



Menu Satisfaction Level at the University Student Cafeteria

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ABSTRACT

This study examines and investigates the level of menu satisfaction at the student cafeteria in line with one of the provisions in the clients' charter of providing efficient and effective services through continuous improvement (UiTM quality policy). Records indicate that 118 (69.4%) of complaints by students are on dissatisfaction on food served. Corresponding students' survey findings indicate that 78% are dissatisfied with the monotonous daily menu at the cafeteria. Cafeteria in-house investigations reveal the existence of food management and purchasing mismatch. A creative approach, a Student Based Menu Plan (SBMP) for a month on rolling procedure basis, has been recommended and implemented and given recognition by the Dietician officer at the Hospital Tengku Ampuan Afzan in Kuantan. Latest survey on students' satisfaction indicates 51.2% satisfaction level or 129% improvements. Although the SBMP was not able to achieve the project's main objective of attaining a 75% level of menu satisfaction, as the stretch target, this study has accomplished drastic positive change among the students' perspectives of the university cafeterias.

Key words: *Menu satisfaction, continuous improvement, monotonous menu, student based menu plan*

Introduction

Student's welfare in the Public Higher Institution such as UiTM which aspires to be a World Class University should be one of the priorities of the university's management. Among those that the management should be concerned on are the food services to the students. Costa (2009) suggests that diet is significantly related to students' academic performance. As such, it is the aim of this study to examine and investigate the level of menu satisfaction at the students' cafeteria in line with one of the provisions in the Universiti Teknologi MARA (UiTM) clients' charter of providing efficient and effective services through continuous improvement.

Students are the primary clientele of a university. Based on observation and experience, most tertiary level students have to cope with all sorts of university life challenges. Crowded lecture room, meeting assignment deadlines, studying for quizzes, tests and examinations are among the daily routine faced by them. It is the responsibilities of the university to take steps to ensure campus life for the students is reasonably comfortable. One relevant factor is in-house cafeteria services where foods are served to cater the residential student's needs. Observations indicate that daily menus at the cafeteria are monotonous and less tasty of which most students' frown at. Numerous food-related complaints have been made by residential students. Coping up with this monotonous menu daily for 3 to 5 years could be stressful for most of them. The Brunei Times (2009) reported nutritious diets, sufficient sleep and enough exercises are needed in order to achieve academic excellence. Constructively, cafeteria operators need some regular

guidance and monitoring in carrying out their contract to provide varieties of menus for the students' welfare. These tasks have been undertaken by REACH, a quality circle group of Universiti Teknologi MARA (UiTM) Pahang.

This study investigates the daily menus served by cafeteria operators in view of introducing some changes in the process of menu planning and other related operational process. This is envisaged to reduce students' menu dissatisfaction by 75% which is a reasonable level that would match students' taste in line with UiTM's client charter of providing efficient and effective services through continuous improvement. At the end of this study, workable creative and innovative suggestions will be recommended on mutual benefits among the food operators, students and the university itself.

Literature Review

In recent years the concept of customer satisfaction/dissatisfaction has been extensively studied by marketing researchers and students of consumer behaviour. Customer satisfaction is a psychological concept that involves the feeling of well-being and pleasure that results from obtaining what one hopes for and expects from an appealing product and/or service (WTO, 1985 cited by Davis and Lockwood, 1994).

Customers normally purchase goods and services with expectations of creating values to them. These outcomes are compared against expectations and when outcome matches expectations, customers are satisfied with the product or services resulting to patronage. This is a positive disconfirmation which occurs only when outcome is greater than expectation: product/service performance is better than expected. On the contrary, when there are differences between expectations and outcomes, dissatisfaction occurs and customers opt for alternative sources. This is manifested by negative disconfirmation that occurs when outcome is less than expectations: product/service performance is less than expected. Satisfaction results when there is confirmation or positive disconfirmation while dissatisfaction is caused by negative disconfirmation.

Menu is an important element in cooked food retail service industry. It is a selling tool when varieties are offered for the day. Traditionally, menus are displayed so that customers can view and evaluate the food they like for a meal and its costs. Among the popular types of menus are:

- (a) A la carte menu which is literally translated to 'according to the card'. It allows the customer to choose the number and type of dishes; lists all the dishes provided to customers with its respective prices. The dishes are cooked when an order is made as such there is a waiting time and each customer is served at his or her own pace;
- (b) Table d'hôte menu which literally translates to 'table of the host'. It usually includes a fixed and limited number of courses. However, each course has some choice of dishes with a price that is already set or fixed, and customers are served the same meal one course at a time. This simple style of menu is very popular because it is easy to control costs and there is little food wastage;
- (c) Function menu is a menu for special occasions such as weddings or parties, and has a fixed price. It has a similarity to a table d'hôte menu but offers little to no choice. There can be four to eight courses, depending on time and cost; and
- (d) Cyclic menu is a series of fixed meals which are rotated over time (Noor, 2006 and Magris et.al, 1993). A cycle can be from 5 days to 5 or more weeks. It offers limited choice for three meals in the day, but a good variety of food can be offered. A cyclic menu can be planned to give a balanced diet, and it enables production and service to be streamlined and controlled.

