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A Feasibility Study for Establishing *Sobo Freshio* Production Outfit in Federal Polytechnic, Ado-Ekiti

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Abstract: *Zobo drink is usually produced by boiling the petals of Hibiscus sabdariffa flower along with other ingredients such as pineapple peel, ginger, garlic, flavour and water. It has become a popular local drink among students across various institutions in Nigeria. Zobo flower, Pineapple fruit and other ingredients used in the production of Zobo drinks are rich sources of nutrients and phytochemicals which are beneficial to health. It has been noticed with revulsion how most producers of Zobo drink on the two campuses of federal polytechnic, Ado-Ekiti produce and package the product in unhygienic environment. Worse still, the end product (Zobo) is also packaged in used plastic bottles that are majorly sourced from dustbins. This unhygienic of action of bottling zobo in used and unhygienic bottles pose threats to the health of these unsuspected consumers of the product. Research also established that there was a huge market for Zobo drinks in federal polytechnic, Ado-Ekiti due to the growing number of students' enrollment each year. It was established that producing Zobo drink on the two campuses campus of Federal Polytechnic, Ado-Ekiti has the potential of boosting the internally generated revenue of the polytechnic. The project was found to be economically and financial viable, having a profitability index of 121.5% and an accounting rate of return of 67.0%. Based on the foregoing, the project was recommended to be embarked upon.*

Keywords: zobo freshio, production, hibiscus sabdariffa, ingredients.

INTRODUCTION

Zobo drink is a non-alcoholic drink made from petals of *Hibiscus sabdariffa* flower (Ezekiel, IU2016). Zobo (*Hibiscus sabdariffa*) was first grown in Mexico, parts of Central America, West indices and in Southern Florida, Texas and California in the late 19th century (Kolawole & Ajayi, 2007). It is now grown for culinary purposes in most tropical areas (Fasoyiro *et al*., 2005). In

Nigeria, it is mainly grown in Kano, Maiduguri, Jos, Katsina and Kwara states all in the northern part of the country (Ekenam, 2018).

The *Hibiscus sabdariffa* is a considerable source of nutrients such as carbohydrate, fiber, vitamin C, calcium and iron (Ismail *et al*., 2008). Zobo also contains antioxidants such as beta- carotene, vitamin C (Gbadegesin and Gbadamosi, 2017) and phytochemicals such as flavonoids (Adelekan et al., 2013). The sour taste of Zobo is associated with the organic acids such as ascorbic, malic and tartaric acid present in Zobo (Adelekan *et al*., 2013). The leaves of *Hibiscus sabdariffa* could be used as vegetables while the seed is a good source of oil (Chukwu & Akaninwor, 2017). The leaves of Zobo plants could also be used to produce syrup, gelatin, jam and jelly (Izah et al., 2015). The health benefits of Zobo drink cannot be overemphasized. In traditional medicine, Zobo drink is used to treat hypertension and urinary tract infection (Tseng *et al*., 2000). Several studies have shown that extracts of *Hibiscus sabdariffa* have a lipid lowering activity which could reduce the risk of hyperlipedemia and cardiovascular diseases such as atherosclerosis and coronary heart diseases (Ekenam, 2018).

Zobo is usually prepared by extracting the content of the calyces of *Hibiscus sabdariffa* with hot boiling water (Odebunmi & Dosumu, 2005). The shelf life of Zobo drink is estimated to be between 24- 28 hours if it is not refrigerated (Bamishaiye *et al*., 2011). Zobo drink is usually produced in small scale by traditional women at minimal cost as its ingredients are cheap and readily available (Ezekiel, 2016). This drink is widely consumed by people from different socioeconomic classes in Nigeria (Odebunmi & Dosumu, 2005). It is also served at special occasions by various tribes (Bamishaiye *et al*., 2011).The consumer preference for Zobo drink could be attributed to its pleasant red colour, low price, high medicinal value and high customer satisfaction (Olayemi et al., 2011).

