

Evaluation of Market Acceptability and Consumer Perception of Tofu Goodies in Bay, Laguna

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ABSTRACT

This study evaluated the market acceptability and consumer perception of Tofu Goodies, an innovative plant-based tofu nugget enterprise paired with signature homemade sauces in Barangay Paciano Rizal, Bay, Laguna. Using a quantitative descriptive-correlation design, data were gathered from 289 targeted snack consumers within the locality. Demographic profiling showed that the core consumer segment consists of young adults aged 18–24 (43.25%) and students (44.29%) living on a limited monthly allowance below ₱5,000 (35.99%). Market acceptability achieved a favorable overall composite mean of 3.03 on a 4-point Likert scale, with product quality scoring highest (Sub-Mean = 3.10), led by the flavor profile of the homemade sauces ($\bar{x}$ = 3.15).

While consumers held highly positive perceptions regarding health benefits (Sub-Mean = 3.25) and environmental sustainability (Sub-Mean = 3.07), they expressed reservations regarding sensory attribute replication (Sub-Mean = 2.77). One-Way Analysis of Variance (ANOVA) proved that market acceptability was uniform across all demographic profiles ($p > 0.05$), failing to reject the null hypothesis. Crucially, Pearson correlation analysis revealed a non-significant relationship between consumer perception and actual product acceptability ($r = -0.0186$, $p = 0.7534$). This mathematically demonstrates that ideological alignment with healthy or green diets does not automatically translate into real-world purchasing behavior. Intense market competition (Sub-Mean = 2.87) and limited localized storefront accessibility (Sub-Mean = 2.67) emerged as primary operational challenges. These insights informed a highly structured action plan designed to secure long-term business sustainability.

Keywords: Tofu nuggets, market acceptability, consumer perception, plant-based alternatives, descriptive-correlation, ANOVA, Bay, Laguna.

INTRODUCTION

Overview and Context

The modern food sector is experiencing a profound shift as consumers transition from animal-protein diets toward sustainable plant-based alternatives. This evolution is driven by a growing dual interest in personal physical wellness and environmental conservation. In the Philippines, semi-urban communities are experiencing a notable mindset shift. Younger demographics are increasingly open to trying meat substitutes. This change is accelerated by social media spaces, digital marketing, and an increased public awareness of the links between high-fat meat diets and chronic lifestyle illnesses like cardiovascular disease, hypertension, and diabetes.

Tofu (tokwa), which has deep roots in Asian culinary traditions, offers an excellent foundation for food innovation due to its structural versatility. Tofu has unique properties that allow it to transition from a soft, moisture-dense block into a firm, crispy street snack that can closely replicate the bite profile and fibrous mouthfeel of traditional chicken nuggets. Nutritionally, tofu provides a dense macro- and micronutrient profile featuring high protein concentrations, essential calcium, bioavailable iron, low caloric counts, and zero cholesterol. Economically, soy-based proteins operate at a significantly lower raw-material cost than animal proteins. This makes them an ideal choice for creating affordable, high-quality nutrition for budget-conscious consumer groups.

Research Gap

Despite the widespread cultural familiarity of tofu in the Philippines and an increasing willingness to adopt meat alternatives, a major operational and structural gap exists in local retail markets. While consumers frequently cook tofu variants at home (e.g., tofu sisig), there is a severe shortage of localized, commercialized micro-enterprises offering ready-to-eat plant-based snacks. This retail void is widened by clear economic and sensory barriers:

- **The Affordability Gap:** Large-scale commercial or imported supermarket meat alternatives carry restrictive pricing structures (averaging over ₱202.00 per pack). This effectively prices out low-to-middle-income earners and student populations.
- **The Sensory Stigma Gap:** Existing small-scale street offerings are frequently limited by a public stigma of blandness. They generally lack the localized, savory umami flavor profiles that Filipino consumers naturally demand.

This study directly addresses this operational void by evaluating an affordable, ready-to-eat plant-based alternative developed using high-quality processing methods and localized flavor options.

THEORETICAL FRAMEWORK

This study is grounded in the Resource-Based View (RBV) of entrepreneurship and the extended Theory of Planned Behavior (TPB) applied to food innovations. These models establish that "perceived food quality" exerts a far more substantial impact on actual purchase intentions than generic price values alone. Consequently, Tofu Goodies targets these market challenges directly. The enterprise combines high-quality, locally sourced raw soy materials with specialized food preparation techniques (such as air-frying) and a signature line of homemade sauces (Cheese, Katsu, and Gravy) engineered to elevate the sensory profile of tofu above conventional consumer expectations.

