

# DETERMINANTS OF FOOD SERVICE ATTRIBUTES AT SCHOOL CANTEEN TOWARDS SECONDARY SCHOOL STUDENTS' SATISFACTION LEVEL IN PONTIAN, JOHOR

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**Abstract:** *School canteens are vital in supporting students' well-being and academic performance in Malaysia. This study examines the determinants of food service attributes—food and beverages, service quality, and physical environment—on secondary school students' satisfaction levels in rural Pontian, Johor. Using a quantitative approach, structured questionnaires collected data from 342 students across four secondary schools. Descriptive and correlation analyses revealed that service attributes (e.g., staff responsiveness, cleanliness, and friendliness) emerged as the most influential factor in student satisfaction, surpassing food quality and environmental comfort. These findings highlight the critical role of interpersonal service delivery in school canteens, even in resource-limited rural settings. The study provides actionable insights for canteen operators and school administrators to prioritize staff training, service efficiency, and menu improvements. This research contributes to broader efforts to enhance student well-being and engagement in Malaysian schools by aligning food service practices with student expectations.*

**Keywords:** *School Canteen, Foodservice Attributes, Student Satisfaction, Rural Schools, Malaysia*

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## Introduction

Foodservice refers to preparing, processing, packing, and distributing food and beverages to customers within the premises (Liivat, 2024). The most prevalent organisation types in these sectors are restaurants, cafes, bars, catering companies, and institutional food suppliers. Foodservice can be divided into commercial and non-commercial (Vespia, 2021). The non-commercial food service category refers to businesses that supply food and beverages to various organisations to support their primary operations. Liivat (2024) stated that profitability is not the primary goal of this part of the foodservice industry. Instead, it provides food and services to meet societal needs. In terms of process, foodservice is mostly managed by contractors that manage the food and dining facilities and are often governed by the institution under which they operate (Liivat, 2024). Meanwhile, school canteen foodservices are frequently bound by authorised school nutrition guidelines (Vespia, 2021). In Malaysia, secondary schools are occupied by students aged from 13 to 17 years old. A considerable corpus of research exists on children's eating behaviours and related constructs. Satiety responsiveness, food responsiveness or enjoyment of food, appetite self-regulation, food delay of gratification, eating without hunger, caloric compensation, food fussiness, and food neophobia are examples of eating behaviours included in the review (Russell et al., 2023). This study aims to identify the foodservice attribute that influences secondary school students' satisfaction levels at school canteens and its most influential foodservice attributes among all attributes discussed.

## Literature Review

Five points are discussed in the literature review, which are foodservice, food and beverages, services, food environment, and customer satisfaction.

### Foodservice

Public food service refers to a subset of 'out-of-home consumption,' which refers to all eating activities outside the house, including school canteens, universities, and other public institutions (Kretschmer & Dehm, 2021). Foodservice is divided into commercial and non-commercial, with school canteens categorised under the latter. A school canteen can be defined as a type of food service that prepares food for pupils. The school is responsible for assigning an organisation to take over and manage the particular school canteen. Commonly, the organisation of the school canteen in Malaysia prepares food ingredients from the sales profits. Moreover, school canteens in Malaysia have the best-known school feeding programs, which are the Rancangan Makanan Tambahan (RMT). The main purpose of RMT is to help pupils from low-income households and also ensure that students receive a nutritious breakfast that benefits their growth

### Food and beverages

When discussing food, people typically consider only two factors: taste and necessity. The human body depends heavily on food and drink to sustain itself. According to more recent research, teenagers prefer to get food from the school canteen and think of "main meals" as meals that should be eaten at home (Devine et al., 2023). Businesses that prepare, serve, and sell food and beverages to consumers make up the food and beverage industry. Students' meals are prepared and served in the school canteen. Food provision affects students' nutritional status and knowledge (D'Souza et al., 2022). Numerous food-related factors may affect the meal choices made by teenagers in the school canteen (Devine et al., 2023). A research dietitian has also classified items on each school's Term 4 menu as 'Every day', 'Occasional', or 'Should not

be sold', using the NSW Healthy School Canteen Strategy: food and drink criteria. Classifications are based on several variables, including the product's nutrient profile, Health Star Rating, serving size, and preparation method (Mc-Harg et al., 2021).

