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Mob: +92 300 3008585, Fax: +92 41 8815544
E-mail: editorpjn@gmail.com

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Increasing the Market Acceptance of Local Food Drinks Through Concept - Testing: A Pilot Study of Kunnu Drink

K.O. Osotimehin[1] O.A. Ajayi [2] and A.A. Tijani[3]
[1]Department of Management and Accounting, Obafemi Awolowo University, Ile-Ife, Nigeria
[2]Department of Agricultural Extension and Rural Sociology, Obafemi Awolowo University, Ile-Ife, Nigeria
[3]Department of Agricultural Economics, Obafemi Awolowo University, Ile-Ife, Nigeria

Abstract: The present state of some locally produced food drinks in Nigeria has not been sufficiently attractive to a wide spectrum of the prevailing market. Kunnu, a cereal-based food drink, is one of such indigenous drinks in Nigeria. The economic gains from these entrepreneurial activities are thus being limited. This pilot study explores the possibility of repositioning Kunnu drink for increased acceptability among present and prospective consumers of the drink. Data for the study were collected from one hundred randomly selected students of Obafemi Awolowo University, Ile Ife, Nigeria. Ninety-Eight percent of the respondents were aware of the drink. In addition, the strawberry flavour was indicated as most preferred by 36.84% of the respondents. The results of the study suggest that the drink might enjoy a higher level of patronage if it is reformulated, as well as hygienically processed and appropriately packaged. The study suggested that processors of the drink be exposed to some form of training to enhance their skill.

Key words: Kunnu, concept-testing, acceptability, consumer, drinks

Introduction

The Nigerian agricultural sector has problems with respect to the provision of food for its teaming population. Ironically, in spite of the inadequacy of the sector to catch up with the rising population growth, post-harvest crop losses are also enormous. Before now, especially in the 1970s, estimates of post-harvest losses ranged from 20 to 50 per cent for most food crops (Ajibola, 2000). Recent figures within the last decade have been found to be between 10 and 25 per cent (Olayemi, 1995). When the consequences of such losses are measured in terms of human suffering and economic costs, they represent a national challenge that demands, priority attention.

Processing can play a prominent role in preventing post-harvest losses. It may actually be seen as the most important component of any nation's agribusiness complex. This is due to the fact that processing is capable of strongly shaping the form of the farm production process, and the resultant monocultures or diversified farm enterprise. In addition, processing can have significant influence on farm commodity marketing patterns. The establishment of processing facilities is, in itself, a first essential step in the stimulation of both consumer demand for the processed product, and of adequate supply of raw materials for processing. It also directly or indirectly increases the income of the farmers, hence enhanced savings and generation of capital for efficient farm production.

In order to maximize the envisaged gains from processing, it is necessary to take the changing needs of the consumers into consideration. Apart from this, it must also be recognized that the successful penetration of a market and subsequent maintenance of a presence within that market is dependant upon a number of factors. Theoretically, the principles that govern successful marketing are the same whatever the commodity, and these involve the complex process, from identifying what the consumer requires to supplying that requirement at a profit to the producers. Processing of local food drinks is also governed by these principles. It can be observed that the volume of such drinks being produced at the cottage level seems to be relatively small, when compared with the potentials available. As it is, very little economic prosperity could only come from the present scenario since most of the processors see their tasks as simply selling what they make. Unfortunately, this approach does not provide long-run answer should the interests and tastes of consumers change. As observed by Kotler (2000), if business units pay more attention to monitoring needs and wants, they would have no problem recognizing opportunities that can be profitably tapped.

One of the locally processed food drinks in Nigeria is Kunnu. It is a millet-based food drink which is processed and consumed within a few hours of its production. Millet is tasty, with a mild sweet, nut-like flavour and contains a myriad of beneficial nutrients. Air-dried grains of millet contain approximately 12.4% water, 11.6% protein, 5% fat 67.1% carbohydrate, 1.2% fibre, and 2.7% ash (Sowonola *et al*., 2005). Millets are good sources of minerals such as calcium, iron, zinc, copper, and manganese, and are also high in starch components, hence serve as energy food. Millet is

