

Marketing strategies on consumer food choices in Kamwenge District. A cross-sectional study.

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Abstract

Background:

The study aims to assess the impact of marketing strategies on consumer food choices in Kamwenge District.

Methodology:

This study employed a combination of probability and non-probability sampling. The qualitative data analysis process involved familiarisation with the data, coding of meaningful segments, categorisation of similar codes, and identification of emerging themes. Quantitative data collected through structured questionnaires were first coded and entered into Microsoft Excel for cleaning and validation.

Results:

Radio was the dominant marketing channel (mean = 3.60/5; 58.6% often/always exposed), followed by in-store promotions (mean = 3.09). Discounts/price promotions had the greatest influence (mean = 3.82), followed by price relative to fresh foods (mean = 3.67); 58.6% perceived advertisements as promoting unhealthy foods. Healthy food choices remained similar across marketing exposure/influence tertiles (64.8%–68.5%). Neither marketing exposure (AOR = 0.917, 95% CI: 0.629–1.337, $p = 0.653$) nor influence (AOR = 1.041, 95% CI: 0.696–1.557, $p = 0.844$) predicted healthy choices. The model was non-significant ($p = 0.692$; Pseudo $R^2 = 0.007$). Three themes emerged: pervasive multi-channel marketing, price- and promotion-driven impulse purchasing, and disproportionate effects on children. Radio was consistently viewed as persuasive, while promotions encouraged unplanned purchases and substitution of fresh foods with ultra-processed alternatives. Child-targeted marketing was evident through colourful packaging, mascots, and school-proximate vendors. Overall, qualitative findings indicated situational marketing effects that quantitative measures may have underestimated. Participants were almost evenly split by sex (51.6% female, 48.4% male)

Conclusion:

Marketing appears to influence food choices mainly through situational price promotions and child-targeted purchasing pressures, rather than consistently determining consumers' usual food choices.

Recommendations:

Retail shop owners and supermarket managers should voluntarily improve the visibility and shelf placement of fresh and minimally processed foods relative to ultra-processed products.

Keywords: *Impact of marketing strategies, Consumer food choices, Healthy food choices, Consumers' usual food.*

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Background

Globally, marketing strategies and food labeling were recognized as critical determinants of consumer food choices and outcomes. Evidence from a systematic review across ten African countries revealed that while consumer awareness of food labels was relatively high (74%), actual understanding of nutritional content remained substantially lower (45%), limiting labeling's capacity to guide healthier

dietary decisions (Osei et al., 2024). Content analyses conducted in Ghana and Kenya demonstrated that the majority of food advertisements on television and radio promoted ultra-processed products high in sugar, fat, and salt, with persuasive techniques such as celebrity endorsement amplifying their influence on purchasing behavior (Boncyk et al., 2025; Karugu et al., 2025). At the regulatory level, a global document review found that only

nine African countries mandated nutrient declarations on packaged foods, and fewer than half of countries worldwide implemented any front-of-pack labeling scheme, creating a significant policy vacuum that enabled misleading marketing practices to go unchecked (Afroz et al., 2024). Experimental evidence from Kenya further confirmed that front-of-pack warning labels significantly reduced consumer purchase intentions toward unhealthy products (Karugu et al., 2024). Collectively, this evidence underscored the urgent need for strengthened food labeling regulations and controlled marketing environments to protect consumer health globally.

Within East Africa, countries like Kenya and Tanzania were experiencing similar dietary shifts. The rapid expansion of supermarkets and aggressive marketing of processed foods had significantly influenced consumer behaviour (Reardon et al., 2019). While some public health initiatives had been introduced to encourage healthier eating, the absence of standardised and widely implemented food labelling systems hindered consumers' ability to make informed nutritional decisions (Abidoye et al., 2021). This challenge was further exacerbated by increasing cases of diet-related non-communicable diseases (NCDs) such as obesity and hypertension (Nyangasa et al., 2020). A study in Kenya found that over 60% of urban consumers relied on advertisements to make food choices, indicating the strong impact of marketing strategies (Mwangi et al., 2021). Meanwhile, in Tanzania, a lack of regulation on food packaging had led to widespread misinformation, with many products carrying misleading health claims (Mbogori et al., 2019). The study aims to assess the impact of marketing strategies on consumer food choices in Kamwenge District, Uganda.

METHODOLOGY

Research Design

This study adopted a concurrent mixed-methods, cross-sectional research design to assess how marketing strategies and food labelling influenced consumer food choices in Kamwenge District, Uganda. This design was appropriate because it allowed data collection at a single point in time, enabling a comprehensive analysis of consumer behaviour and market influences. Both quantitative and qualitative data were collected concurrently: quantitative data from structured questionnaires were used to statistically test the relationships descriptive, bivariate, and multivariate analyses), while qualitative data from key informant interviews, focus group discussions, structured retail observation, and secondary policy document review were used to explain, contextualise, and deepen the quantitative findings.

Study Area

The study was conducted in Kamwenge District, located in the Western Region of Uganda. The district lies approximately at latitude 0.186°N and longitude 30.453°E, about 150 km west of Kampala. It is predominantly rural, with agriculture and small-scale trade as the main economic activities, alongside a growing number of retail shops, supermarkets, and open markets.

Kamwenge District was purposively selected due to the increasing availability of processed and packaged foods, expanding marketing activities, and reported shifts in dietary patterns. District health reports indicated a rise in diet-related non-communicable diseases such as obesity, hypertension, and diabetes, partly linked to changing food consumption patterns.

