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The Romanian consumer's perception on the whole grains market: Opportunities and barriers consumption

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THE ROMANIAN CONSUMER'S PERCEPTION ON THE WHOLE GRAINS MARKET - OPPORTUNITIES AND BARRIERS CONSUMPTION

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Abstract: *Within the internal research plan of the Research Institute for Agrarian Economy and Rural Development, runs the project entitled "Marketing studies for sustainable agri-food products and consumption behavior analysis, in the European Strategy from farm to Fork objectives context". This paper presents the main results obtained in phase 4 of the mentioned project, phase in which the whole grain market was analyzed, through specific marketing, qualitative and quantitative research methods. In order to fulfill the objectives of the research, a questionnaire was applied to a sample of 126 respondents, with the aim of determining the preferences of Romanian whole grains consumers. During the interpretation of the obtained results, similarities with other studies in the field carried out on this market were highlighted, but also particularities, specific to the Romanian market, depending on the socio-demographic characteristics of the consumer. With a slow growing specific products consumption in the reference market, it is observed that the traditional consumption habits formed since childhood constitute the main barrier to the replacement of conventional products obtained from the grains processing with whole grains products, for each of us. Moreover, regardless of the product, consumption habits and consumer perception represent consumption coordinates that are difficult to change, no matter how effective the marketing strategy is implemented.*

Keywords: marketing, From Farm to Fork, consumer behavior, whole grain market

JEL classification: M31, C12

INTRODUCTION

The European Commission's "From Farm to Consumer" strategy, the core of the European Ecological Pact, aims to change the current agri-food system into a fair, healthy and environmentally friendly one (EC, F2F, 2020). In this sense, one of the objectives is to promote sustainable food consumption and facilitate the transition to healthy and sustainable diets,

There are numerous publications dealing with the subject of whole grains and the health benefits of consuming this food category. The number of profile publications has increased systematically, reaching a maximum in 2021, with 410 papers, compared to the year 2000, when this indicator reached below 50 papers. In Europe, Italy is the country with many publications in the field of whole grains and the benefits brought by their consumption (Xun Xei, 2022).

The importance of the whole grains consumption and its impact on the population health is not overlooked by the world health organizations. Thus, the Swedish National Food Agency (Swedish Food Agency, 2015), the Norwegian Dietary Guidelines (The Norwegian Dietary Guidelines, 2014), the US Department of Agriculture (2015) support the whole grains consumption recommending to community members that at least half of the daily amount of specific grains and products should be represented by whole grains.

Specialized studies also emphasize the importance that whole grains and derived products choice is sustainable and suitable not only for the health of the population but also for the environment. Thus, the whole grains production has a low impact on the environment, with specific crops requiring less water compared to other field crops, recording a high yield. Also, the cultivation of whole grains generates a low level of greenhouse gas emissions (Nordic Council of Ministers, 2023).

According to the latest report published by Market Data Forecast, an increase in the whole grain market is expected up to 5 billion USD, by the year 2027. In Romania, the consumption of whole grains remains low according to FAO statistical data and other specialized studies.

MATERIALS AND METHODS

This paper presents the results of the quantitative research carried out within the project "Marketing studies for sustainable agri-food products and analysis of consumption behavior, in the context of the objectives of the European Strategy From farm to Fork", in order to outline the profile of the consumer of whole grains.

The research methodology is represented through a qualitative analysis of the whole grain market, from the supply, demand, price point of view, both in the agricultural and industrial production stage. World trade in the whole grains market was studied in order to identify the degree efficiency degree of the interest market. Also, official documents, European directives and studies carried out by specialists were analyzed. The analysis of these documents was useful for substantiating the objectives and hypotheses of the research.

The instrument used at the level of quantitative research is a survey, which includes 26 questions, in which 126 respondents participated (93 women and 33 men), aged between 18 and 65 years. Consumers residing in Bucharest, Timisoara, Craiova, Neamț, Teleorman, Cluj, Otopeni, Călărași, Ploiesti, Vaslui, Arad, Suceava, Brăila, Sibiu, Brașov, Constanța, Pitesti, participated in the research. The questionnaire includes filter questions, questions with one or more answer options, open questions, questions with different measurement scales as answer options. The collection of responses from interviewed consumers was carried out online, using the Google Forms platform, between February and March 2023. Regarding the centralization stage (database creation), coding and interpretation of consumer responses, the analysis program was used SPSS statistics.

