Analysis of market prospects for bakery products based on the ranking of bakery producers in the region

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Abstract. According to the result of the study based on a comprehensive multidimensional comparative assessment and rating of Vologda enterprises – producers of bakery products participating in the system of voluntary certification of food products “Real Vologda Product”, the authors have analyzed the prospects for the development of this industry in the region. They used the following research methods: questionnaire survey methods, comparative overall assessment, and rating assessment. The study is based on the results of a specially organized marketing survey of consumer preferences. This article presents key aspects of the authors’ comprehensive assessment of commodity producers based on the analysis of economic potential and the position of consumers of products as factors of sustainable development of enterprises. As a validation of the proposed methodology of multidimensional comparative rating, which includes the analysis of the financial condition of the research subjects and assessment of consumer preferences, the researchers carried out a qualitative characterization of the “Real Vologda Product” brand actors engaged in the production of bakery products. The article revealed the structural features of the producers of this commodity group in terms of their influence on the development of the regional bakery market. The study identified the main problems of the economic development of enterprises-producers of bakery products, noted the factors of demand for their products from the local consumer, identified the prospects for sustainable development and stated the ways to solve the problems identified.

1 Introduction

According to experts, the outlook for the bakery market in Russia is not promising, as the production of bakery products has dropped from 5.76 to 5.58 million tonnes. According to BusinesStat forecasts, in 2021–2025, as the economic situation in the country stabilises, sales of bread and bakery products in the Russian market will continue to decline by 0.3-1.4% per annum. In contrast, the cost of these products has been gradually increasing over the last three years, remaining in line with inflation. Researchers point to the following reasons for this dynamic:

1. Reduction in the consumption of bread. Research by Trend Lab identified the following reasons: doctor’s recommendations and health problems, e.g. autoimmune diseases that require the elimination of gluten from the diet; lack of tasty bread that one would like to consume; very caloric product; bread not liked as a product; improved well-being as a result of experimenting with no bakery consumption.

2) Competition between enterprises and their products [1]. In every Russian city, there are usually 1–2 large bakery producers and about a dozen small enterprises and bakeries, which find it difficult to compete in the price segment with the large ones. They tend to appeal to consumers in terms of taste and the range of products on offer.

It is also about improving the quality of life of Russian citizens by guaranteeing high living standards [2, 3]. On the other hand, Russia is currently in dire need of effective mechanisms for launching regional economic growth [4]. The problem of ensuring food security in Russia objectively needs to be addressed not only at the national level, but also at the regional level [5]. The most important task of state industrial policy is to prioritise the formation of a forward-looking industrial structure of the national economic complex capable of generating new sources of growth [6, 9].

Researchers, economists agree that one way out of the current situation, allowing for the support of local producers-processors of agricultural products, is branding as a way of creating their image, recognition, quality and market retention of bakery products. Therefore, many of them create their own brands or participate in already existing territorial brands [7].

The number of participants in the voluntary certification system “Real Vologda Product” is growing in the Vologda Oblast: 74 organisations that label more than 3.600 products with the trademark “Real Vologda Product” [8]. They also include bakeries, but branding has not solved the above problems.

There are various methodologies to assess simultaneously supply and demand for the whole industry in the region and each individual enterprise. However, modern science does not provide a
multidimensional assessment of producers that simultaneously considers both customer feedback and the economic situation of each enterprise. The economic situation would provide a recommendation to the market actor: what to look for in the first place to improve their situation, strengthen their economic potential and become more sustainable. This is precisely the opportunity that our methodology offers.

2 Materials and methods

The methodology for constructing any rankings is based on the technique of comparing the key characteristics of the objects being compared, and in our case the indicators of assessing the economic potential of the brand actors, producing and selling specific products. Therefore, implementing this procedure makes sense only within relatively homogeneous product groups, which was implemented in this work.

The information base for the comparative ranking of producers is a system of indicators in two categories.

