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THE NEW APPROACH ON FOOD QUALITY: AN IMPORTANT FACTOR ON CONSUMER BEHAVIOR AND TRENDS IN FOOD QUALITY

The article points at food quality of European products in some points, how could be the each European companies successful in the global competitive situation not only with history or culture but be safety in the area of product quality such as important factor of consumer behavior and. Food quality is an important food manufacturing requirement, because food consumers are susceptible to any form of contamination that may occur during the manufacturing process. Many consumers also rely on manufacturing and processing standards, particularly to know what ingredients are present, due to dietary, nutritional requirements (kosher, halal, vegetarian), or medical conditions (e.g., diabetes, or allergies) and because of the article shows some of new trends at food market in Europe.

INTRODUCTION

The aim of this article is to show how food quality is perceived quality characteristics of food that is acceptable to consumers. To finding out the food product image where I used several methods in comparison of selected European countries. First, I analyzed the food product image on our realized consumer research and on the other hand I evaluated the perception of food quality by addicting of quality trends based by selected international coefficients. The World Food Programmer and its partners are dealing with all aspects of food quality and safety from food purchase, storage, transportation, processing and distribution. Food Quality Control aims at providing basic and practical information on food characteristics and safety controls. One important element of research is ensuring that food supplies are safe, of good quality and can contribute to an acceptable nutritional and health status for all population groups. Food Quality Control is linked to improvement in the health of the population, potential for a country's economic development and reduction of spoilage and food losses.

FOOD QUALITY: AN IMPORTANT FACTOR OF CONSUMER BEHAVIOR

Food quality is the quality characteristics of food that is acceptable to consumers. This includes external factors as appearance (size, shape, color, gloss, and consistency), texture, and flavor; factors such as federal grade standards (e.g. of eggs) and internal (chemical, physical, microbial). Food quality in the United States is enforced by the

Food Safety Act¹ 1990. Members of the public complain to trading standards professionals, who submit complaint samples and also samples used to routinely monitor the food marketplace to Public Analysts. A recent example of poor sanitation recently has been the 2006 North American E. coli outbreak involving spinach, an outbreak that is still under investigation after new information has come to light regarding the involvement of Cambodian nationals. Food quality also deals with product traceability, e.g. of ingredient and packaging suppliers, should a recall of the product be required. It also deals with labeling issues to ensure there is correct ingredient and nutritional information. In Europe is the food quality generated by each country and its ministry of agriculture.

FOOD PRODUCT'S QUALITY PERCEPTION

The consumer² want quality and value, however these terms have slippery meanings that are hard for us to pin down. We infer quality when we rely on cues as diverse as brand name, price, product warranties, and even our estimate of how much money a company invests in its advertising. In manufacturing, a measure of excellence or a state of being free from defects, deficiencies, and significant variations, brought about by the strict and consistent adherence to measurable and verifiable standards to achieve uniformity of output that satisfies specific customer or user requirements. ISO 8402-1986 standard defines quality as "the totality of features and characteristics of a product or service that bears its ability to satisfy stated or implied needs." The final choice of the consumer to purchase the food illustrated by Figure 1³ is mainly due to the specific situation of the sales point, but with certain beliefs and intent comes from the customer into the store, to purchase and frequent land perception of origin of goods primarily because of negative information's about food products and their composition, therefore, become sensitized and European consumers and to the product country-of-origin. It is presented in the eyes of the euro citizens offered their goods to meet the highly competitive store shelves. Well-known factors affecting consumer purchase decisions reflected in the purchase or not buy the products. The country has a positive image of the world and few negative ratings, the more likely the purchase of food to final consumers. Thus, the sooner Slovakia begins with the development and improvement support the promotion of our food products and export to foreign markets, the sooner it will be the first step in that our name also appeared on the shelves of world trade as "Made in Slovakia - Slovak brand of high quality, which will trigger the final step in consumer behavior - buying.

¹ FOOD STANDARDS AGENCY, 2012: Available at
<<http://www.food.gov.uk/foodindustry/regulation/foodlaw/>, 2012-05-01>

² SOLOMON, R. Michael. 2011. *Consumer Behavior. Buying, Having and Being*. 393 – 395 pg.

