

# Customer Perception of Calorie Information on Menu Labels in Selected Fast-Food Restaurants in Quezon City

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## Index Terms:

calorie menu labeling, customer perception, fast-food restaurants, cognitive response, emotional response, behavioral response, food choice, purchasing decision

**Abstract.** The increasing prevalence of overweight, obesity, and diet-related non-communicable diseases has intensified public health concerns, particularly in urban settings where fast-food consumption is highly accessible. As a policy response, calorie information on menu labels has been implemented to support informed food choices at the point of purchase. Anchored in Consumer Perception Theory, this study assessed customer perception of calorie information on menu labels in selected fast-food restaurants in Quezon City, focusing on cognitive, emotional, and behavioral responses and their influence on food choice or purchasing decisions. A quantitative-descriptive research design was employed. Data were collected from 100 purposively selected fast-food customers using a structured questionnaire. Descriptive statistics, including frequency distribution, percentage, and weighted mean, were used to analyze respondents' demographic profiles, levels of perception, and the influence of calorie information on purchasing behavior. Findings revealed that respondents were predominantly young, single, female, and frequent fast-food visitors. Overall, customer perception of calorie menu labeling was positive across all dimensions. The cognitive response indicated high awareness, understanding, and trust in calorie information, although its consistent application in food selection was sometimes limited by habits and preferences. The emotional response yielded the highest overall perception, demonstrating that calorie labels evoke health concern, motivation, and encouragement toward healthier choices. Behavioral response findings showed that calorie information influenced actual purchasing behavior, particularly in avoiding high-calorie items and choosing lower-calorie options. Moreover, calorie information was found to positively influence food choice and purchasing decisions, despite the moderating effect of habitual ordering patterns. The study concludes that calorie menu labeling is an effective informational and behavioral tool that enhances awareness, emotional engagement, and healthier purchasing decisions among fast-food customers in Quezon City. Recommendations are proposed to improve the clarity, visibility, and utilization of calorie information in fast-food menus.

## Introduction

The increasing prevalence of overweight, obesity, and diet-related non-communicable diseases has become a critical public health concern worldwide, particularly in rapidly urbanizing areas where fast-food consumption is highly accessible. Dining out, especially at fast-food restaurants, has been consistently associated with higher caloric intake and lower nutritional quality compared to home-prepared meals. As a policy response, calorie information on menu labels has been introduced in many countries to help consumers make informed food choices at the point of

purchase (Petimar et al., 2021; Rummo et al., 2023). Menu calorie labeling is designed to increase transparency and address consumers' tendency to underestimate the caloric content of restaurant food. Empirical evidence suggests that when calorie information is displayed prominently on menus, many customers notice and consider it during food selection. A recent nationally representative study found that nearly half of restaurant customers noticed calorie information during their most recent fast-food visit, though awareness and attention varied across demographic groups (Restrepo, 2024). These findings indicate that while menu labeling has the potential to influence decision-making, its effectiveness largely depends on how customers perceive, understand, and value calorie information. According to Consumer Perception Theory, such variability reflects differences in how consumers filter and assign meaning to menu-based information based on prior knowledge, expectations, and personal relevance. These findings indicate that while menu labeling has the potential to influence decision-making, its effectiveness largely depends on how customers perceive, comprehend, and cognitively value calorie information rather than on its mere presence.

Beyond awareness, perception plays a crucial role in determining whether calorie labels actually translate into behavioral change. Studies analyzing real transaction data have demonstrated modest but statistically significant reductions in calories purchased after the implementation of menu labeling policies, indicating consumer sensitivity to calorie disclosures (Rummo et al., 2023). Similarly, longitudinal evidence has shown sustained reductions in calories per transaction following nationwide calorie labeling implementation in fast-food chains, supporting the policy's capacity to influence purchasing behavior over time (Petimar et al., 2021). However, these effects are not uniform, suggesting that individual perceptions, health consciousness, and contextual factors shape how calorie information is used. Consumer understanding and interpretation of calorie labels are equally important. Reviews and empirical studies in nutrition and consumer science emphasize that nutrition labeling while informative can also create confusion if consumers lack adequate knowledge or if labels are not perceived as personally relevant (Martini & Menozzi, 2021). The effectiveness of calorie information therefore depends not only on its presence but also on customers' perceptions of clarity, usefulness, and trustworthiness. Without positive perceptions, calorie labels may be ignored, misunderstood, or perceived as irrelevant, limiting their intended public health impact.

