

A comparative content analysis of food marketing strategies on social media used by big food and beverage companies

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Bryan Ye, Sarah McConville and Jessica Malloy
*Faculty of Medicine and Health,
Nutrition and Dietetics, Susan Wakil School of Nursing and Midwifery,
The University of Sydney, Sydney, Australia*

Emily Denniss
*School of Health and Social Development,
Institute for Physical Activity and Nutrition, Deakin University,
Melbourne, Australia, and*

Rajshri Roy
*Faculty of Medicine and Health,
Nutrition and Dietetics, Susan Wakil School of Nursing and Midwifery,
The University of Sydney, Sydney, Australia;
Charles Perkins Centre, The University of Sydney, Sydney, Australia and
Faculty of Medical and Health Sciences, The University of Auckland,
Auckland, New Zealand*

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Abstract

Purpose – The marketing of ultra-processed and discretionary foods on social media is a growing driver of dietary choices and consumer engagement, particularly among younger users. As food brands increasingly invest in digital media, understanding the strategies they use across platforms is essential for informing public health interventions and policy. Despite this shift, few studies have compared marketing strategies and engagement outcomes across multiple platforms and brands. This study aimed to examine the marketing strategies employed by leading food and beverage companies across four major social media platforms and assess how these strategies influence consumer engagement.

Design/methodology/approach – A comparative analysis was conducted on 1,000 posts from ten internationally recognised food/beverage companies across Facebook, Instagram, TikTok and X (formerly Twitter). Posts (25 posts per company per platform) were manually coded into one or more of eight predefined marketing strategies. Engagement metrics (likes, comments and shares) were collected, and non-parametric statistical tests were used to analyse differences in engagement across platforms, strategies, and brands.

Findings – Corporate social responsibility (CSR) posts were the least frequent (0.7%) but demonstrated the highest median engagement, particularly for comments. Affective Branding and Product Endorsement were the most common strategies but yielded moderate engagement. Engagement differed significantly across platforms, with Instagram receiving the highest median likes and shares, and X the lowest. McDonalds and Sour Patch Kids received significantly higher engagement than other brands ($p < 0.001$).

Practical implications – Public health campaigns and policymakers could leverage emotionally driven and socially oriented marketing strategies, like those successfully employed by food brands to improve consumer

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engagement and promote healthier dietary choices. The distinct differences in strategy effectiveness across platforms also suggest the need for tailored platform-specific health promotion approaches.

Originality/value – This study is among the first to systematically compare digital food marketing strategies and consumer engagement across multiple major social media platforms and brands. Its findings contribute important insights to inform targeted public health initiatives and digital marketing regulation.

Keywords Social media marketing, Consumer engagement, Food and beverage industry, Public health

Paper type Research article

Introduction

The global burden of disease is increasingly exacerbated by overweight and obesity. In 2021, approximately 3.71 million deaths worldwide were attributed to high body mass index (BMI), marking a 43% increase since 2010 (IHME, 2024). In Australia, overweight and obesity emerged as the leading contributors to preventable health loss in 2024, accounting for 8.3% of the total disease burden, surpassing tobacco use (AIHW, 2024). High intake of energy-dense foods, unhealthy eating habits, poor sleep quality, and increased screen time are significant risk factors for obesity among young adults (Lee *et al.*, 2023). Investigation of the physical food environment has highlighted association between food outlets selling predominantly unhealthy and ultra-processed foods and higher levels of obesity, revealing the role the environment plays on dietary choices (Pineda *et al.*, 2024). Notably, evidence shows that children, adolescents, and young adults consume higher levels of ultra-processed foods (UPFs) compared to other age groups, contributing to poorer diet quality and excessive free sugar intake (Marchese *et al.*, 2022; Machado *et al.*, 2020). As young adults continue to spend more time in the digital environment (ACMA, 2021), it can be anticipated that their dietary habits may reflect the types of food and beverages that permeate their online atmosphere.

The digital landscape has transformed marketing, enabling brands to engage directly and interactively with consumers through social media platforms. Social media refers to communication-based applications accessible via the internet for sharing images, videos and informational and lifestyle content. *The Digital 2024 Global Overview Report* highlights the continual growth of social media, with over 5 billion active social media users (Kemp, 2024). In Australia, this trend is even more pronounced with 78.3% of the population, or approximately 20.8 million people, being active social media users, spending a daily average of 1 h and 51 min on social media applications alone (Healy, 2024).

Children aged 13 to 17 are exposed to a median of approximately 168 food promotions per week while using mobile devices, with most of these promotions featuring unhealthy products not permitted under World Health Organization European Region nutrient profile model (Kelly *et al.*, 2021). This digital exposure far exceeds the average of 19 food advertisements per week encountered through television viewing (Kelly *et al.*, 2021). The rise of social media and influencer marketing has not only increased the volume of food promotion but has also made it more subtle and persuasive, often blurring the lines between entertainment and advertising (Alruwaily *et al.*, 2020). When done effectively, influencer content can be difficult to identify as sponsored or promotional, particularly for younger audiences. The proximity of fast-moving consumer goods (FMCG) marketing has progressively intensified from static billboard ads in neighbourhoods to targeted commercials within households via television, and now into the palms of our hands via mobile devices (Cairns, 2013). This evolution shows a shift in marketing power and reach, making unhealthy food advertising more pervasive, personalised, and seamlessly embedded into the everyday digital experiences of young people.

