The realities of today, and the increasing turbulence of the external environment force economic entities to respond quickly to market pulsations. Accordingly, marketing is an effective tool for the growth of the restaurant business and determines the philosophy of its management, and timely marketing analysis of the menu ensures strengthening of positions in the market and victory in the competition. The purpose of the study is to further develop the methodological provisions for the restaurants’ menu analysis in order to increase the profitability level of such establishments. The article substantiates the relevance of using ABC analysis of the menu as one of the most effective marketing tools in the restaurant business, the results of which change prices, exclude items that are not sold from the menu, or vice versa, new products are introduced, the implementation of dishes that are most profitable for the restaurant is activated. Taking into account the specifics of restaurant facilities, it is proposed to carry out a classic ABC analysis not by one, but by three effective indicators: volume of sales, revenue, and gross profit, which allows for a multidimensional analysis of the menu by determining for each dish a combination of three letters denoting the selected parameters (AAA, ABA, ABC, BBC, SSS, etc.). Recommendations for 27 possible combinations of selected parameters have been formed and directions for increasing sales volumes, increasing prices and reducing the cost of dishes are outlined. So, ABC analysis allows identifying «leader dishes» and «outside dishes» in the menu, as well as to make a decision about the assortment of dishes on the menu: identify dishes that need to be more actively promoted; identify dishes that need to be worked on in terms of cost reduction; adjust pricing in the menu in the direction of decreasing or increasing the selling price; justify the expediency of spending on certain types of raw materials, in particular, on those positions with low sales volumes; identify dishes that overlap in the composition of ingredients; identify menu groups that need to be expanded, as well as positions that can be safely replaced with new ones or simply removed from the menu.

Keywords: menu analysis, restaurant facilities, ABC analysis, volume of sales, revenue, gross profit, sales promotion, cost, marketing tool.
The high level of uncertainty caused by the war conditions and the COVID-19 consequences, the business globalization, the competition for resources and the change of consumer preferences force the restaurant industry to look for the new ways to expand operations and increase business profitability. Moreover, in the restaurant business, as in any other, in order to make more profit, you need to be able to work with prices, assortment and promotion. Accordingly, it is marketing that is an effective tool for the restaurant business growth as it determines the philosophy of its management, and a timely marketing menu analysis ensures the strengthening of market positions and victory in the competition.

Every modern restaurant has a large menu. And it is safe to say that not every item of it is sold successfully and has the same demand among customers. For example, a restaurant owner sees that they sell salmon in foil 30 times a month. But not once a day, and in a completely different way. Of course, cooking salmon requires the right perishable ingredients. So, should they delete this dish from the menu? And what if a regular customer spends UAH 5–10 thousand in this restaurant during the week and orders salmon every time? And what if the ingredients for cooking salmon are used in the other several dishes on the menu? [1].

An ideal menu consists of those dishes that guests like and they must bring profit. Even if everything was calculated as much as possible at the stage of creating a restaurant, later life makes its adjustments and the marginality of some dishes may change over time, in particular, due to the increase in prices for certain products. In addition, individual dishes may simply not be of interest to visitors and will be skipped in favor of other items. In order to understand which dishes should be excluded from the menu, and which should be promoted or optimized, it is necessary that ABC analysis of the menu be conducted systematically.

ABC analysis helps to see how valuable a particular dish is, because a simple cream of fish soup can give a restaurant 15% of sales and at the same time a small profit due to the high cost of the trout and a small margin. Besides ABC analysis helps to understand whether it is profitable to sell a low-margin dish with good demand in a restaurant and whether it is worth deleting those dishes that are sold less often, but give much more profit. Thanks to the ABC analysis, the restaurateur will be able to competently optimize the technical and technological maps of the eating establishment’s dishes in order to increase the restaurant management efficiency [1].

Based on the ABC analysis results, prices change, unsold items are excluded from the menu, and vice versa, novelties are introduced, the sale of dishes that are the most profitable for the restaurant industry is intensified. So, there is an impact on the amount of profit due to a change in the sales structure, i.e. sales-mix. Therefore, ABC analysis is one of the most effective methods of pricing and menu optimization, which directly affects the increase in the profit of restaurant establishments.

