



Research Article

Economic Analysis of Yoghurt Marketing in Akure Metropolis of Ondo State,
Nigeria

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Abstract

This study examined the economic analysis of yoghurt marketing in Akure Metropolis, Ondo State, Nigeria. The study was motivated by the increasing demand for yoghurt as a nutritious dairy product and the need to understand the profitability and marketing challenges associated with a highly perishable commodity that requires efficient storage and distribution systems. Specifically, the study examined the cost and returns of yoghurt marketing operations, determined the factors influencing the profitability of yoghurt marketing, and identified the problems associated with yoghurt marketing in the study area. A two-stage sampling technique was used to select 80 respondents. Data were analysed using descriptive statistics, gross margin analysis, market margin, benefit-cost ratio, and multiple linear regression. Results showed that yoghurt marketing was profitable, with an average total revenue of ₦1,566.76 per litre, total variable cost of ₦1,144.60, and gross margin of ₦422.16. The benefit-cost ratio was 1.37, and the market margin was ₦663.21. Regression analysis revealed that educational level ($p < 0.10$), storage cost ($p < 0.01$), and purchase price ($p < 0.01$) significantly influenced profitability. Major constraints were poor transportation facilities ($\bar{x} = 2.49$) and low demand during the rainy season ($\bar{x} = 2.29$). The findings highlight the importance of storage and distribution efficiency in yoghurt marketing, which reflects the unique challenges associated with the marketing of perishable dairy products. The study concludes that yoghurt marketing is a viable and profitable enterprise in Akure Metropolis. It recommends improved access to affordable credit, investment in transportation and cold-storage infrastructure, and capacity-building programmes to enhance marketers' efficiency and profitability.

Keywords: Yoghurt marketing, Profitability, gross margin, constraints, small-scale enterprises

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Introduction

Yoghurt is one of the oldest and most widely consumed fermented dairy products, with origins traced to the Middle East and Asia as far back as 6000 B.C. (Badawi et al., 2020). It is produced through the fermentation of milk using lactic acid bacteria, primarily *Lactobacillus bulgaricus* and *Streptococcus thermophilus* (Weerathilake et al., 2014). It is made by culturing dairy ingredients such as whole milk, skim milk, or cream with specific bacterial cultures that convert lactose into lactic acid, giving yoghurt its characteristic taste, texture, and shelf stability. Beyond its sensory qualities, yoghurt is highly valued for its nutritional benefits, including high-quality protein, calcium, vitamins, and live probiotics that promote gut health and overall well-being.

Globally, yoghurt consumption has increased significantly due to growing health awareness and changing dietary preferences toward functional and convenient foods. In Africa, the yoghurt market is expanding steadily, with a market value estimated at USD 1.48 billion in 2024 and projected to reach USD 1.98 billion by 2029, representing a compound annual growth rate (CAGR) of 6.06% (Research and Markets, 2024). Within this context, Nigeria stands out as one of the leading yoghurt-consuming markets on the continent. The Nigerian yoghurt drinks market was valued at USD 203.7 million in 2025 and is projected to reach USD 464.2 million by 2034, growing at a CAGR of 9.3% (IMARC Group, 2025). This growth is driven by rapid urbanization, rising disposable incomes, increased health consciousness, and the growing demand for convenient, value-added dairy products.

However, the Nigerian dairy sector faces significant structural challenges. The country possesses one of Africa's largest cattle populations (over 20 million head) but produces only about 600,000–700,000 metric tons of milk annually, against a national demand of roughly 1.6 million tons (USDA FAS, 2025; Dairy News Today, n.d.). Local production meets only about 40% of domestic needs, resulting in heavy reliance on imports valued at approximately USD 1.5 billion annually (Dairy News Today, n.d.). The sector is characterized by low productivity, inadequate cold-chain infrastructure, fragmented informal marketing channels dominated by smallholder producers and marketers, and the dominance of multinational firms in formal processing.

Government and private initiatives, such as the Advancing Local Dairy Development in Nigeria (ALDDN) program led by Sahel Consulting, seek to strengthen the dairy value chain, empower smallholder (particularly women) dairy farmers, and reduce import dependence (Sahel Consulting, n.d.). Despite these efforts, progress remains constrained by infrastructural, financial, and institutional barriers. Efficient agricultural marketing

plays a critical role in bridging producers and consumers. According to Arene (2016), agricultural marketing encompasses all activities and services required to move products from producers to consumers in the desired form, place, and time, at prices acceptable to both parties. In the yoghurt sub-sector, an effective marketing system is essential for minimizing post-harvest losses, maintaining product quality and safety, enhancing marketer profitability, and improving consumer access in urban areas.

