

Assessing Consumer's Perception of Yoghurt Products.

(A case study in the Tema Municipal, Ghana)



By

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***Assessing Consumer's Perception of Yoghurt Products.
(A Case Study in the Tema Municipal of Ghana)***

A Research Project Submitted to the Van Hall Larenstein University of Applied Science in Partial Fulfilment of the Requirements for the Master's Degree in Agriculture Production Chain Management, Specialization Livestock Chain Management.

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Acknowledgement

Isaiah 43:1-2 "O Israel, the Lord who created you says Fear not: for I will redeemed you, I have called you by thy name and you are mine. When I pass through waters, rivers, fire I will not perish for the Lord God is with me..."

I am forever grateful Almighty God for the many blessings and favours, I couldn't have gone far without the Lord God on my side, I God my life, abilities and skills acquired.

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Dedication

I dedicate this thesis to my mum and siblings for their prayers, support, and encouragement throughout my schooling. Special thanks to Vincent and friends for their support my research work. I say 'Ayekoo' God bless your hard work.

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List of Abbreviations

DFPAG	Dairy Framers and Processors Association of Ghana
SWOT	Strength, Weakness, Opportunity, and Threat
Cat A	Locally produced yoghurt with local ingredients
Cat B	Locally produced yoghurt with imported ingredients
Cat C	Imported yoghurt
FDA	Food and Drugs Authority
GSA	Ghana Standard Authority
SPSS	Statistical Package for the Social Sciences
GH¢	Ghana cedi
GH¢ 1	1 Ghana Cedi = 0.15 euros
SMART	Specific Measurable, Achievable, Realistic and Time-bound

Abstract

The study was aimed at comparing and assessing consumer perception of three (3) categories of yoghurt products sold in Tema, thus category A; locally produced yoghurt with local ingredients, category B; locally produced yoghurt with imported ingredients and category C; imported yoghurt. The study was analysing consumer perception on health benefit, factors influencing consumers' choice of yoghurt products, benchmarking the three (3) yoghurt products, consumers' expectations and recommended market penetration for Dairy Farmers and Processors Association of Ghana.

An online structured questionnaire was created using google forms and administered to sixty (60) yoghurt consumers in Tema via WhatsApp only fifty-seven (57) consumers responded to the survey questionnaire. The survey consisted of twenty-two (22) males and thirty-five (35) females, between the ages of 18-60years. The education level of the respondent was bachelors and master's degree holder or graduate. An online platform (WhatsApp call) was used for the interview of six (6) key informants. The key informant consisted of two (2) processors from 'Cat A' locally produced yoghurt with local ingredients, two (2) processors from 'Cat B' locally produced yoghurt with imported ingredients, one (1) retailer of all category and one (1) dairy expert. Due to COVID-19 pandemic and restrictions in movement, a research assistant was employed to get WhatsApp contact of consumers and key informants. The focus of the study was to identify effective marketing strategies for DFPAG to penetrate the existing yoghurt market. Recommendation on how to improve their products and sell more.

The result of the study showed that females responded to the survey than males and youth between the ages of 18-35 years purchase more yoghurt. Also, consumers were not comfortable with the quality and safety of 'Cat A' as processors did not have the quality certification (Food and Drugs Authority certificate and Ghana Standard Authority certificate). Packaging, branding, and labelling of 'Cat A' were ranked poor. Consumer expected different flavours from 'Cat A' processors. Consumers were not aware of the health benefit derived from consuming yoghurt and wanted to be educated on the health benefit. The consumer of 'Cat A' reported the price to the yoghurt was expensive and that the products were limited in the market.

The study concludes that 'Cat A' should improve quality and safety, advertisement, and packaging and branding. Recommendation on the 4P's (products, price, promotion, and place) was given for market penetration.

Products: 'Cat A' processors should apply as a group for quality certification and operation as a group and improve the yoghurt products.

Price: 'Cat A' should produce yoghurt in large quantities to reduce the cost of production, thereby benefiting from the economies of scale. Yoghurt should be packed in smaller quantities to reduce the cost of yoghurt.

