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## Research Article

### Exploring the Relationship between Operations Management Practices and Students' Satisfaction in the Canteen at Mabolo National High School

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#### ABSTRACT

This descriptive-correlational study scrutinized the operations management and senior high school students' satisfaction with the canteen inside the Mabolo National High School. Also, the relationship between the two variables was explored. Four hundred eighty-nine (489) respondents were chosen conveniently to participate in the data gathering using a modified tool validated by the experts and obtained 0.7346 internal consistency. Weighted mean and Pearson correlation coefficient were employed to analyze the data and yield valuable findings. Findings revealed that students were satisfied with the personnel's treatment, the proactive approach of the canteen to provide fresh and healthy products, the products being served, and the processes of the canteen to maintain quality service. Also, the study found that the operations management practices in the canteen have a significant relationship to the students' satisfaction. Improving operations management is critical in meeting customer needs and leading to satisfaction. Consequently, maintaining and enhancing customer satisfaction can be attained by ensuring that the quality of products, processes, employees, and proactive measures is exceptional. Furthermore, future researchers can pursue other variables, such as canteen facilities, food prices, food tastes, and food preferences, for future studies as they might influence overall customer satisfaction.

**Keywords:** *Operations management, Satisfaction, Senior High School, Mabolo National High School, Descriptive-correlational*

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## Introduction

The school canteen is a crucial component of the educational system that offers staff and students access to food and nutrition services. In a canteen, operations management would involve food preparation, inventory management, quality control, and customer service. According to Helmold (2021), operations management aims to ensure efficiency and effectiveness in the delivery of products and services. It also provides a setting for teaching and practicing entrepreneurship, food safety, and healthy eating practices. Also, other studies shared the same view that Operations management is essential for the systematic functioning of any organization, interacting with all other functional areas such as finance, marketing, and strategy (Zhang & Tang, 2021; Mazzarol & Reboud, 2019; Bulatović & Jokić, 2017). However, several difficulties and problems may affect the effectiveness and efficiency of the school's canteen's operation and management. Therefore, it is crucial to assess the school canteen's effectiveness and the satisfaction level among the customers. Students are the primary consumers of the canteen's products and services, and their level of satisfaction directly impacts the canteen's overall performance. According to Franklin (2023), customer satisfaction in marketing is the most frequently utilized instrument for the crucial performance of many businesses. It is also a technique for businesses to evaluate how well they are serving the demands and expectations of customers, which are typically assessed through surveys, ratings, reviews, feedback, or loyalty programs. The success of a canteen relies on effective operations management and a focus on student satisfaction, especially when a canteen considers a high level of service delivery (Fabre & Pacpaco, 2020). Therefore, it would be essential for students to assess the school canteen's operational management and customer satisfaction.

Operations management plays a significant role in businesses, especially in the canteen. According to Serhan (2019), most patrons (62.9%) would like to continue dining in the cafeteria; thus, among other things, the most frequently suggested adjustments to the university administration included enhancing diet

quality by providing more nutritious meals. A study collected in 2020 by Akter et al. demonstrated the use of a 7-point Likert scale to assess the effectiveness of all aspects affecting the satisfaction of students. According to the data, student satisfaction is negatively impacted by price, whereas it is significantly positively impacted by meal quality, food variety, ambiance, and staff. The satisfaction that consistently affected customer perception of service quality involves the service entry wait. Tangible responsiveness and assurance play the most critical role in driving customer satisfaction. Customer satisfaction refers to the quality of food, speed of service, food presentation, and value for money. Rajput and Gahfoor (2020) said that food quality is essential to satisfy consumer needs. Studies suggest that ensuring food quality is essential for satisfying customers and influencing their behavior in the food service industry (Mayliza, 2019; Kannan, 2017; Namkung & Jang, 2007; Kim et al., 2006). This synthesis examines the importance of food quality to customers, drawing insights from multiple research studies. In addition, it is a substantial condition to fulfill the needs and expectations of the consumer. Nutrition is relevant in improving a student's learning ability (Roberts et al., 2022). It is crucial to choose the proper equipment to prepare the food for the students and the equipment they will use. Having adequately prepared food will boost the satisfaction of the students. According to Chang and Suki's (2018) study, college students claimed that the limited menu options offered on-campus dining facilities during their time in college have led to a decline in their eating habits, resulting in customers being dissatisfied with the atmosphere and the food quality. The analysis concluded that adding fresh food, variety, and healthier, more exciting menu options to the cafeteria menu every month would be more cost-effective. Furthermore, Rajput and Gahfoor (2020) state that service quality leads to positive word of mouth, customer satisfaction, better corporate image, attraction for new three customers, increased revisits, and amplified business performance.

