Chapter 8

Examining Open and Closed Kitchens in Lebanon Context from a Cleanliness Perspective[1]

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Abstract

One of the most crucial issues regarding the restaurant industry is cleanliness. Most of the restaurants that have closed and open kitchens focus on the cleanliness of their open kitchens and don't consider the hygiene and cleanliness issues of their closed kitchens much. This research aimed to find out the factors that influence the cleanliness perspective of consumers, identify the impact of kitchen cleanliness on the restaurant's reputation, and determine the methods approved by the kitchen staff and restaurant managers to maintain the safety and cleanliness of kitchens. Qualitative and quantitative methodologies were used to collect data, as the mixed method provides the researcher with substantial evidence and deeper study conclusions. An observation was also performed by the researcher, visiting many restaurant kitchens in Byblos to see how the hygiene and cleanliness standards were applied, and comparing the behaviour of the employees in the open vs. closed kitchens. In the analysis of the research data, the crosstab test was applied using the Excel software to test if some variables are related. The findings have contributed to the identification of the factors that positively affect consumers' food safety. The findings of this study will help designers of restaurants identify new directions for restaurant and kitchen design, and also positively contribute to customers' dining experience.

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1. INTRODUCTION

One of the most crucial elements of the restaurant industry is cleanliness. Customers don't visit the restaurant if it isn't clean, regardless of how delicious their cuisine may be, how inventive their dishes may be, or how great the service may be. Therefore, if restaurants don't take the required precautions to guarantee that their atmosphere is clean, they not only run the danger of losing customers, but also the customers themselves could run the risk of contracting various diseases. Whether the restaurant has an open or closed kitchen, maintaining a clean atmosphere is essential to bringing in new customers and improving its reputation.

Food safety's significance has significantly increased in the past few decades, and resulted in a substantial transformation of the hospitality industry's operations. Governments have employed strict requirements for food safety, as food poisoning cases in the hospitality sector have led to serious health consequences (Satcher, 2000). To ensure a safe environment for food consumption in restaurants, kitchen design is considered very important (Guyott, 1997).

Eaton (2005) highlighted the impact of kitchen design on food safety and pointed out that sanitation and heat controls are important factors. For many years, the kitchens in hospitality organisations have adopted many roles, and safety is one of these roles. Adopting foods from varying cultures and trying different trends from different cuisines, employing different cooks also provides entertainment to the clients and this trend has helped the emergence of different kitchen trends, including open kitchen design.

1.1 Statement of the Problem

Most of the restaurants that have closed and open kitchens focus on the cleanliness of their open kitchens and don't consider the hygiene and cleanliness issues of their closed kitchens. Therefore, restaurants should always be clean, not only in the service area but especially in the food processing area to help customers have a nice experience and to avoid food poisoning. In this study, the following hypotheses have been developed to be tested:

1. Customers will be more likely to consider an open kitchen cleaner than a closed kitchen.
2. Employees in open-kitchen restaurants will perform better than in closed kitchens.
3. Customers are more attracted to an open rather than a closed kitchen.

This research aims to examine cleanliness levels in both open and closed kitchens, highlighting the distinctions between them and determining which one is better. We will examine this from the perspectives of restaurant customers and owners/managers in the Byblos Area. The researcher suspects that the difference between the two kitchens will reveal the factors that influence the cleanliness perspective, will also identify the impact of the kitchen cleanliness on the restaurant's reputation, and will identify the methods approved by the kitchen staff and restaurant managers to maintain the safety and cleanliness of the kitchen.

These objectives will be achieved by using observation, survey and interview techniques to gather relevant data. An observation will be done by the researcher, a survey will be addressed to customers, and interviews will be conducted with some of the restaurant managers in Byblos. The results of these data collection techniques will help the researcher determine the difference between open and closed kitchens from a cleanliness perspective. For this purpose, the following research questions have been asked in the study:

1. How can an open kitchen influence the overall hygiene standard in a restaurant?
2. What are the views of restaurant operators regarding operating in an open or closed kitchen?
3. Which one is the safest and cleanest, the open or the closed kitchen?
4. What are the advantages or disadvantages of the kitchen style for restaurant operators?

The responses given to these questions will contribute to the identification of the factors positively affecting food safety. Such developments could increase consumers' trust in the hygiene of restaurants, positive word-of-mouth and repeat patronage. In brief, the findings of this research could help restaurant designers guide them to new directions in designing kitchens and restaurants, and this will contribute to customers' experience.

1.2 Significance of the Study

This topic has been covered in many restaurants nowadays, whether they have open or closed kitchens, ignore and fail to implement cleanliness and hygiene requirements. These issues will be brought to light throughout this study, along with suggestions on how to find them and include user feedback regarding these locations' cleanliness.

