

**Research Article****FOOD HANDLING AND FOOD QUALITY MANAGEMENT AMONG LOCAL RESTAURANTS IN A HIGHER EDUCATION INSTITUTION: INPUT TO POLICY RECOMMENDATION****<sup>1,\*</sup>Hazel Beth M. Bautista and <sup>2</sup>Dr. Nerissa P. Batoon**<sup>1</sup>Central Graduate School, Isabela State University-Echague<sup>2</sup>Dean, College of Education, Isabela State University-Echague**Received 16<sup>th</sup> April 2024; Accepted 10<sup>th</sup> May 2024; Published online 28<sup>th</sup> June 2024**

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**Abstract**

Food is considered to be the ultimate source of energy and the maintenance of quality life. For higher education learners, food is not just anything that supports their physical needs. More often, their foods affect their learning and social being. Hence, good quality and proper handling of foods is paramount to this philosophy. This descriptive study was conducted to assess the food handling and food quality management in Isabela State University system with the end view of developing a manual of operation. The study was mostly participated by young and female students. In terms of food handling management, the study revealed that local restaurants in the university are clean, with proper systems of purchasing, preparation and storage of foods including the disposal of food waste. Moreover, as to quality of foods, the respondents shared that local restaurants promote healthy foods and drinks through selling of fresh fruits and vegetable and preparing newly cooked foods every day. It is therefore recommended the University may conduct regular assessment among local restaurants in the university to ensure that best practices are retained.

**Keywords:** Food handling, Food quality, Local restaurants, Higher education institution.

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**INTRODUCTION**

The university canteen reflects the value habits of considering on healthy eating practices of the students, faculty, and other staff members alike. A canteen is a place where food is served and eaten, where different snacks and drinks are sold. Establishment of sustainable healthy canteen will promote the students' nutritional status achievement as well as their academic performance. Moreover, a canteen acts as channel in promoting good behavior on food and nutrition practices among students. For clienteles who use canteen services regularly, the quality of food being served makes a significant contribution to their total daily food intake and nutrition. For higher education learners, food is not just about their daily intakes to nourish their physical health. Foods for higher education learners are their companions during their day-to-day academic and social battles. Cliché as it may, for them, food is everything. Researchers have shown that the quality of foods affects academic and social life of students. Existing literatures explain that healthy eating habits among students has positive and direct relationship with their academic achievement which means that those students who tend to patronage healthy foods are those who perform better in school (Resimo, *et al.*, 2024; Khan, *et al.*, 2022). On the other hand, learners who choose to eat unhealthy foods will likely to have low grades in their academic subjects (Munda & Del Pilar, 2023). In Isabela State University, students, most of the time, buy their foods in different canteens, stalls, restaurant within their campuses. Different canteens and restaurants can be found in the different parts of the university in order to provide the food requirements of all students. Because of the students' academic responsibility, most of them can not be able to prepare their own foods already.

In addition to this, most of the students of the university are staying in their boarding houses where cooking is not feasible. Hence, they opt to eat at the nearest canteen or restaurant. More often than not, students are choosing their foods based on various reason. Teves & Narciso (2017) explained that learners' decision to buy foods is influence by personal and economic condition such as their taste, food prices, freshness of foods, availability and others. In addition, Trinidad & Balderama (2023) found out in their study that food selection among college students can be most based on the availability of foods in the canteens and restaurants within the campus. Also, Galia, *et al.* (2023) and Okwachi, *et al.* (2017) discovered that cultural background influences food choice and since according to Guzman (2020) that Isabela province is a home to various ethnolinguistics groups with unique culture, the students of Isabela State University may have different food choices based on quality and handling practices. Food quality is important to ensure that the physical and nutritional requirements of the students are met and ensured. According to ASC Consultant (2024), food quality refers to the attributes and characteristics of food products that are reasonably priced, meet customer standards, adhere to laws, and meet other criteria. Galabo (2019) explained that quality of foods and services in school canteen correlated with students' satisfaction. This means that when school canteen provides quality foods and services, more students will be coming to buy their foods from them. Food quality in this context is the assurance that the foods being in school canteen are clean, fresh and nutritious. Food quality is also related to food handling. This refers to the mechanism in buying, preparing, storing and disposing foods. For the context of this study, food handling is the ability of the canteen operators and employees to ensure that the foods they serve are properly selected, prepared, cleaned and cooked until its serving. Food quality and food handling are paramount in ensuring that the students of Isabela State University are receiving the foods they deserve. This

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\*Corresponding Author: **Hazel Beth M. Bautista**  
Central Graduate School, Isabela State University-Echague.

study revolved on evaluating the assessment of the college students of Isabela State University on the food quality and food handling practices among various university-based restaurants. The end view of this study is to propose policies that will ensure better experiences for the students when purchasing or eating their foods in the different canteens in the university and to improve the services of these canteens.

