

THE INFLUENCE OF MEAT CONSUMER BEHAVIOR ON THE REDUCTION OF FARMERS' ECONOMIC VULNERABILITY

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Abstract

Today's consumer is much more attentive to the origin of food, how it was produced or whether agricultural practices respect the environment. Therefore, farmers must adapt production to consumption trends, offering a varied range of high quality and sustainable food. Also, the measures adopted in the last period for animal welfare led to an increase in the quality of the products, as well as the safety of the animals, ensuring the safety of the consumer at the same time. The purpose of the research was to establish the profile of meat consumers by analyzing the preferences for certain types of meat, the frequency of consumption, the source of supply and the criteria that influence the choice of the place of purchase, also presenting their recommendations for producers. The research method was the quantitative survey through the application of the questionnaire, and for the analysis of the data, scaling methods and techniques in marketing were used. The researches showed that 97.6% of the respondents consume meat, of which 45% daily, among the favorites being poultry and pork. Beef and mutton are occasionally consumed by a certain category of consumers, who prefer a higher quality meat, but which in terms of price is less accessible. The results of this study can contribute to farmers' decisions regarding meat production, as well as the orientation towards products that satisfy consumer demands, thus reducing the economic vulnerability of farmers activities.

Key words: consumption preferences; sources of supply; income; Romania

INTRODUCTION

Meat is one of the most valuable sources of protein in the human diet [1], providing essential amino acids [2] which cannot be synthesized by the body. Also, meat contains fats, a complex of vitamins, B, A and D, as well as an important amount of iron, zinc, and other minerals [3, 4]. The species from which the meat comes greatly influences its nutritional characteristics, as well as the food, age, or sex of the animal [5].

Rumors and information provided by the mass media regarding the benefits of reducing meat consumption have given rise to many concerns among consumers. Their perceptions have changed regarding meat, problems related to meat health (abuse of growth hormones, saturated fats, swine fever) have become the most important

aspects in the decision to buy, more than the selling price [6]. However, meat consumption in Romania has increased. According to statistical data, in 2022, 3.921 kg of meat/person was consumed, 0.038 kg more compared to the previous year. The most appreciated among consumers is poultry with a consumption of 1.711 kg/person (+ 0.006 kg/person compared to 2021) and pork with a monthly consumption of 1.514 kg/person (+0.007 kg/person compared to 2021) [7]. Given that consumers opt for meat and fresh meat products, ensuring superior welfare conditions in the livestock sector is a priority for Romania, intervening through support measures for farmers in the implementation of these welfare standards [8] which will contribute to the sustainable development of rural areas

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[9]. On the other hand, the producers, to compete with the big retailers, must adapt to the new conditions and have become more aware of the consumers' needs, their priority being the supply of healthier meat products, they are also more concerned with animal welfare as well as environmental issues [10].

In the food chain, producers represent the first link and consumers the final link, so that the identification of the factors that influence the behavioral patterns of consumers are especially useful for producers who can better adapt and satisfy the expectations, requirements and needs of those who ultimately benefit from them. By knowing consumer preferences in the market, manufacturers can reorient their production activities to meet consumer demands. This can help reduce the vulnerability of farmers' incomes by addressing production chains that are more frequented by consumers.

This paper focuses on the monthly income of consumers, as a factor that could influence their behavior in the frequency of meat consumption, and of course the amount they allocate weekly for its purchase. Another objective was to determine the criteria by which consumers choose their source of supply and their importance depending on their income and the position of producers among other suppliers (supermarkets, convenience stores etc.).

MATERIALS AND METHODS

The most used tool in marketing research is the questionnaire [11]. Data collection from meat consumers in Romania was done with the help of self-administered structured questionnaires. It contained 25 questions, as simple and concrete as possible [12], resulting in a representative sample of 455 respondents. In this work, part of the data obtained was used, focusing on the frequency of meat consumption, the source of meat supply, as well as the influencing factors in choosing the place of purchase, data on income, age, residential environment, gender of the respondents and

occupation. These data were used with the aim of rejecting/accepting the hypothesis that income influences the frequency of meat consumption as well as the amount that the respondents spend weekly to buy meat. Collected data were processed using the SPSS software, the Pearson Chi-Square coefficient, as well as the scaling method (semantic differential) with 5 levels [13], through which the consumer appreciates the importance of certain criteria in choosing the place of meat purchase.