I. Economic indicators — ratios of the financial condition, business activity and performance of an enterprise. The source of information for calculating the values of indicators in this category is the accounting and financial statements of enterprises published by the Federal State Statistics Service of the Russian Federation. The method of information collection is traditional document analysis (desk research). Here we consider the following indicators:

1. Financial sustainability indicators.
2. Liquidity and solvency indicators.

II. Consumer Assessment Indicators were calculated from a summary of a questionnaire survey of the population. The source of information for calculating indicator values for this category is a consumer survey. The method for collecting information is qualitative (determining the proportion of respondents who gave a particular answer) and quantitative (using a scale method).

This category's indicator system included the following 8 assessment indicators:

- indicator for assessing the level of consumer loyalty to a brand actor (an indicator of commitment to the producer, “heart share”, “Product patriotism”); 
- indicator for assessing the level of perceived quality of a brand actor's products (a measure of the perceived quality of the manufacturer's products); 
- indicator for assessing the level of market share (market share, sales share) of a brand actor; 
- indicator to assess the level of perception and recognition of the manufacturer's image as a brand actor; 
- indicator for assessing the level of accessibility of a brand actor's products (an indicator of physical accessibility of products); 
- indicator for assessing the level of price satisfaction with a brand actor's products; 
- indicator for assessing the level of territorial prevalence of a brand actor's products (breadth of the sales market); 
- indicator for assessing the level of awareness of brand actor advertising.

The purpose of the study was to assess the economic potential, prospects and factors of sustainable development of bakery products producers — actors of the brand “Real Vologda Product” by the method of multidimensional comparative rating based on the results of the marketing survey of the population.

We used a questionnaire marketing survey to investigate consumer opinion.

The list of 13 main questions in the questionnaire includes four types of questions. We applied different methods to quantify the results of respondents’ answers, aggregating and normalising them to obtain a quantitative coefficient assessment of the overall result of the respondents for each question for each brand actor included in the set of compared entities to build their ranking [8].

In the next step, the resulting coefficient assessments of the respondents' overall response to each question were aggregated for two indicators: brand member loyalty (a measure of commitment to the manufacturer, “heart share”) and brand member product availability (a measure of physical product availability), for which the respondent answered several questions in the questionnaire. The other indicators, for which there was only one question in the questionnaire, did not require the aggregation of the result of the respondents' answers.

Since the aggregates are coefficients, the geometric mean methodology applied in such cases was used to summarize and determine essentially their mean.

Based on the system of indicators discussed, represented by the indicators of the economic block and the consumer assessment block, it was possible to provide an in-depth and detailed comparative analysis of brand member producers by applying the methodology of a multidimensional comparative and comprehensive assessment.

The methodology for the comparative composite assessment of brand member producers relies on a multidimensional comparison algorithm regarding the indicator system discussed and includes the following steps:

- standardising indicator values; 
- constructing a square matrix for each indicator with the values of private comparative levels between each pair of brand participants in the study population; 
- summarizing the derived matrices with partial levels into a final comparative assessment matrix with summary levels by determining the sum of the values of the partial levels according to the place in the matrices for the whole indicator system for each brand member; 
- constructing a final assessment matrix by calculating the values of the levels of summary comparative scores for each brand actor;
transforming the derived summative assessment levels of brand actors to produce an integrated assessment level value by converting the summative assessment level value to a non-negative form, comparing the non-negative summative assessment levels to the maximum value in their aggregate and presenting the result as an integrated summative comparative assessment level (Integrated Comparative Assessment - ICA); 

- analysing and comparing the integrated assessment levels of the participating brand producers;
- determining the participation degree of the levels of indicators for each block in forming an integrated assessment level by calculating the block relative assessment levels of brand participants according to the above described methodology, based on the previously calculated private levels of comparative assessments of the indicators for the selected blocks;
- qualitative characteristics of the level of assessment received by each brand member according to the blocks of indicators based on an interval scale of values of the received integrated levels, construction of the rating and typological grouping of brand member producers.

The level of integrated comparative assessment of a brand member against one or another of the four domains outlined characterises its economic potential, consumer demand and the degree of attribute manifestation according to the highlighted blocks of indicators.

### 3 Results and discussion

The questionnaire survey “Real Vologda product – Bread products”, conducted online via Google Form, captured the opinions of 105 respondents who wished to take part in this survey.