The Healthy School Canteen Management Guide, published by the Ministry of Education Malaysia in collaboration with the Ministry of Health Malaysia in 2011, was revised in 2016. This review categorises food and beverage sales in the school canteen into two main groups: those permitted for sale and those prohibited. As a result, beginning in 2017, monitoring activities for food and beverage sales in the school canteen were carried out according to the newly updated food and beverage list. This activity provided students with early exposure to the selection of nutritious food and beverages and consequently created an environment conducive to supporting healthy eating practices among people in the school (Nutrition Department, Ministry of Health Malaysia, 2022).

### **Services**

Services in this study refer to a type of special service offered in schools called canteen service, which aims to supply the required food and beverages for its students and the school residents (Malefors et al., 2023 & Cano et al., 2024). On that note, customer satisfaction with institutional food service is influenced by several elements, including location, the cleanliness of the dishes and silverware, staff attire, and politeness (Guak et al., 2022). Licudan and Caballes (2023) assert that student satisfaction may increase when staff exhibit friendliness and attentiveness, coupled with timely and effective service. A customer's opinion of the service can be just as essential as the actual service they receive when there is close interaction between the two parties. In other words, it is the result of customers comparing their service quality expectations with their assessments of how the service was delivered. The service canteen in Malaysia is crucial because these elements are the first things customers will notice. In Malaysia, there is a recurring problem of inadequate service and poor hygiene practices among food establishments, leading to customer dissatisfaction.

### **Foodservice Environment**

A study conducted by Murphy et al. (2024) indicated that, in secondary schools, the majority offer food in a canteen-style arrangement, with meals generally produced on-site with various hot and cold alternatives available for purchase. Benaglia et al. (2023) described the term "physical environment" as the elements of a restaurant, such as the external and internal structures of the buildings, the furniture, the temperature, the lighting, the music or noises, and any other element that the human senses may detect. The ambiance of a restaurant or business influences customers' intent to return, making them more likely to revisit the establishment known for its pleasant atmosphere and service. Furthermore, the school food environment is complicated and impacted by a wide range of interrelated factors, such as the facilities, the faculty, the parents, and the organisations and stakeholders in the larger community (Moore et al., 2023). The canteen's hygiene conditions can have a significant impact on student satisfaction. If the canteen is well-kept and clean, students are likely to be satisfied with their dining experience (Licudan & Caballes, 2023).

### **Customer Satisfaction**

Customer satisfaction determines post-purchase attitude, which indicates a favourable or unfavourable result from the customers (Muhamad et al., 2021). Customer satisfaction plays a

significant part in the economic sector, as a consumer's likelihood to patronise the store again depends on their degree of satisfaction with the goods, service, and overall experience provided. Medina et al. (2024) agreed that the food's quality, presentation, speed of service, and cost influence customer satisfaction. Students' satisfaction levels influence the entire performance of school canteens, as they are the key users. Various personal traits, attitudes, expectations, moods, present demands, health conditions, and other factors influence customer satisfaction. These conditions also suggest that different customers may be satisfied to various degrees with the same service offering (Benaglia et al., 2023). Additionally, research conducted by Raihen et al. in 2023 found that other aspects, including the calibre of food and beverages, service level, value, cost, cleanliness, hygiene, location, and product variety, impact students' satisfaction.

### Methodology

Correlation analysis was used as the study's strategy to assess whether there is an association between students' satisfaction and the food service attributes in school canteens. This study also employed a cross-sectional design, which gathers data from a group of people concurrently. The study also adopted a non-contrived setting since the research was conducted naturally without the researcher's influence. Secondary school students in Pontian, Johor, were the unit of the study in determining and learning about each student's level of satisfaction. The selected secondary schools are situated in a rural area and may not receive attention from Malaysia's Minister of Education. Questionnaires were distributed online to the homeroom teachers via Google Forms to collect data.

### Findings

Based on the demographic profile, there are a total of 342 persons in the sample. Of these, there are more female respondents (193 (56.4%)) than male respondents (149 (43.6%)), respectively. As for age distribution, approximately 19 (5.6%) of the respondents are 13 years old, 41 (12%) are 14 years old, 75 (21.9%) are 15 years old, 156 (45.6%) are 16 years old, and 51 (14.9%) are 17 years old. The respondents came from four schools: Sekolah Menengah Kebangsaan Sri Kukup 113(33%), Sekolah Menengah Kebangsaan Parit Betak 85(24.9%), Sekolah Menengah Kebangsaan Kayu Ara Pasong 70(20.5%), and Sekolah Menengah Kebangsaan Telok Kerang 74(21.6%). In terms of races, there were only two races that consisted of minority 14(4.1%) Chinese respondents and majority 328(95.6%) Malay respondents. A total of 212 students (62%) brought RM5 as their daily school allowance, whereas the remaining students brought a daily allowance of RM0 to RM10, and 1 secondary school student brought RM20. As for the average number of visits to the canteen per week, 158 secondary school students (46.2%) reported making 5 visits in a week, while 16 students (4.7%) reported no visits at all, and they prefer to bring their own packed food.