The study covered five administrative units –Kamwenge Town Council, Busiriba, Bwizi, Kahunge Sub-counties, and Nkoma / Katalyeba Town Council- selected based on the presence of packaged foods, visible marketing strategies (advertisements, promotions, branding), and accessibility to diverse consumers. The district provided a suitable setting for examining how marketing strategies and food labelling influenced consumer food choices in rural and semi-urban Uganda. The study was conducted from November 2025 to October 2026, covering ethics review and clearance, instrument finalization, data collection, data analysis, and report writing in fulfilment of the University's academic requirements.

Study Population

The study population consisted of adult consumers aged 18 years and above residing in Kamwenge District, located in the Western Region of Uganda. The primary participants were individuals who actively purchased and consumed food products from supermarkets, retail shops, and open markets within the district. Focusing on adults was appropriate because they were the primary household decision-makers regarding food purchasing and dietary choices, which were influenced by marketing strategies and food labelling practices. Adults were also more likely to interpret nutritional information and respond to promotional techniques compared to minors, making them suitable respondents for this study. The study included key stakeholders such as food vendors, supermarket and retail shop owners, nutritionists, health professionals, and district officials responsible for trade, health, and regulatory enforcement. The inclusion of these groups provided a comprehensive understanding of food marketing strategies, labelling compliance, and enforcement challenges within the district. Eligible consumer participants were permanent residents of Kamwenge District who were directly involved in household food purchasing decisions. Individuals below

18 years and non-residents were excluded from the study to ensure that responses reflected informed purchasing behaviour and familiarity with the local food environment.

Inclusion and Exclusion Criteria

Inclusion criteria for consumer respondents were: aged 18 years and above; permanent residents of the selected sub-county/town council in Kamwenge District; directly involved in household food purchasing decisions. Exclusion criteria were: individuals unable to participate due to acute illness at the time of data collection. For key informants, inclusion was limited to persons currently serving in a relevant professional role (nutrition, public health, trade/regulatory enforcement, or food retail) within Kamwenge District who consented to participate; those without direct professional involvement in food marketing, labelling, or regulation were excluded.

Sample Size

The sample size was determined using Cochran's (1977) formula for sample size calculation in large populations. Cochran's formula was selected for this study because it is specifically designed for estimating proportions in large or unknown populations where the exact population size may not be precisely defined. It is widely applied in cross-sectional health and social science research in developing country contexts due to its simplicity, statistical robustness, and ability to produce a representative sample at a 95% confidence level with an acceptable margin of error (Cochran, 1977; Creswell, 2018). Given an estimated consumer population of 50,000 in Kamwenge District and assuming a 95% confidence level with a 5% margin of error, a representative sample of approximately 385 respondents was targeted. Additional key informants, such as nutritionists and policymakers, were purposively included in the study.

Sample Size Determination

The sample size for consumer respondents was determined using Cochran's (1977) formula for large populations:

$$n_0 = \frac{Z^2 pq}{e^2}$$

Where n_0 = initial sample size; Z = Z-score at 95% confidence level (1.96); p = estimated population proportion (0.5, assumed for maximum variability); q = $1 - p$; e = margin of error (0.05).

$$n_0 = \frac{1.96^2 \times 0.5 \times (1 - 0.5)}{0.05^2} = \frac{3.8416 \times 0.25}{0.0025} = 384.16$$

Thus, the initial sample size was approximately 385 respondents. Since the estimated consumer population in Kamwenge District was approximately 50,000, the finite

population correction (FPC) formula was considered, but given the minimal difference produced, the study retained 385 respondents to ensure adequate representation. To account for potential non-response, a 10% adjustment was added, as recommended in survey research methodology (Creswell, 2018):

$$n_{adj} = \frac{n}{1 - r} = \frac{385}{1 - 0.1} = 427.8 \approx 428$$

Where r = anticipated non-response rate (0.10). In addition, 10 key informants (nutritionists, health professionals, retail shop owners, and district officials) were purposively selected to provide expert insights on food marketing practices, labeling compliance, and regulatory enforcement within the district. Separately, 32 consumers (4 FGDs of 8 participants each) were purposively recruited from the study administrative units for Focus Group Discussions; these FGD participants were distinct individuals from the questionnaire respondents and from the key informants, so that no single participant was subjected to more than one data collection method. Twelve retail outlets (supermarkets, retail shops, and open-market stalls) were purposively selected for structured observation.

The originally planned final sample size, including a buffer for non-response and incomplete questionnaires, was approximately 470 consumer respondents. At the close of data collection, 428 fully completed and valid consumer questionnaires were retained for analysis, giving an achieved response rate of 91.1% (428/470).

Sampling Techniques

This study employed a combination of probability and non-probability sampling techniques to ensure representativeness of consumers and inclusion of relevant stakeholders in Kamwenge District. For consumer respondents, a multistage sampling technique was used. First, administrative units (sub-counties and town councils) were purposively selected based on the presence of supermarkets, retail shops, and open markets where packaged and labeled foods were sold. This ensured that respondents were drawn from areas with visible food marketing and labeling practices. Second, stratified random sampling was applied to categorize consumers by key demographic characteristics such as gender and age group to ensure proportional representation. Within each stratum, simple random sampling was used to select respondents, giving each eligible adult consumer an equal chance of participation.

For food vendors and retail shop/supermarket owners, purposive sampling was employed. These participants were selected based on their active involvement in selling packaged food products and implementing marketing

strategies such as promotions, product placement, and branding.

For nutritionists, health professionals, and district officials (e.g., health inspectors and trade officers), purposive

sampling was also used. These key informants were selected based on their professional roles in nutrition education, public health, food regulation, and policy enforcement.

