Investigating the Customer Satisfaction on Food Quality, Service and Environment Facility of Restaurant X Using Food Hygiene Perspectives

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Abstract

The increasing number of restaurants in Indonesia requires more careful monitoring of food safety. Consumer perception of food hygiene is useful for assessing restaurant food safety practices. The purpose of this study is to investigate customer satisfaction in Restaurant X using a food hygiene perspective. Instruments involving three factors i.e., food quality, food service, and environment and facility were developed. The study was done at 3 franchised restaurants in Surakarta involving 395 respondents. Further, the importance-performance analysis (IPA) was utilized to analyze the data. In addition, as the customers' demographics, such as gender and age may influence satisfaction, therefore these factors were also evaluated. The result shows that overall, 5 attributes that relate to restaurant facilities and environment, e.g., attribute number 16 (clean and well-maintained kitchen), 17 (clean and well-maintained service area), 21 (clean and tidy garbage disposal area), 22 (clean dining table and the cloth used to clean the table), and 25 (clean and well-maintained toilet), need to be improved. The result also reveals that compared to the male customers the female perceived that more attributes need to be improved. Meanwhile, in groups based on age, customers above twenty require more attributes that need improvement compared to the others.

Keywords
Restaurant, food hygiene, customer satisfaction, and IPA

1. Introduction
The growth of restaurants can be caused by a variety of factors, including practical lifestyles, technological advancements that have led to a variety of meal delivery services, and eating out habits. The competitiveness in this industry has also increased due to the huge development in the number of restaurants. Customer satisfaction is a key success factor in the foodservice industry (Saad et al. 2006, Andaleeb and Caskey 2007). The key to business sustainability is having repeat orders from customers (customers being loyal to our products). As satisfaction could lead to loyalty (Szymanski and Henard, 2001, Fornell et al. 1996)**,** hence it is crucial to identify the factors that contribute to consumer satisfaction.

Given the significant number of cases of foodborne illness in Indonesia, food hygiene is a crucial concern in the restaurant business. In 2019, there were 6205 cases of foodborne illness in Indonesia, according to the National

Agency of Drug and Food Control (BPOM) (BPOM 2019). However, it is anticipated that the real figure will be higher. Only one out of every hundred foodborne outbreaks, according to the WHO's assessment, is recorded, while the other 99 cases are underreported (Romanda et al. 2017). The expenses associated with foodborne cases (reported or underreported) were estimated by W.On et al. (2022), Jacob and Powell (2009) to vary from 5.4 to 17 billion USD. The government and food sector have been encouraged to pay more attention because of the serious burden of foodborne disease in Indonesia and the significant losses as a result of the incident.

Restaurants are potential to spread foodborne illness. According to the CDC data, restaurants were responsible for 60% of the foodborne illnesses that occurred in the United States in 2006 (Jacob and Powel 2009). Currently, a hygiene and safety food is one of the key considerations for consumers when choosing a restaurant from a business standpoint (Ali and Nath 2013, Auty 1992, Duarte et al. 2013, Aksoydan , 2007, Cullen 2004). Consumers typically utilize visual cues to assess the cleanliness and safety of the serving food, as well as the appearance of the rooms, restrooms, dining tables, cutlery, and employees(Bai et al, 2019) Customers' opinions of the establishment's cleanliness and the food's and drink's safety are important for customer satisfaction and repeat purchasing behavior(Ryu and Shawn 2008), therefore, this dimension needs to be evaluated.

