

Journal of Medicinal and Chemical Sciences

Journal homepage: www.jmchemsci.com



Original Article

Analysis of the Prospects of a Small Enterprise for the Production of Bakery Products in Russia, Considering Current Market Problems and Chemical Health Risk

Petr Alekseevich Kapyrin^{1,*}, Dmitry Vladimirovich Kozhinov¹, Valery Ivanovich Khoruzhy², Larisa Nikolaevna Gerasimova³, Evgeny Victorovich Grishin⁴, Lyudmila Vyacheslavovna Goloshchapova⁵

- ¹K.G. Razumovsky Moscow State University of technologies and management (the First Cossack University) (RAZUMOVSKY MSUTM (FCU)), Moscow, Russia
- ² Institute of Economics and Crisis Management, Moscow, Russia
- ³Moscow State University of Civil Engineering (National Research University) (MGSU), Moscow, Russia
- ⁴Kuban State Agrarian University named after I.T. Trubilin, Krasnodar, Russia
- ⁵Plekhanov Russian University of Economics, Moscow, Russia

ARTICLE INFO

Article history

Received: 2021-02-28

Received in revised: 2021-03-06

Accepted: 2021-04-09

Manuscript ID: JMCS-2102-1162 Checked for Plagiarism: **Yes**

Language Editor: Dr. Behrouz Jamalvandi

Editor who approved publication:

Dr. Zeinab Arzehgar

DOI:10.26655/JMCHEMSCI.2021.2.11

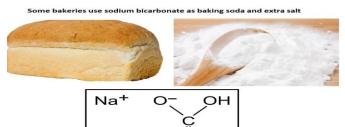
KEYWORDS

Bakery products Market Small bakery Chemical health risk

ABSTRACT

In most cultures, bread is considered a rich and valuable food source. In bread processing, some bakeries use sodium bicarbonate as baking soda and extra salt and these chemical compounds have harmful effects on public health. The article analysed the state of the Russian bakery products market and the prospects for entering into it a new small bakery in order to occupy a new market niche. Particular attention is paid to the prospects of business development in the context of a possible restructuring of the market model, in connection with the global quarantine situation. A search and analysis of a potential market segment for the implementation of a small baking enterprise was carried out. The article analysed the strategic decisions recommended for small enterprises in the field of bakery production, which can facilitate entry and consolidation in the target market segment, as well as possible ways to expand this market segment. An analysis of the strengths and weaknesses of small and large enterprises of the bakery industry was also carried out to reveal their competitive advantages and weaknesses. Based on this analysis, behavioural models for small bakery enterprises in the market are proposed that will allow them not to enter into direct competition with large bakery producers, which is almost impossible, due to the inability of small businesses to compete effectively with large enterprises for a considerable period of time (commutative behaviour model adapted to the industry in question).

GRAPHICAL ABSTRACT



* Corresponding author: Petr Alekseevich Kapyrin

☑ E-mail: <u>irinakrish2000@gmail.com</u>© 2021 by SPC (Sami Publishing Company)

Introduction

Acrylamide, sometimes found in bread, is a compound that is legally listed as a carcinogen, mutagen and a reproductive toxicant. Since bread is eaten both worldwide and in Russia, it is of high interest to determine the acrylamide in different types of bread. Also, the use of various flours for bread baking is becoming common worldwide, and efforts need to be made to understand the effects of flours on bread's chemical and physical profiles. The use of these flours is not only motivated by consumers who are searching for healthier foods, but also by the industry itself, which seeks innovation to keep profits and seduces customers to buy new products. The differences and specificities of each type of bread stand out by analysing the chemical and physical profile, and all of them seem to have their advantages and disadvantages [1,2]. Currently, the range of bakery products is rich, very diverse and is constantly updated with new flavouring options. Among them are products such as bread of various types and formats, buns, croissants, bagels, muffins, tortilla, tacos, naan, pita, rolls, unsweetened pastry, papadam, focaccia, bread sticks and much more. Innovations in the bakery industry stimulate the growth of bakery product categories. Thus, the global bread market is constantly evolving, offering consumers more and more solutions, both traditionally and originally.