RESULTS

Out of the total number of respondents in the study, there were 444 meat consumers (97.6%), using a margin of error of approximately 4.7%. Most of the meat consumers who participated in this study were from urban areas (72.3% of total) and only 27.7% from rural areas. In terms of gender, the respondents were represented by 295 women (66.4%) and 149 men (33.6%). Divided by age category, it was found that the most representative group is that of the respondents in the 20-29 years category (69% of total). The extreme age groups are poorly represented, with 9 respondents under 20 years old and only 1 over 70 years old. Depending on the status on the labor market, there were 206 students (46.4%), 205 employees (46.2%), 13 entrepreneurs (2.9%), 11 unemployed (2.5%) and 9 pensioners (2%) (Figure 1).

Regarding the income, it was observed that most respondents earned up to 3,000 lei (57% of respondents). Of these, 95 respondents have an income of less than 1000 lei (92.6% are students), 70 between 1,001-2,000 lei (84.3% students) and 87 between 2,001-3,000 (98.9% students and employees). A monthly income of 3,001-4,000 lei is collected by 61 respondents, of which 83.6% are employees and those who have more than 4,000 lei represent 29% of the total, 70-80% being employees and a smaller percentage of students, entrepreneurs, or retirees. The share of respondents who exceed an income of 6,000

lei is 11.9%, noting that among them 71.9% are employees and 13.2% entrepreneurs, and the rest from the other categories (Figure 1).

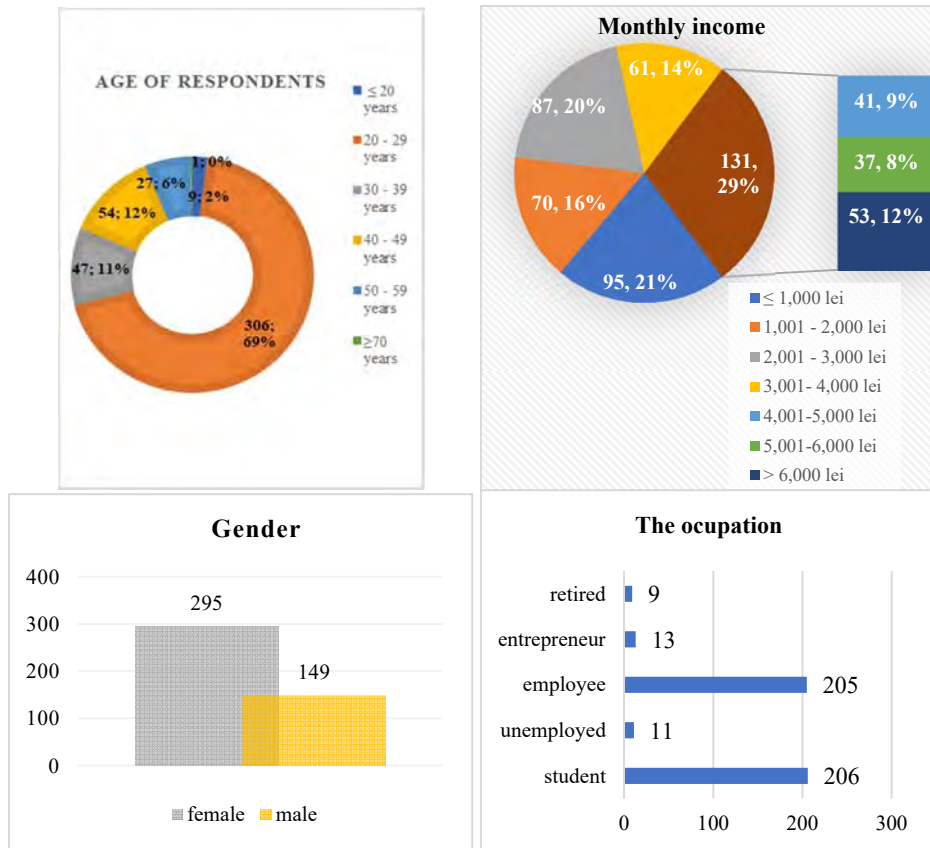


Figure 1 - The structure of meat consumers by age, monthly income, gender, and the occupation
Source: own calculations

Establishing the fact that 444 respondents are meat consumers, the frequency with which they consume meat and the influence of the factors were further analyzed.

The results of the analysis show that 45% of respondents eat meat daily,

followed by 40% of respondents who eat meat 2-3 times a week. Respondents who eat meat once a week have a smaller share (10%), and those who eat meat occasionally represent only 5% of all meat consumers (Figure 2).