Table 1: Socio-Economic Characteristics of Respondents

Characteristics	Frequency	
	Absolute	Relative (%)
Gender		
Male	56	58.95
Female	39	41.05
Total	95	100.00
Age		
Less than 20	4	4.21
20-24	27	28.42
25-29	44	46.32
30-34	17	17.89
35 and above	3	3.16
Total	95	100.00
Religion		
Christianity	66	69.47
Islam	26	27.37
No. response	3	3.16
Total	95	100.00
Marital status		
Single	84	88.42
Married	11	11.58
Total	95	100.00

considered one of the least allergenic and most digestible of all grains available (Hulse *et al.*, 1980; Railey, 2006). Kunnu drink is prepared from pearl millet by cleaning the seeds and soaking in water for about two hours. The soaked seeds are later wet-milled and the slurry sieved with a muslin cloth. The filtrate is allowed to ferment for a day, during which the slurry settles and form sediments. The supernatant liquid is decanted, and the residue mixed with water and divided into two. Half the residue is boiled and the second half poured into it to produce Kunnu (Sowonola *et al.*, 2005). The resultant beverage has low viscosity with a sweet-sour taste, milky cream appearance, and is popular with people in the northern parts of Nigeria (Adeyemi and Umar, 1994). Kunnu is consumed mainly by people within the low income class.

It can be argued that product quality and consumer satisfaction are indeed, important to increase the sales of Kunnu. For instance, on its own, the drink is a little bit sour due to the fermentation process it usually passes through. For a wider acceptance of the beverage by consumers, flavourings and sweeteners may be added. Hence, the potential of the drink can be increased substantially by developing a new product out of the present, through improved product reformulation, processing and packaging. For the present moment, this idea of a new product is just at the concept stage. Not much work has been carried out to address the question of consumer acceptance of flavoured Kunnu drink in Nigeria. Most previous studies on indigenous drinks have focused mainly on the enhancement of nutritional values of traditional food drinks. The purpose of this pilot study therefore is to evaluate the concept with a view to obtaining the reactions of the consumers to the new product. Concepts are critical for the development and marketing of products and services. They constitute the blue print for these products and services, albeit at the level of consumer rather than at the technical level. Concept testing has been used as a research tool for many years for screening a range of alternative ideas for their relative market acceptability. A good product concept helps make the product a success by guarding developers and advertising in the right direction (Moskowitz *et al.*, 2005). In concept testing, consumer reactions are obtained by using a verbal description or a picture of the product and asking for candid options from appropriate target consumers (Schewe, 1987).

Materials and Methods

Data for this study were generated through a random survey of one hundred students of Obafemi Awolowo University Campus, Ile-Ife, Nigeria. The respondents were presented with an elaborated version of the concept as shown in Box 1.

Box 1: Elaborated version of the new Kunnu drink

Kunnu Extra® is a local food drink to be prepared from millet under very strict hygienic conditions. It will be supplemented with other items to give dieters all the needed nutrients along with good taste and high convenience. The product will be offered in four flavours (traditional, chocolate, vanilla, and strawberry), and would cost N20* per 35cl pack.

*N1 = US$0.0074

Opinions of the respondents regarding the concept were collected using a five-point Likert scale. Ninety five questionnaires were eventually used for the analysis because the others were not properly completed.

Results and Discussion

Socioeconomic characteristics: The personal characteristics of the respondents were presented in Table 1. The Table shows that about 60 percent of the respondents were males. Majority of the respondents (44%) belonged to the 25-29 age bracket; 28 percent were found in the 20-24 age group, while about 18 percent were aged between 30 and 34 years. Smaller fragments, i.e. 4% and 3% of the respondents were found to be less than 20 years and above 35 years respectively. This age distribution pattern is typical of the Nigerian higher educational institutions. As shown in the table, about 70 percent of the responding students were of the Christian faith, while 26 percent were practitioners of the Islamic religion. The remaining 3 percent did not indicate their religious leanings. Table 1 further show that 88.42 percent of the respondents were single, while the remaining 11.58 percent were married. These findings show a clear representation of the population studied.

Table 2: Respondents' Status of Awareness of Kunnu Drink

Status	Frequency	
	Absolute	Relative (%)
Aware	93	98.00
Unaware	2	2.00
Total	95	100.00

