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Food Fraud and Consumer Concerns: Vulnerable Food Items in Uyo Metropolis, Akwa Ibom State, Nigeria

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ABSTRACT

Background and Objective: Food fraud poses significant risks to consumer health, market integrity, and food system sustainability, particularly in countries where informal food markets dominate. Food fraud is more risky than traditional food safety negligence as the motives are deliberate, the acts are intentional to avoid detection, and are basically designed for economic gains. This study assessed consumers' concerns and food items most vulnerable to food fraud in Uyo Metropolis, Akwa Ibom State, Nigeria. **Materials and Methods:** A cross-sectional survey design was adopted using primary data collected from 110 consumers in Uyo Metropolis, Akwa Ibom State, Nigeria. Data were obtained through a structured questionnaire covering awareness, information access, training, and perceived vulnerability of food items to fraud. Responses were analyzed using descriptive statistics and a Likert-type rating scale to assess levels of concern and perception. **Results:** The findings showed that the consumers were highly aware (94.55%) of food fraud, and 41.82% had regular access to information on food fraud with very few (18.18%) having received training on food fraud detection. Non-alcoholic beverages (65.45%), fruits and vegetables (58.18%), and alcoholic and fermented beverages (55.45%) were the food items most vulnerable to fraud. Consumers expressed strong concern about adulteration (72.73%), artificial enhancement (75.45%), mislabeling (80.91%), and artificial ripening of fruits (89.09%). **Conclusion:** Non-alcoholic, alcoholic, and fermented beverages, fruits and vegetables were most vulnerable food items. consumers susceptible to deceptive market practices. The findings highlight a coordinated multi-level strategy involving targeted public education, expanded information access, and strengthened market surveillance.

KEYWORDS

Food fraud, consumers, health, vendors, vulnerable foods

INTRODUCTION

Africa's population is expected to reach about 2.4 billion by 2050, making the provision of safe, healthy, and nutritious diets a major challenge for food systems[1]. Food fraud, which is the deliberate adulteration, substitution or misrepresentation of food products for economic gain[2,3] has gain global attention in recent

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years. Globally, this illicit practice costs an estimated $10-15 billion annually[4] and poses serious health hazards to consumers. Adulterated foods have been linked to illnesses ranging from gastrointestinal upset to neurological damage and cancer[5,6]. In Sub-Saharan Africa weak regulation and complex food supply chains further enable such fraud[1,7]. Nigeria in particular has experienced a high incidence of food fraud. In 2022, Nigeria recorded the most food fraud cases in Africa, often involving staples such as cereals, bakery goods and edible oils[1,8], but with lower reported cases (11.9%) as compared to Ghana (42.4%)[8]. The Nigerian food system, characterized by complex supply chains and informal markets, is particularly vulnerable to fraudulent practices such as adulteration, mislabeling, and substitution, which compromise food safety, erode consumer trust, and threaten food security[9]. Local observers have even connected these practices to fatalities: For example, adulterated foods have caused deaths, especially among vulnerable Nigerians (children, the elderly and immuno-compromised people)[10].

Consumer awareness is critical to preventing fraud, yet evidence suggests many Nigerians remain poorly informed. In a nationwide survey, roughly one-third of respondents reported they had never heard the term "food fraud"[11]. Among those who were aware, knowledge of specific scams varied widely. For instance, 82% of survey participants knew about Nigeria's notorious "plastic rice" scandal, but far fewer (around 15-25%) had heard of adulteration in spices, alcoholic drinks or honey[11,12]. These results imply that while high-profile incidents may be widely publicized, numerous common adulteration practices go largely unnoticed by ordinary consumers.

At the local level, Nigerian authorities are beginning to respond to these risks. In Uyo, Akwa Ibom State, regulators held a market outreach campaign in 2025 warning vendors about palm oil adulteration, chemically ripened fruits and other unsafe practices[13]. Officials emphasized that such unsafe foods "endanger lives" and "undermine trust in markets"[14], emphasizing the need for vigilance. They urged consumers to be informed and empowered with "the knowledge and tools" to demand safer food[14]. Food fraud in Nigeria has been documented as a pervasive issue, with studies reporting widespread adulteration, mislabeling, and substitution across various food categories[2,11,12]. Nationwide surveys reveal that approximately 46.5% of Nigerian consumers are aware of food fraud, while 38.1% are unaware and 15.4% remain unsure, indicating significant gaps in public knowledge[2]. Awareness is often linked to education and exposure to high-profile incidents, such as the sale of "plastic rice" and counterfeit beverages[11]. Adulteration is consistently identified as the most prevalent form of food fraud, with packaging and manufacturing stages in the supply chain being particularly vulnerable[2].