Table 1: Study Participants, Achieved Sample Size, and Sampling Strategy

Participant Category	Achieved Sample	Sampling Strategy	Data Collection Tool
Adult consumer respondents	428	Multistage: purposive selection of administrative units; stratified random sampling by gender and age group; simple random sampling within each stratum	Structured Questionnaire
Key informants (nutritionists, health/public health officers, district trade officials, retail/supermarket owners)	10	Purposive sampling	Key Informant Interview (KII)
FGD participants (adult consumers, distinct from questionnaire respondents and key informants)	32 (4 groups of 8)	Purposive sampling	Focus Group Discussion (FGD)
Retail outlets (supermarkets, retail shops, open markets)	12 outlets	Purposive sampling	Structured Observation Checklist
Policy/secondary documents	3	Purposive document selection	Secondary Data Review Guide

Data Collection Methods and Tools

The study used both primary and secondary data collection methods to examine how marketing strategies and food labelling influenced consumer food choices in Kamwenge District, Uganda.

Questionnaires

Structured questionnaires were administered to 428 adult consumer respondents selected through stratified random sampling. The questionnaire collected quantitative data on socio-demographic characteristics, exposure to marketing strategies (television, radio, social media advertisements, pricing and promotions), understanding of food labels (nutritional information, front-of-pack labels, allergen warnings), and food purchasing behavior. Closed-ended and Likert-scale questions were used to allow statistical analysis using Stata version 17.

Key Informant Interviews

Semi-structured interview guides were used to collect qualitative data from 10 purposively selected key informants, including nutritionists, public health officers, district trade officials, and supermarket/retail shop owners. Interviews explored issues such as food labeling

compliance, marketing practices, enforcement challenges, regulatory gaps, and consumer awareness levels.

Observation

A structured observation checklist was used in 12 selected supermarkets, retail shops, and open markets. The study documented the presence and visibility of marketing strategies such as product placement, branding, discounts, promotional materials, and in-store advertisements. The availability and clarity of nutritional information and front-of-pack labels on 10 sampled packaged food products per outlet were also recorded.

Focus Group Discussions

Focus Group Discussions (FGDs) were conducted with 4 groups of 8 purposively selected consumers (32 participants in total) drawn from different demographic backgrounds across the study administrative units. These FGD participants were separate individuals from the 428 questionnaire respondents and the 10 key informants. An FGD guide facilitated discussion on perceptions of advertisements, trust in food labels, interpretation challenges, and social influences on food choices.

Study Variables

Table 2: Study Variables, Measurement Scale, and Description

Variable	Measurement Scale	Description
Dependent Variable		
Consumer Food Choices	Binary (1 = Healthy choice; 0 = Unhealthy choice)	Selection of processed versus fresh foods and the frequency of consuming unhealthy versus nutritious foods by adult consumers. Operationalised in Chapter Four from the questionnaire item on primary food purchased, supplemented by the relative frequency of processed versus home-cooked/fresh consumption for “mixed” purchasers.
Independent Variables		
Marketing Strategies	Likert Scale (1–5)	Consumer exposure to food advertisements on television, radio, social media, billboards, and in-store promotions, and the influence of pricing, branding, product placement, discounts, and trust in health claims on purchasing decisions.
Intervening Variables		
Age	Continuous (years)	Age of the respondent in completed years at the time of the survey.
Sex	Binary (1 = Male, 2 = Female)	Sex of the respondent.
Education Level	Ordinal (1 = No Education; 2 = Primary; 3 = Secondary; 4 = Tertiary/University)	Highest level of formal education attained by the respondent.
Income Level	Ordinal (1 = Below 100,000 UGX; 2 = 100,000–299,999; 3 = 300,000–499,999; 4 = 500,000 and above)	Estimated monthly household income.
Consumer Awareness	Likert Scale (1–5)	Level of awareness of food labeling regulations, nutritional content, and marketing practices.

Quality Control

Quality was safeguarded through the recruitment of two trained research assistants fluent in both English and the local language (Runyankore-Rukiga). The study directly supervised data collection to ensure proper administration of questionnaires, accurate recording of responses, and adherence to ethical standards. The research instruments (questionnaires, interview guides, FGD guides, and observation checklists) were pretested among 20 respondents in a neighbouring district with similar characteristics but outside the main study area. Pretesting helped identify ambiguous questions, improve clarity, and ensure logical flow before the official data collection process; necessary revisions were made based on pilot findings.

Content Validity

Content validity of the research instruments was ensured through expert review. The draft tools were submitted to the research supervisor and two experts in public health and nutrition for evaluation of relevance, clarity, and alignment with the study objectives on marketing strategies, food labeling, and consumer food choices.

The Content Validity Index (CVI) was calculated to quantify expert agreement. Each item was rated on a 4-point relevance scale (1 = not relevant to 4 = highly relevant). Items rated 3 or 4 were considered valid. The Item-Level CVI (I-CVI) was computed as:

$$I-CVI = \frac{\text{Number of experts rating item 3 or 4}}{\text{Total number of experts}}$$

An I-CVI of 0.78 or higher was considered acceptable, while the Scale-Level CVI (S-CVI) threshold was 0.80 or above

(Polit & Beck, 2006). All retained items met these thresholds following one round of expert revision, and the pilot test with 20 respondents further refined item wording for clarity and comprehension before the final tools were deployed.

Reliability

Reliability was assessed to evaluate the internal consistency of the multi-item scales used in the consumer questionnaire, namely the marketing exposure scale, marketing influence scale, label comprehension scale, and label perception/utility scale. Cronbach's alpha (α) was computed for each scale using the achieved dataset of 428 respondents, using the formula:

$$\alpha = \frac{N \cdot \bar{c}}{\bar{v} + (N - 1) \cdot \bar{c}}$$

Where N = number of items, $\bar{c}$ = average covariance between item pairs, and $\bar{v}$ = average variance. A Cronbach's alpha value of 0.70 or above was considered acceptable for internal consistency (Tavakol & Dennick, 2011). The computed alpha coefficients, reported in full in Chapter Four (Section 4.2), were substantially below this threshold for all scales in the achieved dataset. This outcome, its implications for interpreting the composite indices, and its treatment as a limitation of the study.

