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In-flight Meals, Passengers' Level of Satisfaction and Re-flying Intention

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***Abstract*—**Service quality has become a centerpiece for airline companies in vying with one another and keeps their image in the minds of passengers. Many airlines have pushed service quality through service personalization which includes both ground and on board especially from the viewpoint of retaining satisfied passengers and attracting new ones. Besides those, in-flight meals/food service is another important aspect of the airline operation. The in flight meals/food services now are seen as part of marketing strategies in attracting business or leisure travelers. This study reports the outcomes of the investigation on in-flight meals/food attributes toward passengers' level of satisfaction and re-flying intention. Taste, freshness, appearance of in-flight meals/food served and menu choices are important to the airlines passengers especially for the long haul flight. Food not only contributes to the prediction of the airline passengers' levels of satisfaction but besides other factors slightly influence passengers' re- flying intention. Airline companies therefore should not ignore this element but take the opportunity to create more attractive and acceptable in-flight meals/food along with other matter as marketing tools in attracting passengers to re-flying with them.

***Keywords*—**In-flight meal, passengers, satisfaction, re-flying and intention

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I. Introduction

INTERNATIONAL transportation, air travel in particular is found to play an important role in moving people or products from one place to another either domestically or internationally [36]. Chan [11] considered the airline industry to be at the heart of the travel and tourism industry while Pincus [39] argued that the airline industry is the main contributor to many countries' overall economy through international tourist arrivals. The positive development of the travel and tourism industry has created great competition among the large and small airlines companies for passengers. Broad marketing with a full range of innovative strategies, capitalizing to the fullest advantage through establishing hub-and-spoke networks, setting up frequent flyer program, computer reservation systems together with in-flight entertainment, internet connectivity, cabin facilities and cleanliness of the aircraft are some of the examples applied [48]. Chan [11] posited that maintaining and continuously improving service quality has long been crucial for airline companies in attracting passengers [40, 11]. Service quality in fact has become a centerpiece of their corporate in vying with one another and to keep their image in the minds of passengers. Many airline companies have pushed service quality through service personalization which includes both ground and on board especially from the viewpoint of retaining satisfied passengers and attracting new ones.

Besides those elements, in-flight meals/food service is another important aspect of the airline operation. As noted by Solomon [41] passengers commonly will select the airline that offers the best meals/food. The in flight meals/food services now are seen as part of marketing strategies in attracting business or leisure travelers to a particular airline. Some airlines have invested a great deal of money for in-flight meals/food to better treat their passengers and in fact offering a choice of pre-bookable in-flight meals/food and discounts for an early booking by the passengers [35]. Emirates, Cathay Pacific and Singapore Airlines are actively promoting their in-flight meals/food in the electronic media, websites and other advertising forms to attract more passengers to fly with them. Other airlines such as British Airways, Air France and Qantas are reported to be hiring high profile chefs specifically responsible for overlooking the meals/food production, designing menus and the quality of dishes prepared to meet the increase in passengers' demands over the quality of the meals/food [28]. In-flight meals/food besides other attributes has turned out to be part of the total service for airline passengers [26, 29, 5, 27]. King [28] reported some passengers are willing to change airlines, alter travel patterns and even pay more money for high quality in-flight meals/food served. In line with this, many airline caterers are found to be putting tremendous efforts into ensuring the quality of the in-flight meals/food they serve, thus creating a more "intelligent concept of catering" as they are bogged down by combinations of meals/food inappropriate for in-flight conditions [44].

The available studies on in-flight meals/food have looked into the role of meals/food provision in airline catering [5], airline passengers' meals/food service experiences during long haul journey [18] and relationship between the image of airlines and the in- flight meals/food served [34, 47] leaving the gap on the relationship between in-flight food and passengers re-flying intention. In extending the body of knowledge in this field, this study is therefore investigating in-flight meals/food attributes toward passengers' level of satisfaction and re-flying intention.

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II. Literature Review

A. The Development of In-flight Food Catering

The advent of what might be regarded as in- flight catering occurred in the 1920s when Imperial Airways in the UK started to serve tea or coffee in their aircraft [35]. Nevertheless, meals on board which only included cold items like hors d'oeuvres, lobster salad, cold chicken, ham, Nicoise salad, ice cream, cheese, fruits, champagne, wine, whisky, and mineral water were not served until 1927 by the Air Union [19]. These services continued until the mid-1930s when regular hot meals became available. The Imperial and Qantas Airways in 1934 for example had combined their operations and while flying across continents from London to Brisbane had to serve hot meals in the insulated containers known as hay boxes owing to less space to prepare food [10, 50]. A bigger galley in DC3 aircraft was then designed by Imperial Airways in 1936 which enabled extensive hot meals/food to be served to the passengers. In fact, the first 'catering centre' of the airline company was set up by Imperial Airways [50] whereby meals/food was an essential part of the total service in the airlines industry. The use of modern and sophisticated equipment for in- flight catering began in the mid 50s when the interior design of the Boeing 737 aircraft incorporated catering functions or gadgets in the aircraft to enrich the customers' dining experience. The first aircraft ovens and refrigerators were installed in the galleys of Boeing aircraft. With that installation, many airline companies started to serve complete meals/food ranging from cold and hot food to various types of soft and alcoholic beverages. The frozen meals/food were kept in cold storage then defrosted and reheated in the electric ovens to the required temperature before being served to the passengers [35]. Since then, in-flight catering has become a multi-million dollar business and continues to mushroom in the industry. Most airlines companies have in fact given serious attention to the in-flight meals/food. In turn they run their own in flight catering operation with units based at all the major airports as a response to the increasing and huge range of customer needs [39].