The increasing awareness in health and wellbeing has led to corresponding increase in the demand for healthy drinks worldwide. The consumption of Zobo drink in Nigeria is popular because of its claimed health benefits (Ezekiel, 2016; Chukwu & Akaninwor, 2017). Zobo drink is however produced using pineapple peel, pineapple flavour and orange flavor (Gbadegesin and Gbadamosi, 2017). Pineapple fruit and orange fruit are rich sources of nutrients and phytochemicals which are beneficial to health (Ehler, 2011). Adelekan *et al*., (2014) evaluated the acceptability of Zobo drinks enhanced with Iyeye fruit *(Spondiasmombin*), pepper fruit (*Denettiatripetala*) and pineapple juice (*Ananas comosus).* Zobo is currently being produced by vast majority of people, especially aged women on a very low scale. There is still limited data on feasibility study and the economic value of Zobo production on a medium scale. Therefore, this feasibility study will provide the needed data that can be relied by any investor who wishes to embark on the production of Zobo drink on a medium scale.

MARKET

Ado-Ekiti is the capital of Ekiti State and is also an institution city. It has several post primary institutions, the federal polytechnic, one (1) State-owned University and a private University. Ado-Ekiti also house a privately owned polytechnic and a school of Nursing. Beside the main campus of the federal polytechnic, Ado-Ekiti, the institution also has it satellite campus in the heart of Ado-Ekiti where part-time and evening programmes are run. Ado-Ekiti also has many state and federal government owned establishments and numerous business enterprises.

The federal polytechnic, Ado-Ekiti is comprised of five (5) academic schools: the school of business studies, the school of environmental studies, the school of science and computer studies, the school of Engineering and the school of Agricultural technology. All these schools put together have students numbering over 15,000. There are also several non-academic departments, units and directorate in the school. The campus enjoys financial services from three banks which include: First bank, Polaris bank and Union bank. The campus is also littered with other business enterprises at her mini mart.

These public and private sectors undertakings all constitute potential customers of Zobo business, if the outfit can identify the information requirement of these potential customers and charge affordable prices to penetrate the whole market. There are scanty producers' of Zobo drinks on the two campuses of the federal polytechnic Ado-Ekiti and in Ado-Ekiti at large. To worsen the scenario, majority of those who currently produce and sell Zobo on campus and in Ado-Ekiti as a whole produce it in small quantity and are unable to meet the rising demand from potential customers. More so, the unhygienic environments from where many of them produce this drink is subjecting consumers' health to serious risk. Therefore, the market for Zobo is large and those who currently produce the product in Ado-Ekiti will not be able to compete. The product will be produced in a hygienic environment (Food Tech laboratory) and it will be uniquely positioned to meet the diverse needs of consumers. It will be given wide promotion through the use of fliers, posters, banners, local radio jingle, television advertisement and most importantly having good public relations with the various students' bodies.

Production Process

Major Ingredients

Dry Zobo flowers, Cloves (Konafuru), Ginger, Water, Pineaple, Garlic and Flavour.

Methods

a. Rinse out the dust from the Zobo flowers with water
b. Grind the cloves into powdery form
c. Wash and peel the skin of the ginger and blend roughly
d. Wash, peel and cut the pineapple into thin slices

e. Pour the already washed Zobo flowers into a pot and pour adequate water
f. Allow it to steam up for about 15-20 minutes
g. Add ginger and pour garlic to taste and add more and allow it to boil for another 30 minutes. By this time the Zobo flowers would have been completely soft.
h. Turn off the heat and set aside to cool off completely.
i. Blend the pineapple while the Zobo cools
j. When cools, sieve out the Zobo flowers. Then pour the juice through a chiffon cloth to remove tiny particles and flowers to have only a smooth juice.
k. Add the pineapple juice. Sieve it again through a chiffon cloth to make sure that no particles are left.
l. Add any artificial flavor of choice at this point and stir.
m. Pour into bottles and cock it for refrigeration.
n. Zobo is ready for onward distribution to various sales outlets

Zobo can be enjoyed alone or better served with snacks.