³ ŪRGEOVÁ, Johana. 2010. *Vnímanie kvality a pôvodu produktu vo vybraných krajinách Európy*. 127-128 pg.

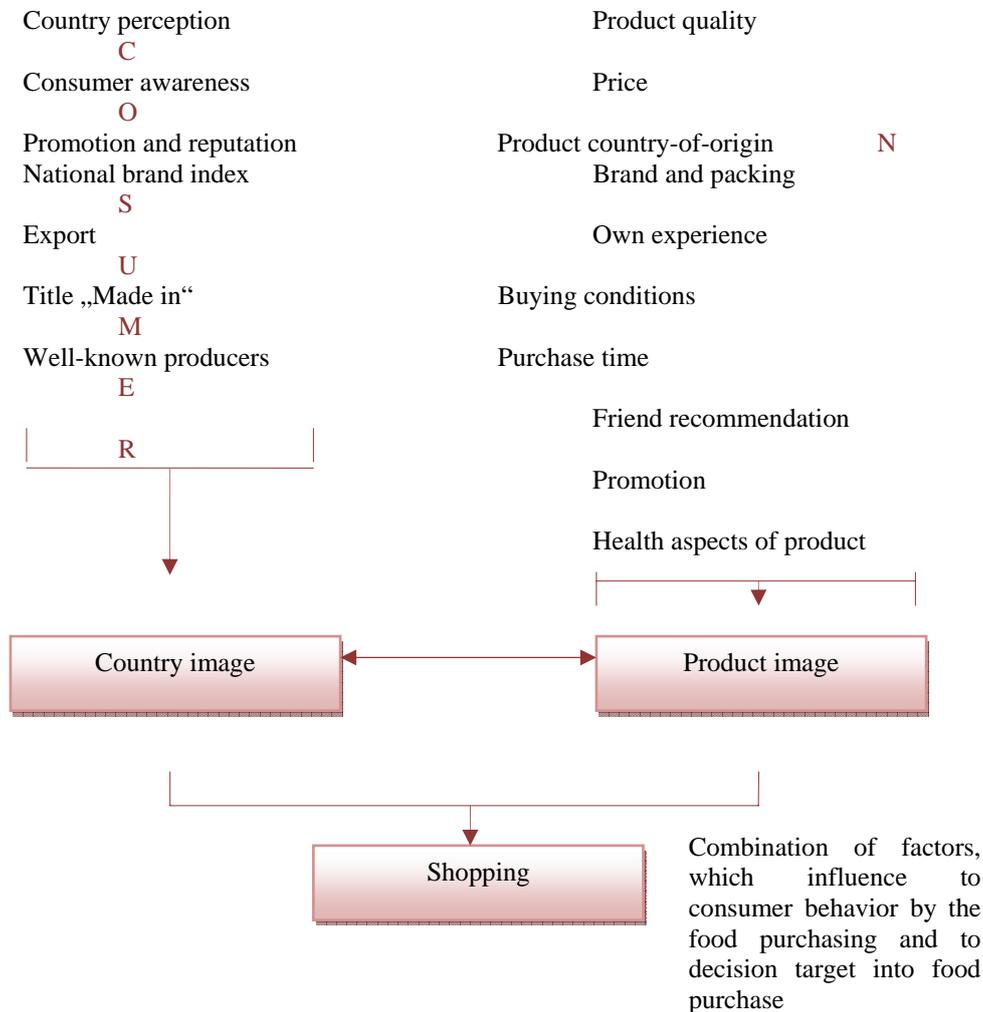


Figure 1 [The influence of country image perception and its product on final consumer decision by the food purchase]
Source: own elaboration

Today we understand under the quality background⁴ that is the summary of symbols and characteristics of product or service, which could satisfy the consumer needs. The quality food product we could understand, that it is the product, which with its benefits can satisfy consumer needs. The quality is made by consumer, in the case of buying or don't buy. The basic quality product requirements are:

⁴ KOLLÁR, Vojtech a kol. 2003. *Produktová politika*. 368-369 pg.

