

## **Perceptions of Food Seasoning Patronage in Nigeria: Examining Consumer Attitudes toward Monosodium Glutamate (MSG)**

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### **Abstract**

This study investigates consumer perceptions of Monosodium Glutamate (MSG) in Nigeria, with a particular focus on affordability, consumer attitudes, and social influences. While MSG remains one of the most widely used flavor enhancers due to its affordability and taste-enhancing qualities, its consumption is clouded by stigma and health-related concerns, often driven by misinformation. Guided by the Theory of Planned Behavior (TPB) and the Health Belief Model (HBM), this research employed a descriptive survey design targeting 400 undergraduate students of Abia State University across diverse departments. Data were collected via structured questionnaires and analyzed using regression models to assess the effects of consumer attitudes, price, and subjective norms on perception of Monosodium Glutamate (MSG). The findings reveal that affordability is the strongest predictor of consumer perception ( $R^2 = 0.727$ ,  $\beta = .853$ ), followed by attitudes ( $R^2 = 0.398$ ,  $\beta = .630$ ) and subjective norms ( $R^2 = 0.293$ ,  $\beta = .542$ ). While health concerns and stigma negatively influence attitudes, economic necessity ensures sustained patronage of MSG-based seasonings. The study concludes that consumer perceptions of MSG are shaped by a combination of affordability, social norms, and health beliefs, with affordability exerting the greatest influence. It recommends targeted public health campaigns to dispel misinformation, transparent labeling of food products, and culturally sensitive education strategies that engage community leaders and influencers. These measures will help align consumer attitudes with scientific evidence while supporting informed decision-making in food consumption.

**Keywords:** Consumer Perception, Monosodium Glutamate (MSG), Affordability, Attitudes, Subjective Norms, Seasoning Patronage, Nigeria

### **Introduction**

Food seasoning holds a vital place in Nigerian cuisine, serving not only to enhance flavor but also to influence how consumers perceive and experience food. Among the various seasonings, Monosodium Glutamate (MSG) has gained particular prominence due to its ability to enhance flavor, its wide availability, and its relative affordability. However, MSG has also become a subject of debate globally, with consumer perceptions divided between acceptance and suspicion. While scientific authorities such as the World Health Organization (WHO) and Food and Agriculture Organization (FAO) affirm the safety of MSG at regulated levels, public opinion continues to be shaped by widespread fears of adverse health effects (Walker & Lupien, 2000).

Empirical evidence reveals this tension. On one hand, studies such as those by Henry-Unaeze (2017) and Udom et al., (2025) confirm that MSG is safe when consumed within recommended limits, suggesting that much of the consumer anxiety is rooted in misinformation. On the other hand, several toxicological and epidemiological studies, including those by Airaodion et al., (2019) and Kayode et al., (2023), have raised concerns about potential risks such as oxidative stress, obesity, and hypertension when MSG is consumed excessively. This duality has created confusion in consumer attitudes, particularly in low- and middle-income countries where knowledge gaps remain significant (Akwaah, 2020; Asamoah, 2020).

In Nigeria, affordability and accessibility are strong determinants of seasoning choices. Studies have shown that MSG-based products are often preferred in households and institutional meals because of their low cost and convenience (Olaniyan, 2015; Oyeneye et al., 2023). This is consistent with findings from Osiakwa et al., (2024), who demonstrated the prevalence of MSG use in African street foods, making it the most accessible flavor enhancer for the majority of consumers. Beyond cost, cultural and social influences also shape consumer perceptions. Ibrahim et al., (2021) reported that peer norms significantly influence additive choices, while Ikuomola and Airhihenbuwa (2021) highlighted how cultural loyalty sustains the use of MSG among Nigerians abroad.

Despite the widespread presence of MSG, stigmatization remains a powerful force influencing perception. Oniku (2024) argued that MSG is a victim of “product stigmatization and exaggeration,” where misinformation and negative publicity overshadow scientific evidence. Haron and Low (2024) further observed that many consumers switch to alternatives such as mushroom-based seasoning not because of proven risks, but due to MSG’s negative image. These findings highlight the multidimensionality of consumer perception, which is shaped by affordability, social norms, cultural traditions, and the information environment.

What remains under-explored is how affordability, health attitudes, and social influence jointly shape perceptions of MSG in Nigeria. Most existing studies either focus narrowly on health effects or explore consumer awareness in isolation, leaving a gap in understanding the combined predictors of consumer perception. Furthermore, behavioral models such as the Theory of Planned Behavior (TPB) and the Health Belief Model (HBM) have rarely been applied to MSG consumption in Nigeria, despite their utility in explaining food-related behaviors. The main objective of this study is to examine consumer perceptions of food seasoning, with specific reference to MSG.

