

## **INNOVATIONS OF THE FOOD PRODUCTS FROM THE PERSPECTIVE OF THE GEN Y CONSUMERS**

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**Abstract.** This article includes results of questionnaire surveys concerning behaviour of the consumers – representing Generation Y – in the process of purchase decisions concerning innovative food products. The aim of this thesis is to identify the ways of perception of innovations on the food market by a consumer of Generation Y. Conducted questionnaire surveys shows that young consumers, in a very different way, define innovations on the market of the food products, associating them, above all, with introduction of the new ways of food preservation (without preservatives, without pasteurization) and reduction of the level of unhealthy ingredients. It is worth noticing that young consumers willingly accept innovations on the food market, every third respondent declared that he/she quickly buys innovative food products, but after due consideration.

**Key words:** innovations, food market, consumer, Generation Y, correspondence analysis

### **INTRODUCTION**

Innovation is a subjective category, which should be considered, both, from the point of view of a consumer and a producer because what is treated by a producer as a new one, it does not have to be treated, in the same way, by a purchaser. The aim of this thesis is to identify the ways of perception of innovations on the food market by a young consumer. The authors used, in a research, analysis of reference books and results of their own questionnaire surveys, conducted among 364 respondents, who were chosen from the group representing Generation Y, living in the regions of southern and eastern borderland of Poland. Conducted research have application values, because edited conclusions may be used by the food producers in a process of building marketing strategies.

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## MATERIAL AND METHODS

Research proceedings were commenced from analyses of available secondary data – statistical data and literature within the scope of research areas. Field research commenced from conceptualization and operationalization of terms. Research was aimed at determination of potential similarities and differences of the behaviours of the Gen Y consumers towards innovations of marketing food products within the border area.

Creating standardized measuring tool required initial research, which were carried out with the application of focus method. Auditorium and internet survey was applied. Before commencement of proper research, pilot research were carried out that enabled verification of measuring tool and elimination of potential irregularities. Cronbach alpha reliability test was used for the assessment of scale reliability of measures. In our research, value between 0.748 and 0.776 was assumed, what means appropriate scale reliability [Hinton et al. 2004]. Survey was carried out in 2013 and 2014 among 364 Gen Y consumers. In research proceedings were applied only questionnaires which were classified as complete and suitable for further analysis. Attitudes of young consumers towards innovative food products were examined and diversity of the ways of perception of these products were measured. Additionally, it was verified, whether these attitudes were related to sex, professional activity (professionally active and inactive) and place of residence of a respondent (village, small city to 50 thousand inhabitants, medium city between 50–100 thousand inhabitants and large city above 100 thousand inhabitants). Statistical analysis of relations between the pairs of variables was performed using Pearson chi-square independence test. In a case when assumptions of this test were not fulfilled, its value  $p$  ( $p$ -value) was determined using Monte Carlo method. Statistical significance 0.05 was accepted. In order to examine co-occurrence of the categories of three variables, correspondence analysis and Ward method of hierarchical classification were conducted. Statistical analyses were performed using program R [R Core Team 2014].

## THEORY AND BACKGROUND

### Innovations on the market of food products

There are numerous attitudes towards the nature of innovations. Diversity of interpretations results from the scope of analyses, choice of approach, and also the very interpretation of novelty [Karcz 2004]. Classic definition was created by J. Schumpeter [1960], who understood innovations “as creating fundamental or radical changes, including transformation of a new idea or technological invention into market product or process”. According to Oslo Manual [2005], definition of innovations includes full spectrum of novelties – novelties on a world scale, novelties on a market scale, where enterprise operates, novelties only from the point of view of a given enterprise. Aim of the innovations is to adapt organization to market environment, to increasing requirements of the clients – inside the box (innovation) – or not satisfied needs – crucial innovation [Christensen and Raynor 2008]. Innovations should be considered both from the point of view

