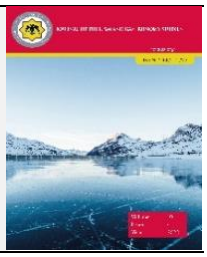
JOURNAL OF TOURISM AND GASTRONOMY STUDIES

ISSN: 2147 – 8775

Journal homepage: www.jotags.org



Menu Engineering in the Restaurant Business: A Study on Kitchen Chefs

Hayrettin MUTLU [a], **İbrahim Levent DEMİRÇAKMAK** [b], *** Murat DOĞAN** [c]

[a] Istanbul Health and Technology University, Faculty of Health Science, Department of Nutrition and Dietetic, Istanbul/Turkey
[b] Istanbul Gelişim University, Vocational School, Department of Culinary, Istanbul/Turkey
[c] Istanbul Gelişim University, Faculty of Fine Arts, Department of Gastronomy and Culinary Arts, Istanbul/Turkey

Article History

Received: 09.11.2022

Accepted: 21.12.2022

Keywords

Gastronomy

Guest satisfaction

Kitchen chefs

Menu engineering processes

Restaurant businesses

Article Type

Research Article

Abstract

The study aimed to determine the approaches of the kitchen chefs of restaurant businesses to the menu engineering processes. A focus group interview with six professional kitchen chefs was held in 2020 to achieve this goal. The analysis of the data collected by the focus group interview method was carried out with descriptive analysis, which is one of the qualitative data analysis methods. In the research findings, it was determined that restaurant kitchen chefs tended to use different applications in menu engineering processes due to intense competition and changing guest expectations. In this process, it was determined that guest satisfaction, raw material cost, labor cost, efficiency, availability of materials, suppliers, qualified personnel, equipment needs, compliance with guest requests, target customer, and concept were the most striking factors. Overall, it was determined that kitchen chefs prioritize guest satisfaction more in menu engineering processes.

***** *Corresponding Author*
E-mail: mdogan@gelisim.edu.tr (M. Doğan)

DOI: 10.21325/jotags.2022.1154

INTRODUCTION

The word "menu" derives from the Latin word "minutus," meaning "small," and is a list of items that helps cooks remember ingredients to buy so they can prepare elaborate meals (Kotschevar & Withrow, 2008). The first use of the menu dates back to 1541, and it was previously in the form of a list of foods served at evening parties or banquets (Aguilera 2018). The existence and change of the classical menu began and changed in France towards the end of the middle ages and into the modern era. The menus, which were randomly ordered until the 19th century, later became regular (Luebbers, 1978).

In food and beverage businesses, all these processes start with the menu and determine the design, layout, management style, and goals of the business. With the growth of trade volume in the food and beverage industry, the importance of menus is increasing in businesses that have started to develop differentiation and competition policies (Jung, 2014). A well-prepared menu provides control over many stages, starting with the purchase of ingredients. For this reason, food and beverage businesses take action according to the menu. The menu guides the investments and initiatives of enterprises and is also a tool used for sustainable competition. For a business to be successful, guests, the environment, and the menu must be in harmony with each other. In addition, the menu is a necessary source of information to reach the targeted guest portfolio (Wansink, 2005).

Menus show the prices of food and beverage services for businesses and are also the determinant and complement of marketing. The most important goal of menus is to reduce the amount of unsold food as much as possible, but no business can predict what their guests will want. Besides being an advertising tool for restaurants, menus are also a tool to determine the expectations of guests. In addition, if the menu is designed regularly, it will be effective for the profit of the restaurant (Jones & Mifll, 2001).

In menu engineering, analysis is made by considering the cost percentages, contribution margins, and popularity rates of the products. Thus, the profitability of all products on the menu, both in marketing and prices, is evaluated and classified. It is accepted that the contribution and price ratios of the food and beverages on the menu have an average distribution. On the other hand, it is important to know which products make a real contribution (Wansink, 2005). The contribution margin of the products on the menu is calculated by subtracting the cost from the selling price of the products. Calculations of the average contribution margin in menu engineering are mainly found as a result of comparing the products on the menu with the contribution margins. If the contribution margin of an item in the menu is greater than the weighted contribution margin of the menu, that item is included in the product category with the highest contribution margin (Wansink, 2005).

The research aimed to reveal the views of restaurant kitchen chefs by examining their menu planning, pricing, and menu analysis, their approaches to menu engineering, and their processes. In this context, it is aimed to explain the positive effects of the experience and knowledge of restaurant kitchen chefs on the performance of menu planning and to determine the determining conditions in the menu planning process to reveal the importance of the study. In addition, it is also important in terms of contributing to the literature and the sector by providing opinions on the stages of menu planning, pricing, and analysis, and understanding the attitudes of the decision mechanisms in the kitchens towards menu applications.

The Theoretical and Conceptual Framework

Since the menu is a powerful factor that can affect processes such as raw material purchase, production, and service in restaurant businesses (Kivela, 2003; Kwong, 2005), it also directly affects demand, income, and cost (Bayou & Bennett, 1992; Kivela, 2003). For this reason, the profitability of the enterprise passes through the profitability of the menu (Taylor et al., 2009). For this purpose, restaurant businesses can use well-designed menus as a strategic tool to increase sales and profitability (McCall & Lynn, 2008). In this context, restaurant managers and kitchen chefs should handle the menu management process in a way that prioritizes business profitability. Because the main purpose of the menu management process is to help guests make good choices from the menu (Lai, 2019; Kwong, 2005).

For a successful business, the cost of the menu and its place in the business budget must be determined quite accurately. The budget spent on food and beverages is different for each business, and the products with high and low costs are distributed in a balanced and systematic way throughout the day. Climate, seasons, and geographical factors affect the food market, and weather changes and seasons affect the food and beverage preferences of customers. In cold weather, high energy and hot foods are considered, while in hot weather, cold and fresh foods are emphasized. Menus should be created with these conditions in mind (Nuutila, 2019).

