

# Marketing research on the study of consumer preferences for sweet dishes

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**Abstract.** The article presents the analysis research results of the confectionery mass market of production and consumption. A comparative characteristic of the confectionery products consumption by residents of Russia and Europe is carried out, the reasons for the differences in consumption are clarified. An analysis of the confectionery market in Russia in 2015–2019, coronavirus impact assessment on it, and a forecast for 2020–2024, according to “*Businessstat*” data, is presented. Based on the Russian State Policy goals in the field of healthy nutrition, the production priorities of the raw materials food main types that meet modern quality and safety requirements are determined, the introduction development vector of additional regional raw materials is determined, taking into account the of the region population traditions: berry raw materials, algae (kelp). When conducting marketing research, the methods of qualitative and quantitative analysis were used in this work. Marketing research was conducted using the questionnaire method, the sample size was 100 random respondents. The object of the study was consumer preferences when choosing sweet dishes. The survey examined consumer preferences in the category of sweet dishes: whether consumers of Murmansk region buy sweet dishes, where they buy them, what kind of sweet dishes they prefer, what possible additives would be acceptable and preferable for the consumer, what Murmansk-city and the region residents rely on when choosing and buying a sweet dish. Based on marketing research, the sweet dish producing feasibility that meets the potential consumers requirements and preferences was revealed. The consumers interest in this product type enriched with berries of the Kola Peninsula is established.

## 1 Introduction

The main State policy task in the healthy nutrition field is to develop technologies for functional products, taking into account the traditions of the region population, as well as using local regional raw materials. The Russian Federation population majority nutrition does not comply with the principles of proper and healthy nutrition as a result of the high foods rich in simple carbohydrates consumption. The consequence of this is the various diseases development, that reduce the life quality.

According to the conducted analyses and studies, the northern regions population nutrition is characterized by insufficient consumption of fresh vegetables and fruits, meat, fish and seafood, which leads to a lack of certain vitamins and bio-elements (such as selenium, calcium, and others) [1].

Since it is impossible to exclude the confectionery products and sweet dishes consumption by residents of Russia, as well as northern regions such as Murmansk and the Murmansk region, the development of confectionery products with functional properties enriched with local wild raw materials, with a rich macro-and microelement composition, is a timely and

urgent task, based on the wishes of consumers and taking into account their preferences [2].

In the work [3], the authors found that the Russian Federation residents consume confectionery and sweet dishes in smaller quantities, in relation to the consumption of this goods group in some Western countries. At the same time, the bakery products consumption in Russia exceeds this figure in European countries by 49 %. These groups products consumption is influenced by the level of income of the population, traditions, and assortment. Sweet dishes and confectionery products do not belong to the basic necessities, and the demand for this group of goods always increases with the increase in the material well-being of the population [4].

Considering the confectionery market, it can be noted that it is very complex. It is influenced not only by general economic factors of macroeconomics, but also by the annually changing situation on the market of flour, sugar, fat-and-oil and dairy products.

The market supply of this products category also depends on the production and supply of nuts and dried fruits, thickeners and flavorings, preservatives and essences. And at the same time, very often fresh fruits and berries are replaced by analogues, additives identical to natural or artificial variations of fresh berries.

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There is also a huge range of confectionery products that are presented on the market. Over the past few years, the number of items has increased dramatically, while the quality has significantly decreased, due to the desire to reduce the cost of production and finished products to generate more profit. This was especially noticeable in relation to the quality of imported confectionery products.

The state policy goals in the healthy nutrition field are to preserve and strengthen the health of the population, to prevent diseases caused by inadequate and unbalanced nutrition. In accordance with this, one of the priority tasks in this area is the domestic production expansion of the food raw materials main types, that meet modern quality and safety requirements, and monitoring the state of population nutrition [5].

Using the possibility of introducing biologically full-fledged, balanced, rich in trace elements, and most importantly, natural and natural additives, such as gelatin, berry raw materials, algae (kelp), will help to reduce the calorie content and make confectionery products more correct in terms of composition, and useful for the consumer [6, 7, 8, 9].