During 1980s, most of the airlines company had their own catering division [13]. This situation however changed in the early 1990s when in-flight catering was contracted out to a specialized flight catering companies. Gate Gourmet, Alpha Flight Services and LSG SKY Chefs are some examples of multi-national in-flight caterers who responsible for preparing thousands of meals for many airline companies nowadays. In fact, these catering companies employ specialist chefs and other related expertise to design the menus suitable for an increasingly demanding market [13]. King [28] claimed that the main reason was to reduce the high operational cost and enable the airlines to fully concentrate on other requirements.

B. Relevant Studies on Airlines and In-flight Meals

A range of studies on airline industry are available from the marketing, human resources, safety and service quality to the in- flight meal/food [38, 30, 16, 27]. Driver [16] looked into the development of airline marketing practices and activities. Products/services, provision of routes, seat allocation and types, in-flight and ground-based services, the price structure, distribution channels and promotion are the current marketing activities and an excellent marketing strategy is the key to the airline's competitive success. Many airline companies were found to be actively engaged in the development of branding strategies integrating their services through first establishing identities and images for their both employees and customers. Betts [8] noted that the purpose of branding is to reveal a characteristic ability in comparison with alternatives brand to allow the brand name, symbol or identity to mean something distinctive and with the subsequent demand that ideally consumers retain that brand in memory. Paying greater attention to the customer through marketing efforts is one the most important element in regulating the market competition, since the international markets have expanded and the marketing environment is becoming broader. In fact, the airline marketing strategies and corporate communication have been found to influence the travelers and directly establish brand images [42].

The use of the internet as a marketing tool is also becoming a central focus among the researchers [29, 20, 32, 21, 43]. This modern era as a communication device in disseminating information is becoming prevalent [29] and the airline industry has been at the forefront of using the internet in conducting business with customers [43]. The online tickets purchase are used by the airline companies as an alternative to maintain low distribution costs, reach new markets and enhance customer values and satisfaction [21]. Computer reservation system, frequent flyer programs, segmentation strategies, low fares advertising, code sharing, scheduling and seat availability are also generated through on line services [43]. The use of internet marketing has also increased the convenience for the consumer in obtaining information, ticketing, checking the schedule, making comparisons and avoiding lines at airport counters when purchasing tickets [29]. Toh and Raven [43] strongly argued that internet marketing activities provide value to the customer and profit to the airline companies and low fare air travel tickets purchased through the internet are one of the most effective solutions for increasing business value, attracting more customers and increasing customer satisfaction [32].

Several researchers have looked into the human resources issues [49, 2, 9, 22]. On the management of health and safety in the airline industry, Boyd [9] revealed that profit maximization overrides the objectives of HRM rather than the provision of employee centered policies and practices. He suggested that HRM should provide a smokescreen for negligence in health and safety management in the airline industry to avoid accident occur thus health and safety will take the place. Howard [24] on the other hand, investigated labour costs, health and safety regulations and the cabin working environment. Despite growth in the airline industry, employment has tended to remain the same. Heskett, Jones, Loveman, Sasser, and Schlessinger [22] identified that training, pay treatment with respect and dignity; teamwork and the company's interest in employees' well being are the factors that contribute to the employees' satisfaction. Writz et al. [49] explored the nature of Airlines' human resources (HR) management practices which facilitated the company's delivery of reliable service in a competent way and the achievement of sustainable competitive advantages. Result of

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this study revealed that the most successful airline organizations have a firm commitment to effective HR management, including recruitment, selection, training, motivation and retention of employees and competitors had to duplicate the high performance human assets. In addition, the strength of the front line employee relationship is often an important driver of customer loyalty [15, 1]. Appelbaum and Fewster [2] suggested that airline administration should make a bridge linking customer value to employee performance in human resources management. In investigating the Global Aviation Human Resources Management; contemporary employee and labour relations practice, they found that a high correlation exists between customer satisfaction and satisfied employees and poor quality in regard to management, decision making, teamwork, employee motivation, or communication can be translated into loss of customers, loss of market share, loss of organization assets, and above all, loss of life.

Safety and security have also received attention from the researchers [7, 45, 33]. These researchers basically measured the effectiveness of the Transportation Security Administration (TSA) which was established to improve air transport industry security. Turney et al. [45] for instance looked at the important areas to improve air transport security from the viewpoint of crew members and suggested the priority should be given by the airline companies to reinforcing the flight deck door and bulkheads, and better passenger screening and identification scanners for airline employees. Norelius and Rancatore [33] noted that security should be improved starting from screening the baggage until it is transferred to the aircraft and training on safety measures should be given to crew members. Rhoades and Waguespack [40] stated after September 11th. Safety quality is much better than the service quality levels and suggested that besides spending more on aircraft maintenance, other matters such as a proper maintenance program, personnel training and record keeping should be also implemented to improve airline safety.