Respondents' awareness of kunnu drink and perceptions of the new concept: The level of awareness of Kunnu among the respondents was found to be high. Information in Table 2 showed that a high proportion (98%) of the respondents claimed to know about the drink. Further information extracted from the respondents showed that less than half of the respondents (46.24%) had taken the drink at one time or the other. The remaining 53.76 per cent were of the opinion that the present form of Kunnu is not appealing to them, especially its outward unhygienic presentation. It is therefore not surprising that almost all the respondents supported the development of a new product as presented in Table 3. About 66 per cent strongly agreed with the statement that a better Kunnu drink could be developed. Another 32 per cent agreed with the statement, while the remaining 2 per cent were undecided. None of them indicated a negative remark to the statement. The mean score obtained from the five-point Likert scale was 4.67, with a standard deviation of 0.25. A large proportion of the respondents were of the view that the new Kunnu could be of nutritional benefits to them. The corresponding average score and standard deviation for the five-point Likert scale are 4.29 and 0.84. This could be an indication of a strong consumer interest for the new drink. Recent observations in Nigeria show that consumers are becoming more increasingly aware of what they take. In fact, less emphasis is now being placed on artificially refined / sweetened foods and drinks, particularly with the increased incidence of diabetes. It can thus be implied that products with natural properties would attract ready acceptance in the market.

The respondents were asked if they would be ready to replace their normal meals with the new Kunnu drink. The analysis of their reactions as presented in Table 3 suggests that this position was not popular. For instance, about 14 per cent of the respondents strongly agreed with the notion. About 22 per cent of them agreed, while majority (30.53%) was undecided. The average mean score and standard deviation for the five-point Likert scale were 2.96 and 1.30 respectively. This low agreement could result from the lack of knowledge about the nutritional profile of the proposed drink. It could also mean that the majority of the respondents saw no need for a diet food drink.

This study also made efforts to gauge the perceived value of the drink by examining their reactions to its proposed selling price. The results of this exercise as reflected in Table 3 shows that a large proportion of the respondents would not mind buying the drink at N20 (US$0.15) per 35cl. For instance, more than 60 per cent of them thought the price was right, while just about 6 per cent showed strong negative view with the proposed price. The average score and standard deviation for the five-point Likert scale constructed were 3.62 and 1.21 respectively. Although no quantitative analysis was carried out for the estimation of the quoted price for, the drink, this study is of the view that the proposed price falls within some acceptable level, judging from those of similar products in the market.

Preference for different flavours: The respondents were presented with four different flavours to choose from traditional, chocolate, vanilla, and strawberry. Frequency distribution of these preferences showed that the strawberry flavour is mostly accepted with about 37 per cent of the respondents choosing the flavour as presented in Table 4. This is closely followed by the traditional flavour (34.74%). The vanilla and chocolate ranked third and fourth respectively in consumer preferences with 15.79 and 12.63 per cent of the respondents respectively. Since innovativeness is one of the major success factors for new products, the Kunnu drink may be produced with different flavours to cater for varying tastes of the market. In a related study, Yaman *et al.* (2006) addressed the question of consumer acceptance of distinctly flavoured yoghurts or various fruit yoghurts by Turkish consumers. It was found that the overall likeness of panelists used for the sensory analysis was based on fruit flavour, sweetness, and sourness liking. It was also discovered that the degree of likeness of yoghurts did not have any correlation with dairy products consumption. Earlier studies by Kroger (1973); O'Neil *et al.* (1979); and Richmond *et al.* (1979), indicated that varied sources of fruit flavourings were an important basis for the popularity of yoghurt. In another study, Sowonola *et al.* (2005) attempted to fortify Kunnu beverage with soymilk. Though results obtained indicated that the concept will result in a more nutritious beverage, hedonic ratings of the sensory qualities by panelists suggest that the blend may have a low level of acceptance by the prospective consumers.

Preference for packaging: Packaging can be a key ingredient in the product offering. For instance, it can make a product easier to use and thereby increase consumer acceptance and satisfaction. This study sought respondents' opinions about the most appropriate packaging for the Kunnu drink. As indicated in Table 5, a large proportion of them (40.00%) wanted the drink to be packed in tetrapaks. About 39 per cent mentioned new plastic bottles, while the remaining 21 per cent would not mind that the drink be packed in nylon

Table 3: Respondents' Attitudes to the Concept of a New Kunnu Drink

Statement	Strongly Agreed	Agreed	Undecided	Disagreed	Strongly Disagreed	Mean	Standard Deviation
The new concept will produce a better Kunnu drink.	63 (66.32)	30 (31.58)	2 (2.10)	- (0.00)	- (0.00)	4.67	0.25
The new drink is capable of meeting my nutritional needs.	41 (43.16)	48 (50.53)	1 (1.05)	3 (3.16)	2 (2.10)	4.29	0.84
The new Kunnu can replace normal meals	13 (13.68)	21 (22.11)	29 (30.53)	13 (13.68)	9 (20.00)	2.96	1.30
The proposed price of N20/35cl. is alright.	26 (27.37)	33 (34.74)	16 (16.84)	14 (14.74)	6 (6.31)	3.62	1.21

