

Optimizing Menu Performance Through Menu Engineering & Culinary Heritage Approach in Hotel Restaurant

Ni Kadek Ida Chandra Devi^{1*}, Ni Komang Diah Rastiti², I Kadek Juanda Artha Prasetya³, Luh Ayu Cintya Dewi⁴, I Gusti Ngurah Aksamalika Putra Pinatih⁵, I Kadek Wahyu Adi Suputra⁶, Ni Luh Gde Sri Sadjuni⁷

Politeknik Pariwisata Bali

Corresponding Author: Ni Kadek Ida Chandra Devi

chandraadevi2801@gmail.com

ARTICLE INFO

Keywords: Menu Engineering, Culinary Heritage, Menu Performance, Hotel Restaurant, SWOT Analysis.

Received : 21, May

Revised : 24, June

Accepted: 29, July

©2026 Devi, Rastiti, Prasetya, Dewi, Pinatih, Suputra, Sadjuni: This is an open-access article distributed under the terms of the [Creative Commons Atribusi 4.0 Internasional](https://creativecommons.org/licenses/by/4.0/).



ABSTRACT

This study aims to analyze the performance of Indonesian culinary heritage menus at Restaurant B using Menu Engineering integrated with the Culinary Heritage approach to provide a more comprehensive menu evaluation. A quantitative descriptive method was employed using sales data from 94 à la carte menu items observed from January to December 2025. Menu performance was evaluated based on popularity and contribution margin, while culinary heritage values were assessed using the Culinary Heritage Performance Checklist. The results show that 75% of Indonesian menus are classified as culinary heritage, with most categorized as Puzzle, indicating high profitability but low popularity. The findings suggest that menu bundling, storytelling, and promotional strategies can improve menu performance while preserving local culinary heritage.

INTRODUCTION

Hotels in Bali face increasingly fierce competition as tourist mobility increases and demands for a stay experience that focuses not only on accommodation but also on quality *food and beverage services*. *Food and beverage services* play a crucial role in shaping the tourist experience through the presentation of local cuisine that reflects the destination's cultural identity (Onat, 2024). Gastronomy is also part of the cultural heritage that can strengthen the destination's image while increasing tourist satisfaction during their stay (Lin et al., 2021). Data from the Bali Provincial Statistics Agency shows that international tourist visits increased from just 43 in 2021 to 6,308,541 in 2024, indicating a recovery in tourism activity that is driving increased demand for hotel culinary services. This situation makes hotel restaurant menu management a strategic aspect that not only supports revenue but also creates a valuable tourist experience.

The recovery of the tourism sector has also driven the growth of the culinary industry in Bali, including hotel restaurants that serve Indonesian cuisine as part of their service identity. The number of restaurants and eateries in Bali has increased again, reaching approximately 8,152 units in 2024 after a decline during the pandemic, indicating increasing competition in the culinary business (Waruwu et al., 2022). However, Statistics Indonesia (BPS) data shows that the proportion of businesses serving exclusively Indonesian cuisine decreased from 89.17% in 2023 to 70.26% in 2024, while businesses offering a combination of Indonesian and international cuisine increased to 22.87%. This phenomenon indicates that local cuisine faces challenges in remaining competitive amid changing market preferences and increasing menu variety (Fitriyani, 2025). Therefore, Hotel B's restaurant needs to manage its *culinary heritage menu* more effectively to maintain its appeal and provide optimal economic contribution.

Managing *culinary heritage menus* in hotel restaurants requires not only maintaining cultural values but also generating sustainable business performance. Traditional menus often face challenges such as fluctuating raw material costs, consistent quality, and changing consumer preferences, necessitating data-driven evaluation to support managerial decision-making (Nur et al., 2023). One approach that can be used is *menu engineering*, an analysis that groups each menu item based on its popularity and profitability into *star*, *plowhorse*, *puzzle*, and *dog* categories (Safitri et al., 2023). This approach helps management determine strategies for maintaining, developing, or evaluating a menu objectively (Goh & Sari, 2023). Thus, the application of *menu engineering* is crucial for Hotel B's restaurant in increasing the effectiveness of culinary heritage-based menu management.