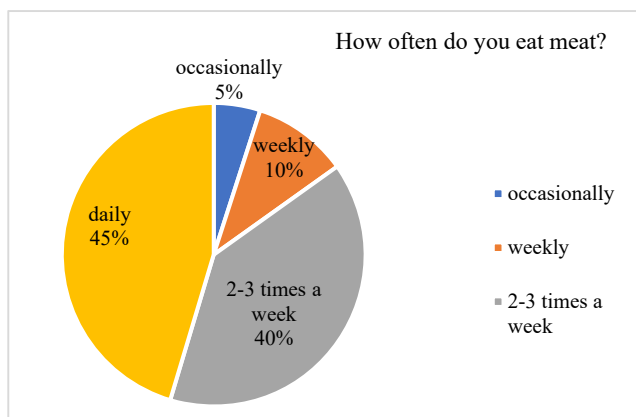


Figure 2 - The structure of the frequency of meat consumption
Source: own calculations

It was launched the hypothesis according to which the independent variables (gender, age, place of residence, occupation, and income) influence the frequency of meat consumption. A significance level of 0.05 was considered, corresponding to a 95% probability of guaranteeing the results. Hypotheses testing was analyzed with the Chi-Square test, the results being insignificant for most influencing factors, except for monthly income (Table 1).

The frequency of meat consumption was not influenced by the gender of the respondents. The tabular value of χ^2 for the chosen significance level and 3 degrees of freedom was 7.82. χ^2 calculated = 3.22 <

7.82, so the hypothesis was rejected. χ^2 was calculated in the same way, resulting that age did not influence the frequency of meat consumption (calculated $\chi^2 = 9.816 < 25$; $df=15$), nor does the environment of residence had an influence (calculated $\chi^2 = 1.000 < 7.82$; $df=3$) as the occupation does not significantly influence the frequency of meat consumption (calculated $\chi^2 = 8.809 < 21.03$; $df=12$). Instead, the monthly income of consumers related to the frequency of meat consumption, recorded a significant level of 0.03. For this significance threshold, the calculated value of χ^2 is equal to 30.863, exceeding the tabular value for the chosen threshold (28.87; $df=18$).

Table 1 - The influence of independent variables (gender, age, residential environment, occupation, and income) on the frequency of meat consumption

How often do you eat meat?	Pearson Chi-Square		
	Value	df	Asymp. Sig. (2-sided)
Gender	3.220	3	0.359
Age	9.816	15	0.831
The environment of residence	1.000	3	0.801
Occupation	8.809	12	0.719
Monthly income	30.863	18	0.030

Source: own calculations * degrees of freedom

Analyzing the frequency of meat consumption according to respondents' income, the results show that from the consumers that eat meat daily, 39 have

monthly incomes between 2,001-3,000 lei, 36 have incomes between 3,001-4,000 lei, 18 respondents have incomes between 4,001-5,000 lei and 27 respondents exceed 6,000

lei. Among consumers with incomes lower than 1,000 lei, meat was consumed daily by 33 respondents and 2-3 times a week by 36 of them. In this group of income (lower than 1,000 lei) we see the largest number of those

who consume meat weekly or occasionally. It can be observed that among consumers that have more than 5,000 lei per month, the occasional consumption of meat doesn't exist. (Figure 3).

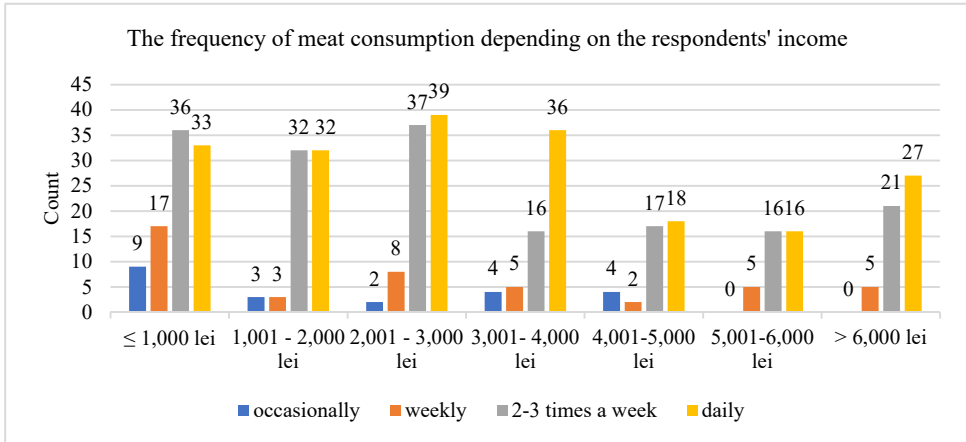


Figure 3 - The frequency of meat consumption depending on the respondents' monthly income
Source: own calculations