Recent studies about customer satisfaction at restaurants have been done (Karki 2018, Haghighi 2012, Waly et al. 2021, Tuncer et al, 2021, Loo et al, 2021, Shin 2020). However, little study has been conducted to assess consumer satisfaction with restaurant food hygiene implementation. In this study, customer perceptions of restaurant food hygiene procedures are used to analyse customer satisfaction. The Importance Performance Analysis (IPA) method is used to gauge and assess an attribute's or parameter's performance from the perspective of the consumer. The information gathered would demonstrate how satisfied customers are with features of a good or service, and the conclusions may be used to management of the food industry.
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2. Methods
The study was conducted through three stages namely, designing the questionnaires, collecting data and analyze the data. The questionnaires are divided into three sections, i) demography profile of respondents, ii) performance of restaurant food hygiene practices and iii) the importance level of the food hygiene attributes. Information at the first section were used to categorize the customer, meanwhile the information in the section two and three were used to construct the IPA diagram. The attributes listed in the questionnaires were referred to with a little adjustment to fit the restaurant condition such as used. The questionnaires were distributed to three restaurants and involved 400 customers who were dining in the restaurants during the data collection. The respondents were voluntary and have sufficient time (15-20 minutes) to fill the questionnaires. A total of 400 questionnaires were distributed, but 5 questionnaires were incomplete. Therefore, a total of 395 questionnaires were tabulated and analyzed.

3. Results and Discussion
3.1 Demographic Profiles
Based on the survey data, the demographic profile of the 395 respondents is summarized and presented in Table 1. As presented in Table 1, the majority respondents were female (59%) and 80% respondents have visited the restaurant at least twice. 70% respondents were in 20-40 years old, 37% were college students and majority have income below 5 million IDR per month.

Table 1. Demographic profile of respondents

No	Characteristics of Respondents	n	Percentage
1.	**Gender**		
	Male	160	41%
	Female	235	59%
2.	**Age**		
	< 20 years	58	15%
	20-40 years	277	70%
	> 40 years	60	15%
3.	**Frequency of eating at the restaurant**		
	Dine-in		
	Once	79	20%
	2-4 times	208	53%
	5-7 times	47	12%
	8-10 times	37	9%
	>10 times	24	6%
	Take-away		
	once	52	42%
	2-4 times	53	43%
	5-8 times	11	9%
	8-10 times	4	3%
	>10 times	4	3%
4.	**Education level**		
	Nonformal education	1	0%
	Elementary school	0	0%
	Junior high school	13	3%
	Senior high school	198	50%
	Diploma	46	12%
	Graduate	125	32%
	Post graduate	12	3%
5.	**Occupation**		
	Highschool student	23	6%
	College student	148	37%
	Government employee	15	4%
	Employee of private sectors	97	25%
	Entrepreneur	37	9%
	Housewife	21	5%
	Lecturer/teacher	23	6%
	Police/military	0	0%
	Others	31	8%
6.	**Income**		
	<Rp1.000.000	97	25%
	Rp1.000.001 – Rp3.000.000	122	31%
	Rp3.000.001 – Rp5.000.000	54	14%
	>Rp5.000.000	45	11%
	others	77	19%

3.2 The importance and the performance level of attributes

Using the food hygiene perspective, 25 attributes were constructed and used for measuring the customer satisfaction. Since the importance level of the attributes may be different, customers were asked to evaluate the importance level before filling the satisfaction questionnaires. The Likert scale 1-7 was used to measure the importance level of attributes as well as the restaurant performance. The result of each attribute, either the importance level and the restaurant performance can be seen in Table 2.