Bread and bakery products are consumed by people all over the world. The difference is only in the types of bread that are most common in a particular region. Many consumers prefer to eat bread with every meal. This trend is typical, for example, for residents of South Africa, in which, according to Mintel, a combination of high growth in the bread market and high demand for these products is predicted. The markets for bakery products from countries such as China, Vietnam and Turkey are actively developing, but consumer demand is quite low. In these states, consumer interest shifts from unpacked bread products to conveniently packaged bread. The markets of developed countries demonstrate low

growth, including the UK, New Zealand, Germany and others. According to the results of monitoring the Mintel Global Base for New Products, from January 1, 2014 to January 20, 2015, 1,746 new products were launched on the world market in the category of bread and bakery products. Of these, 787 were in Europe (22 in Russia), 482 in the Asia-Pacific region, 250 in Latin America, 178 in North America and 50 in the Middle East and Africa.

The market condition depends on many factors: Supply and demand, the political and economic situation in the country, the solvency of the population, the competitive component, etc. Not so long ago, the global financial crisis led to the massive closure of restaurants and cafes. It is the HoReCa segment, especially its elite section, that has suffered the most. People, trying to save money, deleted it from the list expenses for visiting food establishments or simply changed their habits - they paid attention to inexpensive democratic formats [3-8]. The bakery market was also waiting for changes; however, the events of another twenty years ago - the transition to a market economy, the development of the private sector, had an impact on this industry. Despite the fact that bread is an essential product and they will always buy it (it is difficult to argue with this), the production, sale of bakery products, the attitude of consumers to it in general, is changing dramatically. Let us try to trace the main trends of the baking market that determine its current situation [9–12].

Material and methods

Bread has always been one of the main food products in Russia and invariably occupies a leading position in the list of vital foods. It would seem that the demand for such a product should be stable or grow with constant dynamics. However, market research has shown that over the years there has been a steady decline in demand for bakery products, and in 2017, the demand collapsed (Figure 1). Next, we observe recovery processes with a forecast of stable growth. We examined the reasons for this decline

and the reasons for optimism regarding the recovery dynamics of the market [13–18].

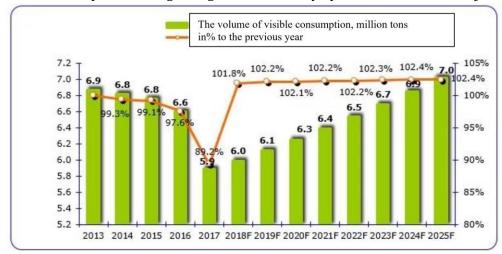


Figure 1: Dynamics of consumption of bakery products in Russia since 2013 and forecast up to 2025. (Source: Rosstat, Federal Customs Service, IndexBox analytics)

The main reasons for the fall in the bakery market are:

- 1. The systematic rise in price of bakery products. This reason is not the main one and led to a gradual decline in the market, which was countered by most manufacturers by changing formulations and introducing alternative raw materials.
- 2. Promoting a healthy lifestyle. This factor can be considered the main reason for the strong market decline, while it also serves as the main driver for the growth of small enterprises in the bakery industry bread produced according to the usual recipe was considered an unhealthy product. The peak of the development of healthy lifestyles in Russia fell in 2013-2015; however, the economic problems associated with the sanctions policy smoothed out the decline in the market we are considering the decline in incomes did not allow us to adjust the food basket to a healthier but more expensive diet for most consumers.

The main reason for the fall in the bakery market, based on the above factors, is the lack of any significant offer of products that fit the definition of a healthy diet, such as fortified bakery products, bread with biologically active additives, iodine-fortified products, etc.

The recovery trend that has been observed since 2017, just basically falling on the market segment of bakery products for people leading a healthy

lifestyle. It is predicted that this market segment will grow at a rate of 2-3% per year and will reach approximately 30% of the total market for bakery products by 2030. At the same time, one should not forget that this growth is largely due to the withering away of the traditional segment of the bakery products market [19–25].

Result and Dissection

Today, the need for new recipes for bread and bakery products is covered mainly by small and medium enterprises in the industry. This is due to the low profitability of large bakery plants - 2 - 5%, according to various estimates - the process of starting production of new road products will take too long to pay off. An important role in the low profitability of large enterprises is played by the lack of their own sales outlets and large retailers setting up their own bread baking. However, one should not forget that the larger the market volume of bakery products for healthy nutrition, the greater the likelihood of a large producer entering it.