Despite the rising popularity of yoghurt among Nigerian urban consumers, empirical information on the economic performance of yoghurt marketing remains limited, especially in cities like Akure Metropolis, Ondo State. Most existing studies focus on dairy production or general marketing systems, with insufficient attention to costs and returns, profitability determinants, and specific marketing constraints in localised urban contexts (e.g., Bello, 2011; Ali, 2010). This knowledge gap limits evidence-based decision-making by marketers, investors, and policymakers aiming to improve efficiency, sustainability, and inclusivity in the dairy value chain.

Therefore, this study seeks to analyse the economics of yoghurt marketing in Akure Metropolis, Ondo State, Nigeria, with the following specific objectives:

- i. analyse the costs and returns associated with yoghurt marketing operations.
- ii. determine the factors influencing the profitability of yoghurt marketing; and
- iii. identify the major constraints associated with yoghurt marketing in the study area.

Methodology

Study Area

The study was conducted in Akure North Local Government Area of Ondo State, Nigeria. The area lies between latitudes 5°45' - 7°52'N and longitudes 4°20' - 6°05'E. The occupation of the populace is primarily agriculture, trading, hospitality, civil service, and government functionaries. The metropolis is the location of the Ondo State capital, with its attached state and federal offices of several parastatals, about five higher institutions of learning, which include a University, a Polytechnic, and a Federal College of Agriculture. The metropolis also boasts numerous primary and secondary schools, numerous hotels, lounges, parks, and gardens. This makes the study area an ideal area for the research as there will be an abundance of yoghurt marketers clustered around these establishments, creating substantial demand for dairy products.

Method of Data Collection

Primary data were used for the study, and they were collected with the aid of a well-structured questionnaire and a personal interview schedule. A cluster sampling method was utilized in the first stage of sampling to choose five (5) clusters of FUTA area, Oja-Oba area, Alagbaka area, Ijoka area, and Arakale-Nepa area was purposively selected because these areas have clusters of malls, shops, relaxation centres, higher institution and student residential area and small ice cream spots, while the second stage involved the random selection of sixteen (16) marketers from each of the clusters identified in stage one, giving total a of (Eighty) 80 respondents for the study. The socioeconomic characteristics of the respondents, the cost and return of yoghurt marketing, and the constraints to marketing were all subjects of the data collected.

Data Analysis

The Data collected were analysed using descriptive statistics such as frequency count, mean, and percentage (%), Gross margin, Market margin, benefit-cost ratio, Linear regression model, and 3-point Likert scale.

Results and Discussion

Socioeconomic Characteristics of Respondents

Table 1 presents the socioeconomic characteristics of the yoghurt marketers in the study area. The results indicate that a majority (53.8%) of the respondents were female, while 46.2% were male. This gender distribution aligns with traditional roles in Nigeria's dairy value chain, where women predominantly engage in the processing and marketing of milk and milk products such as yoghurt, while men are more involved in animal rearing. 78.7% of the marketers were within the 20–49 years age bracket, with a mean age of 37.25 years. This suggests that most respondents were in their economically active and productive years, enabling them to effectively handle the physical and managerial demands of yoghurt marketing. 53.8% of the respondents were married, with an average household size of 4 persons. The moderate household size implies the availability of family labour to support marketing activities.

The respondents show a high literacy rate, with 92.5% of respondents having at least primary education and 41.3% possessing tertiary education. Higher educational attainment equips marketers with better business acumen, enabling them to adopt improved marketing strategies, manage records, and respond to market innovations more effectively than their less-educated counterparts. The majority (60%) of respondents had 1–4 years of marketing experience, with a mean of 4.02 years. Although the average experience is relatively modest, it indicates that marketers possess foundational

knowledge for managing day-to-day operations.

Table 1: Socioeconomic characteristics of Yoghurt Marketers in the Study Area

Variables	Frequency	Percentage	Mean
Gender			
Female	37	46.2	
Male	43	53.8	
Age			
20 – 29	33	41.3	
30 – 39	18	22.5	37.25
40 – 49	12	15.0	
50 – 59	9	11.3	
> 60	8	10.0	
Marital status			
Divorced	4	5.0	
Married	43	53.8	
Single	32	40.0	
Widowed	1	1.2	
Household size			
1 – 5	63	78.8	4.0
6 – 10	17	21.3	
Educational status			
Adult education	7	8.8	
No formal education	6	7.5	
Primary education	4	5.0	
Secondary education	30	37.5	
Tertiary education	33	41.3	
Years of marketing experience			
1 – 4	48	60.0	
5 – 8	28	35.0	4.02
9 – 12	4	5.0	