Various previous studies have shown that *menu engineering* is effective in improving managerial decisions by evaluating the popularity and contribution margin of each menu item (Veronika et al., 2024). Other research also confirms that local cuisine plays a crucial role in enhancing destination appeal while enhancing tourists' gastronomic experiences (Wijaya et al., 2023). However, most research focuses on general menu performance analysis without specifically examining the strategic position of *culinary heritage menus* within the profitability

structure of hotel restaurants. Furthermore, studies on heritage-based menu management in hotel restaurants in Bali are relatively limited, particularly in hotels with diverse operational characteristics. This situation indicates a research gap that requires further exploration.

The novelty of this research lies in the integration of *the menu engineering approach* with *the culinary heritage approach* to evaluate the performance of the Nusantara menu at Hotel B's restaurant. The analysis not only assesses the popularity and profitability of each menu but also considers cultural values as part of the restaurant's management strategy. The research focuses on identifying the position of *culinary heritage menus* within the *menu engineering classification* so that their contribution to restaurant performance can be understood. This approach is expected to produce more comprehensive recommendations than conventional menu analysis. Thus, this research provides a new perspective on culture-based menu management in the hospitality industry.

This study aims to analyze menu classification based on the *menu engineering method*, evaluate the performance of *Indonesian culinary heritage menus* in terms of popularity and profitability, and develop recommendations for menu management at Hotel B's restaurant. The results of the study are expected to provide objective information regarding the position of each menu in *the star, plowhorse, puzzle, and dog categories*. The research findings are also expected to be a basis for Hotel B's management in optimizing menu development strategies that are oriented towards a balance between cultural values and economic performance. In addition to providing practical benefits for restaurant managers, this study is expected to enrich the study of culinary heritage-based *food and beverage management*. Thus, this study can support the strengthening of hotel restaurant competitiveness through more effective, adaptive, and sustainable menu management.

LITERATURE REVIEW

Restaurants in the Hospitality Industry

A restaurant is a commercial business unit in the food and beverage service sector that provides food and beverages for on-site consumption through a professionally managed service system (Walker, 2021). In the hospitality industry, restaurants function not only as food and beverage providers but also as a means of creating a quality dining experience for guests through quality products, service, and a comfortable atmosphere (Davis et al., 2022). The existence of a restaurant is a crucial part of the food and beverage department because it directly contributes to the level of guest satisfaction during their stay (Walker, 2021). In addition to supporting hotel services, restaurants also serve as a source of revenue beyond room sales, thus adding value to hotel operations (Davis et al., 2022). Therefore, professional restaurant management is one of the factors supporting a hotel's competitiveness and positive image (Walker, 2021).

Menu in Restaurant Operations

A menu is a list of food and beverages designed to inform guests about available product choices and reflect the restaurant's operational concept (Ruhizat et al., 2021). In restaurant operations, menus serve as a communication

medium, a marketing tool, and a cost-control tool, making them a crucial part of the food and beverage business strategy (Mutlu et al., 2022). Menus are prepared by considering the type of service, target market, and operational capabilities of the restaurant to optimally meet customer needs (Ruhizat et al., 2021). Based on their presentation, menus can be divided into à la carte, table d'hôte, and buffet, each with distinct service characteristics (Timo, 2021). Furthermore, menus are grouped by serving time, such as breakfast, lunch, dinner, and supper, to support service efficiency and restaurant operational management (Sukmana, 2022)

Engineering Menu

Menu engineering is an analytical method used to evaluate the performance of each menu item based on its popularity and profitability (Chandra & Sarudin, 2025). This analysis helps restaurant management determine which menu items should be maintained, developed, improved, or eliminated based on sales and profit data (Salsabilla et al., 2025). The menu engineering process involves several stages, starting with menu mix analysis, contribution margin calculations, and classifying the performance of each menu item (Atmaja et al., 2023). Based on the analysis, each menu item is categorized into Star, Plowhorse, Puzzle, or Dog categories based on its popularity and profitability (Chandra & Sarudin, 2025).. Thus, menu engineering is an effective decision-making tool for improving restaurant operational performance and profitability (Salsabilla et al., 2025).