### Research Hypotheses

Based on the gaps identified, the study proposes the following hypotheses:

- i. **H1:** Consumer attitudes significantly influence perceptions of MSG use in food seasoning.
- ii. **H2:** Affordability has a stronger effect than other factors on consumer perceptions of MSG.
- iii. **H3:** Subjective norms (peer and social influences) significantly affect consumer perceptions of MSG.

### Literature Review

#### Seasonings and Food Preparation

Seasonings refer to ingredients incorporated into food to enhance its taste, aroma, and overall palatability. They constitute an essential aspect of culinary practices, transforming basic meals into flavorful dishes that appeal to sensory experiences such as taste and smell. Beyond their functional role in flavor enhancement, seasonings also embody cultural significance, as distinct culinary traditions across regions reflect heritage and dietary practices through specific seasoning choices. Within many households, seasonings are not only indispensable for meal preparation but also shape consumer satisfaction and foster loyalty toward particular brands. As noted by Orji, Oyenuga, and Ahungwa (2020), seasonings significantly contribute to the dining experience by influencing the perceived quality and enjoyment of food, which in turn shapes purchasing decisions.

Globally, seasonings are diverse and vary in their cultural and nutritional relevance. Among them, MSG remains one of the most prevalent artificial flavor enhancers, particularly in Asia and Africa, where it is valued for its ability to intensify the umami taste. Despite ongoing debates concerning its potential health effects, MSG continues to be regarded as a cost-effective and efficient flavor additive (Kayode et al., 2023). The proliferation of diverse seasoning types enables consumers to make purchasing decisions based on a combination of affordability, health perceptions, and cultural preferences, thereby shaping market dynamics in the global food industry (Yang & Li, 2023).

Kayode et al., (2023) established a link between excessive MSG consumption and metabolic disorders such as obesity and hypertension, while Airaodion et al., (2019) and Adeleke et al., (2022) observed similar physiological effects at high intake levels. These studies reinforced public concerns and strengthened negative perceptions of MSG. Yet, countervailing evidence suggests otherwise: Henry-Unaeze (2017) reviewed food safety data and found

MSG to be safe within regulatory thresholds, a position further supported by Udom et al., (2025), who argued that most health concerns arise from misinformation rather than empirical evidence. Likewise, Adetunji et al., (2019) demonstrated that when MSG was used moderately in broiler chicken diets, it enhanced meat quality and increased consumer acceptability, suggesting that the additive could have more benefits than risks when responsibly applied. In Ghana, Akwaah (2020) and Asamoah (2020) highlighted low levels of consumer awareness of additive composition in foods, reinforcing the idea that perception is shaped more by suspicion than by scientific literacy. Olaniyan (2015), in a study of Nigerian undergraduates, revealed that instant noodle seasonings rich in MSG were consumed primarily due to low cost and convenience rather than health considerations. Similarly, Osiakwa et al., (2024) and Oyiengo (2014) found that street foods and commercially sold sauces in Kenya and Nigeria often contained MSG at significant levels, making them the most accessible flavor enhancers for low- and middle-income consumers. Oyeneye et al., (2023), in their study of Nigeria's school feeding program, confirmed that affordability was prioritized in selecting seasoning products, with MSG-based cubes being favored for their cost efficiency.

Beyond affordability, cultural and social influences also play a critical role in shaping perceptions. Ibrahim et al., (2021) noted that female lecturers in Zaria often made seasoning decisions in line with peer norms, highlighting how social approval influenced attitudes toward MSG. Similarly, Ikuomola and Airhihenbuwa (2021), applying the PEN-3 cultural model to Nigerian immigrants in the United States, found that despite exposure to health campaigns discouraging MSG, many retained a preference for MSG-based cubes due to cultural loyalty. Akpi et al., (2020) further emphasized the importance of cultural traditions by developing starter cultures for African condiments, showing that consumers were open to safer alternatives as long as they aligned with local taste preferences.

The role of misinformation, stigma, and consumer education has also been widely explored in empirical studies. Oniku (2024) argued that MSG is often stigmatized in African markets due to exaggerated health claims, a phenomenon that distorts consumer perception more than scientific findings do. Haron and Low (2024) demonstrated that when presented with mushroom-based seasoning as an alternative, many consumers readily adopted it, motivated not by proven health risks of MSG but by the stigma attached to its use. Similarly, Nnaji et al., (2025) and Asamoah (2020) documented how food fraud and poor labeling practices misled consumers, further widening the gap between scientific consensus and public understanding. In contexts where health literacy is low, such misinformation spreads rapidly through peer networks, reinforcing negative biases against MSG and increasing reliance on "natural" but more expensive alternatives.