Data Analysis

Data analysis was conducted using both quantitative and qualitative approaches in order to comprehensively.

Quantitative Data Analysis

Quantitative data collected through structured questionnaires were first coded and entered into Microsoft Excel for cleaning and validation. The cleaned dataset (428 valid records, with no missing values on any analysed variable) was then exported to Stata version 17 for statistical analysis.

Data analysis was performed at three levels:

Univariate Analysis. Descriptive statistics were used to summarise respondents' socio-demographic characteristics and key study variables. Continuous variables (such as age) were summarised using means and standard deviations, while categorical variables (such as gender, exposure to advertisements, and use of food labels) were summarised using frequencies and percentages.

Bivariate Analysis. Chi-square tests of independence were conducted to examine associations between independent variables (marketing strategies and food labelling components, categorised into Low/Moderate/High tertiles) and the dependent variable (consumer food choice). Associations were considered statistically significant at $p < 0.05$, and row percentages were reported alongside the chi-

square statistic, degrees of freedom, and p -value as measures of association.

Analysis per Study Objective

Objective 1 (marketing strategies): Descriptive statistics summarised exposure to advertisements, pricing, promotions, product placement, and branding. Chi-square tests assessed associations between these marketing variables and food choices (processed vs. fresh foods). Logistic regression determined the strength and direction of these associations while controlling for socio-demographic factors. Qualitative data from key informant interviews and FGDs complemented this by explaining why and how specific marketing strategies influenced purchasing decisions.

Qualitative Data Analysis

Qualitative data obtained from key informant interviews and Focus Group Discussions were analysed using thematic content analysis. Interview and discussion records were transcribed and, where necessary, translated into English.

The analysis process involved familiarisation with the data, coding of meaningful segments, categorisation of similar codes, and identification of emerging themes. Themes were developed in line with the study objectives: influence of marketing strategies on purchasing behaviour, consumer interpretation of food labels, regulatory and enforcement challenges, and barriers to healthy food choices.

Triangulation was applied by comparing findings from questionnaires, interviews, FGDs, retail observations, and secondary documents to enhance credibility and validity. The integration of quantitative statistical analysis and qualitative thematic analysis provided a comprehensive understanding of how marketing strategies and food labelling influenced consumer food choices in Kamwenge District, as presented in Chapter Four.

Ethical Considerations

The study adhered to established ethical standards for research involving human participants throughout the research process in Kamwenge District.

Institutional Approval

Ethical clearance was obtained from the Bishop Stuart University Research Ethics Committee, and an introductory letter was obtained from the Directorate of Graduate School of Bishop Stuart University prior to the commencement of data collection. Permission was also obtained from the Kamwenge District Local Government and relevant district authorities, including the District Health Office and District Commercial Office, as well as from managers or owners of selected supermarkets, retail shops, and market leaders.

Informed Consent

Informed consent was obtained from all participants before data collection. Participants were clearly informed about the purpose of the study, study procedures, inclusion criteria, potential risks and benefits, and the voluntary nature of participation, and were notified of their right to decline or withdraw at any time without penalty. Written consent was obtained through signature or thumbprint after participants fully understood the information provided. For Focus Group Discussions, participants were also informed about the importance of respecting confidentiality within the group.

Privacy and Confidentiality

Participants' privacy was respected throughout the study. Questionnaires did not include names or personal identifiers; unique codes were assigned to each respondent. Interview and FGD records were securely stored and accessible only to the study. All collected data were used strictly for academic purposes. Findings are reported in aggregate form in this dissertation to prevent identification of individual participants or specific retail outlets.

Justice and Fair Selection

The principle of justice was upheld through fair and unbiased selection of participants: stratified random sampling was used for consumers to provide equal opportunity for inclusion, while purposive sampling for key informants was based solely on relevance to the study objectives.

Respect for Human Dignity and Rights

All respondents were treated with respect, courtesy, and dignity throughout the research process. The study avoided any form of coercion, discrimination, or harm, and participants were not exposed to physical, psychological, or social risks beyond minimal inconvenience associated with answering questions.

General Procedures

This cross-sectional, mixed-methods study was conducted in Kamwenge District, Western Uganda. Following ethical approval and administrative permissions, sub-counties and trading centers with visible marketing activity and packaged food sales were purposively selected. A sample of 428 valid adult consumer questionnaires (from a planned buffer of 470) was retained through multistage sampling: purposive selection of sub-counties/markets, followed by stratified random sampling (by gender and age) and simple random selection of individual respondents. Ten key informants, 32

FGD participants, and 12 retail outlets were purposively selected as described above.

Quantitative data were entered into Microsoft Excel, cleaned, and analysed in Stata version 17 using descriptive statistics, chi-square tests, and binary logistic regression. Qualitative data from interviews, FGDs, and the secondary document review were analysed thematically. Triangulation of findings across methods enhanced the validity and reliability of the conclusions drawn in Chapters Four and Five.

Community Participation

Community participation was integrated throughout the study process in Kamwenge District. At the initial stage, local leaders, market authorities, and relevant district officials were engaged to support community mobilisation and facilitate access to participants. During data collection, community members, including consumers and vendors, actively participated through questionnaires, interviews, and Focus Group Discussions. Feedback sessions to share key results and recommendations with community representatives, retail stakeholders, and district officials are being organised following the completion of this dissertation.

