

## The Influence of Food Sensory Quality on Culinarians' Food Preparation

Khairunnisa Mohamad Abdullah, Rosmaliza Muhammad,  
Faridah Hanim Ismail, Muhammad Adib Mohamed Ramly, Arni  
Abdul Gani

Faculty of Hotel and Tourism Management, Universiti Teknologi MARA, Puncak Alam 42300,  
Malaysia

To Link this Article: <http://dx.doi.org/10.6007/IJARBSS/v8-i17/5221>

DOI:10.6007/IJARBSS/v8-i17/5221

**Published Date:** 20 December 2018

### Abstract

Attitudes of culinarians toward food quality have always been somewhat ambiguous despite many people believe that the culinarians who have knowledge and skills of the culinary education are concerned and aware about food quality in their daily food preparation and consumption. Therefore, this proposed study empirically examines to what extent the food sensory quality attributes, taste, smell and appearance, affecting culinarians' food preparation and consumption. In other words, are they concern and aware of food sensory quality in their daily food preparation and consumption. A descriptive research design using a quantitative approach was applied. Culinarians with age ranges between 18 to 50 years old, who have a culinary educational background, experience and directly involved in the food sectors within the Kuala Lumpur and Selangor area were chosen as a sample. The result revealed that the quality of taste, appearance, and smell plays an important role in their daily food preparation and consumption. Hence, research at this foundational level will unveil that the culinarians who have the advantages and unique opportunity to influence good eating behavior through food sensory quality and apply the industry's best practices not only for themselves but also to the society.

**Keywords:** Food quality, Food preparation, Food consumption, Culinarians, Sensory quality

### Introduction

Food quality can be described as requirements to satisfy consumer needs and expectation (Peri, 2006). Food quality is an essential determinant of food consumption as people are becoming more aware of food quality issues linked to health, taste, environment and ethical concern (Zanoli, 2004). Besides the demand for safe food, there is always the need to eat foods that taste good. Peri (2006) classified food quality into three dimensions which include sensory quality, nutritive value, and food convenience. According to Barrett et al., (2010), the requirement for healthy food has created an interest in food industrialist to offer diversity in food categories that produce health benefits and sensory quality.

Nevertheless, the definition of food sensory quality is too broad and subjective. Different people have a different understanding of food sensory quality whether they are students, athlete, nutritionist, grocers, retailers, and farmers. The same goes to culinarians, who have knowledge and experience from attending culinary school to earn a certificate, diploma or degree qualifications (Gisslen, 2015). For that reason, food quality is not an alien among the food handlers, foodservice staffs, cooks and especially among chefs and culinarians (Pratten, 2003). Additionally, training in a workplace that provides culinarians with knowledge and skills required to operate within the systems and standards set by management (Sommerville et al., 2007). For that reason, training is indispensable in several ways as it enhances productivity while employees are equipped with specialized knowledge, experienced skills, and right thoughts.

In line with that, culinarians play an essential role in transforming the society in promoting good quality food to the extent that they need to be part of youth education for good health and life (Ibrahim, Ismail & Mohammed, 2014). Successful culinarians are successful not only because they know how to cook something, but also because they understand the effect of food on the palate, the food that contains nutrition and the food with full of flavor (Pratten, 2003). A past study reported that most culinarians assumed it was their role to influence consumer's choices (Eves et al., 1996). Furthermore, professional chefs and culinarians are increasingly considered the role model status that can significantly affect guest's food intake by sharing their knowledge, creativity, and passion for preparing and consuming good quality of food (Condrasky et al., 2007). Now more than ever, knowing what chefs and culinarians think and do regarding nutrition could be of the ultimate importance when struggling to diminish the issues of obesity and other diet-related illnesses.

However, how true is the above statement particularly those related to food sensory quality and culinarians' daily food preparation and consumption remained uncertain. According to Horska and Sparke (2007), past research focuses on food consumption among physicians, nurse, nutritionist, model, athlete, student, and not many research focus on culinarians. In other words, to what extent the importance of food sensory quality in culinarians' daily food preparation and consumption. Thus, this study aims to investigate the relationship and influence of food sensory quality attribute on culinarians daily food preparation and consumption.