2. LITERATURE REVIEW

As in the field of molecular gastronomy (Blank, 2008; This, 2005), genetically modified foods, the increasing interest in local produce or green energy, and the ways to be used to save water (Hensley and Donohue, 2008) have shaped the sector as well as its future. New trends regarding the equipment and kitchen style in the field of hospitality (Stipanuk, 2006), as well as consumers' concerns, needs, preferences, and references, are affecting how operators run their business. In many cases, environmental pressures are dictating how businesses perform their food preparation and delivery.

2.1 Open-kitchen and closed-kitchen design

Increasing demands highlight the importance of allocating space (Ghiselli et al., 1998) and its optimisation. Moreover, these factors help maximise productivity and improve some safety issues for clients and employees of a restaurant (Stipanuk, 2006), and they have become very important in today's hospitality sector, regarding kitchen design. One concept that gained popularity in the 1990s at large and small restaurants is the open restaurant kitchen design (Baraban and Durocher, 2010). The number of restaurants having open-style kitchens, which means that kitchens perform all food preparation, cooking, and finishing activities openly to the customer, has been gaining more attention. Open-kitchen restaurants are very popular in terms of design options, spanning the gamut from quick service to fine dining (Alonso & O'Neill, 2010; National Restaurant Association, 2017). The relevant literature points out that transparency in food quality and cleanliness has made restaurants with open kitchens very popular (Chang, Capuozzo, Okumus, & Cho, 2021)

Moreover, restaurants with an open kitchen provide an important dining experience that cannot be provided by other restaurants. For example, clients see the cook cooking their food, and under what conditions they are cooking. Before the emergence of such restaurants, customers were used to hearing bad stories about dirty kitchens behind closed curtains (Chang, Capuozzo, Okumus & Cho, 2021). The celebrity chef cooking challenges on television channels have become very popular among consumers, and thus some clients are attracted by restaurants with open kitchens (Bruni, 2005). In American restaurants in cities such as New York and Atlanta, these restaurants are well known for their open-kitchen design (Bachman, 2008). In Atlanta, several popular restaurants designed themselves in a way to make the chef's work visible with the help of open kitchens, and as a consequence of that, most local fast food restaurants have adopted open kitchen restaurant design.

As the trend in the open kitchen concept increases, some discomfort and unpleasant dining experiences regarding the open kitchen have also been reported in the literature on hospitality management (Byun and Jang, 2018). For example, cooking fumes are a particular concern as they are considered to have some negative health effects on humans (Neghab et al., 2017; Svedahl et al., 2009). Another research on public health points out that cooking is a significant source of indoor particulate matter (PM) pollution, which may harm human health in both homes (Stabile, Fuoco, Marini & Buonanno, 2015) and commercial kitchens (Gysel et al., 2018; Taner et al., 2013). For instance, See and Balasubramanian (2006) have found that restaurant employees are likely to be exposed to higher health risks as they are exposed to PM in the commercial kitchens.

2.1.1 Closed Kitchen Restaurants

According to the research conducted by Graham, Ali & Tajeddini (2020), closed kitchens are observed as an isolated world from society, which affects the mood and attitudes of chefs before they start cooking. The combination of the sound of the oven, dishwasher, coffee machine and the music and diners makes closed kitchens better than an open kitchen.

As mentioned before, chefs may feel motivated and happy when they see people eating and enjoying their food. However, some chefs may not be so extroverted. Some chefs perform to the best of their abilities when they feel that they are not monitored by anyone. Even though the kitchen staff may sometimes try to keep their guests happy, they might start to feel mentally tired and stressed as they are always under monitoring. It is not good for them to be this exposed (Graham, Ali & Tajeddini, 2020).

2.1.2 Open kitchen restaurants

In addition to the comfort and attractiveness of open kitchen restaurants for their customers, varying kitchen designs also serve as an attraction point for customers. The chefs and cooks preparing dishes given to consumers, as with the Japanese chefs preparing sushi, have also contributed glamour to face-to-face food delivery. These are not random, but they are deliberate, as restaurant operators may have the risk of gaining and losing as customers are seeking value for the money that they pay (Chow et al., 2010). Since the kitchens are open to view, customers can view the kitchen, and it becomes part of the dining experience. In addition, the sounds, smells and sights of cooking help the appetites of potential diners. Moreover, open-kitchen restaurant diners tend to perceive the food they eat as tastier than the food

that they consume in closed kitchens (Chang, Capuozzo, Okumus & Cho, 2021).