The purpose of this work is to identify the preferences of the main population group of residents of the city of Murmansk and the Murmansk region.

To achieve this goal, the following tasks were formulated:

- to conduct a sociological survey of the Murmansk and the region population consumer preferences in relation to the sweet dish consumption;
- conduct a respondent's reports quantitative analysis of the to identify the sweet dish consumption specifics;
- to determine the possible interest of potential sweet dishes consumers after the developed sweet dish introduction into mass production using raw materials from the North-West region.

## 2 Materials and methods

To conduct market research, we used the collecting primary data method during a survey of random respondents. To collect primary data, a special questionnaire was developed to study the problem [10].

In this work, the methods of qualitative and quantitative research were used. Marketing research was conducted using the questionnaire method [11], the sample size was 100 random respondents. The object of the study was consumer preferences when choosing sweet dishes.

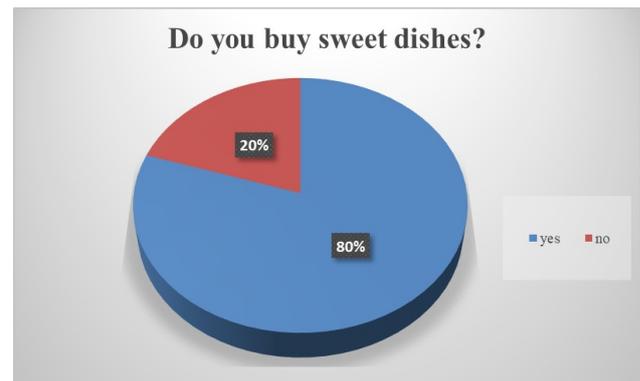
## 3 Results and discussion

According to "Businessstat" estimates, in 2015-2019, sales of confectionery products in Russia grew annually. In 2019, 3.6 million tons of confectionery products were sold in the country, which is 11.7% higher than in 2015.

The confectionery market growth in 2015–2019 was promoted by a number of factors, including the retail chains development, the confectionery product line expansion, and the strengthening of manufacturers and retailers marketing campaigns [12].

The respondent's survey was conducted in the age group from 18 to 50 years, the purchasing power is different (with low, middle and above-average income).

Initially, to identify a potential and interested audience, respondents were asked the question *Do you buy sweet dishes?* A pie chart of the responses is shown in Figure 1.



**Fig. 1.** Percentage of respondents' responses to the question: *Do you buy sweet dishes?*

Analyzing the responses received, it turned out that the vast majority of respondents – 80% – answered *positively* and 20% of respondents answered *negatively*. Thus, the relevance of developing a sweet dish is obvious, but more data is needed to understand a more complete picture of consumer preferences.

In the course of studying the priority places for purchasing sweet dishes, respondents were asked the question *Where do you buy sweet dishes?* An analysis of the responses showed that 55% of the respondents surveyed said that they buy sweet dishes in retail stores. At the same time, 18% – in public catering enterprises and various confectionery and bakeries, 5% – in cooking departments and 4% – in cooking stores. Figure 2 shows a pie chart of respondents' responses.

Thus, the maximum number of respondents buy sweet dishes in retail outlets, so the technology recipes development for sweet dishes, adapted to this type of implementation is in demand.