Commonly targeted food items include alcoholic drinks, dairy products, honey, rice, tomato paste, oils, and spices[2,11,12]. Informal markets, which dominate the Nigerian food landscape, are especially susceptible due to weak regulatory enforcement and socio-economic pressures[9]. Studies also note that consumer concern about food fraud is high, with many expressing distrust in the safety and authenticity of both local and imported products[9,13]. Nevertheless, no empirical study has yet assessed what consumers in Uyo Metropolis actually know or experience regarding food fraud. This gap is important because without reliable information, neither consumers nor policymakers can effectively target education and enforcement efforts.

Food fraud in Nigeria is a widespread threat to public health and market confidence[8,10], but it remains unclear how much local consumers in Uyo are aware of the problem. Existing literature indicates that Nigerian consumers most frequently encounter fraud in products such as cooking oils, fats, alcoholic/non-alcoholic drinks, and honey[10] yet it is unknown whether Uyo residents recognize these or other items as vulnerable. In the absence of local data, government agencies and health advocates lack guidance on where to focus awareness campaigns. Scholars noted that promoting public awareness and consumer education is an essential strategy to prevent food adulteration[1,5,15-18]. By identifying current knowledge gaps in Uyo, this research will help tailor such educational campaigns. In sum, the study is warranted by

the urgent need to empower Nigerian consumers to protect their health and to uphold confidence in the food supply[5]. To address this need, the present study asks three key questions about food fraud in Uyo metropolis: Are local consumers aware of what constitutes food fraud? What types of fraudulent practices do they observe in the food market? And which food items do they perceive as the most vulnerable to food fraud? Specifically, this study assessed consumers' awareness and concern on food fraud and identified the most vulnerable food items in the study area.

MATERIALS AND METHODS

Study area: The study was conducted in Uyo metropolis, the capital of Akwa Ibom State, Nigeria. Uyo is situated 55 km inland from the coastal plain of Southeastern Nigeria. It has a population of 305,961 people. The area lies within the humid tropical rainforest zone with two distinct seasons, wet and dry. The annual precipitation ranges from 2000-3000 mm per annum. The area is located within Latitude 5°17′ and 5°27′ N and Longitude 70°27′ and 70°58′ E and covers an area of approximately 35 km^2. Uyo is a fast-evolving metropolis with considerable governmental, civil, and commercial activities, comprising major residential, commercial, and institutional zones with a growing population. The inhabitants of Uyo engage in part-time farming for food security. Uyo Metropolis is a home to a broad spectrum of consumers from various socio-economic backgrounds, with varying income levels, educational backgrounds, and dietary preferences, the diversity of economic activities makes it suitable location for studying consumers behaviour, awareness levels towards food fraud[16]. The study was conducted for a period of three months between September and November, 2025.

Sampling procedure: This study adopted simple random sampling to select respondents from the four clans in Uyo metropolis, namely Offot, Oku, Ikono, and Etoi. Through the assistance of the Uyo Capital City Development Authority (UCCDA), a list of households in each clan was obtained, from which 30 households were randomly selected each, from Offot, Oku and Etoi clans, while 20 households were selected from Ikono clan (since majority of the population in Ikono clan could be classified as peri-urban, hence the households close to the metropolis were selected) to make a total of 110 households for the study.

Method of data collection: Primary data were collected using well-structured questionnaires administered to food consumers. The questionnaires included information on household characteristics, consumer's awareness, food items that are most vulnerable to food fraud. Data were analyzed using descriptive statistics such as percentages, means, and likert type rating scale.

Data analysis: Descriptive statistics such as means, frequency counts and percentages were used to analyze the sociodemographic distribution, awareness of food fraud, food items most vulnerable to food fraud, and consumers' concern for food fraud. Food items vulnerable to food fraud was analyzed using a 5-point Likert type scale rating that was graded as; Very Vulnerable = 5, Vulnerable = 4, Slightly Vulnerable = 3, Not Vulnerable = 2, and Not Vulnerable at all = 1. A benchmark of 3.0 was obtained, and responses that fall above the benchmark was adjudged to be vulnerable and responses below the benchmark were adjudged not vulnerable.