On the operation management, Bamford and Xystouri [3] posited that service quality is crucial in the airline industry and excellence service can only be achieved through employee satisfaction, commitment and loyalty to the organization [6]. Few airlines that have successfully positioned themselves globally consistently outperformed their competitors by offering an excellent service quality [11]. Wyld, Jones and Totten [51] noted that the efficiency of service like baggage handling and tracking system technology improved airline service quality and customer perception of the service quality will be empirically improved as customers see their baggage upon arrival [12]. In fact, punctuality, safety, scheduling convenience and tracking system is one of the most critical factors influencing passengers' choice of airline and passengers would not choose the same airline for a subsequent flight if they experienced bad service [18] and service failure has given significant impact on passengers' loyalty and passengers poor service experience will be shared with seven to nine friends [42]. Quality of service also significantly drives the airline image and what passengers believe about the service and how they it has the strongest impact on the image of the airline [37]. In this sense, if the passengers believe that a particular airline able to meet their needs, their expectations will be heightened and lead to intention of re-flying. In contrast, failure to provide the quality of services may damage the image of the airline and cause a negative impact on passengers' behavioral intentions.

O' Hara and Strugnell [35] discussed the development of in-flight meal products as part of airline services from the 1920s up to the present day. Some factors such as the function of the tray size, dish specification, overall tray presentation, and the nature of the meals and the effect of delay on loading on to the aircraft need to be considered when designing a tray set and an alternative approach to new product and service development. Jones [27] noted that the role and competencies of in-flight chefs are very important for new food products and service in in-flight catering and suggested that service development in greater consultation with employees, human resources and marketing should be expanded into a fully-fledged concept. Survey of British Traveler on U.S. domestic airlines revealed that meals was ranked ninth, in importance to airline carriers after scheduling, punctuality, safety, speedy check-in, route network, comfort, price, and mileage programs [17]. Tu [46] initially stated that although food may not rank high among the top factors in choosing between airlines it can evoke emotional sentiments and it is certainly a key service element for its repeat passengers. He argued that if the meal served is not appetizing the flight is also considered bland to passengers.

Bennet and Wood [5] recommended that the flight caterer should develop new foods and follow the new meals/food trends to satisfy airline passengers and in fact innovative ideas can be adopted and integrated into the flight catering. Dana [13] initially suggested that airlines should offer special meals/food to meet dietary or religious needs, and also uses the advanced booking of meals/food to attract more passengers. King [28] investigated the key problems of in-flight catering such as travel experiences and media perceptions of meal quality, industry structure, logistics and supply chain in relation to the role of e-commerce, technology design and development and environmental concerns. The passengers' experiences and the industry however are different compared to ten years ago from 1991 to 2001 and in this competitive airline industry, passengers are more concerned with experiencing excellence and a good quality of in-flight meals/food served during their long haul journey. Passengers on the long haul flights in fact demand a greater variety of meals/food to be served to them and safe to be consumed [18].

III. Methodology

A. Sampling and Instrument

As the main objective of this study to investigate the in – flight meals attributes toward passengers' levels of satisfaction and re-flying intention, a self reported experience through a questionnaire survey was chosen as the means of data gathering. This approach was opted for to ensure that the information obtained would be based upon actual experiences of consuming the in flight meal/ food. Sample populations were among the passengers of Malaysian Airlines (MAS) who had experienced in flight meal/ food in long haul flight with this airline. With that, the questionnaire was developed and divided into five major sections. Section A was designed using a nominal scale focused on passengers' demographic profile

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like age, gender and country of origin. Questions such as the frequency of travel and the reason for travel were also included. Section (B) was created with the intention of examining the general perceptions of the passengers of in-flight meals/food attributes. A total of sixteen (16) statements were used for respondents to report their feelings. Items in Section C were concerned with levels of acceptance of in-flight meals/food attributes among the airline passengers and fifteen (15) items used in this section. In these two sections respondents were asked to report their perceptions based on the five-point Likert scale ranging from one (1)"strongly disagree" to five (5), "strongly agree". Twelve items were used in Section D in determining passengers' level of satisfaction with the in-flight meals/food served in the aircraft. In this section, respondents were required to express their feelings on the five type Likert scale ranging from one (1) with "not satisfied at all" to five (5) with "extremely satisfied".

B. Data Collection

The Malaysia Airlines (MAS) Human Resources Manager and In-flight Operations Manager and Malaysia Airport Berhad were contacted with official letter in acquiring permission to undertake the survey in the waiting lounge at Kuala Lumpur International Airport (KLIA). After one week, a follow-up phone call was made to respective managers and they were agreed to give full support as it directly benefited Malaysia Airlines. However, the researcher was only allowed to survey passengers on Malaysian Airlines' international route and the survey had to be undertaken with the assistance airport security guard. Subsequently, the questionnaire was administered by the researchers with assistance of airport security guard. The experiences of passengers with Malaysia Airline were tapped with a screening question "Is this your first time flying with Malaysia Airline". A set of the questionnaire was then given for them if the answer "No". Owing to the time constraint and budget, only fifteen days were spent for data collection process. In light with positive feedback and the absence of any obvious problems with either the instrument or the process, a total of 242 responses were obtained. The data were coded and keyed in Social Statistical Package (SPSS) Version 18. The reliability test was than undertaken for Section B, C and D separately. The result showed that the instrument and items used was reliable with coefficient alpha value at 0.82 for Section B, 0.70 for Section C and 0.62 for Section D.