A basic understanding of nutrition, methods of preparation, cooking and service; and creative flair for combining foods is essential so that the menu not only caters to the customer's appetite, but uses staff sensibly and offers reasonable prices. Healthy eating has many benefits as it helps to maintain a good weight, ensure we are getting all the essential nutrients, keep us energetic and balanced, and can also prevent us from many diseases and bad health conditions. Eating a balanced diet means including foods from all the food groups in the right proportions. A good menu includes meals that are fresh, nutritious and appetizing, and of the finest quality possible at a price which both acceptable to the customer and more than covers the costs of operation.

Customer satisfaction is an essential factor in the measurement of success in today's business environment. The fundamental management philosophy is to keep a customer-driven focus as it involves the customer in developing and monitoring quality, as well as enhancing products and services in businesses from banks to restaurants and everything between. Even school foodservice and nutrition programmes are no exception. Many school foodservices and nutrition programmes have been found that student satisfaction is related to participation and financial stability (Meyer, 2000). The concept of customer satisfaction is recognised as of great importance because it influences repeat purchases and word-of-mouth recommendation. Satisfaction reinforces positive attitudes toward the meal whereas dissatisfaction leads to negative attitudes, thus, lessen the probability of purchasing the same meal.

Kimathi et al. (2009) conducted a research on the sales and gross profit from the healthful options station that were compared to those of the comfort station. It was found that customers were satisfied with attributes of the healthful options station (means >3 on a 5-point scale). Results of paired t tests suggested that customers who had purchased from the healthful options station rated the station significantly ($P < 0.001$) higher for healthfulness of entrées, food presentation, food quality, overall quality of the cafeteria, length of line, and food choices available compared to their ratings for the cafeteria in general. Therefore, it can be concluded that menu with food choices available influences directly the customer satisfaction level.

Many researchers found that consumer demand for healthy food items has stimulated growth in the restaurant industry (Fitzpatrick et al., 1997; Reynolds & Hwang, 2005). Reynolds and Hwang (2005) found that the addition of healthful menu items to restaurant menus has been shown to aid in the development of repeat customers. This self-funded report details the results of a study of 369 customers of Asian ethnic restaurants located in a major metropolitan area in the southwestern part of the United States. Data were reported from five Asian restaurant concepts: Chinese, Japanese, Korean, Vietnamese, and Thai. Participants answered questions designed to ascertain their dining experience satisfaction levels with the restaurant's selection of healthy menu items. Results indicated that Caucasian customers ($n = 214$) had higher satisfaction rates than Asian customers ($n = 111$) when asked about the healthy food offerings in each of the five types of Asian restaurants. Both the Japanese and Thai restaurants received significantly higher ($p < 0.05$) customer satisfaction levels from Caucasian customers. Rank order of satisfaction levels for all customers about the selection of healthy menu items was (1) Japanese restaurants, (2) Korean restaurants, (3) Chinese restaurants, (4) Thai restaurants, and (5) Vietnamese restaurants. Customer willingness to revisit the restaurant, based on healthy menu choices, received the same rank order from all customers. Japanese restaurants as a whole are becoming popular, even though they are perceived as more expensive. This indicates that customers are willing to spend extra costs if the food consumed is healthy.

Research Methodology

This section outlines the research design and approaches to accomplish research objectives. In terms of research design, this study sourced out the primary data through interview and survey was undertaken on the students who dine at the cafeterias. Records at the Students' Affair Department (HEP) UiTM Pahang as of July 2008 indicate a total of 5,138 students who were assigned a specific cafeteria to take daily meals in four cafeterias: cafeteria 2F, cafeteria 1E, Dewan Makan Al-Maidah and Dewan Makan Lazizah. These four cafeterias were on contractual obligations to provide food to the residential students and similarly were the sample cafeteria for this study. The population of the study involved 400 students of which 138 (30%) formed as samples. The students were chosen on the basis of regular dining patronage with these cafeterias. A menu dissatisfaction pilot study was undertaken on Cafeteria 1E, as sample cafeteria, and focused on the menu at lunch time for reasons of convenience and cooperation. As the samples were diverse, a stratified sampling was used in collecting data to ensure all students' responses were inclusive so as to increase samples' statistical efficiency and comprehensive data analysis.

In collecting data, this study made use of multiple methods of data collection such as discussion with the students where the lecturers involved in the project took 5 minutes during lecture hour to get a general idea about the satisfaction of the menu at the cafeteria. Class discussion is conducted to enable the students to express the opinion with regards of their satisfaction level. The information gathered during the class discussion will require supporting evidence and this comes from the number of complaint on the dining hall services. Face-to-face interviews with 50 students were conducted including the manager and workers of the sample cafeteria. Survey questionnaires were distributed at three intervals: pre-period and two post periodic tests. An open-ended pre-period questionnaire, containing 11 variables, was used not only to understand the main students' cafeteria related problems but affords the students to express their opinion freely with regards to the cafeteria food services. The post period first survey questionnaire, containing 29 simple 4-Likert scale questions of 11 variables, was designed after the analysis of the pre-period survey findings. Accordingly, the researchers had grasps on the main problem of the cafeteria food services centered on students' menu dissatisfaction. The second post period survey questionnaire, containing 49 questions on 4-Likert scale containing eight (8) variables, were distributed after the implementation of the suggested recommendation, i.e Student Based Menu Plan, to test the menu satisfaction level of the students. The data were analysed using the SPSS software which is available at the university.