### Descriptive Analysis for Independent Variable

**Table 1: Food and beverage attributes**

Attributes	Mean
Display of food and beverages	2.97
Taste of food and beverages	2.94
Diversity of food and beverages	2.88
Freshness of food and beverages	2.80
Portion of food and beverages	2.87
Price of food and beverages	2.67

The mean for the attributes related to food and beverages is displayed in the table above, ranging from 2.67 to 2.97. The display of food and beverages had the highest mean score ( $M=2.97$ ), while the taste of food and beverages with means ( $M=2.94$ ) came in second. The price of food and beverages had the lowest mean score among the factors related to food and beverages, with a mean score of ( $M=2.67$ ). The means scores for diversity, freshness, and the portion of the food and beverages do not differ significantly from one another.

**Table 2: Services attributes**

Attributes	Mean
Speed of services	2.82
Staff attentiveness	3.37
Consistency of canteen staff	3.17
Cooperation of canteen staff	3.34

With mean scores ranging from 2.82 to 3.87, it is evident that most students are satisfied with the services' attributes. The mean scores for the students' satisfaction with the canteen staff's cooperation and attentiveness are ( $M=3.37$ ) and ( $M=3.34$ ), respectively. The third place went to the staff's consistency, with a mean score of ( $M=3.17$ ), and the last place went to the services' speed, with a mean score of ( $M=2.82$ ).

**Table 3: Environment attributes**

Attributes	Mean
Comfort and seating availability	2.80
Cleanliness and hygiene of the dining area and food counter	2.86
Food and beverage purchase system	2.94
Canteen decoration	2.48
Canteen menu board	2.36

Environment attributes make up the third mean score, with scores ranging from 2.36 to 2.94. The mean score ( $M=2.94$ ) indicates that the students are satisfied with the food and beverage purchasing system. The dining area and food counter's cleanliness and hygiene are rated ( $M=2.86$ ), while the availability of seats and comfort are rated ( $M=2.80$ ). Given that the menu board and canteen decoration received low mean scores, it appears that students are not very satisfied with these features. Service attributes have the highest overall mean score ( $M=3.03$ ), followed by food and beverage attributes ( $M=2.98$ ), and environment attributes ( $M=2.76$ ), which have the lowest mean score.

## Discussion

Based on the mean score results, participants were satisfied with the food and beverages display and taste but were dissatisfied with the food and beverages' price. Regarding the attributes related to service, the respondents indicated that they were generally satisfied with them, except for the canteen staff's consistency, for which the mean score was above 3.0. Regarding the third attribute, environment, the secondary school students indicated that they were generally satisfied with most of the attributes, except for the menu board and canteen decoration, which had the lowest mean score, indicating that the respondents were unsatisfied. Regarding the

overall satisfaction level, the secondary school students were most satisfied with the service attributes, followed by the food and beverages attributes, and finally, the environment attributes, which had the lowest mean score among the respondents.

The correlation between the food and beverage attributes and the respondents' satisfaction level revealed that they are satisfied with the freshness of the food and beverages, as the results showed a significant and positive impact. This finding means that the food and beverages prepared by the canteen staff are fresh every day. According to Sari et al. (2024), freshness is crucial in shaping consumers' perceptions of food quality and augments their overall satisfaction level. Fresh ingredients are thought to have a better flavour and texture, which makes for a more enjoyable meal. The respondents from the four schools were not satisfied with the price of the food and beverages in their canteen, as the correlation perceived was low and insignificant. The findings of the dissatisfaction study on food and beverage prices are consistent with the findings of the studies conducted at Pillila National High School by Rosa Madonna Licudan and Dennis Caballes. As for Licudan and Caballes (2023), the low results suggest that the prices are either too expensive or unaffordable. Devine et al. (2023) found that food choices were influenced by price, value for money, and portion size. For instance, fruit alternatives were said to offer poor value for money due to their tiny portion sizes and lower satiety values, which restricted the variety available. Price is one of the key elements that influence how satisfied students are with the canteen because if the cost of the meals in the canteen exceeds their pocket money, students would not be able to afford to eat there.