ABC analysis is widely used in foreign business practice, as evidenced by numerous scientific works, among which it is worth noting the works of G. Cokins, R. Cooper, R. Kaplan, E. Dopson, A. Jenkins, and others [3–6]. Along with this, domestic scientists and practitio-
The basis of ABC-analysis (Activity-Based Costing) is the Pareto principle (Pareto’s law, the 80/20 rule, the law of the «important minority»), the essence of which is that «for many events, 80% of the consequences follow from 20% of the causes», or 20% of the effort provides 80% of the result and, accordingly, 80% of the effort is aimed at achieving 20% of the result» [1; 3–6]. As a result, controlling 20% of the causes allows you to manage 80% of the situation. Of course, this is not a natural law of the universe, but it has long been proven that the Pareto principle can be applied to many areas of activity. This «magic» also works in the restaurant business: 20% of menu items bring 80% of the result.

As a rule, ABC analysis is carried out according to one of the criteria, based on the contribution of each item to the total profit or revenue (sales). However, at eating establishments, an analysis based on only one of the criteria will be incomplete and insufficiently substantiated.

For example, a certain dish may have a small turnover (it has a low price) and a small profit (it consists of expensive ingredients, which increases the food cost), but it is often ordered (it is in high demand). Obviously, this is the so-called «locomotive» item on the menu – a dish with a small markup, which ensures an influx of visitors. If you analyze this position only from the profit or from the turnover, then you can decide that it should be removed from the menu. But such a decision would be wrong, because such dishes are designed to ensure the appropriate flow of visitors, not for «earning». The above causes the need to expand the classical ABC analysis and implement a multidimensional one, i.e., each studied menu item must be evaluated immediately according to three parameters that characterize the performance of restaurant establishments:

+ volume of sales (demand for a dish, how often a specific item is sold);
+ revenue (turnover, income from the sale of food);
+ gross profit (how much this dish is marginal).

So, in the restaurant business, it is advisable to use the modified Pareto model, which involves dividing the entire range of dishes on the menu into three groups according to three parameters:

+ group A – 20% of the menu items give 80% of the result – leader dishes, the most important menu items. They are popular with visitors, provide the main revenue, provide the restaurant with the largest profit and have a low food cost index. The positions of this group do not require additional advertising or demonstration, visitors know and love them. These dishes are the «signatures» of the restaurant, they can represent the establishment in social networks or in articles on restaurant portals;
+ group B – 30% of the menu items give 15% of the result – the items are average in importance, they are less popular, but at the same time they are not ignored by guests. These are dishes with an average and high food cost index, which bring an average level of income and profit. To move to the list of favorites, such dishes can be reviewed by composition, because improving the dish can help it become interesting (perhaps these dishes lack an additional taste accent or visual component). Also, special offers, tastings can be held for them, they can be offered as a compliment. This will allow visitors to notice the dish, taste it and include it in the list of favorites;
+ group C – 50% of the menu items give 5% of the result – outsider dishes, the first candidates to be removed from the menu. They are ordered very rarely, have the highest food cost and bring little profit to the establishment. The reason for this may be the wrong price-quality ratio or the wrong positioning. Dishes from this category can be excluded from the menu or refined in terms of content and price, which will help them become more attractive and gain recognition from visitors. In addition, among the dishes in this category, there may be some that cannot be removed from the menu, as they should be, in particular, red caviar – a classic premium dish that is present on most menus.

For each dish, we receive a comprehensive assessment in the designation form of three selected parameters: AAA (ideal menu position, sales leader, the dish is liked by visitors and at the same time profitable for the restaurant), ABB (dish sells well, at the same time brings average revenue and average profit), BBB (the dish is popular among a certain group of guests, brings average turnover and average profit), CCC (candidate for removal from the menu), etc. The total number of options is 27, which provides a detailed analysis of each position separately for each parameter (Fig. 1).
For each isolated group (combination of parameters), certain recommendations are provided that allow appropriate management decisions to be made. In particular, a decision is made on what to do with a specific dish: reduce its cost price, increase the markup, stimulate sales, or exclude it from the menu (Tbl. 1).