2.1.3 Consumers' images of open kitchen restaurant design

New developments and trends have significantly increased the complexity level in the process for restaurants to ensure a pleasing and safe environment. For this purpose, restaurants aim to draw consumers and, when possible, they try to encourage the return of their guests. However, the process is not so easy to grasp, and for some reason, many restaurants fail to meet basic expectations of their customers. For example, food poisoning is affecting the operations of many restaurants, and this may result in some lawsuits/penalties (Watford Observer, 2010). As a consequence of that, consumers' expectations regarding the quality and safety of foods have increased (Barber and Scarcelli, 2009). Some studies highlight the importance given by customers to cleanliness, hygiene and trust in varying operations of a restaurant (Aksoydan, 2007; Worsfold, 2006). Unfortunately, considering that many businesses have experienced food safety and hygiene-related problems so far, ensuring that consumers are dining in a safe and healthy environment is very important.

Safety and healthy restaurant environments are associated with the design of a restaurant, especially in a kitchen where food is prepared. On the other hand, designing a kitchen to ensure employees' safety is very important. In the hospitality sector, the impact and importance of the design of the dining room have been discussed (Robson, 1999). In many cases, the aesthetic value of an environment is very helpful to the businesses. Researchers have found that, as services are usually intangible, customers may tend to rely on tangible cues rather than the physical environment to create a general quality representation of the provided service (Bitner, 1992). Researchers have highlighted the integral correlation between the physical environment and the customers' satisfaction (Baker et al., 1994). The physical environment influences customers as well as has a direct influence on employees' motivation to perform their tasks at a higher level in terms of quality. In the end, open kitchen design is a trend in the hospitality sector, and it's used in many restaurants, and in these businesses, this design has a big importance on customers, employees and the cleanliness of the restaurant. In many scenarios, food safety is considered to be the most basic customer expectation, and consumers expect restaurants to be clean and hygienic, have clean restrooms, and offer pleasant atmospheres (Josiam et al., 2007).

2.1.4 Food safety in open kitchen restaurants

Specifically, the restaurant itself and the food served, the cutlery used, the service personnel delivering services, and the kitchens are supposed to be clean enough to meet its customers' expectations (Aksoydan, 2007). However, restaurant customers may expect cleanliness in restaurants, and they may have some doubts about whether or not restaurants are clean. The potential effects of this issue could help some restaurant operators promote some important initiatives. Hence, the Chin Chinese Restaurants designed their restaurants with open kitchens. This strategy could be a leading development for some consumer groups who fear unhygienic kitchen conditions. Furthermore, 325,000 hospitalisations and 5000 deaths were caused by food-related illnesses each year in the USA (Mead et al., 1999).

2.2 Government standards and food inspection

Different standards are adopted for food inspections in every country. For example, in the United States, restaurants are mandated to undergo two inspections annually, whereas in France, eateries are required to undergo three inspections each year (Environmental Health Division, 2009). These inspections are considered valid predictors of food-related illnesses and outbreaks in many countries (Buchholz et al., 2002). Jones et al. (2004) found that the mean inspection scores of restaurants with food-related illnesses were similar to the scores of restaurants for which no outbreaks were reported. Hence, there is evidence that the inspections lead to higher food safety standards.

Furthermore, carelessness, lack of personal negative repercussions, and food preparation employees accept that they may not do the things that they know right, and this may be due to their insufficient training (Pragle et al., 2007). Employees preparing food are very important for food safety (World Health Organization, 2020). Food safety and the prevention of food-related illnesses are very important for public health (Centers for Disease Control and Prevention [CDC], 2021). In spite of some governmental-imposed standards and inspections, unsafe food conditions could still exist (Griffith, 2006). The outcomes of missteps and the crucial role of food preparation workers are significant in the food chain, and they highlight the need to examine any relevant factors influencing food safety (Clayton & Griffith, 2008). The impact of having an open kitchen on restaurants' cleanliness and financial health has been ignored in the relevant literature, and this is very important from the restaurant operators' perspectives (Graham, Ali, & Tajeddini, 2020).

2.3 Employees' Food Hygiene Training and Certificate

Some countries and local governments also dictate certification in food safety practices for those preparing food (Almanza & Nesmith, 2004). For a long period, the UK food industry, particularly small enterprises (SMEs), has relied on formal national standards that are rooted in associations between subpar hygiene practices in food establishments and insufficient staff food hygiene training, as identified by the Audit Commission in 1990. Recognised courses in food hygiene at the basic or foundational level aim to equip food makers with the essential knowledge necessary to make informed and safe choices about food safety. Despite an increase in the number of food providers receiving such training, many food poisoning outbreaks still occur in commercial catering businesses due to poor food handling practices (Clayton et al., 2002).