Community Engagement Approach

Community engagement was structured in three stages. During the initial stage, local leaders, market authorities, and district officials were engaged to build trust and facilitate access to participants. During data collection, consumers, vendors, and retail shop owners actively participated through questionnaires, key informant interviews, focus group discussions, and observations, ensuring the research reflected lived community experiences. In the final stage, feedback sessions with community representatives, retail stakeholders, and district officials are being organised to present key findings and practical recommendations arising from Chapters Four and Five, allowing community members to validate results and contribute to shaping the recommendations presented in Chapter Five.

RESULTS

Response Rate

Data collection targeted a buffer sample of 470 adult consumer respondents, calculated to accommodate an anticipated 10% non-response after applying Cochran's (1977) formula to the base sample of 385 (Chapter Three, Section 3.4). At the close of fieldwork, 428 fully completed and valid questionnaires were retained for analysis after data cleaning, yielding a response rate of:

$$\text{Response rate} = \frac{428}{470} \times 100 = 91.1\%$$

This response rate exceeded the commonly cited minimum acceptable threshold of 70–80% for social and behavioural survey research (Creswell, 2018), and was considered excellent for a face-to-face, interviewer-administered household/retail-intercept survey. In addition, all 10 planned key informant interviews were completed (100%), all 4

planned focus group discussions with 32 participants were completed (100%), all 12 planned retail outlet observations were completed (100%), and all 3 planned secondary policy documents were reviewed (100%). The high response rate across all data collection strands minimised the risk of non-response bias and supported the representativeness of the findings presented.

Table 3: Response Rate by Data Collection Method

Data Collection Method	Planned	Achieved	Response Rate (%)
Consumer questionnaires	470	428	91.1
Key informant interviews	10	10	100.0
Focus group discussions (participants)	32	32	100.0
Retail outlet observations	12	12	100.0
Secondary policy documents	3	3	100.0

Socio-Demographic Characteristics of Respondents

Table 4: Socio-Demographic Characteristics of Consumer Respondents (n = 428)

CHARACTERISTIC	CATEGORY	FREQUENCY (N)	PERCENTAGE (%)
Age (Years)	Mean # SD=34.1 # 8.75, Range = 18-60		1
	18-25	70	6.4
	26- 25	181	42.3
	36 -45	130	11.0
	46 -60	47	11
Sex	Male	207	48.4
	Female	221	51.6
Education level	No formal education	107	25.0
	Primary	174	40.7
	Secondary	108	25.2
	Tertiary/ University	39	9.1
Monthly household Income Ugx)	Below 100,000	16.5	38.6
	100,000- 299,999	167	39.0
	300,000- 499,999	65	15.2
	500,000 and above	31	7.2
Administration unit	Kamwenge Town Council	123	38.7
	Busiriba	92	21
	Kahunge	82	19

Main food purchasing Location	Bwizi	66	15.4
	Noma/ katalyeba T.c	65	15.2
	Retail shop	174	40.7
	Open market	82	19
	Supermarket	73	17.1
	Roadside vender	52	12.1
	Supermarket and retail shops (both)	47	11.0
Diagnosed obesity	Yes	55	12.9
	No	373	87.1
Diagnosed hypertension	Yes	55	12.9
	No	373	87.1
Diagnosed diabetes	Yes	37	8.6
	No	391	91.4

The participants were almost evenly split by sex (51.6% female, 48.4% male) and were dominated by young and middle-aged adults, with a mean age of 34.1 years (SD = 8.75); 58.7% of respondents were aged 35 years or below. Educational attainment was modest: two-thirds of respondents (65.7%) had no more than a primary education, while only 9.1% had attained tertiary/university education, reflecting the predominantly rural character of the district. Household income was similarly skewed toward the lower end, with 77.6% of respondents reporting a monthly household income below UGX 300,000 (approximately USD 81 at prevailing exchange rates), consistent with

Kamwenge's largely agrarian economy. Respondents were fairly evenly distributed across the five administrative units, with the largest share drawn from Kamwenge Town Council (28.7%), reflecting its higher concentration of retail outlets. Retail shops (40.7%) were the dominant food purchasing venue, followed by open markets (19.2%) and supermarkets (17.1%), indicating that most food purchasing in the district still occurred outside formal supermarket chains. Notably, 22.2% of respondents reported having been diagnosed with hypertension, 12.9% with obesity, and 8.6% with diabetes, a self-reported non-communicable disease burden that lends context to the district health office reports.

The Impact of Marketing Strategies on Consumer Food Choices

Univariate Analysis

Table 5: Exposure to Advertising Channels (n = 428), 5-point scale (1 = Never, 5 = Always)

Advertising channel	Mean	SD	% Rarely/Never (1–2)	% Sometimes (3)	% Often/Always (4–5)
Radio advertisements	3.60	1.14	16.1	25.2	58.6
In-store promotions	3.09	1.17	32.0	29.4	38.5
TV advertisements	2.79	1.22	44.9	27.1	28.0
Billboard advertisements	2.45	1.23	55.4	25.5	19.1
Social media advertisements	2.14	1.14	63.3	25.2	11.4

Radio emerged as the dominant advertising channel reaching Kamwenge consumers (mean = 3.60/5.0; 58.6% reporting “often” or “always” exposure), consistent with radio's established reach in rural Uganda, followed by in-store promotions (mean = 3.09). Social media (mean = 2.14)

and billboard advertising (mean = 2.45) were comparatively limited, plausibly reflecting lower smartphone/internet penetration and fewer billboard structures outside Kamwenge Town Council.

