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Research Article

Menu Engineering Approach to Determine Sales Strategy at Senja Eatery Labuan Bajo Restaurant

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Abstract: This study aims to determine the right menu sales strategy in Senja Eatery Restaurant Labuan Bajo by evaluating the menu using the Menu Engineering approach based on its profitability and popularity level. The menu items analyzed are the Main Course menu with a total of 21 items. The research method used is quantitative descriptive with the source of result data. The results of this study are, menu items classified into 4 categories, 1 menu item is classified as Stars menus, 5 menu items are classified as Puzzles menu, 9 menu items are classified as Plow horses menus and the remaining 6 are classified as Dogs menus. The sales strategy applied to each menu category, namely the Stars menu, is to place it in a special place on the menu. For menu puzzles, lowering the selling price can increase sales while promoting it in all marketing media lines. The strategy for the Plow horses menu, maintain the menu items on the menu and make the menu more profitable by increasing the price. The strategy for the Dogs menu, eliminate the dogs menu items from the menu and replace them with other dishes that show potential profitability and popularity.

Keywords: Engineering Menu; Evaluation Menu; Popularity; Profitability; Sales Strategy.

1. Introduction

Effective menu management is a determining factor in today's highly competitive restaurant industry. One of the important steps in menu management is menu evaluation. Menu evaluation should be done regularly, because this step is an important step so that restaurant management can ensure that menu items provide maximum contribution to both profit and customer satisfaction. Menu Engineering as one of the analytical techniques that can be used to evaluate the performance of a menu so that restaurants can determine the right sales strategy and also identify their flagship menu.

Menu Engineering essentially helps restaurants categorize menu items based on their popularity and profitability. By conducting a Menu Engineering analysis, restaurants can easily identify menu items that need to be promoted, changed, or eliminated. In addition, conducting a Menu Engineering analysis regularly allows restaurants to be more adaptive, responding quickly to changes in consumer behavior and market conditions. It also helps in the cost control process by preventing unexpected expenses due to excessive food stock on less popular menu items.

Previous studies on Menu Engineering discussed how to conduct Menu Engineering in a restaurant or cafeteria, which then used the results of the evaluation to register marketing strategies that should be taken by management to increase restaurant profitability (Ardiansyah, 2020; Gusti et al., 2018). Several other studies explored the integration of Menu Engineering using various financing methods (Linassi et al., 2016) (Fang & Rubin, 2014). Other studies on Menu Engineering discussed the development of Menu Engineering as a tool for restaurants to analyze menus. One of them is a study on the design of a Menu Engineering information system based on variable financing that has been conducted in Surabaya (Heru Saputra, 2021).

Although this Menu Engineering analysis is important for a culinary business, it is often found that restaurants, especially newly developed restaurants, forget to do it, and rely more

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on instinct to determine their mainstay menu. This is due to the complexity of calculating Menu Engineering if it is still done manually, while if using the help of a system, the costs required are quite expensive.

For 2 years running, the menu choices of Senja Eatery Labuan Bajo Restaurant, especially the main course menu, have characteristics of the Manggarai and Bali regions such as betutu chicken, lepang chicken to kesambi chicken satay. There are 21 types of main course menus that are attractive to customers. However, not all items on the menu contribute to the restaurant's profits in the same way. Some items on the menu may be very popular but have low margins, while others may have high margins but have fewer customers. It is hoped that this study will produce a comprehensive analysis of the Senja Eatery Labuan Bajo restaurant's main course menu to find and categorize each item on the menu, as well as to create the right sales strategy.

The Menu Engineering approach will help Senja Eatery Labuan Bajo optimize their menu by providing key insights into customer behavior and preferences. Thus, the restaurant can be more responsive to customer needs and wants while increasing operational efficiency and financial profitability.

The purpose of this study is to help the management of Senja Eatery Labuan Bajo Restaurant make strategic decisions about the menu that will improve their competitiveness and performance in an increasingly dynamic market. By implementing Menu Engineering, they are expected to achieve their financial goals and provide a better dining experience for customers.

2. Literature Review

2.1 MENU ANALYSIS

Menu analysis is part of a Cost Control process that aims to maintain the profitability of a hotel (Annaraud, 2008) . Based on previous research, it was explained that restaurants that do not operate efficiently and are far from technology will be forced out by the market (Alberca & Parte, 2018) . Some methods for menu analysis that are commonly used include Menu Engineering , goal value analysis and marginal analysis (Mann et al., 1999).

2.2 ENGINEERING MENU

Menu Engineering is a management tool to evaluate and improve the potential profitability of a menu (Linassi et al., 2016) . Historical Menu Engineering modeling includes food costs , contribution margins , and popularity (Menu Mix) (Taylor & Brown, 2007) . Then, the profitability of all products in the menu, both marketing and pricing are evaluated and classified (Mutlu et al., 2022). Menu Engineering classifies menus into 4 quadrants based on their profitability and popularity, namely:

Stars : menus that have high profitability and high popularity
Plow horses : a menu that has low profitability and high popularity
Puzzles : a menu that has high profitability and low popularity.
Dogs : a menu that has low profitability and low popularity.
Engineering Menu classification is presented in Figure 1.