Table 2. Importance level dan performance score

Dimension		Attributes	mean score, standard deviation					
			importance			performance		
quality of foods	1	Only fresh food and beverages are served to customers	6.59	±	0.682	6.39	±	0.716
	2	No foreign object found in the food and beverages	6.60	±	0.765	6.40	±	0.721
	3	Food and beverages do not emit any strange or typical smells.	6.52	±	0.802	6.40	±	0.721
	4	Food and beverages must be covered from any flies or other	6.69	±	0.639	6.34	±	0.825
	5	All fresh food ingredients and food additives shall be used under good conditions.	6.71	±	0.593	6.39	±	0.733
	6	Consumers do not suffer from illness or food poisoning after consuming food and/or beverages.	6.71	±	0.637	6.52	±	0.666
subsection mean score			**6.64**	**±**	**0.081**	**6.41**	**±**	**0.052**
quality of services	7	Clean, carefully washed utensils to serve food and beverages	6.64	±	0.624	6.35	±	0.819
	8	Employees do not use bare hands to handle and serve food and beverages. They are required to wear gloves or tongs.	6.26	±	0.894	6.16	±	0.882
	9	Employees wear clean and neat uniforms or clothes	6.11	±	1.041	6.19	±	0.922
	10	Employees have short, clean nails without any polish.	6.01	±	1.094	5.97	±	0.988
	11	Employees come to work in good health	6.48	±	0.762	6.27	±	0.797
	12	Employees use appropriate personal protective equipment (i.e., aprons, gloves, masks).	6.22	±	0.942	6.12	±	0.884
	13	Employees do not cough and sneeze over food or beverages	6.60	±	0.792	6.38	±	0.829
	14	Employees are not allowed to wear jewellery or accessories, except watch	5.47	±	1.345	5.85	±	1.096
	15	All employees, without exception, are not allowed to smoke during the food processing and serving	6.33	±	1.012	6.31	±	0.890
subsection mean score			**6.24**	**±**	**0.212**	**6.18**	**±**	**0.093**
environment and facility	16	The kitchen is clean and well-maintained.	6.61	±	0.702	6.15	±	0.981
	17	Service area and all surfaces of the restaurant are clean and well-maintained	6.54	±	0.755	6.17	±	0.888
	18	The terrace, the yard, the parking lot, and the building are clean and tidy	6.23	±	0.883	6.11	±	0.883
	18	No pests and rodents are present around the restaurant	6.54	±	0.770	6.27	±	2.644
	20	The restaurant is in a safe location, not exposed to any source of contamination	6.39	±	0.804	6.22	±	0.844
	21	The restaurant has a clean and tidy garbage disposal area	6.53	±	0.720	6.16	±	0.870
	22	The cleanliness of the dining table and the cloth used to clean the table	6.56	±	0.701	6.12	±	0.962
	23	The restaurant provides proper hand washing sinks	6.59	±	0.672	6.39	±	0.787
	24	The availability of toilets with adequate number and facilities (running water, tissue, hand dryer, soap, and sink)	6.59	±	0.693	6.27	±	0.867
	25	The toilet is clean and well-maintained	6.62	±	0.713	6.18	±	0.945
subsection mean score			**6.52**	**±**	**0.064**	**6.20**	**±**	**0.557**

