

CONSUMER DEMAND ANALYSIS IN THE HUNGARIAN FUNCTIONAL FOOD MARKET FOCUSED ON THE MAIN HEALTH PROBLEMS

Dávid Szakos ^{1*}, László Ózsvári ¹, Gyula Kasza ¹

¹ University of Veterinary Medicine Budapest, Hungary

<https://doi.org/10.47833/2020.1.AGR.015>

Keywords:

functional food products
consumer survey
demand analysis
health and nutrition
health problems

Article history:

Received 10 Sept 2019
Revised 2 Oct 2019
Accepted 10 Oct 2019

Abstract

The rising number of consumers requiring a special diet because of health issues or lifestyle decisions have opened new opportunities for food chain operators. This could designate the directions for product development of the Hungarian food industry. Since functional food products can only achieve market success if they meet the consumers' expectations, the aim of this research was to examine those main health problems that people are most worried about and to compare the acceptance of dietary way (functional food) of preventing and/or mitigating health problems. Results are based on quantitative consumer survey.

1 Introduction

During last decades, a special focus was given to the health related functionality of foodstuffs. The relationship between health and nutrition has come to the forefront of scientific research and due to global demographic trends, physical and psychological well-being of elderly population has become a significant social challenge. Functional foods with high added value have become the fastest growing area of the food industry. According to the estimation of Euromonitor, the share of functional foods in the global food market increased from 33 billion USD to 176.7 billion USD between 2000 and 2013, accounting for approximately 5% of the total food market [1]. The market share varies greatly from country to country, and there is no generally accepted definition of functional foods, so different market data are available due to different interpretations of the category [2] [3].

A study reviewed over one hundred different definitions to determine the boundaries of functional food better [4]. However, we argue that functional foods should not be handled as a well-defined separate product category. Although the definitions help scientific and professional dialogues, it does not have a particularly significant role from the perspective of the consumers. Instead of legal definitions, consumers receive information about the functional properties of food through advertisements and labels. Regarding labels, nutrition and health claims may appear on products by following the indications of Regulation (EC) No 1924/2006 and Regulation (EU) 432/2012 based on the scientific advice of the European Food Safety Authority (EFSA) [5].

The increasing importance of the functionality of food products was recognized even before the turn of the millennium by the food industry, which has accelerated the development of new products. However, new products have a high failure rate on the market, because most of them were not preceded by a deeper exploration of consumer needs [2]. According to an expert estimate from this period, three out of four new functional food products disappeared from store shelves within two years [6]. One illustrative example of these unsuccessful attempts of product development was the fact that in the late 1990s, several large pharmaceutical companies, including Novartis, launched their own functional food product called "AVIVA." However, this product line on the European market

* Corresponding author. Tel.: +36306188530
E-mail address: szakos.david@univet.hu

in 1999 did not show the expected level of customer demand and was removed from the market in most countries after one year [7].

2 Method

Results are based on quantitative consumer survey conducted between 11 July and 14 August on 2018 (n=1002). For data collection, personal interviews were used, with respect to generally accepted preconditions [8] [9]. In terms of sex, age, and geographical distribution (NUTS-2) of the respondents, the sample is representative of the total adult population of Hungary, based on the latest census at the time of the data collection [10]. Statistical analysis of the data was carried out by the IBM SPSS Statistics 22.0 software package. Beyond descriptive analysis, contingency tables (confidence level: 95%) was used to examine the impact of demographic parameters.

3 Results and Discussion

Main health problems people are most affected by and worried about compared to the acceptance of mitigation and prevention with functional foods are shown in Figure 1. Results include a group of respondents who would be willing to pay to prevent or mitigate these health problems, and also those who are concerned/worried, but would not like to spend money on it. The second group could also be a potential target group for product development due to their involvement. Moreover, the inclusion of foods with functional properties in diet can be carried out without further significant expenses, despite other solutions (dietary supplements, medicines, medical treatments).