Culinary Heritage

Culinary heritage is a cultural heritage that includes traditional foods along with knowledge, raw materials, processing techniques, and cultural values passed down from generation to generation (Almansouri et al., 2022). Culinary heritage not only serves to fulfill consumption needs but also serves as a cultural identity that reflects the history, traditions, and characteristics of a region (Ossowska et al., 2024). The existence of culinary heritage plays a crucial role in maintaining cultural sustainability while strengthening community identity amidst the development of globalization (Eliza et al., 2024). In the tourism sector, culinary heritage is an attraction that can provide authentic experiences for tourists through the presentation of regional specialties (Wijaya et al., 2023). Therefore, preserving culinary heritage requires the involvement of various parties to ensure the cultural values contained within are maintained and passed on to future generations (Almansouri et al., 2022).

Menu Performance

Menu performance is an evaluation concept used to assess the effectiveness of each menu item in achieving a restaurant's operational and financial goals (Ardiansyah, 2020). Menu performance assessments are generally based on two main indicators: the popularity and profitability of each menu item (Gomes et al., 2025). Popularity indicates the level of customer acceptance as measured by sales volume, while profitability is measured using the contribution margin generated by each menu item (Susilawati et al., 2024). The combination of these two indicators provides a more comprehensive picture of a menu's performance than using only one indicator (Gomes et al., 2025). The results of the menu performance evaluation then serve as the basis for developing menu

development strategies to increase restaurant sales and profits (Juliana et al., 2021).

SWOT Analysis

SWOT analysis is a strategic analysis method used to identify the internal and external conditions of an organization in developing a business development strategy (Salim & Siswanto, 2019). Internal factors in a SWOT analysis consist of strengths and weaknesses, while external factors consist of opportunities and threats (Salim & Siswanto, 2019). By identifying these four factors, an organization can determine its strategic position in facing business competition (Rangkuti, 2015). The results of the SWOT analysis are then formulated into SO, WO, ST, and WT strategies as alternative decision-making that are appropriate to the organization's conditions (Rangkuti, 2015). Therefore, SWOT analysis is one of the tools widely used to support strategic planning and increase company competitiveness.

METHODOLOGY

This study uses a descriptive research method with a case study approach through observation, interviews, and secondary data collection in the form of menu lists, sales data, food costs, and menu selling prices. The data obtained is analyzed using the *menu engineering method* to evaluate the level of popularity and profitability of the menu and is reviewed based on the *culinary heritage approach*. The results of the analysis are used as the basis for compiling strategic recommendations for each restaurant in optimizing the performance of its menu. The entire series of activities ends with the preparation of a report and a seminar on the results as a medium for conveying findings and recommendations to industry and academics.

RESEARCH RESULT

Engineering Menu Analysis

Menu Engineering analysis, Restaurant B has 94 menu items consisting of 16 Nusantara menus (17%) and 78 Non-Nusantara menus (83%), thus indicating that the menu is still dominated by Non-Nusantara dishes. The entire menu is divided into 14 categories that reflect a diversification strategy to meet guest preferences while maintaining a balance between local and international menus. This study further focused on the Nusantara menu to analyze the performance of each menu based on *the Star, Puzzle, Plowhorse, and Dog classifications* as a basis for developing and optimizing the *culinary heritage concept*.