Many theoretical models have been developed and proposed for menu analysis, and "Cost Margin Analysis Model", "Goal Value Analysis", "Menu Analysis Model", "Menu Engineering Model" and "Enhanced Menu Engineering Model" are a few of them (Pavesic, 1985; Hayes & Huffman, 1985; Miller, 1987; Kasavana et al., 1990; LeBruto et al., 1995). The first models of menu analysis were based on two-dimensional and simple methods. Later models, on the other hand, became more complex and multidimensional with the addition of many variables. In addition to all these, different theories have been created for the concept of menu analysis by making use of the science of psychology. One of these theories is the series position effect theory, in which items at the beginning or end of a list are easier to remember and more preferred than others (Dayan & Bar-Hillel, 2011). This theory suggests that products that are at the beginning or end of the list in each category on the menu are more likely to be preferred. Another theory is the Gaze Motion Theory, which examines how people's eye movements while reading a menu affect their final decisions (Choi et al., 2010).

Studies claim that there are some special areas on the menu called "sweet spots" and that the customer's attention should be directed to these specific areas to increase the chances of choosing products. It is claimed that the sweet spot area is just above the middle of the page in single-page menus, the right page in double-page menus, and the part just above the middle (Bowen & Morris, 1995; Kincaid & Corsun, 2003). Another approach to menu design is the von Restroff Effect, also known as the Isolation Effect, proposed by the Gestalt psychologist Hedwig von Restroff. This effect is the paradigm of easier recall of an item that is salient in various ways in a group (Hunt, 1995).

Menu Analysis and Menu Engineering

Menu analysis can contribute to the development of the price-cost system, the training of its personnel, the determination of the targeted customer profile, and the development of business objectives. Failure to analyze the menu prevents the business from healthily achieving its goals. An effective menu emerges when the menu analysis is made by considering the service type, customer demand, and other factors (Wansink, 2005).

According to the literature research findings on the menu analysis, it was determined that the practitioners used the profit, sales amount, and cost criteria, and also took into account the feedback from the staff and guests. Another important finding is related to the improvement strategies made for the menus with insufficient performance after the performance evaluation of the menu items. Considering this, two basic strategies can be mentioned: making changes to the content of the food and making changes to the menus (Glanz, 2007; Roseman & Dipietro, 2005).

Menu engineering refers to a concept that covers all of the methods used to make the decision-making mechanism more effective on the topics in the menu (Raab, 2010). Different researchers working on menu engineering have developed many menu analysis methods. For menu analysis, the main thing to consider is calculating the contribution margin correctly. For this reason, it is important to use an appropriate cost system. If the cost calculation system does not use the correct information about the cost, it will cause the wrong results and decisions to be taken (Linassi, 2016). There is no set standard among the concepts used in the menu software. Among the concepts used, the most closely used concepts are menu planning, development, analysis, and menu engineering. Although the concepts of menu engineering and menu analysis may seem similar, they do not have the same meaning. Menu analysis includes menu engineering as a very broad concept, and in fact, menu engineering is only one of the different menu analysis methods (Fang & Hsu, 2014).

Methodology

The focus group interview method, which is one of the qualitative research designs, was used to guide the study in harmony with the research instruments. Focus group interviews are based on the individual interview method based on open-ended questions (Rabiee, 2004).

Data Collection Process and Focus Group Interview

Focus group interviews are a form of interview designed for small groups that aim to collect data obtained from the interaction between the participants, as well as individually answer the questions of the researcher (Goldman & McDonald, 1987; Morgan, 1988; Stewart & Shamdasani, 1990; Templeton, 1994; Gordon & Roy, 1988; Berg, 2004). In this method, researchers can use focus groups to develop pre-existing knowledge about a known subject, or they can also use them to gain new ideas and information by focusing on the subject from another angle (Nassar-McMillan & Dianne, 2002). The most important feature of the focus group interview method is that it provides an opportunity to develop the solution together with the problem in the discussion environment (Kitzinger, 1996).

Identification of Focus Group Participants

The chefs of professional kitchens in Istanbul, who have worked as chefs in many regions of Turkey, formed the main population of the research. The fact that the main population is from the city of Istanbul means that all industrial kitchens are accepted as a representative sample in terms of accessibility. This has been accepted as an important framework in terms of costs and time. The reason why the determined population consists of Istanbul restaurants is primarily that Istanbul's food and beverage businesses dominate the Turkish market (STB, 2021). In addition, it allows the research group, which is thought to have both experience and competence on the research subject, to be evaluated more comprehensively. The research sample was created using the maximum diversity method, and the participants were optimally selected. The choice of the maximum diversity sampling method is to make it possible to reach as many businesses and participants as possible, considering the unique conditions of each kitchen. The

maximum diversity method is a method similar to quantitative methods in that it is used to determine the level of similarities or differences and to expand this level in that it serves to see how the values of a particular variable or variables are distributed or to what extent they change (Palinkas, 2015). In this context, focus group meetings were planned and held with six professional kitchen chefs in 2020, and the researchers of the study served as moderators and reporters.

In the literature, it is stated that homogeneous groups should be formed at the beginning of the points to be taken into consideration while determining the focus group participants (Morgan, 1997). In this direction, it becomes possible to determine the perspectives of each participant in the sample in detail and to identify common issues that may arise. The results that can be obtained as a result of such research will be more useful in terms of content than the results obtained with other methods (Patton, 1987).