On the other hand, despite the importance of operations management in ensuring customer satisfaction in various service industries,

there is a lack of research specifically examining the relationship between operational management of a canteen and customer satisfaction. While studies have been conducted on customer satisfaction in the canteen and stall services in the Mabolo National High School, there is a need for more research that focuses specifically on canteens and their unique operational challenges. Existing literature has primarily focused on customer satisfaction in canteen and stall services, neglecting the specific context of canteen operations within Mabolo National High School. For instance, a study by Mabolo National High School alumni Ubalde et al. (2023) explored customer satisfaction in canteen and food stall services. Still, it did not consider the operational management practices specific to canteens inside the school. Canteens are essential for educational institutions, providing sustenance to students throughout the day. A smoothly run canteen ensures students access timely, nutritious meals and snacks. However, issues such as long wait times, food shortages, or inconsistent quality can arise when operations are poorly managed, as observed by the researchers. These problems can directly affect students' satisfaction, as they rely on the canteen for nourishment during their busy academic schedules.

This study tried to establish the operations management practices of a school canteen as perceived by senior high school students and their degree of satisfaction. Additionally, the study looked into the relationship between the two variables to determine if improving the operations management of the canteen would contribute to the student's satisfaction. Furthermore, a course of action was prepared and recommended for implementation in canteens and customer-centered restaurants.

### **Research Objectives:**

This study focused on analyzing and improving the operational aspects of a canteen inside the Mabolo National High School to enhance student satisfaction. This would be achieved by looking at the relationship between the two variables. Its output would help improve the operation and management of a

canteen inside the Mabolo National High School.

This study aimed explicitly to answer the following objectives:

1. Determine the degree of agreement of the canteen's operation as perceived by the respondents in terms of:
  - 1.1. Kitchen Operations; and
  - 1.2. Dining Operations.
2. Discover the degree of satisfaction of the students about:
  - 2.1. Products;
  - 2.2. Processes;
  - 2.3. Workers; and
  - 2.4. Proactivity.
3. To know if there is a significant relationship between operations management of the canteen and satisfaction.
4. To craft and endorse a course of action to the canteen management and other stakeholders.

### **Methodology**

This study used a descriptive-correlational design to determine the operations management practices and students' satisfaction levels. It also looked into the interplay between the two variables. The information obtained from the survey questionnaire helped produce the outcome. The data and statistics used in this investigation were weighted mean and distribution of frequencies.

The study was carried out at Mabolo National High School, one of the public schools serving senior high school in Cebu City. This school was chosen for the investigation because it is conveniently located for the respondents and researchers.

This study's respondents were students in grades 11 and 12 at Mabolo National High School, specifically those enrolled in the 2023–2024 academic year. The researchers considered all the strands for participation using convenience sampling. This sampling technique helps the researchers quickly achieve the expected number of respondents; however, it might affect the quality of the results due to a possible bias in sampling and unknown errors.

