# PERCEPTION OF FOOD QUALITY AND SAFETY AMONG YOUNG CONSUMERS

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A b s t r a c t. The aim of this study was to assess the perception of food quality and safety from young consumers' point of view. The study was conducted among 1121 respondents aged 16 to 24. The findings show that food quality and safety are terms which are interpreted by consumers in various ways depending on socio-demographic characteristics. There is a need to undertake educational activities aimed at young consumers to make them aware of the variety of factors that constitute perception of both food quality and food safety and should be taken into consideration when making decisions, and to realise the responsibility for the safety level of food they buy and consume.

## INTRODUCTION

One of the most popular consumption measures is the share of food expenses in the expenses in general [Kramer 1993]. In 2015, similarly to previous years, the largest share in Polish households has been constituted by food and non-alcoholic beverages 24.0%, although in households working for their own it constituted 20,5% of the total expenses, and 31.3% in farm households [GUS 2016].

The place of residence strongly impacts the food consumption level. Households located in the countryside are characterized by a slightly different eating model than households located in the city. City residents, when compared to those living in the countryside, consumed in average more mineral or spring waters, fruits, cheeses, cottage cheeses and yogurts per person, but less potatoes, bread, eggs, milk, sugar and meat [GUS 2016].

The level of food consumption also strongly depends on the income of a household. With the increase of the prosperousness of households also the level of consumption of some food articles increases. Similarly to previous years when comparing the richest households with those with the lowest incomes (I quintile group), the richer ones (V quintile group) consumed per person in average more: beef almost 6 times more, butter, mineral and spring waters, fruit juices and fruits almost 3 times more, yogurts, fish and seafood, vegetable and

vegetable-fruit juices, cheeses, cottage cheeses almost two times more. While households with the lowest incomes (I quintile group) consumed more bread, potatoes, sugar, flour, margarine and other vegetable fats [GUS 2016]. Due to the still important food expenses in terms of expenses in general, the issue of food safety and quality is also important. Thus, researching the perception of quality and safety among the consumers is also relevant.

Nowadays consumers pay increasing attention to such food attributes as safety and quality [Wen-Hwa 2010]. They expect products that represent high level of sensory quality and that are safe to be consumed as well [Lupien 2007, Swinnen, Vandemoortele 2009]. More emphasis is currently put in the European Union on promotion of high quality foodstuffs. A study commissioned by the European Commission [EC 2010] shows that EU consumers are interested in the issue of food quality and safety. Over a half of those surveyed declared they wanted to receive more information concerning food safety and food quality.

Food quality is a complex notion. A general definition of food quality is included in the standard PN-EN ISO 9000:2006 "Quality management systems. Fundamentals and vocabulary", whereby quality is "the degree to which a set of inherent characteristics fulfils requirements". The word "inherent" refers to properties characteristic for a product type, and "characteristics" are construed as a set of quality features that distinguish one product from others. As a rule, a food producer perceives the quality of a product through its physical properties (objective quality), whereas consumers see quality according to their own criteria (subjective quality) [Ilbery, Kneafsey 2000, Grunert 2005]. Davi A. Garvin [1984] presents a very complex stance on quality, considering four aspects: the product based approach, the user based approach, the value based approach, and the manufacturing based approach. According to Julie A. Caswell [2006] food quality encompasses internal and external product attributes. The internal factors affecting quality include: potential threats for food safety, taste and flavour features, functional features and nutritional value. The external factors that affect foodstuff quality will include quality management systems, certificates, price, brand, or consumer experience with a product.

According to Marija Banović et al. [2010], consumers see product quality under consideration of its origin, physical properties, image and their combination. Research findings show that individual differences in approaching quality influence consumer behaviour, from meal preparation to future shopping decisions [Grunert et al.1996].

In literature, food safety is regarded as an integral part of food quality [Rijs, Frewer 2008]. The distinction between safety and quality is visible in the legislative system, and it also affects the character of the food control system [FAO/WHO 2009]. On the one hand, food producers must meet legal requirements concerning food safety, and on the other hand consumer expectations, concentrating around the remaining quality characteristics. This is confirmed by food quality perception research which shows that safety is not the most important distinguishing feature of food quality for consumers [Brunsø et al. 2002]. The „Green Paper on agricultural product quality: product standards, farming requirements and quality schemes" underlines that food safety is, next to hygiene, health and nutritional value, one of the most important issues raised in the European Union [Commission of the European Communities 2008].