If a dish is in category A by sales volume, but in category C by profit, then in this case it is better to raise its price or refine the recipe to reduce food cost – use cheaper ingredients or reduce the portion size (change the yield of expensive ingredients), view decoration. You can also try to find new suppliers with more favorable conditions or negotiate discounts with existing ones.

To reduce the food cost level, you can diversify the menu with new dishes from cheaper products, for example, make rolls with chum instead of salmon or with cucumber instead of avocado. You can also try cooking rolls with truffle sauce, with curry, with a dry seasoning furikake, popular in Japan, or with sauces based on coconut milk and teriyaki.

As for the price increase, this path requires caution, as a small increase of up to 5% is mostly accepted calmly by visitors, but more significant changes will be noticeable and therefore must be justified, in particular, by adding sauce or using higher quality raw materials. Under

<table>
<thead>
<tr>
<th>Group (sales volume; revenue; gross profit)</th>
<th>Conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAA, ABA, AAB</td>
<td>Sales leaders, they are liked by visitors and at the same time profitable for the restaurant. It is necessary to maintain quality, always have in stock, constantly monitor the availability of ingredients necessary for their preparation</td>
</tr>
<tr>
<td>AAC, ABB, ABC, BAC, ACC</td>
<td>Low margin sales leaders. It is necessary to reduce the cost price and / or increase the price, if the results of the competitive analysis allow</td>
</tr>
<tr>
<td>ACA, ACB</td>
<td>Dishes have high popularity, high gross profit, but low contribution to turnover. Candidates for a price increase after conducting a competitive analysis</td>
</tr>
<tr>
<td>BAA, BAB</td>
<td>They are beneficial for the institution and have the potential to increase sales volumes. It is necessary to review the price policy, perhaps visitors consider these dishes expensive</td>
</tr>
<tr>
<td>BBB, BCB, BBC, BCC, CAC</td>
<td>It is necessary to carry out a set of measures: apply Sales Promotion technologies, revise the price policy, rework the warehouse in the direction of reducing the cost price, carry out scrapping, motivate visitors and waiters</td>
</tr>
<tr>
<td>CCA, CAB, CBA, CBB, BBA, BCA, CAA</td>
<td>Low sales but high margins. It is necessary to focus attention on stimulating sales volumes: actively apply Sales Promotion technologies, contribute to up-sell, motivate waiters, give a spectacular picture on the menu, use table tents, carry out brackerage, etc.</td>
</tr>
<tr>
<td>CCC, CCB, CBC</td>
<td>Outsider dishes. Low sales, revenue and low gross profit. Perhaps these are new positions. Candidates for exclusion from the menu. It is necessary to monitor two indicators: the number of sales and % markup. If a dish is sold less than once a day and has a low markup (less than 150%), it must be removed from the menu. Otherwise, you need to actively work with the dish: maximally stimulate sales, reduce the cost price, increase the price for opportunities, constant sales, motivate visitors, etc.</td>
</tr>
</tbody>
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Source: compiled by the authors.
such conditions, you need to take into account the size of the average check and the paying capacity of the visitors.

Another situation is when the dish brings a high profit to the restaurant, but according to the frequency of its sale it is in category C or B. In this case, it is necessary to stimulate sales by the following actions: make a promotion or a combo offer (for example, «take a cheesecake – get tea as a gift»); announce additional bonuses to waiters for recommending and implementing these positions; emphasize attention in the menu by marking with special icons or symbols (for example, especially natural dishes are marked with «organic», lean dishes – with a green leaf icon (healthy and wholesome), certain dietary dishes – with a red heart; light salads – with a «fitness» icon) or allocation of the best place (perhaps the dish is not visible); promote through a promo on table tents and placemats.

In addition, in the case of low demand for a dish, it is advisable to stock it (perhaps it is a matter of taste or its presentation), measure the time of its preparation (perhaps it is a matter of the serving speed) or train the staff to sell this item (perhaps they forgot about it).