Utilising the acquired safe food handling practices from food hygiene training necessitates that food providers make effective use of the resources at their disposal and implement the knowledge and skills into practical application. Unfortunately, food hygiene training has not been translated into positive food handling behaviours yet (Clayton et al., 2002; Green et al., 2005) or any behavioural changes which could be noticed in the workplaces (Seaman & Eves, 2010). Food workers' managers trained in safe food handling practices are usually aware of proper food handling techniques, and thus, they are responsible for communicating the proper practices to their employees. Many food workers admit that they do not carry out safe food behaviours, such as holding food at proper temperatures and washing hands properly (Clayton et al., 2002).

Ghiselli et al (1998) found that more and more kitchens are built in a smaller size. Considering this, proper kitchen design may be very effective in preventing some potentially dangerous situations (Stipanuk, 2006). For instance, minimising cross-tracking could decrease the accidents among chefs carrying sharp, heavy, or hot cooking tools and service staff carrying trays. On the other hand, the efficiency of operation, equipment, lighting, and other elements helping maximise productivity while minimising accidents, stress, and discomfort, kitchen design can also affect employees' hygiene. Kitchen design can have positive influences on handwashing in the restaurants (Pragle et al., 2007). Employees' higher hand hygiene may lead to the minimisation of the potential of food contamination, and thus minimise the harmful situations that could harm an establishment's reputation. This study will examine some restaurant owners' views regarding their restaurants' cleanliness and restaurant kitchen design, and also their

views on any potential relationship between kitchen style and the cleanliness of restaurants.

3. METHODOLOGY

For this study, both qualitative and quantitative methodologies are used to collect thorough data. The mixed method provides the researcher with substantial evidence and deeper study conclusions. Qualitative methods were employed for observation and interviews, while quantitative methods were utilised for customer feedback. The aim is to assess the disparity in cleanliness between open and closed kitchens in numerous restaurants located in the Byblos Area.

3.1 Data Collection Tools

A survey was designed. It includes questions about the difference between cleanliness and design in open and closed kitchens visited in Byblos. Additionally, interviews were conducted with the managers of the following restaurants in Byblos:

- Kami Sushi
- Billy Boyz
- Khandwich
- Malek Al Tawook
- Saporievini

By analysing the results of these methods, the results were evaluated. The survey was designed using Google Forms and distributed to people who had visited restaurants in Byblos with open, closed or both kitchens. Some of the people had visited the restaurants chosen in Byblos, and some of them had visited other restaurants. This survey contains 13 questions divided into 10 multiple-choice questions and 3 open-ended questions.

The interviews were conducted with the managers of the restaurants listed above in the Byblos Area. 10 open questions were asked related to the cleanliness in open and closed kitchens, which one is considered cleaner, how cleanliness precautions are applied in the restaurants, etc. Also, an observation was done by the researcher; he went to many restaurants in Byblos, entered the kitchen, and saw how the hygiene and cleanliness standards are applied, comparing the behaviour of the employees in the open vs in the closed kitchens.

3.2 Sampling Techniques

The sample of people used in both qualitative and quantitative research was drawn at random, in the Byblos Area and the 5 restaurants, respectively. The researcher interviewed managers from different restaurants in Byblos. The quantitative approach primarily targeted individuals who had dined at restaurants in Byblos within the past two years. This focus was instrumental in advancing the study's objectives and addressing the research questions. Participants were chosen at random and without any preferences or specific needs.

3.3 Data Analysis

The crosstab test will be applied using the Excel software to test if some variables are related, especially the difference between the cleanliness in open and closed kitchens in restaurants in Byblos. The survey was sent to people who had already visited the restaurants with open kitchens in the Byblos area, and the interview was sent to managers of some of the restaurants in Byblos. As the study is a mixed study, which combines quantitative data and qualitative data, the researcher used two different data analysis methods. To begin with, the survey, as mentioned in the previous chapter of this study, took a sample of 81 persons. The supplied information was gathered using Google Forms, which provides the researcher with the statistics and percentages for subsequent analysis and study to comprehend the relationship between the various factors using Excel Software. Apart from the survey, an interview was conducted with managers of restaurants in the Byblos Area. Each respondent provided unique responses that varied depending on their profession, and those responses will be discussed.

3.4 Limitations of the Study

This research topic is considered sensitive because it may have an impact on the reputation of some restaurants in Byblos. It was challenging to gather information and data due to the potential interview subjects and participants' reluctance to comply. Contacting and engaging restaurant managers to participate in the study was challenging due to factors such as time constraints, competing priorities, and limited willingness to answer the interview questions.

4. RESULTS

Beginning with the quantitative method, out of 81 persons, 45 (55.9%) were female, higher than the males, 36 (44.1%). Moreover, there were

participants from various age groups, and the participants were mostly aged between 20 and 29 years, 43 (52.9%), while the second biggest range was between 30 and 49 years, 38 (47.1%). While no participants were recorded from the age group range 10- 19, and more than 49. Based on these numbers, most participants are considered young adults. The third question is about whether they have visited restaurants in Byblos that have open and closed kitchens. Out of 81 persons, 81 (100%) responded with "yes".