RESULTS AND DISCUSSION

In order to achieve the whole grains market research purpose and determining the opportunities and barriers to the development of this market in Romania, a series of objectives (O) and hypotheses (I) were identified, such as:

- **O1:** Identifying the awareness degree of the whole grains meaning: the advantages offered by the consumption of profile products compared to products on the same market, obtained from conventional grains, the types of known whole grains and their frequency of purchase;

H1: According to other reference studies (Prodanovic et al., 2023), most of the respondents are aware of the high content of whole grains in essential antioxidants as well as vitamins and are very interested in the positive aspects that the consumption of whole grains brings it to the level of the respondents' health status. *Thus, a higher proportion of respondents aware of the benefits brought by the consumption of whole grains is estimated, compared to respondents who are not aware of these benefits.*

Following the centralization and interpretation of the results obtained from the conducted research, the respondents know to a high extent the meaning of the concept of whole grains, complete or not: 37,1% of them correctly identified the answer variants according to which whole grains are richer in carbohydrates, fiber healthy, vitamins, minerals compared to conventional cereals and I know that these products are mainly recommended by nutritionists. 20% know the lower degree of

processing of whole grains, while 5.7% of respondents mistakenly chose the option according to which whole grains are as healthy as classic grains (question Q6). Respondents know most of the whole grains offered as answers to the reference question, as follows: 19.9% oats, 13.7% brown rice; 14.4% buckwheat and barley; 12.3% quinoa, 9.6% millet; 7.5% bulgur; 8.2% all. A correlation can thus be deduced between the types of whole grains known and their frequency on the supermarket/hypermarket shelf, as such or in the composition of some gourmet products (question Q7). Thus, hypothesis 1 of the present research is validated.

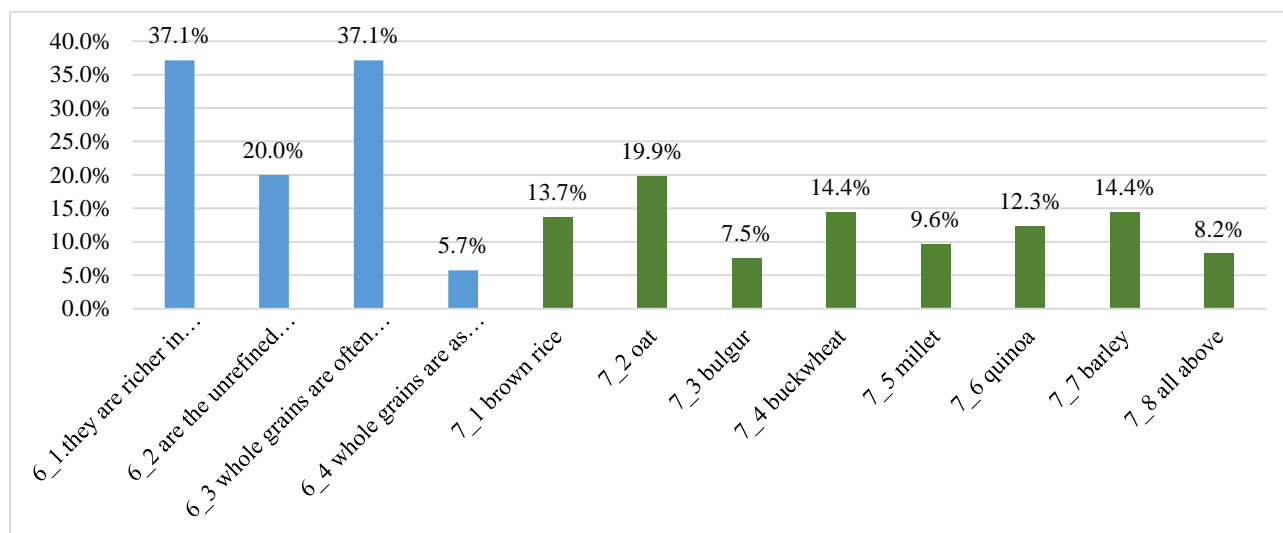


Figure 1. H1 – Whole grains concept and types awareness

• **O2:** Estimation of the frequency of consumption of the main products obtained from the processing of whole/conventional grains (flour, sorghum, breadcrumbs, bread, pasta, rice, quinoa, etc. snacks) and the ways of using these products;