### Statement of the Problems

Generally, this paper assessed the food quality and food handling practices of the school canteens in Isabela State University based from the assessment of the students for the purpose of proposing policies.

Specifically,

1. Determine the Sex of the Respondents.
2. Describe is the food handling practices of the school canteens in Isabela State University as assessed by the students.
3. Characterize the food quality among school canteens in Isabela State University as assessed by the students.
4. Evaluate the difference on the assessment of the respondents on the food handling practices of the school canteens in Isabela State University when they are grouped according to their sex.
5. Assess the difference on the assessment of the respondents on the food quality among the school canteens in Isabela State University when they are grouped according to their sex.

### METHODOLOGY

The study was a descriptive research design. According to Rillo & Alieto (20187) descriptive research is a purposeful process that comprises data collection, analysis, classification, and tabulation on current conditions, practices, procedures, trends, and cause-and-effect relationships. After that, sometimes with little assistance from statistical approaches, the data are appropriately and accurately analyzed. In addition, this methodology determines the factual conditions inside the group that is being studied, yielding results that can describe the general features of the group in a qualitative, quantitative, or mixed manner. A questionnaire was used and implemented through survey method was used to gather the needed data. The questionnaire had undergone validity and reliability test and the Cronbach alpha of 0.92 signifies that the instrument is valid. Respondents of the study were the randomly selected students from the various campuses of Isabela State University. They were computed using the 95% confidence level and 5% allowable error. Frequency and percentages were used to determine the sex of the respondents. In addition, mean was used to determine and characterize the food handling practices and food quality of school canteens. For the differences, t-test was used.

### Result and Discussion

Table 1 presents the sex distribution of the respondents. It can be gleaned from the table that the study was mostly participated by female respondents. The table revealed that there were 387 female students who shared their assessment on food quality and food handling practices of school canteen in

Isabela State University. They composed 69% of the total number of respondents.

**Table 1. The Sex Distribution of the Respondents**

Sex	Frequency n=561	Percentage (100%)
Male	174	31.00
Female	387	69.00

In addition, the table also revealed that there were 174 respondents of the study who are male. They composed 31% of the total number of respondents. The result of the study confirmed that the university is still do dominated by female students than male. The difference on the population of male and female students of the university do not reflect the data from the Philippine Statistics Authority. In the 2020 survey, PSA revealed that generally, male Filipinos has higher population than the female Filipino. In addition to this, the population of male Filipinos with age 15 and below had a sex ratio of 107 male per 100 females. While this is the case in 2022, there was a different situation from 2005 to 2017. According to Balita (2022), in 2017, there were more female than male students in the different colleges in the Philippines. This finding suggests that there is still need to explore the influence of sex in different aspects of Philippine education.

**Table 2. The Food Quality among the School Canteens in Isabela State University as Assessed by the Respondents**

Statements	Mean	Description
1. The canteen promotes and sells healthy food choices with nutritional value.	3.88	Agree
2. The canteen sells appropriate amounts of foods that can sustain the needs of the customer.	3.83	Agree
3. The canteen serves fresh and newly cooked food.	3.91	Agree
4. The canteen has a registered food safety and hygiene plan that is regularly audited and followed by the Canteen Operators/Personnel	3.80	Agree
5. The canteen sells healthy and nutritious food to the customer.	3.87	Agree