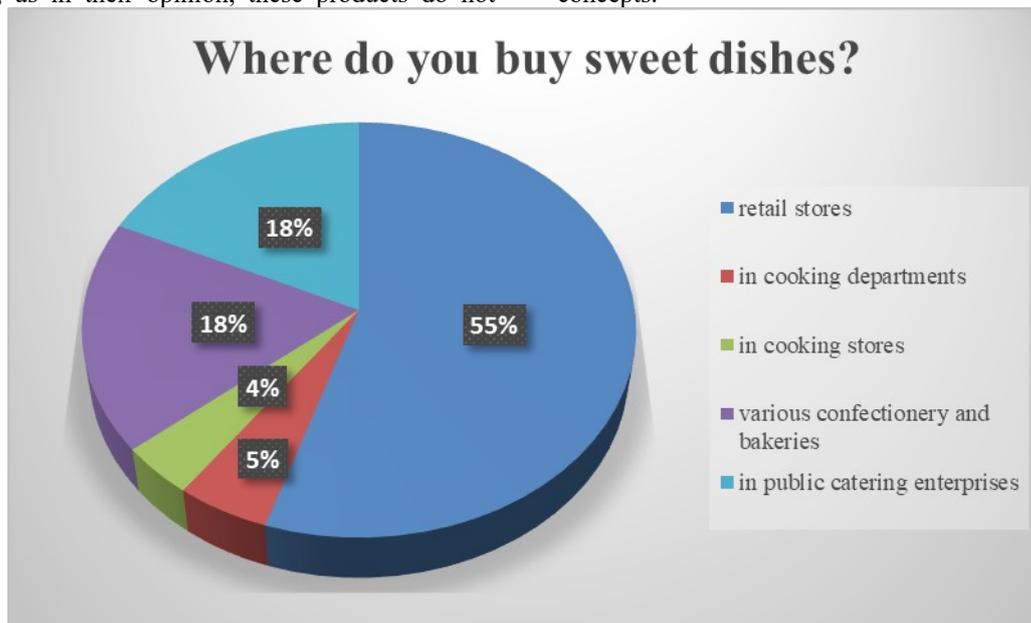
Further, when studying the preferences for the assortment of sweet dishes, the question was asked *What do you prefer to buy sweet dishes?* Figure 3 shows a pie chart of respondent's responses.

Analyzing the results presented in Figure 3, it was found that 34% of respondents prefer to buy desserts based on cream, 29% – sweet gelled dishes, 19% – just a sweet dessert, at least 18% of respondents choose a dessert based on butter cream.

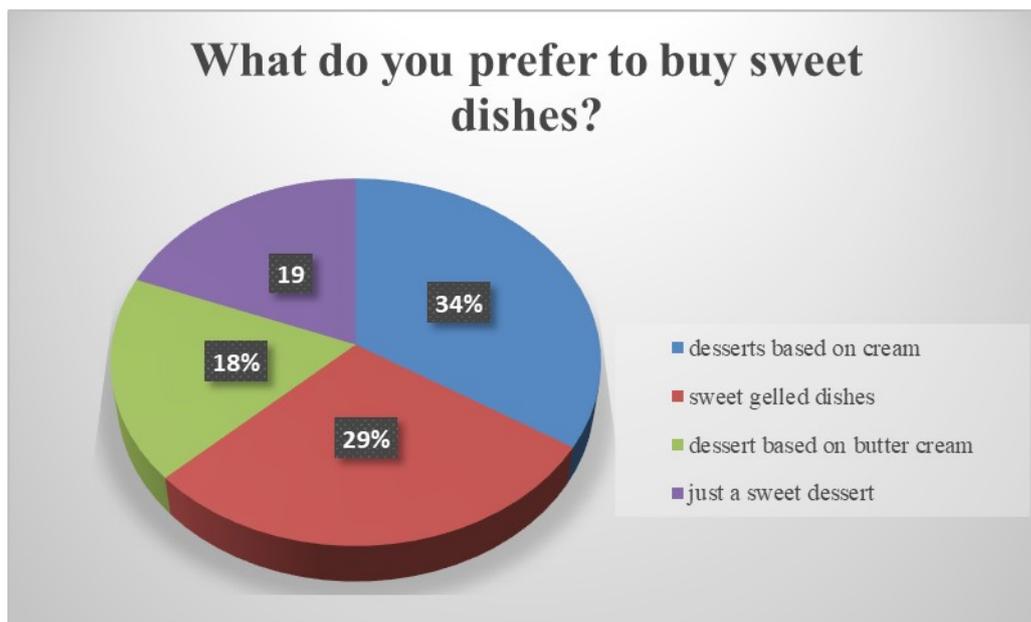
It can be concluded that when developing new technologies, it is advisable to pay attention to the technology of cream-based desserts, as well as to pay attention to gelatin-based desserts. Desserts based on

buttercream are interesting to a small group of consumers, as in their opinion, these products do not

meet the requirements of modern healthy nutrition concepts.



