

Plate Waste and Student-Reported Reasons for Food Rejection in a High School Cafeteria

Chandani Kushwaha¹, LeAnne K. Pollock¹, Darlene H. Locke², Jun Wang¹

¹Texas A&M University, ²Texas A&M AgriLife Extension Service



TEXAS A&M
UNIVERSITY

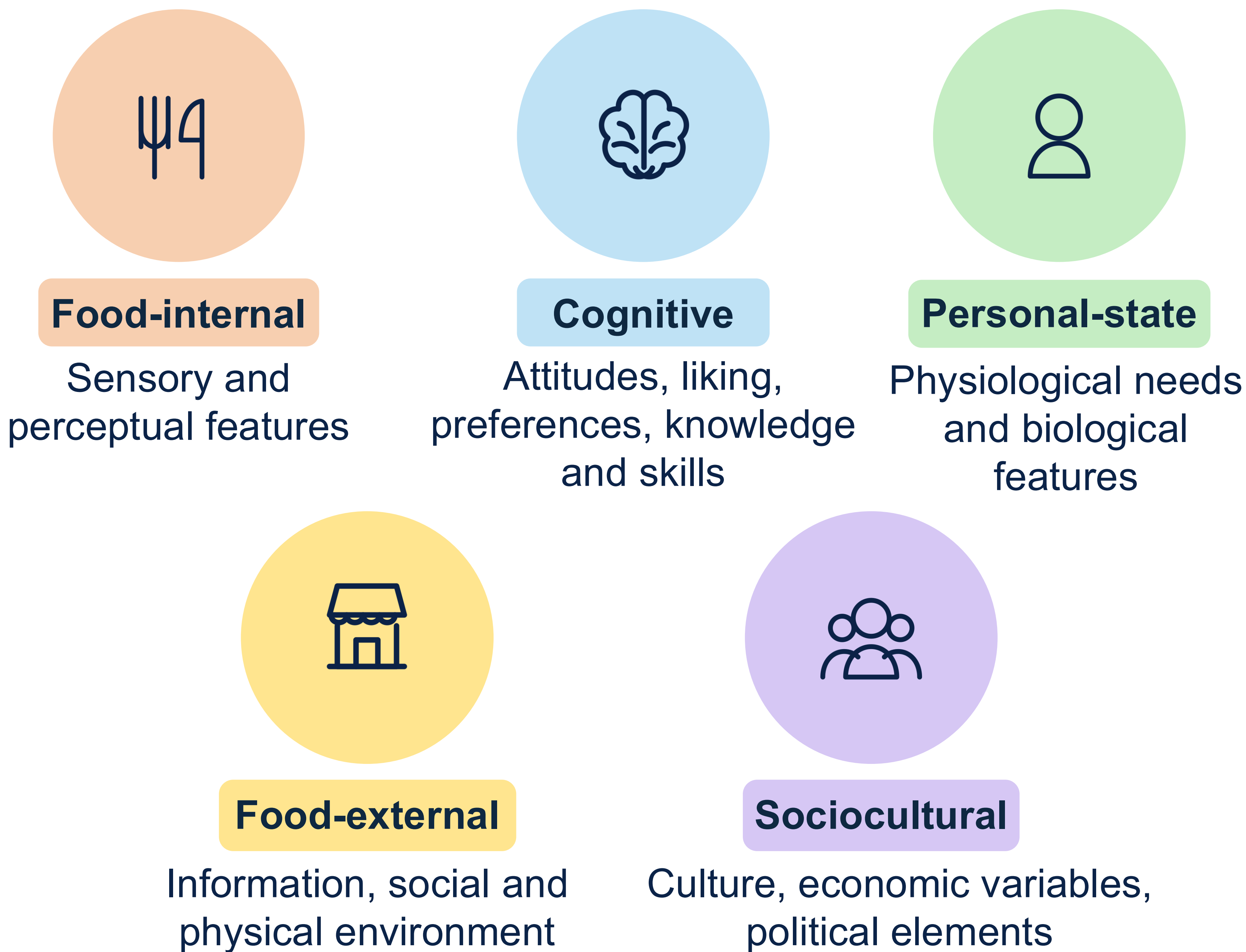
INTRODUCTION

- Food waste is a major U.S. challenge: 30–40% of food produced goes unconsumed, and approximately 30% of food provided through the the National School Lunch Program (NSLP) goes uneaten (Shanks et al., 2017; USDA, 2026).
- In school settings, food quality including taste, texture, and smell has been identified as a barrier to eating lunch, alongside limited time and lack of choice (Zhao et al., 2019).
- Food waste audits document plate waste, but student-reported reasons for not eating are less systematically examined and organized to inform targeted waste-reduction strategies.

Objective: To examine student-reported reasons for not finishing specific food items served in a high school National School Lunch Program cafeteria.

CONCEPTUAL FRAMEWORK

Guided by Chen and Antonelli’s (2020) five-factor food choice determinants framework, adapted to examine student-reported reasons for leaving school lunch uneaten.