The questionnaire investigated consumer opinion on the products of the producers participating in the brand “Real Vologda Product”, specialising in the production of bread and bakery products. The list of manufacturers included 18 brand participants from this product group.

The processing of the responses according to the methodology described above has resulted in forming a system of indicators of consumer assessment to apply in practice a multidimensional comprehensive comparative assessment of producers - participants of the brand “Real Vologda Product” and the construction of their rating for the product group “Bakery products.”

Further, under the methodology of multidimensional comprehensive comparative assessment (Shikhova, Selina, Barinova, 2020), we normalised their values and calculated partial comparative assessments of the indicators for this block of consumer assessment indicators. Summarizing the values of private assessments enabled to calculate the values for the integrated level of comparative assessment of manufacturers-participants in the product group “Bakery products” of the brand “Real Vologda product” on the block of indicators of consumer assessment and to build their rating.

To calculate the values of the economic block indicators, we collected initial information on the accounting (financial) statements of enterprises from the official website of the Federal State Statistics Service of the Russian Federation.

![Fig. 1. Ranking of producers participating in the “Real Vologda product” brand in the product group “Bakery products” according to the value of the aggregated complex comparative assessment.](image-url)
Further, under the methodology of multidimensional comprehensive comparative assessment described in [7], we normalised their values and calculated partial comparative assessments of the indicators for this block of consumer assessment indicators. Summarizing the values of private assessments, we calculated the values of the integrated level of comparative assessment of producers participating in the product group "Bakery products" of the brand “Real Vologda product” on the block of economic indicators and build their rating. In addition, the same methodology calculated sub-block integrated scores for each of the four indicator groups in this block to detail the conclusions of the overall brand assessment of the participants in a given product group.

Building the rating of producers of bakery products – participants of the brand “Real Vologda product” in the whole system of indicators, including both problematic blocks, required according to the same methodology the aggregation of assessment results by blocks. The results are shown in the figure (Figure 1).

The results of the study show that the leader of this product group in the brand “Real Vologda Product” according to the aggregate value of the integrated comparative assessment is ZAO “Vologodsky Khlebokombinat” (ICA is 100%).

According to the interval value scale of the integrated level of comparative assessment (Table 01), its value can be characterised as high. In the same interval of the scale there are values of integral estimation of four more participants of the brand – ООО “Trud” (ICA is 74.6%, 2nd place in the rating of participants), PK “Sazonovsky Khlebozavod” (ICA is 73.8%, 3rd place), PO “Kholebozavod” (ICA is 71.8%, 4th place) and ООО “Totemsky Khleb” (ICA is 70.5%, 5th place in the rating).

We should note this high level of aggregate scores for these three branded product manufacturers is due to the rather high scores for the economic block of indicators (Figure 2).

According to the results of the generalization of respondents’ opinions ZAO “Vologodsky Khlebokombinat” is also the leader in the rating of consumer assessment, taking the first place by all indicators except for the indicator of product availability (score 93.6%, 2nd place in the rating after OAO “Slavyansky Khleb”) (Figure 3).

Table 1. Interval scale of values for the integrated level of comparative assessment of brand member manufacturers.

<table>
<thead>
<tr>
<th>Level value area</th>
<th>Interval boundaries</th>
<th>Characteristics of the assessment level of the participant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>70 ≤ ICA ≤ 100</td>
<td>high</td>
</tr>
<tr>
<td>2</td>
<td>50 ≤ ICA &lt; 70</td>
<td>above average</td>
</tr>
<tr>
<td>3</td>
<td>30 ≤ ICA &lt; 50</td>
<td>below average</td>
</tr>
<tr>
<td>4</td>
<td>0 ≤ ICA &lt; 30</td>
<td>low</td>
</tr>
</tbody>
</table>

We should note this high level of aggregate scores for these three branded product manufacturers is due to the rather high scores for the economic block of indicators (Figure 2).

Fig. 2. Ranking of producers participating in the “Real Vologda Product” brand in the “Bakery Products” product group according to the value of the integrated comparative assessment of the economic block of indicators.