RESULTS AND DISCUSSION

Level of awareness about food fraud in the study area: Table 1 presents respondents' awareness, access to information, training, perception, and health consciousness with respect to food fraud. The result shows that nearly all respondents reported being aware of food fraud (94.55%). This high prevalence of reported awareness indicates that the concept of food fraud is widely recognized among the respondents. Widespread awareness is a necessary condition for consumer action, since individuals who are unaware cannot adopt protective behaviours or demand safer products. However, awareness alone does not guarantee accurate knowledge or corrective behaviour, and must be considered alongside measures of

Table 1: Awareness of food fraud in the study area (n = 110)

Awareness of food fraud	Frequency (n = 110)	Percentage
Yes	104	94.55
No	6	5.45
Level of awareness		
High	38	34.55
Moderate	58	52.73
Low	14	12.73
Access to food fraud information		
Yes	46	41.82
No	64	58.18
Food fraud training		
Yes	20	18.18
No	90	81.82
Perception of food fraud		
High	49	44.55
Low	17	15.45
Normal	43	39.09
Health consciousness		
Yes	77	70
No	33	30

Source: Field survey, 2025

depth of knowledge, information access and practical training. When asked to self-rate their level of awareness, the majority classified their awareness as moderate (52.73%), while 34.55% of the respondents reported high awareness and 12.73% of the respondents reported low awareness. The predominance of a moderate level suggests that many consumers possess a basic or partial understanding of food fraud rather than comprehensive expertise. This pattern implies potential vulnerability to sophisticated forms of fraud that are not easily detected by routine inspection. Interventions that move consumers from moderate to high knowledge, such as practical detection skills and clear guidance on common fraud markers, are therefore warranted. Additionally, less than half of respondents reported regular access to food fraud information (41.82%), and only 18.18% of the respondents had received any form of formal training on the topic. These findings indicate a gap between general awareness and structured information dissemination or capacity building. Limited access to reliable information and scarce training opportunities reduces the likelihood that consumers will be able to verify product claims, trace supply chains, or use formal reporting channels.

In addition, respondent perception of the magnitude of food fraud was divided, with 44.55% of the respondents perceiving food fraud as a high problem, 39.09% of the respondents regarding it as normal, and 15.45% regarding it as a low problem. The plurality that perceives food fraud as a serious concern implies that, consumers view it as a threat to food safety, quality or value. The majority of respondents reported being health conscious with regard to food choices (70%). High reported health consciousness suggests potential receptivity to messages linking food fraud to health risks, and to behaviour changes such as preferring certified brands, checking expiry dates, or avoiding unbranded vendors. Health consciousness can be leveraged in consumer education campaigns to promote both preventive purchase behaviours and the use of complaint mechanisms when fraud is suspected[11,13].

Consumers' experience on food fraud activities in the study area: The result from Table 2 indicates that the majority of the respondents (82.73%) have experienced a form of food fraud, 10.91% of the respondents are not certain if they have experience food fraud, while 6.36% of the respondents reported that they have not experienced food fraud. This very high rate of personal experience suggests that food fraud is not a hypothetical or distant issue for consumers in the study area. Frequent personal encounters likely influence purchasing choices by increasing vigilance and prompting consumers to rely more heavily on trusted vendors, branded products, or markets perceived to have stronger quality controls. The proportion of respondents who were unsure may reflect instances where adulteration or substitution was suspected but not confirmed, illustrating the difficulty many consumers face in detecting fraud with certainty[13].

Table 2: Consumers' experience on food fraud activities in the study area (n = 110)

Category	Frequency	Percentage
Personal experience		
Yes	91	82.73
No	7	6.36
Unsure	12	10.91
Acquaintance experience		
Yes	42	38.18
No	22	20
Unsure	46	41.82

Source: Field survey, 2025

Table 3: Food items most vulnerable to food fraud in the study area

Food category*	Frequency	Percentage	Rank
Non-alcoholic beverages	72	65.45	1st
Fruits and vegetables	64	58.18	2nd
Alcoholic and fermented beverages	61	55.45	3rd
Fast foods	39	35.45	4th
Meat and meat products	38	34.55	5th
Fish and fish products	23	20.91	6th
Herbs, spices and seasonings	23	20.91	6th
Poultry and poultry products	20	18.18	8th
Cereals	20	18.18	8th
Eggs	14	12.73	10th
Nuts and seeds	10	9.09	11th
Roots and tubers	9	8.18	12th
Seafood	6	5.45	13th

Source: Field survey, 2025, *Multiple responses

Also, indirect exposure through acquaintances appeared more evenly distributed. About 38.18% of respondents reported that someone they knew had experienced food fraud, 20% reported no such experience, and a relatively large proportion, 41.82%, were unsure. The high share of uncertainty suggests that many consumers are not fully informed about the experiences of those in their social networks, possibly due to limited communication or the normalization of fraudulent practices to the extent that they are not frequently discussed. Additionally, the proportion reporting acquaintance experience reinforces that food fraud is not confined to isolated incidents but occurs sufficiently often to circulate within social circles[17].