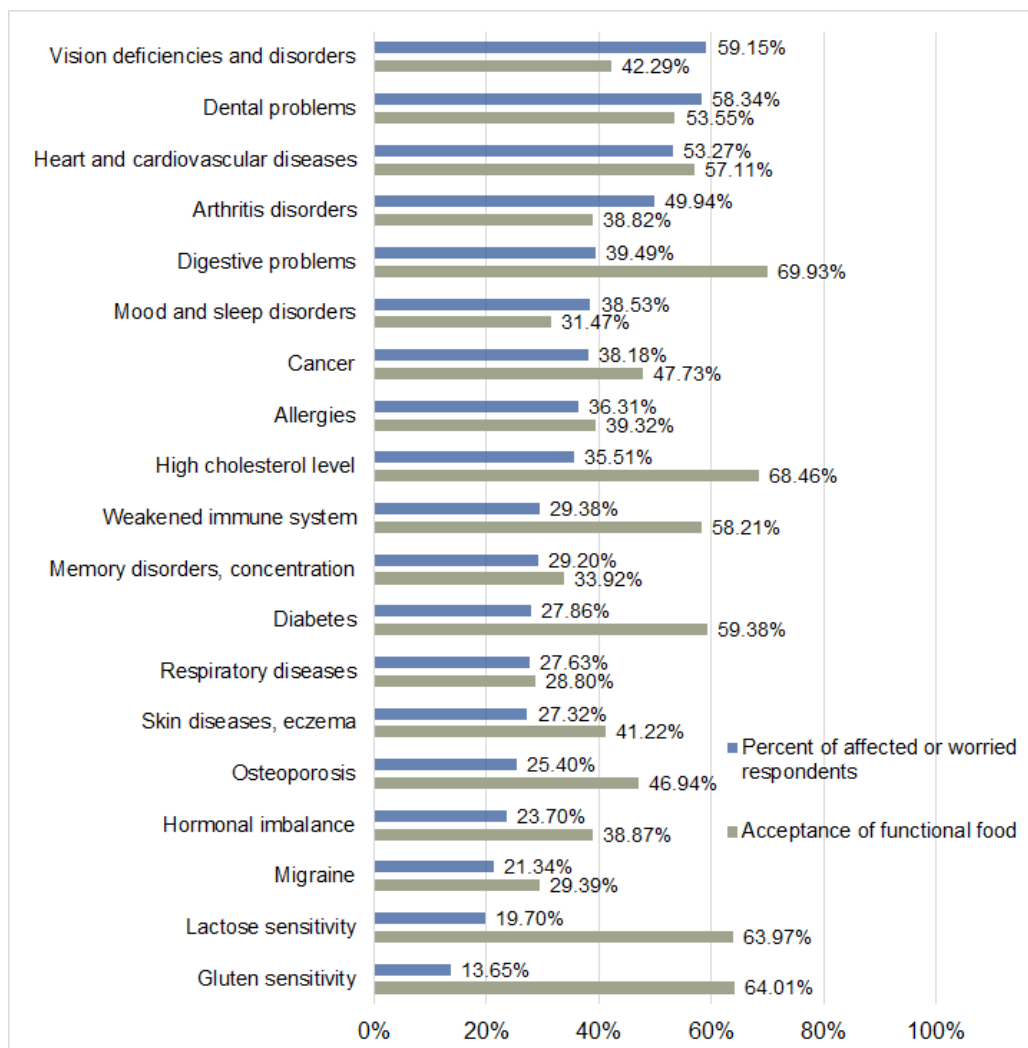


Figure 1. Assessing the worrisome/affecting health problems of Hungarian consumers and the suitability of functional foods to prevent or mitigate these problems

According to the results, the population is mainly concerned/worried are the following non-communicable diseases: Vision deficiencies and disorders, dental problems, and heart and cardiovascular diseases. Similarly to the findings of previous research studies, health claims related to physiological health problems (e. g. heart and cardiovascular diseases, osteoporosis, cancer) are of greater importance among such claims stated on the labels of foodstuff than those related to psychological problems (e. g. stress, fatigue) [11]. Results also show that the diets containing functional foods for the mitigation and prevention of health problems are mainly related to digestive problems, high cholesterol level, lactose sensitivity, and gluten sensitivity according to the opinion of the respondents. However, functional foods can also play an important role in areas that seem to be unaffected by diet for consumers. So, available and credible information is of high importance, for the reason that previous research found connection between knowledge and dietary decisions [12].