H2: According to the data of the National Institute of Statistics, time series Average monthly consumption (kg/inhabitant) in the main industrial categories on the whole grains market, in Romania, in the period 2011-2021, bread and bakery products are still the most consumed category of products preferred by consumers, along with sorghum and flour. However, slight changes are observed in profile consumption trends. *Thus, a higher share among respondents of those who purchase products from conventional cereals is estimated, compared to those who choose whole grains. Among respondents who choose whole grains, they prefer pasta and rice.*

The results of the present research show the average score calculated for each individual product category. Thus, a higher average score is observed for refined grain products (question Q10) such as flour, bakery products, spread and snacks. In other words, the identified products are the products that are easily accessible to consumers, both in terms of distribution strategy and prices, on the one hand, but also intensively promoted, if we refer to bakery products, not so much recommended by nutrition specialists, but with an obvious presence, both by the number of specialized units (patisseries, bakeries) and on store shelves. On the other hand, at the level of products obtained from whole grains, we observe a high average score for pasta and rice (question Q11). At the opposite pole, there are products such as wholemeal breadcrumbs and wholemeal snacks, categories whose price is significantly higher compared to the price of commercial variants or whose provenance is not local (graph 2). Thus, hypothesis 2 is validated.

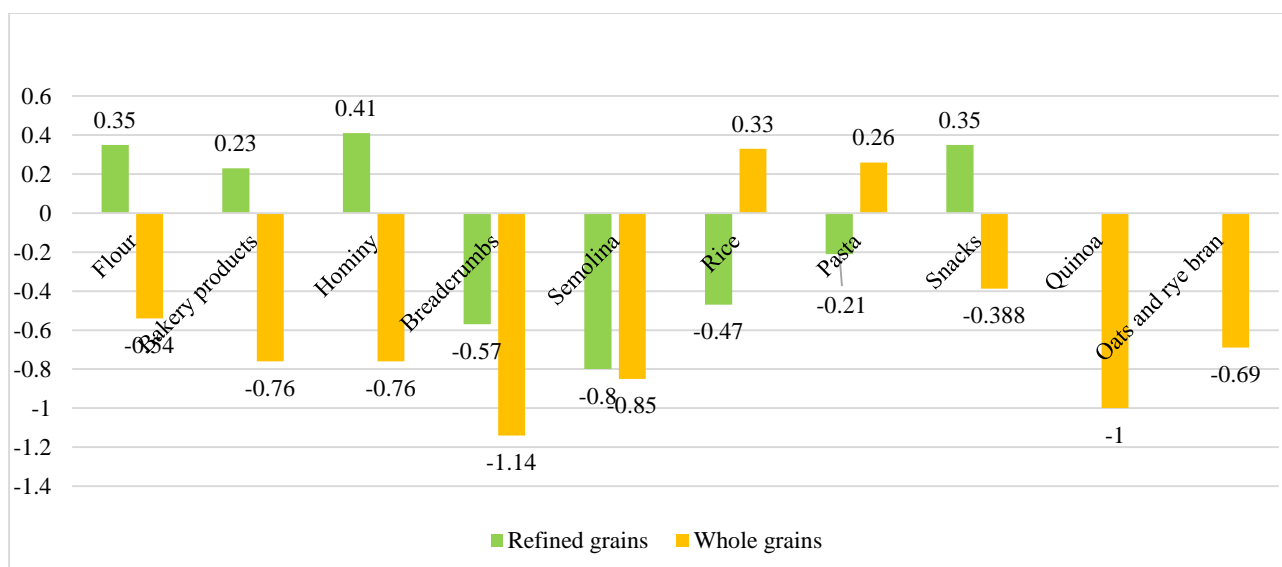


Figure 2. H2 – Consumption frequency of products obtained from conventional cereals vs. whole grains