Participants selected for the focus group have common characteristics regarding the topic to be discussed (Krueger & Casey, 2000). The moderator can determine and direct the direction of the discussion so that the participants in the group remain interested in the topic and convey their thoughts in a natural flow. However, there are different opinions about the optimal number of participants for focus group interviews. Nyumba et al. (2018) reviewed 170 studies using the focus group interview method between 2011 and 2017 and reported that the median was 10 and the number of participants ranged from 3 to 21. In some studies, 6–9 participants (Pramualratana et al,. 1995; Macintosh, 1981), 6-10 participants (Morgan, 1988; Rabiee, 2004), 6–12 participants (Lengua, 1992; Gibbs, 1997), and 15 participants (Goss & Leinbach, 1996) have been reported.

Although there are different opinions about the number of participants in focus groups, studies with relatively small numbers of participants are preferred. Focus group discussions with a small number of participants are usually held with four to ten participants. Prior permission was obtained from the Ethics committee of Gedik University (2020/03). Also, prior informed consent from all the participants was obtained.

Design of Focus Group Interview Questions

A semi-structured interview protocol was created for the focus group interview, and questions were asked about menu engineering. The open-ended questions of the semi-structured interview provided a better understanding of the subject and easier obtaining of the data. Interview questions were prepared using the studies of Seyitoglu (2017), Kivela (2004), and Saiki et al. (2021). In the interview, participants were asked to discuss (1) their experiences and diverse demographics; and (2) questions about menu engineering processes.

Reliability and Validity

The concepts of validity and reliability, which are the important principles of quantitative research, mean that in qualitative research, the researcher observes the researched subject as objectively as possible while preserving its structure (Kirk & Miller, 1986). Reporting the obtained data in detail and detailing the way of reaching the results by the researcher is among the important criteria of validity and reliability in qualitative research (Lune & Berg, 2017).

To ensure the validity of the findings and results of the study, it has been tried to be evaluated as objectively and as a whole. Thus, it can be argued that the findings and results reflect each other. In addition, the correction and consent of the participants were obtained from the deciphered interview text to ensure validity. The reliability of a study requires that the same analysis method can be used reproducibly in different conditions and times and that

similar results can be reached. In this context, to ensure the reliability of the findings and results of the study, the deciphered text was given to three different researchers, who were asked to analyze them, and similar inferences were obtained (Dogan & Olgay, 2022).

Results

Analysis of Focus Group Interview Data

A focus group interview was held with six participants and was initiated by the moderator with a short speech explaining the purpose and scope of the research. The average duration of the interview was 2 hours and 20 minutes. The recordings of the interview are converted into written text in three ways (Bertrand, et al., 1992): (1) Following the audio recording of the interviews, a transcription of the conversations in written form: It is the transcription of all speeches without any changes. Although it has a positive benefit, such as reflecting on one-on-one interview, the negative aspect is that it takes a long time. (2) Extending the audio recordings, taking into account the rapporteur's notes. It is the reporter listening to the recorded data in the interview and taking notes. This ensures that the records are verified. It is appropriate in situations where rapid feedback is intended. Time can be saved, and the selectivity factor can turn into a disadvantage. (3) Using only the reporter's notes It is expanded with what remains in the mind of the rapporteur after the interviews have taken place. If the question that is the subject of the research is very simple, it is correct to apply it. In our study, audio recordings were compiled and texted one-to-one and developed with the notes taken by the reporters. The focus group interview was held with six professional kitchen chefs. The information on the interview participants is given in Table 1.

Table 1. Participants Profile

Participant code*	Age range (in years)	Education qualification	Specialization
A1	41-45	High school	RD, LC, WC
A2	41-45	High school	RD, LC, WC
A3	36-40	Associate Degree	LC, WC
A4	41-45	High school	RD, LC, WC
A5	41-45	High school	LC, WC
A6	36-40	Associate Degree	LC, WC

* RD: Research and development, LC: Local Cuisine, WC: World Cuisine

Data on the focus group interview on the stages of menu engineering are given in Table 2.

Table 2. Key Terms That Emerged as a Result of The Analysis of The Questions of The Focus Group Interview and The Evaluations of The Participants

	Interview Questions	A1	A2	A3	A4	A5	A6
1	What factors should be considered in the menu development process?	Opportunities	The distinction and the concept	Menu variety	Cultural differences	Quality and customer satisfaction	Customer profile
2	What are the stages of menu development?	Revisions	Considering the guest's response	Business and guest expectations	Guest requests and profitability	Guest suggestions and profitability	Sales and profitability data analysis
3	Which units of the business are involved in the formation processes of the meal prices on the menu cards of the restaurant businesses?	Operation	Business owner	All departments	All departments	Senior management	Sales and marketing
5	Are there products on the menu that are low in profit but high in popularity? If so, what precautions do you take?	Demand, Balance, Profit and Attracting Guests	Adding garnishes	Brand standards	Emphasizing profitable products	Alternative products	Drawing attention to high-profit products

Table 2. Key Terms That Emerged as a Result of The Analysis of The Questions of The Focus Group Interview and The Evaluations of The Participants (cont.)

6	What are the points that kitchen managers pay particular attention to during the menu planning process?	Preparing Standard Quality Products	The same high-quality product	Menus prepared according to the rules	Guests can choose from a variety of products.	Business concepts and infrastructure	Chief's Initiative
7	How do the raw materials used in food production affect the menu engineering processes?	Products that can provide continuity	Minimum cost Maximum profit	Cost	The prescription and the total cost	Customer portfolio and diversity in the menu	Profitability

Participants emphasized that traditional uniform menu planning methods are no longer valid in restaurant operations, that each business has specific features and that these features bring menu engineering management to the fore. Accordingly, the participants were asked to name the most important points in the menu engineering processes. The answers obtained were written on the blackboard in the meeting room so that each participant could see them. The answers obtained were written on the blackboard in the meeting room so that each participant could see them. At this stage, each participant was told that they could repeat the themes that the other group members had said if they wanted to. Thus, the themes and frequencies for the menu engineering processes were determined. Then, the participants were asked to rate the determined themes on a scale of 1–5 according to the degree of importance (1-very unimportant, 2-unimportant, 3-uncertain, 4-important, and 5-very important). In addition, the participants were reminded that they could give more than one point to the same item. Thus, the total importance score obtained from six participants was determined. Finally, the total score was obtained by multiplying the frequency and order of importance scores and is given in Table 3. The order of importance of the themes is given in Figure 1.