Figure 1. Engineering Menu Matrix
Source: https://everythingabouthospitality.in/menu-engineering/

2.3 FOOD COST

Food costs can be done by breaking down each menu item based on its ingredients, then calculating the costs required to make each menu item (Hermida & Aráuz, 2023). If written in the following equation:

$$FC = C_1V_1 + C_2V_2 + \cdots + C_mV_m \quad (1)$$

Where:
FC : food cost
C : food costs
V : volume of food ingredients
m : number of food items in a menu item
CONTRIBUTION MARGIN

The contribution margin of a product on the menu is a reduction of the selling price to the food cost (Wansink et al., 2005) . If written in an equation, it is as follows:

$$CM = SP - FC \quad (2)$$

Where:
CM : Contribution margin
SP: selling price
FC : food cost

After calculating the contribution margin, continue by calculating the average contribution margin obtained using the following equation:

$$CMA = \frac{\sum_{i=1}^{n} CM_i}{n} \quad (3)$$

Where:
CMA : average contribution margin (Contribution margin) Average)
n : number of menu items

To find out the menu items that have a high contribution margin, it can be seen from the comparison between the contribution margin and the average contribution margin. If the contribution margin of a particular menu item is higher than the average contribution margin, then it can be categorized as a menu item with high profit, and vice versa (Wansink et al., 2005) .

2.4 MENU MIX PERCENTAGE

The use of quantitative data analysis is a dominant approach used when analyzing Menu Mix (MM). Sales mix reports are the main source in calculating the performance of Mixed Menu (Mifli, 2000) . The popularity of a menu is measured by the percentage of Menu Mix (Atkinson & Jones, 1993). The percentage of sales of menu items for all items sold in a certain period of time is known as the percentage of Menu Mix . The percentage of Menu Mix can be calculated using the following equation:

$$MM\% = \frac{total\ penjualan\ tiap\ item\ menu}{total\ penjualan\ seluruh\ menu} \times 100\% \quad (4)$$

2.5 MENU POPULARITY INDEX

One important aspect in Menu Engineering is knowing the index of the popularity of the menu itself. The menu popularity index can be calculated as follows:

$$Indeks\ Popularitas\ Menu = \frac{100\%}{n} \times 70\% \times N \quad (5)$$

Where:
N : Total menu sold
n : number of menu items

A menu that has a greater number of sales compared to the menu popularity index is said to have high popularity, and vice versa (Atkinson & Jones, 1994).

3. Research Methods

This study uses a qualitative descriptive research method with the help of a spreadsheet-based Menu Engineering calculator to carry out the stages in Menu Engineering until reaching the final stage, namely the menu sales strategy which will then be implemented by the Senja Eatery Labuan Bajo Restaurant. The stages of the Menu Engineering process as explained by (Putra et al., 2022) are described as follows:

- Step 1: Identify the menu items to be analyzed.
- Step 2: Record the number of menus sold and calculate the Menu Mix Percentage (MM%) using equation 4.
- Step 3: Calculate the contribution margin of each menu item. Contribution margin is calculated by subtracting the cost of the food from the selling price of the menu item, as shown in equation 2.
- Step 4: Calculating the sales amount
- Step 5: Calculate Total Contribution Margin by multiplying the sales amount of each menu item by its contribution margin.
- Step 6: Determine the Average Contribution Margin of the menu using equation 3.
- Step 7: Calculate the Menu Popularity Index using equation 5.

Menu Mix Categorization to get the popularity level of the menu items. Compare the sales amount of each menu item with the Menu Popularity Index obtained from the previous step. If the total portion sold is greater than the Menu Popularity Index then the menu is said to have high popularity, and vice versa, if it is smaller than the Menu Popularity Index then the menu item is said to have low popularity.

Step 9: Compare the contribution margin of each menu item with the average contribution margin obtained in step 6 to get the category of its profitability level. If the contribution margin of a menu item is greater than the average contribution margin, then the contribution margin of the menu item is categorized as high. Conversely, if it is lower, then the contribution margin of the menu item is categorized as low.

Step 10: Applying the classification of Menu Mix Percentage as obtained in step 4 and Contribution Margin category as obtained in Step 9. The menu classification is based on Figure 1. Menu Engineering Matrix . Where, for menu items with high popularity and high profitability are categorized as Menu Stars , for menu items with low popularity, while high profitability is said to be the Puzzles menu . Conversely, for menu items with high popularity and low profitability are categorized as Plow horses menu . Finally, for menu items with low profitability and low popularity are categorized as Dogs menu .