According to the FAO/WHO definition [2009], food safety refers to the conditions and practices which are necessary during production, storage, distribution to ensure that the foodstuff is safe and fit for human consumption. The preamble to the Regulation (EC) No 178/2002 stresses that food safety is affected by all aspects "(…) of the food production

chain as a continuum from and including primary production and the production of animal feed up to and including sale or supply of food to the consumer". The regulation assured an integrated approach to food safety in the entire food chain under the field to table principle. The Regulation (EC) No 852/2004 stresses the need to guarantee food safety from the production stage to food distribution. The main responsibility for food safety lies with the food entrepreneur/producer, starting with primary production.

Research into food safety perception among consumers show that the way this issue is understood depends on a number of factors, including age, household income, or educational background [Green et al. 2003, Wilcock et al. 2004, O'Key, Hugh-Jones 2010, Heiman, Lowengart 2011, Grujić et al. 2013]. Susan M. Brewer, Guy K. Sprouls and Russon Craig [1994], revealed that there are six factors that dominate the consumers behaviours and choice toward food safety. These are: chemical issues (e.g. food additives), food regulatory issues (e.g. labels and food inspection), health issues (e.g. nutritional imbalance), spoilage issues (e.g. contaminations), deceptive practices (e.g. weight-loss diets) and ideal situations (e.g. length of time for pesticide safety assessment).

## METHODS

The study was conducted between April and December 2011 with a survey questionnaire on a group of respondents aged 16 to 24, who were deemed appropriate to represent the segment of young consumers. The criteria to distinguish young consumers included their age: participants learn in secondary or tertiary schools located in the Polish administrative province of Mazowieckie Voivodship. Simple random selection was used to get 4 universities and 8 high schools. A computer-aided simple random selection method was used to select the classes and lecturers group. In each of the selected group only respondents which buy food were participated in research. The questionnaire was developed by authors themselves in all schools. The questionnaire was divided into two sections. The first section contained 7 questions concerning, among other things, the way consumers defined the notion of food safety, examination of the perceived way individual market participants influenced food safety, or assessment of food quality level depending on the point of sale. The questionnaire included closed-ended and open-ended questions. The second section included the background information of respondents, such as sex, age, education, affluence level and locality size. The questionnaire included closed-ended and open-ended questions. The second section included the background information on respondents, such as sex, age, education, wealth and residence. The questionnaire took approximately 20-30 minutes to complete.

The questionnaire was distributed directly by the authors in all schools and 1700 inquiry forms were distributed. The response rate of the survey was at the level of 76.8% (1305 items). A total of 1121 questionnaires (85.9%) were analysed in the study. The questionnaire was pilot tested (n = 50) for clarity.

Statistical analysis was performed with the STATISTICA package version 10. In order to show the effect of demographic variables on perception of food quality and safety, Kruskal-Wallis (K-W) ANOVA and $\chi^2$ tests were applied.

## RESULTS AND DISCUSSION

### PROFILE OF RESPONDENTS

Characteristics of participants were presented in table 1. The population studied included 407 people aged 16-18 (36.3%) and 714 (63.7%) people aged 19-24. Women predominated in the group studied (61.5%), but sex differences were noted in individual age groups. Among respondents, aged 16-18, men predominated slightly (49.4%). In people aged 19-24, women were more numerous (68.3%).

Those surveyed lived in both rural and urban localities. Town dwellers accounted for 65.8% of the population studied. Over a half were university students.

Subjective assessment of material affluence of the respondents showed 64.0% assessing their situation as good or very good. Over 8.0% admitted their situation to be poor or very poor, 27.6% thought their material standing was neither good nor poor.