Table 6: Perceived Influence of Marketing Elements on Purchasing Decisions (n = 428), 5-point scale

Marketing element	Mean	SD	% influence (1–2)	% Little/No (3)	% Moderate (3)	% Strong/Very strong (4–5)
Discounts/price promotions	3.82	1.04	9.8	25.7	64.5	
Price relative to fresh alternatives	3.67	1.11	16.4	18.9	64.7	
Perception that ads promote unhealthy foods	3.64	1.10	15.0	26.4	58.6	
Brand reputation	3.33	1.05	20.3	34.1	45.6	
Advertising in general	3.32	1.16	24.5	27.3	48.1	
Packaging appearance	3.11	1.14	27.1	36.0	36.9	
Trust in on-package health claims	2.82	1.14	36.2	39.3	24.5	

Discounts and price promotions recorded the highest mean influence score (3.82), and price relative to fresh alternatives the second-highest (3.67), together indicating that Kamwenge consumers' purchasing behaviour was, by self-report, more strongly driven by price-based marketing than by branding or health-claim-based marketing. Notably, most respondents (58.6%) agreed that food advertisements promoted unhealthy products.

Bivariate Analysis

Marketing exposure and marketing influence scores were each categorised into Low/Moderate/High tertiles and cross-tabulated against the dichotomous health-food-choice outcome using Pearson's chi-square test.

Table 7: Chi-Square Test - Marketing Exposure Index and Marketing Influence Index by Food Choice

Predictor (tertile)	% Healthy choice	χ^2	df	p-value	Decision
Marketing Exposure Index: Low	68.5	0.213	2	0.899	Not significant
Marketing Exposure Index: Moderate	66.2				
Marketing Exposure Index: High	66.4				
Marketing Influence Index: Low	68.5	0.510	2	0.775	Not significant
Marketing Influence Index: Moderate	64.8				
Marketing Influence Index: High	67.8	7.267	4	0.122	Not significant
Main choice driver (5 categories)	56.9–77.1 (range)				
Purchasing location (5 categories)	61.5–70.7 (range)				

None of the marketing-related bivariate associations reached statistical significance at the 5% level. The proportion of respondents classified as making a healthy food choice was remarkably stable (64.8%–68.5%) across low, moderate, and high tertiles of both marketing exposure and marketing influence, indicating that, at the bivariate level, in this sample, self-reported marketing exposure and marketing influence were not associated with the fresh-versus-processed food choice outcome. The widest (though still non-significant, $p = 0.122$) spread was observed across categories of the *main choice driver* item, where

respondents who named “nutritional information on label” as their main driver had the lowest rate of healthy choice (56.9%) and those citing “brand reputation” had the highest (77.1%)

Multivariate Analysis

A binary logistic regression model was fitted with healthy food choice as the outcome and the marketing exposure index and marketing influence index as predictors, controlling for age, sex, education level, and income level.

Table 8: Binary Logistic Regression - Marketing Strategies and Consumer Food Choice, n = 428

Predictor	Coefficient (B)	AOR	95% CI	p-value
Marketing Exposure Index	-0.086	0.917	0.629 – 1.337	0.653
Marketing Influence Index	0.040	1.041	0.696 – 1.557	0.844
Age (years)	-0.021	0.979	0.957 – 1.002	0.072
Sex (Female vs. Male)	0.125	1.134	0.756 – 1.700	0.545
Education level	0.015	1.015	0.811 – 1.270	0.898
Income level	0.043	1.044	0.833 – 1.308	0.712
Constant	1.369	3.931	—	0.199

Model fit: Log-likelihood = -269.31; Pseudo R² (McFadden) = 0.007; Likelihood-ratio $\chi^2(6) = 3.89$, $p = 0.692$.

Neither the marketing exposure index (AOR = 0.917, 95% CI: 0.629–1.337, $p = 0.653$) nor the marketing influence index (AOR = 1.041, 95% CI: 0.696–1.557, $p = 0.844$) was a statistically significant independent predictor of healthy food choice once age, sex, education, and income were controlled for. Age showed a borderline, non-significant negative association with healthy choice (AOR = 0.979, $p = 0.072$), suggesting a weak tendency for older respondents to be marginally less likely to report a healthy choice, though

this did not reach conventional significance. The overall model explained a negligible proportion of variance in food choice (Pseudo R² = 0.007) and was not a significant improvement over the null model ($p = 0.692$).

Decision on Hypothesis 1: Because neither the bivariate chi-square tests nor the multivariate logistic regression detected a statistically significant association between marketing strategies and consumer food choice at $p < 0.05$, the null hypothesis (H_{01} : there was no relationship between marketing strategies and consumer food choices in Kamwenge District) was not rejected based on the quantitative data alone.

Qualitative Thematic Findings

Table 9: Themes and Sub-Themes - Impact of Marketing Strategies on Consumer Food Choices

Theme	Sub-theme	Illustrative excerpt	Source
1. Pervasive, multi-channel marketing penetration	1.1 Radio and megaphone advertising as the dominant, most persuasive channel	“Radio ads for energy drinks make them seem healthy and energizing for daily farm work.”	FGD_01
		“Megaphone ads in trading centers strongly sway decisions on cheap cooking oils and drinks.”	FGD_02
		“Aggressive radio marketing of fortified energy drinks targeting agrarian youth.”	KII_04
	1.2 Outdoor, shopfront, and in-store visual branding	“Dominated by radio ads, colourful shop displays, and aggressive price discounts on UPFs.”	KII_01
		“Prominent billboard and shopfront branding by national beverage corporations.”	KII_07
		“High concentration of outdoor brand banners and canopy sponsorships in urban centers.”	KII_08
2. Price- and promotion-driven impulse purchasing	2.1 Discounts and bundling as behavioural triggers	“Discounts and buy-one-get-one offers compel us to buy packaged snacks not on our list.”	FGD_01
		“Bundled deals lead us to buy processed items because they appear cheaper than fresh alternatives.”	FGD_02
		“Volume discounts like ‘buy 2 get 1 free’ make packaged drinks cheaper per liter than milk.”	KII_01
	2.2 Promotions normalising ultra-processed foods over fresh alternatives	“Promotions drive rapid stock turnover of imported processed foods over local produce.”	KII_02
		“Price subsidization of imported UPFs makes them highly competitive against local crops.”	KII_06
		“Impulse purchasing driven by vibrant packaging designs and promotional gifts.”	KII_08