In addition, we cannot ignore the new, extremely significant factor in the Russian economy in March 2020 - the corona virus and related quarantine measures. At the time of writing (late March - early April 2020), we still cannot see the general dynamics of market changes. However, already now, we see a major failure of retail trade

and an avalanche-like growth in the food delivery market. Naturally, a significant drop in retail is due to the fact that people were mocking some time before these events and also feared the disease. However, it is safe to say that after the completion of the coronavirus history, a significant number of consumers will get used to the new scheme of ordering and receiving food. Given that the market for the delivery of goods, even before 2020, was considered to be booming and occupied approximately 10% of the total turnover, we can expect its growth in 2020 (according to various scenarios) from 5% to 25%. In this paper, we took a cautious position and dwelled on the forecast of growth in the market for the delivery of goods at 10% of the total volume for 2020. Thus, by the end of 2020, we can expect stabilization of the delivery wound by approximately 20% of the country's total trade.

Accordingly, we can make the assumption that the greatest prospects among the enterprises of the bakery industry are small companies that focus on responding quickly to the rapidly changing demands of their market segment, specializing in the production of non-traditional varieties of bakery products and having their marketing infrastructure, preferably own oriented on online sales and delivery of finished products to the consumer. Future research may consider the analysis of possible market prospects, in the new reality of total global quarantine.

Today, probably, we are entering an era of new socio-economic relations, which will be characterized by an increased demand for online purchases with delivery and a decrease in the number of social contacts.

Already a large number of people, being in social isolation forced by quarantine measures, are transferring the sphere of their communication and interests to the online environment. From the point of view of promoting a product on the market, this leads to the following consequences:

1. The need to increase the share of online advertising in product positioning, which is a significant advantage for small businesses; the tools of agency in online advertising and tools for quickly restructuring advertising policies make it possible to quickly and relatively cheaply find customers and evaluate a potential market segment.

- 2. The need for greater diversification within the proposed line of food products. No matter how people like this or that food product, in our case bread, in most cases, sooner or later the client begins to try something new. On this basis, the bakery should support a wide range of products. For a large enterprise, this can be a problem - the wider the range, the more expensive it is to maintain production. However, for small enterprises, this factor is a powerful competitive advantage - the capabilities of the online store, if configured correctly, make it possible to satisfy extremely wide lines of customer requests, and the ability to quickly restructure to produce small batches of the product will help keep the customer base.
- 3. The need to develop and maintain brand awareness. A small bakery will need to build on the consumer a commitment and trust not in the type or recipe of the product, but in its manufacturer. In offline retail, the client is more likely to choose the place of purchase of food products based not on the brand of trademarks, but on their geographical availability. Simply put, which store is closer to home, then the client will go to that. With online trading, the customer does not care where the production, warehouse, etc. are located - the very concept of ordering via the Internet and delivery makes this completely irrelevant. Therefore, in order to create a stable customer base for a small enterprise, when working with the online environment, it is absolutely necessary to create a brand that will make the buyer want to go shopping again and again to him.

Also, an urgent need is the development of new business models under quarantine measures of varying degrees of severity and the possibility of their repeated repetition and/ or long duration. The development of such models is quickly impossible; we need to survive today's events, evaluate their consequences and identify the mechanisms of their course. However, already we can conclude that small enterprises need to look for suppliers of raw materials within their countries - in view of the possibility of total closure of borders for any transit. As a result, the customer base is also best formed in the immediate vicinity of production - the possibilities of targeted advertising can provide a similar option.

Potential market segment of a small bakery

The most promising direction of the small baking business, in modern conditions, is combining its own bakery with a retail outlet and organizing online sales with delivery. You can also open a mini-cafe in the hall, where the visitor can drink coffee with the company's products. However, the latter option leads to higher cost of production and to substantial losses during quarantine measures considered in the article [26]. You can also conclude an agreement with a grocery store, but we will lose the main advantages - the ability to quickly respond to customer requests, the possibility of flexible price competition and, most importantly, an individual brand - because of this, this option is not considered in the article.