•**O3:** Identification of some main product characteristics from the perspective of which consumers differentiate whole grains from conventional ones (price, taste, texture, intake of vitamins, fibers, minerals, etc.);

H3: According to other relevant publications, following research carried out on the whole grains market, it is shown that the respondents differentiate whole grains from conventional ones in terms of the degree of processing, fiber and mineral intake, but also in terms of taste (Foster et. al, 2020). Also, following an analysis of the prices charged on the profile market, a fluctuation of them is observed, especially depending on the manufacturer and brand, and less depending on the type of grain used (conventional or whole). *Thus, it is estimated that the respondents believe that whole grains differ from conventional ones at the level of product characteristics such as: fiber intake, minerals and vitamins, taste.*

Following the answers analysis, provided by consumers to question Q9 in the questionnaire, in the respondent's opinion, whole grains differ from refined ones in terms of: high content of fibers, minerals, vitamins (25.20%), taste (19, 4%), the price (16.50%) but also the degree of satiety obtained (14.60%) (graph 3). At the level of the research sample, hypothesis 3 is validated.

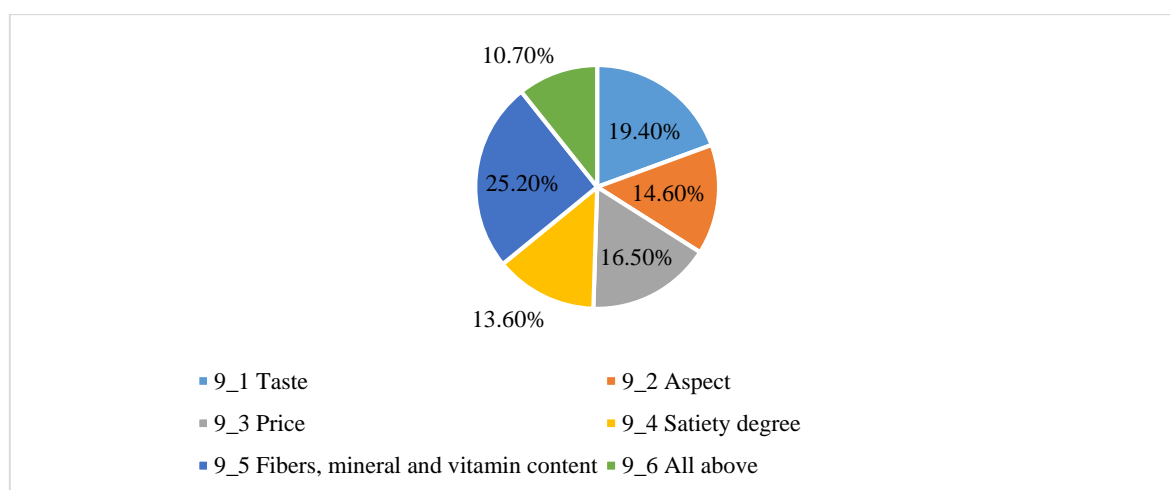


Figure 3. H3 – Respondents' perception of the difference between conventional vs. whole grains

• **O4:** Estimation of the optimal price range from the respondents' perspective for the whole grains products purchase, depending on the type of the product;

H4: Analyzing the average prices of the main categories of products obtained from the processing of whole grains, it is observed that there are no major differences between whole grain and conventional grain products. For example, regarding the bread category, depending on the brand chosen by the consumer, there are no significant differences between the products of the same manufacturer, with the same characteristics. Moreover, with our own brands we encounter situations where the price of black or rye bread ends up costing 0.85 lei/piece less than classic bread; The price varies in this market depending on the manufacturer and the brand in particular. The lowest prices are recorded in industrial categories such as: bread, flour and products obtained from whole grains with a low degree of processing (flakes, bran). The highest prices are recorded in industrial categories such as: breadcrumbs and wholemeal, wholemeal pasta, wholemeal rice. Other studies in the field show that more than the price, inflation is an external factor that determines the purchase decision on the whole grains market (51%). According to the same sources, 37% of younger consumers consider price as a barrier to consumption in the niche market (Gelski J., 2023). *Thus, it is estimated that a majority of respondents write the optimal price for profile products in the existing range on the whole grain products market. It is mentioned that in the first part of the present research we analyzed the price level of products processed from whole grains.*