Table 2 presents the assessment of the respondents on the food quality among the school canteens in Isabela State University. The table revealed that a mean rating from 3.83 to 3.88 suggest that all five (5) statements were rated as "Agree" by the respondents. The table revealed that the respondents agreed that the canteens in Isabela State University are promoting healthy foods and selling them with appropriate prices. In addition to this, the respondents agreed that the school canteens are serving fresh and newly cooked foods and that a food safety and hygiene plan is in place and regularly audited by proper authority. Food quality is important to maximize the benefits from taking meals prepared in school canteen. In the context of the study, food quality has something to do with the freshness of foods being served, proper cooking, following mechanism to ensure hygienic procedure in the food preparation and appropriate pricing of foods. The knowledge and practice in food quality is important in school canteens. In the study of Pascual, *et al.* (2019), it was revealed that there were canteen operators and employees who are not aware on various procedures on ensuring quality of foods being served. If aware, food handler usually don practice them (Pajarillo and Declaro-Ruedas, 2021). Also, Reyes (2020) also disclosed in her study that food safety and food handling is affected by the availability of clear food handling procedures which needs to be followed by all employees of the school canteen. These findings reveal a need for more detailed study about food

quality and the mechanism in ensuring this among school canteens in Isabela State University.

**Table 3. Food Handling Practices among the School Canteens in Isabela State University as Assessed by the Respondents**

Statements	Mean	Description
1. The canteen utilized clean hands, sanitized tools, utensils, and premises in preparing food.	3.98	Agree
2. When preparing food, the raw and cooked are always separated to prevent contamination.	3.97	Agree
3. Foods are thoroughly cooked in proper temperatures to ensure safety.	4.07	Agree
4. Clean and safe water is considered in preparing food.	4.07	Agree
5. Foods are kept in sanitized containers at safe temperatures.	3.97	Agree

Table 3 presents the food handling practices of the school canteens in Isabela State University based from the assessment of the students. It can be noted that all statements were rated as "Agree" by the respondents. This is manifested on the mean rating from 3.97 to 4.07. The respondents of the study agreed that the canteen personnel are cleaned when preparing foods and utilizing sanitized tools, utensil and premises. In addition to this, the respondents agreed that the canteen operators and employees are using clean and safe water and that raw and cooked foods are always separated to avoid contamination. Moreover, the respondents agreed that foods in the canteens are kept in sanitized container and stored in proper place with safe temperatures. Food handling is important in ensuring food quality. In this study, food handling refers to practices related to purchase, preparation, serving and storing of foods among patrons. Proper handling of foods will ensure that it will have its highest quality and that the students of Isabela State University will really benefits from their foods. Issues of food handling is a common experience among school canteens. In the study of Pajantoy and Ubane (2022), they revealed that school canteens are commonly experiencing in the aspects of facilities for foods, services and policy on food handling. On the other hand, if issued of food handling practices such as cleanliness in the food preparation and canteen environment, the patrons will surely to have high satisfactions among school canteens (Duazo& Habla, 2022).

Table 4 presents the difference of the assessment of the respondents on the food quality in school canteens in Isabela State University when they are grouped according to their profile. The t-value from 0.171 to 1.707 and p-value which is greater that 0.05 revealed a not significant difference. The result signifies that when the respondents are grouped according to their sex, their assessment on food quality among school canteens in Isabela State University does not show any significant difference. The result exemplified that male and female students of Isabela State University have comparable assessment on the promotion and selling of healthy foods for an appropriate price, and the ability of the school canteens to served newly cooked and fresh fruits, meat, vegetables and other forms of foods. In addition to this, the study revealed that male and female students have comparable assessment of the availability of food safety and hygiene plan and that this is regularly audited by concern authorities. This led to the acceptance of the null hypothesis which states that there is no significant difference on the assessment of the respondents on the food quality in school canteens in Isabela State University when they respondents are grouped according to their sex. The result of the study contradicts the findings of Ali, *et al.* (2023). Their study revealed that female respondents are more specific on food safety and food quality. In addition to this, they also found out that female have higher tendency of looking into specific mechanism to ensure food quality than their male counterparts.

Table 5 presents the difference on the assessment of the male and female respondents about the food handling practices among school canteen in Isabela State University. The table revealed a not significant difference among all statements. This is based on the t-value from 0.312 to 1.214 and p-value of higher than 0.05. This result indicates that when the respondents are grouped according to their sex, their assessment on the food handling practices is not significantly different. The result may lead to the acceptance of the null hypothesis which states that there is no significant difference on the assessment of the respondents on the food handling practices in school canteens in Isabela State University when they respondents are grouped according to their sex.