Table 3. Menu Engineering Processes' Themes and Frequencies

Themes	Frequency	Importance Score	Total Points
Cost of Raw Materials	2	14	28
Labor Cost/Requirement	4	17	68
Productivity	1	14	14
Availability of materials	2	20	40
Qualified Personnel	2	22	44
Equipment Needed	1	20	20
Compliance with Customer Demand	4	13	52
Target Market/Audience	5	11	55
Concept	1	8	8
Guest Satisfaction	5	15	75

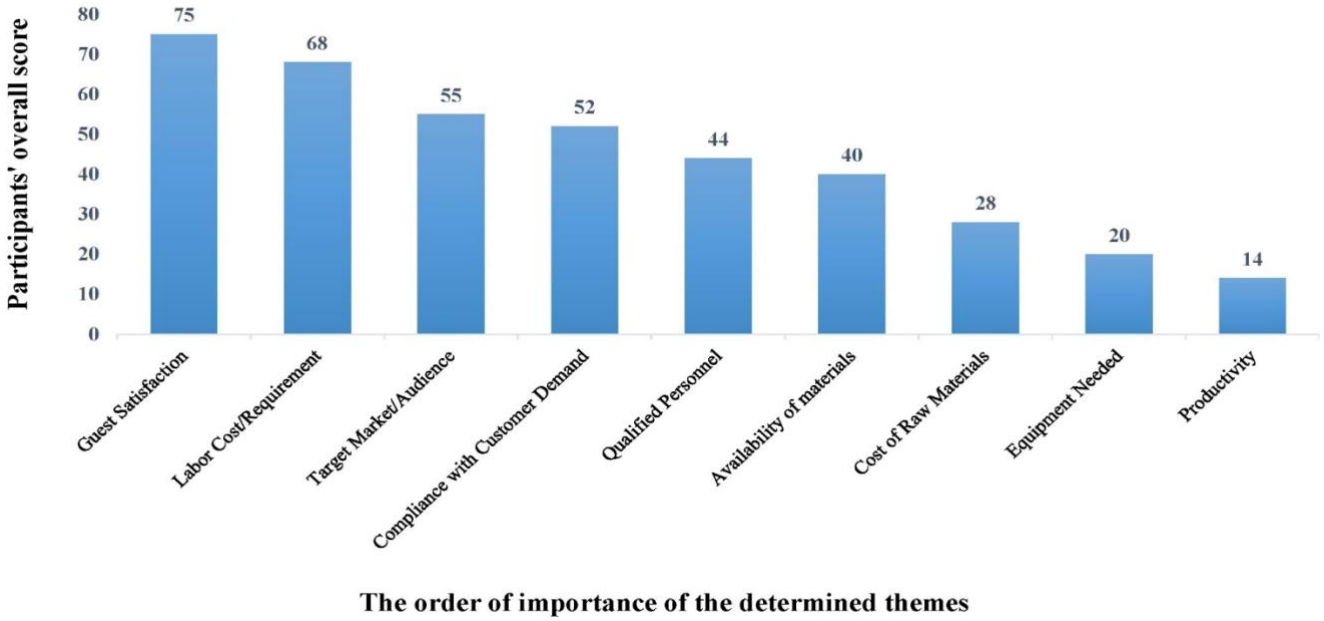


Figure 1. Themes and Order of Importance in Menu Engineering Processes

In the food and beverage sector, which is among the fastest growing sectors with economic developments, the same development is reported in the restaurant business. The rapid increase in the number of restaurants around the world has led to fierce competition in this area, and businesses have chosen to focus more on customer requests and needs every day. One of the phenomena that take the pulse of customer requests and needs in businesses is the menu engineering process. The importance of this process on businesses that provide food service brings along the discussions in this field. Based on all of these, after a detailed review of the menu engineering process in this study, a focus group interview was held with experts in the field and recorded. In this section, the views of the participants on the menu engineering phenomenon were evaluated in detail.

Discussion

Factors in the Menu Development Process

"What factors should be considered in the menu development process?" The answers to the question were analyzed. Participants stated that a more detailed study is needed if there is no data available while re-creating the menu. In addition, the participants stated that while revising the current menu, 25%–30% of the menu changed, while 70% remained standard. Because they said that if a large part changes while the menu is being revised, there is a possibility of losing the guest who is used to that menu or getting his reaction. Considering this, they stated that they had revised the menu and that it was always riskier to make a menu again.

Participants also stated that the data to be considered in the menu revision are sales turnover, profitability rates, and guest suggestions, and that these should be used at this stage. According to the participants, this data should be evaluated immediately, and they stated that the items to be added to the menu, their compatibility with the menu concept, and the trends in the market for the enterprise should be taken into consideration. Participants stated that in the case of re-creating a menu, a menu can be created according to the concept, equipment, business infrastructure, and raw material accessibility of the business.

According to the participants, restaurant menus vary periodically according to factors such as seasonality,

location, and cost calculations. Accordingly, revising the menu means changing the products that are not sold or sold less according to the sales chart. Participants stated that such reasons led to the revision of the menu and that this revision plan was shaped according to the feedback from the guests. The participants pointed out the frequency of arrival of the guests coming to the establishment and stated that the guest should be brought to the same establishment more than once. They said that to achieve this, they acted mostly by trial and error. However, they stated that the best way to ensure that guests prefer the establishment is by adding the most suitable products to the menu.