### **Consumption Trends of MSG in Africa**

MSG remains one of the most extensively produced and consumed flavor enhancers worldwide, with Asia, particularly China, dominating global production and consumption due to the centrality of umami flavor in regional cuisines (Yamaguchi & Ninomiya, 2000). In Africa, MSG has also gained significant consumer acceptance, especially in Nigeria and other West African countries, where seasoning cubes and powdered blends incorporating MSG are widely used in household cooking (Orji et al., 2020). The popularity of MSG in African markets is strongly influenced by its affordability, accessibility, and its ability to enhance the palatability of staple foods such as rice, soups, and stews (Kayode et al., 2023).

### **Regulatory Stance on MSG Safety**

Despite long-standing debates regarding its health implications, regulatory agencies have consistently affirmed the safety of MSG when consumed within recommended dietary limits. Both the World Health Organization (WHO) and the U.S. Food and Drug Administration (FDA) classify MSG as "generally recognized as safe" (GRAS), emphasizing that moderate consumption poses no significant health risks (WHO, 2020; FDA, 2025). Similarly, Nigeria's National Agency for Food and Drug Administration and Control (NAFDAC) has not imposed restrictions on MSG usage but enforces regulatory measures concerning labeling and food safety compliance (NAFDAC, 2021). Regulatory authorities further highlight the nutritional benefit of MSG as a salt substitute, since it can enhance flavor while allowing for reduced sodium intake, thereby contributing to better cardiovascular health outcomes (He et al., 2020). Nevertheless, consumer skepticism persists, as public perception is often shaped

more by anecdotal reports, media portrayals, and cultural biases than by regulatory assurances or scientific consensus (Yang & Li, 2023).

### **Theoretical Framework**

This study on consumer perception and patronage of seasoning products is anchored primarily on the Theory of Planned Behavior (TPB), with supporting insights from the Health Belief Model (HBM). These two theories complement one another in explaining how perceptions, social influences, and health awareness shape purchasing decisions.

#### **Theory of Planned Behavior (TPB)**

The Theory of Planned Behavior (TPB), developed by Ajzen (1991), provides a robust framework for examining consumer decision-making processes, including food-related behaviors such as seasoning consumption. TPB posits that behavioral intention is the immediate predictor of behavior, and this intention is shaped by three core determinants: attitude toward the behavior, subjective norms, and perceived behavioral control (Ajzen, 2011). In the context of seasoning use, consumer attitudes are largely influenced by perceptions of taste, affordability, and health. For instance, individuals who believe that MSG enhances flavor at a relatively low cost are more likely to exhibit favorable attitudes toward purchasing it, whereas those associating MSG with health risks such as obesity or hypertension may develop negative attitudes (Kayode et al., 2023).

Subjective norms represent the social pressures individuals experience regarding their behavior and are particularly salient in collectivist societies such as Nigeria, where cultural preferences, family traditions, and peer influence strongly shape food consumption practices (Fishbein & Ajzen, 2010; Orji et al., 2020). For example, the acceptance or rejection of MSG in Nigerian households is often mediated by prevailing community practices and familial cooking traditions, which exert strong normative influence.

Perceived behavioral control refers to an individual's perception of their ability to perform a behavior and is shaped by external factors such as affordability, accessibility, and availability of seasoning products (Conner & Armitage, 1998). If preferred seasonings are widely available in local markets and offered at affordable prices, consumers are more likely to perceive themselves as capable of incorporating them into household cooking. Accordingly, TPB illustrates how attitudes, norms, and control perceptions converge to shape behavioral intentions, which ultimately translate into actual patronage in the seasoning market.

#### **Health Belief Model (HBM)**

The Health Belief Model (HBM), proposed by Rosenstock (1974), complements TPB by focusing specifically on health-related decision-making. The HBM argues that health behaviors are influenced by an individual's perceived susceptibility to illness, perceived severity of health risks, perceived benefits of action, and perceived barriers to action (Champion & Skinner, 2008). Applied to seasoning consumption, many consumers avoid MSG due to perceived susceptibility to conditions such as obesity, hypertension, and metabolic disorders—perceptions often amplified by misinformation or anecdotal evidence (Eiya & Inneh, 2022).

