International Scientific Journal of Engineering and Management (ISJEM) ISSN: 2583-6129
Volume: 05 Issue: 04 | April – 2026 DOI:10.55041/ISJEM06897
An International Scholarly || Multidisciplinary || Open Access || Indexing in all major Database & Metadata

Customer Purchase Intention Towards Counterfeit Dairy Products: An Empirical Study

Dr. J. Sofia vincent[1] Yuvanesh P[2]

Department of Management Studies, Panimalar Engineering College, Chennai, Tamil Nadu, India Affiliated to Anna University, Chennai

ABSTRACT

The proliferation of counterfeit dairy products poses an escalating threat to consumer health, brand equity, and the structural integrity of the dairy industry. This study examines the factors influencing consumer purchase intention towards counterfeit dairy products, with particular focus on price sensitivity, product awareness, packaging imitation, trust, and promotional influence. Employing a descriptive research design, primary data were collected from 381 respondents through structured questionnaires across the Vellore district. Non-parametric statistical tools including percentage analysis, Mann–Whitney U test, Kruskal–Wallis H test, Chi-square test, and Spearman rank correlation were applied for data analysis. Findings reveal that consumer awareness of counterfeit dairy products remains at a moderate level, and that price incentives and imitation packaging are primary drivers of unintentional counterfeit purchases. The study further establishes that attitude and trust do not differ significantly across gender, and that age does not significantly influence price perception. The paper concludes with strategic recommendations encompassing consumer education, improved packaging security, regulatory reinforcement, and transparent supply chain monitoring to curb counterfeit dairy consumption.

Keywords: *Counterfeit Dairy Products, Purchase Intention, Consumer Awareness, Price Sensitivity, Food Fraud, Aavin*

1. Introduction

Counterfeit dairy products represent a growing and alarming dimension of food fraud that directly undermines public health, consumer confidence, and fair market competition. Dairy products — including milk, butter, cheese, yogurt, and infant formula — constitute an essential segment of daily nutritional intake. Their widespread demand renders them particularly vulnerable to adulteration and counterfeiting by unscrupulous manufacturers who replicate packaging, labeling, and branding of established products while substituting inferior or potentially hazardous ingredients.

Customer purchase intention in this context is shaped by a complex interplay of intrinsic and extrinsic factors. Price remains the foremost determinant; counterfeit dairy products are typically marketed at significantly lower price points, thereby attracting cost-sensitive consumer segments. Beyond price, factors such as brand awareness, product knowledge, packaging resemblance, social influence, and accessibility of counterfeit goods collectively govern purchase decisions. A critical challenge lies in the fact that many consumers purchase counterfeit products unknowingly, deceived by sophisticated imitation of original packaging and branding.

This study focuses on Aavin — the flagship dairy brand of the Tamil Nadu Co-operative Milk Producers' Federation Limited — and investigates consumer purchase intentions in the Vellore District Co-operative Milk Producers' Union. The study addresses a gap in India-specific empirical literature on counterfeit dairy product consumption and aims to provide actionable insights for policymakers, dairy companies, and consumer protection bodies.

2. Review of Literature

Bobe (2024) investigated consumer experiences and perceptions related to dairy fraud and found that while over 70% of surveyed respondents acknowledged awareness of food fraud in general, a notable gap persisted in their ability to identify counterfeit dairy products specifically. The study underscored the necessity of enhanced consumer education programs.

Haratifar (2015) evaluated consumer perceptions of food traceability among young buyers and concluded that 53.8% of frequent organic milk purchasers would consider exclusively purchasing traceable milk if authenticity could be verified — highlighting the strategic value of market-oriented traceability systems.

Handford (2016) documented that milk adulteration commonly involves water dilution supplemented by hazardous substances including urea, melamine, formalin, and detergents. The author noted that food safety vigilance is systematically weaker in developing nations, amplifying consumer health risks.