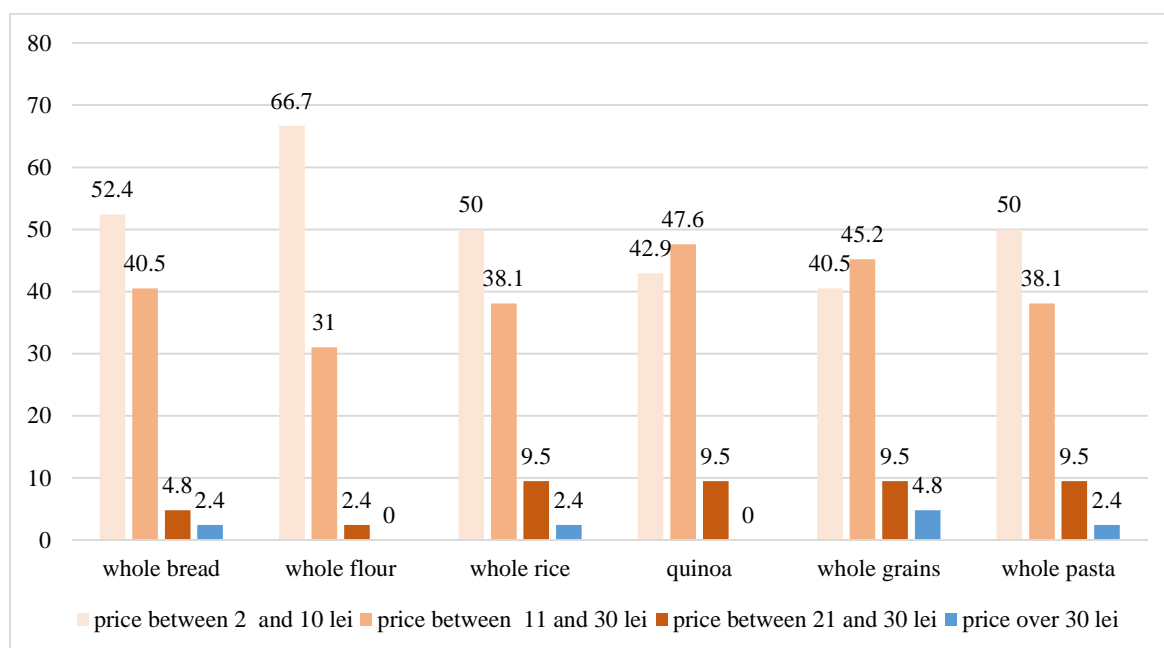


Figure 4. H4 – Respondents' perception regarding the optimal price for the main categories of whole grain products

Regarding the research results, it can be observed that the majority of respondents are willing to pay to purchase wholemeal bread between 2 and 10 lei for the purchase of wholemeal bread (52.4%), wholemeal flour (66.7%), wholemeal pasta (50%), in other words the respondents chose the first price range. There are also categories for which they are willing to pay a higher price, respectively, between 11 and 30 lei, for quinoa (47.6%) and whole grains (45.2%), i.e. for products they do not buy so often, according to the responses recorded to question Q11 (figure 4). At the level of the research sample, hypothesis 4 is validated.