Ubiquitous food and beverage advertising plays an important role in eating behaviours, as explored in other studies (Albert, 2017; Jeong and Shin, 2022; Patwardhan *et al.*, 2024). Findings from these studies show a significant link between social media use and food consumption behaviours, with positive correlations found between social media and the intake of fast food, sugar sweetened beverages, and junk food (Albert, 2017; Jeong and Shin, 2022;

Patwardhan *et al.*, 2024). Food and beverage companies invest into social media platforms such as Facebook and Instagram to craft persuasive content that captures the attention of young people and children (Northcott *et al.*, 2025). By leveraging interactive features such as comments and sharing functionalities, these companies enhance consumer engagement and amplify brand visibility. In addition to interactive features such as likes, comments, and shares that amplify reach and engagement, brands frequently partner with celebrities and social media influencers, a strategy that not only increases relatability and trust among young audiences but also often conceals the persuasive intent of the content. These influencer-driven campaigns can be particularly powerful, given their seamless integration into everyday social media use, and their potential to foster brand loyalty without overtly appearing as advertisements. Despite growing research on digital food marketing exposure, few studies have systematically compared how specific marketing strategies such as emotional branding, price promotion, and corporate social responsibility perform across platforms in driving consumer engagement, a key construct in consumer behaviour and marketing theory.

While prior research has examined the prevalence of unhealthy food marketing on individual platforms and its association with dietary behaviours, less is known about how specific marketing strategies perform across platforms in terms of consumer engagement. Existing studies rarely integrate insights from food systems research with consumer engagement and digital marketing theory to explain why certain strategies attract attention, interaction, and amplification. Understanding these dynamics is theoretically important, as engagement metrics reflect how consumers cognitively and emotionally respond to marketing stimuli, and practically important given the role of algorithms in prioritising highly engaging content.

General engagement analysis suggests that individuals are more inclined to like, comment and share content featuring unhealthy, energy-dense foods compared to healthier options (Pancer *et al.*, 2022, Kent *et al.*, 2024). Algorithms are designed to promote content with the greatest engagement, potentially amplifying the reach of unhealthy food and beverage content (Gillespie, 2016; Zulli, 2018). On platforms such as Facebook, Instagram, X (formerly Twitter), and TikTok, companies can promote products with minimal marketing expense while still garnering high consumer engagement and reach. Strategies such as using trending audios, minimal graphic design, enlisting public influencers, and reposting user-generated content are all relatively low-cost and can create the opportunity for virality.

A lack of policy for social media advertising leaves audiences vulnerable to potentially harmful marketing strategies that promote fast food and discretionary items, typically described as ultra-processed. Products such as these are high in saturated fat, sugar, and salt, and are associated with adverse health outcomes, particularly for cardiometabolic diseases (Temple, 2024, Bahadoran *et al.*, 2016). Analysing food marketing strategies is necessary to inform decision-makers and policymaking on evolving digital advertising tactics and emerging trends. Determining the marketing strategies that drive high engagement allows health promotion initiatives to adapt these techniques to encourage healthier food choices and positively influence consumer behaviour. Leveraging these approaches allows health campaigns to resonate more effectively with target audiences, fostering greater awareness and adoption of healthy eating habits. Through systematic comparison of marketing strategy engagement across various social media platforms, this study will provide insights that can inform the development of effective health promotion strategies in the digital age.

Addressing this gap advances food marketing and consumer behaviour research by linking platform-specific affordances with engagement outcomes, rather than treating social media as a homogenous environment. Practically, identifying which strategies drive engagement provides critical insight for public health practitioners and policymakers seeking to counter or adapt persuasive digital food marketing techniques in an increasingly algorithm-driven media ecosystem. Accordingly, this study addresses the following research questions:

- (1) What marketing strategies are most commonly used by major food and beverage brands on social media?
- (2) How does consumer engagement (likes, comments, and shares) differ across marketing strategies?
- (3) How does the relationship between marketing strategy and engagement vary across social media platforms

Methods

Study design

This study employed a comparative content analysis to examine digital food marketing strategies across four major social media platforms: Facebook, Instagram, TikTok, and X (formerly Twitter). These platforms were selected based on their high user base among adolescents and young adults in Australia, their relevance to digital food marketing, and their suitability for comparative analysis across varying content formats. Platforms such as YouTube were excluded due to limitations in consistent data access and the differing nature of video-based content, which requires alternative analytic approaches. Data collection was conducted during March and April 2025. To ensure consistency in engagement metrics (likes, shares, comments), only posts published prior to March 3, 2025, were included in the analysis. This cut-off allowed for sufficient time for audience interaction and prevented more recently published posts from skewing engagement comparisons due to limited exposure time. As this study did not involve human participants or the collection of personal or identifiable data, a formal ethics application was not required, and the study was deemed exempt from ethics review under institutional guidelines.

Sample selection

Ten food and beverage companies were selected based on predefined inclusion criteria to ensure a diverse and representative sample of popular brands actively engaging in digital marketing across social media. To be eligible, companies were required to:

- (1) Be internationally recognised brands;
- (2) Maintain verified accounts on all four platforms (Facebook, Instagram, TikTok, and X), indicated by a verification badge;
- (3) Be actively posting on each platform (i.e. having posted within the past two months);
- (4) Post with regular frequency (defined as a minimum of six posts per year per platform).

Brand popularity was assessed based on a combination of follower count and engagement levels (likes, comments, and shares) across platforms to identify brands with both a broad reach and high user interaction. An initial list of qualifying brands was compiled through manual screening of social media accounts. From this list, ten companies were purposively selected to reflect diversity in product types (e.g. beverages, fast food, confectionery) and brand personae (e.g. youth-oriented, corporate social responsibility-focused). Screening and selection were conducted by two student researchers in March 2025 under the supervision of the lead investigator. This ensured consistency in applying the inclusion criteria and transparency in the selection process.