Promotion: 'Cat A' should be engaged in more advertisement and awareness on the health benefit derived from yoghurt should be made known to consumers.

Place: Distribution of 'Cat A' should not be focused only on their communities but other parts of the district and country.

Key words: dairy, factors influencing consumers choice of yoghurt products, health benefits derived from yoghurt, marketing mix, bench marking

CHAPTER ONE: INTRODUCTION

1.0 Chapter Introduction

This chapter highlights the background of the study, it has ten (10) main subsections. The first subsection is the introduction, milk production in Ghana is subsection 1.2. The next subsection 1.3 addresses nutritive values of milk followed by subsection 1.4 which is processing the milk into other dairy products. Subsection 1.5 shows yoghurt production and 1.6 shows the consumption of yoghurt. Subsection 1.7 shows the background of the commissioner, 1.8 shows the research problem, 1.9 shows the research objectives and the final section shows the research questions.

1.1 Introduction

Ghana's economy partly depends on agriculture which comprises of crops and livestock. The livestock sub-sector contributes about 8.69% and 1.7 % to the nation's agriculture and national GDP (GSS, 2013). Ghana's national herd includes ruminants such as goats, sheep, cattle, and non-ruminants such as pigs and poultry. Animal production is part of Ghana's agricultural economy and source of income for some people in Ghana. Cattle breeders are mostly found in the Northern part of Ghana with about 75% of the total cattle population Adzitey, (2013). The cattle found in Ghana include indigenous breeds (Ghana Sanga, White Fulani, Sokoto Gudali); exotic breeds (Jersey) and crossbreeds or hybrids (Friesian-Sanga). The West African shorthorn is the most populous breed, constituting more than 65% of the cattle population in Ghana (Adzitey, 2013).

1.2 Milk Production in Ghana

In Ghana, the local dairy sector is a developing industry which needs more attention from the government and farmers Aidoo et al., (2009). Milk consumption has seen an increase in recent years Aidoo et al., (2009), large quantities of fresh milk would be produced from a diverse type of dairy cows since the local breeds do not produce much milk Okantah, (1992). However, production of milk by dairy farmers and Fulani herdsmen are mostly not recorded leading to limited data on milk produced. This has led to a knowledge gap which makes it difficult for research to be conducted (Aidoo *et al.*, 2009).

According to Aidoo et al., (2009), the Fulani herdsmen who may produce about 55% of the milk in Ghana mainly gives the milk to their wives to either process or sell the milk fresh to customers in the urban and peri-urban areas. The farming families also use some for home consumption as well as feed calves. These herdsmen's wife generates some extra income by processing the milk into yoghurt and "wagashi" a soft cheese prepared from fresh milk (FAO, 2013).

1.3 Nutritional Value of Milk

The basic part of food is to provide enough nutrients to meet the nutritional requirements of an individual Tangkananan and Nakhonvattim, (2011). As dietary is changing from the idea of "sufficient nutrition" to "ideal nutrition", new food products, which have the ability to improve physical and mental health and reduce the risk of diseases, are being produced (Annunziata and Vecchio Professor, 2010). People in recent years are more health-conscious and are demanding for nutritive food.

Milk is an important source of protein and micronutrients, as well as calcium and vitamins A and B for both pregnant and lactating mothers including child development (Parry-Hanson Kunadu et al., 2019). Milk contains water, fat, protein, lactose, and minerals Nyarko-Mensah, (2018). Fresh dairy milk has important nutritional values and health benefits like protein, calcium and vitamins which is needed by the body to grow. Milk is essential in the food industry due to its nutrients component Popescu and Angel, (2009). According to Aidoo et al., (2009) "one kilogram of milk contains; water 84-90%, fat 2-

6%, protein 3-4%, lactose 4-5%, minerals <1% and supplies about 668 Kcal of energy". Dairy milk forms part of the important diet most people forget to add to their menu at home and produced into different dairy products for consumption (Metropolis and Twenefour, 2017).