of a consumer and a producer, because what is treated by a producer as a new one, it does not have to be treated, in the same way, by a purchaser. New product considered from the point of view of a producer is a product with new technical and technological solutions. Introduced constructional solutions, new raw materials applied, or new technology of production tell us about novelty of a product. Such a product can satisfy new needs of a consumer, it can satisfy old needs in a different way, but it is not a condition that tells us about novelty of this product [Penc 1999]. New product is any new form of a product, created as specified set of functional features, accompanying services and psychological and social features, introduced to the market. It is necessary for a new product to be considered from the perspective of a consumer, from the utility point, which is received by a recipient [Haffer 1998], therefore, a new product is the one, which satisfies new needs, or product satisfying existing needs in a new way. Thus, attitude of a consumer towards its properties decides about innovativeness of a product. Innovations should create a new value for a consumer. We should remember that goal of the innovations is not only to satisfy market needs, but also to create and satisfy them on the increasing level [Penc 1999]. Consumers on the food market are more and more demanding. Constantly changing trends on the market, shortening the cycle of life of a product, strong competition and changing lifestyle of the clients cause that consumers expect from food, not only satisfying basic needs, that is, to satisfy hunger, but they also demand to satisfy desires, that is, to shorten time for preparing meals, to be healthy or lack of interference into natural environment [Gutkowska and Ozimek 2005]. This state is becoming a factor to take actions, within the scope of development of the innovative products on the food market. Degree of innovativeness of a product is still changing, related to evolution of needs and preferences of the consumers [Sojkin et al. 2009, Barska et al. 2014]. Changes expressing the degree of novelty can refer to different dimensions of a product, therefore, they may concern its functionality, appearance or comfort of exploitation. From the point of view of the consumer, comparison of changes, features and properties of a product with his/her needs and expectations decides about innovativeness of a product, and not a specific modification.

Research of the attitudes towards new products in respect to food were conducted e.g. S.S. Ling, D.T. Pysarchik, F.J. Choo in 2004, X. McCarthy, Y. O'Sullivan, Z. O'Reilly in 1999, and H.J. Choo, J.-E. Chung, D.T. Pysarchik in 2004 [Kowalczyk 2011], whereas among Polish, researches were conducted e.g. K. Gutkowska and I. Ozimek [2005], B. Sojkin, M. Małecka, T. Olejniczak and M. Bakalarska [2009], Kowalczyk [2011], E. Babicz-Zielińska, M. Jeżewska-Zychowicz and M. Trańska [2013]. The presented results suggest connection between innovativeness of the consumers and their social and demographic features [Matysiak-Pejsa 2008, Sojkin et al. 2009], there are researches available, in which such no such dependencies were indicated in case of some features. However, conducted query of the literature enables us to notice that results, presented in the literature, do not concern consumers of Generation Y. Examining this phenomenon is difficult, due to complexity of attitudes and reactions of consumers to novelty, and also their subjectivity in defining novelty, however, they have application values.

### **Consumer of Generation Y on the market**

Generation Y, also called Millennium generation, is a relatively new definition. It comes from the United States, where scientists described in 1993 this separate social group. It is a definition of the generation of which representatives were born in last two decades of the twentieth century [Berreby 1999]. According to Strauss and Howe's taxonomy of generation, representatives of Millennium generation are people who were born after 1982, who were growing up in the times of fast economic growth. In Poland, people who belong to this generation were born in the last years of socialism. People who were born after 1986 are often qualified to this group. They know socialism only from the stories of the elderly. Unlike their parents, they were growing up in a period of economic growth. Representatives of Millennium generation were growing up in the world of globalization, tolerance and acceptance of individuality. Jean Twenge [2007] calls this generation ("Generation Me") – due to their self-confidence and focus on their own needs. The years, in which representatives of Generation Y were born, is also a period of technological development. Internet and wireless ways of communication with the world, allow Generation Y having easy access to unlimited information from the whole world. It is a first generation, who were growing up in homes with computers and had an access to digital media. Internet as a channel of communication has become the most significant for Generation Y [Kotler and Armstrong 2008]. In the network, they communicate with acquaintances, gain knowledge, write blogs and, more and more often, buy things there. Generation Y consumers were growing up in a specific community, who had an influence on values, by which they are directed now and expectations they have towards reality around them. According to M. Males [1996], representatives of Generation Y are distinguished by: higher awareness of their value as purchasers, they know what they want and have limited loyalty. They are characterized as optimists, tolerant, open to the world, they value independence and individuality [Anders 2014].