Analyzing the meat consumption preferences, depending on the animal category, it turned out that the most consumed meat is poultry meat (47% of respondents consume a lot and 53% consume very much). The following category of meat

is pork, 25.2% consume very much and 43.7% a lot much), the beef meat is less consumed (11.6% consume very much, 25.2% a lot and 47.9% consume a little) and the least consumed are sheep and goat (Figure 4).

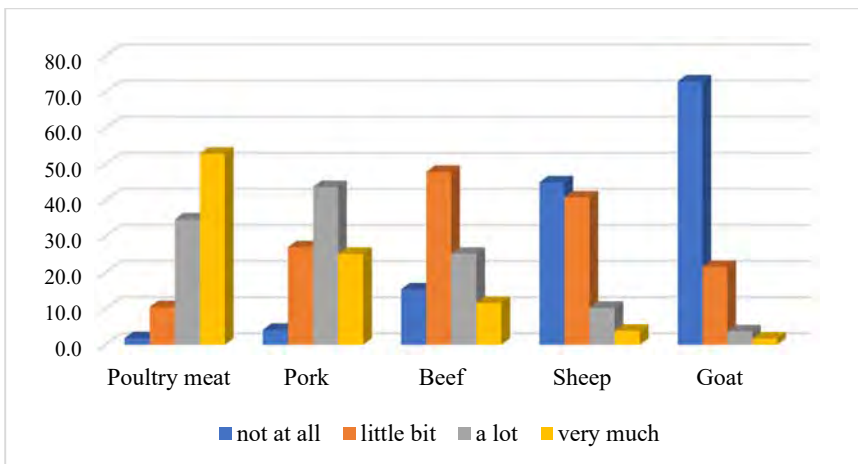


Figure 4 - Meat consumption preferences depending on the species from which it comes
Source: own calculations



Regarding the place where the meat is pickled (supplied), the situation is as follows:

- The supermarket/hypermarket was identified as the main source of meat supply (of the total meat consumers, 36% buy very much, 28.7% - a lot).
- 22.5% buy very much and 20.9% by a lot directly from the producer; 16% buy very

- much and 34.9% buy a lot from traditional stores.
- From convenience stores, 2.3% buy very much and 33.3% a lot.
- Buying meat from online stores is not an option that respondents prefer (69% do not buy at all) and only 4.3% of them use this source very much and 6.5% a lot.

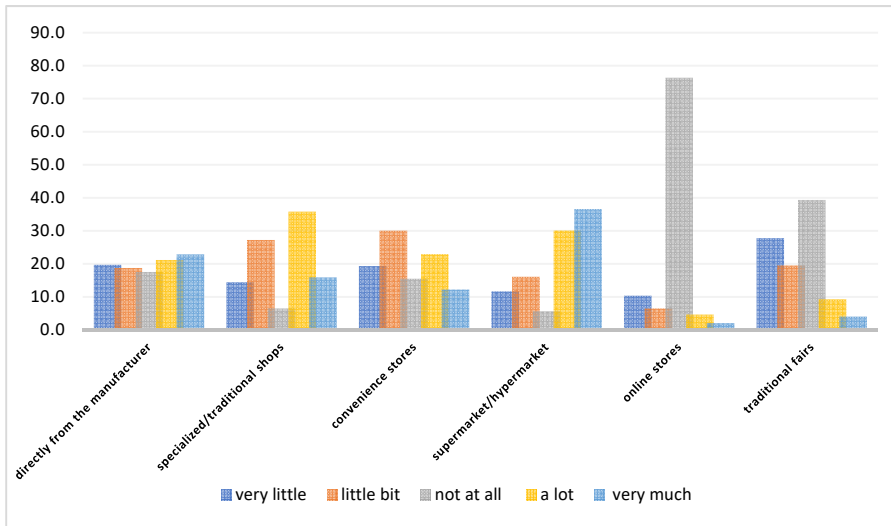


Figure 5 - Consumer preferences regarding the source of meat supply
Source: own calculations

In choosing the place to purchase meat, several aspects were considered more important, such as: proximity to home, more affordable prices, a more varied range of assortments, the availability of fresh products and ecological products, or the quality of the products sold.

