

THE RATIONALITY OF CONSUMER BEHAVIOR ON THE FOOD PRODUCTS MARKET

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THE aim of this study was to identify and evaluate the rationality of consumer behaviour on the food products market. The problem which is the subject of the article was elaborated on the basis of primary information derived from survey research conducted in 2009. The questionnaire was completed by 200 respondents. The results showed that all food needs are analysed by every third person, and every second person analyses only some of these needs. It demonstrates a conscious choice and purchase of food products by the respondents. Half of the respondents established a hierarchy of needs during taking decisions concerning the purchase of foodstuffs. The diversified structure of roles, which respondents perform in their households shows that more and more decisions are considered and made jointly. Among the social determinants affecting the purchase of food products majority of respondents indicated their own beliefs and previous experience as most important factors. Among the marketing factors affecting the choice of food products, respondents most often mentioned the additional quantity of product for the same price and promotional price reductions. Results of this study will help identify the characteristics of rational of consumer behavior on the food products market. This may be helpful for institutions dealing with the wider consumer education, among others in the field of sustainable consumption. With the social and economic development changed patterns of consumer behavior and decisions taken by them on the market (also on food products market).

Key Words: Consumer Behaviour, Rationality, Hierarchy Food Needs.

Introduction

Rationality is a phenomenon occurring in all areas of human activity, therefore, this issue is an object of research in such scientific disciplines, as sociology, or psychology. However, the issue of rationality of choices, decisions or behaviour of consumers or consumer groups has been specifically and widely considered by economic sciences (Smyczek, Sowa 2005).

Consumer behavior on the food products market has specific nature. It is a result of the type of satisfied needs, which are the cause of action in this sphere of consumption. Food needs are the basic needs, stemming from biological (physiological) requirements of the organism. Food needs are objective, but there are also subjective, what is associated with an individual system of consumer values and preferences. In the classification of food needs, as in the general needs classification are primarily included criteria of satisfying urgency and socio-economic functions (Kos, Szwacka-Salmonowicz 1997).

Fulfilling of food needs is related to the biological criterion of rationality of consumption. This criterion of consumption, among others, bases on nutrition standards. The basis for biological criterion of

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rationality consumption of foodstuffs was established by the findings of experts in the area of consumer need selection and ways to satisfy them, which are particularly important from the perspective of proper functioning of human organism (Kiełel 2004).

When choosing food consumers are more and more frequently guided by the principles of rational nutrition, i.e. nutrition following the recommendations of nutrition experts. The main benefits which people, who want to change their way of nutrition, expect to achieve comprise: desire to be healthy or regain health, maintaining constant body weight or reduce it, improve the quality of life, etc. (Gutkowska and Ozimek 2005).

Another criterion of rationality consumption is social criterion. This criterion assumes regarding consumption through the system of values recognized and realised by social groups. It has been assumed that the upper limit of social rationality of consumption is the consumption standard which on one hand would be consistent with the system of values of dominating social group, and on the other would be accepted by the other social group or at least would not be in conflict with their systems of values (Kasiński, Piasny and Szulce 1984).

The condition of the rationality of consumer behavior on the market of food products is also an economic criterion, which has to be applied to the principles of rational action. In consumer behavior, one of these rules is to maximize the effect, that is the standard of living, the quantity or quality of purchased products at the established cost, and thus determining the hierarchy and structure of consumer spending. The second rule relates to the achievement of planned levels of consumption while minimizing financial outlays. It relates mostly to the specific behavior in fulfilling need such as finding and buying cheaper products (Swiatowy 2006).

The inner coherent, logic activity aiming at maximising entity's satisfaction may be also considered rational (Kamińska, Kubska-Maciejowicz, and Laudańska-Trynka 1995). Such behaviour has three assumptions (Rudnicki 2000):

- consumer reveals some preferences and is able to specify needs;
- consumer is able to evaluate his needs – from the most to the least intensively felt ones;
- consumer makes coherent choice in order to maximise their own satisfaction (contentment, usefulness).

Consumers continuously are making market choices. Before making ultimate choice, consumer crosses by the next stages of decision-making processes - from the identification and judging needs, through seeking the information, to the estimation of accessible offers, choice and the purchase. It is possible in this case to find the rationality as fundamental category connected with making a decision about needs which will be fulfilled, the order of their realization, ways of fulfilling them and circumstances of recruiting and using means of consumption (O'Shaughnessy 1994).