Based on the foregoing, we can orient the small bakery to the following market segments:

1. A point near a metro stop, or another major transport hub. This company is likely to be the point of a "quick snack". Orienting it to the production of bread is impractical, rather, it is a variety of cakes and rolls with which the client is going to have a snack on the go. We also lose the possibility of online orders with delivery / pickup, because most customers live at a great distance and the products do not match the standard grocery basket. The advantage of this segment we can call a large customer flow. The downside is the lack of a regular customer base, great distrust of "snacking", and, as a result, the difficulty of creating a recognizable brand, the impossibility of moving the site online, while maintaining profitability in quarantine activities. The price segment is low and, to a lesser extent, average.

2. Shop-cafe in a large shopping centre. As part of the food courts of the shopping and entertainment centre, the company can gain access to a large client base and consolidate its brand. However, the company still remains a "diner" with low opportunities for online orders and very high competition. In addition, the company is extremely dependent on the mode of operation of the mall - as a place of large crowds, food courts are among the first to suffer from quarantine measures. The price segment is medium and high. This option is best chosen by firms aimed at creating a network of institutions.

3. Shop-cafe format "near the house" in a residential area. In this segment, it is quite easy for a company to create a recognizable brand and establish online trading. At the same time, the café-confectionery is rather a catering company located not far from office centres or places of public leisure; therefore, as a cafe, it is unlikely to be in great demand, and the customer flow will be subject to seasonal fluctuations. In addition, quarantine measures will significantly reduce profitability, although the online segment will help the company maintain its existence for quite some time. The price segment is medium and high.

4. Mini bakery store format "near the house" in a residential area. For a newly formed small business, in our opinion, this is the best option for doing business. We can create a regular customer base, and the correct organization of the delivery service will minimize the cost of maintaining it the question is only in the right advertising; for example, you can unobtrusively "tie" the client to delivery orders at a strictly defined time, say, with the slogan: "We bake the freshest bread at 7-00 and 15-00). In addition, a well-functioning online segment will allow the company, with minimal losses, to survive quarantine and similar problems. A significant disadvantage of this format may be the need for relatively high starting costs for advertising - it is very difficult for a regular retail outlet to form a recognizable brand that inspires confidence. The price segment is low, medium and high.

Thus, a small bakery can be targeted at a wide range of market segments for bakery products; however, it is most fully disclosed in the format of a "store near the house", due to the relative simplicity of forming a customer base. In addition, this type of enterprise has a good potential for resistance to force majeure circumstances leading to a decrease in customer flow due to the ability to completely transfer its production to the service sector with an online ordering home delivery [27–32].

Recommendations for building market behaviour of a small baking enterprise

For small enterprises in the baking industry, we recommend a commutative (non-specialized, focus on satisfying private, rather than generalized consumer interests) way of building strategic market behaviour. This way of behaviour will allow you to adapt to the rapidly changing requirements of the target market segment. However, if the company is set to create a network structure, we recommend choosing a patent strategy - focusing on creating your own, unique market segment for a certain category of customers [33,34].

The main equipment that you may need to start your own production is shown in Figure 2. Note that due to the rather long life of the equipment, we can reduce its total cost by taking used equipment or leasing it.

Let us summarize the main advantages and disadvantages of business opportunities, previously identified in a single table (Table 1).

Table 1: Opportunities of a small bakery in various market segments

Table 1: Opportunities of a small bakery in various market segments				
Market segment	Pros	Minuses	Price policy	Recommended Market Strategy
A point near a metro stop or another major transportation hub	A large flow of customers. Narrow specialization.	Low brand awareness. Low brand confidence. Lack of opportunities for online sales.	Low and medium price category.	Patience. There is no way to study individual preferences.
Shop-cafe in a large shopping center.	uniqueness of the	Dependence on the	Medium and high price category.	Patient
Shop-cafe format "near the house" in a residential area.	Constant customer base. The simplicity of creating a brand and maintaining it at a good level. Possibility of remote delivery.	The inability to fully compensate for business losses due to quarantine measures using online services.	Medium and high price category.	Commutant.
Mini bakery store format near the house in a residential area.	wide range, adjusted in accordance with the requirements of the target market segment.	unique brand that inspires confidence and is able to keep the	Low, medium and high price category.	Commutant.

