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ASSESSMENT OF CONSUMER CONFIDENCE WITHIN THE REGION FOOD SECURITY SYSTEM

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Abstract

Ensuring food security is an important task being solved by a state and individual regions, including achievement and maintenance of physical and economic accessibility of food products, ensuring their quality and safety. However, the development of local production depends largely on positive attitude of the population to the products of these enterprises. Thus, one of the conditions for ensuring food security in the region is public confidence in the food produced by local firms. The authors of the article propose to supplement the methodology for assessing food security in the region with an indicator system characterizing a level of consumer confidence in the products of local producers. The following indicators were chosen: a subjective assessment of local producers' food products quality, a subjective assessment of their consumer behaviour, i.e. savings on food, frequency of purchases of various local producers' food products, sales operators' credibility. On the basis of data from a sociological survey of Tyumen region's population, an assessment was made of a level of consumer confidence in products of local producers in the context of food safety criteria. The sample was constructed in accordance with the structure of the population by sex, age, type of settlement (cityvillage), with an error of one sign less than 3 percent. The sample size was 1610 people. The study of public opinion showed high assessments of food products quality produced in the Tyumen region. But it also revealed problems that may hinder the implementation of regional food safety programs.

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Keywords: Consumer confidence, food availability, food security, self-reliance, Tyumen Region.



1. Introduction

One of the priorities of the economic strategy of modern Russia is to improve food supply of the country's population, both at the national and at the regional level.

The economic security issues involved a large number of Russian and foreign researchers. Omitting the diversity of approaches to food security, we note that this concept can be viewed at three levels. At the global level, it is believed that food security exists when all people always have physical, social and economic access to enough safe and nutritious food to meet their nutritional needs (World Food Security Summit Declaration, 2009; Gibson, 2016). On a national scale, food security most often refers to such a state of economy and its agro-industrial complex, in which, regardless of the influence of various internal and external factors, needs of the population for food are fully satisfied in accordance with the consumption norms (Antamoshkina, 2015). A number of scientists consider the study of food security at the regional level to be incorrect, since the country's food market is unified and there are no significant barriers between regions, in particular Vermel (1997) thinks in this way. However, the authors of this paper agree with the opinion that the concept of regional food security is independent and has the right to exist (Kostyaev, 2012; Kostusenko, 2009; Lylov, 2008). Uskova, Selimenkov, Anishchenko, & Chekavinsky (2014) in their monograph define the region's food security as "the state of production, storage, processing and trade system, which is able to ensure uninterruptedly within the year all categories of the population of the respective territories with high-quality food products of their own production not lower than accepted medical standards."

The areas of food safety research are very broad. It is studied from the point of view of the logistic component (Vorotnikov, Sukhanova, Tretyak, & Baskakov, 2017), from the standpoint of contributions from different industries (Lapina, Sobchenko, Kuleshova, & Shamrina, 2015); the impact of prices on the sustainability of agricultural producers (Dorward, 2013); state propaganda (Atkey, Raine, Storey, & Willows, 2016); consumer behaviour (Tolmáci & Tolmáci, 2018); social policy (Riches, 2002) and other aspects.

The main criteria for food security are usually determined by the following: physical accessibility (self-reliance, independence); affordability; safety (quality). In particular, these criteria are mentioned in the Declaration adopted at the World Summit on Food Security (Rome, 16-18 November 2009) (World Food Security Summit Declaration, 2009), in the Doctrine of Food Security of the Russian Federation (On approval of the Doctrine of Food Security of the Russian Federation, 2010).

Physical accessibility, as a rule, means the availability of food throughout the country at any given time and in the necessary range. However, at the regional level, this criterion is often also considered in the context of self-sufficiency (independence) criterion. This criterion describes how fully the region meets the needs of the population for various types of food products at the expense of local production. Economic affordability characterizes the possibility of acquiring food depending on the size of incomes of the population and the level of food prices (Antamoshkina, 2015; Klimova, 2012). Food safety implies possibility of preventing production, sale and consumption of low-quality food products that may harm human health.