IV. Analyses And Results

A. Respondent Profiles

Frequency tests revealed male respondents exceeded the female with 59.5 percent (n =144) against 40.5 percent (n= 98). Substantial number of respondents were between 18 and 29 years old (45.0 percent, n= 109) outweighed those between 30 to 49 years of middle-aged group (41.7 percent, n =101) and 50 to 59 years which represent 9.1 percent (n=22). Other were among the senior citizens between 60 years and above representing 4.1 percent (n=10). The highest number of passengers travelled for holidays and leisure (63.6 percent, n=154) followed by those visiting friends or relatives (19.4 percent, n=47), business purposes (10.7 percent, n=26) and other reasons (6.2 percent, n=15). 85.1 percent (n = 206) of the total respondents were using Malaysia airline for the second time, followed by 5.0 percent (n = 12) for the third times, 6.2 percent (n = 15) for fourth times and 3.7 percent (n=9) had used Malaysia airline more than four times. The majority of passengers were among the Europeans accounting for 57.0 percent (n=138) as opposed to 33.9 percent (n= 82) among the local and Asian countries. 4.1 percent (n= 10) from Australia and 3.3 percent (n = 8) from North America and 1.7 percent (n=4) were among the South African.

B. The General Perception of the In-flight Meals/food Attributes

Before looking at the general perception of respondents toward in-flight food, an exploratory factor analysis was initially conducted to identify the underlying relationships and the grouping for each of the items consistent with the way the questionnaire was developed or used. Using Principal Component Analysis with Varimax rotation through factor loading of 0.30 and Kaiser Normalisation on all items (Section B, C and D), three factors were extracted and named as food appearance, food taste, and food choices).

From the descriptive statistic, respondents agreed that the taste of the meals/food served was acceptable (*M*=4.08, item 1), consistent throughout the journey (*M*=3.91, item 2) and suitable for all palates (*M*=3.93, item 6). Respondents also strongly agreed that the meals/food served were fresh (*M*=4.28, item 4). This is evident with the mean score (*M*=3.96, item 5) given to the freshness of fruits and vegetables used. In fact, the same levels of agreement were given to the appearance of the meals/food served.

This can clearly be seen on the items listed below:

- Attractive color of vegetables served (*M*=3.80, item 6)
- Good color of fruits served (*M*=3.90, item7)
- Well balanced color combination (*M*=3.90, item 8)
- Sufficient portion size of the meals/food served (*M*=3.78, item 9)
- Good arrangement of the meals/food served (*M*=3.94, item 10)
- Great packaging of the meals/food (*M*=3.95, item 11)
- Good textures of the meals/food (*M*=3.83, item 12)

TABLE I
THE MEAN SCORE OF THE RESPONDENTS' GENERAL PERCEPTIONS OF IN-FLIGHT MEALS/FOOD ATTRIBUTES

No	Items	N	Mean	S.D
1.	The taste of the meals/food served is acceptable	242	4.08	.543
2.	The taste of the meals/food served is consistent	242	3.91	.570
3.	Most of the food/ meals served are suitable for all palates	242	3.93	.593
4.	Overall, the meals/food served are fresh	242	4.28	.518
5.	Most of the vegetables and fruits served are fresh	242	3.96	.639
6.	The colour of most of the vegetables served is attractive	242	3.80	.626
7.	Most of the fruits served are good in colour	242	3.90	.665
8.	Overall, the colour combinations of	242	3.90	.708

	the meals/ food served are well balanced			
9.	The packaging of the overall meals/ food looked great.	242	3.94	.700
10.	Most the meals/food served are sufficient, or in the right portion size	242	3.78	.811
11.	Most of the time the meals/food items served on the tray are well arranged	242	3.95	.648
12.	The overall texture of the meal/food served is good	242	3.83	.546
13.	Overall, this airline offers great choices of meals/food compared to other airlines	242	3.04	.732

Scale : 1= Strongly Disagree, 2= Disagree, 3= Slightly agree, 4= Agree, 5= Strongly Agree

Besides taste, freshness and appearance, the choices of the meals/food offered were also seen to catch the respondents' attention. As being pleased with the taste, freshness and appearance of the overall meals/food served, respondents were quite happy with the choices of food offered in the aircraft. The mean score of (*M*=3.04, item 13) given to this item perhaps explains respondents' feelings. What can be said from this section analysis is that Malaysia airline through their in- flight caterer provides overall acceptable meals/food to the passengers not only with regard to taste, appearance, freshness but also choices of food.

