

# CONTRIBUTION MARGIN AND POPULARITY ANALYSIS FOR TOP TEN MENUS IN THE X RESTAURANT BOGOR

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## ABSTRACT

*One of the growing tourism facilities is the restaurant that offers a certain menu. Can be ascertained with the development of restaurants in the city of Bogor and the race in competition provides satisfaction to its customers are increasing. Although customer satisfaction is one of the main goals, but there is another side that often burdens the mind of the restaurant. The burden of thought is simply presented in the following question: why is the menu that is sold in demand does not provide a significant profit, but the menu that is sold less in demand has made significant profit. One of the efforts made to face the fact this is the menu still serves as a typical restaurant menu, even though profits are not significant. On the other principle that the sale should provide benefits can still be significant, so to overcome this problem required steps up marketing strategies and design with attention to any changes that occurred.*

**Keywords:** *contribution margin, menu, popularity analysis, restaurant*

## ABSTRAK

*Salah satu fasilitas turisme yang berkembang adalah restoran yang menyediakan berbagai menu. Bisa dipastikan, dengan perkembangan restoran di kota Bogor serta kompetisi sesama usaha menjadikan meningkatnya kepuasan pelanggan. Walaupun kepuasan pelanggan adalah tujuan utama, ada beberapa hal yang menjadi beban restoran. Beban pikiran termasuk kenapa menu yang sesuai permintaan tidak menghasilkan keuntungan yang signifikan, tetapi menu tersebut tidak termasuk dalam permintaan pelanggan menghasilkan keuntungan yang signifikan. Satu usaha yang dibuat untuk menghadapi fakta ini yaitu menu masih menyediakan menu tipikal restoran umum, walaupun keuntungan tidak signifikan. Dalam prinsip lain, penjualan harus menyediakan keuntungan yang signifikan, sehingga untuk menyelesaikan permasalahan dibutuhkan langkah-langkah dalam strategi marketing dan didesain yang dipengaruhi perubahan yang terjadi.*

**Kata kunci:** *margin kontribusi, menu, analisis popularitas, restoran*

## INTRODUCTION

In Indonesia and every part of the world, it is important having the same perspective about industrial accommodation as the basic tourism facility. Therefore accommodation cannot be separated with the tourism industry because both of them need each other. However, the development of business tourism is also influenced by the availability of adequate accommodation or tourism because of accommodation facilities is the main tourism so the accommodation industry is a component of tourism industry, as accommodation can be either a place or room, where people or visitors or tourists can rest or sleep, bath, eat and drink and enjoy the services and entertainment available.

Bogor is a city located in West java, Indonesia. It is well-known as a rain city because of the high amount of rainfall with a landmark of Bogor botanical garden as a significant tourism asset. Tourism of the City of Bogor diverse, consists of a tour among scientific, cultural and natural with enough potential to be developed into tourist attraction visits, which is supported the establishment of tourism facilities.

X Restaurant is one of the all-day dining restaurants located in Bogor. It provides food and beverage services that are offered to guests that came from inside and outside Bogor. Like many other restaurants alike, there is similarity of variety of food and beverage that is on the menu; terms of taste, appearance, and price are slightly different from one another. However the main focus is not particularly concerning about the competitors but likely the efficiency of X Restaurant in making sure that the prices that they are making meet the customer's demand in terms of quality and price.

In order to achieve the goal, the first thing to do before analyzing the menu and its contribution margin is to understand the basic fundamental of menu. The menu is the foundation for process control in food and beverage operations. As the basis of planning the menu to control the core of the beginning of a process activity. A menu can affect the sales of food items, the regulation of interest and appropriate to increase sales (Ninemeier, 2009).

The type of menu such as: (1) *table D'hote*, set menu forming a complete meal at a set price. It is also called fixed price menu, a choice of dishes may be offered at courses and the choice and number of dishes will be limited; (2) *ala carte*, menu all the dishes individually priced. The customer can therefore compile his own menu. A true ala carte dish should be cooked to order and the customer should be prepared to wait for this service; (3) *semi ala carte*, several types of food (generally appetizer and dessert) can be ordered with main course.

