

A Case Study: Designing a Restaurant Marketing Strategy

Bibhuti B Pradhan,

Abstract: *In this report, they have established a marketing strategy for a Surabaya restaurant. A café-restaurant, serving mid-low customers, is the restaurant. For this restaurant, a clear marketing strategy has never been the main problem. Promotions implemented to the degree that they are not based on a campaign are not targeted and have no impact on revenue. The use of business intelligence from Power Market Intelligence (Power BI) will be a way of predicting customer consumption patterns for restaurants. However, with Market Basket Analysis they also model the demand trend. Captured service consumer consumption patterns used for the implementation of a 4P (product, location, price or promotion) framework for the proper marketing strategy. Some of the restaurant menus have been found to have a unique relationship and can be used for the promotion of profits. Certain findings cover child and office employees in the business category. This data is enabled with the Power BI dashboard, which will allow the review of improvements in revenue by the restaurant's managers based on events and activities.*

Keywords-- *4P concept, Business Intelligent, Market Basket Analysis, Power Business Intelligent, Restaurant.*

I. INTRODUCTION

In any sector, business owners will move forward in the face of new wave consumers. New consumers of waves want something custom-made. Big data processing enables accurate and informal recognition of customer spending trends. The study of the market basket of alliance rules helps owners to learn consumer needs and to use them to formulate the right marketing plan if they are identified. The purpose of this study is to create a mid-low target restaurant in Surabaya. There is no clear marketing strategy under the current circumstances. Applied advertisements are not targeted at purchases and have no impact, as they are not based on any marketing strategy. In fact, the menu modifications were not planned for this problem. There are 106 menus offered which can lead to confusion in ordering food and not optimum profit.

The goal of this research is to develop marketing strategies by forecasting the trend of customer purchases [1]. Patterns were gathered by means of a market basket survey, a large data analysis tool. The outcome is visualized with the dashboard so the owner of this restaurant can evaluate the frequency of consumer purchases and, in turn, to facilitate them quicker.

*Bibhuti B Pradhan, Department of Management, Siksha 'O' Anusandhan (Deemed to be University), Bhubaneswar
bibhutibhusanpradhan@soa.ac.in*

II. RESEARCH METHODS

II.I. Business intelligence:

The Business Intelligence System is a set of techniques and tools for translating data to use technologies and the internet to evaluate businesses. The aim is to promote the understanding of human behavior, like the sequence of transactions [2].

II.II. Market basket analysis:

Market Basket Analysis (MBA) is a way of making marketing strategies and business decision-taking effective in the consumer environment. MBA is an interpretation of partnership rules, and it allows shop keeping firms or other businesses to control their marketing strategies and realize the goods are bought simultaneously [3].

II.III. Association rules:

Association rules are a data mining tool to evaluate mixture laws. There are several useful steps derived from the effects of data processing when deciding association laws. Three measures, assistance, confidence and lifting generally exist.

II.IV. R-Software:

In order to search for a customer purchase trend per transaction is cleaned up and processed with the R program. R program is a method for mining data and association rules in particular. In this research. R software simplifies the analysis of the data by entering and using many sets, including symbols and mathematical formulas, which facilitate the accelerated data processing [4]–[6].

II.V. Power business intelligence:

Power BI is an online platform that allows raw data to be analyzed and analyzed. The aim of data visualization is to encourage information reception and quick decision-making for the user. Power BI can also be used to make a strategic decision in this study for restaurant owners.

II.VI. Marketing strategy:

Marketing strategy for achievement of expected goals is a pillar of business activity or strategic efforts. There are four marketing strategies that frequently refer to 4P (product, quality, promotion and location) marketing strategies.

II.VII. Research flow:

The study process will begin with a dataset cleaning, then the dashboard will be built using PowerBI, matrix frequency, minimum support, and minimum trust calculated, alliance rules established, the findings analyzed and the new marketing plan established.