A brief analysis shows that the Tyumen region is a relatively prosperous region in terms of food security. According to the criterion of self-sufficiency, the situation is generally positive. Production of

the main types of agricultural products provides physiological needs of the population in almost all main food groups (Table 01):

Table 01. Self-sufficiency of the Tyumen region food for 2014-2017

Food products	Rational	2014		2015		2016		2017	
	norms of nutrition, kg / person per year*	Production, kg / person	in percent to normal						
Potatoes	100	422	422	400	400	386	386	390	390
Vegetables	140	111	79	118	84	122	87	122	87
Meat (slaughter weight)	75	75	100	71	95	70	93	69	92
Milk	340	375	110	362	106	349	103	349	103
Eggs, pieces	260	995	383	978	376	912	351	1023	393

^{*}Note: Decree of the Ministry of Health of the Russian Federation. August 19, 2016 No 614 "On approval of recommendations on rational norms of food consumption that meet modern requirements for healthy nutrition" (On approval of recommendations on rational norms of food consumption that meet modern requirements for healthy nutrition, 2016).

The criterion of economic affordability is expressed in terms of poverty coefficients, purchasing power of household income, the Gini coefficient (Uskova et al., 2014). Characteristics of economic availability of food in the Tyumen region are presented in table 02. They are markedly reduced compared with 2014, due to the general economic situation in Russia. By two indicators (poverty ratio and purchasing power ratio), the Tyumen region lags behind the all-Russian indicators, but the Gini index is better than the average Russian indicator.

Table 02. Assessment of economic affordability level in the Tyumen region

Indicator	2014	2015	2016	2017	2017 Russia as a whole	Level of economic affordability in 2017 by the method (Uskova et al., 2014)
Poverty ratio (the ratio of the population with incomes below the subsistence minimum to the total population)	11.4	13.9	15.0	15.2	13.5	low
The coefficient of purchasing power of the region population incomes (the ratio of the subsistence minimum and per capita income)	0.31	0.34	0.36	0.37	0.32	low
Gini coefficient (income concentration index)	0.404	0.402	0.395	0.390	0.414	low

Sources: (Russia in numbers, 2017; Tyumen region without autonomous districts in figures, 2018)

The criterion of quality and safety of food in the region can be assessed using data from the Office of Russian Service for Supervision of Consumer Rights Protection and Human Welfare (Rospotrebnadzor) in the Tyumen region. This service regularly conducts quality checks for various types of products. The results show that the situation with the food quality in the region is quite stable. So, in the second quarter of 2018, the share of meat products that do not meet regulatory requirements for microbiological safety indicators was 6 percent. The proportion of unsatisfactory samples of milk and dairy products according to physical-and-chemical parameters is 7.7 percent (On the results of supervision of the production and circulation of milk and dairy products in the second quarter of 2018, 2018). The quality and safety of bread, fruit and vegetable products are significantly higher: 1.7 percent and 2 percent of unsatisfactory samples, respectively. These figures indicate an insufficient level of food security in the Tyumen region.

The region has paid much attention to its improvement. The Regional Food Security Program of the Tyumen Region for 2011–2020 (On approval of the Doctrine of Food Security of the Russian Federation, 2010) has been developed and is being implemented, which includes activities in the following areas:

- Sustainable development of food production and agricultural raw materials.
- Achieving and maintaining physical and economic accessibility of food in volumes and assortment that meet established rational consumption rates.
- Ensuring quality and safety of food products produced and sold at regional enterprises.
- Formation of a healthy food type.

When implementing the Program, emphasis was placed on the first direction – the development of food production. So the region provides a direct growth of such criteria of food security as physical accessibility and quality of food, and indirectly – economic accessibility, since the growth of local production leads to an increase in employment and income growth of the population.

However, development of local production depends largely on positive attitude of the local population to the products of these enterprises.

2. Problem Statement

In the concept of regional food security, a large role is given to issues of self-sufficiency, meeting needs of the region inhabitants with their own products, supporting local producers, which often becomes an end in itself. However, this issue should not be based on the principle of "production for the sake of production." It is worth looking from the point of view of the buyer – whether the buyer trusts the local producers and whether he wants to purchase products of local producers. If there is no trust, then the most well-thought-out government programs may not reach their intended goals.