## **Literature Review**

### ***Food Quality***

What is food quality? According to Ferree (1973) quality of food includes all those characteristics of excellence that make it acceptable to the food buyer. However, there is little needs to emphasize the point that family and institutional food buyers have a somewhat different set of quality standards from that of other buyers within the food production and distribution system. Meanwhile, Schiefer and Deiter (2013) mentioned that food quality is a key factor for consumers in their buying decisions. In food, the assurance of certain quality requirements for raw materials and semi-finished goods is the prerequisite for achieving maximum end-product qualities within a multi-step production process. The reliability of food quality controls depends partly on time-consuming and cost-intensive methods and procedures which affect their application and use. Hence, the recent emphasis was placed in

the development of rapid, cost-effective, and preferably nondestructive techniques that find increased application in the food sector. Furthermore, although a variety of analytical means is available for the measurement of quality attributes, their correlation to consumer perception remains a challenging task.

Instead, Peri (2006) stated that food quality could be described as the requirements to satisfy consumer needs and expectation. Overall food quality model by Peri (2006) classified food quality into three dimensions. The first dimension is sensory quality, followed by nutritive value and the last dimension is food convenience. The model includes 13 requirements consisted of safety, conformity, nutritional, sensory, production context, ethical, certification, traceability, packaging, information, convenience, availability, and price. These requirements are grouped into five requirement classes of product, psychological, guarantee, packaging system and market system (Peri 2006).

### ***Sensory Quality***

A sensory appraisal is defined as a scientific method used to measure, examine, evoke, and interpret those responses to products as apparent (Vibe, 2012). Vibe (2012) also mentioned that sensory analysis employs the human senses in the evaluation of product qualities. A sensory panel can conduct a sensory analysis under controlled conditions, where attributes are evaluated objectively. Whereas, consumer studies deal with affective and subjective measurements of product quality. Peri (2006) states that perception about food will take place when there is an interaction of the food product which connects with brain function and interprets the reaction associated with a given food. Once the food is tasted repeatedly by the consumer, the determination of sensory quality and hedonic characteristic can lead to confirmation and acceptance of the perception of food quality (Peri, 2006). Meanwhile, Barrett, (2010) stated that characters provide different qualities can be described by various attributes such as color and appearance, sense of taste and flavor, texture and nutritional value.

According to Ferree (1973), palatability, the way food tastes, ranks high on the family and institutional food buyers list of quality standards. Nevertheless, this is one quality factor the buyer can rarely judge until after the sales transaction. Olsen et al. (2002) also stated that quality of taste is the food-attribute evaluations by the perceptions of taste, texture, smell, and appearance. However flavor had been described by Barrett et al. (2010) as a mix of 16 experiences, but an entity experience contains a sensational taste, pressure, and smell, and often skin sensation such as warmth, mild pain, or color. The aroma and taste usually describe the flavor. Aroma is an unpredictable compound, and they are being notified essentially by the nose, while the taste buds will allow you to taste sweet, sour, and salty, umami and bitter when the food is chewed.

On the other hand, color and appearance are the primary quality aspects that attract us to consume certain products, but the most significant impact is on acceptance and desire to consumed are from the flavors (Barrett et al., 2010). According to Amaya and Nickell (2015), color is an integral part of the human daily sensory experience; a particular foodstuff has to be of a specific color quality to be edible. Appropriate color is, therefore, an essential attribute of sensory quality, which reflects the health and safety status of food and the

organism from which it is derived. The appearance of the product is, therefore, one of the main criteria on which consumers base their choice when purchasing food.

### ***Food preparation and Consumption***

Cooking is everything that someone does with food to transform it that involves all the steps of food preparation, and cooking techniques (Bower, 1997). Usuramo (2000) provided an excellent glimpse that food preparation is the stage of preparing foodstuffs for eating, which generally requires the selection measurement and combining of ingredients in an ordered procedure to achieve the desired result and it includes but is not limited to cooking. Muhammad et al. (2009) detailed this aspect into a different culture of a different country which has a different style of preparing their food. They revealed the methods of food preparation to depend on the availability of the ingredients and different technique of cooking.