Table 3 reports the food items/category that are more vulnerable to food fraud in Uyo Metropolis, ordered by frequency and rank. The most commonly reported food items/category was non-alcoholic beverages (65.45%, 1st). This preeminence may reflect consumers' frequent purchase of packaged and unpackaged drinks, the relative ease of adulteration or dilution in liquid products, and visible quality changes that make deception more detectable. Consumer concern about beverages can be driven by cases of substitution, use of non-food grade additives, or mislabelling of ingredients and expiry dates. Because beverages are widely consumed and often sold in informal settings, the high ranking signals an important area for regulatory inspection and public information campaigns.

Fruits and vegetables ranked second most cited category (58.18%, 2nd). This likely reflects consumer awareness of post-harvest manipulations and chemical treatments such as excessive pesticide application, dyeing or water-based weight enhancement. The perishable nature of these products and the multiplicity of actors in the supply chain increase opportunities for economically motivated malpractice. Consumer reports of fraud in this category emphasize the need for source-tracing, good agricultural and handling practices, and clearer labelling for produce sold in packaged form.

Table 4: Consumers concern about food fraud issues in the study area

Issues	Yes	No	Unsure
Adulteration	80 (72.73%)	6 (5.45%)	24 (21.82%)
Addition	70 (63.64%)	12 (10.91%)	28 (25.45%)
Artificial enhancement	83 (75.45%)	7 (6.36%)	20 (18.18%)
Dilution	74 (67.27%)	7 (6.36%)	29 (26.36%)
Artificial ripening of fruits	98 (89.09%)	6 (5.45%)	6 (5.45%)
Counterfeiting	84 (76.36%)	9 (8.18%)	17 (15.45%)
Mislabeling	89 (80.91%)	9 (8.18%)	12 (10.91%)
Smuggling	48 (43.64%)	20 (18.18%)	42 (38.18%)
Substitution	66 (60.00%)	16 (14.55%)	28 (25.45%)
Misrepresentation	67 (60.91%)	16 (14.55%)	27 (24.55%)

Source: Field survey

Alcoholic and fermented beverages ranked third (55.45%, 3rd). Incidents of adulteration, substitution with industrial alcohol or methanol, and illicit production are commonly perceived risks associated with alcoholic products, and the result suggest substantial consumer concern. The public health implications of fraud in this category are acute because of the potential for toxic effects.

Mid-ranked categories such as fast foods (35.45%, 4th), meat and meat products (38, 34.55%, 5th), fish and fish products, and herbs, spices and seasonings (20.91%, 6th respectively) reflect heterogeneous sources of consumer worry. For fast foods, concerns may centre on use of substandard ingredients, undeclared additives and poor storage practices. For meat and fish, respondents may perceive substitution with lower-quality cuts, improper use of preservatives, or mislabelling of species. The equal placement of fish and herbs suggests similar perceived exposure to manipulation or contamination, though the specific mechanisms differ between animal and botanical products.

Lower-ranked categories included poultry and poultry products, cereals (18.18%, 8th respectively), eggs (12.73%, 10th), nuts and seeds (9.09%, 11th), roots and tubers (8.18%, 12th) and seafood (5.45%, 13th). The relatively low frequency for staples such as cereals and roots may indicate either lower perceived risk or lower detectability of fraud in those commodities. Consumers may find it more difficult to detect substitution or adulteration in dry staples and root crops without laboratory testing. Alternatively, lower ranking could reflect reliance on trusted local suppliers for staple foods, which reduces perceived incidence.

Fats and oil, alcoholic and non-alcoholic beverages, meat and fish products, and cereals as most commonly susceptible to food fraud[10]. In addition, nuts and seeds, followed by fruits and vegetables, as well as meat products were identified as most susceptible to food fraud[11,13].

Table 4 presents consumers concern about various food fraud issues in the study area. The result shows that adulteration generated substantial concern, with 72.73% of respondents indicating that they were worried about this practice. Only 5.45% reported no concern, while 21.82% were unsure. This pattern suggests that adulteration is widely recognized as a potential threat to food safety, although a considerable share of respondents remains uncertain about their ability to detect it.

