

THE IMPACT OF FOOD SERVICE ATTRIBUTES ON CUSTOMER SATISFACTION: THE CASE OF CAFETERIA SERVICES AT A STATE UNIVERSITY OF NORTHERN MINDANAO

O IMPACTO DOS ATRIBUTOS DO FOOD SERVICE NA SATISFAÇÃO DO CLIENTE: O CASO DOS SERVIÇOS DE CAFETERIA EM UMA UNIVERSIDADE ESTADUAL DO NORTE DE MINDANAO

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Abstract. The study focuses on determining the impact of food service attributes on customer satisfaction in cafeteria services at the State University of Northern Mindanao. The respondents of this study were selected based on non-random criteria and from the general community of the university, namely students, teachers, office staff, and other personnel. Among the 126 respondents, 25% were aged between 16-25, 25% were between 26-35, 25% were between 36-45 and 25% were between 46-65 years old. Furthermore, approximately half of the respondents were staff of the cafeteria (50%), 24% were instructors and 26% were students. The findings revealed that food service attributes like quality of food and beverage (mean=28), quality of service (mean=16), quality of setting (mean=17), and price and value (mean=7) have a highly positive correlation with the customers' overall satisfaction (mean=14). Furthermore, the study showed that 68.4% of the quality of food and beverage, 45.8% of the quality of service, 62% of the quality of setting, and 61.9% of price and value contributed to overall customer satisfaction. This means that food service attributes posited a highly positive impact on customer satisfaction and therefore all the hypotheses of this study are accepted.

Keywords: food service attributes, impact, customer satisfaction, cafeteria services.

Resumo. O estudo se concentra em determinar o impacto dos atributos do serviço de alimentação na satisfação do cliente em serviços de cafeteria na Universidade Estadual do Norte de Mindanao. Os respondentes deste estudo foram selecionados com base em critérios não aleatórios e provenientes da comunidade geral da universidade, nomeadamente estudantes, professores, funcionários administrativos e outros funcionários. Entre os 126 entrevistados, 25% tinham entre 16 e 25 anos, 25% tinham entre 26 e 35 anos, 25% tinham entre 36 e 45 anos e 25% tinham entre 46 e 65 anos. Além disso, aproximadamente metade dos entrevistados eram funcionários do refeitório (50%), 24% eram instrutores e 26% eram estudantes. Os resultados revelaram que atributos do serviço de alimentação como qualidade dos alimentos e bebidas (média = 28), qualidade do serviço (média = 16), qualidade do ambiente (média = 17) e preço e valor (média = 7) têm um efeito altamente positivo. correlação com a satisfação geral dos clientes (média=14). Além disso, o estudo mostrou que 68,4% da qualidade dos alimentos e bebidas, 45,8% da qualidade do serviço, 62% da qualidade do ambiente e 61,9% do preço e valor contribuíram para a satisfação geral do cliente. Isto significa que os atributos do food service apresentam um impacto altamente positivo na satisfação do cliente e, portanto, todas as hipóteses deste estudo são aceitas.

Palavras-chave: atributos de food service, impacto, satisfação do cliente, serviços de cafeteria



1. INTRODUCTION

Throughout history and across various locations, food and beverages have remained essential human necessities. This has led to the development of diverse food services catering to the ever-changing preferences of customers. This dynamic industry encompasses a wide range of establishments, including restaurants, cafes, fast-food outlets, food trucks, catering companies, and institutional food service providers like schools, hospitals, and prisons. Each of these entities strives to distinguish itself within the evolving global landscape.

In accordance with this, Lee et al. (2016), stated that achieving customer satisfaction emerges as the primary goal in the competitive realm of the hospitality industry. Nonetheless, attaining this goal demands careful consideration of customer needs, preferences, buying behavior, and sensitivity to pricing by food and beverage service providers. However, some cafeterias fall short in this regard. Mensah and Mensah (2018) have identified a range of challenges that hinder university food service establishments from delivering exceptional customer service. These challenges encompass factors such as limited space, repetitive menus, uninspiring food options, and deficiencies in overall food quality, service, and facilities.