MENU ITEM NAME	NUMBER OF ITEM SOLD (MONTH)												TOTAL	MENU MIX (%)	FOOD COST	FOOD SELL PRICE	ITEM CM	MENU COST	TOTAL REVENUE	TOTAL PROFIT	CM CATEGORY	MM CATEGORY	MENU CATEGORY
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC											
1. Nan Goreng Lada	85	71	83	95	83	95	142	106	95	82	71	165	1183	32%	20,845	59,000	38,155	34,439,653	49,787,000	43,137,383	Low	High	Plowhorse
2. Sate Lada (Chicken Pork Mix)	85	64	74	85	74	85	127	95	85	74	65	148	1059	39%	14,195	72,000	57,805	15,652,305	70,340,000	61,215,491	High	High	Star
3. Chicken Madroon	6	5	6	6	6	6	9	7	6	6	5	11	79	2%	25,155	70,000	44,845	1,827,845	5,590,000	3,762,155	High	Low	Puzzle
4. Balinese Grill Chicken	7	6	7	8	6	8	12	9	8	7	6	14	90	3%	22,065	73,000	49,935	2,559,970	7,154,000	4,594,030	High	Low	Puzzle
5. Beef Genger	5	4	5	5	5	5	8	6	5	5	5	10	68	2%	22,840	72,000	49,160	3,595,120	4,806,000	1,210,880	Low	Low	Dog
6. Sweet and Sour (Chicken Pork Fish)	15	12	14	15	14	15	23	17	15	14	12	27	193	5%	20,920	65,000	44,080	4,250,560	12,159,000	7,908,440	High	Low	Puzzle
7. Balinese Nan Goreng	19	14	17	19	17	19	29	22	19	17	15	34	241	7%	29,871	64,000	34,129	7,199,913	15,424,000	8,224,086	Low	High	Plowhorse
8. Saendal Nan Goreng	8	6	7	8	7	8	11	9	8	7	6	10	85	3%	26,845	60,000	33,155	2,592,275	5,700,000	3,107,725	Low	Low	Dog
9. Bakmi or Bakmi Goreng	33	24	28	33	28	33	49	37	33	28	24	57	407	11%	22,185	59,000	36,815	9,029,285	23,606,000	14,576,715	Low	High	Plowhorse
10. Curry (Fish/Pork/Chicken/Pork)	6	5	6	6	6	6	10	7	6	6	5	12	81	2%	33,570	61,000	27,430	2,719,170	4,941,000	2,221,830	Low	Low	Dog
11. Cap Cay	14	10	12	14	12	14	21	15	14	12	9	24	171	5%	20,820	61,000	39,180	3,731,220	10,431,000	6,699,780	High	Low	Puzzle
TOTAL NUMBER OF MENU SOLD (12 MONTHS)													3675	68%				78,832,154	255,886,000	159,853,846			
TOTAL OF MENU ITEM													11										

Figure 1. Draft Worksheet Nusantara Menu

Figures 1 present the Menu Nusantara worksheet used to evaluate menu performance based on popularity and profitability from January to December. The analysis included indicators such as sales volume, menu mix, food cost, selling price, contribution margin, revenue, and profit, which were used to classify each menu into the Star, Plowhorse, Puzzle, and Dog categories.

Table 1. Recapitulation of Menu Classification Distribution Based on Category at Restaurant B

No	Menu Categories	Number of Menus	Star	Plowhorse	Puzzle	Dog	Short Description
1	Soup	6	4	1	1	0	Dominated by the Star menu so it has very good performance.
2	Salad & Appetizer	8	1	2	4	1	Dominated by Puzzles so it needs to increase in popularity.
3	Sandwiches & Burgers	6	3	1	1	1	Most of the menus perform well.
4	Snack	7	3	1	1	2	It has several featured menus, but there is still a Dog menu.
5	Pasta	7	2	1	1	3	Dominated by the Dog menu so it needs evaluation.
6	Pizza	8	2	3	0	3	The composition of Plowhorse and Dog is quite high.
7	Chicken	7	1	2	4	0	Dominated by Puzzles so it has the potential to increase its popularity.

No	Menu Categories	Number of Menus	Star	Plowhorse	Puzzle	Dog	Short Description
8	Beef	4	1	0	1	2	Most of the menus are not showing optimal performance.
9	Pork	5	1	2	2	0	The distribution is relatively balanced without the Dog menu.
10	Seafood	4	1	2	0	1	Most of the menus perform quite well.
11	Indonesian Food	11	2	2	4	3	Many menus still need development.
12	Side Dish	7	1	2	2	2	The distribution is quite diverse across all classifications.
13	Dessert	6	2	2	2	0	The menu performance is relatively balanced without the Dog category.
14	Kids Menu	8	2	2	2	2	Even distribution across all classifications.

Source: Processed data, 2026.