C. Passengers' Levels of Acceptance of In-flight Meals/food Attributes

The On the level of acceptance, majority of the respondents agreed that they could not resist the overall delicious meals/ food (*M*=4.18, item 1), admitted that their appetite was stimulated by the good aromas of the meals/food (*M*=4.02, item 2) and agreed that the taste of the meals/food served was consistent throughout their journey (*M*=4.12, item 3). With the positive expression on those items, it is therefore not surprising to see that the respondents enjoyed the spicy taste (*M*=4.23 item 4) and also loved both Malaysian (*M*=4.02, item 5) or Western food (*M*=4.17, item 6) served. Together these indicate that the meals/food attributes served by Malaysian Airlines reached higher acceptance levels among the local and international airline passengers. This notion is strengthened by the higher level of agreement, with a mean score (*M*=4.23, item 7) given to the item "all foods served are well seasoned and need no additional seasoning".

There were also higher levels of acceptance on the freshness and appearance of the meals/food served. As such, respondents were impressed with the overall presentation (*M*=4.02, item 8), colour combination (*M*=3.76, item 9) and agreed that the texture suited their palate (*M*=3.88, item 10), had no doubt about the cleanliness of the overall meals/food served (*M*=3.83, item 11) and love a variety of menu choices offered (*M*=3.89, item 12). These results clearly indicate that taste, freshness, appearance of meals/food served and menu choices are important to the airlines passengers, especially for the long haul flight which involves more than one meal period.

TABLE II
THE MEAN SCORE OF THE RESPONDENTS' LEVEL OF ACCEPTANCE OF IN-FLIGHT MEALS/FOOD ATTRIBUTES

No	Items	N	Mean	S.D
1.	I could not resist the overall delicious meals/food served	242	4.18	.741
2.	My appetite was stimulated by the good aromas of the meals/food served	242	4.02	.653
3.	The taste of the meals/food was consistent in this airline throughout the journey	242	4.12	.670
4.	I enjoyed the spicy taste of the meals/food served in this airline	242	4.23	.682
5.	I enjoyed most of the Malaysian meals/food served in this airline	242	4.02	.681
6.	I enjoyed most of the western meals/food served in this airline	242	4.17	.665
7.	All food served was well seasoned without additional seasoning	242	4.23	.726
8.	I was impressed with the overall meals/food served	242	4.02	.731
9.	I liked the overall colour combination of the meals/food served	242	3.76	.657
10.	The texture of the meals/food served each time suited my palate	242	3.88	.629
11.	I had no doubts about the cleanliness of the overall meals/food served	242	3.83	.665
12.	I loved the variety of choices of meals/food offered in this airline.	242	3.89	.7033

Scale: 1= Strongly Disagree, 2= Disagree, 3= Slightly agree, 4= Agree, 5= Strongly Agree

D. Passengers' Level of Satisfaction with the In-flight Meals/food Attributes

It is believed that the satisfaction or dissatisfaction might affect the decision of a passenger to return or change to other airlines in future travel. With that, the respondents' ratings on their levels of satisfaction related to those attributes are presented in Table 3. Result revealed that respondents were very satisfied with the taste of (*M*=4.38, item 1), smell (*M*=3.84, item 2) as well as the combination of ingredients (*M*= 3.78, item 3) of the overall meals/food served. Further to this notion, respondents were also satisfied with the freshness of the meals/food served (*M*=3.72, item 4). With regard to appearance, respondents were very satisfied with the colour combination of the meals/food served (*M*=4.30, item 5). In fact, the same level of satisfaction was given to packaging style (*M*=4.24, item 6), portion size (*M*= 4.16, item 7), food arrangement (*M*= 3.63, item 8), cleanliness (*M*=4.09, item 9) and texture (*M*= 3.68, item 10) of the overall meals/food served. This positive expression can clearly be seen as the majority of the respondents were very satisfied with the overall quality of the meals/food served (*M*=4.33, item 11) and the menu choices offered in this airline (*M*=3.70, item 12). What could be said from this result is that respondents clearly demand variety of menu choices especially for the long haul flight.

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TABLE III
THE MEAN SCORE OF THE RESPONDENTS' SATISFACTION OF IN- FLIGHT MEALS/FOOD ATTRIBUTES

No	Items	N	Mean	S.D
1.	Taste of the meal/food served\	242	4.38	.609
2.	Smell of the meal/food served	242	3.84	.767
3.	Combination of the ingredients use	242	3.78	.807
4.	Freshness of the meal/food served	242	3.72	.815
5.	Colour combination of the meal/food served	242	4.30	.607
6.	Packaging of the meal/food served	242	4.24	.594
7.	Portion size of the meal/food served	242	4.16	.631
8.	Arrangement of the meal/food served	242	3.63	.762
9.	Cleanliness of the meal/food served	242	4.09	.588
10.	Texture of the meal/food served	242	3.68	.799
11.	Quality of meal/food served	242	4.33	.524
12.	Choices of the meal/food offered	242	3.70	.533

Note: 1= Not Satisfied at All, 2= Not Too Satisfied, 3= Somewhat Satisfied, 4= Very Satisfied, 5= Extremely Satisfied

E. Relationship between In-Flight Food Attributes and Passengers' Levels of Satisfaction

To evaluate how well the respondents' experience with the in-flight meals/food attributes predicted their levels of satisfactions, a single-step multiple regressions was conducted. The predictors comprised the four attributes of in-flight meals/food (taste, freshness, appearance and menu choices) and the criterion variable relates to passengers' levels of satisfactions. All of these variables were entered into the regression equation in the first step.