Table 1. Demographic characteristics of respondents

| Demographic characteristics | n* | % |
|---|---|---|
| Age group (n = 1121): | | |
| – 16-18 | 407 | 36.3 |
| – 19-24 | 714 | 63.7 |
| Sex (n = 1121): | | |
| – male | 432 | 38.5 |
| – female | 689 | 61.5 |
| Education (n =1121): | | |
| – high school | 557 | 49.7 |
| – university | 564 | 50.3 |
| Affluence level (n =1121): | | |
| – poor and very poor | 95 | 8.5 |
| – neither good nor poor | 309 | 2.6 |
| – good and very good | 717 | 64.0 |
| Locality (n = 1121): | | |
| – rural | 383 | 34.2 |
| – urban, up to 50,000 | 210 | 18.7 |
| – urban, 50,000 to 500,000 | 89 | 7.9 |
| – urban, over 500,000 | 439 | 39.2 |

* Number of respondents.
Source: own calculations.

### ASSOCIATION TO „FOOD SAFETY"

As findings of the study of food associated problems as commissioned by the European Commission show, consumers are more concerned with issues such as economic crises or environmental pollution rather than food associated problems. The study observed, too, that EU consumers, asked about causes of food related threats, spontaneously point to a wide range of replies. They tended to signal problems such as presence of toxic substances, pesticides or other chemicals (19.0%), food poisonings (12.0%) and nutritional diseases, e.g. diabetes (10.0%). Compared to a study conducted in 2005, more respondents showed concerns about insufficient freshness/expiry date or about food additives, preservatives and colouring [EC 2010].

In open questions, the respondents were asked to define notions of "food quality" and "food safety". About a quarter of those asked could not define the term "food safety" (tab. 2). Among those who did answer the question, over 2/5 saw food safety as appropriate food storage (41.4%). Replies such as harmlessness to health (21,1%), observing hygiene in the point of sale (18.7%) and appropriate packaging (15.2%) took subsequent places. The least frequent associations with food safety were safety assurance systems (4.4%), appropriate food formula and appropriate food origin (3.0%).

People aged 16-18 defined food safety first of all as appropriate storage (44.6%). Their next choices were appropriate packaging (18.8%) and observance of hygiene requirements

Table 2. Associations to "food safety"*

| Food safety | % |
|---|---|
| Appropriate storage | 41.4 |
| Harmlessness to health | 21.1 |
| Observing hygiene in the point of sale | 18.7 |
| Appropriate packaging | 15.2 |
| Inspection controls | 8.3 |
| Appropriate transport | 5.5 |
| Expiry date | 5.5 |
| Taste and flavour | 5.1 |
| Safety assurance systems | 4.4 |
| Appropriate composition | 3.7 |
| Appropriate origin | 3.0 |
| Other | 6.0 |

* Number of respondents.
Source: own calculations.

where they were sold or produced (16.0%). Respondents aged 19-24 indicated mostly appropriate storage (27.1%) and observance of hygiene requirements where they were sold or produced (20.1%). University students, when defining food safety, took more factors into consideration than high school students, where nearly a half of the surveyed (47.2%) defined food safety as "appropriate storage". No significant differences were observed between sexes when defining food safety. Bülent Ergönül [2013] point out in his study that that most of the consumers at ages under 20 (42.0%) expressed that their food safety knowledge was moderate.

Contrary to the findings of this research, the Axel Röhr et al. [2005] study conducted among German consumers showed respondents to associate food mostly with exercising inspection/supervision of food. On the other hand the researchers also noted that their respondents identified food safety with the notions of them being: harmless, non-toxic, healthy, which was also reflected in these authors' own research. Associations of food safety with control and absence of risk were also observed by Wendy van Rijsk and Lynn Frewer [2008]. As noted by Mary Roseman and Janet Kurzynske [2006], consumer knowledge of food safety increases with age and it is the young consumers who show a higher need for education in terms of food safety. Better educated consumers often recognize the importance of food safety [Li-Cohen, Bruhn 2002, Sudershan et al. 2008].

Anna Strada et al. [2006] point out that there is a discrepancy between food safety perception among experts (such as nutrition specialists) and consumers. For instance, some specialists, such as those dealing with food safety, perceive the notion in terms of absence of microbiological risks, while consumers associate it with absence of pesticides or chemical additives in foodstuffs. Informing consumers of scientific facts alone concerning food safety does not bring a behaviour change effect. In consumer communication, other socio-cultural factors shaping consumer attitudes play a more important role. Research carried out in Australia and New Zealand [FSA 2000] showed that people's attitudes related to food safety perception changed depending on moods or were affected by information they read or saw.