Based on Table 1, the Soup category is the best performing category because it is dominated by the Star menu , which indicates a high level of popularity and profitability. In contrast, the Pasta and Indonesian Food categories have a relatively large number of Dog menus, requiring evaluation of price, product quality, and marketing strategy. The Chicken and Salad & Appetizer categories are dominated by the Puzzle menu , indicating that these menus actually have a good profit contribution but their level of popularity is still low. Meanwhile, the Dessert , Kids Menu , and Pork categories show a more balanced distribution, so development can be focused on increasing the appeal of certain menus without the need for significant changes. Overall, this recapitulation provides a comprehensive overview of the position of each menu category as a basis for developing a menu management and development strategy at Restaurant B.

Table 2. Menu Category Archipelago & Non- Nusantara

No	Type	Menu Category			
		Star	Puzzle	Plowhorse	Dog
1	Archipelago	3	7	2	4

2	Non-Nusantara	23	18	21	16
Total per Menu Category		26	25	23	20
Total Item Menu			94		

Source: Data processed in 2026

The menu engineering analysis of 94 *A La Carte* menu items at Restaurant B, the Nusantara category is dominated by the Puzzle menu (7 items), while the Non-Nusantara category is dominated by the Star menu (23 items). Meanwhile, the fewest number of menus is in the Plowhorse classification for the Nusantara category (2 items) and Dog for the Non-Nusantara category (4 items). Overall, the percentage of menu classifications is dominated by Plowhorse (44%), followed by Dog (25%), Star (19%), and Puzzle (12%).

Table 3. Menu Archipelago Which Included in Menu Engineering

Category	Amount	Percentage	Menu
Puzzle	7	44%	a) Balinese Pork Satay
			b) Balinese Grill Chicken
			c) Sweet and Sour (Chicken/Pork/Fish)
			d) Cap Cay
			e) Dadar Gulung
			f) Fried Noodles
			g) Chicken Mushroom
Dog	4	25%	a) Beef Rendang
			b) Beef Ginger
			c) Seafood Rice Fry
			d) Curry (Fish/Prawn/Chicken/Pork)
Star	3	19%	a) Chicken Soto
			b) Hotel B Satay
			c) Rice Fry Hotel B
Plowhorse	2	12%	a) Balinese Rice Fry
			b) Noodles or Fried Noodles

The Nusantara menu at Restaurant B is still dominated by the Plowhorse category (44%), followed by Dog (25%), Star (19%), and Puzzle (12%). The menus with the highest sales are Nasi Goreng Hotel B (1,183 portions), Sate Hotel B (1,059 portions), and Bakmi Goreng (407 portions), while the lowest sales are Balinese Pork Satay (42 portions), Gado-Gado (47 portions), and Dadar Gulung (47 portions). These results indicate that although there are several menus that are highly sought after by customers, the overall menu performance is not yet even so that strategies are needed such as maintaining the Star menu, increasing the profitability of the Plowhorse menu, strengthening the promotion of the

Puzzle menu , and evaluating or re-developing the Dog menu so that sales contribution becomes more optimal.

Culinary Heritage Performance Analysis

Based on the analysis, Restaurant B makes culinary heritage its primary identity through the presentation of various Nusantara menus, the use of local ingredients and Balinese spices, traditional cooking techniques, and the conveyance of cultural values to guests. In terms of performance, the Nusantara menu has contributed quite well to sales with menus in the Star and Plowhorse categories, although there are still several Puzzle and Dog menus that require evaluation. Therefore, strategies are needed such as increasing promotions, presentation innovation, and adjusting prices and menu composition so that the full potential of traditional menus can be optimized sustainably.

Based on the Culinary Heritage Performance Checklist, which includes the dimensions of Legacy, People, and Place, of the 16 Nusantara menus at Restaurant B, 12 (75%) are classified as culinary heritage and 4 (25%) are non-culinary heritage. These results indicate that most of the menu items retain the historical, cultural, and authentic values of Indonesian cuisine, thus strengthening the restaurant's identity in preserving traditional culinary heritage.