In urban Asian settings, including Southeast Asia, changing lifestyles and increasing fast-food patronage among young adults and working populations further highlight the need to understand consumer responses to nutrition information. Although international evidence on menu labeling continues to grow, there remains limited localized research examining how Filipino consumers particularly those in highly urbanized areas such as Quezon City perceive calorie information in fast-food restaurants. Given the city's dense concentration of fast-food establishments and its diverse consumer population, examining customer perception of calorie menu labels is essential for evaluating the effectiveness of existing and proposed nutrition policies at the local level. Anchored in Consumer Perception Theory, this study aims to assess customer perception of calorie information on menu labels in selected fast-food restaurants in Quezon City. By understanding how customers perceive, interpret, and value calorie information, the study seeks to contribute empirical evidence that may inform public health strategies, local government initiatives, and restaurant industry practices designed to promote healthier food choices.

#### *Research Questions*

1. What is the demographic profile of the respondents in terms of:
  - 1.1 Age
  - 1.2 Sex
  - 1.3 Civil status
  - 1.4 Frequency of visit
  
2. What is the level of customer perception of calorie information on menu labels in selected fast-food restaurants in Quezon City in terms of:
  - 2.1 Cognitive Response
  - 2.2 Emotional Response
  - 2.3 Behavioral Response
  
3. To what extent does customer perception of calorie information influence their food choice or purchasing decision in fast-food restaurants?
  
4. Based on the findings of the study, what recommendations can be proposed to improve the effectiveness of calorie menu labeling in fast-food restaurants in Quezon City?

Theoretical Framework

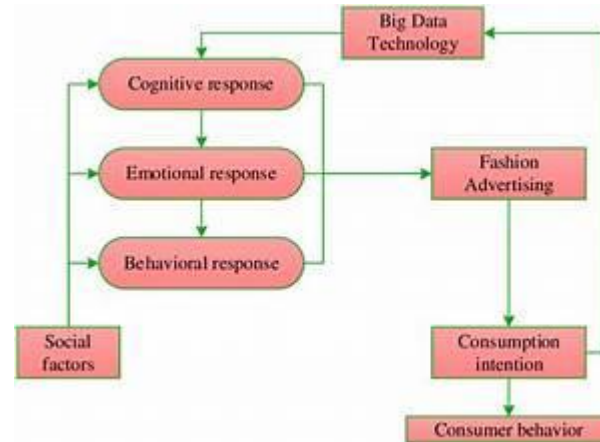


Figure 1. Theoretical Framework: Consumer perception model (Luo, 2023)

This study is grounded in Consumer Perception Theory, which explains how individuals select, organize, and interpret information from their environment to form meaningful judgments that influence attitudes and behavior. In food consumption settings, consumer perception plays a crucial role in how customers understand nutritional information, how they feel about it, and how it ultimately affects their purchasing decisions. Consumer Perception Theory posits that perception is not a passive reception of information but an active psychological process influenced by individual characteristics, prior knowledge, and situational factors. When consumers are exposed to stimuli such as calorie information displayed on fast-food menu labels they interpret this information cognitively, react to it emotionally, and respond behaviorally. Thus, consumer behavior is determined not merely by the presence of information, but by how that information is perceived and evaluated.