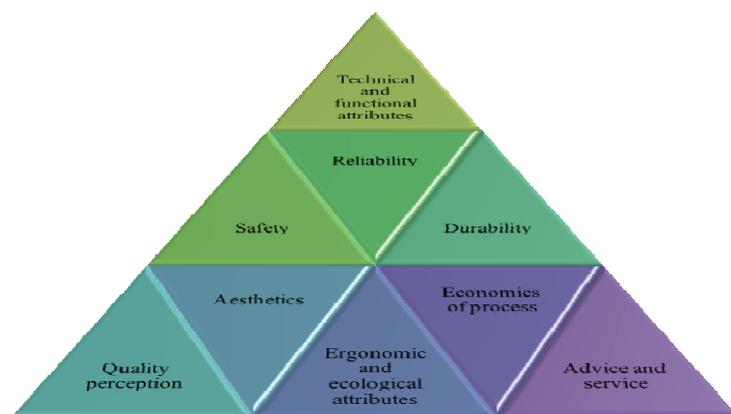


Figure 2 [Action model influences on product quality in the different product life cycle]

Source: KOLLÁR, Vojtech a kol. 2003. *Produktová politika*. 369 pg.

The building of high quality-product or service⁵ is only partial victory, and because it's necessary to build the perception of this quality. The perception of quality could be different because of the various reasons. Firstly, the consumer could be influenced by last vision or his experience of low quality product. Therefore, a consumer doesn't have to believe in any new fact about quality or he doesn't plan to devote his time to verification aims. Secondly, the company can achieve a quality in the areas, which are not important to be perceived by consumers. Thirdly, the consumers seldom have necessary information, in the point of rational and objective valuation of product quality. If they own these information, they very often don't have a time and motivation to assess them. At the end, they count on one or two impulse, which are related by quality.

TREND IN FOOD QUALITY

National-level quality regulation⁶ takes on many dimensions or regimes because product quality itself is multidimensional. Many quality concerns embody attributes from more than one of these subsets and have multiple regulatory regimes that apply to them. For example, consumers who purchase organic produce may be concerned with food safety, nutritional, and value attributes. Similarly various growing, processing, and handling technologies may influence multiple attributes (e.g., food irradiation, animal welfare). Besides the trend towards cheap basics there are trends in food consumption⁷ which are caused by demographic and lifestyle changes like the increasing number of women in the labor force, growing incomes, the plurality of household and family structures (e.g.

⁵ AAKER, David A. 2003. *Brand building budování značky*. 328 pg.

⁶ NEAL H. HOOKER JULIE A. CASWELL. 2010. *Trends in Food Quality Regulation: Implications for Processed Food Trade and Foreign Direct Investment*. Available at: <http://works.bepress.com/julie_caswell/38>

⁷ MARINA PETZOLDT, CHRISTIANE JOIKO, KLAUS MENRAD. 2008. *Factors and their impacts for influencing food quality and safety in the value chains*

decreasing rate of marriages, increasing rate of divorces, decreasing birth rate, decreasing household sizes) and the aging of society. Also many consumers appreciate the standardized taste and the low price of these meals. However, at least in Continental Europe fast food of the American provenance still has a cheap and unhealthy image. The new trend of fast casual food (the fusion of fast food and casual dining) aims to dissolve the contradiction between today's often necessity to eat fast and the desire to eat healthy and without any renouncement of culinary benefits. These meals link the functionality and the productivity of the US-American fast food restaurants and the culinary and atmospheric qualities of the traditional European and Asian cuisine. The slow food trend developed in conscious opposition to fast food. The latter is not only associated with certain products, but especially with the so-called American way of life. Accordingly, slow food stands for the European (in particular the Mediterranean) life-style, which stands for the celebrated consumption of most diverse food and meals in a cultivated, sociable ambience. Thus, the most important target group for slow food is consumers who are world-open, curious as well as fond of travelling and variety. Furthermore, in Europe there is a tendency towards the so-called ethno food, which incorporates food products from other cultures, because of many cross-cultural expositions, which are adapted to each particular country. Movements of emigrants and tourists help to induce the introduction of new products based on other cultural experiences.