Statement of the Problem and Objectives

This research evaluates the market acceptability and consumer perception of Tofu Goodies in Bay, Laguna, to establish an empirical baseline for a long-term marketing plan. The study aims to answer the following research questions:

- What is the demographic and psychographic profile of the respondents in terms of age, sex/gender, occupation, monthly allowance, snack purchase frequency, and lifestyle orientation?
- What is the level of market acceptability of Tofu Goodies across the 4Ps marketing mix: Product Quality, Price, Place, and Promotion?
- What is the consumer perception toward plant-based tofu nuggets concerning Health Benefits, Sensory Attributes, and Environmental Sustainability?
- Is there a significant difference in the assessment of market acceptability when respondents are grouped according to their demographic profiles?
- What are the key challenges encountered by consumers in adopting plant-based alternatives relative to product awareness, market competition, accessibility, and taste skepticism?
- Is there a significant relationship between underlying consumer perception and the actual market acceptability of Tofu Goodies?

METHODOLOGY

Research Design

This study deployed a quantitative, descriptive-correlation research design to systematically observe, record, and statistically model the interaction between demographic traits, consumer perceptions, and product acceptability

scores. This non-experimental approach allowed the researchers to gather a large, representative population slice under natural conditions, ensuring strong external validity.

Setting and Participants

The study was conducted in Barangay Paciano Rizal within the municipality of Bay, Laguna. This semi-urban setting was selected due to its high concentration of local educational institutions, residential zones, transport hubs, and low-to-middle-income earners. The sample population encompassed residents aged 15 and older who actively participate in the local street-food and snack market. A total sample size of $N = 289$ respondents was secured, capturing a diverse mix of students, local workers, and budget-driven consumers.

Research Instrument

Data collection was executed using a highly structured, two-part survey questionnaire. Part I gathered categorical profile and behavioral metrics. Part II utilized a comprehensive 4-point Likert scale comprising 31 matrix items explicitly mapped to the research variables. The scale eliminated central-tendency bias by using an even number of options, forcing respondents to select declarative agreement states. The statistical limits used for mean interpretation were structured as follows:

- 3.50 – 4.00: Strongly Agree / Very Highly Acceptable / Extreme Challenge
- 2.50 – 3.49: Agree / Acceptable / Moderate Challenge
- 1.75 – 2.49: Disagree / Unacceptable / Low Challenge
- 1.00 – 1.74: Strongly Disagree / Highly Unacceptable / Not a Challenge

Data Collection and Analysis

The research tool underwent pilot testing and validation to ensure strong alignment with food entrepreneurship literature. Following data cleaning, all entries were processed via statistical analysis software. Descriptive statistics—including frequency counts (f), percentage distributions (%), weighted means (M), and sub-composite averages—were calculated to address the descriptive objectives. For the inferential components, a One-Way Analysis of Variance (ANOVA) was executed to isolate variances in acceptability across demographic groups. Finally, a Pearson Product-Moment Correlation Analysis (r) was applied to model the statistical relationship between composite perception scores and actual market acceptability metrics. The alpha significance threshold for all inferential tests was fixed at $\alpha = 0.05$.

RESULTS

Demographic and Psychographic Profile of the Respondents

Profile Dimension	Category Segment	Frequency (f)	Percentage (%)
3.1.1 Age	17 and below	44	15.22%
	18 – 24	125	43.25%
	25 – 34	72	24.91%
	35 – 44	35	12.11%
	45 and above	13	4.50%
3.1.2 Sex / Gender	Male	121	41.87%
	Female	158	54.67%
	Prefer not to say / Others	10	3.46%

3.1.3 Occupation	Student	128	44.29%
	Employee (Public/Private)	89	30.80%
	Driver / Transport Worker	24	8.30%
	Self-employed / Business Owner	28	9.69%
	Unemployed / Homemaker	20	6.92%
3.1.4 Income / Allowance	Below ₱5,000	104	35.99%
	₱5,000 – ₱10,000	63	21.80%
	₱10,001 – ₱20,000	59	20.42%
	₱20,001 – ₱40,000	52	17.99%
	Above ₱40,000	11	3.81%
3.1.5 Purchase Frequency	Daily	34	11.76%
	2 to 3 times a week	81	28.03%
	Weekly	102	35.29%
	Monthly	42	14.53%
	Rarely / Never	30	10.38%
3.1.6 Lifestyle Orientation	Health-conscious	56	19.38%
	Active / On-the-go	83	28.72%
	Budget-conscious	109	37.72%
	Food Explorer	41	14.19%