As can be seen from the Table, the four in-flight meals/food attributes were able to explain 52 percent (R^2 = .52, F-change = 64.257, p<.001) of the observed variations in the airline passengers' levels of satisfaction with in-flight meals/food attributes served. Three out of four meals/food attributes (predictor variables), significantly contributed to the prediction of the airline passengers' level of satisfaction (criterion variable). The results showed that taste, appearance and menu choices significantly contributed to the prediction of the airline passengers' levels of satisfaction. Appearance and freshness (β = .33, p < .001) had the most impact on passengers level of satisfaction followed by taste (β = .32, p < .001) and the menu choices (β = .24, p < .001) respectively. As all the meals/food attributes were found to significantly and positively influence the airline passengers' levels of satisfaction, the assumption of the satisfaction with in-flight meals/food attributes among the airline passengers is strongly supported.

TABLE IV
RESULTS OF MULTIPLE REGRESSION OF THE PASSENGERS' LEVELS OF SATISFACTION WITH IN-FLIGHT MEALS/FOOD

Predictors	Model 1 Std. β
V. STEP 1: MODEL VARIABLES	
Food Attributes	
Taste	.32***
Freshness	.33***
Appearance	.33***
Menu Choices	.24***
R^2	.52
Adj. R^2	.51
R^2 Change	.52
F-Change	64.257***

Note: *p < 0.05, **p < 0.01, ***p <0.001

F. The Relationship between In-Flight Food and Passengers' Re-Flying Intention

Similar analysis was undertaken to see how well the respondents' experience with the in-flight meals/food attributes predicted their re-flying intention. As can be seen from the Table, the in-flight meals/food were able to explain 30 percent (R^2 = .30, F-change = .609, p<0,001) of the observed variations in the airline passengers' intention of re-flying. The results show that although meals/food are not statistically significant (β = .050) they are slightly significant as a predictor of the intention to re-fly. In other words, besides others, food also contributes to passengers' intention of re-flying. On the other hand, passengers were willing to take Malaysia Airlines in their future travel and confessed that besides other important factors such as ticket fares, excellent ground and onboard services, facilities and entertainment, in-flight meals/food also play an important part in their intention to re-flying.

TABLE V
RESULTS OF MULTIPLE REGRESSION OF THE PASSENGERS' INTENTION TO RE-FLY

Predictors	Model 1 Std. β
VI. STEP 1: MODEL VARIABLES	
Food	.050
R^2	. 30
Adj. R^2	. 32
R^2 Change	. 30
F-Change	.609***

Note: *p < 0.05, **p < 0.01, ***p <0.001

VII. DISCUSSION

From the analyses, it apparent that the majority of the passengers perceived Malaysia Airlines offers excellent in-flight meals/food with a good taste, fresh, attractive, lovely aromas and ingredients. They were pleased with the color combination, portion size, menu choices, packaging,

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arrangement and the texture of the food. Results also showed that Malaysia Airlines provides an acceptable level of meals/ food to the local and international airline passengers and passengers could not resist the overall delicious meals/ food and admitted that their appetite was stimulated by the aroma of the food served and the taste of the meals/food was consistent throughout the long haul journey. This is further supported as majority of passengers were very satisfied with the all food related attributes. The higher levels of acceptance and satisfaction among the passengers on those matters clearly indicate that Malaysia Airlines' through it in-flight caterer is consistent in producing high quality of in flight meals/food which are acceptable to the range of passengers and complying with international airline regulation standards.

Based on the Malaysia Airlines report, the implementation of the Hazard Analysis Critical Control Point (HACCP) in the flight kitchen is one of the key initiatives taken by the in-flight caterer to ensure efficient methods and that all the meals/food produced achieves higher quality standards. Food testing for every item produced is undertaken as part of quality requirement standards to ensure the safety of meals/food produced. Good food hygiene is practiced, the health status of every food handler is checked, and training in food hygiene is compulsory and held at least three times a year. In addition, the cleanliness of catering plants and utensils is given more serious attention. To show their serious concern with the food production, the in-flight caterer recently implemented the production system or systematic production system in every facet of the catering plant with the goal of increasing the production level of meals/food. On top of that, the advanced operations scheduling was applied to improve the service delivery from the catering plant to the aircraft. These have provided significant improvements in caterer operational efficiency and boost the confidence of other international airlines. It is worth mentioning that the improvement and the good practice by the caterer on those matters are perhaps in line with the improvement strategies by the Malaysia Airlines' with the mission to improve and sustain the company and become more competitive with other airline companies. Besides making many corrective actions and continuous improvement on other aspects, food is also a central focus or agenda to attract more passengers fling with Malaysia Airlines. For example, Malaysia Airlines recently has instructed the caterers to serve the in-flight meal/food in a box rather than a plate as previously practiced. Besides reducing the cost, this practice evidently maintains the freshness, taste and appearance of the food served as well as avoiding food poisoning and contamination.