## FACTORS AFFECTING FOOD SAFETY

As the findings demonstrate, just under a quarter of the respondents could not indicate, what factors they thought most influenced food safety. Those who replied to this question usually declared that what affects the food safety level to the largest extent is its storage (49.8%). They next indicated the way of production (32.3%) and observing hygiene in the shop (16.8%) (tab. 3).

These findings partly reflect those obtained by Sylwia Żakowska-Biemans [2011]. In her research, among factors determining food safety, respondents usually indicated the way foodstuffs were stored in the point of sale and the organic production of food. Women

pointed more frequently to factors such as production methods (33.8%, men 29.7%) or observing hygiene in the point of sale or production (17.2%, men 15.8%). Contrary to women, men were more frequently unable to indicate factors affecting food safety. Also, they pointed more frequently to product packaging (14.5%, women 12.7%) as a vital element of food safety assurance. As distinct from these authors' own research, a study by M. Gavaravarapu M. Rao Subba al. [2009] conducted among South India's girls aged 10-19 showed that they perceive packaged food to be safer. Other studies confirmed this practice [Bruhn, Schutz 1999, Surujlal, Badrie 2004, Ergönül 2013].

Respondents were also asked to indicate those named market participants who were in their opinion most responsible for food safety (tab. 4).

The analysis of data obtained shows that respondents considered food safety as an area that required a comprehensive treatment at various levels. They stated that consumers are not responsible for food safety to the same level as other active market entities. They usually acknowledged it was the domain of producers, production control inspections and farmers (average over 4). Similar results were obtained in a study by Mojca Jevšnik, Valentina Hlebec and Peter Raspor [2008], where respondents agreed that consumers were least responsible for food safety (average 3.37). In another study, conducted in the UK, participants indicated that most responsibility for food safety lies with food producers and the government [Henson et al. 1999]. A study by Janneke de Jonge et al. [2008] showed that those whom consumers credit with most trust on the food market are farmers as those who, among other things, have the appropriate food safety knowledge. Research shows that consumers would prefer authorities responsible for food safety to focus their efforts on preventing food safety risk opportunities rather than existing risk management [Van Kleef et al. 2007].

Table 3. Factors predominantly affecting food safety*

| Variables | % |
|---|---|
| Storage | 49.8 |
| Production method | 32.3 |
| Observing hygiene in place of sale or production | 16.8 |
| Packaging | 13.4 |
| Transport | 6.5 |
| Expiry date | 5.8 |
| Composition | 5.6 |
| Safety assurance systems | 4.4 |
| Consumer | 2.9 |
| Other | 6.4 |

* Indications do not sum up to 100%, as more than one reply could be given [N = 861].
Source: own calculations.

Table 4. Consumers' opinion concerning responsibility for food safety

| Variables | n* | Mean** | SD |
|---|---|---|---|
| Food manufacturers | 1113 | 4.51 | 0.70 |
| Food safety inspectors | 1103 | 4.31 | 0.96 |
| Farmers | 1113 | 4.03 | 0.98 |
| Retails | 1113 | 3.72 | 1.05 |
| Consumers | 1107 | 3.28 | 1.19 |
| Government | 1104 | 3.16 | 1.27 |

* Number of respondents.
** Average of the ranking given to the opinion by respondents. Opinions were ranked from 1 (not at all) to 5 (very much).
Source: own calculations.

Demographic variables such as age, sex and educational background affected the way consumers perceived responsibility of particular market participants. People aged 19-24 and women generally attributed more responsibility to each market participant. High school respondents, too, attributed higher responsibility to each participant. It was only when assessing the consumer's responsibility for food safety that respondents with lower educational backgrounds considered consumer responsibility for food safety to be higher than did university

students ($\chi^2 = 12{,}69$, $p = 0{,}01$). No statistically significant effect was noted in this respect in replies of respondents from different locality size or with different material affluence.

Making food producers chiefly responsible for food safety is also manifest in Item 30 of the Preamble of the Regulation (EC) No 178/2002, whereby "a food business operator is best placed to devise a safe system for supplying food and ensuring that the food it supplies is safe". It has to be remembered, though, that only efficient operation of all food market participants can ensure access to food that is both safe and appropriate quality. The government should assure correct functioning of a system comprising legislation, inspection authorities, laboratories and other elements. Food producers should take care to produce food so that it can be inspected for quality at every step. It should be noted here that a system based solely on food safety inspections will not lead to the desired effect. Only focusing on food safety and food quality can provide the effective tool in the struggle for prevention of food issues [Lupien 2007].