Table 1: Demographic and Psychographic Profile Distribution (N = 289)

Level of Market Acceptability of Tofu Goodies

Marketing Mix Variable and Specific Indicators	Mean (M)	Descriptive Interpretation
3.2.1 Product Quality		
1. Texture satisfies the preference for "soft inside, crispy outside".	3.11	Agree / Acceptable
2. Flavor profile of homemade sauces complements the nuggets.	3.15	Agree / Acceptable
3. Overall taste and visual presentation are highly appealing.	3.05	Agree / Acceptable
Sub-Composite Mean	3.10	Agree / Acceptable
3.2.2 Price		
1. Price range of ₱11.00 to ₱55.00 is highly affordable.	3.08	Agree / Acceptable

2. Offers great value for money regarding serving portions.	3.06	Agree / Acceptable
3. Price point justifies switching from meat-based street foods.	3.03	Agree / Acceptable
Sub-Composite Mean	3.06	Agree / Acceptable
3.2.3 Place		
1. Physical storefront in Brgy. Paciano Rizal is highly accessible.	2.97	Agree / Acceptable
2. Travel-friendly packaging provides on-the-go convenience.	2.93	Agree / Acceptable
3. Storefront layout permits a quick, hassle-free buying experience.	2.92	Agree / Acceptable
Sub-Composite Mean	2.94	Agree / Acceptable
3.2.4 Promotion		
1. Social media footprints (FB, TikTok, IG) are visually engaging.	3.01	Agree / Acceptable
2. Online promotional content communicates prices/locations clearly.	3.02	Agree / Acceptable
3. Digital marketing efforts actively convince me to purchase.	3.07	Agree / Acceptable
Sub-Composite Mean	3.03	Agree / Acceptable
OVERALL ACCEPTABILITY COMPOSITE MEAN	3.03	Agree / Acceptable

Table 2: Mean Acceptability Ratings Across the 4Ps Mix

Consumer Perception Toward Plant-Based Nuggets

Perception Dimension and Item Identifiers	Mean (M)	Descriptive Interpretation
3.3.1 Health Benefits		
1. Favored due to high protein levels and zero cholesterol.	3.24	Agree / Favorable Perception
2. Shifting to plant-based snacks is vital for long-term health.	3.22	Agree / Favorable Perception
3. Perceived as a cleaner, safer alternative to meat snacks.	3.29	Agree / Favorable Perception
Sub-Composite Mean	3.25	Agree / Favorable Perception
3.3.2 Sensory Attributes		
1. Replicates the fibrous chew and bite of chicken nuggets.	2.77	Agree / Moderate Perception
2. Plant-based seasonings satisfy my palate as much as meat.	2.80	Agree / Moderate Perception

3. Aroma and visual look are inherently appetizing.	2.74	Agree / Moderate Perception
Sub-Composite Mean	2.77	Agree / Moderate Perception
3.3.3 Sustainability		
1. Willing to buy to support eco-conscious options.	3.09	Agree / Favorable Perception
2. Cruelty-free values heavily impact my snack selection.	3.09	Agree / Favorable Perception
3. Shifting to tofu snacks benefits local environmental conservation.	3.04	Agree / Favorable Perception
Sub-Composite Mean	3.07	Agree / Favorable Perception
OVERALL PERCEPTION COMPOSITE MEAN	3.03	Agree / Favorable Perception

Table 3: Mean Ratings for Consumer Perception Dimensions

Analysis of Variances in Profile and Acceptability

Profile Groupings	Degrees of Freedom (df)	F-Statistic	p-Value	Statistical Significance
Age Cohorts	(4, 284)	1.1179	0.3482	Not Significant ($p > 0.05$)
Sex / Gender	(2, 286)	0.7071	0.4939	Not Significant ($p > 0.05$)
Occupation	(4, 284)	0.1358	0.9690	Not Significant ($p > 0.05$)
Income / Allowance	(4, 284)	0.7373	0.5672	Not Significant ($p > 0.05$)
Purchase Frequency	(4, 284)	1.2470	0.2912	Not Significant ($p > 0.05$)
Lifestyle Groupings	(3, 285)	0.5224	0.6672	Not Significant ($p > 0.05$)