A wider implication of this study is related to passenger satisfaction and intention of re-flying. Results revealed that food significantly contribute to the prediction of the airline passengers' levels of satisfaction and slightly influence their intention to re- flying despite not being as important as other factors such as fares, services, safety, comfort and punctuality. This element therefore cannot be ignored by Airlines Company and their caterer but should take the opportunity to create more attractive and acceptable meals/food along with other elements, as marketing tools in attracting local and international passengers to fly with them. Although this initiative may look simple, in the long run it may help the airline and the caterer to be recognized internationally through word of mouth among the passengers. As noted by Heide et al. [23], providing good in-flight meals/food and services has generated positive word of mouth communication among the passengers. Passengers who are pleased with the quality of in-flight meals/food served by the airlines will recommend the airline to others. Positive word of mouth communication is an important source of information in the selection of airlines [23]. Passengers in fact will form a mental image of the airline based on information and experienced and then use that information to influence others. Nevertheless, if passengers feel that the in-flight meals/food and services are not good, their bad impression will be disseminated among their circle of friends. Therefore, airline companies and their caterer should be highly conversant with these matters in order to be more internationally recognized and competitive in the global airline market.

VIII. Conclusion

As a conclusion, it is hoped that the recommendations and information flow from this study will facilitate the airline Companies to better understand their passengers' needs. By being alerted to these matters, Airline Companies directly can position themselves well and be more competitive in the fast growing airline industry. Better understanding of the airline passengers' expectations would also make the airlines companies more sensitive and effective in operation management techniques and improve passengers' satisfaction and gain repeat passengers. In fact, Yuksel and Rimmington 52] indicate that the potential benefits of increased customer satisfaction are critical in the world service industry.

References

[1] Alonso, S. (2000). *The antecedents and consequences of customer loyalty: The roles of customer satisfaction and consumer trust-commitment.* Published PhD dissertation, University of Texas-Pan America.

[2] Appelbaum, S. H., & Fewster, B. M. (2003). Global aviation human resource management: contemporary employee and labour relations practices. *Management Research News*, *26* (10), 56-79.

[3] Bamford, D., & Xystouri, T. (2005). A case study of service failure and recovery within an international airline. *Managing Service Quality*, *5* (3), 306-322.

[4] Babbie, E. (2001). *The practice of social research (9th Ed.)*. London: Wadsworth.

[5] Bennet, M. B., & Wood, R. C. (2002). Some current issues in airline catering, *Journal of Tourism Management*, *5* (4), 295-299

[6] Berry, L. L. (1999). *Discovering the soul of service.* New York: The Free Press

[7] Belanger, J. D. (2007). *Analyzing commercial flight crewmember perceptions regarding airline security effectiveness*. Published PhD dissertation, Northcentral University

[8] Betts, P. (2000, Feb 2). A slow flight back into profit – the pain for airlines is by no means over. *Financial Times*, 2.

[9] Boyd, C. (2001). HRM in the airline industry: Strategies and outcomes. *Personnel Review, 30* (4), 483-453

[10] Bruce, S. (2001). *In-flight catering*. Unpublished PhD dissertation, University of Helsinki, Finland

[11] Chan, D. (2000). The Devlopment of the airline industry from 1978-1998: a strategic global overview. *Journal of Management Development*, *19* (6), 489-51

[12] Czipura, C., & Jolly, D. R. (2007). Global airline alliances: sparking profitability for a trouble industry. *Journal of Business Strategies*, *28* (2), 57-64.