Representatives of Generation Y were growing up in a specific community, what may have serious impact on their purchasing attitude. Marketing managers must understand behaviour of the consumers of Generation Y, in order to effectively occur in this segment and develop innovations, the most desirable by these users [Keith 2011].

### **RESULTS AND DISCUSSION**

Research was carried out among 364 consumers, women were 55% of the respondents, whereas men were 44% of the respondents, 1% of the respondents did not reveal their sex. Research has shown that the most numerous group were respondents, who declared that they quickly buy innovative food products, but after due consideration (these consumers are called early imitators), every third respondent answered in this way. Every fourth respondent declared that he/she buys innovative food products after they have been tried by the acquaintances and family (they are the group of the so-called early majority), whereas every fifth respondent buys innovative food products, when most of their acquaintances bought and recommended these products (so-called late majority). Reluctance to new food products and preferring to buy favourite known products was

declared by 16.7% of the respondents. They are the so-called marauders. Belonging to the group of innovators, that is, inclination to buy innovative food products, soon after they are on sale, was declared by about 4.5% of the respondents. In the group of young consumers, share of innovators is much higher than in a Rogers model [1983] concerning the whole population, what may prove that adaptation of innovations on the food market, depends on the age [Barska 2014]. Young consumers much quicker accept innovations on the food market, although, on this market, purchasing conservatism often occurs. It is also confirmed by other researchers [Sojkin et al. 2009, Barska et al. 2014]. Consumers are aware of changes occurring on the Polish food market and perceive new products on this market. Some of these products are perceived positively, especially those, which contain pro-health substances. They expect naturalness and freshness from food, as basic attributes of its quality [Gutkowska 2011].

Arrangement of attitudes towards innovations on the food market among respondents was distinguished into following features: sex (woman and man), professional activity (active and inactive) and place of residence (village, small, medium and large city) – Figure 1. As we can see, in the group of men, share of innovators was outnumbered by over two to one, and representatives of marauders are almost twice as big as in the group of women. More openness towards innovative solutions in the food sphere may result from the fact that women more often buy food products and they have wider knowledge within this scope. It is worth noticing that among inhabitants of rural areas, representatives of the group of innovators were not identified. It is visible that arrangement of attitudes towards innovations in the group of professionally active and inactive people is similar. The attitude towards innovations is much more determined by sex and place of residence than professional activity (V-Cramer coefficient value were respectively: 0.16, 0.12 and 0.07). However, chi-square independence test did not show statistically significant relations between considered features of the respondents and their attitude towards new food products.

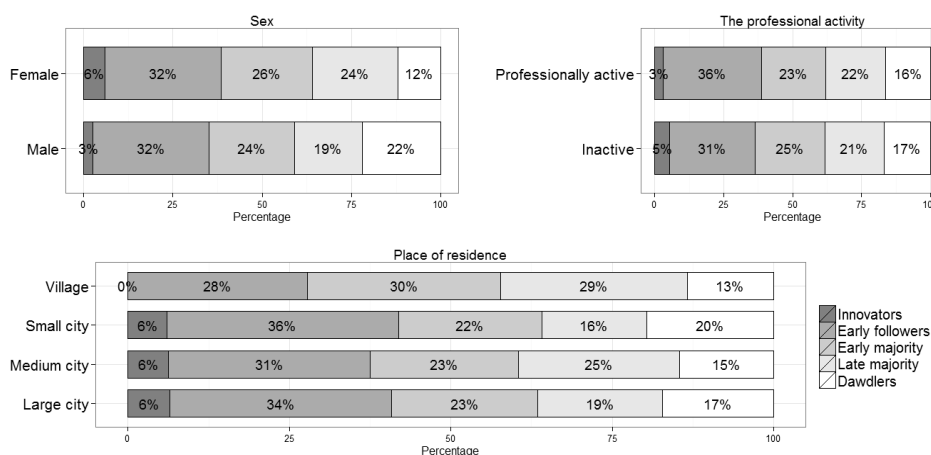


Fig. 1. Diffusion of innovative food products among consumers of Generation Y depending on their sex, place of residence and professional activity

Source: Own research and calculations (by R 3.1.0).