According to Labensky & Hause (2010), Food menu offered on a regular basis, consisting of: (1) Du Jour Menu, a group of some food items offered for that day only; (2) Static Menu, menu that offers the same type of food each day. Menu type rarely change the order of the existing arrangement with the other words used in the menu a few months or longer before replaced with a new menu. Type the menu such as this can be found in fast food restaurants, ethnic restaurants, and others; (3) Cycle Menu, part of the table d'hôte menu is created for a certain period of time, and in the rotation. This type of menu is often found in the Cafeteria The school and hospital; (4) Market Menu, Menu that provides the type of food based on the availability of food at that time or season. In general, the market is used only at certain times, due to limited food and can not be stored for long time; (5) Hybrid Menu, This type of menu is a combination of static menu with a menu cycle, or the market menu.

Menu Engineering is the approach to evaluate the price, design, decision-making that apply to the present and the future (Drysdale & Galipeau, 2002). This method uses a calculation between popularity (sales) and contribution margin. Steps that are needed to be completed in the menu

engineering process are: menu item analysis, menu mix analysis, menu engineering worksheet, four box analysis, and menu engineering graph.

According to Ninemeier (2009), menu items are the data from each of the menu with prices listed, the price per share, contribution margin and the amount of menu sold. The objective of this report is to analyze the amount of the contribution margin earned from each of the menu. Contribution margin is the difference obtained from the price of each item of food sold at food cost. The advantage of this method is easily applied with the availability of accurate information from the financial data operations, as in the above.

### **Contribution Margin = Item Price – Food Cost**

Menu mix analysis report is made to evaluate each of the menu from the menu that the whole sale. Basis to measure the degree of popularity of each type of menu. Menu Engineering assumes that each item popular if sales equal to 70% from the expected. Results from this method can help managers to evaluate the benefits and popularity of each menu, which can increase the credibility of a menu.

Menu engineering worksheet analysis includes almost all that is required to make Menu Engineering Analysis, and a lot of data that are represented on the making of other analysis. Meanwhile, four box analysis serves to describe a menu that has been in the analysis in the Menu Mix Analysis, and describes the categories which include food items, such as: Star, Plow Horse, Dog or Puzzles.

The next step is to set each menu into one of the 4 classification, are: star, plow horse, puzzles, and dog. *Star* means that the menu that has high popularity and high contribution margin. This menu requires a lot of attention; the quality must be maintained through the purchase of materials properly. Preparation of food in accordance with the standards of food quality and presentation of interest.

Plow horse means that the menu that has high popularity but low level contribution margin. This menu does not provide many benefits, but they contribute to the higher sales. Adjustment portion of food will be useful in a certain time. Meanwhile, puzzles means that the menu that has low popularity but high level of contribution. Sales from this menu are not too good because it is not interesting in terms of the presentation menu. *Dog* is the low level of popularity and contribution margin. The menu should be replaced with a new menu has a good prospect.

Menu Engineering Graph is useful means to evaluate decision strategies. It indicates each competing menu item position relative to all others, the menu engineering graph is the most powerful report produced by menu engineering applications. The vertical axis of the graph positions menu mix and the horizontal axis position contribution margin. Each item is then graphed according to its Contribution Margin and Menu Mix coordinates. It is especially important to note that not all items in the same classification posses identical characteristics (Drysdale, 2008).

## **METHOD**

To obtain the data and information needed, the author uses a descriptive method of research with the aim to reveal the problems that exist. Descriptive research is concern with how what is or what exist is related to some preceding event that has influenced or affected a present condition or event. To provide an accurate description or picture of the status or characteristics of a situation or phenomenon (Johnson & Christensen, 2010).

This data collection technique that is being used by this research are: (1) interview, the author conducted interviews with people concerned, namely the company and the leader in order to obtain the required information related to the discussion of the problem and in the form of technical writing duties end of the paper is; (2) observation, the data obtained by making concrete observations directly to the source of the problem. In this case, the authors obtained data from the X Restaurant, Bogor; and (3) questionnaire, a research instrument consisting of a series of questions and other prompts for the purpose of gathering information from respondents. Although they are often designed for statistical analysis of the responses, this is not always the case.

## RESULTS AND DISCUSSIONS

### Menu Analysis at the X Restaurant

Menu Mix Analysis can be a list of contribution margin per item, and the amount of each menu sold in a month.