Thus, one of the conditions for ensuring food security in the region is public confidence in food produced by local producers.

3. Research Questions

The study proceeded from the assumption that without an assessment of the degree of consumer confidence in products of local producers, the assessment of food security in the region would be incomplete. The study was faced with the following questions: what indicators should be chosen as indicators of confidence in the assessment of food security, how will these indicators relate to the criteria for assessing food security, what conclusions and recommendations for regional authorities can be made on the basis of the study.

4. Purpose of the Study

Objective: to assess the degree of consumer confidence in products of local producers in the context of food safety criteria in relation to the Tyumen region.

5. Research Methods

The empirical base of the work was made up by the results of a sociological survey of the population of the Tyumen region (without autonomous districts – Khanty-Mansi Autonomous Okrug and Yamal-Nenets Autonomous Okrug). The sample was constructed in accordance with the structure of the general population by sex, age, type of settlement (city-village), with an error of one sign of less than 3 percent. The sample size was 1610 people. The survey was conducted in all cities of the Tyumen region and 10 municipal areas. The characteristics of the sample make it possible to assert that the social cross-section of survey participants reflects the Tyumen region population structure.

The study of consumer confidence in the products of local producers was carried out in conjunction with the selected food safety criteria: quality, availability, and self-sufficiency.

The following questions were used to study consumer confidence:

- "How do you rate the quality of food products you buy in your village?" A 5-point scale is used for evaluation, where "5" is very good, 1 is "very bad".
- "To what extent do you trust or do not trust the quality and safety of food products?" The rating is given for four types of regional sales operators: 1 in retail chains; 2 in the markets, fairs; 3 in small stores "at home"; 4 in company stores from the manufacturer. For evaluation, a 5-point scale is used from "I trust completely" to "I do not trust at all". The trust index for each sales operator is calculated as a weighted average, so that 1 corresponds to "everyone fully trusts", 0 corresponds to "everyone does not completely trust". The trust index is calculated using the formula = (4 * I completely trust + 3 * Perhaps I trust + 2 * It's hard to say for sure + I don't really trust) / ((100- I don't know, failure) * 4).
- "How often do you buy food products of local producers (producers of the Tyumen region)?".
 15 food categories were identified, each of which was rated on a 5-step scale from "I try to buy products from Tyumen producers only" to "I mainly buy products made abroad."

6. Findings

For food producers, it is extremely important to build consumer confidence in their products. Indicators of trust as a motivation for consumer behavior can be:

- 1. Subjective assessment of the quality of food products that residents of the region buy.
- 2. Confidence in food sales operators.
- 3. Consumer preferences when choosing a food manufacturer.

These indicators are completely correlated with the criteria for consumer safety discussed above. Figure 01 shows the main directions of consumer confidence research from the standpoint of ensuring food security.

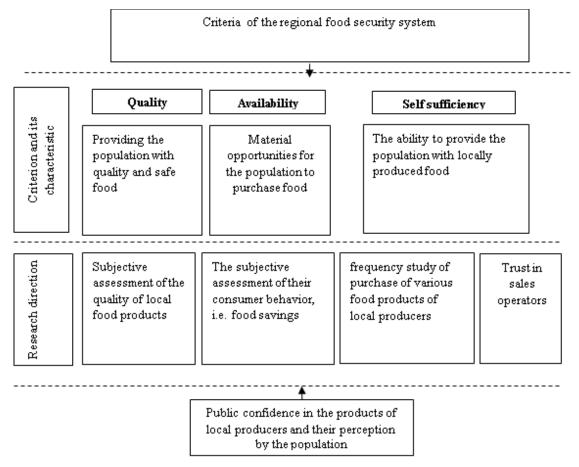


Figure 01. Criteria for the system of ensuring food security in the region and the direction of their research from the perspective of consumer confidence.

