the consumer behaviour.

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