Jurica (2021) reviewed global food fraud incidents from 2010 to 2020, identifying risk-based inspections, supply chain monitoring, and ingredient certification as primary mitigation strategies. The author also proposed expanded definitions connecting food fraud to criminal legislation in both US and EU regulatory frameworks.

Yang (2019) applied the SSAFE food fraud assessment tool across 38 milk supply chain entities and found significant differences in fraud opportunity and control measures among farmers, processors, and retailers, while motivation-related fraud factors remained uniformly consistent across tiers.

Soon (2022) developed a Bayesian network model based on 715 food fraud notifications and found that dairy products account for 14.3% of all reported fraud cases, with manufacturing identified as the primary point of adulteration (63.9%), followed by retail distribution.

3. Objectives of the Study

Primary Objective

To study consumer perception and purchase intention towards Aavin dairy products in the Vellore District Co-operative Milk Producers' Union with specific reference to counterfeit product awareness.

3.1 Secondary Objectives

- To measure the level of consumer awareness about counterfeit dairy products.
- To analyze the relationship between consumer attitude and purchase intention.
- To identify key factors affecting dairy product buying decisions.
- To examine the influence of price sensitivity on counterfeit purchase behavior.
- To propose recommendations for reducing counterfeit dairy product consumption.

4. Research Methodology

This study adopts a descriptive research design to characterize consumer purchase intention patterns across a defined population. Primary data were collected using a structured questionnaire administered to 381 respondents, a sample size determined through the Morgan table for a population of 1,000 at a standard confidence level. Secondary data were sourced from peer-reviewed journals, articles, and institutional reports pertaining to counterfeit dairy products and food fraud.

Non-probability sampling was employed due to the exploratory and contextual nature of the study. Prior to inferential analysis, normality was assessed using Kolmogorov–Smirnov and Shapiro–Wilk tests; all keyvariables returned p-values below 0.05 ($p < 0.05$), confirming non-normal data distributions and necessitating the use of non-parametric statistical methods.

Table 1: Statistical Tools Applied in the Study

Statistical Tool	Purpose / Application
Percentage Analysis	Descriptive profiling of respondent demographics and responses
Mann–Whitney U Test	Comparing attitude and trust scores across gender groups
Kruskal–Wallis H Test	Examining price perception differences across age categories
Chi-Square Test	Assessing association between education and price comparison behavior
Spearman Rank Correlation	Evaluating correlation between regulatory attitude and occupation

5. Data Analysis and Findings

5.1 Demographic Profile of Respondents

Table 2: Demographic Profile of Survey Respondents (N = 381)

Variable	Category	Frequency	Percentage (%)
Age	21–30 Years	113	30
	31–40 Years	111	29
	41–50 Years	116	30
	Above 50 Years	41	11
Gender	Male	238	62
	Female	143	38
Education	School Level	24	6
	Diploma	68	18
	Undergraduate	209	55
	Postgraduate	80	21
Occupation	Government Employee	38	10
	Private Employee	175	46
	Business	123	32
	Homemaker	45	12

The demographic composition of the sample reveals a predominantly male respondent base (62%), with the majority falling within the 21–30 years and 41–50 years age brackets (30% each). Educational attainment is relatively high, with 55% of respondents holding undergraduate qualifications and 21% postgraduate degrees. Private-sector employees constitute the largest occupational group (46%), followed by business owners (32%).

ISSN: 2583-6129
DOI:10.55041/ISJEM06897

5.2 Consumer Awareness and Behavioral Tendencies

Table 3: Key Consumer Behavior Indicators

Construct / Variable	Dominant Response	Percentage (%)
Awareness of counterfeit dairy products	Neutral	42
Ability to differentiate genuine vs. counterfeit	Neutral	30
Self-rated awareness level	Fair	23
Familiarity with counterfeit products	Yes (Familiar)	62
Suspicion of counterfeit purchase	No	60
Attitude towards genuine dairy brand	Disagree (negative)	30
Trust in dairy brands	Neutral	31
Product preference (genuine brands)	Yes	56
Price perception (price sensitivity)	Neutral	35
Influence of discounts on purchase	Yes	63
Willingness to switch brands	Yes	62
Promotional influence acknowledged	Yes	61
Willingness to report counterfeit products	Yes	64
Label checking before purchase	Yes	52