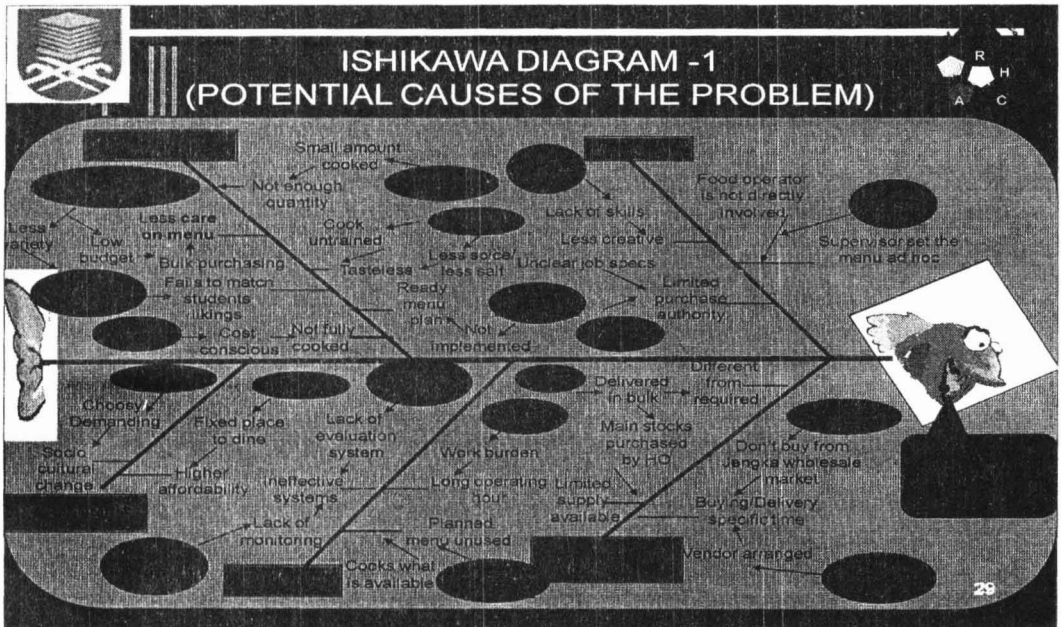
Unique to an applied research, creative and innovative suggestions were analysed and evaluated. Accordingly, a Student Based Menu Plan (SBMP) was designed based on the students' menu preferences during lunch time based on their responses during the interview. Thereafter, an SBMP was developed for eight weekly varied menu plans. The menus comprised of vegetables, meat, chicken, fish, seafood, herbal-like raw vegetables and accompaniment of local sauces including rice to match the differing needs of students' tastes. Acceptances of SBMP from the cafeteria operators are paramount.

Findings and Discussions

Preliminary investigation of potential causes of monotonous menu reveals that there is a mismatch of the menu plan and the available food stocks for the day as shown in the Fish Bone Diagram in Figure 1. Other potential causes are discovered, which, among others are 1) food

operators are not involved directly in the food and menu preparation, 2) limited power of the food supervisor, and 3) less attempt to satisfy student appetite while they have food budget.

Figure 1. Ishikawa diagram



In an undisclosed table, findings reveal that 118 (70%) of the complaints by students are centered on menu dissatisfaction at the cafeterias wholly attributed by monotonous menu (37%), tasteless food (26%), poor service (18%), not enough food (10%) and lacking of ingredients of a particular dish (9%) served on daily basis. Servings for a 30 days' period shows that fried chicken (70%), chicken in tomato sauce (70%), chicken rice (100%), Chicken in soy sauce (70%) fried mudfish (70%), mudfish in hot sauce (70%),fried cabbage (70%), tomyam cabbage (70%), fried mackerel fish (40%), fried bean sprout (27%), chicken curry (27%), and sweet sour fish (27%) are recurrently served at the dismay of the students.

Table 1 shows the findings on 4-Likert scale measures where strongly disagree equals to 1. Findings on chicken dishes reveal that the students have higher preferences for chicken-based menu (mean 2.97) as compared to fish- based (mean 2.50) and chicken rice meals (mean 2.45). Majority of the students strongly disagree or disagree to take chicken-based dishes but many do take them everyday (mean 2.28). Findings on fish dishes manifest that many students strongly disagree or disagree to take fish-based dishes very often but majority do take them 3 times in a week (2.29). With regards to chicken rice, majorities strongly disagree or disagree to taking it regularly but many take it once in a week (2.35). On food taste and cleanliness, findings indicate that majority strongly disagree or disagree that the food serve is not delicious (2.13) and that they are not satisfied with the food served but food is available for lunch (2.47). In terms of cleanliness, many agree that plates are clean (2.49) but tables and chairs are not (2.12). On equipment and supplies, the findings indicate that majority agree that the cafeteria have enough and well-maintained equipment (2.58), enough plates (2.79) but many strongly disagree of reasonable pricing (1.91). Findings on workers' attitude indicate that majority of the students

strongly disagree or disagree that the workers are friendly (2.23), helpful (2.23), look neat (2.31) and enough (2.09). In terms of breakfast, majority of the respondents strongly disagrees or disagrees of taking breakfast (1.58), daily (1.67) many take it once or twice a week (1.96). On question as to whether the students take dinner, findings indicate that many take dinner at the cafeteria (2.21) but most of them take three (3) times a week and daily at equal of mean 2.08 while very few take dinner at the cafeteria: two (2) times a week (1.96); once a week (1.74) as shown in Figure 1.