In this study, calorie information on menu labels in selected fast-food restaurants in Quezon City serves as the primary stimulus. Customers' perceptions of this information are examined through three interconnected dimensions: cognitive response, emotional response, and behavioral response. These dimensions reflect the perceptual sequence proposed by Consumer Perception Theory, wherein understanding precedes emotional reaction, and emotional reaction influences behavioral outcomes. The cognitive response refers to customers' awareness, understanding, and evaluation of calorie information presented on menu labels. This includes perceptions of clarity, usefulness, and relevance of calorie counts when making food choices. Previous studies have shown that customers who cognitively process and comprehend calorie information are more likely to incorporate nutritional considerations into their purchasing decisions (Rummo et al., 2023; Restrepo, 2024). This supports the theory's assertion that perception begins with information processing and interpretation.

The emotional response involves customers' affective reactions to calorie information, such as concern about health, guilt associated with high-calorie items, motivation to select healthier options, or reassurance when choosing lower-calorie meals. Consumer Perception Theory emphasizes that emotions act as a mediator between cognition and behavior, shaping how information influences decision-making. Empirical evidence suggests that nutrition labeling can elicit emotional reactions that significantly affect consumers' willingness to alter their food choices (Sobaih & Abdelaziz, 2022). The behavioral response represents the actions taken by customers as a result of their cognitive and emotional evaluations. In the context of this study, it refers to food selection and purchasing decisions, such as choosing lower-calorie menu items, reducing portion sizes, or actively using calorie information during ordering. Studies on menu labeling have demonstrated that effective calorie disclosure can lead to reductions in calories purchased, indicating a direct behavioral effect of consumer perception (Rummo et al., 2023). Consumer Perception Theory also recognizes that individual differences influence perceptual processes. Demographic characteristics such as age, sex, civil status, and frequency of visit can affect how customers notice, interpret, and respond to calorie information. Research indicates significant variation in consumers' awareness and use of calorie menu labeling across demographic groups, highlighting the importance of profiling customers to better understand perceptual differences (Restrepo, 2024).

Overall, Consumer Perception Theory provides a strong theoretical foundation for this study by explaining how calorie information on menu labels is cognitively interpreted, emotionally evaluated, and behaviorally acted upon by customers. By examining cognitive, emotional, and behavioral responses alongside demographic characteristics, the theory supports

the investigation of how calorie menu labeling influences food choice decisions and informs recommendations to improve its effectiveness in fast-food restaurants in Quezon City.

### Conceptual Framework

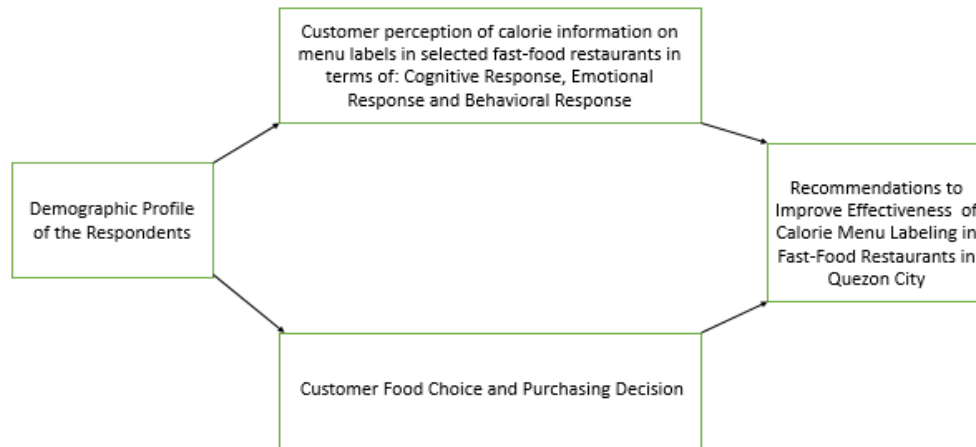


Figure 1. Theoretical Framework: Consumer perception model (Luo, 2023)

This study is guided by Consumer Perception Theory, which explains how consumers interpret information and how these interpretations influence their behavior. The conceptual framework illustrates the relationships among the demographic profile of customers, their perception of calorie information on menu labels, and their resulting food choice or purchasing decisions, leading to recommendations for improving calorie menu labeling in selected fast-food restaurants in Quezon City. The framework begins with the demographic profile of customers, which includes age, sex, civil status, and frequency of visit. These demographic variables are assumed to influence how customers notice, understand, and respond to calorie information. Consumer Perception Theory recognizes that perception is subjective and varies according to individual characteristics and prior experiences; therefore, customers with different demographic backgrounds may perceive calorie menu labels differently.