In support of the above-mentioned findings in the literature, it has been reported that the guests are affected by their food selection and ordering behavior during the menu development process (Bowen & Morris, 1995; Pavesic, 1193; McCall & Lynn, 2008; Lo et al., 2017; Bacon & Krpan, 2018). It has been reported that, especially on new menus, food and beverage managers follow trends and try to place menu items in the appropriate places on the menu card, called focal points or strong points, to direct guests to the products they want to sell (Kwong, 2005; Choi et al., 2010; Filimonau & Krivcova, 2017).

There are two theories underlying these thoughts. One of these theories is gaze movement studies known as "Eye Tracking, Gaze Motoin or Doerfler Theory" (Bowen & Morris, 1995; Reynolds et al., 2005; Pavesic, 1993; Choi et al., 2010; Yang, 2012; Kim et al., 2018; Robertson & Lunn, 2019; Chen et al., 2020). The second theory put forward in this field is the "Priority and Innovation Rule", which is explained with different concepts in the literature (e.g., Primacy and Recency Theory, Von Restorff Effect). According to this rule, it is the theory that is based on the thoughts that the first and last items read from any text or list are remembered the most and easiest, and therefore most preferred (Dayan & Bar-Hillel, 2011; Yang, 2012).

Processes for Determining Food Prices on Menus

"Which units of the business are involved in the formation processes of the meal prices on the menu cards in the restaurant businesses?" The answers to the question were analyzed. Participants stated that this operation is always carried out with the kitchen chef in restaurant businesses, but the request of the operator is always at the forefront. In addition, they stated that the opinions of the board of directors, operations manager, financial affairs department, and marketing department were taken. Participants stated that in chain restaurant businesses, the management, food engineer, dietitian, and R&D manager work together in this process. Participants also stated that these departments carried out the product presentation process several times during the year. Therefore, after the presentation, the participants stated that these departments are making decisions as a common mind and that making decisions alone should be avoided. However, it was stated that the top management was completely cost-oriented in this process.

In support of the above findings, the study by Jones & Mifll (2001) can be given as an example. As a matter of fact, it has been reported in the study that menu engineering methods are not fully used and that most businesses develop menus with their own analysis methods. In this cross-cultural study examining how well menu analysis and planning are suitable for increasing the profitability of restaurants, it is stated that menu developers measure the popularity and profitability of their meals based mainly on qualitative judgments based on their intuitive thinking. Therefore, it is concluded that Kasavana & Smith (1990) have paid little attention to the application of the quantitative menu analysis approach.

Measures Taken for Low Profit Products on Menu Cards

"Are there products on the menu that are low in profit but high in popularity? If so, what precautions do you take?" The answers given to the questions were examined. Participants stated that they include low-profit and highly popular products on the menu by keeping them in balance with the costs of other products on the menu. Accordingly, the popular product is the most preferred and high turnover product. They stated that they are trying to balance the profit by including low-cost and high-profit products in the menu, and that they put them first on the menu cards to attract the attention of the guests.

According to the participants, they stated that there are low-profit and high-popular products on the menu, and that when it is not possible to remove them from the menu, they try to make a profit by making changes in the production stages, weight or garnishes of the products. They stated that the products with high profits are prominently included in the menu, thus balancing the profit with low products. They stated that chain restaurants have to include products with low profits and high popularity in the menu, in accordance with brand standards. Participants stated that they pay attention to factors such as photos being in the first place, providing detailed information and so on so that the popularity of products with high profitability can be high.

Lee (2018) compared menu engineering and cost/profit margin analysis in their study. As a result of the study, they emphasized that menu analysis techniques should be chosen in line with business purposes. They also stated that menu engineering mostly reflects the customer's point of view, while cost / profit margin analysis reveals the management's point of view.

Issues That Kitchen Managers Consider in The Menu Planning Process

"What are the points that kitchen managers pay particular attention to during the menu planning process?" The answers to the question were analyzed. Participants stated that they do not include high-cost, low popularity, and low profit products and foods that are not consumed in season in their menus. They emphasized that the products to be used on the menu should be delivered to chain restaurants with the same quality. They especially talked about the importance of the chain restaurant staff producing the food with the same quality and serving it in a standard way. They also stated that the menu planning in chain restaurants is carried out from a single center.

The answers to the question of the importance of raw materials in the menu engineering process addressed to the participants were examined. They stated that the main reason for the difficulty of this process is the result of the company's desire to maximize profits. For this reason, the most important approach for enterprises, the idea of least input and maximum output, is adopted. This explains the necessity of a business to work in order to make the most profit with the minimum cost, regardless of whether it is on a small, medium, or large scale.

Since the main purpose of enterprises is to make a profit, the pricing and operational evaluations of the products purchased for this purpose are very important. A possible lack of foresight at the purchasing stage will reduce the profit rate and cause the business to make a loss. For this reason, all kinds of possibilities must be calculated and a plan must be made for this. The most important criterion for this search is that the raw material cost-to-sales-price ratio is not exceeded. Otherwise, the product will not make a profit, or even a loss. At this stage, it was stated that the business should work with a system that balances high-cost and low-cost products at the end of the day in order not to lose status and abandon its mission.

The other issue that the participants agreed on is that high prices in raw materials will not be a problem if a balance is observed considering the costing of all prescriptions and the sales volumes throughout the month. The main goal of this balancing is to achieve the desired profit in the businesses. It is important to make the right decision as much as possible during the purchase phase. In other words, when making a supplier agreement, it is important not to be dependent on one place and to make an agreement with the most suitable supplier in every respect.

Participants emphasized that traditional uniform menu planning methods of businesses are no longer valid, each business has its own specific features, and these features come to the fore in the menu engineering process. They stated that the primary goal of their business is not to lose guests. In support of this situation, Kivela's (2003) research stated that the menu is a powerful factor that has the capacity to affect processes such as raw material purchase, production, and service in food and beverage businesses.