METHODOLOGY

The paper is focused to identify how important the quality of the food perception on the buying decisions using mainly cluster analysis. The question has the answers code in Liker Scale; we can see the similar analysis in. For their classification, a scale method (scale of attitudes) can be used. The scales represent a group of questions which are used by the consumer to assign the researched problem on a chosen basis (continuum). This continuum can be expressed verbally (good, average, bad level of an effect), numerically (good level = 1, average level = 2, bad level = 3) and graphically (by the means of pictograms). They used semantic differential for analyze and quantification. Knowledge about food choice motives which have potential to influence consumer consumption decisions is important when designing food and health policies, as well as marketing strategies.⁸ Russian consumers' food choice motives were studied in a survey (1081 respondents across four cities), with the purpose of identifying consumer segments based on these motives. These segments were then profiled using consumption, attitudinal and demographic variables. Cluster profiles differed in relation to socio-demographic factors, consumption patterns and attitudes towards health and healthy food. Analysis of Kent (1998) represented consumers' orientation toward health issues often influences their behavior in the market-place, suggesting implications for marketers of health-related products and services on how best to reach their customers. A cluster analysis of consumers' participation in 29 health-promoting behaviors identified six consumer segments.

Research was done in 2007 - 2010 and we have gathered 978 Slovak respondents from whole area of Slovakia, 313 Polish respondents from Cracow, Warszawa, Katowice and their surroundings and 184 Czech respondents from Prague, České Budejovice and Brno

⁸ HONKANEN - PIRJO-FREWER, LYNN. 2009. *Russian consumers' motives for food choice Appetite*.

cities. The respondents could determine with 5 scales the importance of image factors in chosen European countries. These indicators of food quality were evaluated by respondents with scale values from 1 (very weak indicator) till 5 (very high indicator). The research question looks like:

CLUSTER ANALYSIS USED IN THE COMPARISON OF QUALITY PERCEPTION IN OUR EUROPEAN COUNTRIES

The full and detailed analyse of structure of research output dates we illustrated via dendograms of cluster analysis, in which we can see the sequences of cluster steps in the each cluster levels. In the next dendogram figures we show the objects (indicators) which belong to the each clusters (research countries: Poland, Czech Republic and Slovakia) in the association of their numbers. These indicators of food quality were evaluated by respondents with scale values from 1 (very weak indicator) till 5 (very high indicator). The research question looks like:

<input type="checkbox"/> Health clean of product (C41)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
<input type="checkbox"/> Product safety (C42)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
<input type="checkbox"/> Taste (C43)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
<input type="checkbox"/> Brand (C44)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
<input type="checkbox"/> Packing (C45)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
<input type="checkbox"/> Quality mark on the packing of product (C46)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
<input type="checkbox"/> System of quality safety during production (C47)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

Cluster analysis is a class of statistical techniques that can be applied to data that exhibit “natural” groupings. Cluster analysis sorts through the raw data and groups them into clusters. A cluster is a group of relatively homogeneous cases or observations. Objects in a cluster are similar to each other. They are also dissimilar to objects outside the cluster, particularly objects in other clusters. The term cluster analysis (first used by Tryon, 1939) encompasses a number of different algorithms and methods for grouping objects of similar kind into respective categories. A general question facing researchers in many areas of inquiry is how to organize observed data into meaningful structures, that is, to develop taxonomies. In other words, cluster analysis simply discovers structures in data without explaining why they exist.