Brand selection was further guided by parity in digital market presence, operationalised through follower counts and average engagement rates across platforms. Brands were selected to ensure comparable visibility and interaction levels, rather than extreme outliers, enabling meaningful cross-brand comparisons. This approach aligns with prior digital

Data collection

Following the identification of relevant brands, data were collected manually from each company's official and verified accounts on Facebook, Instagram, TikTok, and X. For each brand, the 25 most recent posts published prior to March 3, 2025, were extracted from each platform. Posts were sampled using a purposive, time-bound strategy, whereby the 25 most recent posts per brand per platform published prior to March 3, 2025, were collected. This approach ensured temporal consistency across brands while capturing current marketing practices, rather than relying on engagement-driven or algorithmically curated samples. This cut-off ensured all posts had sufficient time to accumulate engagement (likes, shares, and comments), thus improving comparability across posts. A fixed post count per brand and platform was used to maintain parity in representation and avoid bias introduced by brands with higher posting frequency. No minimum statistical sample size was required, as the study aimed to compare engagement patterns rather than estimate population parameters.

For each post, the following metadata were recorded using Google Sheets:

- (1) Date of publication
- (2) Media type (image, video, or text)
- (3) Caption and brief content description
- (4) Engagement metrics (likes, comments, and shares)
- (5) URL of the post
- (6) Total number of followers on the brand's page at the time of data collection

Data collection was conducted in March 2025 by two student researchers under supervision. Every fifth post was cross verified by a second coder to ensure accuracy and consistency in data entry.

Data categorisation

After data collection, all posts were manually coded into eight predefined thematic marketing categories, based on established and widely cited frameworks in food marketing, consumer behaviour, and digital advertising research, including emotional branding, promotional tactics, and influencer-based persuasion (Keller, 2003; Jenkin *et al.*, 2014; Coates *et al.*, 2019; Pancer *et al.*, 2022). The categories reflected commonly used marketing strategies observed in digital advertising, including emotional appeals, influencer collaborations, and promotional tactics. These categories were:

- (1) Affective Branding
- (2) Product Endorsement
- (3) Promotional Pricing
- (4) Brand Storytelling
- (5) Corporate Social Responsibility (CSR)
- (6) Collaboration
- (7) Competitive Callout
- (8) Product Placement

These categories reflect dominant strategic logics in contemporary digital marketing, including affective persuasion, price-based incentives, symbolic brand meaning, and corporate signalling, consistent with recent literature on digital consumer engagement.

Initially, Health Claims was included as a planned marketing theme. However, no included food companies posted content with the primary intent of promoting products based on health benefits. Where the main marketing strategy was ambiguous, additional subcategories were developed inductively during the coding process to ensure better thematic coverage (see Table 1). Posts were primarily categorised based on the most prominent marketing theme presented, although in cases where content clearly employed multiple strategies, posts were assigned to more than one category (e.g. Promotional Pricing/Affective Branding). Coding was conducted independently by two coders, with regular discussion to resolve ambiguities and refine coding consistency. Discrepancies were addressed either by assigning a post to multiple categories or, where needed, resolved through consultation with a third reviewer.

Data analysis

Engagement metrics were non-normally distributed; therefore, non-parametric statistical tests were applied (Social Science Statistics, 2024). The distribution of engagement metrics was assessed using Shapiro–Wilk tests and visual inspection of histograms. The distribution of engagement metrics was assessed using Shapiro–Wilk tests. Likes, shares, and comments were significantly non-normally distributed: likes, $W = 0.229, p < 0.001$; shares, $W = 0.147, p < 0.001$; comments, $W = 0.260, p < 0.001$. Therefore, non-parametric statistical tests were used. Likes, shares, and comments were analysed as separate engagement outcomes and were not statistically compared with one another. Differences in engagement across multiple marketing strategies and brands were assessed using Kruskal–Wallis H tests for independent samples. Kruskal–Wallis H tests were appropriate because engagement metrics were discrete count outcomes and the grouping variables were categorical and independent. Where significant differences were identified, post hoc pairwise comparisons were conducted using Mann–Whitney U tests with Bonferroni adjustment. Associations between marketing strategy and social media platform were examined using Pearson’s chi-square tests of independence. Because marketing strategy and platform formed a contingency table larger than 2×2 , Fisher–Freeman–Halton exact testing with Monte Carlo estimation was used when expected cell counts were small. A single odds ratio is not defined for contingency tables larger than 2×2 ; therefore, Cramér’s V was used as the effect size for the overall association. Exploratory one-versus-rest 2×2 Fisher’s Exact Tests were used only to describe specific platform–strategy cells. Statistical significance was set at $p < 0.05$. The authors hypothesised that:

- H1. Consumer engagement differs significantly across digital food marketing strategies.
- H2. Consumer engagement differs significantly across social media platforms.
- H3. The distribution of marketing strategies varies by social media platform.

Results

All engagement metrics (likes, shares, and comments) were treated as outcome variables. Because likes, shares, and comments represent distinct forms of engagement, all analyses were conducted separately for each metric. Marketing strategy, social media platform, and brand were treated as independent grouping variables. Given the non-normal distribution of engagement data, Kruskal–Wallis H tests were used to assess overall differences across multiple groups, followed by post hoc Mann–Whitney U tests where appropriate. In total, 1,000 posts from 10 food and beverage brands’ Facebook, Instagram, X and TikTok accounts were collected (25 posts per brand per platform). The brands included in the sample and the distribution of engagement metrics across companies are presented in Table 2.