3.3 Importance Performance Analysis Diagram

To construct the IPA diagrams, the data importance and performance data were categorized based on the demographic profile, e.g., overall, gender (male and female) and age (<20, 20-40 and >40). The result can be seen in Figure 1
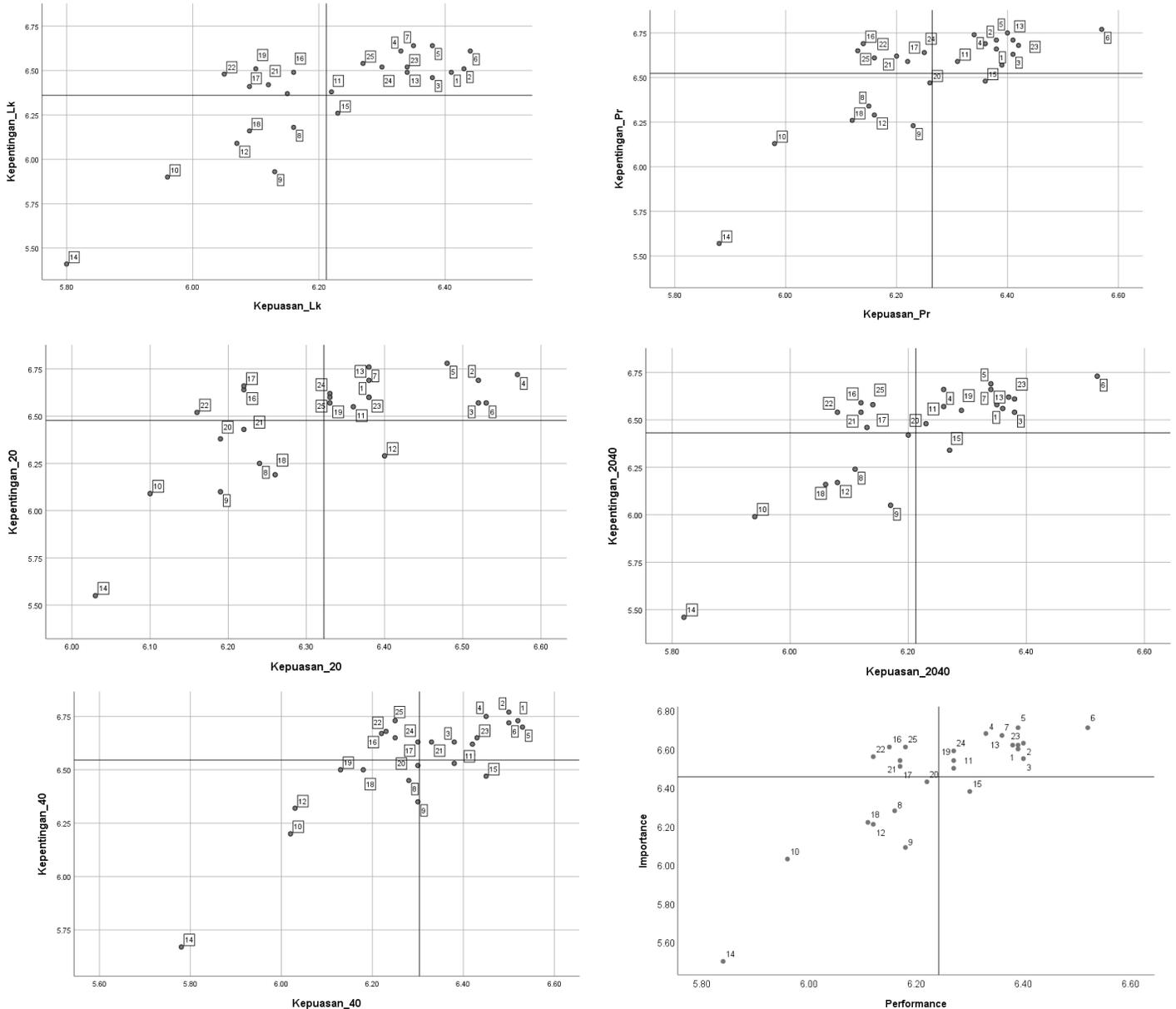

Figure 1. IPA's diagram

The IPA's diagrams were constructed based on the categorized data, Figure 1a is owned by male group, Fig. 1b belong to female group, meanwhile Fig. 1c-e represent IPAs of different ages and finally the last diagram represents the overall data. From male and female diagrams, the underperformed attributes are quite similar, 12 and 13 based on male and female perception. However, female perceived that hand washing facilities and toilet (attribute 24 and 25) need improvement while male fell that these attributes were outperformed since it falls in quadrant 3. Further, customers in age around 20-40 were more demanding compared to the other groups. It shows by the number of attributed perceived to be underperformed is higher than others. This group has the lowest satisfaction and fell that 6

attributes need improvement. Without differentiate the customers based on their demography profile, the IPA diagram shows that restaurant need to improve 6 attributes, number 16, 17, 21, 22 and 25 since all customer expect much on those attributes but their performance below the expectation.

4. Conclusion

An investigation to customer satisfaction on food quality, service quality and environment facility of a restaurant has been done. The result shows that there is a quite different perception on which attributes that need to be improved based on customer groups. However, all groups agreed that kitchen and service area cleanliness need improvement. This study evaluates the customer satisfaction based on demographic profiles. Since customers that have different level of hygiene knowledge may have different perception on restaurant food safety practices, hence forthcoming studies evaluating this factor maybe beneficial.

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