The behavioral analysis reveals several important patterns. A substantial portion of respondents (42%) remain neutral about awareness of counterfeit dairy products, indicating moderate knowledge levels rather than strong conviction. Despite 62% of respondents claiming familiarity with counterfeit products, only 40% have ever suspected purchasing one — a discrepancy that suggests a gap between general knowledge and real-time detection capability. Discounts emerge as a pivotal influence factor, with 63% of respondents acknowledging their impact on purchase decisions. Encouragingly, 64% of respondents indicated willingness to report counterfeit products, which presents a viable behavioral foundation for consumer-led market surveillance.

5.3 Inferential Statistical Results

Table 4: Summary of Inferential Test Results

Test	Hypothesis	p-Value	Decision
Mann–Whitney U	Attitude & trust differ by gender	0.434 / 0.920	H_0 Accepted
Kruskal–Wallis H	Price perception differs by age group	0.387	H_0 Accepted
Chi-Square	Association: education & price comparison behavior	0.367	H_0 Accepted
Spearman Correlation	Correlation: regulation attitude & occupation	0.765	H_0 Accepted

All inferential tests yielded p-values exceeding the 0.05 significance threshold, leading to the acceptance of respective null hypotheses. Specifically, the Mann–Whitney U test confirmed that gender does not significantly influence attitude ($p = 0.434$) or trust ($p = 0.920$) regarding counterfeit dairy products. The Kruskal–Wallis H test established that age does not produce significant differences in price perception ($p = 0.387$). Chi-square analysis found no significant association between educational level and price comparison behavior ($p = 0.367$), while Spearman correlation revealed no significant relationship between regulatory attitude and occupational category ($p = 0.765$). These results collectively indicate that purchase intention factors related to counterfeit dairy products are broadly distributed across

demographic segments rather than confined to specific subgroups.

6. Discussion

The findings of this study reinforce prevailing literature that price sensitivity is a dominant catalyst for counterfeit dairy product purchases. With 63% of respondents influenced by discounts and 62% indicating willingness to switch brands on price changes, the economic attractiveness of counterfeit products is evident. This aligns with Handford's (2016) assertion that cost-motivated adulteration flourishes in markets with price-sensitive consumer bases.

The moderate awareness levels observed — with the majority of respondents rating their awareness as 'fair' and defaulting to 'neutral' on related Likert-scale items — corroborate Bobe's (2024) finding that consumers often possess generalized awareness of food fraud without the specific knowledge needed to detect counterfeit dairy products in practice. This cognitive gap is particularly concerning given that 60% of respondents reported no suspicion of ever having purchased a counterfeit product, despite 62% claiming familiarity with the phenomenon.

The absence of statistically significant demographic differences across all tested constructs suggests that vulnerability to counterfeit dairy purchases is not confined to any particular age, gender, education, or occupational group. This is a crucial policy insight: awareness and regulatory interventions must be designed for broad-spectrum reach rather than targeted at specific demographic profiles.

The behavioral willingness of 64% of respondents to report counterfeit products and 52% to check product labels prior to purchase signals a favorable disposition towards consumer-led vigilance — a resource that regulatory bodies and dairy brands can leverage through structured complaint mechanisms and public awareness campaigns.