The following question is about the type of restaurant they visit. Among the 81 participants,37 (45.7%) chose Casual restaurants, 30 (37.1%) chose Fast Food restaurants,11 (14.3%) chose Fine Dining restaurants, and 3 (3.9%) had visited all of the restaurant types mentioned. The follow-up inquiry is about the cuisine speciality of the restaurant visited, 25 (31.4%) chose American cuisine, 21 (25.7%) chose Japanese cuisine, 16 (20%) chose Italian cuisine, 11(14.3%) chose Lebanese cuisine, 3 (3.4%) chose Chinese, 4 (5%) chose all kinds of restaurants. So, most people prefer to visit American, Japanese, and Italian restaurants in The Byblos Area.

The next question is about the name of the restaurant visited in Byblos,16 (20%) answered Saporievini, 14 (17.1%) answered kami sushi, 9 (11.4%) answered Malak Al Tawook Byblos, 11 (14.3%) answered Billy Boyz,7 (8.6%) answered Mon Maki A Moi, 4 (5%) answered Roadster, 4 (5%) answered beit nazha, 4 (5%) answered Macdo, 4 (5%) answered Mashrou3 Café, 4 (5%) answered Al khan, 4 (5%) answered Chopstick. The following question is what they think is the cleanest and safest place in the restaurant, the open or the closed kitchen. 61 (75%) answered that both kitchens are safe and clean, and 20 (25%) answered that the open kitchen is the safest and cleanest in the restaurant. According to these numbers, most people think that both open and closed should be clean and safe.

The next question is about the process of cooking in front of the guest in the open kitchen, if it adds a kind of enjoyment and appetite, 78 (97.1%) answered "Yes", and 3 (2.9%) answered "No". This means that most people enjoy looking at the chefs when they are cooking or preparing the food in front of them. The succeeding question is whether they prefer to see the process of preparing food in front of them or if it's not important for them. 50 (62%) answered that it is important to them to see the process of food, and 31 (38%) answered that it is not important to them. The following question is about whether the architecture and design of the open kitchen bothered them during their restaurant experience. 55 (68.6%) answered "yes", 14 (17.1%) answered "maybe", and 12 (14.3%) answered "no". As for the next question, the participants should specify their answers to

the previous question, 24 (30%) the noise bothers them, 18 (22%) chose cleanliness, 14 (18%) the odour of the food bothers them, 24 (30%) think that all the above factors bother them while visiting a restaurant with an open kitchen.

The following question is about the restaurants visited following safety and hygiene standards; the answer was 100% "yes". Our last question concerns the hygiene standards followed by the restaurants visited; the answers were:

- Wearing clean uniforms.
- Using Clean utensils.
- Wearing hairnets.
- Wearing gloves.
- Use clean cutting boards.
- Following the FDA standards.
- Clean and tidy.
- All the necessary conditions to keep high quality.

Table 1: Frequency distribution for respondents' gender and age

Characteristic	Frequency	Percentage
Female	45	55.9%
Male	36	44.1%
Total	81	100%
Age		
10-19	0	0%
20-29	43	52.9%
30-39	38	47.1%
□ 39	0	0%
Total	81	100%

The results in Table 1 show that out of 81 respondents, 45 were females, with the highest percentage of 55.9% of the total respondents, and 36 were males, 44.1% of the total respondents. The variables of ages are represented as the highest percentage, 52.9% or 45 respondents being between 20 and 29, and 47.1% being between 30 and 39.

Table 2: Types of restaurants visited in Byblos.

Types of restaurants	Frequency	Percentage
Casual Restaurant	37	45.7%
Fast Food Restaurant	30	37.1%
Fine Dining Restaurant	11	14.3%
All the above	3	3.9%

This table shows the type of restaurants frequently visited by the respondents in the Byblos Area. Most of the respondents visit Casual restaurants (37), others visit Fast Food Restaurants (30), 11 respondents visit Fine Dining Restaurants, and 3 only visit the three types of restaurants in Byblos.

Table 3: Cuisine Speciality of restaurants Visited in Byblos

Cuisine specialty	Frequency	Percentage
American	**25**	**31.4%**
Japanese	**21**	**25.7%**
Italian	**16**	**20%**
Lebanese	**11**	**14.3%**
Chinese	**3**	**3.4%**
Others	**4**	**5%**

This table shows the cuisine speciality of restaurants in Byblos visited by respondents**,** most of the respondents 25 (31.4%) visit American cuisine, 21 (25.7%) visit Japanese cuisine, 15 (20%) visit Italian cuisine, 11 (14.3%) visit Lebanese cuisine, 3 (3.4%) visit Chinese cuisine, and 4 (5%) visit all kind of restaurants located in the Byblos Area.