They stated that if the labor force requirement, which is another factor, is not considered, the operation in the kitchen will be difficult. It affects the profitability of the business, and in this direction, the kitchen chef should calculate the labor cost. The participants also stated that while evaluating this issue, kitchen chefs can either work by hiring and training a new graduate with a minimum wage, or they can hire a highly qualified employee and pay a high salary without any effort, and that it is entirely at the initiative of the kitchen chefs. They emphasized that the efficiency to be obtained from raw materials depends on the kitchen chef. In this context, they stated that they can increase the productivity rate by processing a product with minimal waste. The participants pointed out that efficiency is based on business data and stated that a restaurant should determine which days are busy and which days are quiet, and that preparations should be made according to the number of guests arriving on these days. This situation can be used as a strategic tool for restaurants to increase sales and profitability (McCall & Lynn, 2008; Antun, 2005).

According to the participants, the availability of raw materials is one of the most important factors. They stated that if the right material for the product cannot be found, the desired efficiency cannot be obtained from the product, and this situation puts the business in trouble. They stated that in order to minimize this problem, an alternative could be created for the product, and an equivalent product could be applied. In this context, it can be stated that the main purpose of the menu engineering process is to help the guests make good choices from the menu and to control their preferences (Nemeschansky, 2020).

Participants also stated that even if guest satisfaction is ensured, other factors do not matter as long as a restaurant cannot make a profit. Jones & Mifli (2001) reported that there are gross profit, sales quantity and cost criteria in the menu engineering process. In addition, feedback from employees and guests is also taken into account. Another important finding by Jones & Mifli (2001) is related to the improvement strategies applied to the menu items whose performance was deemed inadequate after the performance evaluation of the menu items. Accordingly, two main groups of strategies can be mentioned. These were determined as making changes in the meal (presentation, price, cost, and changes in the recipe) and making changes in the menu (promotion, positioning, retention, and removal from the menu).

All the data obtained within the scope of the research was obtained through the exchange of ideas among the interviewed kitchen chefs. Keeping the number of participants in the focus group interview at a certain level prevented the relevant topic from dispersing and allowed important determinations to be made in the field. As a matter of fact, according to Arıkan et al. (2019), working with a small group of managers to conduct a detailed

analysis provides more qualified findings.

Conclusion

The general conclusion of the study is that the menu engineering process differs according to many factors and is determined by taking them into account. Considering the findings of the research, it is seen that guest satisfaction is at the forefront. When the interviews are examined, another striking element is that if international chain restaurants start their operations in another country and create a menu, they must use the products of that country. Products with low profitability in terms of prestige must be kept on the menu. The most important rule that chain restaurants should pay more attention to than other businesses is the standard. In other words, the same products and dishes should be presented with the same taste, the same visual, and the same quality in all restaurants.

One of the important results of the study is that the region where the restaurant is located and the guest profile is important. It has been found that improving the existing menu is more suitable for kitchen chefs than re-creating the menu. Among the factors affecting the menu engineering processes are the conditions that the chain restaurant brand dictates to that business and the issues that need special attention. In addition, raw material cost, labor cost, efficiency, availability of materials, supplier, qualified personnel, equipment need, compliance with customer demand, target audience, concept, and guest satisfaction were the most important factors in the menu engineering process.

Implications for Research and Practice

With this study, we have helped to contribute to food service by determining the approach of restaurant kitchen chefs to the menu engineering processes and revealing the importance of considering different solution proposals in the management of the processes. The most important output of the research is that kitchen chefs prioritize guest satisfaction in menu engineering processes. In addition, with the research findings, we determined that restaurant kitchen chefs tend to different applications in menu engineering processes due to the intense competitive environment and changing guest expectations.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

REFERENCES

Aguilera, J. M. , (2018). Relating food engineering to cooking and gastronomy. *Comprehensive Reviews in Food Science And Food Safety*, 17(4), 1021-1039.

Antun, J. M., & Gustafson, C. M. (2005). Menu analysis: Design, merchandising, and pricing strategies used by successful restaurants and private clubs. *Journal of Nutrition in Recipe & Menu Development*, 3(3-4), 81-102.

Arikan, E., Sürücü, Ö. A., & Arman, A. (2018). Problems and solution proposals in training kitchens of higher education institutions. *Journal of Tourism and Gastronomy Studies*, 592, 601.

Bacon, L. & Krpan, D. (2018). (Not) Eating for The Environment: The impact of restaurant menu design on vegetarian food choice. *Appetite*, 125 (2018) 190-200.

Bayou, M. E. & Bennett, L. B. (1992). Profitability analysis for table service restaurants. *The Cornell Hotel and Restaurant Administration Quarterly*, 33(2), 49–55.

Berg, Bruce L. (2004). *Qualitative Research Methods for the Social Sciences* (5th Edition). Pearson, 46.

Bertrand, J. T., Brown, J. E., & Ward, V. M. (1992). Techniques for analyzing focus group data. *Evaluation Review*, 16(2), 198-209.

Bowen, J.T. & Morris, A.J. (1995). Menu design: Can menus sell?. *International Journal of Contemporary Hospitality Management*, 7 (4), 4-9.

Chen, X. Ren, H, Liu, Y. Okumuş, B. and Bilgihan, A. (2020). Attention to chinese menus with metaphorical or metonymic names: An eye movement lab experiment. *International Journal of Hospitality Management*, 84 (2020) 102305.

Choi, J, G. Lee, B. Mok, J. (2010). An experiment on psychological gaze motion: Are-examination of item selection behavior of restaurant customers. *Journal of Global Business and Technology*, 6(1),68–79.

Dayan, E. & Bar-Hillel, M. (2011). Nudge to nobesity II: Menu position influences food orders. *Judgment and Decision Making*, 6(4), 333-342.