The central component of the framework is customer perception of calorie information on menu labels, which is examined through three dimensions: cognitive response, emotional response, and behavioral response. The cognitive response refers to customers' awareness and understanding of calorie information and its perceived usefulness in making food choices. The emotional response pertains to customers' feelings elicited by calorie information, such as concern for health, motivation to choose healthier options, or guilt associated with high-calorie foods. The behavioral response represents customers' tendencies or actions related to the use of calorie information, such as paying attention to labels or considering calorie content when ordering. These three perceptual dimensions collectively influence the food choice or purchasing decision of customers in fast-food restaurants. In line with Consumer Perception Theory, the framework assumes that when customers cognitively process calorie information and experience emotional reactions toward it, they are more likely to modify their purchasing behavior, such as choosing lower-calorie menu items or making more health-conscious food selections.

Finally, the outcomes of the analysis serve as the basis for proposed recommendations aimed at improving the effectiveness of calorie menu labeling in fast-food restaurants in Quezon City. These recommendations may focus on enhancing the clarity, visibility, and presentation of calorie information to positively influence customer perception and support healthier food choices.

## Methodology

### Research Design

This study employed a quantitative-descriptive research design to assess customer perception of calorie information on menu labels in selected fast-food restaurants in Quezon City. A quantitative approach was used to collect numerical data that describe respondents' demographic characteristics, levels of perception, and the influence of calorie information on food choice or purchasing decisions. The descriptive design was appropriate because the study aimed to describe, analyze,

and interpret existing conditions without manipulating variables, focusing on customers' perceptions and responses as they naturally occur.

#### *Population and Sample of the Study*

The population of the study consisted of customers dining in selected fast-food restaurants located in Quezon City. Due to accessibility and relevance to the research focus, the study utilized purposive sampling, wherein respondents were deliberately selected based on the criterion that they had experience ordering food from fast-food restaurants with calorie information displayed on menu labels. A total of 100 respondents participated in the study. This sample size was deemed sufficient to provide meaningful quantitative insights into customer perception while remaining manageable for data collection and analysis. The respondents were selected from various fast-food establishments in Quezon City to ensure diversity in customer profiles and dining frequency.

#### *Data Gathering Procedure*

The primary data-gathering instrument used in the study was a self-administered survey questionnaire, which was structured into three major parts. The first part focused on the demographic profile of the respondents, collecting information on age, sex, civil status, and frequency of visit to fast-food restaurants. The second part measured the level of customer perception of calorie information on menu labels, specifically in terms of cognitive response, emotional response, and behavioral response. The third part assessed the extent to which calorie information influenced respondents' food choice or purchasing decisions in fast-food restaurants.

Prior to data collection, permission was sought from the management of selected fast-food restaurants to allow the distribution of questionnaires. Respondents were approached while dining or after ordering their meals and were informed of the purpose of the study. Participation was voluntary, and confidentiality of responses was assured. The questionnaires were distributed personally to ensure proper explanation of instructions and immediate clarification of questions when necessary. Respondents were given sufficient time to answer the questionnaire before retrieval. Completed questionnaires were checked for completeness and accuracy prior to data encoding and analysis.