1.4 Processing Milk into other dairy Products

Milk is a nutritious food which has a short shelf life and can be processed into various dairy products (Pereira, 2014). The Life span of milk can be extended by reducing the available water through pasteurization and transforming milk into a product like yoghurt, cheese, etc Melnik, Swen and Gerd, (2013). Milk can be transformed into many products depending on the processing technique and the amount of fat required in the products Muehlhoff, Bennet and McMahon, (2013). One lucrative area for adding value to milk is cheese making. It has a concentrated amount of proteins, fat, and minerals and can last longer (Pereira, 2014).

Most fresh milk is processed into products like yoghurt, local cheese (wagashi), pasteurized milk, ice cream and butter, of which yoghurt has a high demand Metropolis and Twenefour, (2017) According to Aidoo et al., (2009), Accra (Tema) has a niche market in the dairy industry with limited research data but high demand in the yoghurt which is consumed by 80% of the population. Yoghurt one of the processed milk products has seen an increase in recent years, and it is consumed in almost all part of the world, Tangkananan and Naknouvatim, (2011). The most consumed dairy product in Ghana is yoghurt as compared to the other dairy products (Aidoo et al., 2009)

1.5 Yoghurt Production

Yoghurt is a fermented dairy product generated from lactic acid fermentation of dairy milk from cows and bacterial known as culture. Sanful, (2009a). Yoghurt has nutritional health benefits which can be enjoyed by all persons including the person with moderate lactose-intolerants without getting ill. Sanful, (2009b). Traditionally, yoghurt is produced from dairy milk, but in recent years due to illness and change in diet for some people, yoghurt can be produced from plant milk substitutes like coconut milk, soya milk, groundnut milk and tiger nut milk which is accepted as yoghurt-like products Olalekan et al., (2019). The research will focus on three categories of yoghurt, category A locally produced yoghurt with local ingredients like local fresh milk from DFPAG, category B locally produced yoghurt with imported ingredients like imported powdered milk and category C imported yoghurt. These categorise are labelled 'Cat A', 'Cat B', and 'Cat C' for easy referencing and comparison.

1.6 Consumption of Yoghurt

Yoghurt consumption has seen an increase in recent years Aidoo et al., (2009), large amounts of fresh milk would be needed to for the production of yoghurt, milk from a diverse type of dairy cows since the local breeds do not produce much milk for the production of yoghurt Okantah, (1992). Consumers are interested in their eating habits, the type of food they want to eat, the nutritional content in the food, the ingredient used for producing the food products. Valin et al., (2014). Increase in populations, higher income in household and changes in the lifestyle of consumers together with health issues such as malnutrition influences consumer demand for advanced food products Donkor et al., (2020). Consumers' power to make choices depends partly on the quantity and quality of the products, information available and the price Aryee et al., (2019). Yoghurt is a product which is highly demanded and patronized by consumers within the Accra metropolis, with a different brand, categorise and types are sold at supermarkets, retail shops and roadside vendors (Adubofuor, 2014)

1.7 Background of the commissioner (DFPAG)

According to Ofori, (2020) the president of DFPAG, a group of farmers in Suhum, a town within the Greater Accra Region came together to form a dairy cooperative in 2006. Due to their determination

and focus on improving the dairy industry in Ghana, they got support for an international company called Heifer located in the Netherlands. In 2007, the company helped them by importing dairy cows into the country to support members in the cooperative and required they pass on the gift for a new member who joins the cooperative in the future. The cooperative grew to become an association in the year 2009. The name of the association is Dairy Farmers' and Processors' Association, Ghana.