Similarly, Pajantoy & Ubane (2022) and Galabo (2019) have also highlighted issues related to food variety, high cafeteria prices, and inadequate kitchen facilities, overcrowding, and limited dining choices. Numerous students and staff members at a particular state university in northern Mindanao have raised the same concerns. Some students and employees opt to dine off-campus or purchase food nearby due to factors like affordability and greater comfort compared to the university cafeteria.

These challenges are of particular concern, especially considering Garg and Kumar (2017) observation that the global population of college students continues to rise. As a result, cafeteria services need to exhibit a level of competitiveness that aligns with the expectations of students in terms of food quality, beverage options, service efficiency, setting, price, and overall value. According to Misiran et al. (2022), it has been highlighted that students may exhibit a reluctance to partake in on-campus dining if they experience dissatisfaction with the quality of cafeteria services. Thus, Tcvetkova, (2017) noted that continuous assessment of customer satisfaction is vital for any organization.

Given the foregoing challenges, this research determined the impact of food service attributes on customer satisfaction. Notably, there is a lack of published data regarding customer satisfaction in this university's cafeteria services, which created a knowledge gap regarding students' and employees' viewpoints. The study aimed to bridge this gap through the following objectives: assessed satisfaction concerning the quality of food and beverages, quality of service, quality of setting, price and value, and overall cafeteria experience. Furthermore, the study sought to identify potential strategies for enhancing quality practices and implementing interventions to enhance the on-campus dining experience for students and employees.

On top of that, studying the impact of food service attributes on customer satisfaction can have several implications and benefits when applied to education. Firstly, it can enhance the student experience by identifying factors like quality, pricing, and service that affect satisfaction. This knowledge can guide educational institutions in improving student services to ensure students are engaged and satisfied. Moreover, high customer satisfaction leads to loyalty in the business world, as contented students are more likely to share positive experiences and contribute to the institution's reputation. Lastly, a customer-centric approach to education can improve the alignment of services with students' needs and expectations, leading to more effective educational outcomes.

To the program of Master in Technical and Technology Education (MTTE), this study sought to enrich the context of the food service management major so that MTTE students would have a better view of the factors that may affect customer satisfaction in the food and beverage industry. Moreover, having valid and reliable data to support the significant impact

of food service attributes on customer satisfaction helped students consider and apply comprehensive quality services and continuous assessment in their future employment or entrepreneurial endeavors. Furthermore, as one of the auxiliary services of the university, the cafeteria would serve as a good avenue for the students to be equipped and be able to apply the following competencies food production management, food and beverage management, and cost control.

2. METHODS

Research Design

This study utilized a descriptive research design. This dealt with quantifying and analyzing variables to get results. It involved the utilization and analysis of numerical data using specific statistical techniques to answer questions like who, how much, what, where, when, how many, and how. It also describes the methods of explaining an issue or phenomenon through gathering data in numerical form (Apuke, 2017; Jamalpour & Yaghoobi-Derabi, 2022). For this study, descriptive statistics, correlation, and regression analysis are utilized.

Research Setting

The study was conducted at one of the state universities and colleges in Cagayan de Oro City, Misamis Oriental in Northern Mindanao.

Respondents of the Study

The overall sample consisted of $n=126$ in which 64% of the sample were male and 36% were female respondents. Among the 126 respondents, 25% were aged between 16-25, 25% were between 26-35, 25% were between 36-45 and 25% were between 46-65 years old. As shown in the table above, 63% of the surveyed respondents were single, 36% were married and only 1% were widowed and separated. Furthermore, approximately half of the respondents were staff of the cafeteria (50%), 24% were instructors and 26% were students.

Table 1. Demographic Characteristics of the Respondents.

	Frequency	Percentage
Gender		
Male	80	64%
Female	46	36%
Age		
16-25	31	25%
26-35	32	25%
36-45	31	25%
46-65	32	25%
	126	100%
Marital Status		
Single	79	63%
Married	45	36%
Widow	1	0.5%
Separated	1	0.5%
Cafeteria User's Status		
Instructor/Professor	30	24%
Staff	63	50%
Student	33	26%

Data Gathering Procedure

The data was collected through different phases:

Phase 1: Obtained approval.

The researcher composed an official request letter addressed to the Campus Vice Chancellor for Finance and Administration (VCFA), which sought authorization to carry out the gathering of data. This action was deemed essential since the cafeteria services were under the jurisdiction of the VCFA. Subsequently, the letter was transmitted to the cafeteria manager to apprise her about the research activity taking place within the cafeteria premises.