Concern about the addition of undeclared substances was also relatively high at 63.64%. The proportion of respondents who expressed no concern stood at 10.91%, while 25.45% were unsure. These findings indicate that consumers are aware of the possibility that extra or non-food substances may be added to products, but many remain uncertain due to difficulty in verifying such practices.

Artificial enhancement attracted even higher concern, with 75.45% expressing worry. Only 6.36% reported no concern and 18.18% were unsure. The strong concern in this category suggests that practices involving artificial colourants, flavour enhancers or preservatives are particularly salient to consumers, likely because such alterations can sometimes be detected visually or through taste.

Dilution was identified as a concern by 67.27% of respondents. The proportion expressing no concern was 6.36%, while 26.36% were unsure. This indicates that consumers perceive beverages and oils as being especially vulnerable to dilution, although many still lack confidence in identifying such fraud with certainty.

Artificial ripening of fruits elicited the highest level of concern across all categories, with 89.09% indicating worry. Only 5.45% reported no concern and the same percentage expressed uncertainty. This strong response reflects widespread awareness of chemical ripening agents and their potential health implications.

Counterfeiting also attracted considerable concern, with 76.36% of respondents viewing it as an issue. The proportion with no concern was 8.18%, while 15.45% were unsure. These results suggest that consumers recognize the risk posed by counterfeit packaged goods, although challenges remain in differentiating authentic and fake products.

Mislabeling was another prominent concern, reported by 80.91% of respondents. Only 8.18% indicated no concern and 10.91% were unsure. High concern in this area reflects consumer sensitivity to inaccurate expiry dates, false ingredient lists and deceptive nutritional information.

Smuggling, however, recorded lower concern levels relative to other categories. Only 43.64% expressed worry, while 18.18% reported no concern and a substantial 38.18% were unsure. This high level of uncertainty suggests that many consumers have limited visibility into the origins of certain food items and may be unaware of the risks associated with smuggled products.

Substitution was a concern for 60% of consumers, while 14.55% reported no concern and 25.45% were unsure. These results reflect consumer awareness of the possibility that high-value products may be replaced with inferior alternatives, although the considerable uncertainty indicates detection challenges at the retail level.

Misrepresentation generated concern among 60.91% of the consumers. The proportion with no concern was 14.55%, while 24.55% remained unsure. This indicates that while many consumers perceive deceptive claims or misleading information as a problem, a sizeable portion may lack the knowledge required to verify authenticity claims on food products. There has been reported high cases of adulteration, dilution and counterfeiting of alcoholic drinks, and also substitution frauds in spices[13].

Food items that are most vulnerable to food fraud in the study area: Table 5 shows the extent to which respondents perceive different food items/ categories as vulnerable to food fraud. A benchmark means of 3.0 indicates a threshold above which respondents believe a food type is vulnerable or highly vulnerable.

Respondents rated alcoholic and fermented beverages as vulnerable to food fraud (x = 3.41). With close to half (45.45%) indicating that these products are very vulnerable, the high mean suggests strong public concern. This perception aligns with long-standing issues such as adulteration with harmful substances, counterfeiting of branded alcohol, and unsafe fermentation practices, which remain common in unregulated markets. The high mean score implies a high-risk category that requires regulatory attention.

This category recorded one of the highest mean scores, indicating that respondents perceive non-alcoholic beverages to be highly vulnerable (x = 3.82). The dominance of the very vulnerable rating (60.91%) suggests a widespread belief that soft drinks, juices, and related beverages face significant risks of adulteration, dilution, mislabeling, or artificial enhancement. This could reflect recent national discourse around contamination of drinks, fake brands in circulation, and poor-quality control by informal vendors.