Step 11: Make a conclusion about the menu item, then propose a marketing strategy that is suitable for the menu. The decisions are: maintaining the menu item, changing the position of the menu item, replacing the menu item or deleting the menu item. For the Dogs menu , the strategy used is "Remove or eliminate from the menu and replace with other dishes that show potential profitability and popularity", then for the Plow horses menu , the strategy applied is "Maintain the menu item on the menu and make the menu more profitable by increasing the price or adjusting the price of raw materials without reducing the quality, so that the profitability of the Plow horses menu can increase". For the Puzzles menu , the strategy made is "Lower the selling price so that it can be well received by consumers. Giving discounts on the menu can increase sales while promoting it in all lines of marketing media. It is also recommended to limit the number of menu items by removing or changing their position to avoid burdening the restaurant's costs excessively". Finally, for the menu item with the Stars category , the strategy used is "Place it in a special place on the menu and implement extensive marketing to promote it more widely".

In conducting the research, data collection was carried out using documentation techniques, where documents are records of past events. Documents can be in the form of pictures, writings or monumental works of a person (Sugiyono, 2013). The data documented were data on 21 main course menu items from the Senja Eatery Labuan Bajo Restaurant. These menus are typical Manggarai and Balinese menus sold from January 2025 to May 2025, which will then be analyzed for sales levels and profitability levels using the Menu Engineering calculator.

3.1 METHOD STUDY

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- Step 8: Menu Mix Categorization to get the popularity level of the menu items. Compare the number of sales of each menu item with the Menu Popularity Index obtained from the previous step. If the total portion sold is greater than the Menu Popularity Index, the menu is said to have high popularity, and vice versa, if it is smaller than the Menu Popularity Index, the menu item is said to have low popularity.
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will then be analyzed for sales levels and profitability levels using the Menu Engineering calculator.

4. Results and Discussion

Menu Engineering is carried out through several stages as explained in the research methodology section, using a spreadsheet-based Menu Engineering calculator that is easy to obtain and use. The data analyzed is the documentation data carried out at the Senja Eatery Labuan Bajo Restaurant. The data includes the number of sales, food costs and selling prices of each menu item. The data is presented in Table 1.

Table 1. Senja Eatery Labuan Bajo Restaurant Menu Item Data

No	Menu Items	Number of Sold (portions)	Price	Food Costs
1	Half Betutu Chicken	50	Rp. 85,000	Rp. 60,000
2	Whole Chicken Betutu	6	Rp. 150,000	Rp. 90,000
3	Half Lepang Chicken	23	Rp. 105,000	Rp. 75,000
4	Whole Lepang Chicken	6	Rp. 170,000	Rp. 110,000
5	Half Lepang Duck	102	Rp. 145,000	Rp. 85,000
6	Whole Lepang Duck	35	Rp. 210,000	Rp. 140,000
7	Beef Clear Soup	67	Rp. 65,000	Rp. 43,000
8	Beef Rendang	159	Rp. 65,000	Rp. 43,000
9	Be Still Real	60	Rp. 65,000	Rp. 43,000
10	Rice cake with cap gomeh	0	Rp. 65,000	Rp. 39,000
11	The Bird of Saung Nderu	69	Rp. 65,000	Rp. 39,000
12	Senja Fried Noodles	170	Rp. 60,000	Rp. 36,500
13	Balinese Mixed Rice	130	Rp. 65,000	Rp. 42,000
14	Manggarai Mixed Rice	208	Rp. 65,000	Rp. 41,000
15	Sei Fried Rice	171	Rp. 60,000	Rp. 38,000
16	Dusk Fried Rice	248	Rp. 60,000	Rp. 38,000
17	Chicken Kesambi Satay	49	Rp. 65,000	Rp. 37,000
18	Beef Kesambi Satay	57	Rp. 65,000	Rp. 40,000
19	Sate Lilit	49	Rp. 55,000	Rp. 35,000
20	Beef Rib Stew	47	Rp. 65,000	Rp. 43,000
21	Darne Mackerel	57	Rp. 78,000	Rp. 55,000
Total		1763		

Source: Senja Eatery Labuan Bajo Restaurant (2025)

From the data presented in Table 1, it appears that during the period January-May 2025, Senja Eatery Labuan Bajo Restaurant has sold 21 Main Course menu items . All of these menu items have different sales levels. Therefore, a menu evaluation is carried out to determine the level of profitability and popularity of each menu item, so that the Restaurant can determine the right strategic sales steps to increase menu sales. The stages carried out include:

Calculating Menu Mix Percentage

The Mix Percentage menu is calculated using the equation:

$$MM\% = \frac{total\ penjualan\ tiap\ item\ menu}{total\ penjualan\ seluruh\ menu} \times 100\%$$

With the MM% results for each menu item presented as in Table 2.