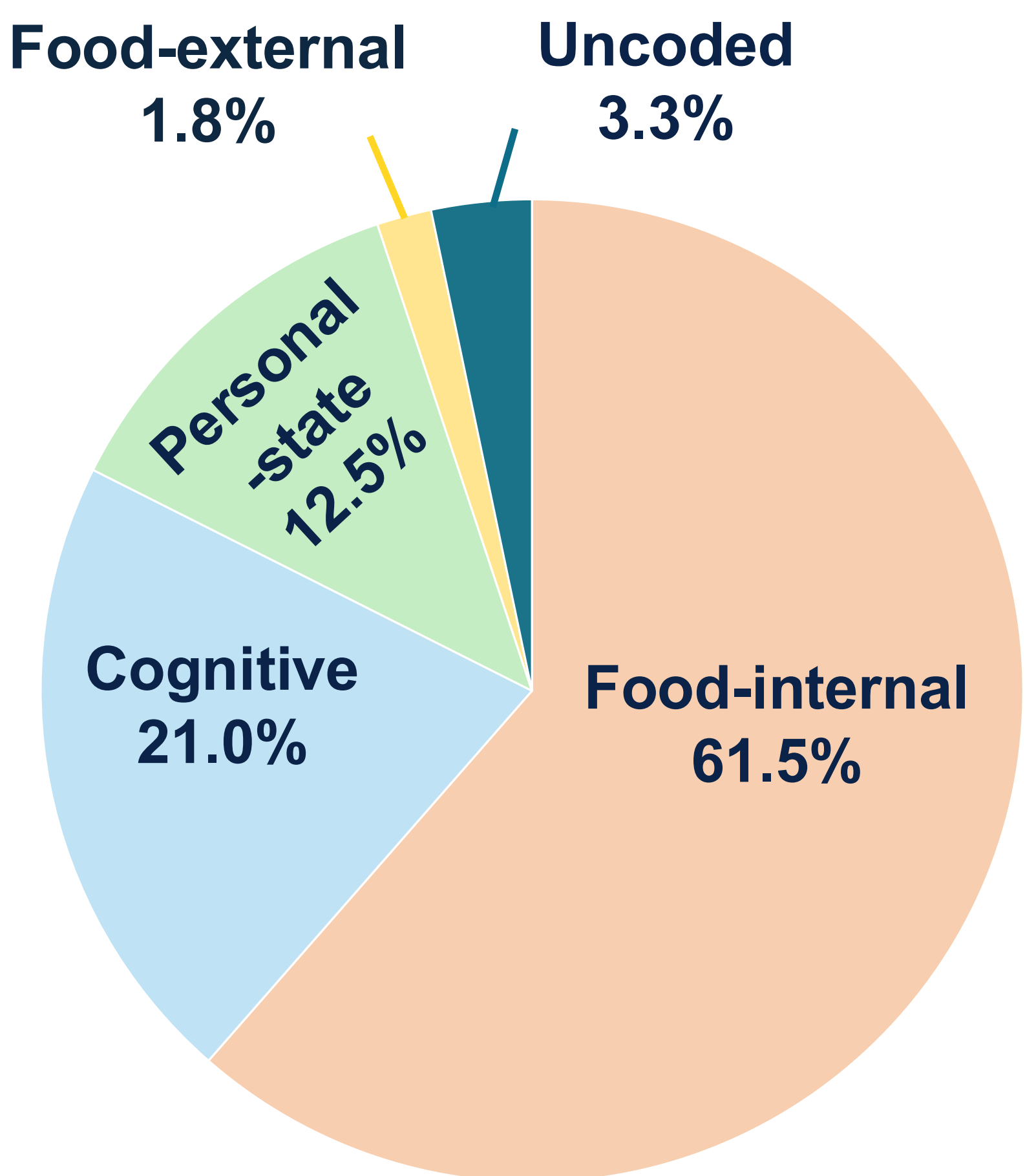


METHODS

- Setting:** Two food waste audits, following Environmental Protection Agency (EPA) guidance, were conducted at an NSLP-participating high school in a major metropolitan city in Texas.
- Data Collection:** During each audit, uneaten food was collected, sorted, and weighed across all four lunch periods within the audit day, while student-led teams asked why students did not finish a specific food item.
- Sample:** 447 responses were collected; 416 were analyzed.
- Data Analysis:** Student-reported reasons were examined using directed content analysis (Hsieh & Shannon, 2005), guided by Chen and Antonelli’s (2020) food choice determinants framework.

RESULTS

Factors Associated With Food Rejection



Note: Sociocultural factors were not observed in student responses

Reasons Within Factors

Factor	Sub-Factor	Reasons
Food-internal	Sensory features	Taste; Texture; dryness; Sogginess; bad taste
	Perceptual features	bad presentation; unappetizing
Cognitive	Attitude, Liking, and preference	doesn't like; didn't want; just wanted chips; preferred grapes
	Knowledge	unfamiliar food; doesn't know what it is
Personal-state	Physiological needs	Full; not hungry
	Biological features	sick, allergies; lactose intolerance
Food-external	Physical environment	didn't have time to eat; want more options
Uncoded		forced to take; throwing away all lunch

CONCLUSIONS

- Food-internal factors predominated, suggesting that students’ willingness to eat school meals depends largely on the food’s sensory and perceptual qualities, particularly taste, texture, and appearance.
- Cognitive factors also influenced meal acceptance, whereas hunger, health conditions, and cafeteria conditions played comparatively smaller roles.

IMPLICATIONS

- School Nutrition Professionals & Cafeteria Managers:** Enhance the sensory quality and presentation of meals and incorporate student feedback and choice into menu planning.
- Agricultural Educators & School Sustainability Programs:** Use student-led food waste audits that capture reasons for rejection to inform targeted waste-reduction efforts.

ABSTRACT & REFERENCES