Phase 2: Document Preparation.

The researcher created a hard copy of an attendance sheet to keep track of the number of participants present during the data collection process. After this, informed consent forms were prepared to provide participants with information about the study's objectives, their option to decline participation, and their right to withdraw from the study. Participants were also guaranteed anonymity and assured of strict confidentiality. Lastly, printed survey instruments were generated to collect the necessary data, with respondents indicating their satisfaction levels regarding cafeteria service attributes.

Phase 3: Distribution of Survey Instruments for Data Collection.

During this stage, the researcher conducted a convenient sampling within the cafeteria premises and initiated the process of identifying potential respondents throughout the day. Students, as well as teaching and non-teaching staff who were present in the cafeteria, were approached and briefed about the study.

The researcher asked about the most suitable time for them to answer the printed survey. When the respondents expressed their willingness to participate, they were instructed to proceed to the culinary arts laboratory, which offered a more suitable environment for completing the questionnaire. Before receiving the survey instrument, respondents were required to provide essential information on an attendance sheet.

Subsequently, the researcher explained the content of the informed consent document to ensure respondents were well-informed. This document was then provided to those respondents who agreed to participate in the study. Following this, the formal data collection process commenced, with the researcher explaining what the survey entailed and guiding the respondents through the survey until they had completed it.

Phase 4: Retrieval of Questionnaires.

The researcher personally gathered the survey instruments to guarantee 100% accuracy and retrieval.

The Research Instrument

To gather the data, the researcher utilized the following measures: (1) Demographic data form, this is the first section of the survey form that was used to gather relevant information such as the respondent's gender, age, marital status, and cafeteria user's status. (2) DINESERV Scale, which was an adopted instrument from the study of Serhan and Serhan (2019). This is the second section of the survey form which has five parts. Statements in these parts were adapted from the DINESERV questionnaire, which was created by Yi et al., (2017) and designed for the food service industry.

The first eight statements in the first part of the second section were meant to find out how customers felt about the quality of the food and beverages at the cafeteria. The second part has four statements that were meant to find out how customers felt about the quality of service in

the cafeteria. The third part consists of five statements aimed at measuring customers' perceptions regarding the quality of the setting. The fourth part has two statements to measure the customers' perception of price and value, and the last part has five statements aimed at measuring the customers' overall satisfaction in terms of overall satisfaction with the quality of food and beverages, quality of service, quality of setting, price and value. This questionnaire is a 5-point Likert scale, where 5 = very satisfied, 4 = satisfied, 3 = neutral, 2 = unsatisfied, and 1 = very unsatisfied

Instrument Validation

Serhan and Serhan (2019), reported a high Cronbach alpha coefficient of 0.960 for this scale, surpassing the standard reliability threshold of 0.7. Item analysis was also conducted to assess item-total correlations and Cronbach's alpha when individual items were excluded from the survey questionnaire. In terms of construct validity, an exploratory factor analysis (EFA) with promax rotation was carried out.

To ensure content validity, a convenience sample of six expert panel members, all professors with expertise in the study's subject matter, reviewed each item in the modified questionnaire. The results confirmed the validity and reliability of the final questionnaire, making it suitable for future studies examining customer satisfaction, as well as perceptions of food and beverage quality and services provided in university cafeterias.

Statistical Treatment of the Data

Descriptive analysis with a frequency procedure was used to summarize categorical variables, providing an overview of participant demographics and preferences for food service attributes categorized by age groups. Also, the data of the study underwent a correlation analysis to illustrate the strength of relationships among the variables.

Furthermore, multiple regression analysis was employed to gain a deeper understanding of the connection between the dependent variable which is customer satisfaction, and the independent variable which is food service attributes. All of these analyses were carried out using SPSS version 20.

3. RESULTS AND DISCUSSION

This part of the paper presents the analysis and interpretation of data gathered from the study. The data are presented in tabular form. Likewise, the details are analyzed and interpreted according to the problems stated in method section.

Problem number 1. Is there a significant correlation between customer satisfaction and food service attributes in terms of quality of food and beverage; quality of service; quality of setting; and price and value?