**Fig. 2.** Percentage of respondents' responses to the question *Where do you buy sweet dishes?*



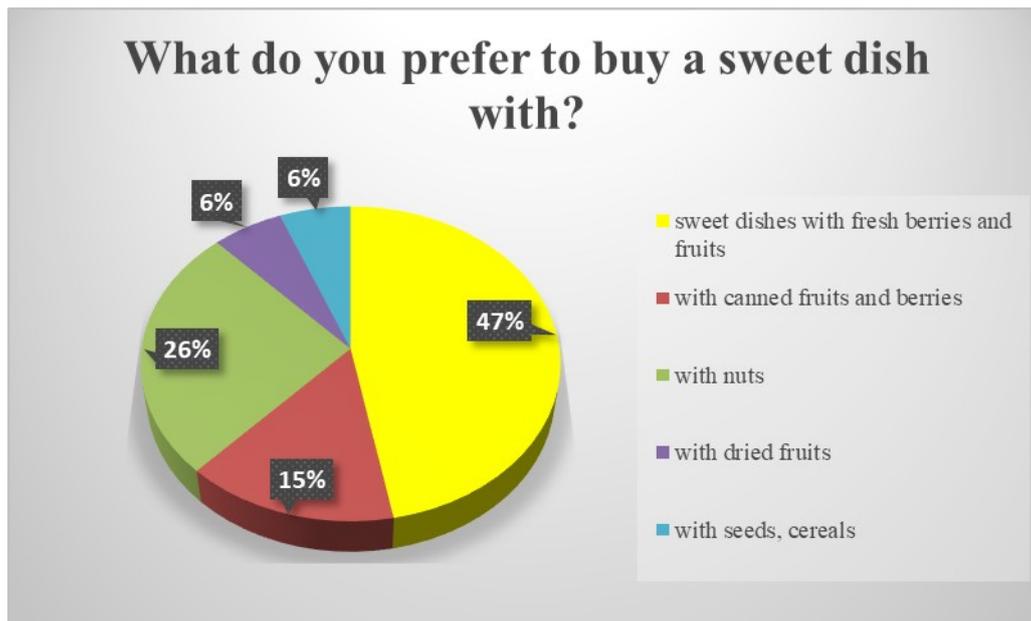
**Fig. 3.** Percentage of respondents' responses to the question *What sweet dishes do you prefer to buy?*

After analyzing consumer preferences for additional ingredients that are part of desserts and sweet dishes, respondents were asked the question *What do you prefer to buy a sweet dessert with?* Analyzing the answers, we found that 47% of respondents prefer to buy sweet dishes with fresh berries and fruits, 26% – with nuts, 15% – with canned fruits and berries, 6% – with seeds, cereals and dried fruits. Figure 4 presents a respondents' responses pie chart.

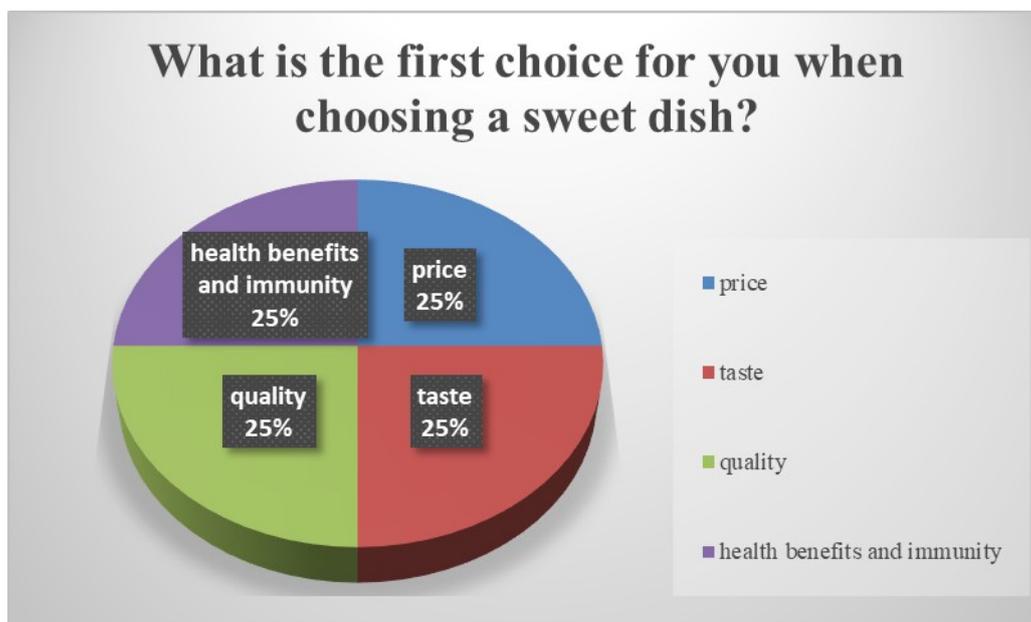
Based on the data obtained, it can be concluded that the development of technology for preparing sweet dishes with the use of fresh berries, the richest in vitamin composition, and nuts, rich in vegetable fats, as