Meanwhile, food consumption pattern is the repeated arrangements of consumption that have been categorized by types and quantities of food items and their combination in dishes and meals (Gerbens-Leenes & Nonhebel, 2002). The relationship on food consumption based on these three components of sensory quality, nutritive value and food convenience are absolute. First, before the diners consume their meal, sensory quality plays a primary role and their responses to products as apparent. Taste quality is the food-attribute evaluations by the perceptions of taste, texture, smell, and appearance (Olsen et al., 2002). Second nutritive value is about protein, carbohydrates, vitamins, minerals, and fat contained therein (Peri, 2006). The last point is food convenience; it is based on price and food preparation. These foods are a product that takes less time preparing, easy to handle, easy to cook and easily available at a convenience store and also can be preserved in storage for an extended period or also known as ready prepared food (Buckleya et al., 2007).

### **Methodology**

The design is dependent upon the nature of the study. Since this study is to empirically investigate the influence of food sensory quality on culinarians' daily food preparation, a causal research design using a quantitative through cross-sectional approach will be used for data collection (Sekaran & Bougies, 2013). To base upon actual experience, the information requires this study were obtained through a self-administered questionnaire with chefs and culinarians who are working in the food industry or culinary field. They are believed to be knowledgeable and have the experience to provide relevant information on a particular subject. Owing to the large number of culinarians' in Malaysia and the geographical dispersion, only those who are working directly in food sectors like restaurants and hotels within the Kuala Lumpur area will be chosen as a sample. The unit of analysis is the culinarians' who have culinary or food service educational background or/and experience.

Most of the items in the survey questionnaire are adapted from the previous research that dwells on the topic, and a few modifications are made to the questions to achieve the objective of the study. The first section deals with the demographic information of the samples, including gender, age, marital status, and education. Section B is created to examine the independent variable which is food sensory quality (taste, smell, appearance). The last section C is dedicated to measuring the culinarian food preparation. The five-point Likert scale

is used to gather the response from the samples with 1 represents “strongly disagree,” and five represents “strongly agree.”

The data collected were entered in Statistical Package for Social Science (SPSS) version 23. During the process of data screening, only 201 were useful responses. Therefore, descriptive statistical analyses were applied to formulate the frequencies, percentage, mean score and standard deviations were used to report the data of the study variables. Then, reliability analyses were used to indicate the data whether the internal consistency of the scale and correlation between each item exists and how much consistency presents among the ratings made by respondents. The reliability was assessed through Cronbach's Alpha as this test is possibly the most commonly accepted measure of reliability. The standard multiple regression was used in determining how much variance in food preparation and consumption among culinarian was explained by the influence of food sensory quality attributes.

## Analysis and Results

### *The Importance of Sensory Quality on Culinarian' Food Preparation and consumption*

Table 1

*Mean score of the Important of Sensory Quality on Culinarian' Food Preparation and Consumption*

| <b>Sensory quality</b>   | <b>M</b> | <b>S.D.</b> |
|--|----------|-------------|
| 1. Food taste plays an important role in my daily food preparation and consumption   | 4.8      | .43         |
| 2. I prefer to have/use less seasoning/flavoring in my daily food preparation and consumption  | 4.9      | .24         |
| 3. Food smell plays an important role in my daily food preparation and consumption   | 4.8      | .43         |
| 4. I believe that the smell of the food does not indicate the taste of the food, example: fermented shrimp paste / fermented durian. | 4.7      | .44         |
| 5. I believe a good smell of food can enliven my appetite  | 4.5      | .50         |
| 6. Food appearance plays an important role in my daily food preparation and consumption  | 4.8      | .38         |
| 7. I love to cook and eat foods that have a variety of color that will enliven my appetite   | 4.7      | .45         |
| 8. I believe that food garnishing play an important role to make food more appealing to consume.                                     | 4.9      | .33         |

Results in table 4.1 show that many of the respondents agreed that food taste plays an important role in their daily food preparation and consumption (M = 4.8) and they prefer to have or use less seasoning and flavoring in their daily food consumption which attained the highest score (M = 4.9). For that reason, they also believed that food garnishing, food appearance and the smell of the food is important to make the food more appealing to be consumed (M = 4.9) and that the reason why they agreed that it is important to cook and eat foods that have a variety of color (M = 4.7). They also agreed that smell of the food does not

indicate the taste of the food ( $M = 4.7$ ), however, they assured that the good smell of food is necessary to enliven the appetite ( $M = 4.5$ ).