Table 1 Food cost and sales (March-May 2010)

No	Menu Item	Price	Food Cost	Food Cost %	Sales			
					Mar	Apr	May	Total
1	Garden Salad	Rp15.000,00	Rp6.750,00	45%	1	1	1	3
2	Caesar Salad	Rp22.000,00	Rp9.900,00	45%	1	0	1	2
3	Soup Buntut	Rp36.000,00	Rp17.280,00	48%	1	2	1	4
4	Tom Yam	Rp22.500,00	Rp9.000,00	40%	0	1	1	2
5	Nasi Goreng	Rp25.000,00	Rp11.250,00	45%	4	5	2	11
6	Ayam Goreng Mentega	Rp35.000,00	Rp15.750,00	45%	1	1	0	2
7	Grill Sirloin Steak	Rp67.000,00	Rp30.150,00	45%	0	1	2	3
8	Spaghetti Bolognaise	Rp32.500,00	Rp13.975,00	43%	0	1	2	3
9	French Fries	Rp17.500,00	Rp7.875,00	45%	8	1	6	15
10	Cheese Burger	Rp25.000,00	Rp12.500,00	50%	1	0	1	2

Source: Data Restaurant X Bogor

The contribution margin of each menu item is obtained from the item selling price less the food cost items.

Table 2 Menu item analysis (March–May 2010)

Item Name	Item Selling	Item Food	Contribution	MM
	Price	Cost	Margin	Count
Garden Salad	Rp15.000,00	Rp6.750,00	Rp8.250,00	3
Caesar Salad	Rp22.000,00	Rp9.900,00	Rp12.100,00	2
Soup Buntut	Rp36.000,00	Rp17.280,00	Rp18.720,00	4
Tom Yam	Rp22.500,00	Rp9.000,00	Rp13.500,00	2
Nasi Goreng	Rp25.000,00	Rp11.250,00	Rp13.750,00	11
Ayam Goreng Mentega	Rp35.000,00	Rp15.750,00	Rp19.250,00	2

Grill Sirloin Steak	Rp67.000,00	Rp30.150,00	Rp36.850,00	3
Spaghetti Bolognaise	Rp32.500,00	Rp13.975,00	Rp18.525,00	3
French Fries	Rp17.500,00	Rp7.875,00	Rp9.625,00	15
Cheese Burger	Rp25.000,00	Rp12.500,00	Rp12.500,00	2

Source: Data Restaurant X, Bogor

Table 3 Menu mix analysis

Item	MM	%MM	Group	Item	Menu	Group	Menu
Name	Count	Share	Rank	CM	CM	Rank	Class
Garden Salad	3	0,06%	Low	Rp8.250,00	Rp24.750,00	Low	Dog
Caesar Salad	2	0,04%	Low	Rp12.100,00	Rp24.200,00	Low	Dog
Soup Buntut	4	0,09%	High	Rp18.720,00	Rp74.880,00	High	Star
Tom Yam	2	0,04%	Low	Rp13.500,00	Rp27.000,00	Low	Dog
Nasi Goreng	11	0,23%	High	Rp13.750,00	Rp151.250,00	Low	Plow Horse
Ayam Goreng Mentega	2	0,04%	Low	Rp19.250,00	Rp38.500,00	High	Puzzle
Grill Sirloin Steak	3	0,06%	Low	Rp36.850,00	Rp110.550,00	High	Puzzle
Spaghetti Bolognaise	3	0,06%	Low	Rp18.525,00	Rp55.575,00	High	Puzzle
French Fries	15	0,32%	High	Rp9.625,00	Rp144.375,00	Low	Plow Horse
Cheese Burger	2	0,04%	Low	Rp12.500,00	Rp25.000,00	Low	Dog
<b>Total</b>	47				Rp676.080,00		
<b>Average CM</b>					Rp14.384,68		

Source: Data Restaurant X, Bogor

This report is made to evaluate each of the menu from the menu that are sold whole and evaluate the benefits and popularity of each of the menu to obtained the menu class. Function of the popularity index is to find the popularity level of a menu of each menu. The popularity index formula:

$$\text{Popularity Index} = \frac{1}{\text{Item}} \times 70\%$$

$$\text{Popularity Index} = \frac{1}{10} \times 70\% = 0.07\%$$

From this report we can see Menu Mix Percentage Share or MM% Share, which is obtained from the amount of each sold divided by the total number of sold the entire menu.

$$\text{MM Count} \\ \% \text{MM Share} = \frac{\text{MM Count}}{\text{Total MM Count}} \times 100\%$$

If the results from %MM Share is greater than Popularity Index included in the group rank *High*, and when the results from % MM Share smaller than Popularity Index included in the group rank *Low*. In addition to Popularity Index and Menu Mix percentage can also be obtained Menu Contribution Margin (Menu CM). Functionality from the Menu Contribution Margin (Menu CM) is to find the group's rank Contribution Margin. Where to obtain it by looking for Average Contribution