Table 2. Menu Mix Percentage at Senja Eatery Labuan Bajo Restaurant

No	Menu Items	*Menu Mix Percentage* (%)
1	Half Betutu Chicken	0.95
2	Whole Chicken Betutu	0.11
3	Half Lepang Chicken	0.44
4	Whole Lepang Chicken	0.11
5	Half Lepang Duck	1.93
6	Whole Lepang Duck	0.66
7	Beef Clear Soup	1.27
8	Beef Rendang	3.01
9	Be Still Real	1.14
10	Rice cake with cap gomeh	0.00
11	The Bird of Saung Nderu	1.31
12	Senja Fried Noodles	3.22
13	Balinese Mixed Rice	2.46
14	Manggarai Mixed Rice	3.94
15	Sei Fried Rice	3.24
16	Dusk Fried Rice	4.70
17	Chicken Kesambi Satay	0.93
18	Beef Kesambi Satay	1.08
19	Sate Lilit	0.93
20	Beef Rib Stew	0.89
21	Darne Mackerel	1.08

Source: Processed data (2025)

Based on Table 2, it can be seen that the Senja Fried Rice menu item has the highest Menu Mix Percentage, which is 4.70%, while the lowest is Lontong Cap Gomeh at 0%. This is because the Lontong Cap Gomeh menu is only available once a year, which is 15 days after Chinese New Year, but it turns out that it is not very popular with guests at the Senja Eatery restaurant.

4.1 Determining Contribution Margin

Contribution Margin Calculation to determine the profitability of each menu item. Contribution margin is calculated using equation 2.

$$Margin\ Kontribusi = Harga\ Jual - Biaya\ Makanan$$

After calculating the Contribution Margin, the results presented in Table 3 were obtained.

Table 3. Contribution Margin of Menu Items at Senja Eatery Labuan Bajo Restaurant

No	Menu Items	Contribution Margin
1	Half Betutu Chicken	Rp. 25,000
2	Whole Chicken Betutu	Rp. 60,000
3	Half Lepang Chicken	Rp. 30,000
4	Whole Lepang Chicken	Rp. 60,000
5	Half Lepang Duck	Rp. 60,000
6	Whole Lepang Duck	Rp. 70,000
7	Beef Clear Soup	Rp. 22,000

No	Menu Items	Contribution Margin
8	Beef Rendang	Rp. 22,000
9	Be Still Real	Rp. 22,000
10	Rice cake with cap gomeh	Rp. 26,000
11	The Bird of Saung Nderu	Rp. 26,000
12	Senja Fried Noodles	Rp. 23,500
13	Balinese Mixed Rice	Rp. 23,000
14	Manggarai Mixed Rice	Rp. 24,000
15	Sei Fried Rice	Rp. 22,000
16	Dusk Fried Rice	Rp. 22,000
17	Chicken Kesambi Satay	Rp. 28,000
18	Beef Kesambi Satay	Rp. 25,000
19	Sate Lilit	Rp. 20,000
20	Beef Rib Stew	Rp. 22,000
21	Darne Mackerel	Rp. 23,000

Source: Processed data (2025)

From Table 3, it appears that the sate lilit menu item has the lowest contribution margin or profitability among the others, with a contribution margin of IDR 20,000.00, while the highest is the whole duck lepang with a contribution margin of IDR 70,000.00.

4.2 Determine Total Sales.

Total sales are obtained by multiplying the number of menu item sales by the price of the menu item. After the calculation, the results are obtained as presented in table 4.

Table 4. Total Sales

No	Menu Items	Total Sales
1	Half Betutu Chicken	Rp. 4,250,000
2	Whole Chicken Betutu	Rp. 900,000
3	Half Lepang Chicken	Rp. 2,415,000
4	Whole Lepang Chicken	Rp. 1,020,000
5	Half Lepang Duck	Rp. 14,790,000
6	Whole Lepang Duck	Rp. 7,350,000
7	Beef Clear Soup	Rp. 4,355,000
8	Beef Rendang	Rp. 10,335,000
9	Be Still Real	Rp. 3,900,000
10	Rice cake with cap gomeh	Rp -
11	The Bird of Saung Nderu	Rp. 4,485,000
12	Senja Fried Noodles	Rp. 10,200,000
13	Balinese Mixed Rice	Rp. 8,450,000
14	Manggarai Mixed Rice	Rp. 13,520,000
15	Sei Fried Rice	Rp. 10,260,000
16	Dusk Fried Rice	Rp. 14,880,000
17	Chicken Kesambi Satay	Rp. 3,185,000
18	Beef Kesambi Satay	Rp. 3,705,000
19	Sate Lilit	Rp. 2,695,000

No	Menu Items	Total Sales
20	Beef Rib Stew	Rp. 3,055,000
21	Darne Mackerel	Rp. 4,446,000

Source: Processed data (2025)

Based on Table 4, it can be seen that nasi goreng senja is a menu item with the highest total sales of Rp14,880,000.00, followed by bebek lepang whole with total sales of Rp7,350,000.00. While the menu item with the lowest sales level is Lontong Cap Gomeh with total sales of Rp0.00.