III. RESULT AND DISCUSSIONS

Consumer description:

The restaurant customers are primarily housewives between 27 and 50 years old. In a hypermarket and department store, they went for food and household needs. Husbands and kids look for a place to sit down to purchase food and wait in the restaurant while their housewives shop. Other users are office workers and traders who join both Saturday and Sunday in the economics seminar.

Data cleaning and aggregation:

In this analysis, the raw data collected is a transaction list from a Surabaya restaurant. The used raw data is between 23 March and 30 June 2018, followed by both 23 September and 16 October 2018. There are several incidents in the restaurant's activity log. The tragic bombing occurred in various places in Surabaya on 13 and 14 May. This causes people in Surabaya to feel vulnerable and prefer to stay at home, even cook. The same data set is reached in the fasting month between May 17 and June 16, 2018. Information will be evaluated independently within these cases. In this study, 15,000,87 registered data are used. The first to allow the analysis of data is aggregation variables. Additional composite variables are the vector day of transactions (Days), whether they are carried out on the weekend (Weekend), on the weekday or not (Weekly), on the month of operation (Monday), on the evenings or on the night (Morning), on food or drink (Grouping), and on food (Type) types [5]–[8].

The data cleaning results together with the composite variables are then analyzed with the Power BI program. Power BI applications can show overview data results simply by typing a script for a clearer view of the context of a report. The analyzed data is data without bombing incidents and fasting months. For further study, sales data will be handled in normal and other formats. Public reviews are also being collected and evaluated. One of the ideas to establish a marketing strategy for the restaurant will be the findings of this research.

Dashboard business intelligence:

It is necessary for a corporation to track its sales movements continuously. The diagram in Fig. The graph. 1(a), Photo. Graph, 1(b). 1(c) is a program that is developed by Power BI, a tracking and decision-making platform for restaurant managers. Unable to distinguish marketing from surveillance.

A list of general information on the restaurant is available on the first page of the dashboard. The contrast of profits earned this month and last month or weekly is important information that can be learned. The two-goal ranges are compared. The goal is based on the estimate of the restaurant's monthly cost. In comparison, data on the average consumer capacity in each deal (disposal to pay) is also seen as Rp. Sixty-nine,370. Seven of the restaurant's most famous menus can also be considered advertising references. The timing of arrivals is also shown so that restaurant managers are told about the right time to take advantage or plan. A tab to evaluate the menus of the restaurant is the second-page overview. This table shows a look at Teh Manis (sweet tea), Nasi Putih (rice) and Air Putih (water) menus for the most popular and not favorite menus. The executive uses this screen to identify the favorite type of menu. The manager of this dashboard will figure out which types of menus are most commonly ordered, and render the menu with this type in the future.

A third-page tab can be used for the market analysis based on the frequency of incidents. The operation provides high productivity can be seen from the table together with the profit margins received. The forum on this website will help executives point out the positive effects on sales and the potential for them to be continually replicated or repeated. Building occurrence information is provided by the building activity log, while statistics from local events have not been applied (restaurant). The case study also includes national holiday data to determine the level of use.



Fig. 1: (a) General Summary Dashboard; (b) Food Reference Dashboard; (c) Event Analysis Dashboard.

Fasting month descriptive data analysis:

In the menu ordered during the fasting month, there may be a variation, especially at night, when Muslims quickly split. A video. Total food menu sales at night (10 pm-2.00 pm) were 2(a) from 16 May to 8 June 2018. The hours of the quick break focused on the Republic of Indonesia Ministry of Religion 1439 H 2018 M. Image. Fig. 2(b) is the cumulative cocktail menu quicking night sales.