Table 1. Definitions of categories and sub-categories for marketing themes

Category	Definition	Sub-categories	Definition
Product Endorsement	Posts that express support or positive appeal for a specific food or beverage product	User Generated Content	Posts that feature content created by customers or fans, typically showcasing their experience with the product
		Self-endorsement	Posts where the brand directly promotes its own product in a positive light, without external validation or partnerships
		Limited Offer	Posts highlighting a product that is available for a short time only, creating urgency and exclusivity
		Seasonal Marketing	Posts that endorse a product tied to a specific season, holiday, or event to make it more relevant to current customer interests
Collaboration	A post that involves a partnership between two or more brands, influencers, or creators to promote a product or campaign	Brand	Posts featuring a partnership between two or more brands working together to promote a product, campaign, or event
		Celebrity	Posts that involve a well-known influencer, public figure or entertainer partnering with a brand to promote a product or campaign
		Athlete	Posts showcasing partnerships between sports personalities and brands, often used to target fans and sports audiences
Brand Storytelling	A post that uses narratives and emotional connections to communicate brand values and engage customers	Character Marketing	Posts that use mascots, fictional characters, or brand personas to tell stories and engage the audience
		Reputation	Posts that highlight the brand's history, values, achievements, or ethical practices to build trust and loyalty
		Sporting Event	Posts that connect the brand with sports events, teams, or athletes to evoke excitement, pride, or shared experiences
Promotional Pricing	A post that uses temporary discounts or special offers as a strategy to drive sales and customer acquisition	Value Marketing	Posts that promote the perception of getting more for less, such as deals on larger quantities or bundled offers
		BOGO	Posts featuring offers where customers get a free or discounted item when they purchase another item
		Charm Pricing	Posts that use pricing ending in 0.99 or 0.95 to create the perception of a better deal or affordability
		In-App Only	Posts promoting special discounts or offers that are exclusively available through a brand's mobile app
Corporate Social Responsibility	A post in which a business communicates its contribution to society through ethical, environmental, or social initiatives		

(continued)

Table 1. Continued

Category	Definition	Sub-categories	Definition
Competitor Call Out	A post in which a brand references or critiques its competitors, either explicitly or through implication, to draw comparison or gain attention	Brand	Posts where a brand directly or indirectly references or critiques another competing brand to highlight its own advantages or to engage audiences through rivalry
Engagement Bait	A post that explicitly prompts users to engage by liking, sharing, commenting, or tagging others	Comment Bait	Posts that invite users to comment, often by asking questions or prompting “tags”
		Share Bait	Posts that prompt users to share the content with their friends or networks
		Like Bait	Posts that explicitly ask or encourage users to like the post to increase engagement
Affective Branding	A post that uses emotional appeal to build a connection between the brand and its audience	Humour	Posts that use jokes, memes, or playful content to entertain and create a positive emotional connection with the audience
		Trending Social Topics	Posts that tap into current events, popular culture, or viral trends to engage audiences by staying relevant and timely
		Experience	Posts that evoke sensory or relatable experiences associated with using the product, helping the audience imagine or recall those moments
		Emotional Appeal	Posts that aim to evoke deeper feelings such as nostalgia, joy, empathy, or inspiration to strengthen the bond with the audience

Table 2. Median number of engagement metrics (likes, shares, comments) per food company

Company	Likes	<i>p</i> -value	Shares	<i>p</i> -value	Comments	<i>p</i> -value
McDonalds	7,100	<0.001	957.5	0.007	691	<0.001
KFC	242	0.025	22	0.109	60	0.022
Subway	338	0.218	32.5	0.720	59.5	0.118
Krispy Kreme	699	0.285	77	0.283	35.5	0.030
Starbucks	3,600	0.554	402.5	0.258	150	0.991
Snickers	221	0.297	24	0.870	25	0.056
Mountain Dew	538	0.724	45	0.430	61	0.046
Sour Patch Kids	9031.5	<0.001	867.5	<0.001	351	<0.001
Wendy’s	1,002.5	0.089	110	0.168	124	0.135
Burger King	301	<0.001	38	<0.001	50	<0.001

Note(s): Kruskal–Wallis tests showed significant differences across companies for likes, $H(9) = 326.58$, $p < 0.001$, $\eta^2 = 0.321$; shares, $H(9) = 326.79$, $p < 0.001$, $\eta^2 = 0.321$; and comments, $H(9) = 325.35$, $p < 0.001$, $\eta^2 = 0.320$. Post-hoc comparisons were conducted using Dunn’s test with Bonferroni correction

A Kruskal–Wallis test indicated significant differences in engagement across companies for likes, $H(9) = 326.58$, $p < 0.001$, $\eta^2 = 0.321$; shares, $H(9) = 326.79$, $p < 0.001$, $\eta^2 = 0.321$; and comments, $H(9) = 325.35$, $p < 0.001$, $\eta^2 = 0.320$. Dunn’s post-hoc comparisons with Bonferroni correction were conducted to identify specific company-level differences.

Post-hoc Dunn's tests with Bonferroni correction showed that McDonald's and Sour Patch Kids differed significantly from several lower-engagement brands across engagement metrics (Supplementary Table A2).

Through deductive assessment, a total of eight marketing strategies were identified. As the coding process involved a cross-referencing stage, several posts were classified under two marketing themes. There was an unequal distribution of posts, with a particularly small number of posts categorised under CSR ($n = 7$) and Competitor Callout ($n = 6$).

Because likes, shares, and comments represent distinct forms of engagement, each metric was analysed separately. A Kruskal–Wallis test indicated significant differences in engagement across marketing strategies for likes, $H(7) = 57.36$, $p < 0.001$, $\eta^2 = 0.052$; shares, $H(7) = 41.22$, $p < 0.001$, $\eta^2 = 0.035$; and comments, $H(7) = 37.35$, $p < 0.001$, $\eta^2 = 0.031$. Dunn's post-hoc comparisons with Bonferroni correction identified specific pairwise differences between strategies, reported in Supplementary Table A1. CSR posts generated the highest median engagement across all three metrics, despite accounting for only 0.7% of posts. Affective Branding and Product Endorsement were the most frequently used strategies but demonstrated moderate median engagement. (Table 3).

A Pearson chi-square test of independence demonstrated a significant association between marketing strategy and social media platform ($\chi^2(39, N = 1,000) = 73.42$, $p < 0.001$), indicating that strategies were not evenly distributed across platforms. Affective Branding was the most prevalent strategy across all platforms, while Facebook disproportionately featured Promotional Pricing, Brand Storytelling, and CSR content. Instagram and TikTok more frequently utilised Collaboration and Engagement Bait strategies, whereas X showed greater use of Competitor Callout and Affective Branding. (Table 4).