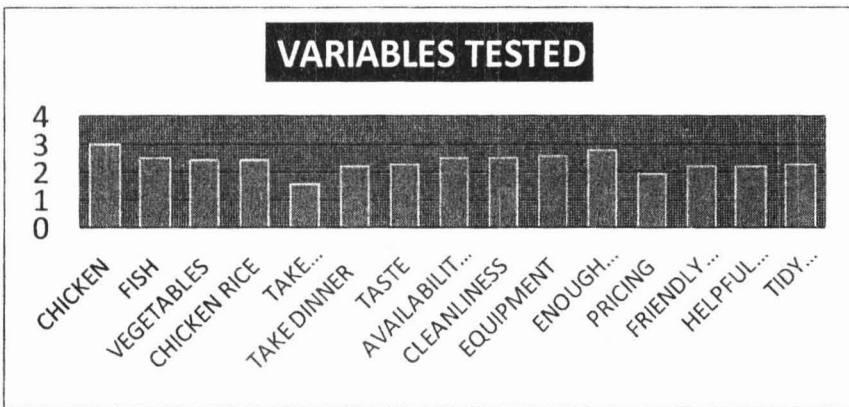


Figure 1. Mean of variables tested

Two creative solutions were suggested after identifying the main causes of monotonous menu; Option 1: Student-Based Menu Plan (SBMP) together with Standard Operating Procedures (SOP), and Option 2: Use the Current Menu & Introduce Ala Carte Menu.

Option 1: Student-Based Menu Plan (SBMP) together with Standard Operating Procedures (SOP)

The team designs SBMP and creates SOP that illustrates the required step-by-step procedures that must be complied during the execution of the entire chain of activities in the Cafeteria. Prior to the preparation of the SBMP, the group sought some suggestions and feedback from the students to determine the range of their food preferences. The suggestions were then incorporated in the menu which consists of vegetables, fish and chicken dishes. The minimum servings are four (4) per type of dish or more and cook in reasonable quantity as shown in Table 1.

The SBMP does not only match the students' appetite but are also prepared using different methods of preparation, students' nutrition requirements and hygienic cooking and serving practices. The daily menus are cooked from fresh ingredients and food stocks and tasty. However, the findings of this study do not match with the research conducted by Meyer (2000) on students' food satisfaction that is related to participation and financial stability. The current study reveals that students' satisfaction on food is linked to the variety of food or meals served on daily basis. Students are satisfied when foods served on daily basis were of varieties regardless of types of menu the cafeteria operators' offer. Further, the findings indicate that most of these operators have served Table d'hôte menus.

Table 1. Student Based Menu Plan (SBMP)

Isnin	Selasa	Rabu	Khamis	Umaat	Sabtu	Ahad
Nasi putih	Nasi putih	Nasi putih	Nasi putih	Nasi putih	Nasi putih	Nasi putih
Nasi ayam kukus	Nasi tomato	Nasi kebuli	Nasi hujan panas	Nasi beriyani	Nasi ayam goreng	Nasi minyak Berkismis
Peria goreng	Kacang pis goreng	Pucuk ubi lemak	Terung pedas	Paceri	Kacang	Sayur campur
Tom yam sayur			Sup sayur	nenas/terung	Panjang	Sawi Goreng
Kangkung masak kicap	Kobis cina goreng	Bayam goreng	cendawan	Masak lemak	goreng	Kubis masak kicap
Nangka masak lemak	Tauge /tauhu tumis	goreng	lemak	Sayur campur	Kangkung	Kangkung
	Rebung masak Lemak	Kacang botol masak merah	Tauhu asam manis	Sayur paprik	masak lemak	masak belacan
Ikan cencaru bakar	Ikan tenggiri masak pedas	Kerang rebus	Ikan	Ikan bawal	Ikan Keli goreng	Kerang Rebus
Ikan Keli masak cili api	Ikan Bawal	ikan Selar	Kembang	sweet sour	goreng	Ikan kembung
Udang masak merah	Masak Merah	ikan Kembang bakar	Kicap	Ikan cencaru bakar	Ikan selar	masak cili api
Ikan bawal sweet sour	Kerang masak cili api	Asam pedas	Ikan Cencaru	Sotong masak merah	masak lemak	Ikan keli
	Sotong	ikan pari	Kerang masak merah	merah	Ikan bawal	masak sambal
	Sambal		Sotong masak pedasi	Ikan keli masak merah	masak sweet sour	Sotong masak kicap
					Kerang Tumis pedas	

Standard Operating Procedure Manual (Good Hygiene Practice)

Simultaneously, an SOP was prepared by the team based on Food Act 1983 & Code of Practice of Food Hygiene in the months of March, April, May and June 2008 as shown in Table 3. This SOP in Bahasa Malaysia, was accredited by the Jabatan Kesihatan Negeri Pahang in October 2008 as suitable for use in the entire university's food service delivery system.