Source: Field survey, 2024

Cost and Returns of Yoghurt Marketing

The results in Table 2 show the cost and returns analysis of yoghurt marketing per litre in the study area. The result shows that the average purchasing cost of yoghurt per litre in the study area was ₦903.55, which accounted for 78.94% of the total variable cost. The results also indicated that transport cost, labour cost, packaging, sales material, coolants, and storage accounted for 9.81%, 7.97%, 1.29%, 0.66%, 0.45%, and 0.88% of the total

variable cost (TVC) respectively. The average total revenue for yoghurt marketing per litre in the study area was ₦1566.76, the total variable cost was ₦1144.60, and the gross margin was ₦422.16. This implies that the marketing of yoghurt in the study area is profitable. This is similar to the findings of Aboki *et al.* (2019), which showed that the cow milk enterprise is profitable with a return of 0.46 k/Naira invested. The result showed that the market margin for yoghurt was ₦663.21, which implies that the yoghurt marketers are running their enterprises at a profit. The benefit-cost ratio was revealed as 1.37, which implied that the yoghurt marketing in the study area is very solvent and capable of offsetting the cost involved in its production.

Table 2: Cost and returns of yoghurt marketers in the study area

Components	Amount (₦) per litre	% TVC
Total Revenue		
Yoghurt Sales	1566.76	
Cost		
Purchase Cost	903.55	78.94
Transport Cost	112.25	9.81
Labour Cost	91.20	7.97
Packaging	14.81	1.29
Sales Material	7.57	0.66
Coolants	5.15	0.45
Storage cost	10.07	0.88
Total Cost	1144.60	100.00
Market Margin	663.21	
Gross Margin	422.16	
Benefit Cost Ratio	1.37	

Source: Field Survey 2024

Socioeconomic Factors Influencing the Profitability of Yoghurt

Table 3 shows the regression analysis on the factors influencing profitability of yoghurt marketers in the study area. The regression result indicates that the R^2 value is 0.486, which implies that 49% of the variability in the profitability of the yoghurt marketing is explained by the independent variables specified in the model. From the result, it could be seen that educational level (X_3) was significant at 10%, while storage cost (X_6) and purchase price (X_8) were significant at 1%, indicating that these variables were major factors in determining the profitability from yoghurt marketing in the study area. The positive sign associated with some of the variables, such as age (X_1), educational level (X_3), household size (X_4), experience (X_5), and transport cost (X_7) imply that

an increase in the variables will lead to an increase in the profitability from yoghurt marketing. The coefficient of marketer's age (X_1) was positive, with an increase in the age of marketers, their yoghurt profitability also increases, possibly due to mastery and perfection of yoghurt marketing technicalities over time. Specifically, one unit increase in the marketer's age increases the venture's profitability by about 1 unit. The finding agrees with Oke *et al.* (2021) that output and profit level increase with age, probably resulting from knowledge and experience gathered from years of observation and trials with various marketing strategies. For example, when the marketing experience is high, it is in line with the a priori expectation, as marketers with much experience are likely to have acquired skills over time that will improve their marketing activities. The coefficient of transport cost that is positive implies that when the cost of transportation is high the marketers will increase the price of yoghurts in order to have higher income. On the other hand, the negative sign associated with marital status (X_2), storage cost (X_6), and purchase price (X_8) implies a negative relationship. For example, a decrease in storage cost and purchase price will bring about an increase in the profitability of the marketers. The value of the F-statistics ($F = 5.578$) was significant at 1%, which indicated that the whole model significantly explained the variations in the profitability of the yoghurt marketers.

Table 3: Factors influencing the profitability of yoghurt marketing

Variables	Coefficient	Standard Error	t values
Constant	3235.847	567.267	5.704
Age (X_1)	0.996	5.953	0.167
Marital Status (X_2)	-16.801	102.117	-0.165
Educational Level (X_3)	89.687	46.836	1.915*
Experience (X_4)	4.151	32.734	0.127
Household Size (X_5)	0.649	28.519	0.023
Storage Cost (X_6)	-0.267	0.048	-5.548***
Transport Cost (X_7)	0.000	0.003	0.046
Purchase Price (X_8)	-0.002	0.001	-3.099***
R²		0.489	
Adjusted R squared		0.417	
F Value		5.578	

***Significant at 1% *Significant at 10%

Constraints to Yoghurt Marketing in the Study Area

The problems associated with yoghurt marketing are shown in Table 4. The result indicated that all seven of the identified problems were serious problems with mean scores above 2. Poor transportation facilities ($\bar{X} = 2.49$) was ranked first, having had the highest mean score, low demand during the rainy season ($\bar{X} = 2.29$), general inflation ($\bar{X} = 2.25$), limited financial capabilities ($\bar{X} = 2.21$), inadequate storage facilities ($\bar{X} = 2.14$), too many competitors ($\bar{X} = 2.11$) and consumers preferring other products ($\bar{X} = 2.06$) was ranked seventh. This also agrees with the finding of Osabohien *et al.* (2020) that inadequate capital, poor transportation, price fluctuations, and inadequate storage facilities were the major constraints faced by livestock product marketers.