Table 1. Respondents of the Study

Respondents	N	n	%
Grade 11	638	246	50.3
Grade 12	619	243	49.6
<b>Total</b>	<b>1,257</b>	<b>489</b>	<b>100</b>

An adequate sample design was used to choose the senior high school representative of Mabolo National High School. Slovin's calculation, which considers the population sizes of 638 Grade 11 students and 619 Grade 12 students, determined the sample sizes of 246 for Grade 11 and 243 for Grade 12 respondents. The following formula represents the elements that go into getting the sample.

$$n = \frac{619}{1 + 619 (0.05)^2} \quad \frac{638}{1 + 638 (0.05)^2}$$

$$n = 242.98 \text{ or } 243 \quad n = 245.86 \text{ or } 246$$

The researchers took as a reference but altered the five research questions from Silvano et al.'s study (2022). The researchers omitted two items from the original questions. They added three new ones: the demographic profile (grade level, sex), the four sub-variables of each primary variable, namely product, processes, workers, proactivity, and the degree of agreement with the operation management of the canteen at Mabolo National High School. The tool aimed to ascertain the respondents' satisfaction with the Mabolo National High School canteen's operation management.

Table 2. Rating and Description of Satisfaction

Scale	Scale Range	Descriptive Equivalent
4	3.26-4.0	Very Satisfied
3	2.51-3.25	Satisfied
2	1.76-2.50	Dissatisfied
1	1.0-1.75	Very Dissatisfied

There were four scale levels in this investigation, and the table above shows the ratings and their descriptions that would decide, symbolize, and categorize the data. First, the most significant scale is (4), with a scale range of 3.26-4.00, with a descriptive equivalent of "very satisfied." Second, (3), with a scale range

of 2.51-3.25, has a descriptive equivalent of "satisfied." Third, (2), with a scale range of 1.76-2.51, has a descriptive equivalent of "dissatisfied," and lastly, (1), with a scale range of 1.00-1.75, has a descriptive equivalent of "very dissatisfied."

Table 3. Rating and Description of Operations Management and Challenges

Scale	Scale Range	Descriptive Equivalent
4	3.26-4.0	Strongly Agree
3	2.51-3.25	Agree
2	1.76-2.50	Disagree
1	1.0-1.75	Strongly Disagree

In this inquiry, there were four scale levels; Table 2 lists the ratings along with the descriptions that would determine, signify, and group the data. The most significant scale is (4), which has a descriptive equivalent of "strongly agree" and a scale range of 3.26-4.00. The most significant scale (3) has a descriptive equivalent of

"agree" and a scale range of 2.51-3.25. The third most significant scale is (2), which has a descriptive equivalent of "disagree" and a scale range of 1.76-2.51. The last scale is (1), which has a descriptive equivalent of "strongly disagree" with a scale of 1.00-1.75.

The methodologies used in the research were derived from previously completed and published studies; nevertheless, the researchers decided to undertake a content validity test to strengthen the study's rigor. Content validity tests whether the behavior or the construct is mirrored in all senses. The person who validated the content was a research expert. Pilot testing was done to ensure reliability. Questionnaires were administered, collected, and statistically analyzed. The tool's consistency and reliability was assessed using Cronbach's alpha, yielding a reliability coefficient result. The outcome of the pilot test indicates an acceptable/reliable internal consistency of the respondents' responses, with a result of 0.7346.

Microsoft Excel was used in tabulating the gathered data. Frequency distribution, simple percentage, and weighted mean were used to determine the degree of agreement and

satisfaction as perceived by the respondents. Additionally, to determine whether the operations management practices contribute to the student's satisfaction, the study employed a Pearson product-moment correlation coefficient (Pearson r).

This study placed much emphasis on ethical issues, mainly when gathering data. There was a guarantee of confidentiality when consent was provided. The researchers informed the respondents of all the information they need to understand on their participation. The confidentiality of the personal data provided by respondents was ensured. Additionally, researchers maintained impartiality in the distribution of questionnaires to avoid being swayed by their feelings, opinions, or interpersonal connections. The researchers guaranteed that this study would improve the school canteen's atmosphere and raise students' satisfaction.