The association consist of ninety-four (94) members of which twenty-six (26) members are dairy farmers, twelve (12) members are processors and rest of the fifty-six (56) members are livestock farmers (sheep and goat), veterinary doctors, extension workers, lecturers, and students. Currently, the association does not have any sponsor. The association approximately have between 85-93 cattle of which 65% are dairy cows, 25% are bulls, and 10% are calves. The main product is fresh dairy milk, consisting a minimum of 10liters of milk/cow/day and a maximum of 25liters of milk/cow/day given an average of 17.5liters of milk/cow/day (Ofori, 2020). Milking of dairy cows is mostly done in the morning between 5:30 am to 6:00 am and evening between 4:00 pm to 4:30 pm, the fresh milk is sold to both processors in the group and other dairy milk consumers. The fresh milk is processed into other dairy products like pasteurized milk 25%, yoghurt 50%, ghee 15% (all fat extracted) and wagashi 10% (Ofori, 2020).

All processors have registered their produce with Food and Drug Authority and Standard Board Authority for certification and approval to operate, quality measures are taken into consideration when producing. To ensure quality fresh milk, milk is tested once or twice a year at the University of Ghana, Legon or sometimes as and when needed with a small fee charged. The association currently has a big production unit which aims to produce a higher number of dairy products and market it nationwide, it is opened to new members who are interested in the development of dairy industry in Ghana.

1.8 Problem Context

Despite the many health benefits of milk, consumption of dairy milk product in developing countries like Ghana is very low as compared to developed countries Claeys et al., (2014). Due to the knowledge deficits of Ghana's dairy sector, it is challenging for actors in the dairy sector to develop effective marketing strategies to sustain the high demand for yoghurt in the dairy industry. There has been a current attempt in promoting the production and marketing dairy products but little or no attention was given to consumers (Aidoo et al., 2009).

Even though there are high demand and growing market for yoghurt in urban communities like Tema, yoghurt processors do not benefit from the growing market. Aidoo et al., (2009). DFPAG is burden with the problem of low consumption of local yoghurt produced by its member Ofori, (2020). This problem is caused by knowledge gaps in consumer behaviour and choice of dairy products. Associated to the cause of this problem is the information deficit in marketing strategies that will improve the consumption of locally produced yoghurt Aidoo et al., (2009). Poor gross margins and the inability to upscale local dairy products are some of the effects of low consumption (Parry-Hanson Kunadu et al., 2019).

1.8.1 Research Problem

The main problem of DFPAG is that the cooperative does not benefit from the growing market on the demand for yoghurt products in the markets of Tema, Accra.

Problem Owner: Dairy Farmers and Processors Association, Ghana (DFPAG)

1.9 Research Objective

To assess consumer behaviour and choice for selecting one category of yoghurt products and recommend effective market penetration strategies to DFPAG.

1.10 Research Questions

- 1. What are the perceptions of consumers towards locally produced yoghurt with local ingredients, locally produced yoghurt with imported ingredients and imported yoghurt sold in Tema?**

Sub Questions:

- a. What are the types of consumer segments based on the consumption of the three selected categories of yoghurt?
- b. What are the factors that influence consumers choice among the three categories of yoghurt?
- c. What are the health benefits derived from consumers' choice of yoghurt products?

- 2. What strategies are suitable for market penetration of yoghurt in Ghana's niche market?**

Sub Questions

- a. What are consumers' expectations of locally produced yoghurt with local ingredients?
- b. What is the current benchmark for the three categories (A, B, C) of yoghurt sold in Tema?
- c. What are the recommended marketing mix strategies to be used by the cooperative for successful market penetration?