Researches show that innovations on the food market is a subjective category. Young consumers associate them, above all, with introduction of the new ways of food preservation (without preservatives, without pasteurization). It was declared by 72% of the respondents and reduction of the level of unhealthy ingredients, was declared by 70% respondents. Almost seven out of ten agreed that innovation in a food product means to introduce innovative food products with a new taste, consistency, form. Change of packaging into ecological as an innovation, within the scope of a product on the food market, is treated by 66% of the respondents. It is worth noticing that small percentage of the respondents treats change of packaging and brand as an innovation. The highest polarization of opinions of the respondents concerned perception, by them, innovativeness of the products as a change of their brand: 25% of the respondents answered “yes” and 31% answered “no”. Whereas, the highest percentage of undecided (50%) was among those who understand this innovativeness as change of basis weight of innovative food products. Therefore, results prove that innovations, consumers perceive, above all, through prism of new values created by them for a recipient (Fig. 2).

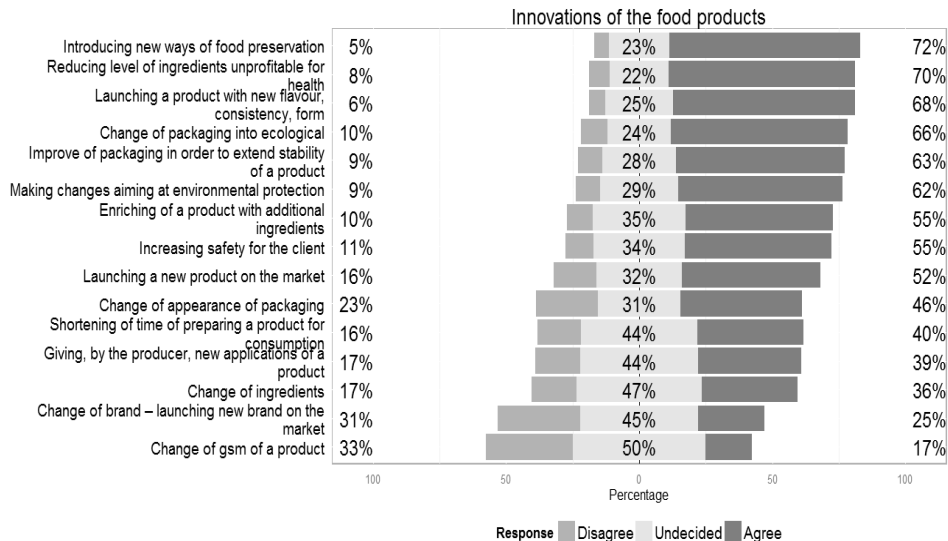


Fig. 2. The ways of perception – among consumers of Generation Y – innovative food products  
Source: Own research and calculations (by R 3.1.0).

Analysing the role of sex in perception of innovations, we should pay attention to the fact that there was found a statistical dependence between sex and following actions: change of packaging (new shape, new colours –  $\chi^2 = 23.12$ ,  $p < 0.0001$ ); change of packaging into ecological ( $\chi^2 = 8.44$ ,  $p = 0.0147$ ); change of brand – introduction of a new brand to the market ( $\chi^2 = 12.64$ ,  $p = 0.0018$ ) and introduction of the new ways of food preservation (without preservatives, without pasteurization –  $\chi^2 = 6.93$ ,  $p = 0.0312$ ). In all these cases, women more often recognized these solutions as an innovation, whereas, the highest conformity between women (77%) and men (66%) concerned accepting as innovative products, those with a new way of food preservation (Fig. 3). Whereas, the