Rationality of needs fulfilling can also be equated with maximizing utility. Utility is a category corresponding to such concepts as satisfaction, contentment, and pleasure from the consumption of some goods. In order to fulfilling their needs, consumers will buy such quantities of selected goods at a certain income to cause them the greatest satisfaction. The degree of satisfaction as a measure of the rationality of consumer behavior is closely related to the identified characteristics of rational behavior: the desirability of actions, calculations (not just economic) (Kiełel 2007).

While analyzing the market behavior of consumers, that can be seen in everyday life, they often do not calculate exactly their actions. Consumers are not thinking about the benefits and losses stemming

from the individual decisions to purchase goods, especially for everyday uses. Such behavior is the result of the learning process, through which thinking and acting are shortening, leading to routine behavior. Consumer makes decisions according to certain patterns modeled on the environment or based on past experience, by multiple repetition of certain acts of behavior which in his opinion, gave positive results (Senda 1998). In decision-making processes consumers can perform different roles. The structure of these roles depends on kind of the decision and character of product. According to Kotler (1980) it is possible to show the following basic roles performed by consumers in process of purchase:

- initiator – a person who usually puts forward ideas of purchasing a given product or products,
- advisor – a person whose ideas are crucial for making decision about the purchase,
- decision maker – a person who usually decides about product purchases,
- buyer – a person who usually buys foodstuffs.

A role, which consumers perform in their households, indicates that decisions concerning the choice and purchase of products often are made jointly.

Data and Methodology

The problem which is the subject of the article was elaborated on the basis of primary information derived from survey research conducted in 2009 (Bijota 2009). The questionnaire was completed by 200 respondents. The empirical material was elaborated using the indicators of structure and arithmetic mean. Some of the analyses were conducted considering the structure of the respondents according to gender and age¹. To verify the relation between the results of the survey and the characteristics of respondents (gender and age) the χ^2 – test of independence was used. All hypotheses were verified on the significance level $\alpha=0.05$.

$$\chi^2 = \sum_{i=1}^r \sum_{j=1}^k \frac{(O_{ij} - E_{ij})^2}{E_{ij}}$$

O_{ij} – result of measurement in the i-th line and the j-th column

E_{ij} – expected value in the i-th line of the j-th column

Formula 1. Value of χ^2 - test

Results

The investigations revealed that a majority of the surveyed (54%) declared that they analyse some of their food needs, whereas every third person (33.5%) analysed all food needs. The respondents who do not analyse their food needs made up 12.5% of the surveyed (Table 1).

Considering the distribution of answers according to gender, it may be seen that a similar percentage of both women and men (respectively 33.3% and 33.8%) declared that they analyse their food needs. On the other hand only 6.4% of women and 23.0% of men do not analyse their needs.

Rationality, which in this case is regarded as the capability of determining one's needs was increasing with growing age of the respondents. Among persons aged over 50 almost 67% declares that they

1 Women made up a major part of the respondent group - 63%, and the men constituted 37% of the surveyed. The surveyed were divided into five age groups among which respondents aged 21-30 made up the highest percent (48.5%) and less numerous groups consisted of respondents aged 31-40 (15.0%) and below 20 (13.5%). 12.4% of the surveyed belonged to the 41-50 age group and the least numerous group was made up of persons aged over 51 years - 10.5%.

consider all their food needs, whereas in the group of persons aged below 20 only 11.1% made such declaration.

Verification using the χ^2 – test showed a dependency between the respondents' declarations concerning analysis of their food needs and their gender and age (Table 1).

Table 1: Respondents' Declarations Concerning Analysis of their Food Needs

Respondents' indications (%)				
	I analyse all food needs	I analyse only some food needs	I do not analyse food needs	Value of χ^2
Total	33.5	54.0	12.5	
		Gender ¹		
Women	33.3	60.3	6.4	12.82643*
Men	33.8	43.2	23.0	
		Age ²		
Below 20 years	11.1	74.1	14.8	18.93112*
21-30 years	29.9	57.7	12.4	
31-40 years	36.7	46.7	16.6	
41-50 years	40.0	52.0	8.0	
Over 50 years	66.7	23.8	9.5	

* value of χ^2 significant on the level $\alpha = 0.05$

¹ $\chi^2 = 5.991$ - critical value on significance level $\alpha = 0.05$ and 2 degrees of freedom

² $\chi^2 = 15.507$ - critical value on significance level $\alpha = 0.05$ and 8 degrees of freedom

Source: Own Elaboration based on Conducted Survey.