In case of many health problems, the age of respondents is a significant factor ($p < 0.05$) based on contingency table analysis (*Table 1*).

Table 1. The age distribution of worrisome/affecting health problems of Hungarian consumers

Health problem	Under 30 years	30-39 years	40-59 years	Over 60 years	Pearson's Chi-square
Vision deficiencies and disorders	46.06%	43.04%	64.57%	72.97%	<0.0001
Dental problems	40.85%	57.86%	65.91%	61.21%	<0.0001
Heart and cardiovascular diseases	27.53%	45.24%	48.86%	54.93%	<0.0001
Arthritis disorders	27.11%	37.34%	53.97%	69.70%	<0.0001
Digestive problems	29.45%	35.67%	45.00%	42.36%	0.0063
High cholesterol level	19.88%	31.45%	34.56%	51.60%	<0.0001
Memory disorders, concentration	23.49%	26.42%	28.19%	38.02%	0.0142
Diabetes	17.58%	26.58%	29.77%	34.50%	0.0033
Osteoporosis	13.25%	20.13%	27.65%	36.79%	<0.0001
Migraine	22.42%	25.16%	24.91%	10.86%	0.0017

In the vast majority of cases, the elderly consumers are more affected or worried about the health problems. Results are harmonizing with previous studies, which pointed out that age has a significant role in field of health related opinion and choices [13] [14] [15].

Figure 2 presents the acceptance of functional food for consumers over the age of 40 in case of more worrisome health problems.

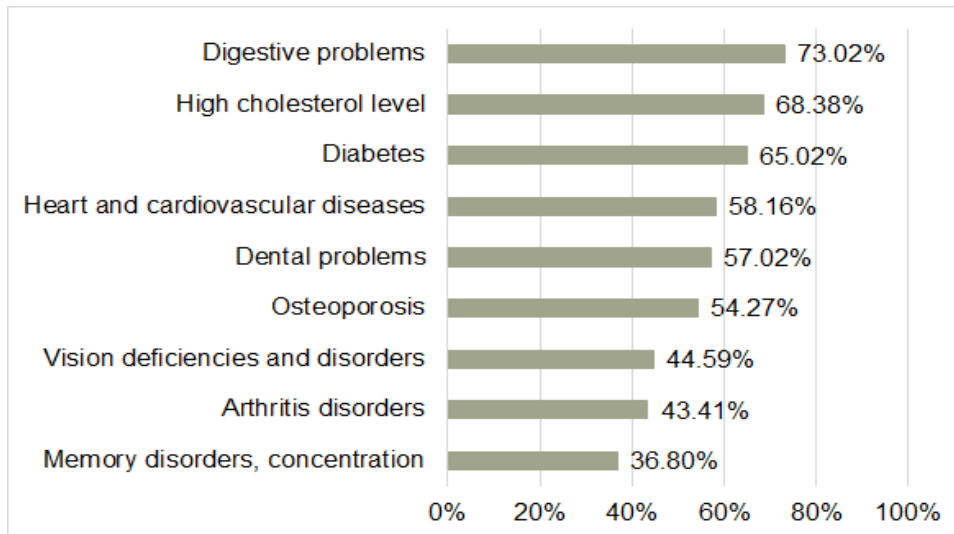


Figure 2. Acceptance of functional foods for consumers over the age of 40 in case of more worrisome health problems

Research covered the acceptance of functional foods for consumers over the age of 40 in case of more worrisome health problems. Based on the results, the development of functional foods should focus on the following areas: Digestive problems (73.02%), high cholesterol level (63.38%), diabetes (65.02%), and heart and cardiovascular diseases (68.16%).