Using the semantic differential method, through which the 5 steps of the scale were scored from 0 - not important to 4 - very important, the ranking of the criteria in choosing the place of purchase of meat according to the importance given was the result.

The results indicate that the first criterion considered for the place of purchase of meat is the availability of fresh products, obtaining an average score of 3.38, exceeding level 3 - Important. The respondents from the income categories of

3,001-4,000 lei and over 6,000 lei monthly are the ones who obtained the highest score of 3.49 and 3.5, respectively. The average score of 3.37 places the quality of the meat in the next place, noting that for the respondents in the income categories 3,001-4,000 lei and 4,000-5,000 lei, this criterion was the most important. Affordable prices are a factor of medium importance for most respondents, with a score value of 2.79, but for those in the income category of 1,001-2,000 lei this factor was an important one (score value is equal to level 3 - Important). Assortment diversity was an important average criterion, obtaining a score of 2.74, as was the availability of ecological products, with a score of 2.54. In the case of assortment diversity, respondents with incomes of 2,001-3,000 lei and 4,001-5,000 lei obtained the highest score of 2.85, and in

the case of the availability of ecological products, those with an income over 6,000 lei (2.90), they gave more importance to these criteria. On the last place, is the proximity to the house, being a less important criterion in choosing the place to buy meat, with a score of 2.08 (the value of

the average score was close to level 2 - Little important). The least importance is given to this criterion by those with an income of 5,001-6,000 lei (average score of 1.89), and the highest score was obtained by those who exceeded 6,000 lei per month (2.20) (Table 2).

Table 2 - The grades obtained from the readings in choosing the place of purchase of meat depending on the monthly income

Criteria	Monthly income							Total
	<1.000 lei	1.001 - 2.000 lei	2.001 - 3.000 lei	3001- 4000 lei	4.001- 5000 lei	5001- 6000 lei	> 6000 lei	
proximity to home	2.15	2.10	2.09	1.98	2.03	1.89	2.20	2.08
assortment diversity	2.64	2.76	2.85	2.75	2.85	2.75	2.61	2.74
affordable prices	2.81	3.00	2.89	2.77	2.70	2.58	2.50	2.79
fresh produce	3.32	3.22	3.43	3.49	3.44	3.30	3.50	3.38
ecological products	2.48	2.10	2.69	2.48	2.63	2.71	2.90	2.54
quality	3.22	3.31	3.42	3.53	3.59	3.19	3.45	3.37

Source: own calculations

Another aspect studied depending on the monthly income, was the amount that consumers allocated weekly for the purchase of meat. The results in Figure 6 show that a significant percentage of those

with incomes below 1,000 lei spend an average of 100-150 lei per week for the purchase of meat, while in the other income categories, consumers who buy an average of 51-100 lei receive meat per week.

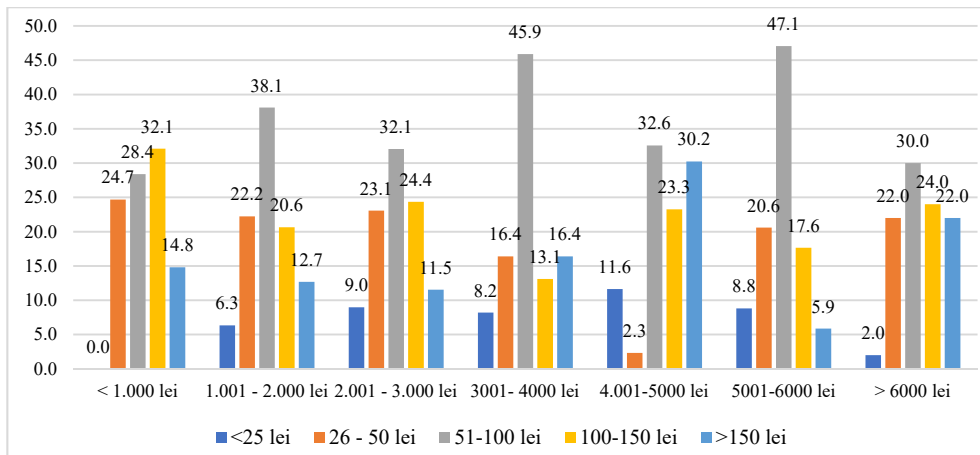


Figure 6 - The amount allocated weekly for the purchase of meat depending on the monthly income
Source: own calculations

The hypothesis was formulated that income is a factor influencing the amount allocated weekly for the purchase of meat. In the same way as above, χ^2 was calculated for the significance threshold of 0.05. The monthly income of consumers compared to

the amount allocated weekly for the purchase of meat, recorded a significant level of 0.017. For this significance threshold, the calculated value of χ^2 was equal to 40.84, exceeding the tabular value for the chosen threshold (36.42; $df=24$) (Table 3).