## ASSOCIATIONS TO „FOOD QUALITY" AND „APPROVED QUALITY"

From the consumers' point of view several aspects contribute to defining the quality of a food product: these are not only intrinsic qualities (e.g. taste and other organoleptic properties), but also external factors such as labelling or quality certificates [Bernués et al. 2003]. On the other hand, the way consumers perceive the quality of a food product before a purchase is often different after consumption [Verdú Jover et al. 2004]. Klaus G. Grunert et al. [1996] identified four quality dimensions: taste and appearance, health, convenience and process. Tanis Furst et al. [1996] observed that economic or social-demographical variables (e.g. age, family size) are crucial to consider when analyzing consumers' food quality perception.

Just over 35% of those surveyed could not define the term "food quality". Among those who replied to the question, over a third associated this notion with appropriate taste and flavour (tab. 5). These findings are confirmed in a study by W. van Rijs and L.J. Frewer [2008], who also noted that consumers usually associated food quality with its taste and flavour. A study by Karen Brunsø et al. [2002] shows that an open question about food quality leads to responses which oscillate around such distinctions as: taste and flavour, health, convenience and production aspects (natural/organic production etc.).

Table 5. Associations to "food quality"*

| Variables | % |
|---|---|
| Taste and flavour | 36.6 |
| Appropriate composition | 17.1 |
| Condition of the product | 13.2 |
| Expiry date | 12.9 |
| Appropriate production method | 10.9 |
| Appropriate origin | 10.2 |
| Absence of negative health impact | 7.3 |
| All features in general | 5.4 |
| Appropriate storage | 3.7 |
| Other | 15.5 |

* Number of respondents [727].
Source: own calculations.

When considering the respondents' age it was observed, that those aged 16-18 identified food quality first and foremost with appropriate taste and flavour (39.0%), condition of a foodstuff (17.0%) and expiry date (12.4%). Respondents aged 19-24 usually indicated appropriate taste and flavour (35.4%), appropriate composition (21.2%) and expiry date (13.2%). Only 8.7% indicated appropriate composition in the 16-18 age group. Also, 21.9% women and only 9.3% men decided food quality is associated with its appropriate composition.

Anne W. Taylor et al. [2012] observed that age may affect the way respondents perceive food safety and quality. People below 30 years of age were less interested in these aspects.

This relationship was also confirmed by other research [Dosman et al. 2001]. Analysis of replies leads to an observation that respondents who defined food quality failed to distinguish "food safety". Research carried out by K. Brunsø et al. [2002] showed that consumers who think of food quality often do not take food safety into consideration as a component of food quality.

Respondents were asked to comment on statements that might characterize "high quality food". They usually condoned the statement whereby it is food of "appropriate taste and flavour", is "free from contaminants", has "quality certificates" or "high nutritional value" (average above 4) (tab. 6).

Table 6. Associations to "approved quality"

| Variables | n* | Mean** | SD |
|---|---|---|---|
| Has appropriate taste and flavour | 1119 | 4.35 | 0.81 |
| Is free from contaminants | 1120 | 4.32 | 0.99 |
| Has quality certificates | 1120 | 4.08 | 0.98 |
| Has high nutritional value | 1120 | 4.04 | 1.01 |
| Contains no preservatives | 1117 | 3.84 | 1.09 |
| Is produced organically | 1116 | 3.81 | 1.07 |
| Is produced by a Polish producer | 1116 | 3.29 | 1.09 |
| Is a well known brand | 1119 | 2.92 | 1.24 |
| Is advertised on TV | 1119 | 2.21 | 1.11 |

* Number of respondents.
** Average of the ranking given to the opinion by respondents, opinions were ranked from 1 (I don't agree) to 5 (I agree).
Source: own calculations.