Table 4: Problems associated with yoghurt marketing (n = 80)

Problems	Very serious F (%)	Serious F (%)	Not serious F (%)	Mean	Standard deviation	Rank
Poor transportation facilities	41 (51.2)	37 (46.3)	2 (2.5)	2.49*	0.551	1 st
Low demand during rainy season	36 (45.0)	31 (38.8)	13 (16.3)	2.29*	0.732	2 nd
General inflation	39 (48.9)	22 (27.5)	19 (23.8)	2.25*	0.824	3 rd
Limited financial capabilities	34 (42.5)	29 (36.3)	17 (21.3)	2.21*	0.774	4 th
Inadequate storage facilities	32 (40.0)	27 (33.8)	21 (26.3)	2.14*	0.807	5 th
Too many competitors	27 (33.8)	35 (43.8)	18 (22.5)	2.11*	0.746	6 th
Consumer preferring other products	27 (33.8)	31 (38.8)	22 (27.5)	2.06*	0.785	7 th

Source: Field Survey, 2024

Discussion

The findings of this study show that yoghurt marketing is a profitable enterprise and an important source of livelihood, particularly for women and economically active individuals. The business is largely dominated by women, who, alongside relatively young and literate marketers, leverage education and moderate experience to participate effectively in the value chain. The youthful age structure and moderate household sizes further support operational efficiency, as family labour can supplement marketing activities. In addition, the relatively high level of education enhances record-keeping, pricing decisions, and responsiveness to market dynamics.

The cost and return analysis confirm that yoghurt marketing is economically viable. The enterprise recorded an average total revenue of ₦1,566.76 per litre, a gross margin of ₦422.16, a market margin of ₦663.21, and a benefit-cost ratio of 1.37, indicating profitability. Variable costs were largely driven by purchase cost (78.94%), while transport, labour, packaging, and storage contributed smaller proportions. These results suggest that despite operating within a challenging informal market environment, marketers are able to generate returns that exceed costs, thereby supporting household incomes and contributing to food system sustainability.

The regression results ($R^2 = 0.486$; $F = 5.578$, $p < 0.01$) indicate that the model significantly explains variations in profitability. Key determinants include education level, storage cost, and purchase price, all significant at conventional levels. While education positively influences profitability by improving managerial efficiency and market decisions, higher storage and purchase costs reduce margins. Other variables such as age, experience, household size, and transport cost also show relationships with profitability, suggesting that both human capital and cost structures jointly shape performance in yoghurt marketing. Overall, the results highlight that profitability is driven more by efficient cost management and human capital than by scale of operation alone.

Despite its profitability, yoghurt marketing faces several constraints that limit performance. The most severe challenge is poor transportation infrastructure, followed by seasonal fluctuations in demand, inflation, limited access to finance, inadequate storage facilities, intense competition, and consumer preference shifts. These constraints increase operational costs, reduce product shelf life, and create unstable income patterns, particularly during the rainy season. Collectively, they reflect broader structural challenges within Nigeria's informal dairy marketing system, especially in logistics and cold chain infrastructure.

The findings are consistent with previous studies on perishable agricultural and livestock product marketing in developing economies. In particular, the observed profitability aligns with evidence from dairy and milk-based enterprises, while the importance of education and experience supports established literature linking human capital to improved business outcomes. Similarly, the negative effects of storage and purchase costs, as well as constraints such as poor transport and limited capital, corroborate earlier research on informal food marketing systems in Nigeria and similar contexts.

Conclusion

The study concludes that yoghurt marketing is a profitable enterprise with strong livelihood potential, especially for women and youth. However, its profitability is constrained by high input costs, weak transport infrastructure, seasonal demand variability, and limited access to finance. Human capital factors such as education and experience enhance performance, but structural inefficiencies in storage and distribution systems continue to limit optimal returns.

Recommendations

To improve the performance and sustainability of yoghurt marketing, the government and relevant stakeholders should invest in rural transportation networks and affordable cold storage facilities to reduce post-harvest losses. Financial institutions and development agencies should design accessible microcredit schemes tailored to small-scale marketers to ease capital constraints and enable bulk purchasing. In addition, training programmes in business management, pricing strategies, record-keeping, and value addition should be provided to strengthen operational efficiency. Finally, future studies should adopt longitudinal approaches with larger samples across multiple states to capture seasonal variations, test interventions, and explore the impact of digital marketing and climate factors on the yoghurt value chain.

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