#### *Statistical Treatment of Data*

The collected data were organized, tabulated, and analyzed using appropriate descriptive statistical tools. Frequency and percentage distribution were used to describe the demographic profile of the respondents in terms of age, sex, civil status, and frequency of visit to fast-food restaurants. The weighted mean was employed to determine the level of customer perception of calorie information on menu labels in terms of cognitive, emotional, and behavioral responses. The interpretation of the weighted mean was guided by the following scale: 3.26–4.00 interpreted as Strongly Agree, 2.51–3.25 as Agree, 1.76–2.50 as Disagree, and 1.00–1.75 as Strongly Disagree. To determine the extent to which customer perception of calorie information influences food choice or purchasing decisions, mean scores and corresponding descriptive interpretations were likewise used. The results of the statistical analysis served as the basis for formulating recommendations to improve the effectiveness of calorie menu labeling in fast-food restaurants in Quezon City.

## **Results and Discussion**

#### *Demographic Profile of the Respondents*

The results show that most of the respondents were young adults. A total of 63% belonged to the 18–28 age group, followed by 33% aged 29–44, while only 4% were 45 years old and above. This indicates that fast-food restaurants in Quezon City are mostly patronized by younger customers, who are more likely to notice and respond to menu information such as calorie labels. In terms of sex, 68% of the respondents were female, while 32% were male. This suggests that female customers were more dominant among fast-food diners and may be more attentive to nutrition-related information, including calorie menu labeling.

Regarding civil status, the majority of the respondents were single (84%), while 16% were married. No respondents were widowed or separated. This result is consistent with the age distribution, as younger individuals are more likely to be single and to dine frequently in fast-food restaurants. As to the frequency of visit, most respondents were regular fast-food customers. 36% reported visiting often, 29% visited always, and 27% visited sometimes. Only 8% visited rarely, and none reported never visiting fast-food restaurants. This indicates that the respondents had sufficient exposure to fast-food menus, making them appropriate participants for assessing perceptions of calorie information.

Overall, the findings show that the respondents were mostly young, single, female, and frequent fast-food visitors, supporting the relevance of their responses in evaluating customer perception of calorie information on menu labels in Quezon City.

#### *Customer Perception of Calorie Information on Menu Labels*

##### *A. Cognitive Response*

The cognitive response of customers to calorie information on menu labels produced an overall weighted mean of 3.01, indicating a high level of cognitive engagement. This suggests that respondents are generally aware of calorie information, find it understandable, and perceive it as credible when making food choices in fast-food restaurants. High weighted means for ease of understanding (WM = 3.26), trust in accuracy (WM = 3.13), and awareness (WM = 3.02) indicate that calorie menu labeling is cognitively accessible to consumers. These findings suggest that current menu labeling formats successfully communicate nutritional information in a manner that is clear and noticeable. Recent research supports this result, showing that simplified and prominently displayed calorie information enhances consumer knowledge and comprehension during decision-making processes (Taillie et al., 2021).

However, the comparatively lower weighted mean for the usefulness of calorie information when choosing food (WM = 2.76) implies that awareness and understanding do not always translate into active utilization. This reflects the possibility that consumers may cognitively process calorie information but still rely on taste preferences, habits, or price when selecting food. Similar findings were reported by Grummon and Hall (2022), who noted that while calorie labels improve nutritional awareness, their practical influence depends on individual motivation and situational factors. Overall, the cognitive results indicate that calorie labeling is effective in informing consumers, although further strategies may be needed to encourage consistent application of this knowledge in food selection. This aligns with recent evidence suggesting that enhancing contextual cues and interpretive labeling can further strengthen the cognitive use of calorie information (Petimar et al., 2023).

##### *B. Emotional Response*

The emotional response dimension yielded an overall weighted mean of 3.15, reflecting a strong emotional impact of calorie menu labeling on consumers. This result demonstrates that calorie information evokes health-related emotions that may influence food choice behavior. Respondents reported heightened concern about their health when viewing calorie information (WM = 3.32), as well as increased motivation to select healthier food options (WM = 3.24) and encouragement from seeing lower-calorie menu items (WM = 3.22). These findings indicate that calorie labels elicit positive emotional reactions that support healthier dietary intentions. Recent studies confirm that exposure to calorie information increases health consciousness and emotional engagement, particularly among individuals concerned with weight management (Bleich et al., 2021). Lower yet still positive responses for hesitation toward high-calorie foods (WM = 2.98) and sense of responsibility (WM = 2.98) suggest variability in emotional sensitivity among consumers.