Margin, which is obtained from the total number of Menu Contribution Margin, divided by the total number of Menu Mix Count (MM Count).

$$\text{Menu CM} = \text{MM Count} \times \text{Item CM}$$

$$\text{AV CM} = \frac{\text{Total Menu CM}}{\text{Total MM Count}} = \frac{\text{Rp676.080,00}}{47} = \text{Rp14.384,68}$$

If the Contribution Margin per item is greater than the Average Contribution Margin included in the group rank *High*, and when the results from the Contribution Margin per item is smaller than the Average Contribution Margin included in the group rank *Low*.

After obtaining the group's rank MM% Share, and Contribution Margin, then the next is set each menu in the Menu Class. The function is: (1) if the group rank MM% *High* and Contribution Margin *Low* then categorized as *Plow Horse*; (2) if the group rank MM% *Low* and Contribution Margin *High* then categorized as *Puzzle*; (3) if the group rank MM% *High* and Contribution Margin *High* then categorized as *Star*; (4) if the group rank MM% *Low* and Contribution Margin *Low* then categorized as *Dog*.

MENU ENGINEERING WORKSHEET

A	B	C	D	E	F	G	H	L	P	R	S	
Menu Item Name	Number	Menu	Item	Item	Item	Menu	Menu	Menu	CM	MM %	Menu Item	
	Sold	Mix	Food	Selling	CM	Cost	Revenues	CM	Category	Category	Classification	
	(MM)	%	Cost	Price								
Garden Salad	3	0.06	Rp6,750.00	Rp15,000.00	Rp8,250.00	Rp20,250.00	Rp45,000.00	Rp24,750.00	Low	Low	Dog	
Caesar Salad	2	0.04	Rp9,900.00	Rp22,000.00	Rp12,100.00	Rp19,800.00	Rp44,000.00	Rp24,200.00	Low	Low	Dog	
Soup Buntut	4	0.09	Rp17,280.00	Rp36,000.00	Rp18,720.00	Rp69,120.00	Rp144,000.00	Rp74,880.00	High	High	Star	
Tom Yam	2	0.04	Rp9,000.00	Rp22,500.00	Rp13,500.00	Rp18,000.00	Rp45,000.00	Rp27,000.00	Low	Low	Dog	
Nasi Goreng	11	0.23	Rp11,250.00	Rp25,000.00	Rp13,750.00	Rp123,750.00	Rp275,000.00	Rp151,250.00	Low	High	Horse	
Ayam Goreng Mentega	2	0.04	Rp15,750.00	Rp35,000.00	Rp19,250.00	Rp31,500.00	Rp70,000.00	Rp38,500.00	High	Low	Puzzle	
Grill Sirloin Steak	3	0.06	Rp30,150.00	Rp67,000.00	Rp36,850.00	Rp90,450.00	Rp201,000.00	Rp110,550.00	High	Low	Puzzle	
Spaghetti Bolognaise	3	0.06	Rp13,975.00	Rp32,500.00	Rp18,525.00	Rp41,925.00	Rp97,500.00	Rp55,575.00	High	Low	Puzzle	
French Fries	15	0.32	Rp7,875.00	Rp17,500.00	Rp9,625.00	Rp118,125.00	Rp262,500.00	Rp144,375.00	Low	High	Horse	
Cheese Burger	2	0.04	Rp12,500.00	Rp25,000.00	Rp12,500.00	Rp25,000.00	Rp50,000.00	Rp25,000.00	Low	Low	Dog	
	<b>N</b>					<b>I</b>	<b>J</b>	<b>M</b>				
Columnn Total	47					Rp134,430.00	Rp1,234,000.00	Rp676,080.00				
		Additional Computation					<b>K = I/J</b>	<b>O = M/N</b>	<b>Q = (100%/Item) (70%)</b>			
							0.11	Rp14,384.68			0.07	

(Data Restaurant X, Bogor)

This analysis consist of whole information such as total revenue, total food cost, total contribution margin, popularity index, average contribution margin, food cost percentage, and menu class which are needed to settle Menu Engineering Analysis.