Source: compiled by the authors

6.1. Subjective assessment of the quality of local food products

The population of the Tyumen region is generally positive about the quality of food products represented in the region. The average rating on a 5-point scale is 3.8. Positive assessments of the quality of food products that they buy in stores were set by 66 percent of respondents. Not satisfied with the

quality of food only 5 percent. The latter are, as a rule, representatives of the poor strata of the population and / or older age groups. Younger and / or better-off citizens who can buy food without looking at their cost, give higher marks than the average for the sample. Residents of the region gave dairy products, eggs, grocery products the highest marks for food quality: 78 percent - 74 percent of people in the region gave marks "good" and "excellent", rice. (Fig. 2) The lowest ratings: alcoholic beverages, sausages, smoked meats, fish and seafood.

The quality of local products produced in the Tyumen Region is higher in all categories except alcoholic and non-alcoholic beverages.

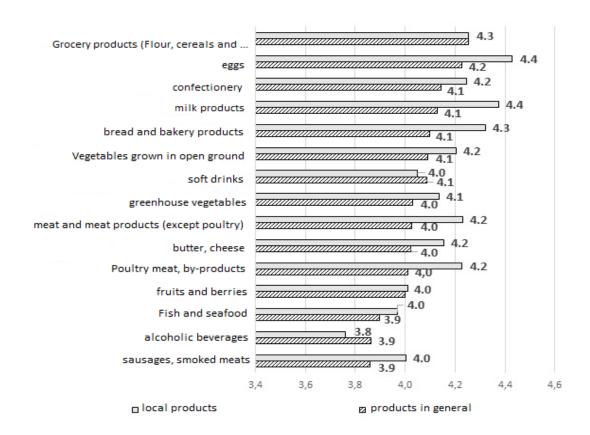


Figure 02. Food quality assessment on a 5-point scale, where 5 is "excellent", 1 – "very bad"

6.2. Frequency of local food products purchase

The probability of choosing in favor of food products of local producers differs depending on the type of product (table 03). Thus, groups of essential goods - bread, dairy products, meat, eggs - are products with clearly defined buyers' preferences towards local producers. Most buyers of these products in the region (up to 70 percent for certain categories of products) make a choice in favor of local products. Moreover, in this group of food products, the demand for products of local producers is not fully met – 20-28 percent of the inhabitants of the region do not always have an opportunity to buy products from local producers.

There are groups of goods with a predominantly formed but insufficiently realized demand for goods of a local manufacturer. This includes sausages, smoked meats, pastries, vegetables. 46-50 percent of residents of the region prefer to buy local products of these food categories.

And, finally, goods with unformed demand for products of local producers. These are alcoholic and non-alcoholic beverages, fruits, butter, cheeses, fish and seafood. Only 20-35 percent of the inhabitants of the region are focused on the purchase of local products. For some categories of this group of goods (seafood, fruits, etc.), the potential demand for local products is reduced for objective reasons: climatic conditions, an insufficient number of producers of these goods in the region. But a number of products (butter, cheeses, alcoholic beverages) are widely represented in the product line of Tyumen manufacturers, moreover they are actively supported by the regional authorities through various investment projects (Regional Program of food security of the Tyumen region for 2011-2020, 2010). However, low customer loyalty to these types of products is a significant barrier to the successful implementation of these projects.

Table 03. Answers to the question: "How often do you buy food products from manufacturers of the Tyumen region?", percentage of the number of respondents, by line

Products	I try to buy products only from Tyumen manufacturers	I buy products from Tyumen manufacturers when I have such an opportunity	I don't pay attention to the manufacturer of products	I mainly buy products made in other regions	I mainly buy products made abroad	No answer	total			
Groups of goods with steady demand for local products										
Milk products	50	20	23	3		4	100			
Bread and Bakery Products	49	21	27	2		2	100			
Eggs	43	21	29	2		4	100			
Poultry meat, by-products	40	26	27	3		4	100			
Meat and meat products (except poultry)	37	28	28	3		4	100			
Groups of goods with a formed but not sufficiently realized demand for local products										
Confectionery	23	23	44	6	1	3	100			
Vegetables grown in the greenhouse	23	26	40	5	1	5	100			
Sausages, smoked products	26	24	30	7		13	100			
Product groups with unformed demand for local products										
Butter, cheese	21	14	23	3	1	38	100			
Grocery products (flour, groats, etc.)	16	19	52	8		5	100			
Soft drinks	12	13	52	11	4	8	100			
Fruits and berries	16	20	46	12	2	5	100			
Alcoholic drinks	9	11	46	14	9	12	100			
Fish and seafood	16	20	43	15	1	5	100			