Dogan, M., & Olgay, P. (2022). A Research on the general knowledge of pastry chefs about food colorings and their awareness of reading labels. *International Journal of Gastronomy Research*, 1(1), 9–15. https://doi.org/10.56479/ayed.2022.03231

Fang, C. Y., & Hsu, F. S. (2014). An efficiency-based metafrontier approach to menu analysis. *Journal of Hospitality & Tourism Research*, 38(2), 199-221.

Filimonau, V. & Krivcova, M. (2017). Restaurant menu design and more responsible consumer food choice: An exploratory study of managerial perceptions. *Journal of Cleaner Production*, 143, 516-527.

Gibbs A. (1997). Focus Groups, *Social Research Update Issue* 19, Guilford,

Glanz, K., Resnicow, K., Seymour, J., Hoy, K., Stewart, H., Lyons, M., & Goldberg, J. (2007). How major restaurant chains plan their menus: The role of profit, demand, and health. *American Journal of Preventive Medicine*, 32(5), 383-388.

Goldman, A. E., & MacDonald, S. S. (1987). *The Group Depth Interview*: Principles and practice. Prentice-Hall.

Gordon, W. & Roy L. (1988). *Qualitative Market Research: A Practitioner's & Buyer's Guide*, Gower: London. (10 th edt. Goss & Leinbach, 1996)

Goss, J. D., & Leinbach, T. R. (1996). Focus groups as alternative research practice: Experience with transmigrants in Indonesia. *Area*, 115-123.

Hayes, D. K., & Huffman, L. (1985). Menu analysis: A better way. *Cornell Hotel and Restaurant Administration Quarterly*, 25(4), 64-70.

Hunt, R. R. (1995). The subtlety of distinctiveness: What von Restorff really did. *Psychonomic Bulletin & Review*, 2(1), 105-112.

Jones, P., & Mifl M. (2001). Menu development and analysis in UK restaurant chains. *Tourism and Hospitality Research*, 3(1), 61-71.

Jung, J. W. (2014). A study on the influence of menu selection attributes and design of western restaurants on the customer value and customer satisfaction. *Culinary Science and Hospitality Research*, 20(6), 69-79.

Kasavana, M. L., Smith, D. I., & Schmidgall, R. S. (1990). Menu engineering: a practical guide to menu analysis. Rev.

Kim, E. Tang, L. R. Meusel, C. & Gupta, M. (2018). Optimization of menu-labeling formats to drive healthy dining: An eye tracking study. *International Journal of Hospitality Management*, 70, 37-48.

Kincaid, C. S., & Corsun, D. L. (2003). Are consultants blowing smoke? An empirical test of the impact of menu layout on item sales. *International Journal of Contemporary Hospitality Management*.

Kirk, J. & Marc L. M. (1986). *Reliability and Validity in Qualitative Research*, Sage Publications, Beverly Hills, CA, s. 21.

Kitzinger, J. (1995). Qualitative research: introducing focus groups. *Bmj*, 311(7000), 299-302.

Kivela, J. (2003). Results of a qualitative approach to menu planning using control and experimental groups. *Journal of Foodservice Business Research*, 6(4), 43-65.

Kivela, J. (2004). Results of a qualitative approach to menu planning using control and experimental groups. *Journal of Foodservice Business Research*, 6(4), 43-65.

Kotschevar, L. H., & Withrow, D. (2007). *Study Guide to Accompany Management By Menu*, 4e. John Wiley & Sons.

Krueger, R. & Mary A. C. (2000). *Focus groups: A practical guide for applied research* (3rd Edition). SAGE Publications, Inc.

Kwong, L. Y. L. (2005). The application of menu engineering and design in Asian restaurants. *International Journal of Hospitality Management*, 24, 91–106.

Lai, H. B. J., Karim, S., Krauss, S. E., & Ishak, F. A. (2019). Can restaurant revenue management work with menu analysis?. *Journal of Revenue and Pricing Management*, 18(3), 204-212.

LeBruto, S. M., Quain, W. J., & Ashley, R. A. (1995). Menu engineering: a model including labor. *Hospitality Review*, 13(1), 5.

Lee, S. H., Lee, J., & Neilson, S. M. (2018). Exploring guest preferences of breakfast menu: conjoint analysis. *Journal of Culinary Science & Technology*, 16(2), 149-164.

Lengua L. J. Mark W. R. Erika S. N. Marcia L. Michaels, C. N. B. and Louis F. W. (1992). Using focus groups to guide the development of a parenting program for difficult to reach, high risk families. *Family Relations*, 41(2), (Apr.), 163-168.

Linassi, R., Alberton, A., & Marinho, S. V. (2016). Menu engineering and activity-based costing: an improved method of menu planning. *International Journal of Contemporary Hospitality Management*.

Lo, A. King, B. & Mackenzie, M. (2017). Restaurant customers' attitude toward sustainability and nutritional menu labels. *Journal of Hospitality Marketing & Management*, 26(8), 846-867.

Luebbers, R. A., & Colorado, M. A. (1978). *Meals and Menus: A study of change in prehistoric coastal settlements in South Australia*. The Australian National University (Australia).

Lune, H., & Berg, B. L. (2017). *Qualitative Research Methods for the Social Sciences*. Pearson.

Macintosh, A. J., (1981). Focus groups in distance nursing education, *Journal of Advanced Nursing*, 18 (12), 1981–1985.

McCall, M., & Lynn, A. (2008). The effects of restaurant menu item descriptions on perceptions of quality, price, and purchase intention. *Journal of Foodservice Business Research*, 11(4), 439-445.

Miller, J. E., 1987. *Menu Pricing & Strategy*. Van Nostrand Reinhold Co.

Morgan, D. L. (1988). *Focus Groups as Qualitative Research*. Newburry Park, CA: Sage, 135-142

Morgan, D. L. (1997). *Qualitative Research Methods: Focus Groups as Qualitative Research*. Thousand Oaks, CA: SAGE Publications, Inc. doi, 10, 9781412984287.