BUSINESS LOCATION

The business will be strategically cited within the Food Tech laboratory within the school of science, of the main campus of the federal polytechnic, Ado-Ekiti. The site is chosen because it has necessary equipment for sterilization and the environment is hygienic for production purpose. Also, the science of science that house the Food Tech laboratory is centrally located within the main campus of the polytechnic. Additionally, there are experts within the laboratory that will ease production of the product. Beside the Food Tech laboratory where the production factory will be sited, sales outlets will be opened at the satellite campus of the polytechnic as well as all the five schools (faculties) at the main campus. As time progresses, more sales outlet will be opened at Ekiti state University, Ado-Ekiti, Bamidele Olomilua Univeristy of Science and Education Technology, Ekiti State school of Nursing and other post primary institutions in the State.

Fixed Asset

The cost of fixed assets is shown in Table 1 below.

Table 1: Fixed Assets at Cost

Asset	Cost (N)	Total (N)
Cooking utensils	N300,000	N300,000
1 big Gas Cylinder	N80,000	N80,000
1 big deep freezers	N400,000	N400,000
1 big fridge	N300,000	N300,000
3 big coolers	N300,000	N300,000
1 big generating set	N250,000	N250,000
1 big stainless cooking drum	N120,000	N120,000
Total	**N1,750,000**	**N1,750,000**

Source: Market survey, 2023

Management Structure

The business will be run as a small scale business. The tentative design of the management structure will include: a Manager, account Clerk and sales persons. The manager will be in charge of the day to day running of the business, the sales supervisor will oversee daily sales by salespersons, Account clerk will take records of all the financial transactions, while the salespersons will be responsible for sales of the product across the various locations that have been mapped out for sales of the product.

Operating Costs

The operating costs of the proposed Zobo business are shown in Table 2 below.

Table 2: Operating costs of the Proposed Zobo Business

Particular	**Unit Cost (N)/ Month**	**Total Cost (N)/ Year**
Salary for Manager	**N40,000 per Month**	**N40,000**
Salary for account clerk	**N25,000 per Month**	**N25,000**
Salary for 4 salespersons	**N25,000 per Month**	**N25,000**
Transport allowance	**N30,000 per Month**	**N30,000**
Telephone	**N30,000 per Month**	**N30,000**
Promotion cost	**N30,000 per Month**	**N30,000**
Administration expenses	**N35,000 per Month**	**N35,000**
Zobo Flower	**5 Bags of Zobo @ N45,000**	**N225,000**
Other materials	**N20,000 per Month**	**N20,000**
Bottles	**N850,000 per month**	**N850,000**
Branding of bottles	**N120,000 per month**	**N120,000**
Total Operating Cost		**N3,180,000**

Source: Field survey, 2023

Income Projection

A 35*CL* bottle of ***Zobo Freshio*** shall sell for **N300** only. This amount is adjudged suitable as it is far below the selling price of other well-known competing brands such as Coke, Pepsi, 7UP, Fanta, etc which currently sell at **N500**. The five-year income projection is shown in Table 3 below. The net profits projected for years 1 to 5 is N15,539,600, N57,684,000, N62,928,000, N68,172,000 and N73,416,000 respectively. These net income figures are used below in calculating payback period, accounting rate of return and profitability index.

Capital Requirements and Recommended Financing Structure

The capital of N3, 180,000 will constitute the total initial investment required. The amount is the sum of the fixed assets and working capital.

Financial Feasibility

It is possible to raise both permanent and working capital from the Bank of Industry (BOI) and a consortium of Nigerian Banks. The demand for Zobo drink has continued to be on the increase among students across all levels due to its medicinal value and high level of satisfaction derive when consumed. The product is expected to yield high return on investment.

CONCLUSION

The project has proven to be economically and financially feasible. Specifically, the project has shown to be viable having a profitability index of 121.57% and an accounting rate of return of 60.07%. The rate of cash flow generation shows that there is no deficit within the first 5 years of take-off. The project has a short payback period of 2.6 years this shows that the initial investment can be recouped before the third year of the business. In addition, the data generated from the polytechnic community suggests that Zobo drink is likely to be accepted by the general public if prepared in a hygienic environment and properly packaged with clean and new bottles. Studies have shown that Pineapple and orange fruits when used are nutritious and their addition to the Zobo drink makes it a beverage that could be used to improve the nutritional status of students and as well as help in fighting diseases and infections. The project is highly recommended because it is feasible and viable especially with the proposed management structure.

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