The Table 2 shows the summary of the findings to test the Ho1 of the study:

Ho1: There is a significant correlation between food service attributes (Quality of food and beverages, Quality of Service, Quality of Setting, Price, and Value) and Customer Satisfaction.

Table 2. Correlation of the Variables

Variables	Mean	Standard Deviation	Quality of Food and Beverage	Quality of Service	Quality of Setting	Price and Value
Quality of Food and Beverage	28	6				
Quality of Service	16	3	.618**			
Quality of Setting	17	4	.744**	.581**		
Price and Value	7	2	.735**	.544**	.610**	
Overall Satisfaction	14	3	.827**	.677**	.787**	.787**

(Note: **. Correlation is significant at the 0.01 level (2-tailed). n = 126. *p<0.05; **p<0.01)

The data from Table 2 showed the correlation of all variables: quality of food and beverage, quality of service, quality of setting, price and value, and overall satisfaction. The results showed that food service attributes such as quality of food and beverage ($r=.827^{**}$), quality of service ($r=.677^{**}$), quality of setting ($r=.787^{**}$), and price and value ($r=.787^{**}$) highly positively correlated with students' overall satisfaction in the university cafeteria.

This implies that an increase in the quality of food and beverage, quality of service, quality of setting, and price and value also increases the customers' overall satisfaction. The means of score were computed. Moreover, customers' perceptions of the quality of food and beverages presented in the cafeteria were above average ($M=28$). It means that a high percentage of customers were satisfied with the quality of food and beverages in the cafeteria.

The study by Garg and Kumar (2017) noted that taste, smell, freshness, appearance, size, shape, color, gloss, consistency, and texture play a higher role in accomplishing or surpassing customer satisfaction and expectation to return. Consequently, Osman et al. (2018) stated that the highest correlation is observed between food quality and student satisfaction followed by ambiance, staff, and price fairness, respectively.

Similarly, to the result of the first attribute, quality of service ($M= 16$) and quality of setting ($M= 17$) also showed above average. Some of the students were also satisfied with the ambiance and the service provided by the cafeteria staff. Hence, it is highly positively correlated with students' overall satisfaction in the university cafeteria. Even though students' expectation regarding the quality of service varies from one student to another, previous studies mentioned the importance of quality of service in influencing customers' satisfaction. According to Suciptawati et al. (2019), high-quality service is anticipated to lead to customer satisfaction, ultimately resulting in increased customer retention and loyalty.

As for the quality of the setting, this study corresponds to the result of Akter et al. (2020) which discovered that ambiance significantly and positively influences student satisfaction. Furthermore, the price they paid compared to the value they received. As the table presented, the quantity of food and beverage items, given the price paid was perceived to be neutral ($M= 7$). Price is the student's first concern in university students due to limited funds (Nazulis & Syafrizal. 2021; Jamalpour & Derabi, 2023). They also indicated that if the prices of the on-campus food services are too high, the students tend to look for alternatives or get cheaper prices from off-campus food services.

Likewise, Misiran et al., (2022) found that pricing and value for money affect student satisfaction with campus cafeterias. Students are less likely to eat on campus if there are issues with food, service, or pricing. Moreover, Nazulis & Syafrizal. (2021), also added that the paid price should be appropriate for the food quality and quantity served so that the customer would feel that the money they paid was worth the price which results in satisfaction. Nonetheless,

based on the presented results, customers were explicitly satisfied with the overall performance of the university cafeteria (M= 14). This implies that all four food service attributes in this study showed a highly positive correlation with customer satisfaction. Therefore, HO1 is accepted.

Problem number 2. Which of the following variables significantly impacts customers' overall satisfaction with the university cafeteria considering: the quality of food and beverage; quality of service; quality of setting; and price and value.

The Table 3 shows the summary of the findings. The customers' overall satisfaction was regressed on the food attributes services to test the following hypotheses:

Ho2: The quality of food and beverages significantly impacts customers' overall satisfaction with the university cafeteria.

Ho3: The quality of service significantly impacts customers' overall satisfaction with the university cafeteria.

Ho4: The quality of the setting significantly impacts customers' overall satisfaction with the university cafeteria.

Ho5: The price and value significantly impact customers' overall satisfaction with the university cafeteria.