Table 4. List of Nusantara Menus at Restaurant B Based on the Culinary Heritage Performance Checklist

No.	Menu Name	Score	Category
1	Mixed vegetables with the peanut sauce	15	Culinary Heritage
2	Chicken Soto	15	Culinary Heritage
3	Hotel B Fried Rice	14	Culinary Heritage
4	Sate Hotel B (Chicken, Pork, Mix)	17	Culinary Heritage
5	Balinese Grilled Chicken	15	Culinary Heritage
6	Balinese Fried Rice	14	Culinary Heritage
7	Fried Noodles/Vermicelli	14	Culinary Heritage
8	Curry (Fish, Prawn, Chicken, Pork)	12	Culinary Heritage
9	Cap Cay	15	Culinary Heritage
10	Balinese Pork Satay	16	Culinary Heritage
11	Beef Rendang	16	Culinary Heritage
12	Chicken Mushroom	3	Non-Culinary Heritage
13	Sweet and Sour (Chicken, Pork, Fish)	4	Non-Culinary Heritage
14	Seafood Nasi Goreng	3	Non-Culinary Heritage
15	Beef Ginger	4	Non-Culinary Heritage
16	Dadar Gulung	15	Culinary Heritage

Source: Processed data, 2026.

Table 4 displays a list of 16 Nusantara menus along with their assessment scores and categories, namely culinary heritage and non-culinary heritage. Of the total menus, 12 menus are classified as culinary heritage, such as Sate Hotel B which received the highest score of 17, as well as several other menus such as Balinese Pork Satay and Beef Rendang which each received a score of 16. Meanwhile, 4 other menus are included in the non-culinary heritage category, namely Chicken Mushroom, Sweet and Sour, Seafood Nasi Goreng, and Beef Ginger, with a relatively lower score range, namely between 3 and 4. In general, the results of the table show that menus classified as culinary heritage not only dominate the number, but also have higher scores than non-heritage menus, thus reflecting a stronger preference for traditional Nusantara menus both in terms of value and quality assessed.

Analysis Results and Menu Recommendations

Based on the analysis of 16 Nusantara menus at Restaurant B, the Puzzle category dominates with 7 menus (44%), followed by Dog with 4 menus (25%), Star with 3 menus (19%), and Plowhorse with 2 menus (12%). These results indicate that most of the menus have high profit potential, but are not yet popular enough among customers. In addition, the culinary heritage analysis shows that 12 menus (75%) are classified as culinary heritage and 4 menus (25%) are non-culinary heritage, so it can be concluded that most of the menus still maintain the authenticity and value of Indonesian culinary culture even though some have undergone adaptation.

Table 5. Results of Menu Grouping Based on Culinary Heritage and Menu Engineering

No.	Menu Name	Score	Category	Engineering Menu Classification
1	Mixed vegetables with the peanut sauce	15	Culinary Heritage	Puzzle
2	Chicken Soto	15	Culinary Heritage	Star
3	Hotel B Fried Rice	14	Culinary Heritage	Star
4	Sate Hotel B (Chicken, Pork, Mix)	17	Culinary Heritage	Star
5	Balinese Grilled Chicken	15	Culinary Heritage	Puzzle
6	Balinese Fried Rice	14	Culinary Heritage	Plowhorse
7	Fried Noodles/Vermicelli	14	Culinary Heritage	Plowhorse
8	Curry (Fish, Prawn, Chicken, Pork)	12	Culinary Heritage	Dog

No.	Menu Name	Score	Category	Engineering Menu Classification
9	Cap Cay	15	Culinary Heritage	Puzzle
10	Balinese Pork Satay	16	Culinary Heritage	Puzzle
11	Beef Rendang	16	Culinary Heritage	Dog
12	Chicken Mushroom	3	Non-Culinary Heritage	Puzzle
13	Sweet and Sour (Chicken, Pork, Fish)	4	Non-Culinary Heritage	Puzzle
14	Seafood Nasi Goreng	3	Non-Culinary Heritage	Dog
15	Beef Ginger	4	Non-Culinary Heritage	Dog
16	Rolled Omelette	15	Culinary Heritage	Puzzle

Source: Processed data, 2026.