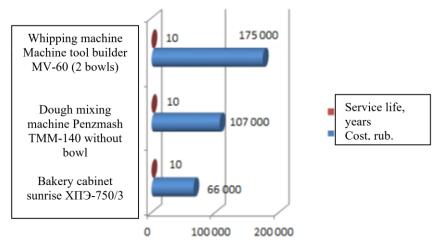


Figure 2: Cost and service life of the basic equipment needed by a small bakery

Another idea for a small baking business can be the manufacture and sale of mixtures for selfbaking bread. This approach can increase brand awareness and credibility. The advantages of this approach can be considered:

- 1. The low cost of production of such mixtures is the ability to create a large number of mixtures without the use of basic, expensive equipment (Fig. 1).
- 2. The long shelf life of finished products is much higher than that of products baked for sale.
- 3. Opportunity: How to adapt to the recipe needed by the client, and to sell additional ingredients separately is vital, so that the client can be creative. This enhances the brand's positive image.
- 4. Greater customer confidence in packaged products for self-preparation during quarantine events: The shorter the production process associated with the contact of the employee and the final product, the calmer the customer.
- 5. Home delivery of packages with a mixture for baking is much more convenient and safer than the delivery of finished products.

Conclusion

To sum up, we can conclude that in the next few years small enterprises will have the advantage of growth in the bakery market. This is due to the changing needs of target market segments. Increased demands will be made on the

uniqueness, usefulness and quality of products. Also, the newly emerging economic reality will impose requirements on the possibility of long-term work in conditions of isolation of entire groups of the population, and possibly entire cities, regions and even complete border closures. In view of this, a small bakery industry should have the following strengths:

- 1. Constant customer base.
- 2. The ability to fully switch to online sales.
- 3. Formation of a brand recognizable by customers.
- 4. Focus on the wide diversification of their products.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Authors' contributions

All authors contributed toward data analysis, drafting and revising the paper and agreed to be responsible for all the aspects of this work.

Conflict of Interest

We have no conflicts of interest to disclose.

References

- [1]. Sayar N., Karatepe A., *J. Med. Chem. Sci.*, 2020, **3**:308
- [2]. Abdi R., Ghorbani-HasanSaraei A., Naghizadeh Raeisi S., Karimi F., *J. Med. Chem. Sci.*, 2020, **3**:338

- [3]. Kiseleva N.V., Panichkina M.V., Klochko E.N., Nikonorova A.V., Kireev S.V., *Int. J. Econ. Financ. Issues*, 2016, **6:**294
- [4]. Rudoy Y.V., Matveev D.M., Stasiulis M.V., Suchkov A.I., Filimonova N.G., *Biomed. Pharmacol. J.*, 2015, **8**:811
- [5]. Krotkova E.V., Mullakhmetov K.S., Akhmetshin E.M., *Acad. Strateg. Manag. J.*, 2016, **15:**170
- [6]. Ling V.V., Yumashev A.V., *Espacios*, 2018, **39**:22
- [7]. Kuzmin P.A., Bukharina I.L., Kuzmina A.M., *Int. J. Econ. Perspect.*, 2017, **11:**1586
- [8]. Spasojević-Brkić V., Veljković Z., Brkić A., Perišić M., *J. Appl. Eng. Sci.*, 2020, **18**:387
- [9]. Melnikov A.B., Mikhailushkin P.V., Poltarykhin A.L., Dibrova Z.N., *Entrep. Sustain. Issues*, 2019, **7**:595
- [10]. Akhmetshin E.M., Solodova E.P., Selyutina A.V., Sharafutdinov R.I., Kulmetev R.I., in *Innov. Manag. Educ. Excell. Vis. 2020*, **2018**:3924
- [11]. Mikavica I., Ran\djelović D., \DJor\djević V., Gajić G., Mutić J., J. Appl. Eng. Sci., 2020, **18**:413
- [12]. Bisultanova A.A., Zemlyakova N.S., Razzhivin O.A., Udovik E.E., Adamenko A.A., *Espacios*, 2018, **39:**ID35721671
- [13]. Poltarykhin A.L., Dibrova Z.N., Kovaleva I., Vasyutkina L., Potekhina E., Zinisha O., *Entrep. Sustain. Issues*, 2020, **7**:2313
- [14]. Bolobov V.I., Chupin S.A., Bochkov V.S., Mishin I.I., *Gorn. Zhurnal*, 2019, **5**:67
- [15]. Fedulova I., Ivanova V., Atyukova O., Nosov V., J. Soc. Stud. Educ. Res., 2019, **10**:118
- [16]. Khormali A., Petrakov D.G., Moghaddam R.N., *J. Pet. Sci. Eng.*, 2017, **153**:257
- [17]. Pimnev A.L., Zemenkova M.Y., Zemenkov Y.D., Iljyashchenko D.P., in *IOP Conf. Ser. Mater. Sci. Eng.*, IOP Publishing, 2016, **127**:012049
- [18]. Dudukalov E., Spabekov G.O., Kashirskaya L.V., Sevbitov A.V., Voronkova O.Y., Vasyutkina L.V., *Dudukalov EV Spabekov GO Kashirskaya LV*
- Sevbitov AV Voronkova O Yu Vasyutkina LV