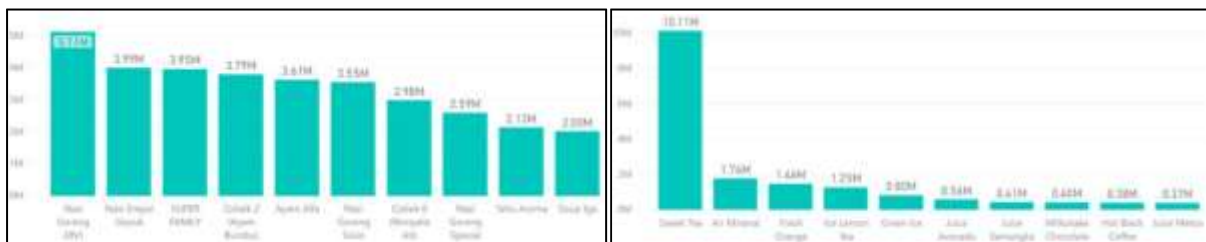


Fig. 2: (a) Total Sales of Food Menu Fasting Night; (b) Total Sales of Beverage Menu Fasting Night.

There are 05.22 PM in Surabaya. Nasi Goreng 2IN1 was the most common menu and Nasi Empal Gepuk (rice and meat) and the Super Family were followed. When you break quickly in plates with side dishes, particularly healthy meat and egg, even those with many customers, the menu choices that consumers want. Super Family is a package food of five bits of fried chicken and rice, which is perfect for breaking easily with friends or family.

Market basket analysis:

The outcome for combined variables is then evaluated by the rules for associating the menu with each other. The used statistics was event-free records. This research is carried out using the R program rules bundle. For every transaction involving over one type of menu name, the first move is to delete redundant records, since the study of association rules involves only one for each type of menu. The matrix includes relationships between two objects or objects, so that for each object or attribute only one identity is desired.

Table 1. Association Rules Support 4% and Confidence 15%.

lhs	rhs	support	confiden ce	lift	Count
[1] {Air Mineral, Ayam Goreng Nasi}	{Teh Manis}	0.0420354	0.8209877	1.248849	133
[2] {Air Mineral, Nasi Goreng 2IN1}	{Teh Manis}	0.0414033	0.7891566	1,200429	131
[3] {Nasi Putih, Tahu}	{Teh Manis}	0.0600506	0.781893	1.18938	190
[4] {Cobek B, Nasi Putih}	{Teh Manis}	0.0420354	0.7777778	1.183212	133
[5] {Air Mineral, Tahu}	{Teh Manis}	0.0448799	0.7759563	1.180349	142
[6] {Ayam Goreng Nasi, Nasi Putih}	{Teh Manis}	0.0540455	0.7668161	1.166445	171
[7] {Nasi Goreng 2IN1, Nasi Putih}	{Teh Manis}	0.0489886	0.7598039	1.155779	155
[8] {Nasi Goreng, Telur}	{Teh Manis}	0.0840708	0.7578348	1.152783	266
[9] {Nasi Empal Gepuk}	{Teh Manis}	0.1090392	0.7549234	1.14835	345
[10] {Ice Lemon Tea, Nasi Putih}	{Teh Manis}	0.0401391	0.7514793	1.143116	127

* Teh Manis (Sweet Tea), Air Mineral (Water), Ayam Goreng (Fried Chicken), Nasi Goreng (Fried Rice), Nasi (Rice), Tahu (Tofu), Empal (Fried Meat)

Associative associations can be formed after occurrence matrixes reveal customer preferences in menus collection. Many considerations, minimum funding, and minimum confidence must be calculated. Maximum funding and maximum initial confidence are set at 4% and 15%, respectively as shown in Table 1. A hybrid experiment several times is necessary to achieve a useful outcome and to use it for research or enhancement. The importance of encouragement and trust is accomplished.

The findings from 10 related partnerships, all shown in the LHS table on The Manis (sweet tea) page, are increased. The laws for The Manis (sweet tea) matrix events can be seen in Fig. Table. 6. There are still no substantial effects from the initial collaboration, as the customers who order food menus for Teh Manis (sweet tea), Air Putih (water), and Nasi Putih (rice) are also ordering menus.

The adjustment provided by the elimination of the Teh Manis, Air Putih, and Nasi Putih menu for association rules. Minimum support and minimum confidence factor values are determined by 1.25 percent and 15 percent respectively as the output that is expected to come out after making several attempts to change values (See Fig. 3). The experiment's main purpose is to set high confidence values to characterize the power of both menus. The frequency of the combination of the two items in the overall high transaction data is then represented with the high supply value.