A Pearson chi-square test of independence indicated a significant association between marketing strategy and social media platform, $\chi^2(21, N = 1,000) = 48.82$, $p < 0.001$, Cramér's $V = 0.128$. Because some expected cell counts were below five, a Fisher–Freeman–Halton exact test with Monte Carlo estimation was also conducted and confirmed the association, $p < 0.001$. Because some expected cell counts were below five, a Fisher–Freeman–Halton exact test with Monte Carlo estimation was also conducted and confirmed the association, $p < 0.001$.

Exploratory one-versus-rest Fisher's Exact Tests showed that Collaboration was significantly less likely to appear on Facebook than on other platforms, $OR = 0.354$, 95% CI [0.223, 0.561], $p < 0.001$, Bonferroni-adjusted $p < 0.001$. Although Brand Storytelling appeared more likely on Facebook, $OR = 2.721$, 95% CI [1.309, 5.659], this association did

Table 3. Median number of engagement metrics (likes, shares, comments) per marketing strategy

Marketing strategy	<i>n</i> (posts)*	Percent of total posts (%)	Median likes	<i>P</i> -value	Median shares	<i>P</i> -value	Median comments	<i>P</i> -value
Collaboration	191	18.8	1,826	0.234	155	0.975	90	0.519
Promotional Pricing	98	9.7	412	0.059	46	0.180	68	0.035
Product Endorsement	303	29.9	569	0.431	59.5	0.347	75.5	0.225
Affective Branding	340	33.5	697	0.265	77	0.109	70	0.096
Brand Storytelling	30	3	2,350	0.614	308.5	0.540	467	0.450
Engagement Bait	40	3.9	270	0.223	30	0.394	73	0.331
Corporate Social Responsibility	7	0.7	4,100	0.679	453	0.988	635	<0.001
Competitor Callout	6	0.6	1,133	0.706	180	0.745	84	0.697

Note(s): *Posts which were classified as two categories were included under both marketing strategies in Table 2. As such, the total number of posts shown in Table 2 exceeds 1,000. Median is descriptively because engagement metrics were non-normally distributed. Inferential comparisons were based on Kruskal–Wallis H tests and Dunn's post-hoc tests with Bonferroni correction

Table 4. Number and ratio of social media posts per platform and marketing strategy

Strategy		Facebook	Instagram	X	Tik Tok	Total
Collaborations	Count (n)	21	60	46	57	184
	% within Strategy	11.4%	32.6%	25.0%	31.0%	100.0%
Promotional Pricing	Count (n)	30	21	22	16	89
	% within Strategy	33.7%	23.6%	24.7%	18.0%	100.0%
Product Endorsement	Count (n)	84	70	66	76	296
	% within Strategy	28.4%	23.6%	22.3%	25.7%	100.0%
Affective Branding	Count (n)	86	71	92	85	334
	% within Strategy	25.7%	21.3%	27.5%	25.4%	100.0%
Brand Storytelling	Count (n)	14	8	5	3	30
	% within Strategy	46.7%	26.7%	16.7%	10.0%	100.0%
Engagement Bait	Count (n)	8	11	9	11	39
	% within Strategy	20.5%	28.2%	23.1%	28.2%	100.0%
Corporate Social Responsibility	Count (n)	4	1	2	0	7
	% within Strategy	57.1%	14.3%	28.6%	0.0%	100.0%
Competitor Callout	Count (n)	0	3	3	0	6
	% within Strategy	0.0%	50.0%	50.0%	0.0%	100.0%
Collaborations + Promotional Pricing	Count (n)	2	1	2	0	5
	% within Strategy	40.0%	20.0%	40.0%	0.0%	100.0%
Product Endorsement + Affective Branding	Count (n)	1	0	1	2	4
	% within Strategy	25.0%	0.0%	25.0%	50.0%	100.0%
Product Endorsement + Collaboration	Count (n)	0	1	0	0	1
	% within Strategy	0.0%	100.0%	0.0%	0.0%	100.0%
Promotional Pricing + Product Endorsement	Count (n)	0	0	2	0	2
	% within Strategy	0.0%	0.0%	100.0%	0.0%	100.0%
Affective Branding + Promotional Pricing	Count (n)	0	2	0	0	2
	% within Strategy	0.0%	100.0%	0.0%	0.0%	100.0%
Product Endorsement + Engagement Bait	Count (n)	0	1	0	0	1
	% within Strategy	0.0%	100.0%	0.0%	0.0%	100.0%
Total (n)		250	250	250	250	1,000

Note(s): Pearson chi-square test: χ^2 (21, $N = 1,000$) = 48.82, $p < 0.001$, Cramér's $V = 0.128$. Fisher–Freeman–Halton exact test was applied where expected cell counts were <5. OR = odds ratio; CI = confidence interval. One-versus-rest Fisher's Exact Tests were exploratory and Bonferroni-adjusted for multiple comparisons

not remain statistically significant after Bonferroni correction, adjusted $p = 0.291$. ([Supplementary Table A3](#)).

Kruskal–Wallis H tests revealed significant differences in engagement outcomes across brands, indicating heterogeneity in consumer response rather than brand-driven grouping effects ($p < 0.05$). In terms of engagement, McDonald’s and Sour Patch Kids received significantly more likes and comments than other companies (all $p < 0.001$). Conversely, posts from KFC received significantly fewer likes ($p = 0.025$), while Burger King received significantly fewer likes, shares, and comments (all $p < 0.001$). For shares, McDonald’s ($p = 0.007$) and Sour Patch Kids ($p < 0.001$) were the only brands to receive significantly higher engagement. ([Table 4](#)).