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

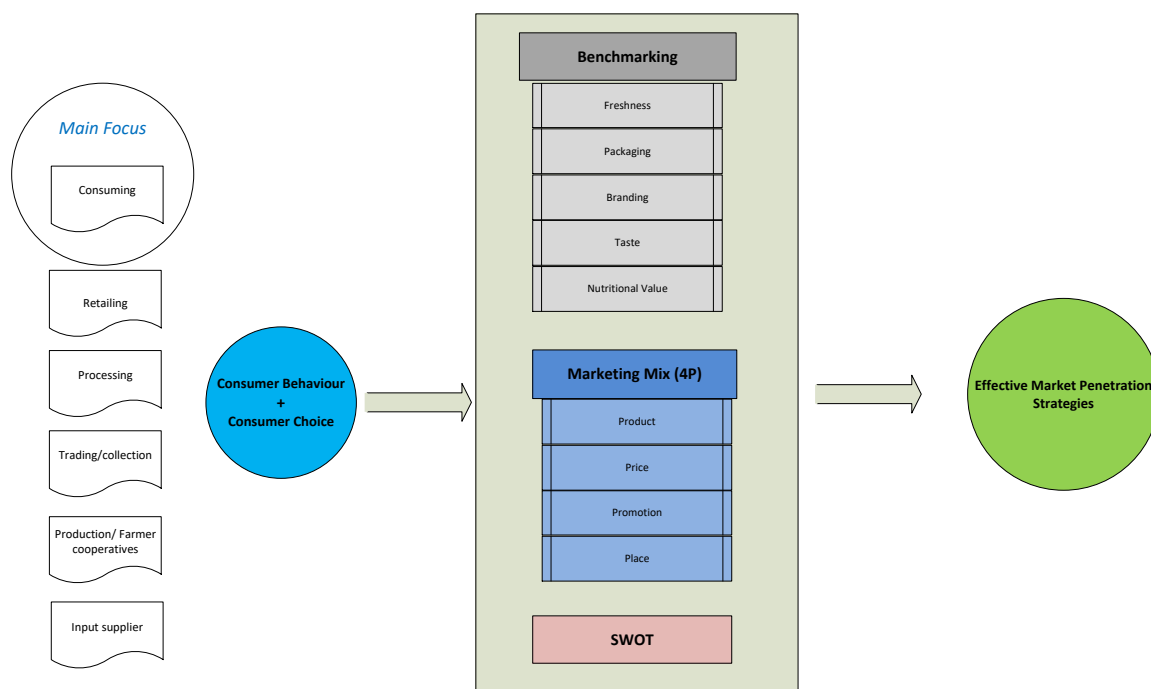
This chapter covers the conceptual framework and describes how the key concept will be applied in the research work, the quality measure used, operationalization of the conceptual framework and shows the proposed value chain for all three yoghurt categories (A, B, C).

2.1 Conceptual Framework

A conceptual framework in research is defined as the interrelation of several concepts to predict happenings under probing (Berman, 2013). It provides a concept map for probing the research problem by linking all the relevant concepts (Leavy, 2017). A conceptual framework also serves as a guide on the selection of variables to be included in the analysis as well as the operationalisation of the variables in the data collection Plano-Clark and Creswell, (2015). Figure 2.1 shows the conceptual framework of the study. The conceptual framework is designed to assess consumer preference on the three categories of yoghurt ('Cat A', 'Cat B', and 'Cat C') sold in Tema. Consumer behaviour in yoghurt consumption plays a significant role in the actor's participation in the dairy value chain. According to Nyokabi et al., (2018) the dairy actors participate in the vertical mix to control the dissemination of yoghurt expanding its capacity in the commercial centre, diminishing expense, and winning higher pay. In the horizontal direction, these actors engage in activities such as marketing, sales, input procurement and promotion to lessen the market-related outcomes of small-scale production and heterogeneous product quality.

The research will first focus on consumer behaviour regarding the consumption of the three categories of yoghurt available. Consumers choice of yoghurt products, health benefit and nutritive value, and benchmarking on these three categories of yoghurt product, thus, locally produced yoghurt with local ingredients (Cat A), locally produced yoghurt with imported ingredients (Cat B), and imported yoghurt (Cat C), will be assessed. The marketing mix (4Ps) on products, price, place, and promotion will be used. SWOT analysis to identify the strength, weakness and threat of the cooperative will be established. After all these, effective marketing strategies for the cooperatives will be recommended. Figure 2.1 shows the conceptual framework.

Figure 2.1 conceptual framework.