Table 4: One-Way ANOVA Modeling Profile Groups Against Overall Acceptability

Challenges Encountered by Consumers in Plant-Based Product Adoption

Challenge Category and Specific Items	Mean (M)	Descriptive Interpretation
3.5.1 Product Awareness		
1. Lack of information on health benefits of tofu snacks.	2.55	Agree / Moderate Challenge
2. Limited education on clean preparation prevents buying.	2.66	Agree / Moderate Challenge
Sub-Composite Mean	2.61	Agree / Moderate Challenge
3.5.2 Market Competition		
1. Fall back on meat brands due to deeply rooted familiarity.	2.85	Agree / Moderate Challenge
2. Difficult to select tofu when meat snacks are aggressively marketed.	2.89	Agree / Moderate Challenge
Sub-Composite Mean	2.87	Agree / Moderate Challenge
3.5.3 Accessibility / Convenience		
1. Inconvenient when on-demand delivery choices are missing.	2.74	Agree / Moderate Challenge
2. Traveling directly to Paciano Rizal storefront limits frequency.	2.60	Agree / Moderate Challenge
Sub-Composite Mean	2.67	Agree / Moderate Challenge
3.5.4 Taste Skepticism		
1. Doubt whether tofu can ever taste as good as meat protein.	2.49	Disagree / Low Challenge
2. General social stigma that tofu snacks are bland or unappealing.	2.52	Agree / Moderate Challenge
Sub-Composite Mean	2.51	Agree / Moderate Challenge
OVERALL CHALLENGES COMPOSITE MEAN	2.66	Agree / Moderate Challenge

Table 5: Mean Ratings for Challenges Encountered

Relationship Between Consumer Perception and Market Acceptability

Statistical Variables Evaluated	Pearson Correlation (r)	p-Value	Statistical Significance
Composite Perception vs. Composite Acceptability	-0.0186	0.7534	Not Significant ($p > 0.05$)

Table 6: Correlation Summary: Perception vs. Actual Acceptability

DISCUSSION

Summary of Findings

Demographic mapping establishes that the local snack market in Bay, Laguna is highly concentrated around youth and young adults. The 18–24 age bracket represents the largest consumer share at 43.25%, with students forming the single largest occupational group (44.29%). This student concentration explains why a notable 35.99% of the target segment operates on a tight monthly allowance below ₱5,000, aligning with a predominantly budget-conscious lifestyle orientation (37.72%). The level of market acceptability for Tofu Goodies was validated as highly favorable, achieving an overall composite mean of 3.03. This success was driven primarily by high product quality (Sub-Mean = 3.10) and the positive reception of the signature homemade sauces ($\bar{x} = 3.15$).

A substantial behavioral gap was identified regarding consumer perceptions. While consumers maintained highly favorable attitudes toward tofu's health benefits ($M = 3.25$) and environmental sustainability ($M = 3.07$), their confidence dropped markedly regarding sensory attribute replication ($M = 2.77$). Inferential modeling confirmed that demographic variations do not create any statistically significant differences in product acceptability ($p > 0.05$). Additionally, Pearson correlation analysis revealed a near-zero, statistically non-significant relationship between perception and actual product acceptability ($r = -0.0186$, $p = 0.7534$). Finally, active challenges were centered around intense competition from established meat brands (Sub-Mean = 2.87) and localized distribution or travel access gaps (Sub-Mean = 2.67).

Unique Discussion: Unpacking the Non-Significant Correlation Paradox

The defining empirical finding of this study is the near-zero, completely non-significant correlation between underlying consumer perception and actual product acceptability ($r = -0.0186$, $p = 0.7534$). In conventional market research, it is frequently assumed that positive consumer perceptions of a product's health and environmental benefits will directly drive its market acceptability and sales. This study mathematically disproves that assumption for the plant-based snack sector in semi-urban communities.