There are numerous other linkage rules such as these that have been proposed: Single linkage (nearest neighbor). Complete linkage (furthest neighbor). Unweight pair-group average. Weighted pair-group average. Unweight pair-group centroid. Weighted pair-group centroid (median). We have applied Ward methods and try to describe deeper this method. Method is distinct from all other methods because it uses an analysis of variance approach to evaluate the distances between clusters. In short, this method attempts to minimize the Sum of Squares (SS) of any two (hypothetical) clusters that can be formed at each step. Refer to Ward (1963) for details concerning this method. In general, this method is regarded as very efficient, however, it tends to create clusters of small size. (Ward, 1963) proposed a clustering procedure seeking to form the partitions P_n, P_{n-1}, \dots, P_1 in a manner that minimizes the loss associated with each grouping, and to quantify that loss in a form that is readily interpretable. At each step in the analysis, the union of every possible cluster pair is considered and the two clusters whose fusion results in minimum increase in 'information loss' are combined. Information loss is defined by Ward in terms of an error sum-of-squares criterion.

The following text is focused on food quality labels that can meet consumers in the Czech Republic, Poland and Slovakia. First, the characterization of labels is included, followed by the presentation of marketing research results regarding consumers' awareness and perception of selected food quality labels.

Poland

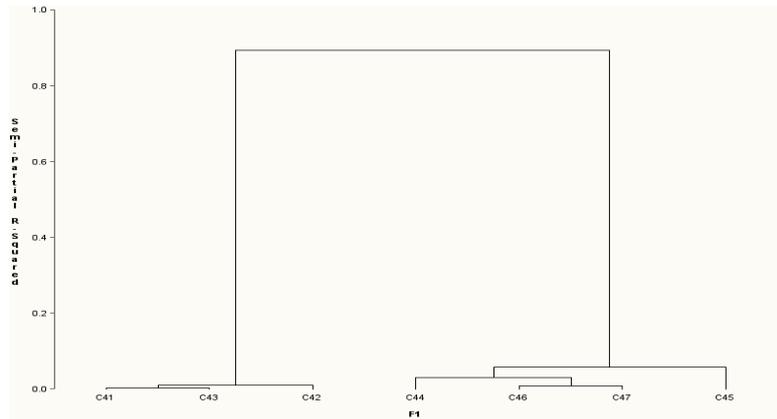


Figure 3 [Poland's dendrogram]
Source: own research

cluster	
1	health clean of product product safety taste
2	system of quality safety during production brand quality mark on the packing of product
3	packing

Table 1 [Poland cluster division]
Source: own research

Food industry is one of the key sectors of the Polish national economy. Its share in GDP stands at about 6%, and the gross added value it generates fetches around EUR 6 billion. The Importance of this branch is also reflected by the fact that it holds an approximately 20% share products sold by the entire industry and an about 16% share in total employment of this sector. On its accession to the EU, Poland has grown to become the sixth biggest food producer and a major net exporter of agricultural and food products. Polish agricultural and food products are characterized by high health values which are a result of the clean environment; methods of production applied and limited use of chemicals in agricultural production. Despite this fact, Poland is an important European and global producer of a number of agricultural and horticultural products as well as products of animal origin. Poland is the biggest producer of apples in Europe, the bulk of which is exported in either a fresh or processed state. Poland is also a European leader in the production of soft fruit. There's a cluster analysis implicated on Poland. From Figure 3 or Table 1, we can see three groups of similarity between clusters. For Polish consumers is health clean of product, product safety and taste of food product

importance very close. Packing such as one factor is perceived separately, which may be due by image or color of packing, that's in many cause not so importance. The consumers are interested in to read information on packing. System of quality during production, brand or quality mark on the packing of product is in the last cluster group. In the present time they are very favorite and written in media, because of global affairs about food quality. The consumer and sensitive on logo quality, because they think, that product is domestic and should be in better quality. Quality signs and marks are meant to reflect the added value of the product. The extra quality may refer to only one aspect or to more aspects that a consumer may be uncertain about. For example, these can be environmental advantages, product quality, safety and hygiene, production circumstances during growth, the absence of additives or preservatives, etc. Polish producers and exporters of food should attach even greater attention to the quality aspects and promote our products even more effectively than before, the more so as following the accession to the Union they have improved their skills concerning the documentation of quality, compliance with complex procedures or the methods of communication with the closest potential recipients.