The last way to stimulate sales is to reduce the price, since the dishes of the BAA/CAA category are often quite expensive, which turns away visitors. A temporary decrease in the price will allow to reach a larger audience, but then, with a reverse rise, some of the new supporters of the dish will continue to buy it. If all the above methods of sales promotion do not help, then it is necessary to make a decision to replace such a dish in the menu.

As for the ABC analysis algorithm, the classical scheme has the following stages [3–6]:

+ determine the purpose of the analysis, the object and the parameter by which the classification will be carried out;
+ rank objects according to the set parameter in descending order;
+ find the share of each parameter in its sum;
+ calculate the share of each parameter with an incremental total;
+ find the value of the indicator in the list, according to which the share in the cumulative total is about 80%. This is the lower limit of group A, and the upper limit is the first in the list;
+ to find the value of the list, in which the share adds up to 95% (+15%). This is the lower limit of group B; everything below belongs to group C;
+ count the number of values for each category and the total number of items in the list, as well as find the shares of each category in the total number of items.

This method of ranking is quite simple, but it is problematic to operate with large volumes of data without special programs. Therefore, ABC analysis is carried out by downloading data from sales reports for the corresponding period from the back office of the automated management system used at the restaurant to an Excel table, which greatly facilitates the analysis process.

If the restaurant establishment has a large assortment with different categories (more than 50 items), then it is impractical to conduct an ABC analysis of the entire menu, it is necessary to analyze by categories of dishes or smaller subgroups (in particular, separately, soups, salads, pizzas, burgers, desserts, rolls, sauces, drinks, etc.). For example, the category «rolls» can be divided into subgroups: sushi, sets, baked rolls, tempura rolls, signature rolls, maki rolls, gunkans, sandwich rolls, etc. Next, carry out an ABC analysis within these subgroups with further roles’ range analysis in the middle of subgroups that fall into groups B and C. You can also do it separately by kitchen, by bar, by category, by establishments (for restaurant chains), etc. At the same time, we consider it expedient to carry out an ABC analysis of the menu assortment every month in order to quickly implement the sales mix and have a constant assessment of sales dynamics.

When carrying out an ABC analysis of each menu item, it is necessary to carefully look at the sales volume, the dish price, its cost price, the percentage of the markup, and the ratio with indicators of other items. In addition, when performing such an analysis, it is important to take into account the group (category) to which the dish belongs, the introduction and removal of the dish from the menu, the season of sale (volumes of lemonade sales or ice cream in summer and winter), the serving time of the dish (for example, the margin established by the institution in the amount UAH 60 will be normal for breakfast or a business lunch, but for dinner it is a very low figure). It is also advisable to constantly monitor the prices of competitors.

In general, we recommend creating a list of 3-5 menu items every month, on the sales of which you need to focus attention and inform visitors about them by: placing banners on the website and stickers or table tents on the tables; sending push messages to guests, as well as «highlighting dishes» (for example, without reducing the price, draw the attention of guests: «Try the salad with tiger shrimp and avocado – it got even tastier»! Also, use smaller plates. They give the guest a better perception of value.

CONCLUSIONS

ABC analysis is a tool for work, not a «magic wand», so its use in restaurants primarily allows you to identify «leader dishes» and «outsider dishes» in the menu, as well as to make a decision about the assortment of dishes on the menu. It also helps to identify dishes that need to be more actively promoted (in particular, include a dish in a promotional offer, not to sell it at a discount, but offer it as a bonus to a certain popular dish, or «highlight» a dish for guests so that they pay attention to it); identify dishes that need to be worked on in terms of cost reduction (for example, reduce the portion, replace ingredients...
with cheaper analogues, negotiate with suppliers); adjust pricing in the menu in the direction of decreasing or increasing the selling price (while not losing the demand for these items among guests); justify the expediency of spending on certain types of raw materials, in particular, on those positions with low sales volumes; identify dishes that overlap in the composition of ingredients (the more of them, the lower the costs of their preparation); identify menu groups that need to be expanded, as well as positions that can be safely replaced with new ones or simply removed from the menu.

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