The answer to the following question was to show whether the surveyed evaluate their needs in the decision making process concerning purchases of foodstuffs. Establishing a hierarchy of needs may evidence that the respondents are characterised by intentional and, therefore, conscious and purposeful behaviours. 47% of all respondents admitted that they set up a hierarchy of needs while making decision about foodstuff purchases. On the other hand, 37.5% of the surveyed declared that they establish such hierarchy only for selected needs, while 15% do not do so at all (Table 2).

Similar percentage of both women and men (respectively 46.8% and 47.3%) confirmed that they set up a hierarchy of needs in the decision making process about purchases of food products. On the other hand 11.1% of women and over twice higher percentage of men (23%) do not establish such hierarchy at all.

Age is another factor favouring evaluation of needs. From among the surveyed persons aged below 20 only every third one (29.6%) declared establishing the hierarchy, whereas in group of persons aged over 50 the percentage was twice higher (61.9%).

Verification using the χ^2 – test showed a dependency only between the respondents' declarations concerning establishing the hierarchy of needs while making decision about purchasing foodstuffs and their gender (Table 2).

Table 2: Respondents' Declarations Concerning Establishing the Hierarchy of Needs While Making Decision about Purchasing Foodstuffs

Respondents' indications (%)				
	I establish the hierarchy of needs	I establish the hierarchy of some needs	I do not establish hierarchy of needs	Value of χ^2
Total	47.0	37.5	15.5	
		Gender ¹		
Women	46.8	42.1	11.1	6.125392*
Men	47.3	29.7	23.0	
		Age ²		
Below 20 years	29.6	51.9	18.5	11.59996
21-30 years	45.4	42.3	12.3	
31-40 years	50.0	23.3	26.7	
41-50 years	56.0	32.0	12.0	
Over 50 years	61.9	23.8	14.3	

* value of χ^2 significant on the level $\alpha = 0.05$

¹ $\chi^2 = 5.991$ - critical value on significance level $\alpha = 0.05$ and 2 degrees of freedom

² $\chi^2 = 15.507$ - critical value on significance level $\alpha = 0.05$ and 8 degrees of freedom

Source: Own Elaboration Based on Conducted Survey.

Over a half (52%) of the surveyed who earlier declared that they analyse all or only some of their needs (Table 1) stated that they set up the hierarchy of these needs. On the other hand, 38.5% of these respondents establish the hierarchy of only some (selected) needs. The lowest percentage of respondents confirming analysing their needs are the persons who do not set up their hierarchy – 9.5%.

The next question aimed to elicit information about the role which the respondents play in making decision about food product purchases in their households. They were given a choice of four possible answers: initiator, advisor, decision maker, and buyer (Table 3).

The study demonstrated that almost every third respondent (30.5%) acted as an advisor and every fourth as a buyer (29.5%) in their households. Over one fifth of the surveyed persons (22.5%) states that they represent the decision makers group, whereas over 17.5% consider themselves as initiators, i.e., the persons who put forward ideas of purchasing individual products.

The surveyed persons' declarations demonstrate that division of roles due to gender is the most diversified concerning the role of an initiator in which women regard themselves three time more frequent as men. On the other hand men more often assume the role of buyer than women.

Considering the division of roles the respondents play according to age, it may be said that persons from age groups below 20 and 21-30 regard themselves mainly as advisors (respectively 48.2% and 36.1%). Respondents in the 31-40 age group described themselves mostly as buyers (46.7%) whereas in the 41-50 years group as decision makers (36.0%). The oldest respondent age group regard themselves primarily as initiators (33.3%) of decision making about food product purchase.

Verification using the χ^2 – test showed a dependency between the respondents’ declarations concerning their role in decision making about purchases of food products and their gender and age (Table 3).