* Percentages in Parenthesis

Table 4: Respondents' Preferences for Different Flavours

Flavour	Frequency	
	Absolute	Relative (%)
Traditional	33	34.74
Chocolate	12	12.63
Vanilla	15	15.79
Strawberry	35	36.84
Total	95	100.00

Table 5: Respondents' Preferences for the Product Package

Packaging Type	Frequency	
	Absolute	Relative (%)
Nylon sachets	20	21.05
New plastic bottle	37	38.95
Tetrapaks	38	40.00
Total	95	100.00

Table 6: Respondents' Purchase Intention

Decision	Frequency	
	Absolute	Relative (%)
Definitely would	49	51.58
Probably would	27	28.42
Undecided	11	11.58
Probably would not	5	5.26
Definitely would not	3	3.16
Total	95	100.00

sachets. Though 40 percent of the respondents selected tetrapaks, it is very doubtful if small-scale processing business can sustain such. This notwithstanding, the issue of packaging needs to be properly taken care of, if the current poor image of the drink is to be redressed.

Respondents' purchase intentions: The respondents' purchase behaviour was measured through their purchase intent. The outcome of this investigation is presented in Table 6. About 52 per cent of the respondents indicated their definite decision to buy the product. Another 28 per cent showed some possibility of purchase, while above 12 per cent of them were undecided. Only 3.16 per cent reacted negatively to the issue of purchase. The outcome of this analysis tends to suggest that the product might be accepted in the market.

Summary and Conclusions: This pilot study examined the possibility of increasing the acceptability of Kunnu drink by reformulating and repackaging the present form of the drink. Though there is a high level of awareness (98%) for the drink, less than half of the respondents had actually taken it. The remaining majority were put off by the drink's outward unhygienic presentation. It can thus be said that the drink is poorly positioned.

The results of the study also suggest a high level of patronage if the production process and packaging are enhanced. The present situation whereby processors see their tasks continue to change. Small processors can benefit immensely from the marketing philosophy, which pays more attention to monitoring the dynamic needs and wants in the market place. It is also good for them to employ some of the new product development processes. All these could be passed across to the farmers through extension agents who should be well trained. The rural processors should be trained on the acceptable ways of production, packaging / presentation of the Kunnu drink so as to enhance their income and consequently their level of living.

References

Adeyemi, I.A. and S. Umar, 1994. Effects of Method of Manufacture on Quality Characteristics of Kunun Zaki, a Millet-Based Beverage. Nig. Food J., 12: 34-41.

Ajibola, 2000. Adding value to the Farmer's Harvest. Inaugural Lecture Series 145. Ile-Ife, Obafemi Awolowo University Press Ltd.

Hulse, J.H, E.M. Laong and O.E. Pearson, 1980. Sorghum and Millets: Their Composition and Nutritive Value. New York, Academy Press.

Kotler, P., 2000. Marketing Management. New Delhi, Prentice-Hall of India Private Ltd.

Kroger, M., 1973. Controlling the quality of fruit yoghurt. Dairy and Ice Cream Field, 158: 38.

Moskowitz, H.R., S. Porreta and M. Silcher., 2005. Concepts Research and Design in Food Product Development. Blackwell Publishing.

Olayemi, J.K., 1995. Issues in Nigerian Food Security". Development Policy Centre Work Paper WP/95.4. Ibadan, Development Policy Centre.

O'Neil, J.M., D.H. Kleyn and B.L. Hare, 1979. Consistency and Compositional Characteristics of Commercial Yoghurts. J. Dairy Sci., 62: 1032.

Railey, K., 2006. Whole Grains: Millet (Gramineae / Poaceoe). Available on the World Wide Web: http://chetday.com.millet.html.

Richmond, M.L., R.C. Channdan and C.M. Stine, 1979. Yoghurt - A Compositional Survey in the Greater Lansing Area. J. Food Prot., 42: 424.

Schewe, C.D., 1987. Marketing: Principles and Strategies, New York, Random House, Inc.

Sowonola, O.A., T.Y. Tunde-Akintunde and F. Adedeji, 2005. Nutritional and Sensory Qualities of Soymilk-Kunnu Blends. Afr. J. Food Agri. Nutr. Dev., 5: 1-12.

Yaman, H., A. Cetinkaya, M. Elmali and G. Karadagoglu, 2006. Prediction of Consumer Acceptability of Flavoured Youghurts by Sensory Measures in Turkey. Pak. J. Nutr., 5: 93-96.