4.4 Determining Total Contribution Margin and Average Contribution Margin

The total contribution margin needs to be known to be able to determine the average contribution margin on the Main Course menu at Senja Eatery Labuan Bajo Restaurant. The total contribution margin is calculated using the following equation:

$$Total\ Margin\ Kontribusi = Margin\ Kontribusi \times Total\ Penjualan$$

After knowing the Total Contribution Margin, continue by calculating the average contribution margin using the following equation 3:

$$Rata - rata\ Margin\ Kontribusi = \frac{\sum_{i=1}^{n} CM_i}{n}$$

Where:
CM i : Contribution margin of menu i
n : number of menu items

The calculation of Total Contribution Margin on the menu items of Senja Eatery Labuan Bajo Restaurant is presented in Table 5.

Table 5. Total Contribution Margin

No	Menu Items	Total Contribution Margin
1	Half Betutu Chicken	Rp. 1,250,000
2	Whole Chicken Betutu	Rp. 360,000
3	Half Lepang Chicken	Rp. 690,000
4	Whole Lepang Chicken	Rp. 360,000
5	Half Lepang Duck	Rp. 6,120,000
6	Whole Lepang Duck	Rp. 2,450,000
7	Beef Clear Soup	Rp. 1,474,000
8	Beef Rendang	Rp. 3,498,000
9	Be Still Real	Rp. 1,320,000
10	Rice cake with cap gomeh	Rp -
11	The Bird of Saung Nderu	Rp. 1,794,000
12	Senja Fried Noodles	Rp. 3,995,000
13	Balinese Mixed Rice	Rp. 2,990,000
14	Manggarai Mixed Rice	Rp. 4,992,000
15	Sei Fried Rice	Rp. 3,762,000
16	Dusk Fried Rice	Rp. 5,456,000
17	Chicken Kesambi Satay	Rp. 1,372,000
18	Beef Kesambi Satay	Rp. 1,425,000
19	Sate Lilit	Rp. 2,406,000
20	Beef Rib Stew	Rp. 1,034,000
21	Darne Mackerel	Rp. 1,311,000
Total		Rp48,059,000.00

No	Menu Items	Total Contribution Margin
Average Contribution Margin		Rp2,288,524.00

Source: Processed data (2025)

From Table 5, the total contribution margin on the Main Course menu items of Senja Eatery Labuan Bajo Restaurant ranges from Rp0.00 to Rp6,120,000.00. The menu with the lowest total contribution margin is Lontong Cap Gomeh, while the highest is bebek lepang half. The average contribution margin for each menu item is Rp2,288,524.00.

4.5 Determining Menu Popularity Index

Menu Popularity Index needs to be known as a basis for decision making regarding the popularity of a menu. The menu popularity index is calculated using equation 5

$$Indeks\ Popularitas\ Menu = \frac{100\%}{n} \times 70\% \times N$$

Where:
N : Total menu sold
n : number of menu items

Based on the total menu data sold, it is 1,763 and the number of Main Course menu items at the Senja Eatery Labuan Bajo Restaurant is 21 items, so the Menu Popularity Index is obtained as follows:

$$Indeks\ Popularitas\ Menu = \frac{100\%}{21} \times 70\% \times 1.763 = 58{,}77$$

4.6 Menu Mix Categorization

After knowing the menu popularity index, the next step is to determine the menu mix category of each menu item. If the menu has a smaller number of sales compared to the menu popularity index, then the menu is said to have a low level of popularity, conversely if the number of sales of the menu item is greater than the menu popularity index, then the menu item is said to have a high level of popularity. The menu popularity index obtained was 190.03. The Menu Mix category can be seen in Table 6.

Table 6. Menu Mix Categories at Senja Eatery Labuan Bajo Restaurant

No	Menu Items	Number of Sold (portions)	*Mix Menu* Category
1	Half Betutu Chicken	50	Low
2	Whole Chicken Betutu	6	Low
3	Half Lepang Chicken	23	Low
4	Whole Lepang Chicken	6	Low
5	Half Lepang Duck	102	Tall
6	Whole Lepang Duck	35	Low
7	Beef Clear Soup	67	Tall
8	Beef Rendang	159	Tall
9	Be Still Real	60	Tall
10	Rice cake with cap gomeh	0	Low
11	The Bird of Saung Nderu	69	Tall
12	Senja Fried Noodles	170	Tall
13	Balinese Mixed Rice	130	Tall
14	Manggarai Mixed Rice	208	Tall
15	Sei Fried Rice	171	Tall
16	Dusk Fried Rice	248	Tall
17	Chicken Kesambi Satay	49	Low
18	Beef Kesambi Satay	57	Low

No	Menu Items	Number of Sold (portions)	*Mix Menu* Category
19	Sate Lilit	49	Low
20	Beef Rib Stew	47	Low
21	Darne Mackerel	57	Low

Source: Processed data (2025)