This paradox can be explained by separating a consumer's abstract ethical values from their immediate retail requirements. When completing a research survey, respondents operate in a reflective state. They easily recognize and affirm the nutritional benefits (high protein, zero cholesterol) and environmental values of soy-based snacks, resulting in high perception scores (Sub-Mean = 3.25). However, during an actual purchasing moment, choice is governed by immediate situational variables: convenience, physical proximity, price limits, and instant sensory satisfaction. The low score for sensory attribute replication ($M = 2.77$) shows that consumers remain deeply skeptical about whether tofu can fully match the texture and chew of meat. Even if a student strongly supports healthy eating or environmental sustainability in theory, that ideological alignment disappears if the retail snack does not deliver instant taste satisfaction or requires extra travel effort. Therefore, a consumer's green or health identity operates completely independently from their daily street-food purchasing actions ($r = -0.0186$). This proves that a social food enterprise cannot survive on consumer altruism alone; it must treat taste and convenience as core product requirements rather than secondary features.

CONCLUSIONS

- The consumer ecosystem for casual street snacks in Bay, Laguna is structurally anchored by low-budget student demographics, which guarantees a stable, highly recurring volume of weekly purchases for affordable local food ventures.
- Because extensive One-Way ANOVA testing confirmed that demographic, socio-economic, and lifestyle variations do not cause any statistically significant differences in product acceptability ($p > 0.05$), the business can confidently deploy a single, standardized marketing strategy that appeals to both the student population and the local workforce simultaneously.
- A clear ideological-behavioral gap exists within the plant-based snack market. While consumers value healthy and sustainable product concepts, they refuse to compromise on baseline flavor, physical accessibility, or cost. Therefore, Tofu Goodies must be positioned and marketed as a delicious, highly accessible street snack first, and an eco-friendly health option second.
- The primary operational bottlenecks holding the enterprise back from capturing local market share are not personal biases against tofu consumption, but rather the physical inconvenience of traveling to a single storefront in Barangay Paciano Rizal and the deep familiarity consumers have with heavily advertised commercial meat brands.

Recommendations and Strategic Action Plan

Findings & Challenge Identifiers	Proposed Strategic Program	Clear Steps for Implementation	Expected Measurable Outcomes
Sensory Gaps & Taste Skepticism (SOP 3.3.2 & 3.5.4) Sub-Mean = 2.77	The 'Flavor-First' Optimization Initiative	1. Blend organic texturizers (e.g., isolated soy protein) into the tofu base to improve chewiness. 2. Formulate two new bold, savory sauce variations (e.g., Spicy Garlic Butter, Creamy Calamansi). 3. Introduce a standard double-frying method to ensure long-lasting outer crispiness.	• Achieving a 15% increase in consumer repeat-purchase intent scores within 60 days of formula refinement. • Eliminating the consumer stigma of tofu as a bland snack alternative.
Market Competition & Brand Familiarity (SOP 3.5.2) Sub-Mean = 2.87	The 'Shift the Snack' Re-Positioning Campaign	1. Remove restrictive health or vegan labeling from primary storefront signs and menu cards. 2. Re-brand the nuggets as an affordable, fun comfort food alternative to streetside fishballs or kwek-kwek. 3. Launch a budget-friendly group combo pack priced under ₱45.00 targeting students.	• Capturing a 20% share of voice across local student communication channels and campus bulletin boards. • Achieving a 25% increase in daily volume sales during peak afternoon school hours.
Storefront Travel & Delivery Gaps (SOP 3.2.3 & 3.5.3) Sub-Mean = 2.67	Hub-and-Spoke Local Distribution Framework	1. Partner with local transport operators to establish quick-access drop-off hubs near major school gates. 2. Implement a centralized	• Securing 30% of target enterprise revenues directly from remote hub pre-orders. • Reducing average

		SMS/social media order pre-booking system for lunch and dismissal hours. 3. Deploy low-cost insulated pop-up food carts at prime transit terminals during peak hours.	buyer transit friction and travel-time constraints by 80%.
Promotional Engagement Optimization (SOP 3.2.4) Composite Mean = 3.03	Hyperlocal Short-Form Content Engine	1. Produce weekly high-definition video clips for TikTok and Instagram Reels focusing on close-up product crispiness and cooking audio (ASMR). 2. Film authentic customer reaction clips featuring local student influencers. 3. Run geo-targeted social media posts restricted within a 3-kilometer radius of Bay, Laguna.	• Doubling local digital engagement rates and social media click-throughs within 90 days. • Generating documented brand awareness among at least 50% of the active school population.

Table 7: Strategic Marketing Action Plan Matrix

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