Consumers who recognize the potential benefits of MSG such as its ability to enhance umami taste and reduce dependence on table salt may perceive it as a healthier alternative when consumed in moderation (He et al., 2020).

### **Methodology**

This study employed a descriptive survey design. A survey approach is particularly appropriate for consumer research, as it facilitates the collection of first-hand information on attitudes, perceptions, and purchasing behaviors from a large and diverse population (Creswell & Creswell, 2018). Given the study's focus on identifying the influence of factors such as perception, affordability, and health consciousness, the descriptive survey provides a systematic framework for data gathering and subsequent statistical analysis.

The target population consists of consumers of seasoning products across Nigeria, encompassing both urban and rural settings. In this study, 200-level students of Abia State University were selected as respondents because they

originate from diverse socio-demographic backgrounds and different parts of the country, thereby providing a heterogeneous sample whose views can reasonably reflect broader consumer experiences with food seasonings.

The study employed a purposive sampling approach, targeting 200-level students of Abia State University in the Departments of Accounting, Marketing, Banking and Finance, and Public Administration. Data were collected using an online survey administered through Google Forms, which allowed easy distribution of questionnaires and increased participation across departments. A total of 400 respondents were targeted and exposed to the online survey link created with Google Forms. The link was shared through departmental WhatsApp groups, email lists, and with the assistance of class representatives across the Departments of Accounting, Marketing, Banking and Finance, and Public Administration. This approach ensured wide reach and accessibility to the target population. The sample size of 400 was guided by Krejcie and Morgan's (1970) recommendation that samples above 300 are considered adequate for generalization in behavioral studies

Data was obtained from both primary and secondary sources. Primary data collection involves administering structured questionnaires both physically and electronically via Google Forms, a method known to increase reach and improve response rates (Wright, 2005). The study variables were operationalized in line with the Theory of Planned Behavior (TPB) and the Health Belief Model (HBM) to ensure that each construct was measured appropriately within the context of consumer perception of seasoning products. Consumer Attitudes were measured by TPB's construct of *attitude toward behavior*. In this study, attitudes were assessed through indicators such as taste preference, flavor satisfaction, and overall evaluation of seasoning products. Higher scores indicated more favorable attitudes toward seasonings.

Affordability was measured by TPB's construct of *perceived behavioral control (PBC)*. This was captured by consumers' financial capacity and ability to purchase seasonings at prevailing market prices, as well as the influence of packaging sizes on accessibility. Positive affordability perceptions reflected stronger control over seasoning use. Peer Influence was measured by TPB's construct of *subjective norms*. This included the extent to which family members, peers, and community traditions encouraged or discouraged the use of seasonings. High scores indicated stronger normative influence shaping perception.

Consumer Perception was the dependent variable, measured as the overall evaluation of seasoning products. This included perceptions of safety, quality, usefulness, and trust in brand claims. The construct was further moderated by HBM dimensions such as perceived health risks, perceived benefits, and exposure to misinformation about MSG. Inferential analysis via regression models was adopted to examine associations between the variables

## Results and Discussion

**Table 1: Regression Summary of Predictors of Consumer Perception**

Predictor Variable	B	SE	B	T	Sig.	R	R <sup>2</sup>	Adj. R <sup>2</sup>	F (df1, df2)	Sig. F
Attitude (ATT_mean)	0.728	0.078	.630	9.333	.000	.630	.398	.393	87.10 (1,132)	.000
Subjective Norms (SN_mean)	0.611	0.083	.542	7.403	.000	.542	.293	.288	54.80 (1,132)	.000
Price (PRICE_mean)	1.037	0.055	.853	18.75	.000	.853	.727	.725	351.57 (1,132)	.000

Note. Dependent variable: Consumer Perception (PER\_mean). B = unstandardized coefficient, SE = standard error,  $\beta$  = standardized beta coefficient.

**Table 2: Comparative Strength of Predictors of Consumer Perception**

Predictor	Standardized Beta ( $\beta$ )	Variance Explained ( $R^2$ )	Interpretation
Price	.853	72.7%	Strongest predictor of consumer perception
Attitude	.630	39.8%	Significant positive influence
Subjective Norms	.542	29.3%	Moderate but significant effect

Source: SPSS Analysis Output, (See Appendix).