Based on table 6, it is known that 11 menu items are categorized as menus with a low menu mix , so that these menu items are said to have low popularity, namely the Half Betutu Chicken menu, Whole Betutu Chicken, Half Lepang Chicken, Whole Lepang Chicken, Whole Lepang Duck, Lontong Cap Gomeh, Chicken Kesambi Satay, Beef Kesambi Satay, Lilit Satay, Beef Rib Srosob, and Darne Tenggiri. While the other 10 menus have high popularity, with a high menu mix category, including: Half Lepang Duck, Beef Clear Soup, Beef Rendang, Sampi Menyat Nyat, Manuk Saung Nderu, Senja Fried Noodles, Balinese Mixed Rice, Manggarai Mixed Rice, Sei Fried Rice, and Senja Fried Rice

4.7 Contribution Margin Categorization

The next stage is to categorize the contribution margin to determine the level of profitability of each menu item. This stage is carried out by comparing the contribution margin of each menu item with the average contribution margin of Rp2,288,524.00. If the contribution margin is smaller than the average contribution margin, then the menu item is said to have a low level of profitability. And vice versa. The results of the categorization of the contribution margin of each menu at the Senja Eatery Labuan Bajo Restaurant can be seen in Table 7.

Table 7. Profitability Categories at Senja Eatery Labuan Bajo Restaurant

No	Menu Items	Contribution Margin	Profitability
1	Half Betutu Chicken	Rp. 25,000	Low
2	Whole Chicken Betutu	Rp. 60,000	Tall
3	Half Lepang Chicken	Rp. 30,000	Tall
4	Whole Lepang Chicken	Rp. 60,000	Tall
5	Half Lepang Duck	Rp. 60,000	Tall
6	Whole Lepang Duck	Rp. 70,000	Tall
7	Beef Clear Soup	Rp. 22,000	Low
8	Beef Rendang	Rp. 22,000	Low
9	Be Still Real	Rp. 22,000	Low
10	Rice cake with cap gomeh	Rp. 26,000	Low
11	The Bird of Saung Nderu	Rp. 26,000	Low
12	Senja Fried Noodles	Rp. 23,500	Low
13	Balinese Mixed Rice	Rp. 23,000	Low
14	Manggarai Mixed Rice	Rp. 24,000	Low
15	Sei Fried Rice	Rp. 22,000	Low
16	Dusk Fried Rice	Rp. 22,000	Low
17	Chicken Kesambi Satay	Rp. 28,000	Tall
18	Beef Kesambi Satay	Rp. 25,000	Low
19	Sate Lilit	Rp. 20,000	Low
20	Beef Rib Stew	Rp. 22,000	Low
21	Darne Mackerel	Rp. 23,000	Low

Source: Processed data (2025)

Based on Table 7, it can be seen that 6 of the 21 menu items, namely Whole Betutu Chicken, Half Lepang Chicken, Whole Lepang Chicken, Half Lepang Duck, Whole Lepang

Duck, and Kesambi Chicken Satay have a high level of profitability, while the rest have a low level of profitability.

4.8 Menu Classification in the Engineering Menu Matrix

Based on the results of the popularity and profitability levels of each menu item shown in Table 6 and Table 7, a menu classification table and Menu Engineering matrix can be compiled , respectively presented in Table 8 and Figure 2:

Table 8. Menu Classification at Senja Eatery Labuan Bajo Restaurant

No	Menu Items	Mix Menu Classification	Contribution Margin Classification	Menu Classification
1	Half Betutu Chicken	Low	Low	Dogs
2	Whole Chicken Betutu	Low	Tall	Puzzles
3	Half Lepang Chicken	Low	Tall	Puzzles
4	Whole Lepang Chicken	Low	Tall	Puzzles
5	Half Lepang Duck	Tall	Tall	Stars
6	Whole Lepang Duck	Low	Tall	Puzzles
7	Beef Clear Soup	Tall	Low	Plow horses
8	Beef Rendang	Tall	Low	Plow horses
9	Be Still Real	Tall	Low	Plow horses
10	Rice cake with cap gomeh	Low	Low	Dogs
11	The Bird of Saung Nderu	Tall	Low	Plow horses
12	Senja Fried Noodles	Tall	Low	Plow horses
13	Balinese Mixed Rice	Tall	Low	Plow horses
14	Manggarai Mixed Rice	Tall	Low	Plow horses
15	Sei Fried Rice	Tall	Low	Plow horses
16	Dusk Fried Rice	Tall	Low	Plow horses
17	Chicken Kesambi Satay	Low	Tall	Puzzles
18	Beef Kesambi Satay	Low	Low	Dogs
19	Sate Lilit	Low	Low	Dogs
20	Beef Rib Stew	Low	Low	Dogs
21	Darne Mackerel	Low	Low	Dogs

Source: Processed data (2025)