Table 4: Do you prefer to see the process of cooking in front of you?

Do you prefer to see the cooking process in front of you?	Answers	Frequency	Percentage
	Important	**50**	**62%**
	Not Important	**31**	**38%**

This table shows that for most of the respondents, 50 (62%) out of 81 (100%), seeing the cooking process, and 31 (38%) out of 81, seeing the cooking process in front of them, is not important.

Table 5: Does the architecture and design of the open kitchen bother you During your restaurant experience?

Does the architecture and design of the open kitchen bother you in your restaurant?	Answers	Frequency	Percentage
	Yes	**55**	**68.6%**
	No	**12**	**14.3%**
	Maybe	**14**	**17.1%**

This table shows that the architecture and design of the open kitchen bother most of the respondents, 55 out of 81, 12 out of 81 answered "no" because they are not bothered by these two elements, and 14 out of 81 answered "maybe".

Table 6: What factors bother you in the architecture and Design of the open kitchen?

Factors	Frequency	Percentage
The noise	**24**	**30%**
The cleanliness	**18**	**22%**
The odour of food	**14**	**18%**
All the Above	**24**	**30%**

This Table shows the factors chosen by the respondents: 24 out of 81 chose noise, 18 out of 81 chose cleanliness, 14 out of 81 chose odour of food, and 24 out of 81 chose all the above factors.

Table 7: The hygiene standards followed by the restaurants visited.

The hygiene standards followed by the restaurants visited
1. Wearing a clean uniform
2. Using Clean Utensils
3. Wearing gloves
4. Using a clean cutting board
5. Following the FDA standards
6. Cleanliness tidy
7. All the necessary to keep high-quality

This table shows the answers concerning the hygiene standards followed by the restaurants visited by the respondents in Byblos. Previously, the researcher mentioned that a qualitative method was used, and interviews with managers of some of the restaurants were held in Byblos. A total of 10 questions were addressed to them; the questions were mainly about the open kitchen, how it affects employee behaviour, and customers' reputation, as well as the hygiene precautions considered in restaurants.

5 Interviews were done.

- The first interview was held with Mr Bernard Abboud, the Manager of Billy Boyz Byblos.
- The second interview was held with Mr Mohammad Bou Haidar, the Manager of Kami Sushi Byblos.
- The third interview was held with Mr Tony Daher, the Manager of Saporievini Byblos.
- The fourth interview was held with Mr Ali Yassine, the Manager of Malak Al Tawook Byblos.
- The fifth Interview was held with Mr Jean Zouein, the manager of Al Khan Byblos.

Question 1: Do you consider an open kitchen cleaner than a closed kitchen? Yes, or No?

Mr Abboud said that between yes and no, he would say an open kitchen is cleaner, but both should be as clean. Mr Bou Haidar, Mr Daher, Mr Yassine,

and Mr Zouein said yes, they consider an open kitchen cleaner than a closed kitchen.

Question 2: Why do you consider it cleaner?

Mr Abboud said that considering that the open kitchen is a live cooking bar, it should always be clean between each order". Mr Bou Haidar said that the open kitchen is in front of the guests, so it should always be clean, and the chefs should present clean dishes. Mr Daher also recognises that the open kitchen is a live show, so people who are in the restaurants come and stand in front of the bar or the kitchen to see the food process, so everything should be clean.

Mr Yassine and Mr Zouain said that an open kitchen is considered cleaner than a closed kitchen because it shows guests the image of the restaurant, so all utensils in the open kitchen should be clean, the uniforms of the chefs also should be clean, and after each order, the chefs should clean their sections.

Question 3: To what extent does having an open kitchen affect the restaurants' cleanliness?

For Mr Abboud, having an open kitchen is covered by all kinds of bacteria from the restaurant. So, the restaurant should always be aware that its kitchen is always at risk of poor cleanliness. For Mr Bou Haidar, having an open kitchen can significantly impact the cleanliness of restaurants. With an open kitchen, customers have a direct view of food preparation, which puts pressure on restaurant staff to maintain high cleanliness standards at all times. Additionally, the transparency of an open kitchen encourages accountability and ensures that any potential hygiene issues are immediately addressed to maintain customer satisfaction.

For Mr Daher, Mr Yassine, and Mr Zouein, having a restaurant with an open kitchen gives diners a direct view into your kitchen. They can watch their food being prepared at every step. Such transparency will help your diners feel at ease. And sanitary food preparation is key to a restaurant's everlasting success. The care and attention of your cooks will demonstrate to diners that your food will never make them sick. This can be especially helpful for people suffering from food allergies, and they can be sure that their dish is being prepared safely.