Source (Researcher, 2020)

2.2 Key Concepts in the Conceptual Framework

2.2.1 Consumer Behaviour and Choice

Consumer behaviour includes the ideas and feelings people face and the procedures they perform in spending their available resource Peter and Olson, (2010). Consumer behaviour focuses more on the individual's decision on spending their available resource (money and time) on essential items like what to buy? Where to buy it? How much does it cost? When to buy it? Who is using the product? These decisions help consumers to settle on the specific type of products when it comes to purchasing Grunert, Bech-Larsen and Bredahl, (2000). Consumer demand for dairy milk products has received some attention in the consumer choice literature. Consumers are now anxious about their eating habits, notably the type of food products, its nutritional content and how production is done Vandeplas and Minten, (2014) Valin, Sands and van der Mensbrugghe, (2014)

Consumption of dairy product (yoghurt) has increased in many parts of the developing countries due to economic growth and high income of which Ghana is part Gerosa and Skoet, (2012). The consumption rate differs from every households, cities, countries, and continent (Aidoo et al., 2009). According to Gerosa and Skoet, (2012), dairy consumption especially yoghurt has increased in the developing part of the world. Income growth and urbanisation leading to an increase in the level of food intake and composition of food consumed has seen rapid changes.

Consumer behaviour in accepting new dairy product is a criterion for a new market, the higher the rejection of the product by consumers the failure the dairy products becomes in the markets. Uigado, (1993). Consumer's interest depends on the social and environmental aspects of the production such as pricing, packaging, branding product appearance advertisement and distribution channels (Peter and Olson, 2010).

2.2.2 Benchmarking

Benchmarking, according to Donthu, Hershberger and Osmonbekov, (2005) is defined as "a continuous, systematic process for evaluating the products, services and work processes of

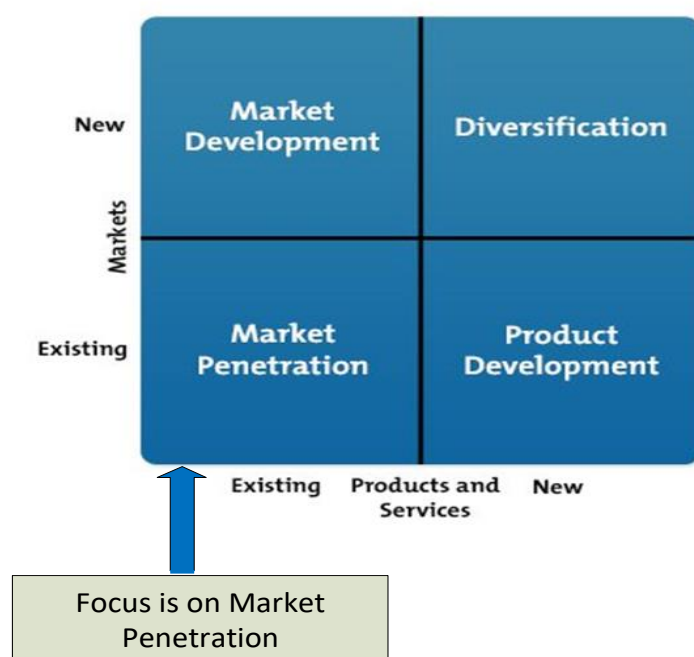
organisations”. Benchmarking can be appropriate when studying marketing productivity among firms or specific products produced by different firms, this can be viewed in the way of advertising, pricing, packaging, and branding or distribution. Benchmarking is used for all three categories of yoghurt; thus, Cat A locally produced yoghurt with local ingredients, Cat B locally produced yoghurt with imported ingredients and Cat C imported yoghurt against Freshness, packaging, branding, taste, nutritional value.