Kruskal–Wallis H tests indicated significant differences in engagement across social media platforms, with platform treated as the primary grouping variable. Instagram generated significantly higher median likes and shares compared with Facebook, TikTok, and X ($p < 0.01$). X recorded significantly lower engagement across all three metrics. Facebook followed with the second highest median likes and shares, and although it showed the greatest median comment engagement this value was not statistically significant. X recorded the lowest engagement across all three metrics with median likes, shares, and comments all significantly lower than other platforms ([Table 5](#)).

Kruskal–Wallis tests indicated significant differences in engagement across platforms for likes, $H(3) = 257.41, p < 0.001, \eta^2 = 0.255$; shares, $H(3) = 181.05, p < 0.001, \eta^2 = 0.179$; and comments, $H(3) = 91.50, p < 0.001, \eta^2 = 0.089$. Dunn’s post-hoc comparisons with Bonferroni correction showed that Instagram generated significantly higher likes and shares than all other platforms, while X had significantly lower engagement across most metrics.

Discussion

Principal findings

This study conducted a comparative content analysis of 1,000 social media posts published by ten prominent food and beverage companies across four major social media platforms (Facebook, Instagram, X and TikTok). Posts were inductively coded into predefined marketing strategy themes. The findings highlight substantial disparities in the distribution of marketing strategies and their associated engagement metrics. This discussion is structured around the study’s research questions: (RQ1) which strategies are most commonly used, (RQ2) which strategies generate the highest engagement, and (RQ3) how strategy use and engagement differ across platforms.

Among the marketing strategies analysed, CSR posts demonstrated notably high median engagement, particularly for comments, despite representing a very small proportion of the

Table 5. Median number of engagement metrics per Social Media Platform

	Likes		Shares		Comments		No. of posts
	Median	P-value	Median	P-value	Median	P-value	
Facebook	358	0.004	62	0.037	163	0.174	250
X	220.5	0.003	42	0.021	42.5	0.002	250
Instagram	3,307	0.001	416	0.005	104	0.682	250
Tik Tok	601.5	0.115	48	0.380	59	0.105	250
Total	765.5	N/A	84.5	N/A	78	N/A	1,000

Note(s): Median engagement metrics by social media platform. Kruskal–Wallis tests showed significant differences across platforms for likes, $H(3) = 257.41, p < 0.001, \eta^2 = 0.255$; shares, $H(3) = 181.05, p < 0.001, \eta^2 = 0.179$; and comments, $H(3) = 91.50, p < 0.001, \eta^2 = 0.089$. Dunn–Bonferroni post-hoc comparisons are reported in [Supplementary Table A2](#). Engagement metrics were treated as dependent variables; platform was the independent grouping variable

dataset. Conversely, Promotional Pricing posts, which featured more frequently, elicited significantly lower levels of engagement. Post-hoc analyses indicated that the strongest pairwise differences were generally observed between emotionally oriented or narrative-based strategies and overtly promotional content. These findings suggest that higher posting frequency within a category is not necessarily associated with higher engagement, indicating that engagement may be driven more by message appeal than content volume. Younger generations, who are both heavy users of social media and more attuned to social justice and sustainability issues may be more responsive to CSR content, which aligns with a broader shift toward subtle and value-driven marketing strategies (Fromm and Read, 2018). Consistent with the non-parametric analysis, engagement differences across strategies were statistically significant across metrics, reinforcing that strategy choice is associated with measurable differences in user interaction.

Affective Branding emerged as the most frequently employed strategy. This theme includes emotionally charged content, such as humour, nostalgia, and lifestyle alignment, and was found to significantly enhance user engagement. These findings align with a prior study by Dwivedi *et al.* (2019), that links emotional brand attachment to consumer-based brand equity, suggesting that emotionally driven strategies are effective in fostering consumer relationships and extending digital reach. Posts categorised under Product Endorsement and Promotional Pricing tended to reduce the consumer-brand relationship to a transactional exchange, whereas those under CSR and Affective Branding were more successful in facilitating parasocial relationships, where consumer affinity and loyalty were enhanced (Brooks *et al.*, 2022; Ward, 2016). For food businesses, this indicates that brand meaning-making and identity signalling may be more effective for sustaining engagement than short-term price incentives, supporting marketing theory that emphasises brand equity building over purely promotional tactics.

Platform-specific analysis revealed that Instagram consistently generated higher levels of engagement in the form of likes and shares, than other social media platforms. This finding is consistent with existing research that identifies Instagram's visual-centric design, influencer culture, and high youth engagement as key drivers of performance (Truman and Elliott, 2024; Rahman *et al.*, 2022). In contrast, posts published on X received less engagement across all metrics. Post-hoc comparisons confirmed that Instagram generated significantly greater likes and shares than most other platforms, while X consistently underperformed across engagement metrics. This may be attributable to its predominantly text-based interface, which is less conducive to food and beverage marketing that relies heavily on visual appeal. Furthermore, X maintains a significantly smaller user base (~600 million as of 2025) compared to Facebook (~3 billion) and Instagram (~2 billion) (Dixon, 2025), which likely results in lower engagement. Brand-specific analysis revealed that McDonald's and Sour Patch Kids consistently achieved the highest engagement. McDonald's performance is likely influenced by its popularity and substantial social media following (82 million on Facebook as of 2025). In contrast, Sour Patch Kids, with a markedly smaller following (3.1 million on Facebook), effectively employed "Affective Branding" to maintain high interaction levels. Sour Patch Kids appeared to leverage humour and meme-based, youth-oriented tone to drive interaction despite a smaller follower base (Román-García *et al.*, 2016).