While some individuals experience discouragement when faced with high-calorie content, others may exhibit emotional resistance or desensitization. This pattern is consistent with findings by Song et al. (2022), who observed that emotional responses to nutritional labels vary based on personal health goals and prior dietary habits. Overall, the emotional response findings imply that calorie labeling plays a significant motivational role by triggering concern, encouragement, and accountability. Recent evidence highlights that emotional reactions serve as a key mechanism linking nutritional information to healthier intentions (Roberto et al., 2022).

##### *C. Behavioral Response*

The behavioral response to calorie menu labeling obtained an overall weighted mean of 3.11, indicating a positive behavioral influence on consumers' food-ordering practices. This suggests that calorie information does not remain at a cognitive or emotional level but actively shapes consumer behavior. Respondents reported avoiding high-calorie food items when calorie information was available (WM = 3.24) and choosing lower-calorie options due to menu labels (WM = 3.16). The use of calorie information to guide food selection also showed a high response (WM = 3.12), demonstrating that calorie labeling effectively supports healthier food choices in practice. These findings are consistent with recent experimental and observational studies showing reductions in calories ordered after the implementation of menu labeling policies (Petimar et al., 2022).

Although paying attention to calorie information during ordering had a slightly lower mean (WM = 2.97), and effects on ordering frequency registered WM = 3.05, the results still indicate meaningful behavioral change. According to Taillie et al. (2021), even modest shifts in purchasing behavior associated with calorie labeling can result in significant population-level

health benefits over time. Overall, the findings confirm that calorie menu labeling is an effective behavioral intervention that guides consumers toward healthier eating decisions in fast-food environments, aligning with recent public health evaluations (Grummon et al., 2023).

#### *Influence of Calorie Information on Food Choice or Purchasing Decision*

The findings indicate that calorie information exerts a positive influence on consumers' food choices and purchasing decisions in fast-food restaurants. The overall weighted mean of 2.97 suggests that respondents generally agree that the presence of calorie information affects how they decide what food items to purchase. The highest weighted mean was observed for the statement "I am more likely to purchase items with lower calorie content" (WM = 3.11), highlighting that calorie labeling encourages consumers to consciously consider lower-calorie alternatives. This is supported by similarly high ratings for statements indicating that calorie information influences final food choices (WM = 3.06) and is considered important in decision-making (WM = 3.01). These results suggest that calorie menu labeling functions as a practical guide that supports more health-oriented purchasing behavior at the point of sale.

Recent evidence supports this observation. A cohort study by Rummo et al. (2023) found that menu calorie labeling in a large U.S. fast-food chain was associated with sustained reductions in calories purchased per transaction, indicating that consumers respond to calorie disclosures by selecting lower-calorie options. Similarly, experimental research by VanEpps et al. (2021) demonstrated that enhanced calorie information presentation led consumers to revise their orders in real time, resulting in meals with fewer total calories. These findings align with the current results, which show that consumers actively use calorie information when making purchasing decisions. Statements related to changing habitual behavior, such as "I change my usual order after seeing calorie information" (WM = 2.82), recorded slightly lower agreement. This suggests that while calorie information influences decision-making, ingrained preferences and ordering habits may reduce the likelihood of major changes for some consumers. Nonetheless, respondents still agreed that calorie labeling helps them make better purchasing decisions (WM = 2.85), implying that even if habits are not always altered, decision quality is improved. This pattern is consistent with the findings of Grummon et al. (2023), who reported that calorie and nutrient labeling prompts incremental yet meaningful shifts in purchasing behavior rather than immediate large-scale changes. Their study emphasized that repeated exposure to calorie information can gradually shape consumer preferences and reinforce healthier choices over time.