Question 4: In your opinion, do you think consumers consider open or closed restaurants to be cleaner?

Mr. Abboud, Mr. Bou Haidar, Mr. Daher, Mr. Yassine, and Mr. Zouein said that usually most consumers consider open kitchens cleaner than closed

kitchens. They believed that since customers can see where food is prepared and how it is cleaned, they may think that open restaurants are cleaner. It is crucial to remember that people's perceptions of cleanliness can vary and may not be based only on whether a restaurant is open or closed. Consumer perceptions of restaurant cleanliness are also greatly influenced by variables like hygiene ratings, client reviews, and general reputation.

Question 5: Could an Open kitchen affect employee behaviour?

Mr. Abboud said that, yes, of course, an open kitchen could affect employee behaviour. The absence of physical barriers between the kitchen and dining area, for instance, might make staff members more aware of their behaviour and motivate them to uphold cleanliness and professionalism at all times. Additionally, the idea of an open kitchen might promote transparency because patrons can watch as food is prepared, which might boost patrons' trust and satisfaction in the business.

Mr Bou Haidar thinks that an open kitchen could affect employees' behaviour. In open kitchens, customers have become an element of chefs' work and changed the management dyad into a tripartite relationship. Open kitchens have created a new interaction as chefs are now part of the frontline workers. They need to adapt by combining a front-stage performance with technical backstage competence to meet the expected societal norms as they perform emotional labour, aesthetic labor, and impression work.

Mr Daher agreed that an open kitchen could affect employee behaviour because an open kitchen allows chefs to showcase their skills and interact with customers directly. It also encourages them to maintain a high level of cleanliness and organisation, as everything is visible to the diners.

Mr Yassine also agreed that an open kitchen could affect employee behaviour. As they work side by side, it promotes cooperation and communication among the kitchen staff. This may result in a more effective workflow and better coordination during the meal preparation process. Additionally, an open kitchen allows chefs to demonstrate their talents and creativity to customers, which can increase their motivation and confidence to produce outstanding dishes.

Mr Zouein confirmed that an open kitchen could affect employee behavior because they cannot act in front of customers as they do in closed kitchens. There are rules they should follow in front of them, as this will show the customers a good or bad impression of the restaurant management.

Question 6: Do you consider that consumers are attracted to open kitchens?

Mr. Abboud said that consumers are usually attracted to open kitchens because they always like to watch how the food is being made and served in front of them. Mr. Bou Haidar, Mr.Daher, Mr.Yassine, and Mr. Zouein agreed that consumers are attracted to open kitchens. Since they promote transparency and a sense of connection between the chefs and diners, open kitchens have grown in popularity in recent years. It can be exciting and reassuring to dine in an environment where you can watch the food being prepared. Further increasing the overall appeal for customers, open kitchens frequently offer a vibrant and vivacious atmosphere.

Question 7: What are the hygiene precautions that you consider at your restaurant?

For Mr. Abboud, in Billy Boyz, the hygiene precautions considered are: wearing a clean uniform, clean smell, short nails, short hair, and long socks. For Mr. Bou Haidar, in Kami Sushi, the hygiene precautions considered are: washing hands after each order, wearing a clean uniform, wearing single-use gloves, wearing hairnets, and using specific cleaning products, following FIFO procedures.

For Mr. Daher, in Saporievini, the hygiene precautions considered are regular training on proper handwashing techniques, the importance of personal hygiene, and a strict cleaning and sanitisation schedule for all surfaces, utensils, and equipment used in food preparation. For Mr Yassine, in Malak Al Tawook, Byblos, the hygiene precautions considered are: wearing a clean apron, working in a clean section, cleaning and sanitising utensils used in food preparation, and using disposable gloves.

For Mr. Zouein, in Al Khan Byblos, the hygiene precautions considered are: wearing a clean uniform, using disposable gloves, using clean and sanitised utensils and types of equipment, and storing food at the right temperature.

Question 8: How many times have you had a food inspection (Check-up or look-over) in the restaurant?

Mr. Abboud said that in Billy Boyz, they check the food inspection every 30 minutes to 1 hour, depending on the rush hours. Mr Bou Haidar said that in Kami Sushi, they do not have a specific time to do the food inspection; it depends on the situation of the work, it could be 10 times in a day, and it could be zero. Mr. Daher said that in Saporievini, they check the food inspection each day, when opening and closing the kitchens. Mr. Yassine

said that in Malak Al Tawook Byblos, they check the food inspection after each order, it also depends on the work. Mr. Zouein said that in Al Khan, they check the food inspection 3 times during the day, which might be more dependent on the situation of the work.