Table 3. Multiple Regression Analysis of Food Service Attributes and Customer's Overall Satisfaction.

Predictor	Criterion	R square	Beta	SD	P value
Quality of Food and Beverages	Customer's Overall Satisfaction	0.684	0.82	6	0.000
Quality of Service		0.458	0.67	3	0.000
Quality of Setting		0.620	0.78	4	0.000
Price and Value		0.619	0.78	2	0.000

Note: Beta =standardized coefficient, **p<0.001, n=126

Quality of Food and Beverages

The results in the table above revealed that the quality of food and beverages has a significant impact on customers' overall satisfaction. It has an accounted variance of $r^2=.684$ which means that the model explains 68.4% of the variance in customer satisfaction. The coefficients were assessed to determine the impact of the quality of food and beverages on the customers' overall satisfaction. The results revealed that the quality of food and beverages has a significant and positive impact on customers' satisfaction (B=.82, p=.000). Thus, the HO2 is accepted.

The result is in line with the other researchers (Abdullah et al., 2019; Nazulis & Syafrizal, 2021; Berliansyah & Suroso, 2018; Atsnawiyah et al., 2021; Jamalpour & Verma, 2022). Food freshness is the most important variable, followed by food taste, food presentation, menu variety, food temperature, and healthy food options (Luong & Hussey, 2022). As stated by Ibrahim et al., (2018) and Raihen et al., (2023) food quality is the most important indicator of student satisfaction in food service.

Though 68.4% have shown their satisfaction with the quality of food and beverage in this study, it was noted by the respondents that the university cafeteria should improve menu

planning in which additional options of healthy foods like vegetables and fruits is much appreciated.

Also, avoid repetition and ensure freshness of food offered at all times. Moreover, observed proper sanitation inside the kitchen to avoid food contamination.

Quality of Service

The results showed that quality of service has a significant impact on the customers' overall satisfaction with the university cafeteria ($B = .67$, $p < 0.001$). Moreover, the $r^2 = .458$ depicts that the model explains 45.8% of the variance in customers' overall satisfaction. As indicated in Table number 3, the accounted variance is .620 which means that the quality of the setting causes a 62.0% change in the customers' overall satisfaction. This further implies that quality of service considerably affects customers' satisfaction where H_03 is accepted.

This result was supported by different studies across the food and beverage industries (Edike & Joseph, 2020; Abdullah et al., 2022; Shariati et al., 2013; Villanueva et al., 2023; Tantonio & Sudyasjayanti, 2022; and Serhan and Serhan, 2019). Moreover, Smith et al., (2020) noted in their study that the elements of service quality were ranked second to food quality in affecting student satisfaction with food service facility. Thus, in the study of Akbara et al., (2021) respectfulness of the food service outlet staff, speed of service in the service outlet, and staff knowledge of the food items sold in the service outlet were noted to be very important, which made the students satisfied with the service provided by the cafeteria services.

Quality of Setting

On the other hand, table number 3 showed that $p < .001$, hence, the quality of the setting has a significant impact on customers' overall satisfaction with the university cafeteria where H_04 is accepted. The coefficients were also computed. $B = .78$ depicts that the change in the quality of setting by one unit will bring about a change in the customers' satisfaction by .787 units. Therefore, the quality of the setting is consistently recognized as a critical factor in influencing guest satisfaction, loyalty, and positive word-of-mouth (Heide et al., 2009). According to Kwun (2011), the setting of the campus food services is often referred to as its environmental and operational facets.

Cafeteria environment factors could also refer to influences within the individual's immediate setting such as package, plate, shape, lighting, and dining companions (Story et al., 2008). Furthermore, the result of this study is consistent with the previous study which confirmed that the dining environment is considered as one of the influential factors that determine customer satisfaction. In a recent study, Anderson and Sin (2020), found out that there is a significant effect between store atmosphere on purchasing and customer satisfaction. While purchasing decisions have a significant effect on customer satisfaction.