This study examined the determinants of consumer perception of seasoning products in Nigeria, using regression analysis to test the effect of attitude, subjective norms, and price (affordability) on perception. The results are presented and discussed below in relation to the study objectives and the guiding theories. The regression results show that attitude has a significant positive effect on consumer perception ( $\beta = .630$ ,  $t = 9.333$ ,  $p < .001$ ). The model explained 39.8% of the variance in perception ( $R^2 = .398$ ). Price emerged as the strongest predictor of consumer perception. The regression model showed that price accounted for 72.7% of the variance in perception ( $R^2 = .727$ ), with a highly significant effect ( $\beta = .853$ ,  $t = 18.750$ ,  $p < .001$ ). The results for subjective norms indicate a significant positive relationship with perception ( $\beta = .542$ ,  $t = 7.403$ ,  $p < .001$ ), explaining 29.3% of the variance ( $R^2 = .293$ ). This implies that the opinions and practices of family, peers, and communities play an important role in shaping consumer perception of seasoning products.

**Discussion of Findings**

Using regression analysis, it was established that affordability emerged as the strongest predictor of consumer perception, explaining more than 70% of the variance. Attitudes also had a significant effect, followed by subjective norms, while health concerns were less predictive compared to cost and social influence.

These results are consistent with earlier empirical studies that highlight the dominance of affordability in consumer decision-making. Olaniyan (2015) showed that affordability was the primary driver of MSG-based instant noodle consumption among Nigerian undergraduates, while Oyeneye et al., (2023) observed similar patterns in Nigeria’s school feeding program, where MSG-rich seasonings were chosen largely because of their cost-effectiveness. Osiakwa et al., (2024) and Oyiengo (2014) also confirmed that MSG’s prevalence in African street foods is tied more to its low price and availability than to its nutritional or health profile. The findings of the present study thus reinforce affordability as the most decisive factor in consumer perception, echoing wider African consumption patterns.

The study also found that consumer attitudes significantly shaped perception, though to a lesser degree than affordability. This aligns with Kayode et al. (2023), who reported that growing awareness of potential links between MSG and obesity or hypertension has influenced attitudes negatively, even where consumption remains high. Similarly, Airaodion et al. (2019) documented toxicological risks at high doses, fueling consumer skepticism. Yet, as Henry-Unaeze (2017) and Udom et al. (2025) stressed, MSG is safe at regulated levels, suggesting that consumer attitudes are not always aligned with scientific evidence but are instead mediated by perceived health risks and misinformation. The present study reflects this duality: although affordability keeps MSG consumption high, health concerns shape underlying attitudes in ways that create ambivalence among consumers.

Furthermore, subjective norms (peer influence) were found to play a moderate but significant role in shaping perceptions. This result mirrors the work of Ibrahim et al., (2021), who reported that peer and social approval strongly influenced additive choices among female lecturers in Zaria. Likewise, Ikuomola and Airhihenbuwa (2021) found that Nigerians abroad continued to use MSG cubes due to cultural loyalty, despite exposure to anti-MSG campaigns. These parallels demonstrate that perceptions of MSG are not purely individual choices but are shaped by broader social and cultural contexts.

Taken together, these findings provide strong support for the application of the Theory of Planned Behavior (TPB) and the Health Belief Model (HBM) in explaining MSG perceptions in Nigeria. TPB is validated in showing that affordability (a perceived behavioral control factor), attitudes, and subjective norms jointly shape behavior. Similarly, HBM is reflected in the way perceived health risks (susceptibility and severity) influence attitudes toward MSG, even when objective evidence suggests safety.

### **Conclusion**

This study examined consumer perceptions of MSG in Nigeria, focusing on the influence of affordability, consumer attitudes, and subjective norms. The findings reveal that affordability is the most powerful determinant of perception, outweighing health concerns and social influences. Attitudes toward MSG, shaped by both positive taste experiences and negative health perceptions, also significantly influenced perception, while subjective norms exerted a moderate but notable effect.

Although consumers often express skepticism about MSG due to perceived health risks, its affordability and availability ensure continued patronage. The study concludes that perceptions of MSG in Nigeria are socially embedded. While scientific consensus maintains MSG's safety at regulated levels, consumer suspicion persists, largely driven by stigma and misinformation. Yet, economic necessity ensures its use. Addressing this duality requires improved consumer education.

### **Recommendations**

- i. Public health campaigns should address misinformation by providing clear, accessible, and culturally sensitive information about MSG's safety at regulated levels. This could reduce stigma and align consumer attitudes more closely with scientific evidence.
- ii. Since peer and cultural norms significantly influence perceptions, community leaders, educators, and food influencers should be engaged in advocacy campaigns. Using trusted voices can increase acceptance of healthier consumption patterns.
- iii. Regulators should enforce transparent labeling of food seasonings to ensure consumers are fully aware of additive contents. Clear labeling reduces misinformation and empowers consumers to make informed choices.

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