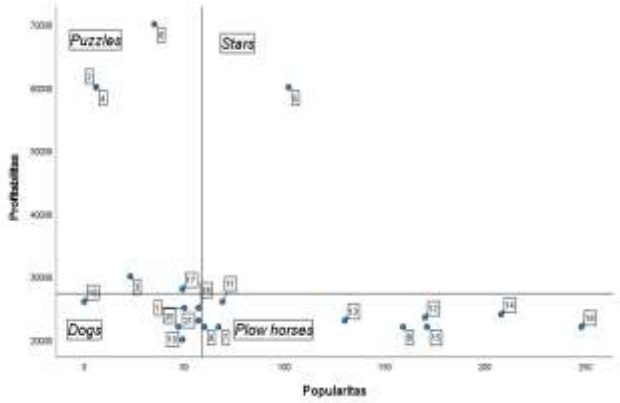

Figure 2. Engineering Menu Matrix
Source: Processed data (2025)

From the menu classification obtained by conducting menu engineering analysis in Table 8 and also supported by the Matrix in Figure 2, the recommended sales strategies are:

Star Menu

In the Stars menu group that has high profitability and popularity. The menu categorized as the Stars menu group is: Bebek Lepang Half. The recommended sales strategy is to place it in a special place on the menu and implement extensive marketing to promote it more widely.

Puzzle Menu

The menu items Ayam Betutu Whole, Ayam Lepang Half, Ayam Lepang Whole, Bebek Lepang Whole, and Sate Kesambi Ayam are in the Puzzles menu category , which is a menu that has high profitability, but low popularity. This can be caused by a lack of promotion or a lack of interest from tourists to try the menu. The strategy that can be done on the Puzzles menu is to lower the selling price so that it can be well received by consumers. Giving discounts on the menu can increase sales while promoting it in all lines of marketing media. It is also recommended to limit the number of menu items by removing or changing their positions to avoid burdening the restaurant with excessive costs.

Menu Plow horses

Several menus fall into the Plow horses menu category . The Plow horses menu is a menu that has high popularity but low profitability. Menus that fall into the Plow horses menu category include: Beef Clear Soup, Beef Rendang, Be Sampi Menyat Nyat, Manuk Saung Nderu, Mie Goreng Senja, Nasi Campur Bali, Nasi Campur Manggarai, Nasi Goreng Sei, and Nasi Goreng Senja. The strategy that can be taken by the Senja Eatery restaurant manager is to maintain menu items and make the menu more profitable by increasing the price. The manager can also take another strategy, namely adjusting the price of raw materials without reducing the quality, so that the profitability of the Plow horses menu can increase.

Dogs Menu

The last menu category is the Dogs menu . This menu is a menu that has a low level of profitability and popularity. Of the 21 menu items, 6 menu items are included in the Dogs menu category , including Ayam Betutu Half, Lontong Cap Gomeh, Sate Kesambi Sapi, Sate Lilit, Srosob Iga Sapi, and Tenggiri Darne. The strategy that can be taken for the Dogs menu is to remove or eliminate the Dogs menu item from the menu and replace it with other dishes that show potential profitability and popularity.

5. Conclusion

After conducting a menu evaluation at Senja Eatery Labuan Bajo Restaurant using the Menu Engineering approach, 21 menu items were categorized into 4 menu categories, namely Stars, Puzzles, Plow horses and Dogs. The Stars menu consists of Bebek Lepang Half, the Puzzles menu consists of Ayam Betutu Whole, Ayam Lepang Half, Ayam Lepang Whole, Bebek Lepang Whole, and Sate Kesambi Chicken, then the Plow horses menu consists of Beef Clear Soup, Beef Rendang, Be Sampi Menyat Nyat, Manuk Saung Nderu, Mie Goreng

Senja, Nasi Campur Bali, Nasi Campur Manggarai, Nasi Goreng Sei, and Nasi Goreng Senja. The last is the Dogs menu which consists of Ayam Betutu Half, Lontong Cap Gomeh, Sate Kesambi Sapi, Sate Lilit, Srosob Iga Sapi, and Tenggiri Darne.

Each menu category will implement different sales strategies, namely, for the Stars menu is to place it in a special place on the menu and implement extensive marketing to promote it more widely. For the Puzzles menu, lower the selling price so that it can be well received by consumers. Giving discounts on the menu can increase sales while promoting it in all lines of marketing media. It is also recommended to limit the number of menu items by removing or changing their positions to avoid burdening the restaurant's costs excessively. Then for the Plow horses menu, the strategy that can be taken is to maintain the menu items on the menu and make the menu more profitable by increasing the price or adjusting the price of raw materials without reducing the quality, so that the profitability of the Plow horses menu can increase. Finally, the Dogs menu, the sales strategy that can be taken is to remove or eliminate the Dogs menu item from the menu and replace it with other dishes that show potential profitability and popularity.

5.1 Suggestion

Based on the research results, the following suggestions can be given:

Practical Advice

The manager of Senja Eatery Labuan Bajo Restaurant should audit and evaluate the menu in the Restaurant as a whole, so that the menu and promotion can run optimally to increase the Restaurant's income. After evaluating the menu, redesign the menu using psychological principles to increase its appeal and readability.