6.3. Trust in sales operators

An important participant in the food market, responsible for the quality and safety of food, is the sales operator (large chain store, small convenience store, etc.). The buyer usually maneuvers between

different segments and is inclined to choose the one that trusts more and where above assesses the quality and safety of the products presented.

The study showed that the level of confidence in food quality and safety varies depending on the sales operator (Table 04). The leader of confidence in the quality and safety of food products is brand stores "from the manufacturer" confidence index (CI) = 0.68. 62 percent of the residents of the region trust the company stores to one degree or another, and the level of distrust is the lowest - 10 percent. Next in terms of trust are large chain stores (CI = 0.60, 51 percent trust), markets and fairs (CI = 0.59, trust 45 percent), small "home" stores (CI = 0.57, 43 percent of those polled trust).

A higher level of trust in company stores, in which the products of local producers are mainly represented, may also indicate that the population of the Tyumen region perceives local products as better and safer.

Table 04. Level of confidence and confidence index in regional sales operators on food quality and safety

	I complete ly trust	Perhaps I trust	It is difficult to say for sure	I do not really trust	I do not trust at all	No answer	Total	Trust index
1. Large shopping, retail chains	11	40	26	17	4	3	100	0.60
2. Markets, fairs	9	36	35	13	4	4	100	0.59
3. Small shopping "at home"	10	33	32	17	5	3	100	0.57

These data allow us to conclude: the population of the Tyumen region is largely focused on food products of local producers, highly appreciates its quality, there is a shaped demand for local products. But there are also problems: it is not always possible to buy products from local producers; local products are presented in a limited range. And, that is very important, the population is not sure that sales operators can ensure the safety and quality of food. Therefore, the assessment of food quality is significantly higher than the assessment of confidence in the quality and safety of products sold through network and nonchain stores, markets and fairs.

6.4. Subjective assessment of consumer behavior

Adequate food supply and the level of supply with retail space do not yet guarantee the food security of households. An important condition for the latter is the economic affordability of food. Subjective indicators of the economic affordability of food may be assessments of their consumer behavior, i.e. Do people save on food?

According to the results of a sociological survey, the inhabitants of the region are not determined to save on food. Only about 8 percent of respondents answered that they have to save on food constantly. This is less than the share of the population in the region with cash income below the subsistence

minimum (in 2017 – 15.2 percent) (Tyumen region without autonomous districts in numbers, 2018). 34 percent of residents of the region never save on food, 37 percent "usually do not save on food, but they do not buy some products, because they are too expensive", and 21 percent of respondents "sometimes save on food."

The dominant strategy for the inhabitants of the region is "we usually do not save on food, but we don't buy some products because they are too expensive." It is also worth noting that 45 percent of buyers are not satisfied with the price of food products from Tyumen manufacturers. Thus, the economic affordability of food products is estimated by the population itself positively, but a significant part of the population has to make a choice in favor of goods with a lower price. With that, local products often cost more than similar ones.

Thus, the study of public opinion showed high assessments of the quality of food products produced in the Tyumen Region, and the generated demand for certain socially important groups of products of Tyumen producers. But it also revealed problems that may hinder the implementation of regional food safety programs. These problems are primarily associated with low customer loyalty to such types of products as butter, fish, grocery products, alcoholic beverages and non-alcoholic beverages, with a low level of trust in almost all sales operators, with an insufficient range and high prices for local products.

7. Conclusion

An important condition for food security in the region is consumer confidence in local products. Confidence, customer loyalty to local products is a form of business support; competitive advantage that allows small and medium-sized businesses to survive and develop in the face of fierce competition with global players. It is important to foster "local economic patriotism," and the government should use the tools available to it. The first step in this process is to assess the degree of confidence of the inhabitants of the region to local products.

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