Table 3: Respondents’ Declarations Concerning their Role in Decision Making about Purchases of Food Products

Respondents’ indications (%)					
	Initiator	Advisor	Decision maker	Buyer	Value of χ^2
Total	17.5	30.5	22.5	29.5	
		Gender ¹			
Women	23.8	31.7	20.6	23.8	12.1847*
Men	6.8	28.4	25.7	39.2	
		Age ²			
Below 20 years	18.5	48.2	18.5	14.8	23.99585*
21-30 years	17.5	36.1	16.5	29.9	
31-40 years	6.7	16.6	30.0	46.7	
41-50 years	16.0	16.0	36.0	32.0	
Over 50 years	33.3	19.0	28.7	19.0	

* value of χ^2 significant on the level $\alpha = 0.05$

¹ $\chi^2 = 7.815$ - critical value on significance level $\alpha = 0.05$ and 3 degrees of freedom

² $\chi^2 = 21.026$ - critical value on significance level $\alpha = 0.05$ and 12 degrees of freedom

Source: Own Elaboration Based on Conducted Survey.

The survey questionnaire used also questions - scales for determining the power of influence of individual (social and marketing) factors on respondents’ purchasing decisions concerning foodstuffs.

Among the social factors the most important for the respondents are their own convictions – mean value of this factor was 4.04. Pervious experiences connected with purchases of food products are equally important for the surveyed – mean value 3.91 as well as their the life styles – mean mark 3.63. Family habits proved an essential factor for the surveyed (mean mark – 3.42) as well as a desire to try something new (mean value – 3.34). Opinions of other people proved to be the factor of the least significance for the choice of food products (mean value – 2.94)- Table 4.

In the marketing factors group, the most important determinants of the choice of food products by the respondents proved an additional amount of products at the standard price (mean value – 3.49), promotional price reductions (mean 3.46) and the product brand (mean 3.45). The surveyed attached lesser importance to the quality signs and advertising (mean values respectively 2.8 and 2.78). The least important marketing factor in the respondents’ opinion were competitions with prizes (mean 2.15) – Table 4.

Rational behaviour of buyers may be also visible as comparing product prices in various retail stores. The investigations demonstrated that 42% of the surveyed persons admits that they often compare prices of food products in different shops. On the other hand 38.5% of the respondents states that they rarely compare prices in this way. However, almost one fifth of the surveyed (19.5%) never analyses the prices of products sold in various shops (Table 5).

Table 4: Mean Value of Social and Marketing Factors Determining the Choice of Food Products on 1-5 Scale (1- the Least Important Factor; 5 – The Most Important Factor)

Social factors	Mean value	Marketing factors	Mean value
Opinions of other persons	2.94	Competitions with prizes	2.15
Desire to try something	3.34	Attractive wrapping	2.65
Family habit	3.42	Advertising	2.78
Lifestyle	3.63	Quality signs	2.80
Previous experiences	3.91	Brand	3.45
Own conviction	4.04	Promotional lower prices	3.46
		Additional amount of product for the same price	3.49

Source: Own Elaboration Based on Conducted Survey.

Considering the division of respondents by gender, it is possible to say that women more often than men analyze the prices of food products in stores where they purchase. The frequency of price comparisons of products showed an increasing trend with age of respondents. Among respondents aged below 20 years about 22% declared that often compares prices, while among respondents aged over 50 proportion is over 71%.

Verification using the χ^2 – test not showed a dependency between respondents' declarations concerning frequency of prices comparison in different retail stores and their gender and age (Table 5).

Table 5: Respondents' Declarations Concerning Frequency of Prices Comparison in Different Retail Stores

Respondents' indications (%)				
	Often	Rarely	Never	Value of χ^2
Total	42.0	38.5	19.5	
	Gender ¹			
Women	45.2	36.5	18.3	1.472301
Men	36.5	41.9	21.6	
	Age ²			
Below 20 years	22.2	48.2	29.6	14.06553
21-30 years	41.2	37.1	21.7	
31-40 years	36.7	43.3	20.0	
41-50 years	48.0	40.0	12.0	
Over 50 years	71.4	23.8	4.8	

¹ $\chi^2 = 5.991$ - critical value on significance level $\alpha = 0.05$ and 2 degrees of freedom

² $\chi^2 = 15.507$ - critical value on significance level $\alpha = 0.05$ and 8 degrees of freedom

Source: Own Elaboration Based on Conducted Survey.