• **O5:** Establishing the main sources of information regarding the coordinates of the cereal market, as well as of a balanced food style;

H5: According to other studies published in the field, 43% of the respondents choose to look for information about the benefits of whole grains online, while only 14% of the sample obtain information by consulting a specialist in the field (nutritionists, medical specialists, etc.) (Foster et al, 2020). *Thus, a high frequency of responses related to the "internet" or "health experts" variants is estimated.*

At the interest sample level, the Internet, including social networks, is the main source of information, for a percentage of 40.50%. This shows the undeniable usefulness of campaigns or short articles on the ways of using and the benefits of said profile applications, possibly on communication channels such as Facebook or Instagram, social networks more accessible to consumers, regardless of age or education level. An important weight declares the fact that the source of information is represented by health experts (27%), something positively appreciated. Hypothesis 5 is validated at the level of the present research (figure 5).

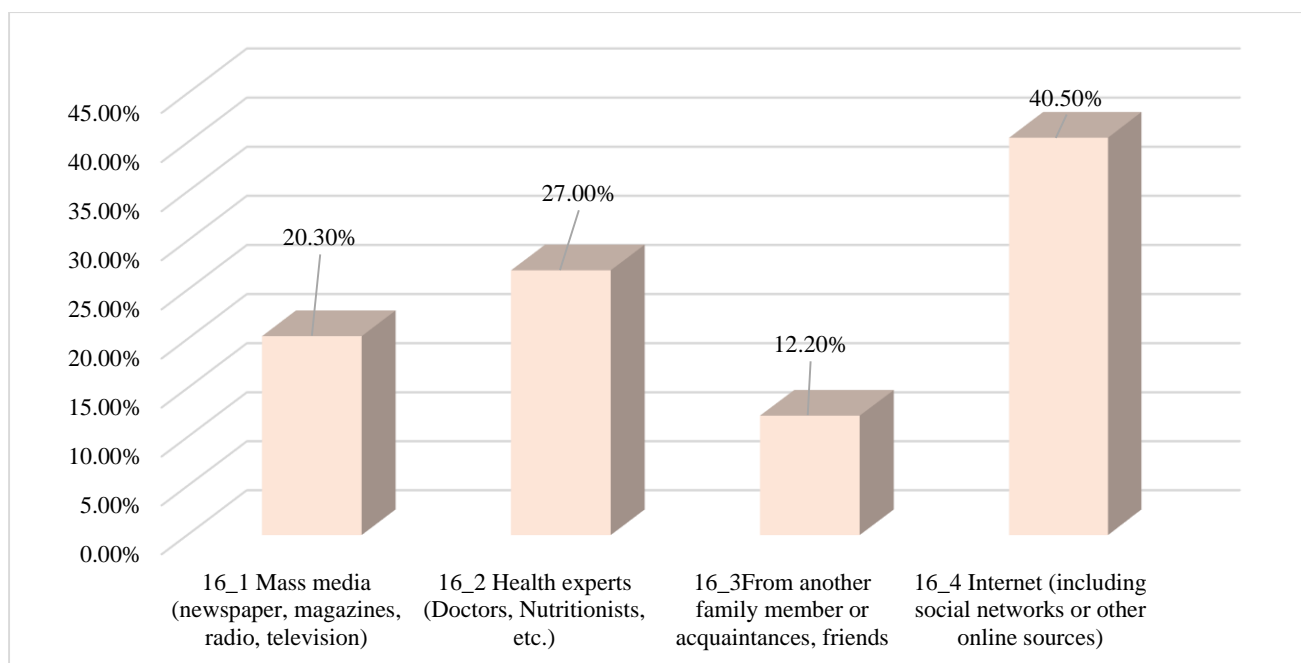


Figure 5. H5 – Respondents' main sources of information for a healthy eating style

• **O6:** Identifying the socio-demographic characteristics of consumers who choose to purchase whole grain products, with a higher frequency (age, social status, level of income and education)

H6. Research in the field shows that younger respondents, aged between 35 and 44, as well as those aged over 60 more often choose to consume whole grain products three times a day. It also shows a higher share of those who consume whole grain products more often from the middle social class (non-manual), compared to those enrolled in other social classes, with an activity that requires more physical than intellectual effort (Lang B., Jebb S.A., 2003). *Thus, a higher share of women between the ages of 35 and 44, graduates of a form of higher education is estimated among those who purchase whole grain products with a higher frequency.*

Following the centralization of consumer responses to reference question Q8, as a central tendency, whole grains are consumed by the studied community occasionally (54.8%), with only 11.9% of respondents choosing to consume these types of products daily.