Women declared more frequently than men that high quality food contains no preservatives ($\chi^2 = 12.99$, $p = 0.01$), has high nutritional value ($\chi^2 = 10.39$, $p = 0.05$) and has quality certificates ($\chi^2 = 15.53$, $p = 0.001$). Research conducted in Czech Republic confirmed that women give a higher attention to quality labels than men [Velcovska 2012]. In turn, men admitted more frequently that high quality food is a well known brand ($\chi^2 = 17.59$, $p < 0.001$). People aged 16-18 were more ready than older respondents to condone the statement that high quality food is food that is advertised on TV ($\chi^2 = 17.71$, $p = 0.001$) and that it is a well known brand ($\chi^2 = 19.47$, $p = 0.001$). Older study participants associated high quality with organic production methods ($\chi^2 = 13.28$, $p = 0.01$) or absence of contaminants ($\chi^2 = 26.96$, $p < 0.001$).

When one considers locality size, differences in "high quality food" perception were noted between urban and rural participants. People from rural areas more readily agreed with statements to the effect that "high quality food" is food that is "advertised on TV" (ANOVA K-W (3,N = 1119) = 22.64, $p < 0.001$), "produced using organic methods" (ANOVA K-W (3, N = 1116) = 13.41, $p = 0.004$) or "produced by a Polish producer" (ANOVA K-W (3, N = 1116) = 37.42, $p < 0.001$). People living in towns more frequently indicated this to be the food that is "free from contaminants" (ANOVA K-W (3, N = 1120) = 11.84, $p = 0.01$).

It is significant that most respondents indicated taste and flavour as the most characteristic factor of "high quality food". What is surprising is the low significance of the "well known brand" (average 2.92). The role of brand is widely commented in literature. Researchers point to the link between expected quality and product brand [Dawar, Parker 1994]. According to Tihomir Vraneševic and Ranko Stančec [2003] consumers see the brand as a "quality mark" in their decision making process when buying, and then consider other assessment criteria, such as external appearance, price etc.

TNS Opinion and Social research carried out on the EU area in 2012 upon request by the European Commission [2012] leads to the insight that food quality was the least reason for choosing food among people aged 15-24. Members of this age group, too, looked for quality marks on food packaging less readily than other age groups.

## FACTORS AFFECTING FOOD QUALITY

Table 7. Factors affecting food quality*

| Variables | % |
|---|---|
| Production method | 37.0 |
| Producer | 29.4 |
| Storage | 25.6 |
| Origin | 19.2 |
| Composition | 5.9 |
| Point of sale | 3.5 |
| Taste and flavour | 3.3 |
| Expiry date | 3.3 |
| Control inspections | 2.9 |
| Other | 9.8 |

* Number of respondents [N = 780].
Source: own calculations.

Jacques Trienekens and Peter Zuurbier [2008] expect that quality assurance will dominate the process of production and distribution and may induce responses like technological innovation to create e.g. higher efficiency or reduce costs.

Analysis of replies by respondents who answered the open question concerning factors that most affect food quality showed that just like with factors most affecting food safety, those surveyed indicated production method (37.0%). Research participants also pointed to the producer (29.4%), storage (25.6%) as well as food origin (19,2%) (tab. 7).

According to Kołożyn-Krajewska [2013] food quality is first and foremost affected by raw ingredients used, whose quality in their turn follows from agriculture and environmental conditions. However, as she notes, an equally important influence is the production method, which was the most indicated factor in these authors' own research. Production method was mostly indicated by women (37.0%), people aged 19-24 (39.4%), and respondents from the biggest cities (37.5%). Beata Kupiec and Brian Revell [2001] observed that traditional appearance of food is identiefied by consumers as a sign of quality. Consumers tend to distrust innovation in food production, and judge it as less real and safe than the traditional alternatives [Fernandez-Polanco et al. 2008].

The origin of foodstuff was regarded as a vital food quality factor mainly by inhabitants of town sized 50,000 to 500,000 people (26.1%), university students (20.2%) and women (19.2%).

## IMPACT OF THE POINT OF SALE ON THE QUALITY OF FOOD

Respondents assessed food quality differently depending on the point of sale. They thought the highest quality characterized food sold in organic shops (average 4.17) or bought from farmers (average 4.15). It was interesting to note that the quality of food sold on the premises of schools/universities (average 2.91), or online (average 2.63) was assessed as the poorest (tab. 8). Junhong Chu et al. (2010) write that consumers assess the quality of food sold in brick and mortar shops higher than that sold online. Therefore they are more often guided by the product brand when choosing a foodstuff and are less sensitive to its price.