Similarly, with the quality of food and beverage, the quality of the setting also has a higher percentage of cafeteria satisfaction with 62%. Nonetheless, comments and suggestions were posited by the respondents. (1) address temperature concerns, particularly during peak hours like lunchtime, by installing windows or aircon to improve temperature within the cafeteria; (2) lighting should be improved; expansion of seating capacity by adding more chairs and tables and ensure that all available chairs and tables are usable and accessible to customers; (3) consider establishing restroom facilities for the convenience of customers; (4) maintain cleanliness and organization in the cafeteria; (5) implement strategies to manage to overcrowd, particularly during lunch hours; (6) address the issue of non-customers occupying seating areas, ensuring fair access for all; and (7) emphasize the importance of cleanliness in food preparation and dining areas with special attention to floors.

Price and Value

Finally, as shown in Table 3, price and value have a significant impact on customers' overall satisfaction where H_05 is accepted. It has an accounted variance of .619 which indicates that 61.9% of the variance in price and value can be explained by customers' overall satisfaction. The results revealed that $p < .001$ which indicates the price and value have a significant and positive impact on customers' overall satisfaction with the university cafeteria ($B = .78, p = .000$).

This is in line with the results shown in the study of Garg and Kumar (2017) which also noted that if the costs of food and beverages are too high for students on the university or college campus, the students will choose to buy food and beverages from less expensive off-campus food service operations. Budget constraints may affect the decision to select food service for customers as they would seek reasonable prices. Receiving the right value for the money paid for the food and beverages is one of the factors that lead to customer satisfaction. Nazulis & Syafrizal. (2021) stated that cost is the primary factor in university food service operations since customers prefer to purchase food and beverages at a cheaper price.

They also added that food service administrators should improve the food and beverages menu in the university cafeteria with more rational and reasonable prices so that the staff and students consume food and beverage from the university cafeteria rather than buying off-campus which leads to high customer satisfaction. Moreover, the result of this study is in line with Xi and Shuai (2009), which stated that price fairness has a significant influence on student's satisfaction with cafeteria services.

Thus, it is important to recognize and consider the suggestions of the respondents of this study with regard to the price and value of the university cafeteria to enhance customer satisfaction further. First, review pricing strategies to ensure competitiveness and consider external food service providers' pricing for comparison. Second, consider lowering the price of food offerings. Third, while offering premium-priced items, prioritize taste and quality. Fourth, evaluate portion sizes concerning their price as the quality and quantity of serving or portion of cafeteria food is not worth the price.

4. CONCLUSION

The results of the study revealed that all the different factors e.g., quality of food and beverage, quality of service, quality of setting, and price and value have a significant and positive impact on customers' satisfaction with the university cafeteria.

Food service administrators must continue to improve the quality of food and beverages to increase the level of satisfaction of the customer. Moreover, a well-prepared menu with different food and beverage varieties, at a reasonable price should be served in an appropriate ambiance or setting. Universities should also be concerned with providing a diverse selection of food for their staff and students to choose from to recognize the importance of having a diverse student body.

The results also showed that customers' satisfaction with the university cafeteria has a positive relationship with the different food service attributes. This was supported by the previous studies. Additionally, one of the significant implications of this study is that food and beverage quality and price and value are the critical components that must be considered regardless of whether students, staff, teachers, or the general public, who visit and dine at the university cafeteria.

Furthermore, this study also evaluates the paid price of the customer and the total value they received from the university cafeteria. The results indicated that price is an essential factor to measure the general fulfillment and expectations of the customer. Findings also stated that all the food service attributes were satisfactory however they can be enhanced further.

5. RECOMMENDATION

After a thorough analysis, the study came up with the following recommendations. First and foremost, the university cafeteria management should conduct regular customer satisfaction assessments to uphold the overall quality of cafeteria services. Furthermore, a keen focus on the quality of food, including taste and portion size, is also essential to be reviewed. Equally important is providing retraining to all cafeteria employees and concessionaires in food safety and hygiene to ensure the cleanliness and safety of the food they serve.

It is also forwarded that collaboration with concessionaires, covering both internal and those managed by the cooperative, should prioritize offering more nutritious foods and beverages, contributing to the promotion of healthier student lifestyles. Furthermore, they should take into consideration the purchasing power, specifically the prices of goods and commodities, given their customers' limited budgets.

Another recommendation is for the school administration to create a comfortable atmosphere through proper ventilation and the provision of a convenient restroom facility for customers. These measures collectively aim to enhance the overall cafeteria experience and customer satisfaction.

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