Pearson Correlation findings on the attributes of the services, the secondary school students from four schools in Pontian, Johor, were satisfied with the services rendered by their canteen staff. These characteristics had a significant and positive impact on students' level of satisfaction. The cooperation between the canteen staff and students receives the highest score of the four criteria in the service attributes. Omar et al. (2021) identified, employees' willingness to help and provide fast, accurate service and deliver clear information influences customer satisfaction. The secondary school students who participated in the interviews reported that the canteen staff treated them well and were willing and persistent in answering all their inquiries about food and beverages served at the school canteen.

Compared to the previous study by Moore et al. (2023), the canteen staff controlled the meal queue systems efficiently, and the students perceived the queue times as reasonable. Pupils had a choice of two meals at most schools. Most school canteens display the term's meal menu, while others display their daily menu. In the survey conducted at the four schools, the means for the purchasing system showed that students were satisfied with how their school canteen managed the food buying process. The menu board has the lowest mean score in environment attributes, indicating that most students are unsatisfied. On the other hand, studies by Raihen et al. (2023) revealed that the students at Bangladesh University are unsatisfied with the environment at their campus foodservice outlet.

For overall satisfaction with foodservice attributes, the result between the three attributes using Pearson Correlation analysis showed that the gap between foodservice attributes is not too far, but respondents were still satisfied with these attributes in their school canteen. Services have a moderate positive relationship and have the highest value among these three attributes. The three main elements that influence Bangladeshi public university students' satisfaction are

price, food quality, and staff behaviour, according to a prior study by Raihen et al. (2023). The comparison shows a slight difference between the studies. Another study by Siti Nor Aziani et al. (2023) showed an excellent result for overall satisfaction using the Cronbach Alpha analysis, where all the values were above 0.9 on average.

This study aims to determine whether there is a crucial relationship between student satisfaction and the foodservice attributes in the school canteen in Pontian, Johor. The first practical aspect is the administrators of schools. The outcome of this study offers insights into developing policies and enhancing the catered services offered to students. This strategy might make it easier for school principals to support the supply of canteen facilities for the school improvement plan. The second practical aspect is the school canteen food handler. The findings will help create awareness among foodservice operators to provide food and service to satisfy students. As for the theoretical aspects, this study will benefit future researchers who wish to undertake the same experimental study or any other study on students' satisfaction levels with food service attributes at school canteens. They can refer to and use the study's findings as a guide.

### Conclusion

In conclusion, this study aimed to determine the foodservice attributes that influenced secondary school students' satisfaction with their schools' canteens. The result of the study indicated that all the students are satisfied with their school canteen foodservice. The result for foodservice attributes showed that many students are unsatisfied with the food's price. They hope for a price reduction, as not all students can afford the current price. The study could benefit from a more detailed discussion in the future of the factors that affect food prices, which were a major source of dissatisfaction for the students. For the service attributes, students are satisfied with staff cooperation and attentiveness, which had higher results than other items under the service attributes. Students are satisfied with the staff's attentiveness and cooperation when they seek information or need help. Environmental attributes also showed a good result when students were satisfied and happy with the food and beverage purchasing system. The result showed that the food-buying process is very systematic.

The study's results showed that foodservice attributes can determine secondary school students' satisfaction level with their school's canteen. The most influential foodservice attribute among the three attributes is service. Service has the highest value compared to the other factors. It showed that students are satisfied with the service that the canteen provides. The results indicate that all school canteens prioritize service as their primary strategy to attract students.

Further research could expand the sample size and include a wider geographic area to increase the generalizability of the findings. Lastly, the use of more robust statistical analyses (for example, regression analysis) could provide deeper insights into the relationships between different foodservice attributes and student satisfaction when dining at their school canteen.