The absence of "Health Marketing" reflects a broader industry trend in which health-oriented marketing is deprioritised in favour of emotionally appealing or promotional content (Cuevas *et al.*, 2021). Moreover, an inverse trend was observed between the number of posts within a marketing category and its average engagement. Categories with fewer posts tended to generate more interaction. This suggests that audiences may experience fatigue or reduced responsiveness to overused content types. The importance of emotional resonance in user engagement is further supported by prior research indicating that posts eliciting positive emotional responses are more likely to receive interaction (Smith, 2013).

The study makes three contributions. First, it advances digital food marketing research by moving beyond exposure counts to compare engagement outcomes across strategies. Second, it contributes to consumer behaviour and marketing literature by showing that engagement

tended to be stronger for value-driven and affective messaging than for transactional pricing content. Third, it offers cross-platform evidence that platform affordances shape both strategic emphasis and engagement, which refines how “social media marketing” should be theorised as platform-specific rather than uniform.

Strengths and limitations

A primary strength of this study is the comprehensive and evenly distributed sample size of 1,000 social media posts, distributed equally across platforms and brands. Furthermore, the validity of the coding process was reinforced by having each post coded independently by the two lead authors. Discrepancies in coding were resolved via third-party adjudication, contributing to the methodological robustness of the analysis. Nevertheless, several limitations warrant consideration. Firstly, the underrepresentation of CSR (0.7%) and Competitor Callout (0.6%) posts limit the statistical generalisability of findings within those themes. Given the small number of CSR and Competitor Callout posts, findings relating to these categories should be interpreted cautiously despite significant overall non-parametric test results. The sample focused on major multinational brands; therefore, findings may not generalise to national brands, smaller businesses, or organisations marketing healthier products, whose goals and messaging strategies may differ. Secondly, this study did not conduct sentiment analysis and therefore, the emotional valence (positive, negative, or neutral) of the engagement remains unknown. While this constrains the interpretability of comments as a purely positive engagement metric, negative discussions still provide brands with first-hand recommendations for improvement, increasing business profitability (Pantano and Corvello, 2013). Furthermore, the study focused exclusively on engagement metrics (likes, shares, comments) and did not assess the demographic characteristics of who was exposed to the marketing content, their purchasing behaviour or nutritional outcomes. As such, the commercial or potential health impacts of these marketing strategies remain speculative. While categories such as Promotional Pricing underperform in digital interaction, they may be more effective at converting impressions into sales, suggesting that engagement and economic performance are not necessarily correlated. Additionally, engagement metrics may not accurately reflect users’ underlying sentiments or intentions. For example, a post may be widely shared or commented on for reasons unrelated to positive brand perception, such as criticism or mockery. The dynamic nature of social media further complicates interpretation, as post visibility and interaction can change substantially over time. Although a time-restricted data collection period was employed to mitigate these temporal variations, posts published closer to the study’s endpoint (March 2025) may not have reached engagement saturation.

Implications for practice

The findings of this study have implications for dietetic practice and client education. From a practice perspective, these findings inform both commercial digital strategy (how brands generate interaction at scale) and public health counter-marketing (how to compete for attention within algorithmic feeds). Public health professionals should consider adopting successful commercial strategies, such as humour, relatability, storytelling, and influencer partnerships to enhance engagement with healthy messages. Consumers are frequently exposed to persuasive, emotionally charged digital food marketing, often without recognising its influence (Bagnato *et al.*, 2023). This environment complicates the decision-making process, particularly for individuals prone to emotion-led choices (Crivelli *et al.*, 2024). Dietitians must be equipped to address this challenge by enhancing clients’ social media literacy and empowering them to critically assess the marketing content they encounter. A nuanced understanding of digital marketing techniques can also inform the development of more impactful health promotion campaigns. Queensland Health’s viral Instagram campaign “It’s Okay to Poo at Work” employed humour and Affective Branding to destigmatise digestive health, achieving over 240,000 likes, 1,900 comments, and 320,000 shares

(Queensland Health, 2024). This illustrates the potential for emotionally resonant messaging to amplify public health discourse. DrinkWise Australia similarly integrates emotional appeals and celebrity endorsements to advocate for responsible alcohol consumption, notably through campaigns such as “Kids Absorb Your Drinking” (Drinkwise Australia, 2008). However, the organisation’s financial ties to the alcohol industry have drawn criticism, highlighting the importance of transparency and authentic harm-reduction objectives in health promotion (Foundation for Alcohol Research and Education, 2024). This emphasises the critical partnership between health promotion campaigns and national policy stakeholders. Without legislative change, the population remains at the helm of food and beverage companies who can evade health promotion tactics and produce duplicitous marketing content for commercial gain. Socially, reducing exposure to highly engaging UPF marketing may contribute to healthier food norms online, supporting improved diet quality and potentially lowering obesity-related health loss over time.

Implications for future research

Further research is needed to explore the direct effects of digital food marketing on consumer purchasing behaviours, dietary intakes and long-term health outcomes. While correlations between increased social media usage and diet-related diseases have been identified (AIHW, 2024), causality cannot be inferred. Longitudinal studies tracking consumer exposure to food marketing alongside changes in dietary behaviour and health markers would be valuable. Research has demonstrated the value of social media analysis for understanding food-related consumer sentiment and behavioural responses, including anti-consumption narratives, suggesting this approach can be extended beyond marketing content to consumer resistance and critique (Khan *et al.*, 2019). Future investigations should also include sentiment analysis to evaluate the tone of user-generated comments, thereby providing deeper insights into audience reception. Expanding the sample to include brands that focus on health-based content could allow for more comprehensive comparisons between healthy and unhealthy food promotion. Future studies should explicitly compare multinational discretionary-food corporations with national brands and health-oriented food businesses to assess whether engagement drivers differ when health positioning is central rather than profit-maximisation. Evaluating current health promotion efforts on social media would also help identify effective communication strategies. Observational studies similar in design to this research could assess the engagement performance of public health campaigns. This would inform the development of more compelling and platform-appropriate messaging for health stakeholders.