The Menu Engineering Worksheet Description:

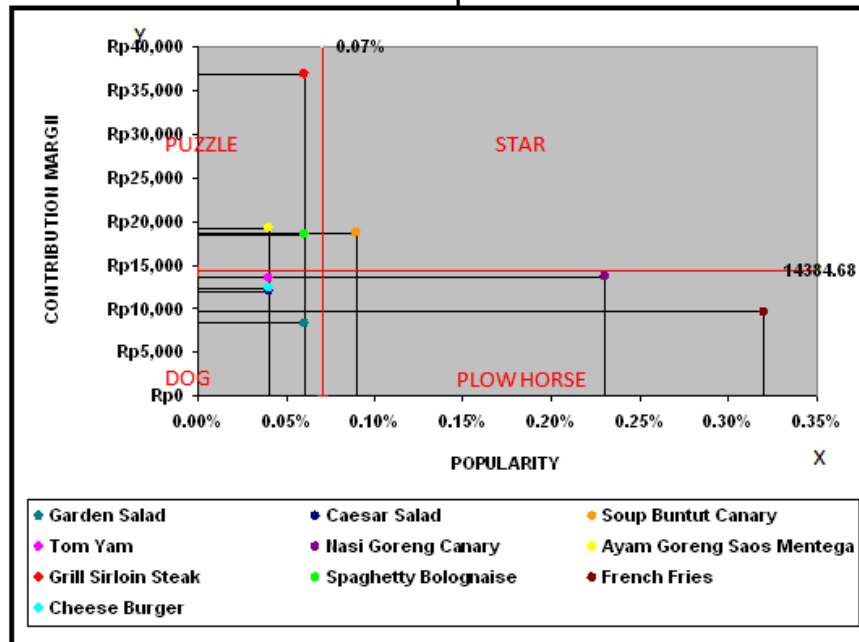
- A: Menu Item Name
- B: Number Sold (MM)
- C: Menu mix percentage obtained from the number of menu items sold divided by total sales multiplied the 100%
- D: Item food cost
- E: Item Selling Price
- F: Item Contribution Margin obtained from item selling price less by item food cost
- G: Menu Cost obtained from number sold multiplied by item food cost
- H: Menu Revenues obtained from number sold multiplied by item selling price
- I: Total item food cost
- J: Total Menu Revenues
- K: Food Cost Percentage obtained from total item food cost divided by total menu revenues
- L: Menu Contribution Margin (Menu CM) obtained from number sold multiplied by item contribution margin (Item CM)
- M: Total Menu Contribution Margin (Menu CM)
- N: Total Number Sold (MM)
- O: Average Contribution Margin obtained from total menu contribution margin (Menu CM) divided by total number sold
- P: Contribution Margin Category obtained if Item Contribution Margin is greater than Average Contribution Margin included in the group rank "High" and if Item Contribution Margin is smaller than Average Contribution Margin included in the group rank "Low"
- Q: Popularity Item Index obtained from 1 divided total menu item multiplied 70%
- R: Menu Mix Percentage Category obtained if Menu Mix Percentage is greater than Popularity Index included in the group rank "High" and if Item Menu Mix Percentage is smaller than Popularity Index included in the group rank "Low"
- S: Menu Item Classification obtained If the group rank Menu Mix Percentage "High" and Contribution Margin "Low" then categorized as "Plow Horse". If the group rank Menu Mix Percentage "Low" and Contribution Margin "High" then categorized as "Puzzle". If the group rank Menu Mix Percentage "High" and Contribution Margin "High" then categorized as "Star". If the group rank Menu Mix Percentage "Low" and Contribution Margin "Low" then categorized as "Dog."

Table 4 Four box analysis

<b>PLOW HORSE</b>		<b>STAR</b>	
Nasi Goreng , French Fries		Soup Buntut	
<b>PUZZLE</b>			
Garden Salad, Caesar Salad, Cheese Burger, Tom Yam		Grill Sirloin	Steak, Spaghetti Bolognese, Ayam Goreng Mentega

This report provides the user about the number of items found in each category.

Table 5 Menu engineering graphics



Menu Engineering Graph useful to evaluate the strategies that can be applied to each item on the menu to see the competition position of each menu item on the entire menu item.

### Questionnaire Analysis at the X Restaurant

Questionnaire is given to 50 customers who have dine in the Restaurant X, the type of questions are varieties of food, taste of food, display of food, portion of food, and the price of food. Based on the *varieties of food*, 3 voters give very good answers with score 15, 3 voter to give good answers with score 12, 17 voter to give fair answers with score 51, 12 voter to give poor answers with score 24, and 15 voter to give very poor answers with score 15.