2.2.3 Marketing Mix

The marketing mix is an instrument used for marketing. The marketing mix for this research focuses on price, how much is it selling for? Place, where is it sold/ what is the distribution channel? Products, what is the product? and Promotion, how is the product promoted to consumers? (Sunardi, Tarik Ibrahim and Tain, 2016). The concept of the agri-food system is encouraging for both actors and stakeholders in the food system to focus on products development and upgrades to meet the continuously changing needs of consumers. The marketing of yoghurt has grown over time (Donkor *et al.*, 2020) (Winger and Wall, 2006). In the past less attention was given to consumers’ needs, most producers focused on bringing their products to the markets with the notion that consumers would purchase their products once it was available (Winger and Wall, 2006)The marketing mix will be used to design new marketing strategies for DFPAG to penetrate the existing market to benefit from the growing dairy industry. The four Ps to be considered are as follows:

- **Product** means the goods and services a company offers to the target market or specific group of customers.
- **Place** means the distribution areas or activities carried out for a product to get the targeted costumers
- **Price** is the amount of money a customer must pay to acquire a specific product.
- **Promotion** means the activities involved in communicating the product to targeted costumers to purchase it. (Armstrong *et al.*, 2009)

Figure 2.2 Ansoff Matrix for Marketing



Online Source, (The Ansoff Matrix - Strategy Skills Training from MindTools.com, assessed 2020)

Market penetration is the easiest and finest option for the development of most companies, especially when there is a market for the products. It is the attempt to increase a company's sale while focusing on the original product and market space (Hussain, Khattak and Rizwan, 2013). Figure 2.2 shows the Ansoff Matrix for marketing and the focus is market penetration for DFPAG.

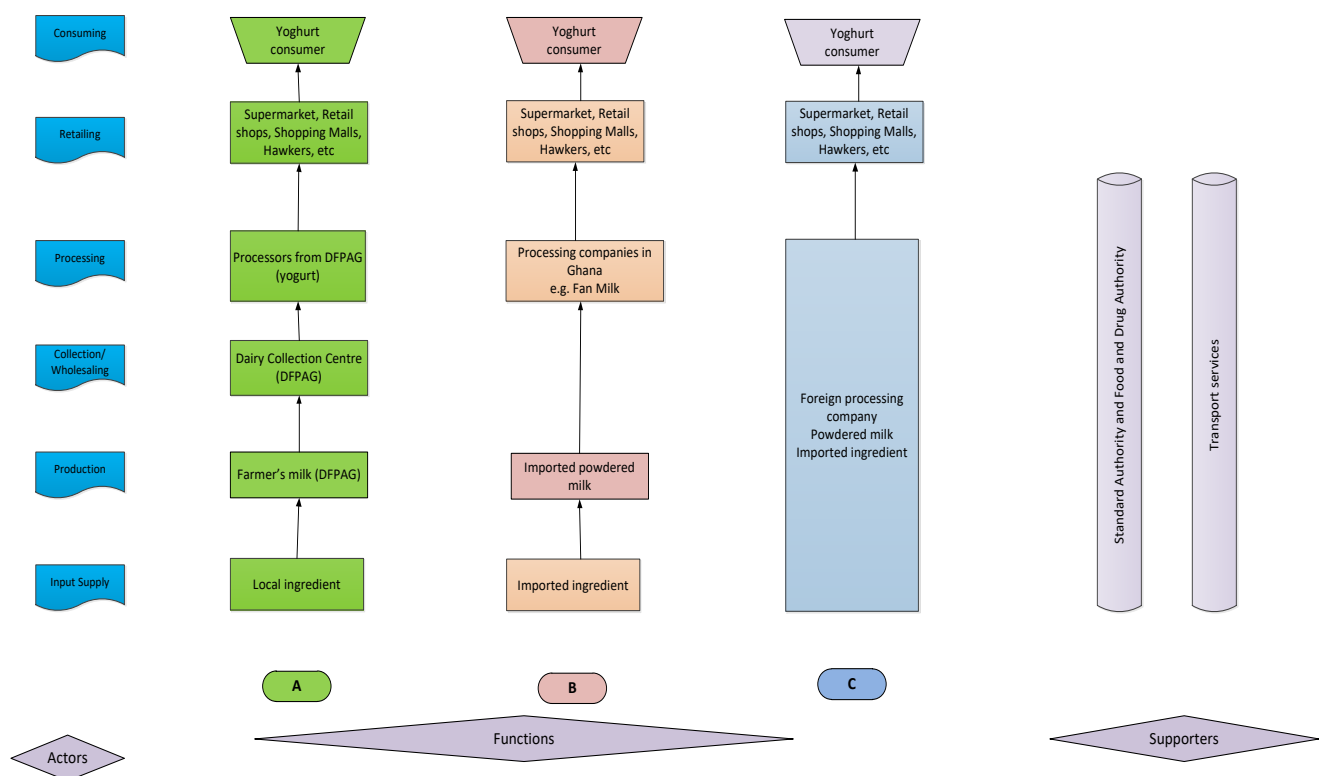
2.2.4 Strength, Weakness, Opportunity, and Threat (SWOT) Analysis