Implications for policy

The findings underscore the necessity for regulatory intervention to address the pervasive influence of unhealthy food marketing in the digital environment. The National Preventive Health Strategy 2021–2030 recognises the dual potential of social media as both a risk and opportunity for health communication (Australian Government Department of Health, 2021). To mitigate harm, policies such as mandatory restrictions on data collection for targeted advertising to children, limitations on the promotion of discretionary, ultra-processed and fast foods and nutrient disclosures in marketing posts, should be implemented. The recent Online Safety Amendment (Social Media Minimum Age) Bill 2024 (Cth), which enforces a minimum age of 16 for social media access, reflects growing public concern regarding youth exposure to harmful digital content (Fraser and Griffiths, 2024). While this legislation shifts responsibility to platforms, additional policy efforts to regulate social media platforms are required to address marketing practices directly. This includes mandating clear labelling of sponsored content, preventing the sale of user data to manufacturers of discretionary and ultra-processed foods and curbing algorithmic amplification of unhealthy food advertising. Developing a national social media health promotion framework may further enhance the visibility and effectiveness of

health messaging. By emulating techniques used by the food and beverage industry, such a framework could improve audience engagement and promote behavioural change at scale.

Conclusion

We found that emotionally oriented strategies particularly Affective Branding and Product Endorsement were most commonly used, while CSR content was rare. Engagement differed significantly by strategy where CSR posts demonstrated disproportionately high median interaction, particularly for comments, whereas overtly transactional strategies such as Promotional Pricing tended to underperform ([Hypothesis 1](#)). Both engagement and strategy distribution varied significantly by platform, indicating that social media food marketing is not a uniform phenomenon but is shaped by platform affordances and user norms ([Hypothesis 2](#) and [3](#)). These findings matter because they advance theory by showing that engagement is more strongly associated with affective and value-signalling content than with price-led messaging, and they inform practice and policy by identifying the specific persuasive tactics and platform dynamics that public health counter-marketing and regulatory approaches must contend with in the contemporary digital food environment.

Supplementary Tables

Table A1. Significant Dunn–Bonferroni comparisons by marketing strategy

Outcome	Significant pairwise comparison	z	Bonferroni-adjusted p
Likes	Collaboration vs Promotional Pricing	5.71	3.12×10^{-7}
Likes	Promotional Pricing vs Brand Storytelling	−5.22	5.02×10^{-6}
Likes	Brand Storytelling vs Engagement Bait	4.51	1.85×10^{-4}
Likes	Collaboration vs Engagement Bait	4.14	9.80×10^{-4}
Likes	Promotional Pricing vs Affective Branding	−3.89	0.0028
Likes	Collaboration vs Product Endorsement	3.87	0.0030
Likes	Product Endorsement vs Brand Storytelling	−3.80	0.0041
Likes	Affective Branding vs Brand Storytelling	−3.35	0.0229
Shares	Promotional Pricing vs Brand Storytelling	−4.60	1.18×10^{-4}
Shares	Collaboration vs Promotional Pricing	4.23	6.63×10^{-4}
Shares	Brand Storytelling vs Engagement Bait	4.22	6.83×10^{-4}
Shares	Product Endorsement vs Brand Storytelling	−3.70	0.0059
Shares	Collaboration vs Engagement Bait	3.40	0.0189
Shares	Promotional Pricing vs Affective Branding	−3.25	0.0321
Comments	Promotional Pricing vs Brand Storytelling	−5.48	1.19×10^{-6}
Comments	Affective Branding vs Brand Storytelling	−5.22	5.03×10^{-6}
Comments	Collaboration vs Brand Storytelling	−5.19	5.75×10^{-6}
Comments	Product Endorsement vs Brand Storytelling	−5.10	9.74×10^{-6}
Comments	Brand Storytelling vs Engagement Bait	4.33	4.25×10^{-4}

Table A2. Significant Dunn–Bonferroni comparisons by platforms

Outcome	Significant platform comparison	z	Bonferroni-adjusted p
Likes	Instagram vs X	15.60	4.56×10^{-54}
Likes	Facebook vs Instagram	−10.95	3.78×10^{-27}
Likes	Instagram vs TikTok	8.09	3.46×10^{-15}
Likes	TikTok vs X	7.50	3.74×10^{-13}
Likes	Facebook vs X	4.64	2.07×10^{-5}
Likes	Facebook vs TikTok	−2.86	0.025
Shares	Instagram vs X	11.97	2.98×10^{-32}
Shares	Instagram vs TikTok	10.53	3.81×10^{-25}
Shares	Facebook vs Instagram	−10.11	3.07×10^{-23}
Comments	Facebook vs X	9.00	1.32×10^{-18}
Comments	Instagram vs X	6.77	7.79×10^{-11}
Comments	Facebook vs TikTok	5.29	7.19×10^{-7}
Comments	TikTok vs X	3.71	0.0012
Comments	Instagram vs TikTok	3.06	0.013

Table A3. Exploratory Fisher’s Exact Test comparisons for marketing strategy distribution across social media platforms

Strategy-platform comparison	OR	95% CI	Fisher exact p	Bonferroni-adjusted p
Collaboration on Facebook vs all other cells	0.354	0.223–0.561	1.75×10^{-6}	5.59×10^{-5}
Brand Storytelling on Facebook vs all other cells	2.721	1.309–5.659	0.0091	0.291
Collaboration on Instagram vs all other cells	1.554	1.100–2.195	0.0153	0.490
Promotional Pricing on Facebook vs all other cells	1.540	0.970–2.446	0.0752	1.000

Note(s): OR = odds ratio; CI = confidence interval. One-versus-rest comparisons were exploratory and adjusted using Bonferroni correction for multiple testing

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Corresponding author

Rajshri Roy can be contacted at: rajshri.roy@sydney.edu.au