Table 3 - The influence of income on the amount allocated weekly for the purchase of meat and meat products

What amount do you spend - on average - weekly for buying meat and meat products?	Pearson Chi-Square		
	Value	df*	Asymp. Sig. (2-sided)
Your monthly income:	40.840 ^a	24	0.017

Source: own calculations * degrees of freedom

Based on the results, the hypothesis was accepted according to which income is a factor that influences the consumption of meat as well as the amount allocated for buying meat. On the other hand, the choice of the place where the respondents buy was not chosen according to the income criterion, but more based on the availability of fresh products, the quality of the products sold or the affordable prices.

DISCUSSION

The purpose of this analysis was to understand the behavior of the meat consumer in relation to the declared income, the place of purchase of the meat as well as the criteria that influence the choice of the source of supply, all of which being the basis of the assessment of the possibilities that producers to relate to the consumers requirements, to reduce the economic vulnerability of their incomes. The analysis of these factors can be useful to producers, who can adapt to the demands of consumers by supplying the market with accessible, valuable products, following individual consumer needs.

Based on the data from this study, it was proven that income is an important factor in the frequency of meat consumption, a fact confirmed also in other studies [14]. People's consumption pattern can be affected by changes in income [15]. The increase in incomes has led to an increase in the frequency of meat consumption, consumers with incomes less than 1,000 lei consume less often and as incomes increase, so does meat consumption, noting that those with an income greater than 5,000 lei monthly, the frequency of meat consumption is higher.

Since in the income category of less than 1,000 lei the majority are students, it can say that young people consume less meat compared to the other categories. If before the tendency to consume meat was increasing among young people [16] the Covid-19 pandemic has disrupted many aspects of life, including eating routines and meat consumption, including young people's [17]. The results of the latest research indicate that giving up meat is a trend among teenagers and young adults, this being influenced by other factors such as health, vegetarianism, and compassion for animals [18].

Among the respondents, the main type of meat consumed was poultry, closely followed by pork. And here it assumed that the choice is greatly influenced by income, these two types being more accessible, in addition to the long tradition of Romanian consumption of these two types of meat.

The source of supply turned out to be mainly the supermarket, thus confirming the statistical data indicating an increase in the import of meat in Romania [19]. Given the higher animal welfare standards to which Romanian farms must adhere, there are few that meet these conditions and can supply meat to large retailers.

The producer was in third place as a source of meat supply after the specialized stores, indicating the fact that Romanians still do not have full confidence in buying meat directly from the producer, preferring places where the product's preservation requirements are higher. The fact that the program in such locations is extended or is located near the home, compared to the producer, from where consumer can buy in his free time or by direct weekly order for

the area where he distributes, can also contribute to this aspect.

From this study it emerged that the very important aspects in choosing where to buy meat are: the offer of fresh products, their quality, and more affordable prices.

The meat consumers thus recommend the producers to diversify the range of products, to strictly respect hygiene and to sell products as fresh as possible. It also encourages them to access the support programs to modernize the farms and arrange the storage spaces, the equipment corresponding to the perishability of the product, the access being willing to pay extra for a higher quality meat.

CONCLUSIONS

Identifying the factors that influence the consumer's decision to buy meat and the place of purchase, such as: the quality, the availability of fresh products as well as the price, can have significant effects on the reorientation of farmers in terms of the supply of products and can lead to the reduction of the economic vulnerability of farms. By implementing modern technologies for raising meat-producing animals, adapting to animal welfare standards, and storing farm products, the producer can offer valuable products to the consumer, ensuring, on the one hand, food safety and security, and on the other on the other hand, the reduction of economic risks in farm activities. Promoting domestic products and customer loyalty are also ways to reduce the vulnerability of farmers' incomes. Producers can obtain valuable information by analyzing the evolution and trend of product demand on the market, thus being able to adapt their production directions, and the direct beneficiary, the consumer, can have access to high quality products at reasonable prices. It is necessary for farmers to adopt higher animal welfare standards, to be able to enter the Romanian market with fresh and quality products and to shorten the food chain from the producer directly to the consumer, thus reducing their

vulnerability to changes in the competitive environment in which they activate.

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