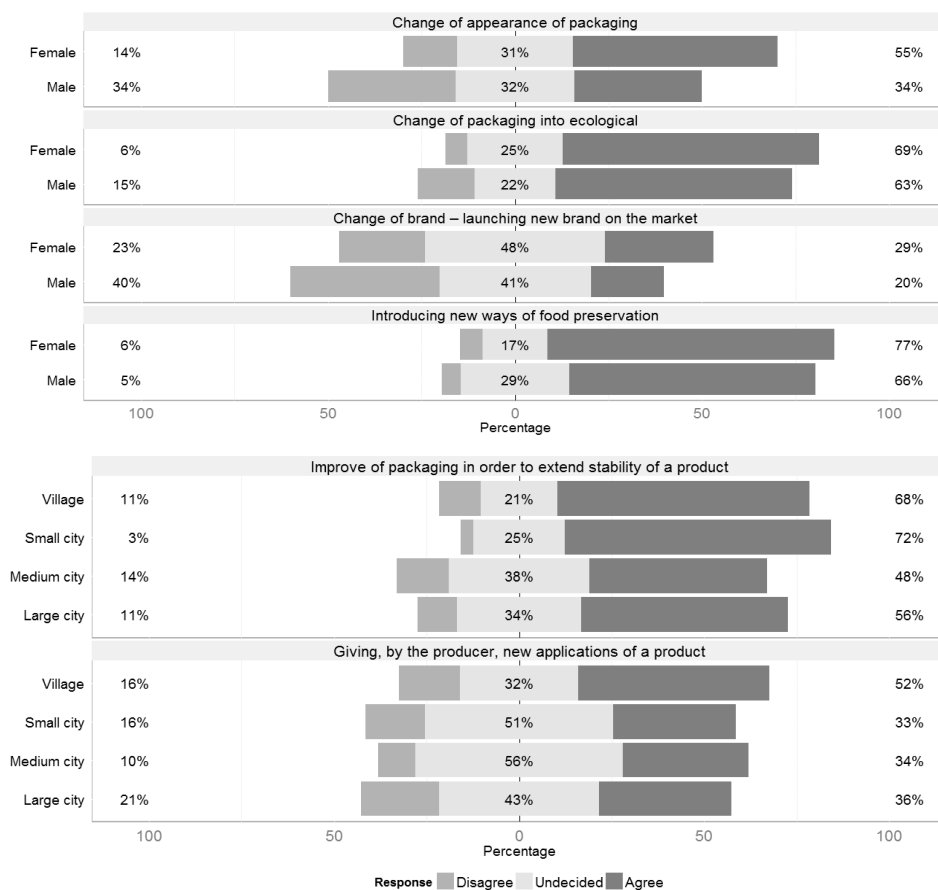


Fig. 3. The ways of perception – among consumers of Generation Y – innovative food products depending on sex and place of residence

Source: Own research and calculations (by R 3.1.0).

highest polarization of opinions, especially among men, concerned perception of innovations through change of packaging of a food product.

Place of residence of a young respondent, in a statistically significant way, determined the level of perception of innovativeness of the food products as related to improvement of packaging, in order to extend durability of a product ( $\chi^2 = 16.19$ ,  $p = 0.0128$ ) and its new applications ( $\chi^2 = 14.06$ ,  $p = 0.029$ ) – Figure 3. In the first case, percentage of the respondents living in the village (68%) was comparable with those living in the small city to 50 thousand inhabitants (72%), who agree with such comprehension of innovativeness. People living in the village recognized the innovativeness product by giving, by a producer, its new applications (52%), whereas among inhabitants of large cities, above 100 thousand inhabitants, there was the highest polarization of this opinion.

In order to determine relations between categories of answers of three variables: diffusion of innovations, professional activity and place of residence, correspondence analysis

was performed (Fig. 4). Due to the fact that the group of the innovators was a small percentage of the respondents (4.5%), co-occurrence analysis was performed without this group of young people. It is confirmed that, among people from small cities (to 50 thousand inhabitants), attitude of marauders towards innovations of the food products dominated and it is clearly seen that people from large cities (above 100 thousand inhabitants) are professionally active. On the other hand, people professionally inactive are strong group of people with an attitude of the early majority group towards innovations, living in the village or in the city from 50 to 100 thousand inhabitants.