**Table 4. Difference on the Assessment of Male and Female Respondents about the Food Quality in School Canteen in Isabela State University**

Statement	Male		Female		t-value	p-value
	M	Desc	M	Desc		
1. The canteen promotes and sells healthy food choices with nutritional value.	3.80	A	3.92	A	1.707 <sup>ns</sup>	0.08
2. The canteen sells appropriate amounts of foods that can sustain the needs of the customer.	3.81	A	3.84	A	0.457 <sup>ns</sup>	0.64
3. The canteen serves fresh and newly cooked food.	3.90	A	3.91	A	0.171 <sup>ns</sup>	0.86
4. The canteen has a registered food safety and hygiene plan that is regularly audited and followed by the Canteen Operators/Personnel	3.79	A	3.80	A	0.221 <sup>ns</sup>	0.82
5. The canteen sells healthy and nutritious food to the customer.	3.82	A	3.89	A	1.095 <sup>ns</sup>	0.27

A- Agree ns- Not Significant

**Table 5. Difference on the Assessment of Male and Female Respondents about the Food Handling Practices in School Canteen in Isabela State University**

Statement	Male		Female		t-value	p-value
	M	Desc	M	Desc		
1. The canteen utilized clean hands, sanitized tools, utensils, and premises in preparing food.	3.93	A	4.01	A	1.214 <sup>ns</sup>	.226
2. When preparing food, the raw and cooked are always separated to prevent contamination.	3.93	A	3.99	A	0.950 <sup>ns</sup>	.342
3. Foods are thoroughly cooked in proper temperatures to ensure safety.	4.06	A	4.08	A	0.312 <sup>ns</sup>	.755
4. Clean and safe water is considered in preparing food.	4.10	A	4.06	A	0.540 <sup>ns</sup>	.589
5. Foods are kept in sanitized containers at safe temperatures.	3.96	A	3.98	A	0.241 <sup>ns</sup>	.810

A- Agree ns- Not Significant

The result further signify that male and female respondents of the study have similar assessment on the practices of school canteens in ensuring clean environment, proper purchasing, preparing, and storing of foods. Also, the respondents have comparable assessment on the practice of school canteen on the use of clean water for all their foods. The result of the study is in consonant with the findings of Fabre and Pacpaco (2020). In their study, personal variable such as sex do not really influence management and operations of school canteen. This means that regardless of personal characteristics such as education or sex, canteen can still be operated properly

## Conclusion

Based from the findings of the study, the following were concluded:

1. Most of the respondents were female.
2. The respondents have positive assessment of food quality among school canteens in Isabela State University.
3. The respondents have positive assessment of food handling practices among school canteens in Isabela State University.
4. Male and female students have comparable assessment on the food quality and food handling practices in school canteens in Isabela State University.

## Recommendations

Based from the findings of the study, the following are recommended:

1. The Management of Isabela State University may device a mechanism that will assess the assurance of food quality and proper handling of foods among all canteens in the university.
2. For the canteen operators, they are encouraged to continuously practice proper food handling and ensure food quality to ensure satisfactions among the patron.
3. Other study on may be conducted along this line