additional ingredients to improve the taste or as a decoration of dishes, is relevant, since most of the respondents understand the significant advantage of this type of additives in comparison with ingredients that have undergone heat treatment or drying.

To understand a more complete picture of the potential consumers preferences, the respondents were asked the question *What is your first priority when choosing a sweet dish?* The analysis of the respondents' responses showed that preferences were divided equally between the indicators: *price, taste, quality, health benefits and immunity*. A pie chart of respondent's responses is shown in Figure 5.



**Fig. 4.** Percentage of respondents' responses to the question *What do you prefer to buy a sweet dish with?*



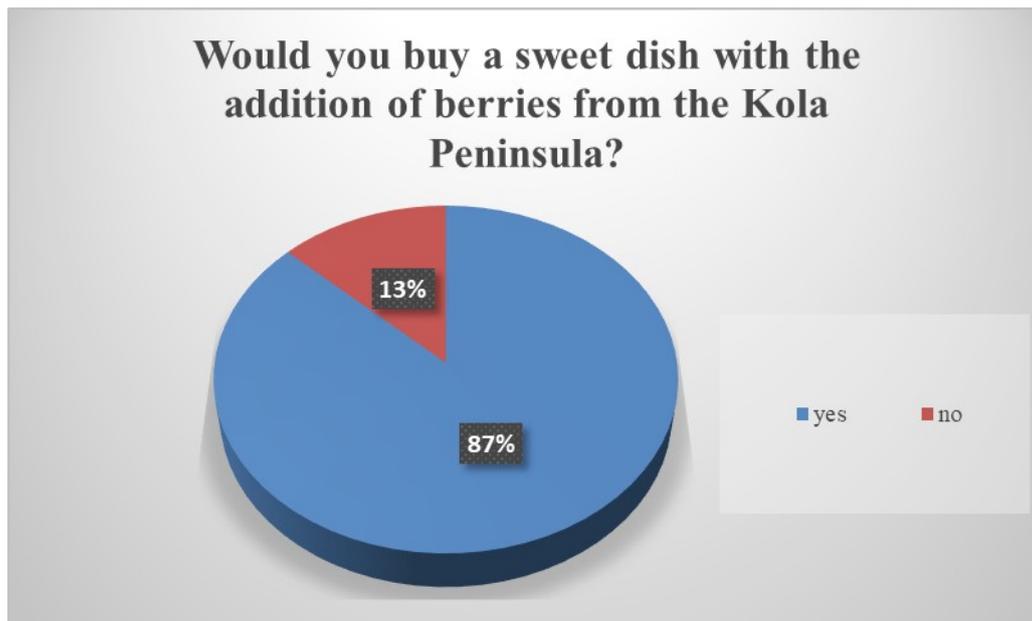
**Fig. 5.** Percentage of respondents' responses to the question *What is the first choice for you when choosing a sweet dish?*

Based on the data presented in Figure 5, it is revealed that consumers, when choosing a sweet dish, are based not only on monetary costs, but also important aspects are organoleptic indicators, and the impact on the health of the respondents themselves and their family members.