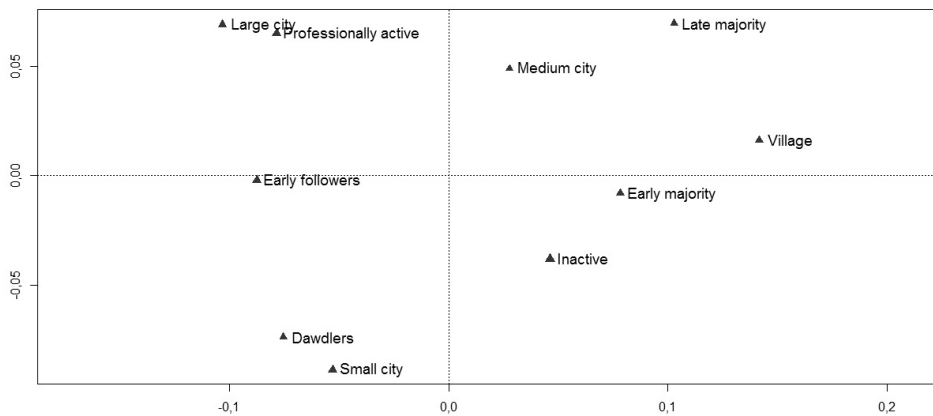


Fig. 4. Graphical presentation of results of correspondence analysis for concurrent occurrences of categories of variables: diffusion of innovations (excluding the group of innovators), professional activity and place of residence. Dimension 1 explains 54.8% of total inertia, dimension 2–23.0% of this inertia

Source: Own research and calculations (by R 3.1.0).



Fig. 5. Clustering dendrogram using Ward method of the categories of features: diffusion of innovations (excluding the group of innovators), professional activity and place of residence. Value of silhouette index at 3 concentrations is 0.54.

Source: Own research and calculations (by R 3.1.0).



Additionally, analysis of relations of versions of variables was conducted using Ward method of hierarchical classification (Fig. 5). Division of the respondents (excluding the group of innovators) into three classes generally confirms conclusions coming from correspondence analysis. It is confirmed that examined group of inhabitants of the small cities are the people with sceptical attitude towards innovations on the food market. Moreover, the profiles of the people, living in the village and in the city, between 50 to 100 thousand inhabitants, are similar. People with attitudes towards innovations on the food market described as early majority and late majority dominate there. The third group create representatives of the early imitators group, that is, people who are professionally active and live in a large city.

## CONCLUSIONS

Research of perception – among consumers of Generation Y – of the product innovations on the food market show that modern market is “flooded” with a large number of different food articles and consumer gets “confused” which product is innovative, and which one is not. Results of research have proven that young consumers are open to novelties, but they also make heavy demands on the food producers. They are aware consumers and they know very well what they expect from a new product. Innovative products, for the examined group, are those that bring new value, what should become a determinant for marketing activities addressed to this group. The consumers of Generation Y associate a new product, above all, with introduction of the new ways of food preservation (without preservatives, without pasteurization) and reduction of the level of ingredients unfavourable for health, what suggest innovations related to health-improving changes of a product. It is important to note that innovative products are those which bring new value. Knowledge of attitudes of the consumers of Generation Y towards innovations on the food market, gives producers not only measurable benefits, but it can also favour faster diffusion of innovative solutions, due to the fact that young consumers play many different roles in the decision-making process related to purchase of food: gaining information, initiating purchase, advisor or also purchaser. The realized researches show a relation between innovativeness of the consumers and their social and demographic features. It is noted that attitude towards innovations is much more determined by sex than professional activity. Place of residence of a young respondent, in a statistically significant way, determined the degree of comprehension by them the innovativeness of the food products.

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## INNOWACJE PRODUKTÓW ŻYWNOŚCIOWYCH Z PERSPEKTYWY KONSUMENTA GENERACJI Y

**Streszczenie.** W niniejszym artykule zostały zaprezentowane wyniki badań ankietowych dotyczących zachowań konsumentów – reprezentujących generację Y – w procesie decyzji zakupowych dotyczących innowacyjnych produktów żywnościowych. Celem niniejszego

artykułu jest identyfikacja sposobów postrzegania innowacji na rynku żywności przez konsumenta generacji Y. Z przeprowadzonych badań ankietowych wynika, że młodzi konsumenci w bardzo różny sposób definiują innowacje na rynku produktów żywnościowych, kojarząc je przede wszystkim z wprowadzaniem nowych sposobów utrwalania żywności (bez konserwantów, bez pasteryzacji) oraz zmniejszeniem poziomu składników niekorzystnych dla zdrowia. Warto zauważyć, że młodzi konsumenci chętnie akceptują innowacje na rynku żywności, co trzeci badany zadeklarował, że kupuje innowacyjne produkty żywnościowe szybko, ale po uprzednim namyśle.

**Słowa kluczowe:** innowacje, rynek żywności, konsument, generacja Y, analiza korespondencji

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