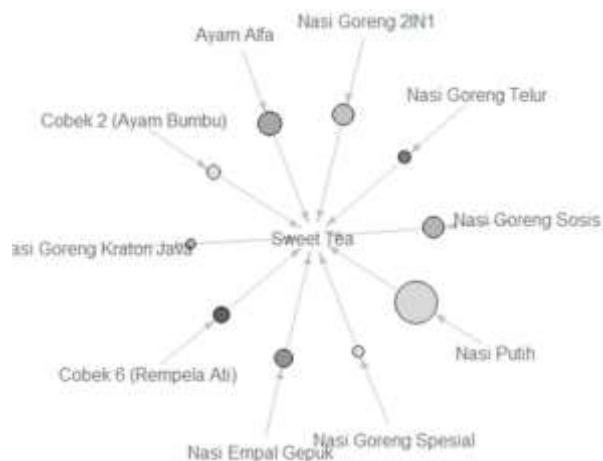


Fig. 3: Matrix Incidence Association Rules Teh Manis.

The higher support benefit is that the more common associational ties are transactions with Fresh Orange (orange circle in Fig. 4) between Tahu (Tofu), Ice Lemon Tea and Tahu. The other outcome of the alliance created after several menus had been removed. 0.8% and 10% will also be calculated for several assessments to achieve the values of support and trust. Some principles had to be taken into account in the implementation of the associational rules above. Cobek Rules A and a strong relationship with the Soup Iga menu (green circle in fig. 4). A sambal and chicken Rules. Consumers who make purchases like food based on Ribs may create a clear link between the two. The other rules applicable are Milkshake Chocolate, although the mixture of these two meals is frequently bought for children and Nasi Ayam Goreng (fried chicken and rice, red circle in Fig. 4). The three associational laws listed are likely to be promotions.



Fig. 4: Matrix Incidence Association Rules Adjustment 1 & 2.

Menu list:

The findings of the market basket research menu classification promote consideration of what product styles for the restaurant customers are most attractive. The Nasi and Cobek food menus have the highest average prices of the whole diet. Menu of the Nasi & Cobek is an Indonesian menu, which represents a high average proportion of the food that is served as Indonesian menus by the restaurant. Ayam style menu, in particular, Ayam Goreng Nasí (frozen chicken and rice) is very common among consumers of restaurants who demonstrate that consumers like chicken menus in the restaurant. Customers who bring kids, because kids like this fast-food usually order chicken menus.

There is a small share of Chinese, Mie, and Hotplate's menus. Traditional Chinese and Mie menus are very demanding for traditional Chinese menus. The site of the restaurant, where the indigenous people of Indonesia reside, is very likely. Nor have customers reacted well to the form menu of the Packet that was carried in the restaurant. Each type of dish is tested by sorting menus. Total sales and raw materials are taken into account in the restaurant. Total sales are an important aspect of the life of the restaurant, which is the most common menu. The higher sales value for each restaurant menu is supposed to reflect the demand in the food menu. Menus with low total sales but the same raw material will be retained as the menu with high total sales.

Marketing strategy design (4P):

The findings of the concise data analysis are used to determine the correct marketing strategy for 4P. Using the 4P process, consumers and restaurants are pleased. Four separate interdependent, including commodity, location,

quality, and promotion (4P) are evaluated by 4P itself. Appropriate awareness and use of 4P will be key to achieving successful marketing goals, such as benefit. The methodology used in the following way is 4P:

Product:

The restaurant uses too large a range of items to make observations of the author during the study. This state is understood because advertising commercials made by the restaurant are menus with too different foods, for instance, Chinese style and hotplate type marketing, (by showing menu photos, X banners put in front of the restaurant and on the front of the cafe table). This situation is based on the author's commitment to solving the problem with the product extension approach by implementing the menu range in the restaurant categories. All food and drinks are excluded from the restaurant menus on the basis of the overall sales and raw materials. Only certain specifics of the menu, form, grouping and business management requirements are maintained. The menu has been replaced by 54 menus containing 37 food menus and 17 drinks menus [2], [9], [10]. Most of the menus on the list are Indonesian food, such as Nasi, Cobek and Ayam. The Chinese and Noodle menus have been largely withdrawn since the overall sales were low and restaurant customers less enjoyed them. The other 54 menus will concentrate on Indonesian cuisine for restaurant items. Based on the outcome of the triage, the restaurant can be said to be an Indonesian restaurant.

Place:

The restaurant is located in one of the centers in Southern Surabaya and is still in the mall. The restaurant's location is convenient enough to transport the merchandise. The customers can see the restaurant on the right side automatically, situated next to the parking lot in the car and motorcycle on the first floor. Underneath the mall is a conventional shop, a hypermarket right next to the restaurant and the supermarket is a major department store. These places will carry customers, especially homemakers. The second floor just before the escalator is complete with a game area that can also sell children's customers. The restaurant's position was improved by the presence of a new hotel near the mall during the last one year. On the 1st floor of the parking lot of the restaurant, this hotel has a linking path to the center. The presence of this hotel can provide hotel tenants with promotions.

In Indonesia, Kartajaya clarified the rise of New Wave Culture. Old, female and networked individuals, no longer adults, men, and residents, are major contributors to marketing cultures. Young people find it easier to choose a commodity they just tried, while women decide to buy in the home. Females have a more sensitive picture of potential customers. The advances in the internet have encouraged the creation of people who easily perceive and appreciate the world in a way that is very simple. With this new culture, in addition to the current true location, the restaurant is expected to use the Internet as a tool for the sale of goods.

Price:

The cost of the restaurant is cheaper in comparison to restaurants with a similar quality so that the strategy employed by the restaurant is a good strategy at the moment. The restaurant is superior to the size, hoping to come mid-low customers. Although the price of the restaurant is below the costs of other restaurants, some customers say the price is still high. The person of today is strongly lifestyle based on the same book written by Kartajaya. Live a high life does not mean a high market for the resident, but a luxury lifestyle. The restaurant's average price is Rp. 17,701.01 while others like dining options offer average Rp food. Twenty-five thousand and more [11]–[13]. Considering that today mid-low-class buyers want a "luxury" way of life, shoppers also prefer a lustful, high-quality menu at a low price. To order for customers to believe they are paying the price paid, it is important to provide discounts for certain products or sales coupons to order to be aware of this problem.

Promotion:

The authors found that there were many customers who had never previously known the restaurant by evaluation and direct inquiries to many consumers. Answers who knew the restaurant were most noted for the marketing of shopping markets. This knowledge can be inferred that the customers are less familiar with the campaign conducted by the restaurant.

IV. CONCLUSION

The study has shown the trend of consumption that contributes to the main menu of the Indonesian food menu Nasi (rice), Ayam (chicken) and Cobek (chicken and sambal). The restaurant customers are hardly in demand for the menu styles of Mie and Chinese. Customers in the restaurant are also customers who like to shop at weekends. High consumption sales are likely on weekends because the mall organizes entrepreneurs ' seminars every weekend (Saturday and Sunday).

Tahu (tofu) is a perfect treat to reveal, it is the restaurant's favorite snack bar. A promo was created to catch this situation by integrating Tahu with a high-profit margin drink menu. Certain study results found that other trends of consumption are seen by a strong link between the Ayam Goreng Nasi menu (fried chicken and rice) and the Milkshake candy. This connection indicates that there are customers at the restaurant that bring children and never before.

Consumer patterns of usage can continue to change over time; this trend must, therefore, be tracked using dashboards. The dashboard can be used as a device in which restaurant managers can monitor menus, events and advertisements constantly that have positive consequences or have no effect on earnings. The dashboard helps administrators to easily decide about promotions or tasks on the basis of the details presented.

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