Theme	Sub-theme	Illustrative excerpt	Source
3. Marketing's disproportionate effect on children	3.1 "Pester power" and child-driven household demand	"Children constantly demand advertised biscuits after seeing colorful packaging and cartoons."	FGD_01
		"Cartoons on sweet packages make children refuse traditional home-cooked meals."	FGD_02
		"Pester power from children influenced by market displays drives unnecessary spending."	FGD_04
	3.2 School-environment vendor targeting	"School surroundings are heavily targeted by food vendors selling cheap UPFs."	KII_10
		"Children spend lunch allowances on packaged snacks and sodas instead of cooked food."	KII_10

Theme 1: Pervasive, multi-channel marketing penetration. Across all four FGDs and at least six of the ten KIIs, participants described a marketing environment saturated with radio advertising, megaphone announcements in trading centers, and visible shopfront/outdoor branding. Radio emerged consistently as the channel participants themselves identified as most persuasive, a pattern that directly corroborated the quantitative finding that radio recorded the highest exposure score of all channels tested (mean = 3.60/5). Sub-theme 1.2 (visual/outdoor branding) was reinforced by KII_07 and KII_08, both of whom specifically implicated national beverage corporations' billboard and canopy-sponsorship strategies in shaping the retail landscape, a pattern independently confirmed by the retail audit finding that 8 of 12 outlets carried prominent brand posters or bundled-deal signage.

Theme 2: Price- and promotion-driven impulse purchasing. This was the most emphatically and consistently raised theme across data sources. Every one of the four FGDs, and at least five KIIs, independently described discounts, "buy-one-get-one" offers, and bundled deals as the mechanism through which marketing translated most directly into unplanned purchases. This convergence across independent sources triangulated closely with the quantitative finding that discount/price-promotion influence recorded the single highest mean score (3.82/5) of any marketing item measured. Sub-theme 2.2 extended this by linking promotions specifically to the *substitution* of fresh/local foods by imported ultra-processed alternatives; KII_02 and KII_06 both framed this as a structural market-

distortion problem rather than a matter of individual consumer preference, with KII_06 (District Agriculture Officer) noting that "price subsidization of imported UPFs makes them highly competitive against local crops."

Theme 3: Marketing's disproportionate effect on children. A troubling and highly consistent theme across three of the four FGDs and two KIIs was the targeting, whether deliberate or incidental, of children through colourful packaging, cartoon branding, and proximity of vendors to schools. Sub-theme 3.1 ("pester power") was described almost identically across FGD_01, FGD_02, and FGD_04, independently conducted in three different administrative units, lending strong credibility to the pattern. Sub-theme 3.2 was raised specifically by the Education Officer (KII_10), whose professional vantage point at school level added an institutional perspective largely absent from the consumer-facing FGDs: "children spend lunch allowances on packaged snacks and sodas instead of cooked food." This finding was corroborated by the retail audit, in which 5 of 12 outlets displayed child-oriented mascots at or near checkout points.

Taken together, these three themes suggest that marketing operated powerfully in Kamwenge District, but chiefly through situational, impulse-driven, and child-mediated mechanisms rather than through a stable, generalised shift in a consumer's *usual* food category. This distinction plausibly explains why the rich thematic evidence above coexisted with the statistically non-significant bivariate and multivariate associations obtained. A single cross-sectional item on "primary food type usually purchased" was not

designed to capture the situational purchase triggers that the qualitative data showed to be marketing's dominant mode of influence.

Discussion

The finding that radio (58.6% “often/always” exposed) and in-store promotions (38.5%) were the dominant marketing channels reaching Kamwenge consumers, far ahead of social media (11.4%) and billboards (19.1%), aligned closely with Karugu et al. (2025), who found that traditional broadcast media, particularly radio, remained a heavily used but understudied channel for food and beverage marketing in East Africa, and explicitly called for more research on radio's dietary influence outside urban centres. It also resonated with Boncyk et al. (2025), whose content analysis of Ghanaian television found that two-thirds of food advertisements promoted unhealthy products, reinforcing the plausibility of this study's qualitative finding that Kamwenge's marketing environment was “dominated by radio ads, colourful shop displays, and aggressive in-store promotions” (KII_01). At the same time, this study's finding of comparatively low social media exposure stood in contrast to Mubiru and Goyal (2025), who found that customized, engaging social media content significantly increased fast-food purchase intention among urban Kampala consumers; the divergence was consistent with — and empirically confirmed — the gap identified in Chapter Two that Mubiru and Goyal's urban, fast-food-sector findings could not be assumed to generalise to rural or semi-urban districts such as Kamwenge, where lower smartphone and internet penetration limited social media's reach.