Based on the *taste of food*, 2 voter to give very good answers with score 10, 6 voter to give good answers with score 24, 18 voter to give fair answers with score 54, 20 voter to give poor answers with score 40, and 4 voter to give very poor answers with score 4. Based on the *display of food*, 2 voter to give very good answers with score 10, 11 voter to give good answers with score 44, 13 voter to give fair answers with score 39, 10 voter to give poor answers with score 20, and 14 voter to give very poor answers with score 14.

Based on the *portion of food*, 1 voter to give very good answers with score 5, 5 voter to give good answers with score 20, 9 voter to give fair answers with score 27, 17 voter to give poor answers with score 34, and 18 voter to give very poor answers with score 18. Based on the *price of food*, 1 voter to give very good answers with score 5, 3 voter to give good answers with score 12, 14 voter to give fair answers with score 42, 14 voter to give poor answers with score 28, and 18 voter to give very poor answers with score 18.



Based on five question then the total score is 585 from 50 voter or 46,8% that obtained from  $5 \times 5 \times 50 = 1250$ .

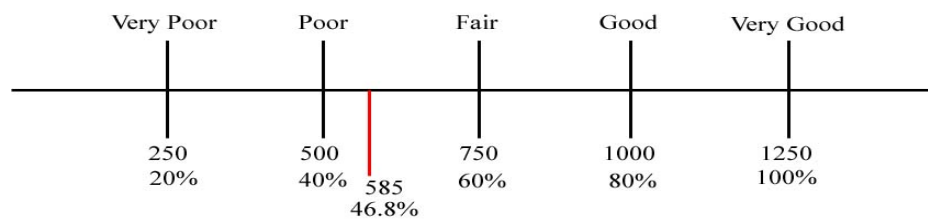


Figure 1 Likert scale

From Figure 1 that level of food quality based on several questions that are still in the category are less fair.

## CONCLUSION

Based on the results of research, the conclusions that can be taken from the top 10 menu items only one that has a popularity and contribution margin maximum (*Star*) is Soup Buntut. While for the other menu items which are Nasi Goreng and French Fries, only give the maximum popularity without the maximum contribution margin (*Plow Horse*). And for the menu item Ayam Goreng Mentega, Grill Sirloin Steak and Spaghetti Bolognaise only give the maximum contribution margin without the maximum popularity (*Puzzle*). From the existing menu item, 4 menu items which are Garden Salad, Caesar Salad, Tom Yam and Cheese Burger are in the (*dog*) category or the menu does not have a maximum popularity and contribution margin.

According to Ninemeier (2009), for menu items included in the category *Star* should maintain discrete items, do not alter the quality of the product is presented, placing the menu in a position that is easily seen on the menu and the list should be to the customer that the menu is always available. For menu items included in the category *Puzzle* should place this item on the area that is often seen on the menu list, increase the promotion, better put table tens for promotion, and consider the decreasing the price, with the contribution margin still maintain higher above the average. As a possible item for the low popularity items that do not provide a value for the customer.

For menu items included in the category *Plow Horse* should increase the price carefully. Likely to be popular because of the menu item that gives high value to customers, if the price is increased still need to provide a high value for customers, the popularity and provide a high contribution margins. For menu items included in the category *Dog* should explore the menu of the different variations with the basic material that is still the same or when the menu item still give a low contribution margin and the low popularity should remove the menu from the list of menu.

Based on the result of the questionnaire the X Restaurant should be more attention in the policies provided. According to Labensky & Hause (2010), the policies include marketing, financial and catering policy. *Marketing policy* displays the menu design in accordance with the market's restaurants, development and explanation of the menus adapted to the style of consumers who want. Before planning, it is necessary to know the types of clients that will be served at the establishment. A survey of the customers is taken and after gathering the information that is necessary, a successful menu can be planned (the occupation, the economical status of the area, the nationality, the religion, the age, the sex).

*Financial policy* includes the structure and pricing strategy that will be offered to consumers. Compile a menu with the food cost not higher than standard. *Catering policy* displays the menu seen in terms of the portion of the menu and type of food that will be offered. Variety the menu should include not only the food items but also the methods of preparation and the texture colors forms and shapes of the food (Variation of food material, variation of color, variation of flavors, variation of sauce, variation of texture, variation of cooking methods used, variation and suitability of garnitures).

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## BIOGRAPHY

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