Czech Republic

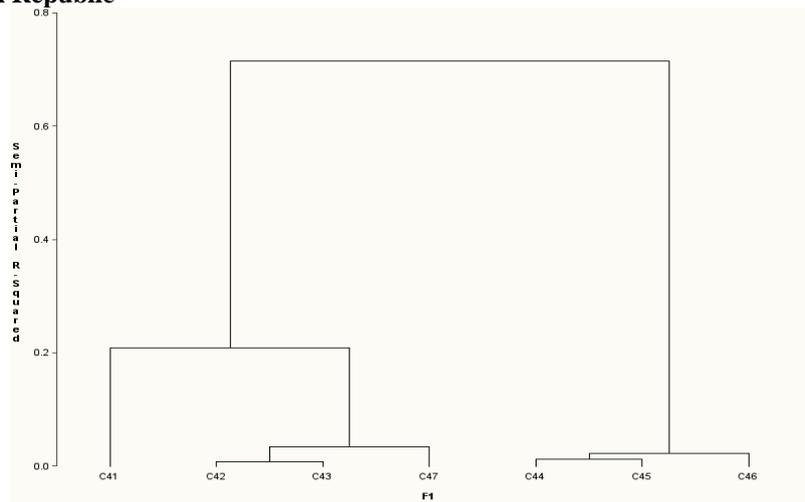


Figure 4 [Czech's dendrogram]

Source: own research

cluster	
1	health clean of product
2	product safety taste system of quality safety during production
3	brand packing quality mark on the packing of product

Table 2 [Czech cluster division]

Source: own research

Keeping the food safety in perspective is great important. The food safety is staying according to the Food Concept after EU accession (2004 – 2013) as one of long-terms priorities of national food policy. Meeting all the quality requirements and strict standards of the EU, improving food safety and competitiveness in this branch and as well awarding domestic products made by domestic resources are top preference of National Domestic Food Promotion Program – the KLASA mark opening to all food producer doing business in the Czech Republic. This program is similar to governmental or semi-governmental systems in EU and other countries and also corresponds with the instruments of the World Trade Organization (WTO). Figure 4 and Table 2 show, how Czech consumer perceive the factors of food quality. There’s three groups. The health clean of product is perceived very separately and isn’t assigned to any cluster. Product safety, taste and quality system are in the Czech Republic, there are four most important national labels on the food products market; only three of them, Klasa, Regional Food and Czech BIO label are included in the marketing research. The label Czech Product, guaranteed by Food Chamber of Czech Republic is a new label which was introduced into the market after marketing research study. Besides national labels, four European labels are chosen for analysis. The last cluster Brand, packing and quality mark are in separately cluster, f.e. because of brand image are most oft added to quality and back. And packing should be perceive such a s factor of image because of quality mark or brand logo.

Slovakia

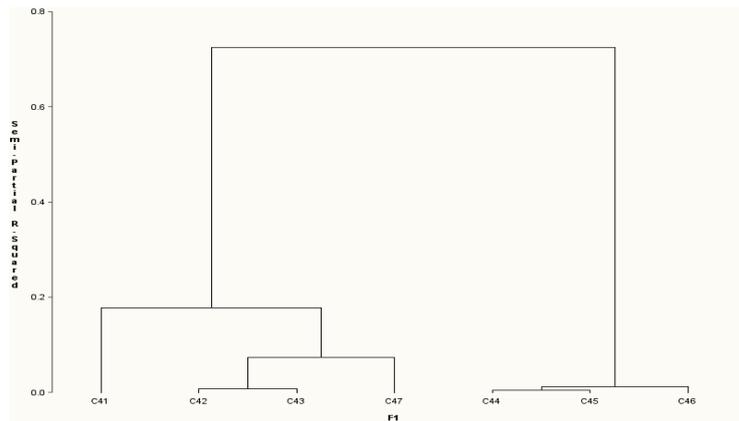


Figure 5 [Slovakia’s dendrogram]

Source: own research

cluster	
1	health clean of product
2	product safety taste system of quality safety during production
3	brand packing quality mark on the packing of product

Table 3 [Slovakia cluster division]