Morrison, P. (1997). Menu engineering in upscale restaurants. *British Food Journal*, 99(10), 388–395.

Nassar-Mcmillan, S. C. & Dianne L. B. (2002). Use of focus groups in survey item development. *The Qualitative Report*, 7(1), March, 60.

Nemeschansky, B., von der Heidt, T., & Kim, P. B. (2020). Customer-driven menu analysis (CDMA): Capturing customer voice in menu management. *International Journal of Hospitality Management*, 91, 102417.

Nuutila, J., Risku-Norja, H., & Arolaakso, A. (2019). Public kitchen menu substitutions increase organic share and school meal sustainability at equal cost. *Organic Agriculture*, 9(1), 117-126.

O. Nyumba, T., Wilson, K., Derrick, C. J., & Mukherjee, N. (2018). The use of focus group discussion methodology: Insights from two decades of application in conservation. *Methods in Ecology and Evolution*, 9(1), 20-32.

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research*, 42(5), 533-544.

Patton, M. Q. (1987). *How to Use Qualitative Methods in Evaluation*, Sage, 42.

Pavesic, D. V. (1985). Prime numbers: Finding your menu's strengths. *Cornell Hotel and Restaurant Administration Quarterly*, 26(3), 70-77.

Pavesic, D. V. (1993). Hospitality education 2005: Curricular and programmatic trends. *Hospitality Research Journal*, 17(1), 285-294.

Pramualratana, A. & Napaporn, H. John K. J. (1985). Exploring the normative basis for age at marriage in Thailand: an example from focus group research. *Journal of Marriage and the Family*, February, 203-210.

Raab, C., Mayer, K., & Shoemaker, S. (2010). Menu engineering using activity-based costing: an exploratory study using a profit factor comparison approach. *Journal of Hospitality & Tourism Research*, 34(2), 204-224.

Rabiee, F. (2004). Focus-group interview and data analysis. *Proceedings of The Nutrition Society*, 63(4), 655-660.

Reynolds, D., Merritt, E. A., & Pinckney, S. (2005). Understanding menu psychology: An empirical investigation of menu design and consumer response. *International Journal of Hospitality & Tourism Administration*, 6(1), 1-9.

Robertson, D. A. & Lunn, P. (2019). The effect of spatial position of calorie information on choice, consumption and attention (No. 615). ESRI Working Paper.

Roseman, M. G., & Dipietro, R. B. (2005). An exploratory study of quick service restaurants' changing menus. *Journal of Nutrition in Recipe & Menu Development*, 3(3-4), 103-120.

Saiki, M., Shimpo, M., Akamatsu, R., & Komatsu, M. (2021). Restaurant menu-planning in Japan: A qualitative analysis. *Journal of Foodservice Business Research*, 24(2), 165-176.

Seyitoglu, F. (2017). Components of the menu planning process: the case of five star hotels in Antalya. *British Food Journal.*

STB, (T.C. Sanayi ve Teknoloji Bakanlığı) (2021). Sektör Raporları: Gıda ve İçecek Sektör Raporu (2021), https://www.sanayi.gov.tr/plan-program-raporlar-ve-yayinlar/sektor-raporlari, (Erişim Tarihi: 18.12.2022).

Stewart, W. D. & Prem. N. Shamdasini, P.N. (1990). *Focus Groups: Theory & Practice*. Newbury Park, CA: Sage. 180-186

Taylor, J. Reynolds, D. & Brown, D. M. (2009). Multi-factor menu analysis using data envelopment analysis. *International Journal of Contemporary Hospitality Management*, 21(2), 213–225.

Templeton, Jane. F. (1994). *Focus Groups: A Guide for Marketing and Advertising*, Probus Pub. Co; First Edition, 88.

Wansink, B., Van Ittersum, K., & Painter, J. E. (2005). How descriptive food names bias sensory perceptions in restaurants. *Food quality and preference*, 16(5), 393-400.

Yang, S. S. (2012). Eye movements on restaurant menus: A revisitation on gaze motion and consumer scanpaths. *International Journal of Hospitality Management*, 31(3), 1021-1029.

Annex-1: Ethics Committee Permission

İstanbul GEDİK Üniversitesi

T.C.
İSTANBUL GEDİK ÜNİVERSİTESİ REKTÖRLÜĞÜ
Yazı İşleri Müdürlüğü

12 Haziran 2020

Sayı : 20788822-050.01.04 -80 -E-164708
Konu : Etik Kurul Kararı 2020/03 Dr. Öğr. Üyesi Hayrettin MUTLU-İbrahim Levent DEMİRÇAKMAK

Sayın Dr. Öğr. Üyesi Hayrettin MUTLU

03.06.2020 tarihli ve 2020/03 sayılı Etik Kurul Toplantısında Dr. Öğr. Üyesi Hayrettin MUTLU'nun, "Mutfak Şeflerinin Menü Planlama ve Analiz Yöntemleriyle Yaklaşımları: İstanbul İlinde Bir Araştırma" adlı başvurusu görüşüldü. Yapılan görüşme sonunda: "Mutfak Şeflerinin Menü Planlama ve Analiz Yöntemleriyle Yaklaşımları: İstanbul İlinde Bir Araştırma" adlı başvurusunun etik olarak uygun olduğuna katılanların oy birliği ile karar verildi.

Bilgilerinizi rica ederim.

Prof. Dr. Berin ERGİN
Etik Kurul Başkanı

Adres : T.C. İstanbul Gedik Üniversitesi Cumhuriyet Mahallesi İlkbahar Sokak No: 1-3-5 34876 Yakacık Kartal İstanbul
Telefon : 444 5 438 / Dahili: 1196 Fax : 0216 452 87 17 Ayrıntılı bilgi için: Ozan YILDIZ