## REFERENCES

- Ali, Taif; Mahmud, Sultan; Mian, Ashraf; Islam, Ariful; Ahmed, Fee Faysal. (2023). Knowledge, Attitude and Practices towards Food Safety among Students in Bangladesh: A Cross-Sectional Web-based Study. *Heliyon Journal*, Vol. 9, Issue 4.
- ASC Consultant. (2024, April 16). The Difference between Food Safety and Food Quality Explained. Retrieved from: <https://ascconsultants.co.za/the-difference-between-food-safety-and-food-quality-explained/>, Retrieved on: June 14, 2024.
- Balita, C. (2022). Female to Male Ratio in Tertiary Education in the Philippines from 2005 to 2017. Retrieved from: <https://www.statista.com/statistics/695577/philippines-female-to-male-ratio-in-tertiary-education/>. Retrieved on: June 14, 2024.
- Duazo, Catherine D. & Habla, Fely A. (2022). School Canteen Services in the Province of Sorsogon, Philippines. *International Journal of Contemporary Applied Researches*, Vol. 9, Issue 9, pp. 47-53.
- Fabre, Doriden de Classica A. & Pacpaco, Eleuteria R. (2020). Management and Operations of School Canteens: Basis for an Enhanced Canteen Development Program. *Asian Journal of Education and Human Development*, Vol. 1, Issue 1, pp. 88 – 96.
- Galabo, Norman R. (2019). Canteen Service Quality and Student Satisfaction. *International Journal of Scientific and Technology Research*, Vol. 8, Issue 6, pp. 114 – 126.
- Galia, Glendoris G.; Morano, Ellen Mae; Cuayzon John Mar M.; Buendia, Josephine B.; Somono, Leah D.; Sanchez-Danday, Alma Sonia; Salarda, Ariel G. (2023). Food Preference and Food Consumption of Primary Grade Students. *East Asia Journal of Multidisciplinary Research*, Vol. 2, No. 8, pp. 3479-3490.
- Guzman, Rodel B. (2020). Wedding Stages and Rituals among the Indigenous Itawes in Isabela, Philippines. *Journal of Critical Reviews*, Vol. 7, Issue 11, pp. 1-6.
- Kan, Sohail Imran; Zada, Rohat & Ismael, Dhuda Saad. (2022). Effect of Healthy Eating Habits on the Academic Performance of Graduating Students. *Asia-Pacific Journal of Health Management*, Vo. 73, Issue 2, pp. 1 – 8.
- Munda, Noel P. & Del Pila, Levann Dulf D. (2023). Eating Habits, Nutritional Literacy and Mathematics Performance of Junior High School Students. *International Journal of Science, Technology, Engineering and Mathematics*, Vol. 3, Issue 2, pp. 20 – 38.
- Okwachi, Simon Were; Miricho, Moses & Maranga, Vincent. (2017). The Role of Culture on Food Choices: A Case Study of Hospitality Clientele in Independent Commercial Catering Outlets. *International Journal in Tourism and Hospitality*, Vol. 3, Issue 4, pp. 44 – 53.
- Pajantoy, Ann Jelaine C. & Ubane, Siony C. (2022). Assessment on the Canteen Services in All Central Schools in Catarman: Basis in the Design of a Model Canteen. *Journal of Positive Psychology*, Vol. 6, No. 7, pp. 930 – 953.
- Pajarillo, Nena L. & Declaro-Ruedas, Mary Yole Apple. (2021). Food Safety Knowledge, Attitude and Practices of Food Handlers in the Different School Canteens in San Jose North District, Occidental Mindoro, Philippines. *American Journal of Humanities and Social Sciences Research*, Vol. 5, Issue 2, pp. 485-489.
- Pascual, Pet Anthony; Olobia, Leonido P.; Pascual, Gladys L.; Abenis, Neuville Florinth L. (2019). Knowledge, Attitude and Practices (KAPs) on Food Safety Handlers in School Canteens in Estern Visayas, Philippines. *Journal of Science Engineering and Technology*, Vol. 7, No. 1, pp. 58 – 67.
- Philippine Statistics Authority. (2020). Age and Sex Distribution in the Philippine Population (2020 Census of Population and Housing). Retrieved from: <https://www.psa.gov.ph/content/age-and-sex-distribution-philippine-population-2020-census-population-and-housing>. Retrieved on June 10, 2024.
- Resimo, Jheenet G.; Rosa, Mae Cianne Mierl D.; Tesiorna, Jade G; Guazon, Carmel Grace B. & Ederio, Nikko T. (2024). Eating Habits and Academic Performance of College Students in a Private School. *International Journal of Current Science Research and Review*, Vol. 07, Issue 5, pp. 3284 – 3302.
- Reyes, Cecilia P. (2020). Assessment of Food Safety and Sanitation Standards of Canteens in Nueva Ecija. *International Journal of Advanced Engineering, Management and Science*, Vol. 6, Issue 1, pp. 34 – 36.
- Rillo, Richard M. & Alieto, Ericson O. (2018). Indirectness Markers in Korean and Persian English Essays: Implications for Teaching Writing to EFL Learners. *The Journal of English as International Language*, Vol. 13, Issue 2.2, pp. 165 – 184.
- Teves, KKaren Luz Y. & Narciso, Joseph Faith T. (2017). The Consequences of Students' Eating Behaviors and Food Perception on their Nutritional Status and Academic Achievement. *PEOPLE: International Journal of Social Sciences*, No. 3, Issue 1, pp. 761 – 769.
- Trinidad, Ma. Cristina Q. & Balderama, Ron Michael. (2023). Determinants of the Dining Practices of College Students in the Promotion and Adoption of Sustainable Dining. *GATR-Global Journal of Business and Social Science Review*, Vol. 11, Issue 4, pp. 66 – 80.