Also, an important aspect for the research and development of the sweet dish preparing technology was the expediency of using rather unconventional regional raw materials in sweet dishes and desserts [13]. To analyze this area, the respondents were asked the

question *Would you buy a sweet dish with the addition of berries from the Kola Peninsula?* The analysis of the responses showed that 87% of the respondents responded positively and 13% – negatively. Figure 6 shows a pie chart of respondent's responses.

Based on the data presented in Figure 6, it can be concluded that potential consumers are interested in the appearance of a sweet dish with regional berries on the market, knowing about the microelement value and vitamin benefits of this raw material [14, 15].



**Fig. 6.** Percentage of respondents' responses to the question *Would you buy a sweet dish with berries from the Kola Peninsula?*

## 4 Conclusion

Thus, as a result of the conducted research and analysis of the respondent's responses, the confectionery market and the offers for 2020–2024 forecast, the interest of Murmansk and the Murmansk region consumers in purchasing sweet dishes using North-Western region berries was revealed. The value of these marketing research is high, as it gives an understanding of the feasibility of further sweet dish *Cranberry chocolate cream* creature, which includes milk cream, cranberry and cloudberry berries, as well as hazelnut kernels.

## References

1. N. I. Didenko, V. A. Davydenko, E. R. Magaril, G. F. Romashkina, D. F. Skripnuk, S. V. Kulik, The nutrition and health status of residents of the Northern Regions of Russia: Outlook of vertical agricultural farms, *Public Health* **18**, [doi: 10.3390/ijerph18020414](https://doi.org/10.3390/ijerph18020414) (2021)
2. V. F. Korolkov, V. V. Bragie Design and manufacture of products based on consumer expectations, *Standards and quality* **11**, 64–65 (2003)
3. A. V. Ryzhakova, O. A. Babina Global confectionery market, *International trade and trade policy* **4** (12), 59–74 (2017)
4. I. A. Kuznetsov, A. S. Nikolashin, Socio-economic state of the regional confectionery market in the period of import substitution policy, *Economics and Business: theory and practice* **11**, 90–95 (2017)
5. Fundamentals of the state policy of the Russian Federation in the field of healthy nutrition of the population for the period up to 2020 (2010)
6. E. I. Muratova, S. I. Dvoreckii, P. M. Smolikhina, Optimization of the composition of confectionery products, *Vestnik TGTU* **1**, 130–140 (2015)
7. S. Vislouhova, A. Shevchuk, Confectionery products of the new generation, *Science and Innovation* **171**, 30–33 (2017)
8. A. S. Zaharova, L. A. Kozubaeva, E. Y. Egorova, Flour confectionery products with lingonberries, *Polzunov's Bulletin* **4**, 17–20 2019
9. Z. A. Kanarskaya, F. K. Khuzin, A. R. Ivleva, V. M. Gematdinova, Trends in the development of confectionery technology, *Vestnik VGUIT* **3** (69), 195–204 (2016)
10. E. P. Golubkov, *Marketing Research: Theory, Methodology and Practice* (Moscow: Finpress, 1998)
11. A. G. Bondarenko, *Sociological research: Survey Methodology* (Volgograd: VolgGTU, 2006)
12. Analysis of the confectionery market in Russia in 2015–2019, assessment of the impact of coronavirus and forecast for 2020–2024
13. E. G. Turshuk, *Development of Valuable Food Products with The Addition Of Medicinal Natural Raw Materials Of The Far North And Their Commodity Characteristics* (Murmansk: Murmansk State Technical University, 2008)
14. E. E. Kharmich, E. G. Turshuk, Research on the properties of cranberries of the Kola Peninsula for the development of sweet dishes, *Collection of reports of the regional scientific and practical conference "Key factors of development of the*

- Northern territories of Russia*” (Murmansk, PINRO named N. M. Knipovich) pp 120–123 (2018)
15. E. E. Kharmich, E. G. Turshuk, Study of the chemical composition and vitamin activity of dishes based on cranberry berries of the Far North, *Collection of reports of the regional scientific and practical conference “Key factors of development of the Northern territories of Russia” (Murmansk, Murmansk PINRO named N. M. Knipovich)* pp 221–233 (2019)