4 Conclusions

For the well-being of older consumers, the availability of functional food products that can be integrated into a balanced diet has been of great importance. Based on industry experience, successful food industry innovations start with understanding consumer needs and require a product chain approach. As a first step, this research has highlighted that digestive problems, high cholesterol level, diabetes, and cardiovascular concerns are issues that need to be considered when designing functional foods with real added value for older consumers.

Acknowledgment

The Project was supported by the European Union and co-financed by the European Social Fund: (1) EFOP-3.6.1-16-2016-00024 'Innovations for Intelligent Specialisation on the University of Veterinary Science and the Faculty of Agricultural and Food Sciences of the Széchenyi István University Cooperation'; (2) EFOP-3.6.2-16-2017-00012 'Development of a product chain model for functional, healthy and safe foods from farm to fork based on a thematic research network'; and (3) EFOP-3.6.3-VEKOP-16-2017-00005 'Strengthening the scientific replacement by supporting the academic workshops and programs of students, developing a mentoring process'.

References

- [1] Maggie Hennessy (2013), "What's driving growth in functional food and beverages? A convergence of nutrition, convenience and taste," *nutraingredients-usa.com*. Available: <https://www.nutraingredients-usa.com/Article/2013/09/27/What-s-driving-growth-in-functional-food-and-beverages>. [Accessed: 09-Sep-2019].
- [2] K. Menrad (2003), "Market and marketing of functional food in Europe" *Journal of Food Engineering*, vol. 56, no. 2, pp. 181–188.
- [3] I. Siró, E. Kápolna, B. Kápolna, and A. Lugasi (2008), "Functional food. Product development, marketing and consumer acceptance--a review" *Appetite*, vol. 51, no. 3, pp. 456–467.
- [4] B. Bigliardi and F. Galati, "Innovation trends in the food industry: The case of functional foods" *Trends in Food Science & Technology*, vol. 31, no. 2, pp. 118–129.
- [5] H. Verhagen, E. Vos, S. Francl, M. Heinonen, and H. van Loveren (2010), "Status of nutrition and health claims in Europe" *Arch. Biochem. Biophys.*, vol. 501, no. 1, pp. 6–15, Sep.
- [6] K. Mehler (1998), "Die kleine Revolution" *LZ Spezial, Handel was nun*, vol. 4, pp. 76–77.
- [7] S. Biester (2001), "Verhaltene Stimmung" *Lebensmittelzeitung*, vol. 53, no. 30, pp. 33–34.
- [8] E. R. Babbie (2015), *The Practice of Social Research*. Cengage Learning.
- [9] J. S. Lourenço, E. Ciriolo, S. R. Almeida, and F. J. Dessart (2016), "Behavioural Insights Applied to Policy-Country Overviews 2016" Joint Research Centre (Seville site).
- [10] HCSO (2016), "Hungarian Census Data 2016" Available: https://www.ksh.hu/mikrocenzus2016/kotet_3_demografiai_adatok.
- [11] E. Van Kleef, H. C. van Trijp, and P. Luning (2005), "Functional foods: health claim-food product compatibility and the impact of health claim framing on consumer evaluation" *Appetite*, vol. 44, no. 3, pp. 299–308.
- [12] A. S. Németh-Torkos, J. Vincze-Tóth, J. Hegyi, and S. Troján (2014), "Functional foods – consumer and customer preferences" *Acta Agronomica Óváriensis*, vol. 56, no. 1, pp. 29–42.
- [13] W. Verbeke (2005), "Consumer acceptance of functional foods: socio-demographic, cognitive and attitudinal determinants" *Food quality and preference*, vol. 16, no. 1, pp. 45–57.
- [14] G. Ares and A. Gámbaro (2007), "Influence of gender, age and motives underlying food choice on perceived healthiness and willingness to try functional foods" *Appetite*, vol. 49, no. 1, pp. 148–158.
- [15] Á. Temesi and J. Hajtó (2014), "Basics of Product Development of Functional Foods - Consumer Behavioral Research" *The Hungarian Journal of Food Nutrition and Marketing*, vol. 10, no. 1, pp. 11–20.