The Menu Engineering analysis show that most of the culinary heritage menus at Restaurant B are in the Puzzle category, which has high profit potential but its popularity level is still low. The SWOT analysis reveals that the restaurant has strengths in the *family dining concept*, authentic taste, and *storytelling service*, but is still weak in promoting heritage menus. Therefore, a development strategy is recommended through menu optimization based on the *Menu Engineering classification*, including maintaining the Star menu, increasing the appeal of the Puzzle menu, improving the Plowhorse and Dog menus, and implementing bundling strategies to increase sales while strengthening the preservation of Nusantara culinary.

DISCUSSION

The analysis results show that Restaurant B has 94 menu items, dominated by non-Indonesian menus (83%), while Indonesian menus only account for 17%. This composition reflects the restaurant's continued efforts to balance the presentation of international menus with local menus to meet the needs of the target market. According to Ruhizat et al. (2021), menu development must consider the restaurant's concept, customer characteristics, and operational capabilities to optimally meet consumer needs. The diversity of menu categories at Restaurant B also demonstrates the menu's function as a marketing medium and a restaurant operational control tool (Mutlu et al., 2022). Thus, the menu development at Restaurant B has supported restaurant operations in the hospitality industry, aiming to increase guest satisfaction and hotel revenue (Davis et al., 2022; Walker, 2021).

The Menu Engineering analysis results show that most Indonesian menu items fall into the Puzzle category, while more non-Indonesian menu items fall into the Star category. This finding suggests that most traditional menu items have high profitability, but their popularity remains low. This is consistent with Menu Engineering theory, which states that menu evaluation is based on a combination of popularity and profitability indicators to determine the management strategy for each menu item (Atmaja et al., 2023; Chandra & Sarudin, 2025). The Star, Puzzle, Plowhorse, and Dog classifications provide a basis for management in determining which menu items to maintain, promote, improve, or evaluate to optimally contribute to restaurant performance (Salsabilla et al., 2025). Therefore, the results of this analysis can serve as a reference for more effective menu performance improvement.

The Culinary Heritage analysis revealed that 12 of the 16 Nusantara menu items (75%) qualify as culinary heritage, indicating that Restaurant B has successfully preserved most of the cultural values embedded in its menu. This finding is consistent with Almansouri et al. (2022) and Wijaya et al. (2023), although the dominance of heritage dishes in the Puzzle category suggests that their high cultural value has not yet translated into strong market demand, highlighting the need for enhanced promotion and menu presentation (Eliza et al., 2024; Ossowska et al., 2024). Based on the Menu Engineering and SWOT analyses, the recommended strategies include maintaining Star menu items, increasing promotion of Puzzle items, improving Plowhorse and Dog items, and implementing bundling strategies to enhance sales, competitiveness, and profitability while supporting the preservation of Indonesia's culinary heritage (Davis et al., 2022).

CONCLUSION AND SUGGESTIONS

Based on the analysis of Menu Engineering and Culinary Heritage Performance, it can be concluded that most of the culinary heritage menus in Restaurant B are in the Puzzle category, which shows high profitability potential but its popularity level is still low, while the Star menu has provided an optimal contribution to sales and profits. In terms of culinary heritage, Restaurant B has succeeded in maintaining the authenticity of taste and cultural identity through the use of traditional spices and the presentation of Nusantara menus. Therefore, it is recommended that the restaurant optimize the Puzzle menu through bundling strategies, strengthening storytelling, and improving menu displays, maintaining the quality of the Star menu, increasing the profitability of the Plowhorse menu, evaluating the Dog menu, and strengthening the promotion and marketing of heritage menus in order to be able to increase competitiveness, profitability, and preserve Nusantara culinary sustainably.