Table 3. Contents of the SOP

Content	Preparer	Date 2008
Pengendalian Makanan	Norlaila Abdullah	March/ April
Penyediaan & kebersihan	Sabariah & Yuzai	March/ April
Penyajian Makanan	Azlan & Ku Intan	March/ April
Pekerja & pengendali makanan	Lily & Rosliza	March/ April
Peralatan	Faizah & Suria	March/ April
Lampiran 1 Senarai Semak	Sabariah, Yuzai, Faizah	August
Kebersihan Makanan	Ku Intan, Lily, Rosliza, Suria	August

Evaluation of Option 1- SBMP

The options are analysed based on the principles of QCDSM (Quality, Cost, Delivery System, Safety and Morale) as shown in Table 4.

Table 4. Advantages and Disadvantages of SBMP

Advantages	
1. Quality menu - The student based menu matches with the students' menu needs, thus, expects less complaints from them leading to increase revenues.	
2. More choices & affordable menus; students' menu is affordable & enjoyable.	
Costs per lunch per person:	
Nasi	RM1.00
Kangkung masak kicap	RM 0.60
Ayam masak merah	<u>RM 1.50</u>
	RM 3.10
Minuman	<u>RM 0.80</u>
Total	<u>RM 3.90</u>
3. Able to deliver student based menu – The cafeteria meets the expectation of UiTM and students making them satisfied and happy at lunch time.	
4. Students enjoy dining at cafeteria - offering variety of menus at lunch time makes students' campus life better. Feel at home. Students talk positively about the cafeteria services, thus increases cafeteria's competitiveness.	
5. Variety of choices of food at lunch time increases the confidence of the students -When the students are satisfied with the food, their confidence to undertake academic challenge increases, UiTM is satisfied and cafeteria's worth increases as well. Ultimately, everyone is geared to achieve greater heights of performance.	
Disadvantages	
1. Takes too much time to plan quality menu at the initial stage.	
2. Requires consistent focus on menu as a core routine job.	

Option 2: Use the Current Menu & Introduce Ala Carte Menu

The current menu plan is continuously implemented in addition to the introduction of Ala Carte dishes at lunch time. The menu consists of a variety of freshly cook rice and noodles dishes. It is cooked as and when there is an order. Additional cook is hired. Scope of assigned monitoring task is to be agreed upon among team members and the cafeteria supervisor. Each team member will be assigned specific tasks and regular monitoring schedules (thrice a week). Monitoring reports will be discussed amongst REACH members. Corrective measures will be discussed with cafeteria 1E supervisor.

Evaluation of Option 2: Current Menu and Ala Carte

The option is analysed based on the principles of QCDSM (Quality, Cost, Delivery System, Safety and Morale) as shown in Table 5.

Table 5. Advantages and disadvantages

Advantages	
1. More Varieties of Menu (Ala Carte) – The students have more varieties of menu to choose from.	
2 More varieties of dishes at current price	
Nasi	RM 1.00
Ayam Kari	RM 1.40
Sayur lemak	RM 0.70
	RM 3.10
Air sirap	RM 0.80
	RM 3.90
3. Ala Carte	
Fried Rice or noodle	RM 2.70
Air sirap	RM 0.80
	RM 3.50
4. Able to provide variety of menu to the students by offering Ala Carte at lunch time.	
5. Small number of students (26%*) are happy to have Ala Carte or ready cook food choice at lunch time.*Estimated	
6. Given more choice of food available at lunch time, it makes majority of the students happy especially during week end.	
Disadvantages	
1. Employment of additional worker – new Cook is to be hired to cook the Ala carte menu i.e. Cook (1) RM 1,000 per month	
2. Requires extra time for the supervisor to manage Ala Carte menu and also the workers to prepare the ingredients.	
3. Additional investment is needed for Ala Carte ingredients or food stocks i.e. RM 200/day.	
4. The majority of the students have limited time during lunch break as such 20 out of 27 students are not willing to order Ala Carte menu during lunch time (based on students' interviews on 14 March 2008.	

Table 6. Cost Analysis

<i>OPTION 1 – STUDENT-BASED MENU</i>	<i>OPTION 2 – CURRENT MENU + ALA CARTE</i>
COSTING	COSTING
<p>REACH members work on voluntary basis and require no actual outflow.</p> <p>Cost per lunch per student:</p> <p>(i) Lunch without drink RM 3.10</p> <p>(ii) Lunch inclusive of drink RM 3.90</p>	<p>Expected numbers of students order Ala Carte per day (5% x 951) = 48 pax</p> <p>Price per Ala carte menu = RM 3.50</p> <p>Expected revenue /day = RM 168.00</p> <p>Impact on existing lunch* = RM 140.40</p> <p>(75% x 48 = 36 x RM3.90)</p>
<p>Expected revenue from food (1 semester)</p> <p>(9 51students X 53%* = 504 x RM 3.90 x 17 Wks x 7 days) RM 233,906</p>	<p>Expected revenue from food (1 semester)</p> <p>(504 pax x RM 3.90x 17 wks x 7 days) RM 233,906</p> <p>Revenue from Ala Carte</p> <p>(48 x RM 3.50 x 17 wks x 7 days) RM 19,992</p> <p>Foregone revenue</p> <p>(RM140.40 x 17 wks x 7 days) (RM 16,708)</p> <p>Less: Cost of 1 cook (RM 5,000)</p> <p>Expected Revenue RM 232,190</p> <p>+ Non – financial reason: Majority of the students have class at 2.10 P. M. Many prefer ready cooked food.</p>
<p>*5 3% is the rate of students dining at the cafeteria.</p>	