According to the results of the generalization of respondents’ opinions ZAO “Vologodsky Khlebokombinat” is also the leader in the rating of consumer assessment, taking the first place by all indicators except for the indicator of product availability (score 93.6%, 2nd place in the rating after OAO “Slavyansky Khleb”) (Figure 3).
Fig. 3. Ranking of producers-participants of the brand "Real Vologda Product" in the product group “Bakery products” according to the value of the integrated comparative assessment of the block of indicators of consumer opinion.

In the economic block of indicators the level of an integrated comparative assessment of ZAO “Vologodsky Khlebokombinat” is only above average (61.6%) and 8th position in the rating for this problematic block, which is explained by the low level of ratings for indicators of liquidity and solvency (17.3%, 6th place in the rating), business activity (27.7%, 11th place of 18 in the rating of participants) (Figure 2).

The second place in the consumer rating is occupied by OAO “Slavyansky ‘Khleb’”, but we should note that the value of the integrated indicator is significantly lower than that of the leader and amounts to 57.6%. Summarizing the consumers' opinions on the totality of indicators in this block, we can say that this company is second in the ranking by almost all items, except for the first place for the level of product availability and fourth place for the level of perceived product quality (62.2%) and the level of its territorial prevalence (27.2%).

The third and fourth positions in the consumer ranking belong to AO “Russky Biscuit” (37.8%) and OOO “Vologodsky Kombinat Hleboproductov” (36.9%), respectively, but their integrated score for this block is significantly lower than the average (Figure 3). According to the results of the survey, respondents were quite appreciative of the quality and availability, as well as the price level of these companies' products. However, assessments of the level of advertising visibility, image recognition of enterprises and, as a consequence, indicators of market share, product prevalence and consumer loyalty to them are low. These businesses, like all but the leaders in this product group, should pay serious attention to the effectiveness and vigour of their marketing policy.

Of course, it is difficult for small businesses in this product group to compete with the leaders in the consumer market, as they have a narrowly defined task of providing fresh bakery products and confectionery to the consumer in the immediate vicinity of the production site. This is why the products of small businesses in this product group are little known to the general public in the region and even less so outside it. If the objective is to expand the market, to reach a new customer, this will require additional financial investment to expand and modernise production, to diversify the range of products, and to build a strategy for entering new markets. This is possible through effective product branding but requires investment and support.

There is a marked difference in the alignment of the integrated assessments of the problematic blocks in this product group with the ratings for the meat and dairy producer groups. Whereas in the previous two cases of testing the comprehensive rating methodology, consumer opinion leaders mostly had high scores on the block of economic indicators, the situation in the case of the product group of bakery product producers is uncharacteristic (Figure 2).

Thus, the 2nd and 3rd positions in the rating by the level of aggregate assessment occupied OOO “Trud” (74.6%) and PK “Sazonovsky Khlebozavod” (73.8%). Such a high position was due to a high level of integrated assessment by the block of economic indicators (accordingly 100% – 1st place for OOO “Trud”, and 89. 1% – 3rd place for PC “Sazonovsky Khlebozavod”), but at the same time the levels of consumer assessment for them are very low (OOO “Trud” – 6.4% and 14th position out of 18 in the consumer rating, PC “Sazonovsky Khlebozavod” – 18.9% and 8th place). However, the above leaders of the overall ranking are significantly inferior to these companies in terms of their aggregate economic capacity.
scores. This fact allows us to conclude that such brand participants as OOO “Totemsky Khleb”, OOO “Trud”, PK “Sazonovsky Khlebozavod”, PO “Khlebozavod”, OOO “Baker” can expect an increase in loyalty and popularity with the Vologda Oblast population when expanding the sales of manufactured products and using an active marketing policy.

4 Conclusion

The analysis of producers of bakery products participating in the brand "Real Vologda product" on the basis of a comprehensive approach allowed to identify the strengths and weaknesses of these enterprises, their economic potential and the prospects for the development of this sector of the agricultural market in the region. The identified factors of economic sustainability of this category of producers, determined by consumer demand for the products of this product group, have made it possible to identify possible areas of expansion of the sales market both within and outside the region. Products of agricultural origin made from certified organic raw materials have a clear competitive advantage over products from neighbouring regions and imported products.

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