The quantitative finding that discounts and price promotions carried the highest self-reported influence score (mean = 3.82/5) among all marketing elements aligned with two distinct bodies of evidence reviewed in Chapter Two. Kopasker et al. (2022), using UK longitudinal purchase data, found that households responded most strongly to volume promotions such as buy-one-get-one-free rather than to simple price cuts, particularly for unhealthy snacks; the present study's qualitative corroboration that “discounts and buy-one-get-one offers compel us to buy packaged snacks we did not plan to buy” (FGD_01) suggested that the same promotional mechanism identified in a high-income setting operated similarly in rural Uganda, addressing the price-elasticity research gap that Kopasker et al. (2022) themselves noted was scarce in African contexts. Similarly, Orji et al. (2020), studying Nestlé Maggi seasoning purchases in Abuja, Nigeria, found that rebates, free samples, and bonus gifts significantly boosted purchase likelihood; this study's retail audit finding that three-quarters of outlets exhibited dominant promotional displays for ultra-processed foods extended Orji et al.'s single-brand

case study finding to a multi-outlet, multi-product rural Ugandan context, addressing the gap the authors identified regarding the absence of comparable East African evidence. However, a central and somewhat unexpected finding of this study was that neither the marketing exposure index nor the marketing influence index showed a statistically significant bivariate ($\chi^2 = 0.213-0.510$, $p > 0.7$) or multivariate (AOR = 0.917–1.041, $p > 0.65$) association with the fresh-versus-processed food choice outcome. This null quantitative result appeared, at first glance, to contradict the broader literature suggesting marketing exposure shapes dietary behaviour, such as Boyland et al.'s (2016) systematic review and meta-analysis showing that advertising exposure significantly increased calorie intake, and the strong descriptive prevalence findings of Boncyk et al. (2025) and Karugu et al. (2025). Reconciling this apparent contradiction required attention to methodological differences: Boyland et al. (2016) synthesised experimental studies measuring *immediate* calorie intake following controlled advertising exposure, a considerably more sensitive and proximal outcome than this study's single cross-sectional self-report of “primary food type usually purchased.” The qualitative data in this study offered a plausible explanation consistent with this measurement gap: marketing appeared to operate through impulsive, in-the-moment purchase triggers (“children constantly demand advertised biscuits,” “discounts... compel us to buy packaged snacks we did not plan to buy”) rather than through a stable, generalised shift in a consumer's usual or intended food category — precisely the kind of proximal behavioural effect that Boyland et al.'s experimental paradigm, but not this study's cross-sectional self-report design, was equipped to detect. This methodological insight represents a genuine contribution of the present study: it suggests that cross-sectional “usual purchase” measures, commonly used in African food-environment surveys of the kind reviewed by Osei et al. (2024), may systematically understate marketing's true behavioural influence relative to experimental or purchase-diary designs.

The finding regarding packaging and branding influence (mean = 3.11 and 3.33 respectively, of moderate but not dominant strength) partially aligned with Rahman et al. (2025) and Paul et al. (2024), both of whom found that packaging quality, visual appeal, and branding significantly shaped consumer preference and purchase decisions in Ghana and Nigeria respectively. The moderate rather than dominant influence recorded in Kamwenge was consistent with the contextual limitation both studies acknowledged — that their urban, formal-market findings might not transfer to a predominantly rural, lower-income, informal-market setting such as Kamwenge District, where price

considerations appeared, in this study, to dominate over branding and packaging aesthetics.

Conclusion

Marketing activity, particularly radio advertising, in-store promotions, and price-based discounting, was pervasive in Kamwenge District's food retail environment and was vividly and consistently described by consumers, retailers, and officials alike as shaping day-to-day purchasing behaviour, especially impulsive purchases. However, this study did not find a statistically significant relationship between self-reported marketing exposure/influence and a cross-sectional measure of "usual" food choice, and the null hypothesis for Objective 1 was therefore not rejected on strict statistical grounds. As a researcher, I concluded that this reflected a genuine limitation of using a single retrospective, categorical outcome measure to capture what is, by its nature, a series of situational and impulsive purchase decisions, rather than evidence that marketing exposure is inconsequential in this setting; the rich, convergent qualitative and observational evidence (retail merchandising patterns, key informant testimony, FGD accounts) left me persuaded that marketing strategies substantively shape food purchasing behaviour in Kamwenge District, even though this particular quantitative instrument was not sensitive enough to detect it statistically.

Limitations

The cross-sectional design, while appropriate for the study's descriptive and associative objectives, limited the ability to establish the temporal or causal direction of any of the associations examined

Limited literacy among some respondents, despite interviewer assistance, may have affected the precision with which Likert-scale items were understood and answered, a concern raised in the original protocol's anticipated limitations and reinforced by this study's own qualitative finding that many respondents struggled with technical English terminology even when assisted.

Recommendations

The Uganda National Bureau of Standards (UNBS) and the Uganda Communications Commission (UCC) should develop and enforce specific guidelines restricting the marketing of ultra-processed foods and beverages to children, including on radio (the dominant channel identified in this study) and through in-store child-oriented displays, drawing on the child-marketing restriction models already piloted in Kenya and Senegal.

Kamwenge District Commercial Office and District Health Office should Institute periodic, joint inspection visits to retail outlets to monitor in-store promotional and

merchandising practices (e.g., eye-level placement of ultra-processed foods, discount-driven impulse-purchase triggers), given that three-quarters of audited outlets in this study exhibited dominant UPF promotional displays.

Retail shop owners and supermarket managers should voluntarily improve the visibility and shelf placement of fresh and minimally processed foods relative to ultra-processed products, and moderate the use of child-directed promotional materials, as a low-cost, immediately actionable step ahead of formal regulation.

Consumer and civil society organisations should design targeted radio-based counter-messaging and nutrition education campaigns, mirroring the channel (radio) through which this study found unhealthy food marketing to be most pervasive in the district.

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List of Acronyms

CVI Content Validity Index

FGD Focus Group Discussion

FOP Front-of-pack

FPC Finite Population Correction

KII Key Informant Interview

NCDs Non-Communicable Diseases

OR Odds Ratio

UCC Uganda Communications Commission

UNBS Uganda National Bureau of Standards

UPF Ultra-Processed Food

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The authors did not declare any conflict of interest.

Data availability

Data are available upon request.

Author contribution

Benon Twinomujuni: Conceptualisation, Funding acquisition, Resources, Investigation, writing – original draft, Software, Methodology, Data curation, Visualisation, Formal analysis, Validation, Writing – review & editing, Supervision, Project administration

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