- 2020"Fiscal Goals Regul. Act. Inst. Control. Foreign Co. Digit. Econ. Entrep. Sustain. Issues, 2020, **8**:972 [19]. Cheremisina O., Sergeev V., Fedorov A., Iliyna A., J. Ecol. Eng., 2017, **18**
- [20]. Cheremisina O.V., Sergeev V.V., Chirkst D.E., Litvinova T.E., *Russ. J. Non-Ferr. Met.*, 2015, **56**:615
- [21]. Cheremisina O.V., Sergeev V.V., Alferova D.A., Ilyna A.P., in *J. Phys. Conf. Ser.*, IOP Publishing, 2018, **1118**:012012
- [22]. Puryaev A., Puryaev A., in *Proceeding Int. Sci. Technol. Conf. FarEastCon 2019*, Springer, 2020:317
- [23]. Sychev Y.A., Aladin M.E., Abramovich B.N., in *2020 IEEE Conf. Russ. Young Res. Electr. Electron. Eng. ElConRus*, IEEE, 2020:904
- [24]. Movchan I.B., Yakovleva A.A., *Int. J. Adv. Trends Comput. Sci. Eng.*, 2020, **9**:1793
- [25]. Movchan I.B., Yakovleva Aa., *Int. J. Mech. Eng. Technol.*, 2017, **8**:926
- [26]. Fedorov S.N., Palyanitsin P.S., in *IOP Conf. Ser. Mater. Sci. Eng.*, IOP Publishing, 2019, **560**:012180
- [27]. Gdanskiy N.I., Isabekova O.A., Kapyrin P.A., Meshkov N.A., Mitrofanova I.P., Neusypin K.A., Popovich A.E., *Ekoloji*, 2019, **28**:5013
- [28]. Fedorova S.N., Razzhivin O.A., Zamkovoy A.A., Potapova E.V., Nikonorova A.V., Maymina E.M., *Int. J. Appl. Bus. Econ. Res.*, 2017, **15**:73
- [29]. Chupin S.A., Bolobov V.I., in *IOP Conf. Ser. Mater. Sci. Eng.*, IOP Publishing, 2017, **177**:012062
- [30]. Podoprigora D.G., Korobov G.Y., Bondarenko A.V., *Int. J. Civ. Eng. Technol.*, 2019, **10**:2680.
- [31]. Valentim L.C.G., Lucena H. de A.N., Amaral I.B.C., Couto L.C., Reis A.B., *Period. Tche Quimica*, 2019, **16**:49
- [32]. Kuzmin P.A., Sharifullina A.M., *Life Sci. J.*, 2014, **11**:377
- [33]. Tarman B., J. Ethn. Cult. Stud., 2018, 5:16
- [34]. Bernuzzi C., Bertinotti E., Simoncelli M., *J. Appl. Eng. Sci.*, 2020, **18**:443

HOW TO CITE THIS ARTICLE

Petr Alekseevich Kapyrin, Dmitry Vladimirovich Kozhinov, Valery Ivanovich Khoruzhy, Larisa Nikolaevna Gerasimova, Evgeny Victorovich Grishin, Lyudmila Vyacheslavovna Goloshchapova. Analysis of the Prospects of a Small Enterprise for the Production of Bakery Products in Russia, Considering Current Market Problems and Chemical Health Risk, *J. Med. Chem. Sci.*, 2021, 4(2) 199-206

DOI: 10.26655/JMCHEMSCI.2021.2.11

URL: http://www.jmchemsci.com/article_129215.html