Regarding the above hypothesis, following the calculation of some reference statistical parameters (table 1), the chi square test (a value lower than 0.005 shows the existence of the correlation between the variables) and the contingency coefficient (shows the intensity of the link between the variables, where it is the case). Thus, age, income level and professional status influence the frequency of consumption of whole grains. Thus, respondents aged between 18 and 35 years consume whole grain products more often than respondents aged between 35 and 49 years, who usually occasionally consume profiled products. Also, respondents with a better financial situation, with incomes above 4,500 lei, show a higher frequency of consumption of whole grains, this being weekly or daily. Those with incomes between 1500 and 3000 lei occasionally consume reference products.

Table 1. Tested correlations through Hypothesis 6

Independent variable	Dependent variables Consumption frequency	
	Test χ^2	Contingent coefficient
Gender	0,750	-
Age	0,000	0,471
Education level	0,492	-
Income level	0,004	0,369
Professional status	0,000	0,431

Source: SPSS model results

Last but not least, the professional status influences the consumption of whole grains, in the sense that people registered in the retired category purchase products from this category less often, compared to those who are employed. Following the calculations, the value of the χ^2 test shows that the gender of the respondents and the level of education do not significantly influence the frequency of consumption of whole grains (values above the threshold of 0,005), while the professional status and age of the respondent's influence with a medium to high intensity the variable studied (values of the contingency coefficient between 0,431 and 0.471). Thus hypothesis 6 is not validated in terms of socio-demographic characteristics of the respondents such as gender or level of education, but it is confirmed for other characteristics, such as age, income level or professional status.

CONCLUSIONS

The present work presents, using a varied methodology, the whole grain market in Romania, at the global, European and national level, as well as the results of the quantitative research obtained with the aim of determining the preferences of whole grain consumers in Romania.

It is concluded that Romanians are generally informed about the meaning of the concept of whole grains, the differences between conventional and whole grains, their particularities in terms of the health benefits brought by consumption, but also the representative types of grains for the category of integral. It is also recognized by the respondents that the intake of minerals, vitamins and fiber, as well as the taste, are the main differences between refined and whole grains. In general, whole grains are occasionally consumed by the 126 respondents who make up the current sample, they remain traditionalists, especially regarding the consumption of bakery products, white flour or spelt. When

they choose to purchase profile products, whole grain pasta or whole grain rice are among consumers' preferences. Most respondents choose whole grain products for breakfast or snacks and do not take into account when cooking whether the raw material is based on whole or refined grains. They choose whole grain products to diversify their diet when fasting or dieting. Most of the respondents do not use smart apps to shape their dietary lifestyle, although some of them would be willing to use them in the future, and a lower share of the sample uses them. This shows the fact that although at the level of European society, including in Romania, we are in the midst of a digitalization process, the tools related to information technology currently represent another barrier at the level of the interface between the consumer and the equipment. The Internet and health professionals are two sources of information regarding the benefits of including whole grains in the daily diet identified among respondents. From the price point of view, the respondents believe that the purchase of whole grain products involves a higher cost, compared to conventional products. However, following the analysis of the market at the price policy level, it is shown that this statement reflects an erroneous perception, rather than the reality, as there are whole grains on the market produced at a price even lower than those in the whole grain category. As for the category of bread preferred by the respondents, the leading positions in the ranking are occupied by whole wheat or rye sliced bread, ready-packaged white sliced bread and black bread. Therefore, there is an inclination towards products that comply with hygiene standards, ready-packaged, consumption behavior that has intensified with the Covid-19 pandemic. Also, from the point of view of easy access to the profile products, it is more convenient for consumers to buy their bread from the supermarket or hypermarket, with their other purchases, when they finish the working hours, than to go to other profile units, of the "bread on the hearth" type. Bakeries are fewer in number than grocery stores and typically do not have extended hours of operation like convenience stores do.

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