Analysis of replies leads one to notice their differentiation according to age, sex, educational background or locality size. People aged 19-24 stated more often than younger research participants that higher quality food can be bought in organic shops ($\chi^2 = 12.68$, $p = 0.01$), on farms ($\chi^2 = 10.94$, $p = 0.03$) or via the internet ($\chi^2 = 28.94$, $p < 0.001$). The internet was also more often indicated as a place to buy higher quality food by men ($\chi^2 = 19.73$, $p = 0.001$) and by people living in the biggest cities (ANOVA K-W (3, N = 1098)

= 27.51, $p < 0.001$). According to Kim Ramus and K.G. Grunert [2004] importance of quality aspects deals with the importance of criteria like e.g. taste, freshness, health or naturalness. The relative weight of these quality aspects may affect the formation of beliefs about Internet shopping. Health or naturalness are information intensive credence characteristics, where Internet shopping may have advantages, whereas freshness and taste are experience characteristics where visual cues are important, where Internet shopping may have disadvantages.

Table 8. Food quality perception depending on the point of sale

| Variables | n* | Mean** | SD |
|---|---|---|---|
| Organic food shop | 1113 | 4.17 | 0.95 |
| Farmer | 1119 | 4.15 | 0.93 |
| Gastronomy establishment | 1115 | 3.68 | 0.90 |
| Local convenience store | 1120 | 3.62 | 0.80 |
| Local market | 1120 | 3.54 | 1.03 |
| Hyper/supermarket | 1120 | 3.29 | 0.87 |
| Discount retailer | 1121 | 3.19 | 0.97 |
| School/university premises | 1117 | 2.91 | 0.99 |
| Internet | 1098 | 2.63 | 1.03 |

* Number of respondents.
** Average of the ranking given to the opinion by respondents, opinions were ranked from 1 (very poor quality) to 5 (very high quality).
Source: own calculations.

Hyper/supermarkets are usually places to buy such food according to people aged 16-18 lat ($\chi^2 = 18.21$, $p = 0.001$), men ($\chi^2 = 17.18$, $p = 0.002$) and high school students ($\chi^2 = 11.08$, $p = 0.03$). No statistically significant effect of affluence level was noted in this respect.

Lotte Holm and Helle Kildevang [1996] write that consumers preferred different groups of products from different shops, e.g. meat from one and vegetables from another. In their study none of the respondents bought all their foods from just one shop, but would switch between shops from day to day.

## CONCLUSIONS

Findings of this research show that food quality and food safety are terms construed by consumers in various ways and this interpretation depends on socio-demographic characteristics. The analysis of the factors affecting food quality and safety shows that the respondents most often link them with production method and storage. Respondents considered food safety as an area that required a comprehensive treatment at various levels. They usually acknowledged it was the domain of producers, food safety inspectors and farmers.

A better understanding of factors that affect consumer perception of food safety and food quality may contribute to better communication of food safety issues on the in the marketplace. Communication of food safety should be expressed in the simplest way possible to facilitate understanding. An education program should not be limited to nutrition or microbiological hazards, but should address all aspects of product safety and quality. There is a need to purse educational activities aimed at young consumers to make them aware of the variety of factors that are involved in perception of both quality and safety of food and should be considered in the decision making processes, and also of the responsibility of the consumer as a market participant for the safety level of the food they purchase and consume.

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## *POSTRZEGANIE JAKOŚCI I BEZPIECZEŃSTWA ŻYWNOŚCI PRZEZ MŁODYCH KONSUMENTÓW*

### *Streszczenie*

*Celem artykułu jest ocena postrzegania jakości i bezpieczeństwa żywności z punktu widzenia młodych konsumentów. Badanie przeprowadzono wśród 1121 respondentów w wieku od 16 do 24 lat. Wyniki badania pokazują, że jakość i bezpieczeństwo żywności są interpretowane przez konsumentów w różny sposób, w zależności od cech społeczno-demograficznych. Istnieje potrzeba przeprowadzania działań edukacyjnych skierowanych do młodych konsumentów w celu wskazania im różnych czynników, które wpływają na postrzeganie jakości i bezpieczeństwa żywności oraz uświadomienie im odpowiedzialności za poziom bezpieczeństwa żywności, którą kupują i spożywają.*

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