Question 9: What are the factors that influence food safety in your opinion?

For Mr Abboud, the factors that influence food safety are: washing hands, gloves, cooking temperature, keeping heated food hot and cooled food cold, and reheating to the right temperature. For Mr. Bou Haidar, the factors that influence food safety are: training the employees on how to handle food safety, and then following up with them, to ensure they are working correctly.

For Mr Daher, the factors that influence food safety are: storing food at the right temperature, cooking at the right temperature, and using clean and sanitised equipment to avoid cross-contamination. For Mr. Yasssine, the factors that influence food safety are proper handling and storage techniques, adherence to food safety regulations and guidelines, as well as the level of training and knowledge of food handlers. For Mr. Zouein, the factors that influence food safety are: cross-contamination prevention, temperature control during cooking and serving, and effective pest control measures, which also play a significant role in ensuring food safety.

Question 10: Do you have any certificates regarding food safety?

For Billy Boyz, Mr. Abboud said that they don't have any certificate regarding food safety. For Kami Sushi and Saporievini, Mr.Bou Haidar and Mr. Daher mentioned that they have the same certificates regarding food safety, " Food Safety Level 2" and "HACCP". For Malak Al Tawook, Mr. Yassine mentioned that they have a "HACCP" certificate regarding food safety. For Al Khan, Mr. Zouein mentioned the "ISO" certificate regarding food safety.

3.3 Reliability and Validity

The researcher picked a specific group of participants who met the needed points in this study. This study needs information gathered about restaurants that have open kitchens in the Byblos Area. All the data received from the survey was valid and approved since the researcher got the data from participants who had visited these restaurants. The researcher got responses from 81 subjects.

5. CONCLUSION AND RECOMMENDATION

This study aims to compare the cleanliness of open and closed kitchens, showing their differences and determining which is better, from two different perspectives: The customer and the managers of some restaurants in the Byblos Area. This research first studied books, articles, magazines, and other sources to gather information about the topic chosen. The researcher prepared the data collection methods in this study. The collection methods were both qualitative and quantitative, as the study is already mixed.

A survey and interviews were done by the researcher, which helped to answer the four research questions in this study. The answer to the first research question was "Compared to closed kitchens, open kitchens are cleaner". Additionally, food will be made carefully in open kitchens, and the kitchen crew will look better there. Also, when food is made in an open kitchen, consumers feel considerably safer. For the second question, the answer was "Restaurant operators, particularly those operating in an open kitchen setup, predominantly espoused the belief that open-kitchen restaurants would be cleaner than closed-kitchen restaurants." The majority of the participants interviewed also thought customers would have the same view.

Now, for the third question, the answer was "Overall, respondents operating in both open and closed viewed restaurants with an open kitchen as the most hygienic, claiming that restaurant operators with an open kitchen are more emphatic about the cleanliness. The answer to the last research question was "For the open kitchen, this concept in restaurants is not only about the chefs and diners and their point of satisfaction and motivation. An open kitchen saves space and money for the restaurant owners. A separate and closed kitchen requires more space. Therefore, this leads to higher rent, power and maintenance costs. For the closed kitchen, this layout doesn't allow for direct access from the kitchen to the dining table, or vice versa. Customers cannot observe the food preparation process.

The findings obtained with this research have revealed that cleanliness in the restaurant industry is not only an operational necessity but also a strategic factor for customer trust and brand reputation. The study revealed that while hygiene is often highlighted through the visual appeal of open kitchens, ignoring closed kitchens can create negative effects on consumers' perception. Observations revealed that staff behaviour and operational practices may vary depending on the type of kitchen, and this indicates that hygiene standards should be supported not only by regulations but also by organisational culture. Thanks to the mixed-methods approach,

both consumer expectations and staff experiences were examined in a holistic manner, and the findings provide a valuable roadmap for restaurant managers. In this context, elements such as transparency in kitchen design, continuity in staff training, and effectiveness in control mechanisms come to the forefront. Therefore, the study not only examines existing hygiene practices but also offers recommendations that will improve customer satisfaction, strengthen reliability, and contribute to achieving sustainable success in the sector in the long term.

Finally, to conclude, the researcher achieved her objectives regarding the difference between open and closed kitchens from a cleanliness perspective, and the study helped highlight different objectives, such as how to avoid food contamination in the production area in the open kitchens.

Recommendations

This research has shown the difference between open and closed kitchens from a cleanliness perspective, which might negatively affect the customer reputation. For instance, restaurants can begin by improving the appearance of their kitchens, keeping them clean, and also follow the FDA regulations and guidelines to avoid food contamination and poisoning. Moreover, the Ministry of Health, along with a food inspector, can supervise the standards of hygiene used by restaurants if they are consistent with the required specifications.

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