Decision Tree Analysis

Option 1: Financial Impact Analysis

This financial impact analysis incorporates the analysis as per Tables 4, 5 and 6 above. Option 1, comprising SBMP and SOP is analysed based on five criteria and expected outcomes as shown below. Based on Table 6, a minimum monthly revenue of RM233, 906 per semester per cafeteria, April 2008, is generated in addition to varieties of menu are served to students' satisfaction.

Criteria	Expected Outcome
Quality	Quality Menu
Cost	Cost/meal RM3.90
Delivery system	Deliver Menu
Safety	Enjoy lunch meal
Morale	Satisfaction

Option 1 - Non-Financial Analysis

Figure 2 illustrates the non-financial components as one of the basis in the selection of the most viable suggestion that will provide higher impact to students' menu satisfaction level. It is found that Option 1 generates higher revenue by RM 1716.00 per semester as compared to Option 2 and it has better qualitative elements, i.e. a variety of menus and students enjoy their lunch leading to less menu complaints

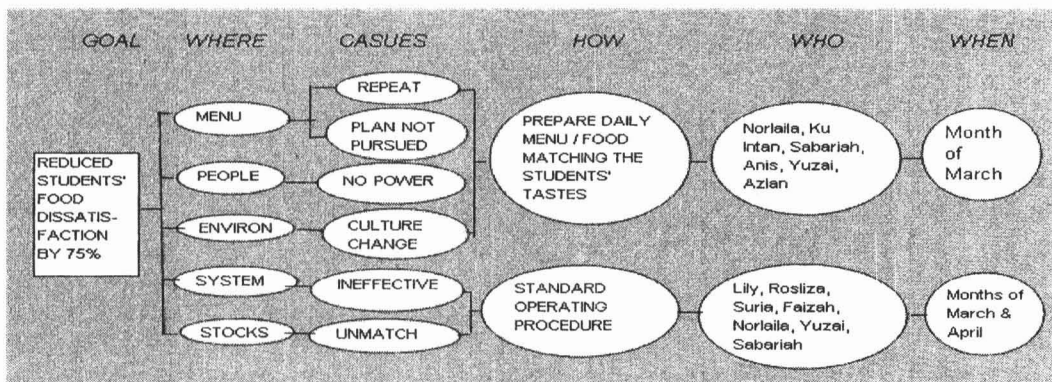


Figure 2. Non financial decision tree analysis

Similarly, Option 2 comprising Current Menu and Ala Carte is analysed based on five criteria and expected outcomes as follows:

<i>Criteria</i>	<i>Expected Outcome</i>
Quality	More varieties
Cost	Cost/meal RM3.90 and Ala carte RM3.50
Delivery system	Ala carte
Safety	More choices
Morale	Weekends

The expected revenue total is RM232, 190 per semester per cafeteria for April 2008 in addition to the variety of menu. However, limited time is available for students to take their lunch as most of them have class at 2 o'clock in the afternoon as shown in Tables 5 and 6.

Option 2 - Non-Financial Analysis

Non-financial analyses were conducted prior to the selection of the most appropriate suggestion as depicted in Figure 3 to determine some factors affecting the menu satisfaction amongst students in areas of quality, delivery, safety and morale. Results will further be incorporated in the decision matrix analysis.

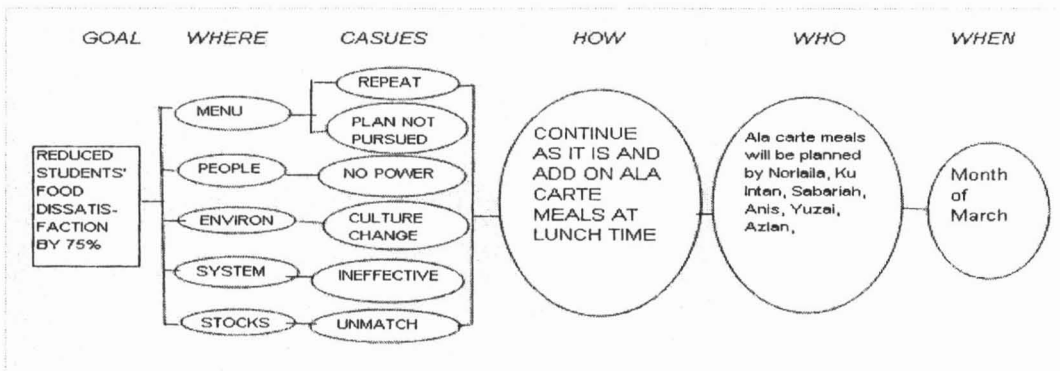


Figure 3. Non financial analysis for Option 2

Matrix Analysis on Suggested Options

Table 7 shows the matrix analysis of the comparative possible outcomes of both options based on the five criteria mentioned earlier. This table reveals that option 1 has better outcomes, total 36, as compared to option 2 as such the Team recommends Option No 1 as it generates higher quantitative and qualitative benefits as compared to Option 2.