## References

- Abdullah N. B. A. & Ismail A. F. (2021). Food poisoning outbreaks among school children in Terengganu and their associated factors. *Sains Malaysiana* 50(4):1027-1036.
- Aiman, A. (2021). With UPSR scrapped, rural schools need better facilities. *Free Malaysia Today (FMT)*.
- Benaglia, M. F., Ho, M. H., & Tsai, T. (2023). Drivers of customer satisfaction with restaurants during COVID-19. A survey of young adults in Taiwan and Indonesia. *Asia Pacific Management Review*.
- Cano, M., & Hijada II, V. (2024). Canteen service quality and customer satisfaction: A mixed method study. *Journal of Tourism, Hospitality & Culinary Arts*, 16(2), 48-80.
- Clinton-McHarg, T., Delaney, T., Lamont, H., Lecathelinais, C., Yoong, S. L., Wolfenden, L., Sutherland, R., & Wyse, R. (2021). A Cross-Sectional study of the nutritional quality of New South Wales High School student food and drink purchases made via an online canteen ordering system. *Nutrients*, 13(12), 4327.
- Devine, L. D., Gallagher, A. M., Briggs, S., & Hill, A. J. (2023). Factors that influence food choices in secondary school canteens: a qualitative study of pupil and staff perspectives. *Frontiers in Public Health*, 11.
- D'Souza, E., Vandevijvere, S. and Swinburn, B. (2022), The healthiness of New Zealand school food environments: a national survey. *Australian and New Zealand Journal of Public Health*, 46: 325-331.
- Foo, L. H., & Tan, Y. J. (2021). Assessment of Food Quality in School Canteens: A Comparative Quantitative Study between Primary and Secondary Schools in Malaysia. *Nutrients*, 13(9), 3009.
- Guak, J. W., Oh, J. E. & Cho, M. S. (2022). A study on the factors affecting customer satisfaction with institutional foodservice during Covid-19. *MPDI*, 11(7), 1053.
- Hanson, E. M. (2023). A quick guide on the food service industry. *FoodDocs*.
- Kretschmer, S. & Dehm, S. (2021). Sustainability transitions in university food service- A living lab approach of Locavore meal planning and procurement. *MDPI*, 13(13), 7305.
- Licudan, R.M., Caballes, D., (2023). Students' Satisfaction on the School Canteen Operation of Pililla National High School. *Psychology and Education: A Multidisciplinary Journal*, 10(4), 421-429.
- Liivat, K. (2024). Foodservice industry guide: Trends, insight and opportunities. *FoodDocs*.
- Malefors, C., Sundin, N., Tromp, M., & Eriksson, M. (2022) Testing interventions to reduce food waste in school catering. *Resources, Conservation and Recycling*, Vol: 177, Page: 105997.
- Medina, A. P., Aguilon, S. M., Pepito, C. M. B., Enopequez, A. M., Polinar, M. A. N., Rabanes, B. G., & Mahipos, A. M. (2024). Exploring the relationship between operations management practices and students' satisfaction in the canteen at Mabolo National High School. *International Journal of Multidisciplinary Applied Business and Education Research*, 5(7), 2636–2644.
- Moore, S. E. H., Brennan, S., Lavelle, F., Dean, M., McKinley, M., Olgacher, D., McCole, P., Hunter, R. F., Dunne, L., O'Connell, N., Elliott, C., McCarthy, D., & Woodside, J.V. (2023) Capturing the whole-school food environment in primary schools. *Public Health Nutrition*, 26(8), 1671–1678.
- Mohammadi, P., Maleknia, R., & Rahimian, M. (2024). An Examination of participatory behavior of Urban Forests visitors: Applying the Theory of Planned Behavior in the Urban Forests of Khorram Abad..



- Murphy, M., Coffey, A., Pallan, M., & Oyebode, O. (2024). Changing the food environment in secondary school canteens to promote healthy dietary choices: a qualitative study with school caterers. *BMC Public Health*, 24(1).
- Nutrition Department, Ministry of Health Malaysia. (2022). Monitoring the sales of food and beverages in the school canteen introduction. Portal Rasmi Bahagian Pemakanan Kementerian Kesihatan Malaysia.
- Omar, M. S., Yunus, I. Y., & Jang, J. M. J. (2021). Factors Affecting Staff Satisfaction at PTSS Staff Cafeteria. A Case Study of Politeknik Tuanku Syed Sirajuddin.
- Pajantoy, A. J. C. & Ubane, S. C. (2022). Assessment on the canteen service in all central school of Catarman: Basis in the design of a model canteen. *Journal of Positive School Psychology*, 6(7), 930-953.
- Raihen, M. N., Akter, S., & Sardar, M. N. (2023). Food Satisfaction among Students: A Study of Present Public University Students in Bangladesh. *Journal of Mathematics and Statistics Studies*, 4(1), 01–18.
- Ros, A. H. C. (2023, January 3). Ala Kafe Hipster, SMK Sri Pontian ubah Persepsi “Kantin Sekolah” Mingguan Wanita.
- Russell, A., Jansen, E., Burnett, A. J., Lee, J., & Russell, C. G. (2023). Children’s eating behaviors and related constructs: Conceptual and theoretical foundations and their implications. *BMC*.
- Vespia, C. (2021). *The Basics of Food Service Operations*. Zip HACCP.