### ***Food Preparation and Consumption among Culinarian***

Table 2

*Mean score of the importance of Food preparation and consumption among Culinarian' Food Preparation and Consumption*

| <b>Sensory quality</b>   | <b>M</b> | <b>S.D.</b> |
|--|----------|-------------|
| 1. I prefer to cook my food instead of dining outside because it is healthier and fresher                              | 4.3      | .63         |
| 2. My culinary knowledge and experience had influenced me to use and consumed fresh food in my daily food consumption. | 4.4      | .65         |
| 3. I believe convenience food usage is seen, by me as degrading my culinary skills and knowledge.                      | 4.3      | .64         |
| 4. My culinary knowledge experience has contributed to have better food consumption and healthy cooking habits.        | 4.3      | .67         |

The importance of food preparation and consumption among culinarian was further analyzed by looking at the total mean score of them, and the results were exhibited in Table 4.2. It is also evident that the majority of the respondents agree that they prefer to cook their food instead of dining outside because it is healthier and fresher ( $M = 4.3$ ). The also believes that their culinary knowledge and experience had influenced them to use and consumed fresh ( $M = 4.4$ ) and healthier food ( $M = 4.3$ ) in their daily food preparation and consumption. They also believed that the use of convenience in daily food preparation and consumption would degrade their culinary skills and knowledge ( $M = 4.3$ ).

### ***The Relationship between food Sensory Quality and Culinarians Food Preparation and Consumption.***

Table 3

*Multiple Regression results*

| <b>Independent variable</b> | <b>Beta Coefficients and Significance Levels</b> |
|-----------------------------|--|
| Step 1: Model variable      |  |
| Food Sensory Quality        | .70***   |
| $R^2$                       | .716   |
| Adj. $R^2$                  | .713   |
| $R^2$ change                | .109   |
| F-change                    | 151.914  |

The relationship between food sensory quality and culinarians' daily food consumption is further confirmed with multiple regression analysis. The beta value under



standardized coefficient was evaluated in comparing the contribution of the independent variables to the dependent. The result signifies that Food sensory quality was able to clarify 72 percent ( $p < .001$ ) of the variance in culinarians daily food preparation and consumption. By looking at the beta value, food sensory quality ( $\beta = .70$ ,  $p = 0.00$ ) had a strong influence on culinarians daily food preparation and consumption.

### Implication, Conclusion, Recommendation

Based on the objective above, result shown that majority of respondents assured that sensory quality is essential and affect their daily food preparation and consumption. They also believed that sensory quality is important through taste, smell and appearance which can be learned through experience and knowledge. Culinarians who are not only knowledgeable of foods and ingredients but also have the enormous opportunity to transmit the knowledge and share culinary best practices. They are also able to inspire another generation towards healthier and more value culinary goals that can make a long-lasting impact on culinary education, disease prevention, health information attitudes, and the overall dietary behaviors of the society. In addition, the relevant authorities such as the chef association and culinary expert may also help to raise awareness about food quality among food service provider.

Additionally, the culinarians can provide consultation and professional advice on how to better organize the food preparation process and conduct training on improving the variety, appeal, and presentation of meal served. Besides that, teaching the society how to cook can lead to the ultimate application of dietary recommendations, especially as youths gain critical thinking skills and technical proficiencies in which to implement dietary guidelines (Nelson, Corbin, & Nickols-Richardson, 2013). With the vast culinary knowledge and experience, the culinarians and food service provider will be able to encourage the industry's best practices so that they can prepare not only good quality but also sensory-acceptable meals for the consumers.