ADVANCED RESEARCH

This study has several limitations, namely that it was only conducted on one research object with a focus on analyzing the Nusantara menu using the Menu Engineering and Culinary Heritage Performance approaches, so the results of the study cannot be generalized to all restaurants or hotels. In addition,

the analysis was only based on sales data, food costs, and menu characteristics without involving customer perceptions or external factors that can influence purchasing decisions. Therefore, further research is recommended to involve more research objects with different restaurant characteristics, add variables such as customer satisfaction, consumer behavior, service quality, and digital marketing strategies, and use a longer observation period. Thus, the results of the study are expected to provide a more comprehensive picture of menu development based on Menu Engineering and Culinary Heritage in supporting the competitiveness and sustainability of the hospitality industry.

ACKNOWLEDGMENT

The author would like to thank his supervisor for his guidance and support throughout the research. He also thanks all parties who contributed generously to the successful completion of this research.

REFERENCES

- Almansouri, M., Verkerk, R., Fogliano, V., & Luning, P. A. (2022). *The heritage food concept and its authenticity risk factors: Validation by culinary professionals*. *International Journal of Gastronomy and Food Science*, 28, 100523.
- Atmaja, INPS, Pambudi, B., & Wardana, MA (2023). Analysis of menu engineering-based business development strategies to increase restaurant revenue. *PARIS: Jurnal Pariwisata*, 2 (5), 1206–1224.
- Central Bureau of Statistics of Indonesia. (2024). *Food and beverage supply statistics 2023*.
- Central Bureau of Statistics of Indonesia. (2025). *Food and beverage supply statistics 2024*.
- Bali Province Central Statistics Agency. (2025a). *Number of restaurants and eateries detailed by district/city in Bali, 2020*.
- Chandra, J., & Sarudin, R. (2025). Analysis of the application of menu engineering in an effort to increase sales at OK Bakery & Cake. *Educational Scientific Journal*.
- Davis, B., Lockwood, A., Pantelidis, I., & Alcott, P. (2022). *Food and beverage management* (6th ed.). Routledge.
- Eliza, H., Elmustian, Fauziah, F., Efendi, AN, Candra, ZPR, Utari, N., Ahadani, S., & Gunawan, RA (2024). Culinary as a cultural heritage: Exploration of Kuok satay and bedulang eating in Pulau Belimbing Village. *Student Research Journal*.
- Fitriyani, N. (2025). The role of culinary tourism in economic growth in the Demak tourism destination. *Scientific Journal of Economics and Management*, 3 (1), 484–493.
- Goh, SF, & Sari, WN (2023). Menu engineering on food to increase revenue at Laku Café, Gading Serpong. *Journal of Syntax Transformation*, 4 (12), 114–122.
- Lin, M., & Marine-Roig, E. (2021). Gastronomy as a sign of the identity and cultural heritage of tourist destinations: A bibliometric analysis 2001–2020. *Sustainability*.

- Nur, F., Nasution, H., Hudaiby, A., & Kusumah, G. (2023). Pelestarian warisan kuliner: Menyeimbangkan tradisi dan inovasi di dalam wisata kuliner. *Tourism and Hospitality Essentials Journal*, 13(2).
- Onat, G. (2024). The effect of food and beverages served in accommodation businesses on destination attractiveness. *Tourist Destination Journal*, 1(1), 69–80.
- Ossowska, L., Janiszewska, D., Kwiatkowski, G., & Oklevik, O. (2024). Local food production based on culinary heritage—A way to local sustainability. *Sustainability*, 16(24).
- Safitri, EY, Yustita, AD, Cahya, J., & Wijaya, A. (2023). Menu engineering analysis using a matrix approach to determine the marketing mix strategy of culinary businesses. *Journal of Hospitality and Tourism Management*, 6 (3), 100–107.
- Walker, J.R. (2021). *Introduction to hospitality management* (8th ed.). Pearson Education.
- Waruwu, D., Santoso, RTPB, & Ardana, IMDW (2022). The existence of culinary tourism during the Covid-19 pandemic in economic recovery and tourism in Sangeh Village, Badung, Bali. *Journal of History, Education and Humanities*, 6 (1), 48–60.
- Wijaya, I. N. C., Budarma, I. K., & Suci, N. G. (2023). Exploring the culinary heritage: Strategies for promoting gastronomy tourism in tourism village Tista Tabanan. *Journal of Applied Sciences in Travel and Hospitality*, 6(2), 107–116.