The respondents were asked to indicate among the statements presented the variant which best characterises their way of allocating their monthly budgets. The highest percentage responded that they plan only the major expenses but does not consider running expenses. On the other hand every fourth surveyed person stated that they spend money in a well considered and planned way. The least percentage of the surveyed (9%) stated that they plan expense only in some specific situations, such as holidays or vacations (Table 6).

Table 6: Respondents' Declarations Concerning the Way of their Monthly Income Allocation

	Respondents' indications (%)
1) I plan only the major expenses and do not consider running expenses	29.0
2) I spend money only in a well considered and planned way	23.0
3) I plan expenses when my income changes – promotion, bonus	13.5
4) I rather do not plan my expenses	13.5
5) Other member of my household plans the expenses	12.0
5) I plan expenses only in specific situations, like anniversaries, holidays, vacations	9.0

Source: Own Elaboration Based on Conducted Survey.

Conclusion

Presented research results allowed to formulate several conclusions.

- Every third surveyed person analyses all food needs whereas every second person only some of those needs. The hierarchy of all needs is set up by almost every second surveyed person during decision making process, whereas a slightly smaller percentage of the respondents establishes the hierarchy of selected needs. Both the analysis and evaluation of the needs may be regarded as features of rational activity. It means that the respondents have established preferences and by determining the urgency of needs they aim to reach the contentment. Therefore, such behaviour may be regarded as conscious, purposeful, and sensible.
- A similar distribution of the structure of roles the respondents perform in their households indicates that more and more often decisions concerning the choice and purchase of food products are well considered and made jointly.
- Among social factors determining food purchases, as the most important the respondents considered their own convictions and previous experiences, whereas they attached lesser importance to the opinions of other purchasers. It testifies the respondents' belief that only their own preferences and personal opinion can ensure the best choice of products.
- The respondents considered an additional quantity of product for the standard price (so called "bonus") and promotional price reductions as the most important factors among the marketing factors determining their choice of food products. High value of these factors evidences a rational approach to the purchase through willingness to minimize financial outlays when the opportunity presents itself. It may be also stated that it does not happen at the expense of product quality because also the brand of food products was considerably important for the surveyed persons.
- Food prices may vary depending on the place of sale (the store). Comparing prices shows that the respondents take reasonable purchasing decisions. With a limited budget, they try to minimize the

financial expenditures in order to achieve a certain level of consumption. Only one in five respondents said that they never compare the prices of products which they want to buy.

- A majority of respondents declare that they plan only the major expenses and do not pay attention to running costs. However, a considerable percentage of the surveyed states that they spend money in a well considered and planned way. This diversification may result from different managing capabilities, also consumer aspirations are different for different respondents.

References

- Bijota, J. (2009), Research for the Thesis Done at the Department of Agribusiness, Agricultural University in Kraków.
- Gutkowska, K. and Ozimek, I. (2005), Selected Aspects of Consumer Behavior on the Food Market - Criteria of Differentiation, Publishing House of Warsaw University of Life Sciences SGGW, Warszawa.
- Kamińska, T., Kubska-Maciejewicz, B. and Laudańska-Trynka, J. (1995), Theory of Decision Making by Market Participants: Selected Problems of Microeconomics, Publishing House of University of Gdańsk, Gdańsk.
- Kieźel E. (red.) (2004), Rationality of Consumption and Consumer Behavior, PWE, Warszawa.
- Kieźel E., (2007), Rationality of Polish Consumers Behavior (in:) Consumer, Household, Market, Publishing House of University of Economics in Katowice.
- Kotler, Ph. (1980), Principles of Marketing, Englewo Cliffs: Prentice Hall.
- Kraśniński, Z. and Piasny, J., Szulce, H. (1984), Economics of consumption, Warszawa: PWE.
- Kos. Cz and Szwacka-Salmonowicz, J. (1997), Marketing of Food Products, Warszawa: PWERiL.
- O'Shaughnessy, J. (1994), Why People Buy, Warszawa: PWE.
- Rudnicki, L. (2000), Consumer Behavior on the Market, Warszawa: PWE.
- Senda, J. (1998), Basic Aspects of the Rationality of Consumer Behavior, Movement of Law, Economics and Sociology, No. 2.
- Smyczek, S. and Sowa, I. (2005), Consumers on the market, Behavior, models, applications, Warszawa: Difin.
- Swiatowy, G. (2006), Consumer Behavior: Determinants and Methods of Understanding and Forming, Warszawa: PWE.