Table 5: Food items vulnerable to food fraud in the study area

Food type	Not vulnerable at all (%)	Not vulnerable (%)	Slightly vulnerable (%)	Vulnerable (%)	Very vulnerable (%)	Mean
Alcoholic and fermented beverages	18 (16.36)	6 (5.45)	13 (11.82)	23 (20.91)	50 (45.45)	3.41
Non-alcoholic beverages	8 (7.27)	8 (7.27)	11 (10.00)	16 (14.55)	67 (60.91)	3.82
Cereals	15 (13.64)	20 (18.18)	25 (22.73)	15 (13.64)	35 (31.82)	2.57
Eggs	20 (18.18)	23 (20.91)	16 (14.55)	11 (10.00)	40 (36.36)	2.47
Fruits and vegetables	14 (12.73)	6 (5.45)	14 (12.73)	27 (24.55)	49 (44.55)	3.30
Fat and oil	21 (19.09)	12 (10.91)	24 (21.82)	10 (9.09)	43 (39.09)	2.66
Fish and fish products	22 (20.00)	13 (11.82)	20 (18.18)	16 (14.55)	39 (35.45)	2.59
Herbs, spices and seasonings	26 (23.64)	15 (13.64)	15 (13.64)	15 (13.64)	39 (35.45)	2.45
Milk and dairy	14 (12.73)	7 (6.36)	21 (19.09)	18 (16.36)	50 (45.45)	3.20
Meat and meat products	18 (16.36)	13 (11.82)	20 (18.18)	17 (15.45)	42 (38.18)	2.79
Nuts and seeds	30 (27.27)	25 (22.73)	11 (10.00)	7 (6.36)	37 (33.64)	2.05
Poultry and poultry products	22 (20.00)	16 (14.55)	13 (11.82)	16 (14.55)	43 (39.09)	2.66
Fast foods	16 (14.55)	9 (8.18)	7 (6.36)	14 (12.73)	64 (58.18)	3.43
Roots & tubers	32 (29.09)	26 (23.64)	10 (9.09)	7 (6.36)	35 (31.82)	1.93
Seafood	27 (24.55)	10 (9.09)	18 (16.36)	17 (15.45)	38 (34.55)	2.42

Source: Field survey, 2025

Fruits and vegetables were also perceived as vulnerable to food fraud (x = 3.30). A substantial proportion (44.55%) rated them as very vulnerable, likely influenced by the increasing reports of artificial ripening, chemical enhancement, wax coating, and misrepresentation of quality or origin in markets. The mean above the benchmark indicates that consumers remain cautious about the authenticity and safety of fresh produce.

Milk and dairy products were likewise rated as vulnerable, with a mean slightly above the benchmark (x = 3.20). The perception of vulnerability is consistent with concerns about adulteration with water, powders, starches, or unsafe preservatives. With 45.45% rating these foods as very vulnerable, the findings reflect persistent mistrust of processed and unpackaged dairy products, especially in informal retail settings.

Fast foods also exceeded the benchmark, indicating significant perceived vulnerability (x = 3.43). The high proportion of respondents (58.18%) rating this category as very vulnerable suggests concerns about ingredient substitution, use of expired or low-quality components, misrepresentation, and unhygienic preparation practices. This perception implies consumer fears driven by the rapid growth of unregulated fast-food vendors in the study area.

Policymakers should strengthen public education on food fraud through coordinated digital and community-based awareness campaigns aimed at moving consumers from moderate to high awareness levels. Research institutions, schools, and relevant stakeholders should facilitate structured training programs for both consumers and food vendors to enhance practical skills in identifying fraudulent food indicators and to promote the use of official reporting mechanisms. Regulatory agencies should intensify market surveillance and routine inspections, with particular focus on high-risk food categories such as non-alcoholic beverages and fresh fruits and vegetables. Public health communication should clearly link food fraud practices to specific health risks in order to encourage safer purchasing behaviors, including label verification and preference for certified products. In addition, the establishment of consumer advocacy groups and community-based organizations should be encouraged to provide organized platforms for information sharing and collective action against fraudulent food practices.

CONCLUSION

This study demonstrates that food fraud is a pervasive and tangible problem in Uyo Metropolis, with a vast majority of the population reporting direct encounters with fraudulent products. Although general awareness is exceptionally high, the study indicates that such awareness is often superficial. The study

shows that liquid products, such as beverages, and perishable items, like fruits and vegetables, are the primary targets for fraud by food vendors. The high level of concern regarding artificial ripening and chemical enhancements indicates a public that is conscious of health risks but lacks the technical tools to verify product safety. Ultimately, the findings suggest that the current absence of structured information channels and formal training programs creates a significant vulnerability gap. Without improved access to reliable data and practical detection skills, consumers remain unable to effectively protect themselves against the health and economic consequences of food fraud.

SIGNIFICANCE STATEMENT

This study addresses the critical yet under-researched threat of intentional food fraud in Nigeria's informal markets. By identifying high levels of consumer concern alongside significant gaps in detection training, the findings provide a vital roadmap for policymakers. It highlights the urgent need for targeted public education and strengthened surveillance to protect consumer health and restore integrity to the local food system.

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