Source: own research

Figure 5 and Table 3 illustrate the situation in Slovakia. There's the similarities with Czech Republic in the factor of health clean of product which should be separated from others. In the case of customer satisfaction in grocery stores, respondents reported that flour and pasta for them to more than 95% acceptable and are happy with their offer in stores. Least satisfied with the fruit, which marked only 77.64% of respondents. The biggest disappointment with the selection of agricultural commodities in stores seen with just fruit, which is often imported from neighboring and distant countries especially, reducing the appearance, quality and features offered vitamin fruit. Slovakia is situated in climate zone, where we achieve at the highest seasonal summer and beyond, we as a country more or less dependent on import. Meat is also a commodity that is perceived by respondents as less attractive. 80.36% of respondents said they were satisfied with the shelves. Recent scandals meat on meat quality in the Slovak market, which we know from the media (gritting salt discovered in some Polish meat products, meat or changing supermarkets, etc. ...), teach consumers to be especially careful and monitor data on the packaging, shelf life, initial appearance or country of origin of the product. The situation in the Czech Republic spoiled meat is already reflected in our country. In the shops while repeating the same sins as known in our neighborhood: relabeling expiration date, smelly meat or insufficient documentation of its origin. While supermarkets to build leadership in the Slovak market, the streets quietly waned traditional butchers. Remained particularly gigantic shop where our various discounts glue eyes. At low salaries Slovaks mainly interested in the label expiration date and price. The majority that ends up in the basket cheap, but poor nutrition meat uncertain origin. According to TV news TV JOJ dated March 16, 2012 Americans Brussels opens the possibility of an American or Canadian export meat to the EU. U.S. beef from local farmer's megafarmer already preparing to sell to traders who can get him calmly and in Slovak stores. The most important condition is that the meat did not result from cattle riddled with drugs and growth hormones. When shopping in the hypermarket where you roll on the shelves of various kinds of meat, no ordinary consumer or come to mind thinking about how good it is. And Slovakia to the prediction of future consumer behavior in directed search for butchers already mentioned, where the Slovaks will return and will buy meat products. The last cluster Brand, packing and quality mark are in separately cluster, f.e. because of brand image are most oft added to quality and back. And packing should be perceive such a s factor of image because of quality mark or brand logo.

CONCLUSION

Firstly, one can observe that European consumers spend ever less on basic foods (e.g. bread, butter, yogurt, cheese, sausage, milk, oils etc.) which push the trend towards the so-called cheap basics. Although a stagnating economy, burden of taxations and the pension discussion are mentioned as reasons, this bargain hunting has not alone something to do with income situations. Buyers can be found in all social layers. By doing shopping at discounters consumers with higher incomes psychologically compensate afterwards expensive impulse purchases. Furthermore, this trend is forced by large retail chains by offering cheap private labeled products and by a progressive concentration process. Country-of-association significantly impacts consumers' product evaluations and choice. Besides the trend towards cheap basics there are trends in food consumption which are caused by demographic and lifestyle changes like the increasing

number of women in the labor force, growing incomes, the plurality of household and family structures (e.g. decreasing rate of marriages, increasing rate of divorces, decreasing birth rate, decreasing household sizes) and the aging of society.

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SUMMARY

The provision of safe food which protects customers' integrity and provides consumers with the desired taste is expected to remain the major priority in world food markets in the foreseeable future. While reducing microbial contamination, chemical contaminants and pesticide residues will gain in importance, ethical products and functional foods are the emerging priorities. Food businesses will need to give much greater attention towards minimising water use and pollution, more sustainable production systems, worker welfare and waste management. Recyclable packaging, conservation and biodiversity, food miles and reducing salinity and land degradation are the emerging environmental issues. Country-of-origin is perceived to be the most important indicator of food quality both now and in the foreseeable future. Identifying which food preservatives, food colourings and flavour enhancing compounds have been used in the food will continue to grow in importance as consumers move towards more natural, unadulterated food products. Identifying the presence of potential allergens is critically important for the growing number of susceptible consumers. The food energy content and the use of sugar and artificial sweeteners are the emerging issues, with the presence of genetically modified organisms and eco-labelling poised to become more prominent in the long-term.

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