## Result and Discussion

Table 3. Operations Management as Perceived by the Respondents

Items	Weighted Mean	Descriptive Equivalent
Delayed services of food and supplies.	2.64	Agree
Lack of necessary utensils	2.67	Agree
Malfunction of equipment and machine	2.69	Agree
The canteen is not well-ventilated.	2.64	Agree
The waste segregation program is not followed correctly.	2.81	Agree
The canteen is lacking of space.	2.95	Agree
The organization of food is clean.	2.86	Agree
Shortage of food and water supply.	2.79	Agree
The price is student-friendly.	2.56	Agree
<b>Overall Mean</b>	<b>2.73</b>	<b>Agree</b>

As shown in Table 3, the item "The canteen is lacking in space" received the highest weighted mean of 2.95 with an agreed interpretation. The respondents who participated in our survey indicate that the canteen lacks space and needs improvement. Upon analysis, it was found that the item labeled "The price is student friendly" obtained the lowest weighted mean of 2.56. This suggests that the students, to some extent, expressed dissatisfaction with the food prices, indicating that they did not perceive the prices as being accommodating or suitable for students. Furthermore, the price, especially for students in public schools, is an

important indicator to consider when making buying decisions. Multiple studies indicated that price is a factor in their purchasing decision by examining the product's worth (Karmarkar et al., 2015), especially food purchases (DiSantis et al., 2013).

In addition, the overall mean in the same table was 2.73, with an agreeable interpretation indicating that the kitchen and dining operations cannot satisfy the students at Mabolo National High School. Furthermore, several studies have concluded that the kitchen and dining operations satisfied the students, in contrast to the findings (Almasari & Prasasti, 2019).

Students' satisfaction with kitchen and dining operations is crucial to their overall experience and retention rates on campus. Food quality and efficient service influence student satisfaction with dining operations (Smith et al., 2020; Lee & Whaley, 2018). Additionally, enhancing kitchen equipment and facilities can improve food quality and dining experiences, ultimately increasing customer satisfaction (Du et al., 2022; Ya, 2014). Keeping a school canteen

clean promotes health promotion in the learning environment, controls food safety, and guards against diseases among students (Wognski et al., 2021). Furthermore, this research shows that nutritional value, taste of food, cleanliness of school canteen, and diversity of products are essential variables to consider to satisfy the students' needs (Licudan & Caballes, 2023).

Table 4. Senior High School Students' Degree of Satisfaction with the Operations Management of the Canteen

Parameters of Satisfaction	Overall Mean	Descriptive Equivalent	Rank
Workers	2.95	Satisfied	1
Proactivity	2.94	Satisfied	2
Product	2.89	Satisfied	3
Processes	2.72	Satisfied	4
<b>Grand Mean</b>	<b>2.88</b>	<b>Satisfied</b>	

The table above shows the score of senior high school students' degree of satisfaction, the interpretation of each score, and the ranking of each attribute. In general, senior high school students were found to be satisfied with the operation management of the canteen at Mabolo National High School. The overall mean of "workers" was 2.95, demonstrating that the senior high school students in Mabolo National High School who responded to the survey were satisfied with the canteen workers' performance. Furthermore, several studies have concluded that the workers' performance satisfied the student, which is consistent with the findings of Harire (2020). As a result of the findings, canteen workers should improve their performance from being satisfied to a high level of satisfaction

the operation process was perceived as satisfactory by the respondents. Some studies have shown, including Meher (2021), that students frequently eat during breaks at campus canteens in today's educational system. However, few students receive their orders on time because of sporadic foot traffic. Systems for automating the canteen can help reduce the need for human order processing and streamline cashless transactions, resulting in a more effective and efficient dining experience that can improve the canteen's performance processes, from satisfaction to a high degree of contentment. Therefore, to be effective, business managers need to understand processes and make informed decisions on improving operations to meet customers' expectations and achieve their strategies (Landel & Faulk, 2017).