7. Recommendations

- **Enhanced Consumer Education:** Regulatory authorities and dairy companies should invest in structured awareness campaigns — including digital media, school curricula, and point-of-sale communications — to bridge the gap between general food fraud awareness and specific counterfeit dairy detection skills.
- **Advanced Packaging Security:** Dairy brands should integrate anti-counterfeiting technologies such as QR codes linked to authentication portals, holographic seals, tamper-evident packaging, and blockchain-based traceability to enable real-time product verification by consumers.
- **Regulatory Strengthening:** Government bodies must enforce stringent inspection protocols, impose escalating penalties on counterfeit producers, and establish rapid-response mechanisms for supply chain surveillance, particularly at the distribution and retail levels.
- **Competitive Pricing Strategies:** Genuine dairy brands should explore value-based pricing, loyalty programs, and subsidized distribution models in price-sensitive markets to diminish the economic differential that makes counterfeit alternatives attractive.
- **Consumer Complaint Infrastructure:** A dedicated, accessible complaint ecosystem — encompassing toll-free helplines, mobile applications, and anonymous reporting portals — should be established to empower the 64% of consumers who have expressed willingness to report counterfeit products.
- **Supply Chain Transparency:** Implementing end-to-end supply chain monitoring systems, potentially leveraging IoT-based tracking and third-party audit frameworks, will reduce vulnerabilities at manufacturing, distribution, and retail touchpoints.

8. Conclusion

This study provides empirical evidence that counterfeit dairy products continue to pose a systemic challenge in Indian dairy markets, sustained by moderate consumer awareness, compelling price differentials, and sophisticated packaging imitation. The findings demonstrate that purchase intention is influenced by a constellation of factors — price sensitivity, promotional stimuli, brand trust, and product availability — none of which vary significantly across core demographic groups. This universality of vulnerability underscores the imperative for macro-level interventions.

Effective mitigation requires a convergence of regulatory rigor, technological innovation in packaging security, and

proactive consumer engagement. Dairy brands, government agencies, and consumer protection bodies must collaborate to establish a resilient ecosystem that safeguards public health, preserves the integrity of genuine dairy brands such as Aavin, and fosters informed consumer decision-making. Future research may extend this investigation by incorporating rural-urban comparative analyses, supply chain perspectives, and longitudinal behavioral tracking to capture shifts in awareness and purchase intention over time.

References

Andrade, L. M. (2023). Paper-based detection method for identifying starch adulteration in milk. Food Chemistry.
Bobe, M. (2024). Dairy fraud and consumer awareness: A study on consumer perception and experience. Food Control.
Bommala, R. (2024). Blockchain-based supply chain model for preventing milk adulteration and ensuring quality. Journal of Food Safety.

Coton, M. (2022). Food fraud in dairy products: Authentication techniques and economic impact. Comprehensive Reviews in Food Science.

Di Donato, F. (2022). Analytical techniques and chemometrics for food authentication and traceability. Trends in Analytical Chemistry.

Fikselova, M. (2020). Food fraud trends and consumer awareness in the European Union. Food Policy.

Gahlawat, V. K. (2024). Consumer perception and preferences towards traceability in the dairy sector. British Food Journal. Gereles, A. (2020). Production of milk and dairy products in Ukraine: Trends, efficiency, and concentration. Agricultural
Economics.

Handford, C. E. (2016). Milk fraud and adulteration: Risks, causes, and detection methods. Trends in Food Science & Technology.

Haratifar, S. (2015). Consumer perception of food traceability and its importance in dairy products. International Dairy Journal.

Hooda, A. (2025). Challenges and opportunities in food and dairy safety systems. Food Quality and Safety. Huck, C. W. (2016). Consumer trust, food labeling, and authentication technologies. Food Control.
Jurica, K. (2021). Food fraud: Regulatory frameworks, detection methods, and global challenges. Foods.

Kolesnik, T. (2020). Challenges in dairy industry development and counterfeit product issues. Agricultural and Resource Economics.

Kothari, C. R. (2004). Research Methodology: Methods and Techniques (2nd ed.). New Age International Publishers.
Poonia, A. (2017). Milk adulteration: Types, detection techniques, and health implications. Food Chemistry.
Soon, J. M. (2022). Food fraud prediction using Bayesian network modeling. Food Control.

Tortia, C. (2014). RFID technology in dairy supply chain traceability and anti-counterfeiting. Computers and Electronics in Agriculture.

Ulas, B. (2023). GC-MS techniques for authentication and detection of adulteration in dairy products. Food Chemistry.