Table 7. Matrix analysis of options

DECISION MATRIX ANALYSIS							
OPTIONS	CRITERIA					TOTAL**	DECISION
	Quality Morale	Cost	Delivery system	Safety			
1. Student Based Menu and SOP	8	6	9	7	6	36	√
2. Current Menu and Ala Carte Dishes	2	4	1	3	4	14	X

** Figures represent the votes from KIK members

Value-Based Recommendation: Option 1

The SBMP at lunch time is a continuous improvement programme and action plan encompassing not only the eight weekly menu plans but also monthly menu feedback /suggestion from the students for sustainability. Subsequently, the implementation activities were conducted from the months of April, May and July 2008. To carry out the task effectively, necessary implementation protocol was adhered by obtaining approvals from the Campus Director and the cafeteria operators.

Trial Runs

Figure 4 shows the results of a series of trial runs conducted on the SBMP implementation. Other areas relating to SOP training on SOP with Cafeteria 1E, as pilot exercise, cooking operation, food handling and preparations and food display were also undertaken.

Findings indicate that reduced repetitions of original menus was evident as shown in Figure 3 where 5 out of 10 (50%) were not repeated during the periods of trial Run # 1- 5. New menu (55%) was added and the 33 dishes were now served as compared to 15 (45%) original dishes.

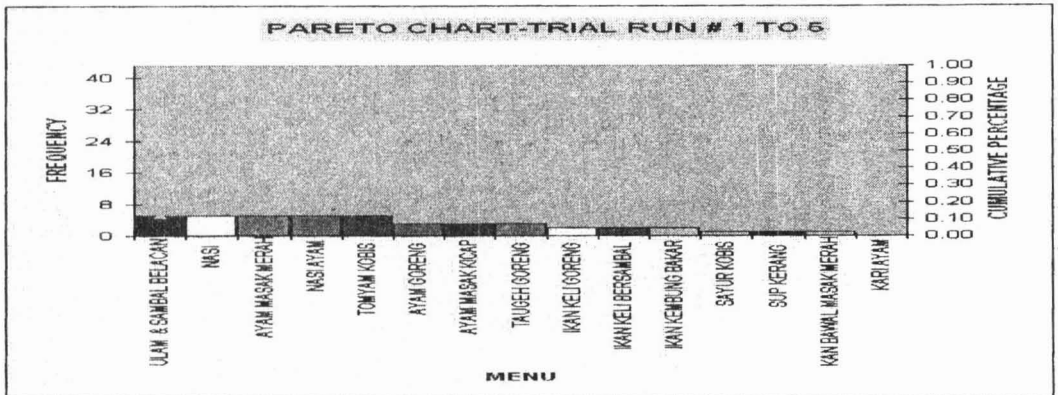


Figure 4 . Pareto Chart – Trial Runs # 1 – 5 on Menu Implementation

Corrective and Follow-up Actions

Both corrective and follow-up actions were conducted as numerous resistances of all sorts from some cafeteria operators on issues relating to availability of food supplies and attitude. With tact and perseverance, the team was able to manage these issues positively. On the variety of menu, post-test survey findings (first set trial runs) show that variety of fish and chicken dishes are now served at the cafeteria in reasonable quantities resulting to 38% improvement on complaints from 107 to 66 and menu satisfaction amongst students has increased to 55% or an increase by 19%.

In July 2008, the group implemented the same SBMP but using rolling procedure. In this procedure, the planning of a menu began every Thursday of the week. Out of the 5 days of trial runs and monitoring, fried mudfish (ikan keli) was still served occasionally and new chicken dishes were yet to be seen. The group conducted the third survey on students' food satisfaction for the same group of sample and results indicate that 25 students (39%) were not satisfied and 39 (61%) were satisfied and complaints had reduced to 45% (reduced by 17%).

Subsequently, the group undertook standardisation processes among the other three (3) cafeterias. A weekly standardisation milestone chart of standardisation activities was prepared and suggested corrective actions were forwarded to the three cafeteria supervisors' for implementation. The group prepared a report on the standardisation outcomes and submitted it to the Deputy Director of Student Affairs.

Benchmarking Practice

A number of institutions were identified and examined for possible benchmarking practices and the team selected the Hospital Tengku Ampuan Afzan (HTAA) as shown in Table 8. Findings reveal that both entities have similar practices on good food hygiene, cleanliness, variety of menu, balanced meal components and focus on serving dishes that match the clients' needs.



Table 8. Benchmarking with HTAA

Items	HTAA	UiTM CAMPUS JENKKA CAFETERIA
Practice Good Food Hygiene	Yes	Yes
Kitchen Cleanliness	Yes	Yes
Variety of Menu	Yes	Yes
Balanced Menu Components	Yes	Yes
Do you practice student/patient based menu plan	Yes	Yes

Achievement and Value Creations

Table 9 highlights the achievements that have been accomplished in this study. Final findings reveal that there was reduction on menu complaints by 50%, some nominal cost of RM 158,400 was allocated leading to increase by 386% in dishes served at lunch time and students' satisfaction level rose to 61% and 70% in October 2008.