### Corresponding Author

Khairunnisa Mohamad Abdullah, Faculty of Hotel and Tourism Management,  
Universiti Teknologi MARA, Puncak Alam Campus, 42300, Selangor, Malaysia  
Email: khairunnisa1864@salam.uitm.edu.my

### References

- Barrett, D. M., Beaulieu, J. C., & Shewfelt, R. (2010). Color, Flavor, Texture, and Nutritional Quality of Fresh-Cut Fruits and Vegetable: Desirable Level, Instrumental and Sensory measurement, and the Effects of Processing. Food Science & Technology, University of California, Davis, CA.
- Bower, A. L. (1997). *Recipes for Reading: Community Cookbooks, Stories, Histories*. Amherst: University of Massachusetts Press, 105-117.
- Buckleya, M., Cowana, C., & McCarthyb, M. (2007). The Convenience food Market in Great Britain: Convenience Food Lifestyle Segments. Vol.106, issue 2, 106-127.
- Cardello, A. V. (1995). Food quality: relativity, context and consumer expectations. Food Quality and preference, 163-170.
- Condrasky, M., Ledikwe, J. H., Flood, J. E., & Rolls, B. J. (2007). Chefs' opinions of restaurant portion sizes. *Obesity*, 15(8), 2086–2093.

- Amaya, E., Nickell, D., (2015). Using feed to enhance the color quality of fish and crustaceans: Feed and Feeding Practices in Aquaculture. <https://doi.org/10.1016/B978-0-08-100506-4.00011-8>
- Eves, A., Corney, M., Kipps, M., Lumbers, M., Price, M., & Noble, C. (1996). The nutritional implications of food choices from catering outlets. *Journal of Nutrition & Food Science*, 96(5), 26–29.
- Ferree M. (1973), What Is Food Quality? *Journal of Food Distribution Research*, 34- 36.
- Gerbens-Leenes, W. & Nonhebel, S. (2002). Food and land use. The influence of consumption patterns on the use of agricultural resources. University of Groningen, Netherlands.
- Horska, E., & Sparke K. (2007): Marketing attitudes towards the functional food and implications for market segmentation. *Agricultural Economics – Czech*, 53 (7): 349–353.
- Ibrahim, U., Ismail, F. U., & Mohammed, M. (2014). Nutritional Knowledge, Attitudes and Junk Food Consumption Habits among Students of AbubakarTatari Polytechnic (ATAP) Bauchi, Vol 5, 12.
- McClelland, S. D. (2002). The Graduate School University of Wisconsin Stout. A Training Needs Assessment for the United Way of Dunn County Wisconsin.
- Muhammad, R., Zahari, M. S. M., Othman, Z., Jamaluddin, M. R., & Rashdi, M. O. (2009). Modernization and ethnic festival food. *Paper presented at the International Conference of Business and Economic*, Kuching, Sarawak.
- Nelson, S., Corbin, M., & Nickols-Richardson, S. (2013). A call for culinary skills education in childhood obesity-prevention interventions: Current status and peer influences. *Journal of the Academy of Nutrition and Dietetics*, 113(8), 1031–1036.
- Olsen, S. O. (2002). "Comparative evaluation and the relationship between quality, satisfaction, and repurchase loyalty." *Journal of the Academy of Marketing Science* 30(3): 240-249.
- Peri, C. (2006). The universe of food quality. *Food Quality and preference*. 17, 3–8.
- Pratten, J. D. (2003). What Makes a Great Chef, *British food Journal*. 454-459.
- Schiefer, G., Deiter, J. (2013) *Challenges and Experiences :Transparency for Sustainability in the Food Chain*. <https://doi.org/10.1016/C2013-0-01393-X>
- Sommerville, Kogan, P., & Kerry, L. (2007). *Hospitality Employee Management and Supervision, concepts and practical applications*. New Jersey.
- Soroka (2002). *Fundamentals of Packaging Technology*, Institute of Packaging Professionals
- Usuramo, S. (2000). Fijian verbs of cooking. *Journal of Educational Studies*, 22(10), 114-124.
- Vibe, B. (2012). Sensory quality and chemical composition of culinary preparations of root crops. Aarhus university of Denmark.
- Yamaguchi, S. & Ninomiya, K. (2000). Umami and food palatability. *Journal Nutrition*, 130:921S–926S.
- Yang, X. (2010). The Importance of Staff Training in the Hotel Industry Case study: Renaissance Shanghai Yuyuan Hotel.