Theoretical Suggestions

It should be noted that this study was conducted only on the scope of the Main Course menu. Further research can focus on a wider scope with the activity-based costing method, so that an understanding of menu evaluation from the early stages will be obtained, as well as good strategies to be implemented in order to increase sales of a product.

Reference

[1] P. Alberca and L. Parte, "Operational efficiency evaluation of restaurant firms," International Journal of Contemporary Hospitality Management, vol. 30, no. 3, pp. 1959–1977, 2018. [Online]. Available: https://doi.org/10.1108/IJCHM-09-2016-0547

[2] K. Annaraud, "Restaurant menu analysis: Can we go further?" Journal of Foodservice Business Research, vol. 10, no. 4, pp. 25–37, 2008. [Online]. Available: https://doi.org/10.1300/J369v10n04_03

[3] I. Ardiansyah, "The Application Of Menu Engineering Technique In Determining Marketing Strategy At The Den Of Kalaha Restaurant Jakarta," Journal of Business and Entrepreneurship, vol. 8, no. 1, 2020. [Online]. Available: http://ojs.sampoernauniversity.ac.id

[4] H. Atkinson and P. Jones, "Engineering menu," Journal of Restaurant & Foodservice Marketing, vol. 1, no. 1, pp. 37–55, 1993. [Online]. Available: https://doi.org/10.1300/J061v01n01_03

[5] H. Atkinson and P. Jones, "Menu engineering: Managing the foodsemic micro-marketing mix," Journal of Restaurant & Foodservice Marketing, vol. 1, no. 1, pp. 37–55, 1994.

[6] C. Y. Fang and D. L. Rubin, "An Efficiency-Based Metafrontier Approach To Menu Analysis," Journal of Hospitality and Tourism Research, vol. 38, no. 2, pp. 199–221, 2014. [Online]. Available: https://doi.org/10.1177/1096348012451461

[7] I. Gusti, N. Dhyangga, P. Putra, I. A. Elistyawati, I. Made, and D. Oka, "The Application Of Menu Appetizer Based On Menu Engineering To Increase Selling Volume In El Patio Restaurant, Sol Beach House Benoa Bali," JASTH-Journal of Applied Sciences in Travel and Hospitality, vol. 1, no. 2, 2018.

[8] C. E. C. Hermida and M. B. B. Aráuz, "Menu engineering: A benchmark methodology for improving the profitability of a restaurant company," Journal of Surveys in Fisheries Sciences, vol. 10, no. 3S, pp. 3067–3079, 2023.

[9] A. Heru Saputra, "Design of Operational Strategy with Variable-Costing-Based Menu Engineering Information System for Restaurants in Surabaya," 2021.

[10] R. Linassi, A. Alberton, and S. V. Marinho, "Menu engineering and activity-based costing: An improved method of menu planning," International Journal of Contemporary Hospitality Management, vol. 28, no. 7, pp. 1417–1440, 2016. [Online]. Available: https://doi.org/10.1108/IJCHM-09-2014-0438

[11] L. L. Mann, D. Macinnis, and N. Gardiner, "Menu Analysis for Improved Customer Demand and Profitability in Hospital Cafeterias," Canadian Journal of Dietetic Practice and Research, vol. 60, no. 1, 1999.

[12] M. Mifli, "Development and analysis menu," in The Fourth Biennial and International Conference on Tourism and Hotel Industry in Southeast Asia & Indo-China: Development Marketing and Sustainability, 2000, pp. 24–26.

[13] H. Mutlu, İ. L. Demirçakmak, and M. Doğan, "Menu Engineering in the Restaurant Business: A Study on Kitchen Chefs," Journal of Tourism and Gastronomy Studies, 2022. [Online]. Available: https://doi.org/10.21325/jotags.2022.1154

[14] I. K. G. M. Putra, I. K. Astawa, and B. Susanto, "Menu Engineering Analysis To Improve The Selling Of The Main Course In Clay Craft Restaurant At The Renaissance Bali Uluwatu Resort & Spa," Journal of Applied Tourism Science, vol. 7, no. 1, pp. 57–68, 2022.
[15] D. Sugiyono, Educational research methods using quantitative, qualitative and R&D approaches, 2013.
[16] J. J. Taylor and D. M. Brown, "Menu Analysis: A Review of Techniques and Approaches," in Hospitality Review, vol. 25, no. 2, 2007. [Online]. Available: https://digitalcommons.fiu.edu/hospitalityreview/vol25/iss2/6
[17] B. Wansink, K. van Ittersum, and J. E. Painter, "How descriptive food names bias sensory perceptions in restaurants," Food Quality and Preference, vol. 16, no. 5, pp. 393–400, 2005. [Online]. Available: https://doi.org/10.1016/j.foodqual.2004.06.005