Table 9. Project achievement

ACHIEVEMENT	BEFORE	AFTER (1)	AFTER (2)	REMARKS
QUALITY: Menu Complaints %	78% (Pre test 8/3/08)	45% (Post test 23/4/08)	39%(interview: 64 -21/7/08)	Decreasing trend 100% / 58%/50%
COSTS: Hours Taken on KIK tasks	220 hrs or 24 hrs/m	588 hrs or 65.33 hrs/m	576 hrs or 64hrs/m	Total hrs taken = 1,384 hrs @ RM 138,400 excluding training costs.
DELIVERY SYSTEM: Total dishes served (lunch)	14	33	54	Increasing trend 100%/ 235%/386%
SAFETY: student satisfaction %	22%	52%	61%*	Increasing trend 100%/236%/277%
MORALE	Cannot be measured	Cannot be measured	Cannot be Measured	

*Personal interview with 64 students by Rosliza, Suria, Faezah, Yuzai, Saba & Norlaila on 19/7/08 & 21/7/08)

These achievements have positive impact to UiTM Pahang. A total cost of RM158, 400 as shown in table 10.



Table 10. Cost benefit analysis

(A) COST	(B) BENEFITS	
	QUANTITATIVE	QUALITATIVE
UiTM PAHANG	<u>WIDE SCALE IMPLEMENTATION</u> (i) cafeteria operators student cafeteria = 4 students' food stalls = 6 total = 10	(i) Cafeteria operators have social responsibility in offering varieties of menus to the UiTM Pahang's students for happier stay. (ii) Having varieties of menus at lunch in the cafeteria saves students & staff time and provides convenience and leads greater motivation at work.
(I) Cost incurred on training & other benefits to KIK members RM 20,000 (ii) Lecturers' nominal costs attributed to hrs taken RM 138,400. TOTAL=RM158,400	<u>TO CATER THE FOOD NEEDS OF:</u> <input type="checkbox"/> students = 5,138 <input type="checkbox"/> expected heads taking lunch (90%) = 4624 students <u>(ii) expected food revenue (lunch):</u> 17 weeks x 7 days x 4624 persons x RM 4 x 2 semesters = RM4,402,048.00 (iii) value for ringgit satisfaction	(iii) The students and staff of UiTM Pahang are more satisfied to dine at the cafeteria

Target versus Actual Performance

Table 11 shows the comparative percentage of actual menu complaints and the target objective where the team was short of 25% from achieving our stretch target of 75% due to the varying and ever changing tastes of the students. Regardless of non-conformance to the set objective, this study has brought about changes to the varieties of dishes served at the cafeteria within the interest of clients: the students.

Table 11. Comparison of target and actual performance

<i>COMPARISON OF TARGET & ACTUAL</i>				
PROJECT OBJECTIVE ACHIEVEMENT:				
	a. target complain reduction on monotonous menu: 75%			
	b. target menu complain from students (after) : 25%			
ACHIEVEMENT	BEFORE	AFTER (1)	AFTER (2)	REMARKS
ACTUAL: % of Menu Complains	78%	45%	39% OR 50%	UNABLE TO REACH THE STRETCH TARGET BY 25%
REASONS:	But REACH has been able to reduce the students' complains on monotonous menu by 50%			
(i)	Solving menu complaints need longer cycle period (4 months).			
(ii)	Students assigned in the sample cafeteria changes every semester.			

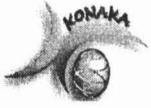


Conclusion

This study on menu satisfaction at the student cafeteria has revealed how a team of university lecturers managed to improve the food services in the cafeteria. Clamor for variety of dishes was heard from the students for their daily food consumptions. Earlier findings reveal that the cafeteria operators were not addressing the students' taste and this resulted in excessive complaints from the students. A solution which centers on the appropriate mix of menu that caters to fit the students' taste, that is, the Student Based Menu Plan (SBMP) has been proposed. The SBMP is complemented by the Standard Operating Procedure which is designed solely as the fundamental principles for food operators. The SBMP not only satisfies the needs of the students, but also the cafeteria operators and ultimately the university.

The implementation and standardisation of SBMP and SOP are satisfactory to the effect that the cafeteria operators have been able to introduce new dishes at lunch time resulting to students' monotonous menu complaints drastically reduced. The implementations of both SBMP and SOP are not free from difficulties, however, resistance from concerned parties have been tactfully managed by the team. On value creations, this study has proven, through concerted efforts, which students' menu satisfaction has improved from a state of dissatisfaction to a state of satisfaction within the trial run period.

Effective July 2009, UiTM Pahang has introduced some changes on food service management where the cafeteria system was replaced by food court system where numerous and small food stalls at strategic places on campus are to cater to the food needs of the students. With the new small sized food stall providers on campus, food supervision, monitoring and hygiene are highly imperative, thus, the SBMP and SOP are essentially vital tools for the team and the hostel personnel in daily routine food operations' monitoring and control purposes. The SBMP and SOP have been proven and recognised by the deticians at the HTAA and the Department of Health, State of Pahang respectively. The SOP is highly recommended to be used in the entire University's food service operations.



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