[13] Dana, L. P. (1999). Korean Airlines: *British Food Journal*. *101* (5), 113-116.
[14] Dana, K. H. (2000). More and better food. *Journal of Air Transport World*, *5*, 102-103.
[15] Davidow, M. (2003). Have you heard the word? The effect of word of mouth on perceived justice, satisfaction and repurchase intentions following complaint handling. *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, *16* (1), 67-80.
[16] Driver, J. C. (1999). Development in airlines marketing practice. *Journal of Marketing Practice: Applied Marketing Science*, *5* (5), 45-50.
[17] Elaine, M. J. (2000). *Consumer attitude towards branded quick-service foods on domestic coach class in-flight menu*. Published PhD dissertation, Oklahoma State University.
[18] Eric, T., & Laws, Y. (2005). Managing passenger satisfaction: some quality issues in airline meal service, *Journal of Quality Assurance in Hospitality & Tourism*, *6* (1/2), 89-113.
[19] Franklin, F. G. (1999). History of in-flight catering: It all began in 1903 with Orville Wright. *Journal of Airline and Food Travel Service*, 1*6* (2), 21
[20] Garrow, L. A., Jones, S. P., & Parker, R. A. (2006). How much airline customers are willing to pay: an analysis of price sensitivity in online distribution channels. *Journal of Revenue and Pricing Management*. *5* (4), 271–290
[21] Hanke, M., & Teo, T. S. (2003). Meeting the challenges in globalizing electronic commerce at United Airlines. *Journal of Information Technology Cases and Applications, 5* (4), 21-38.
[22] Heskett, J. L., Jones, T. O., Loveman, G. W., Sasser, E, E. J., & Schlessinger, L. A. (2000). Putting the service profit chain to work. *Harvard Business Review*,*72* (2), 164-174.
[23] Heide, M., Kjell, G., & Marit, G. E. (1999). Industry specific measurement of consumer satisfaction: experiences from the business traveling industry. *Journal of Hospitality Management, 18* (2), 201-213
[24] Howard, S. (1998). Asian crisis threatens aviation safety staff under pressure. *Journal of International Transport Workers Federation (ITF).4* (2), 45-54.
[25] Holmes, R., Dahan, H. M., & Ashari, H. (2005). *A guide to research in the social sciences*. Kuala Lumpur: Pearson Prentice Hall.
[26] James, J. (2005). Airline food: competing for the palates of passengers, *Journal of Airline and Food Travel Service*, *10* (2), 15-17.
[27] Jones, P. (1995). Developing new products and services in flight catering: As economic activity shifts away from manufacturing to the service sector, it is becoming increasingly important to understand the new product development process. *International Journal of Contemporary Hospitality Management, 7* (2), 24-28
[28] King, T.(2001). In-flight Catering. *Journal of Tourism and Hospitality Research, 3* (2), 181-184
[29] Law, R., & Leung, R. (2000). A study of airlines' online reservation on the Internet. *Journal of Research*, *39* (3), 202-211.
[30] Lynes, J. K., & Dredge, D. (2006). Going green: Motivations for environmental commitment in the airline industry: a case study of Scandinavian Airlines. *Journal of sustainable tourism .4* (2), 114-117
[31] Marican, S. (2006). *Penyelidikan sains social: Pendekatan pragmatic*. Selangor: Edusystem Sdn. Bhd.
[32] Marks, A. (2004). Now's a good time to fly, unless you're a major airline. (Online) available :http://web.lexis-nexis.com
[33] Norelius, J., & Rancatore, P. (2004). APA and CAPA's aviation security report card flight line. (Online) available http://www.flightline.com
[34] Nomani, A. (1999, August 2).Carry-on food really taking off as airlines cut back.*The Arizona Republic,*12
[35] O'Hara, L., & Strugnell, C. (1997). Development in in-flight catering. *Journal of Nutrition and Food Science, 3* (20), 105-106.
[36] Oyewole, P., Sankaran, M. and Choudhury, P. (2007). Marketing Airlines Services in Malaysia: A Consumer Satisfaction Orientation Approach. Journal of *Innovative Marketing*, *3* (1), 189-191.
[37] Park, J.W., Robertson, R., & Wu, C.L. (2005). Investigating the effect of airline service quality on airline passengers' future behavioral intentions. *Journal of Tourism Studies*, *16* (1), 67-87.
[38] Pham, K.V., & Simpson, M. (2006).The impact of frequency of use on service quality expectations: An empirical study of Trans-Atlantic Airline passengers. *The Journal of American Academy of Business Cambridge*,*10* (1), 23-27.
[39] Pincus, L. (2001). Flight catering: A North American perspective. *Journal of Tourism and Hospitality Research, 3* (2), 174-176
[40] Rhoades, D. L., & Waguespack, B. P. (2005). Service and safety quality in US airline.: pre and post-September 11th. *Managing Service Quality*, *14* (4), 307-316
[41] Solomon, M. R. (2002). *Consumer Behavior International Edition, (5th Ed)*, New Jersey: Prentice Hall.
[42] Suzuki, Y. (2004). The impact of airline service failures on travelers carrier choice: a case study of Central Iowa. *Transportation Journal*, *3* (20), 26-36.
[43] Toh, R. S., & Raven, P. (2003). Perishable asset revenue management: Integrated internet marketing strategies for the airlines, *Transportation Journal, 2* (3), 89-100.
[44] Thorpe,V.(1998, October 5). In-Flight Meals Was a Dog's Dinner. *London Newspaper* , 3
[45] Turney, M. A., Bishop, Y.C., & Fitzgerald, P.C. (2004). Measuring the importance of recent airport interventions. *Journal of Air Transportation*,*9* (3),56-60.
[46] Tu, A.(1997). Catering to passengers. Onboard Services, 29(9), p. 14.
[47] Williams, K, (1995, Mar 19). Better eat before you fly. *Capital Times,* 4.
[48] Wirtz,J., & Johnson,R.(2003), Singapore Airlines: What it makes it takes to sustain service excellence- a Senior Management Perspective. *Managing Service Quality,13* (1), 10-19
[49] Writz, J, Heracleous, L., & Pangarkar, N. (2008). Managing human resources for service excellence and cost effectiveness at Singapore Airlines. *Managing Service Quality*,*18* (1), 4-19
[50] Wright, C. (2001). *Table in the sky: Recipe from the British Airways and the great chefs.* W.H: Allen and Co
[51] Wyld, D.C.; Jones, M.A and Totten, J.W. (2005). Where is my suitcase? RFID and airline customer service. *USA Marketing Intelligence & Planning*, *23*(4),382-394
[52] Yuksel, M., & Rimmington, M. (1998).Customer-satisfaction measurement: *Cornell Hotel & Restaurant Administration Quarterly 39* (6), 60-71.

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