Overall, the results indicate that calorie menu labeling positively influences food choice and purchasing decisions by promoting awareness of calorie content, encouraging the purchase of lower-calorie items, and supporting informed decision-making. Although habitual eating patterns may temper the extent of change, calorie information remains an effective tool for guiding consumers toward healthier purchasing behaviors in fast-food settings.

## **Conclusion and Recommendations**

This study examined Customer Perception of Calorie Information on Menu Labels in Selected Fast-Food Restaurants in Quezon City, focusing on customers' demographic profile, their cognitive, emotional, and behavioral responses to calorie information, and the influence of such information on food choice and purchasing decisions. Based on the findings, it can be concluded that fast-food customers in Quezon City are predominantly young, single, female, and frequent fast-food diners, indicating a population that is regularly exposed to menu information and therefore relevant for assessing perceptions of calorie labeling. Their frequent visits suggest ample opportunity for calorie menu labels to influence awareness and behavior. In terms of customer perception, the study revealed generally positive responses across the cognitive, emotional, and behavioral dimensions. Customers demonstrated a high level of cognitive awareness, indicating that calorie information is noticeable, understandable, and trusted. However, while respondents understand calorie information, its consistent use in actual food selection is sometimes limited by personal preferences, habits, and taste considerations.

The emotional response registered the highest overall perception, showing that calorie menu labeling effectively evokes health-related concern, motivation, and encouragement toward healthier food choices. This highlights the importance of emotional engagement as a driver of healthier eating intentions. The behavioral response results further confirmed that calorie information goes beyond awareness and emotions, translating into practical actions such as avoiding high-calorie items and choosing lower-calorie alternatives. Although changes in habitual ordering were not always strong, respondents still acknowledged that calorie labels helped them make better purchasing decisions.

Finally, the study established that calorie information has a positive influence on food choice and purchasing decisions, with respondents more likely to select lower-calorie items and consider calorie content important when ordering. While deeply ingrained habits may limit immediate behavioral change, calorie menu labeling clearly supports more informed, health-conscious decision-making. Overall, the findings support the conclusion that calorie menu labeling is an effective

informational and behavioral tool that enhances customer awareness, motivates healthier attitudes, and influences purchasing behavior in selected fast-food restaurants in Quezon City.

Based on the findings and conclusions of the study, the following recommendations are proposed to improve the effectiveness of calorie menu labeling in fast-food restaurants in Quezon City:

#### *For Fast-Food Restaurant Management*

- Enhance the visibility and design of calorie labels by using clear fonts, contrasting colors, and strategic placement near menu items to ensure that calorie information captures customer attention more effectively.
- Complement calorie information with simple interpretive cues, such as labels indicating “lower calorie choice” or “healthier option,” to assist customers who find numerical calorie values difficult to apply during decision-making.
- Promote lower-calorie menu options through marketing materials and menu highlights to encourage healthier choices without limiting customer freedom.

#### *For Local Government Units and Policymakers*

- Strengthen the implementation and monitoring of calorie labeling ordinances to ensure consistent compliance among fast-food establishments across Quezon City.
- Conduct public nutrition awareness campaigns that educate consumers on how to interpret and use calorie information, helping translate awareness into sustained behavioral change.

#### *For Consumers*

- Customers are encouraged to actively consider calorie information alongside taste preferences when selecting food, using menu labels as a guide for healthier and more balanced choices.

#### *For Future Researchers*

- Future studies may explore the relationship between demographic variables and calorie label use or examine the long-term effects of repeated exposure to calorie menu labeling on eating habits.
- Researchers may also consider including qualitative methods, such as interviews or focus group discussions, to gain deeper insights into barriers that prevent customers from fully utilizing calorie information.
- Expanding the study to include other cities or different types of food establishments may improve the generalizability of the findings.

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## **Competing Interests Statement**

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this article.

## **Data Availability Statement**

Data sharing is not applicable to this article as no new data were created or analyzed in this study; all data used were obtained from previously published sources as cited in the reference list.

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## Appendices

No appendices are attached to this study.