On the other hand, the "processes" received the lowest overall mean of 2.72, indicating that

Table 4. The Relationship between Operations Management and Satisfaction of the Respondents

Source of Relationship	df	Computed r	Critical r value	Decision	Interpretation
Operations Management Satisfaction	487	0.738	0.092	Reject the null	Significant

The table shows the correlation between Operation Management and Senior High School satisfaction. The degree of freedom is 487, and since the computed R is greater than the critical

T value, the researchers rejected the null hypothesis. Interpreting that there is a significant relationship between the two variables.

This means there is a connection between operation management and senior high school students' satisfaction, implying that it is one of the students' overall satisfaction determinants. However, other factors might influence the satisfaction of senior high school students regarding the canteen and not just the operation management of the canteen. According to Galabo et al. (2019), the indicators of canteen service quality were tangibility, assurance, reliability, responsiveness, and empathy. Student satisfaction was based on the canteen ambiance, cleanliness, facilities, features, and prices. Moreover, in the study of Azni (2019), it was concluded that half of the customers expressed satisfaction with the waiter's demeanor, sense of safety, speed of service, and the seller's responsiveness.

## Conclusion

Based on the study's findings, the researchers conclude that senior high school students who participated in the survey were satisfied with the canteen's product, processes, workers, and proactivity. In addition, senior high school students from Mabolo National High School were satisfied with most of the canteen workers, gaining a 2.95 weighted mean, following proactivity with a 2.94 weighted mean. Aside from that, senior high school students were also found to be satisfied with the canteen product receiving a 2.89 weighted mean, while processes received the lowest weighted mean of 2.72. Moreover, regarding the level of agreement with the following claims in the canteen, it is concluded that senior high school students who participated in the survey agreed to it because of their overall weighted mean of 2.73. Additionally, it was discovered that the operations management of the canteen significantly impacts student satisfaction. This means that improving canteen operations can lead to increased customer patronage and loyalty.

Aside from that, the Mabolo National High School canteen should preserve and improve customer satisfaction since senior high school students are satisfied with its products, processes, workers, and proactiveness. The canteen administration should regularly ask students for their opinions on the menu selections and caliber of food. Additionally, differing

tastes and nutritional requirements can be met by providing an array of reasonably priced, nutrient-dense, and culturally diverse meal options. Lastly, maintaining a clean, spacious, and welcoming dining area and providing prompt service can help create a good student experience, making it more straightforward for the canteen to generate a profit and provide its customers with the most incredible dining experience.

## Recommendation

Based on the outcome of the study, to improve the operation management and the senior high school students' satisfaction, the researchers recommend the following:

Canteen management may provide suggestion boxes near the canteen to allow students to express perceived issues, concerns, or comments regarding the canteen's operations. Also, the canteen management may consider to train staff to be courteous, helpful, and efficient in interacting with customers, which ensures professionalism and smooth service. To satisfy students, the management needs to ensure portion sizes are adequate for the price. Moreover, it may also continuously monitor student satisfaction through assessment levels to assess the implemented strategies' effectiveness and make necessary adjustments.

In addition to the mentioned recommendations, the Mabolo National High School may consider selling healthy and nutritious options on the menu and promote them to students. This will show that they are committed to the well-being of students. Other schools must regularly remind their canteen staff about food hygiene, customer service, and efficient operation procedures; ensure that the canteen is clean, well-lit, and comfortable. Food prices needs to be affordable for students.

Finally, future researchers interested in the study can increase the number of respondents and add students from different grade levels. This is a crucial idea to enhance the current study and assist future researchers in coming to more reliable conclusions. In future studies, it would be beneficial to consider additional parameters, such as canteen facilities, food prices, food tastes, and food preferences, as these factors may impact overall customer satisfaction.

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