SWOT analysis is a tool used to identify the strength, weakness, opportunity, and threat of the cooperative on their production and marketing strategies.

2.3 Value Chain Module

The dairy value chain can be defined as adding value to dairy products along the chain. It consists of different activities such as input supply, production, processing, and marketing for a product or service to get to the final consumer (Fonseca *et al.*, 2019). There are communities in the peri-urban areas in Ghana with such value chain approaches. The value chain of the three categories of yoghurt products 'Cat A' represents the flow of locally produced yoghurt with local ingredients (local fresh milk from DFPAG), 'Cat B' represents the flow of locally produced yoghurt with imported ingredients (imported powdered milk), and 'Cat C' represents the flow of import yoghurt.

Figure 2.3 Overview of the different categories of Yoghurt in Ghana



2.4 Quality Measures

Milk is a perishable product due to its high nutritive value and can be invaded by bacteria and other harmful microorganisms. Milk is also a good source of pathogens and bacterial growth (Pandey and Voskuil, 2011). When milk does not go under proper treatment, one gets infected with foodborne diseases upon consuming it (Popescu and Angel, 2009). For milk to be safe and quality, quality measures go beyond the company's point of view. Quality draws more consideration in the food business and agribusiness because of the increased consumer concerns and developed interest partners, like government, the interest of partners and retailers (Luning and Marcelis, 2006).

The consumers' point of view is a major factor for deciding the quality of products especially when a product is introduced into the market. Quality has a different dimension such as, to understand consumer's perception of quality, it is important to differentiate the various types of quality dimension and examine to understand consumer perception of quality in dairy products (Popescu and Angel, 2009). For yoghurt to be considered as a quality, a new description of high-quality yoghurt is enforced by the Quality Management System which is an essential tool used in measuring the quality of yoghurt sold in the market to the consumer. (Nyokabi *et al.*, 2018)

Table 2.1 Operationalization of Conceptual Framework

Core Concepts	Dimensions	Indication
Consumer perspective	Consumer behaviour	Consumer choice, Consumer perceptions on quality
	Marketing mix strategy	Product, Price, Place, Promotion,
	Benchmarking	Freshness Packaging Branding Taste Nutritional value Hygiene

Source (Researcher, 2020)

CHAPTER 3: RESEARCH DESIGN AND METHODS

3.0 Introduction

This chapter represents the research methodology used to accomplish the objectives of the research. It describes the methods used for conducting the research work. The first subsection describes the topic selection. Subsection 2 covers the research design used. Description and selection of the study are explained in subsection 3. Subsection 4 highlights the framework used for the research. The sampling technique used to select respondents for the research is explained in subsection 5. Subsection 6 presents how data is collected and the technique used to analyse the data. Limitations and the involvement in a research assistant are explained in section 7. Subsection 8 presents the measurement of variables

3.1 Selection of Topic

Choosing a topic for research work (master thesis) is very important. A lot of factors need to be considered when selecting a topic. A thesis topic should be Specific Measurable Realistic and Time-bound (SMART). The first topic selected was “consumer perception on dairy products, and the comparison was between local dairy products and imported dairy products”, but after a dialogue, the researcher, supervisor and assessor, came to a conclusion to settle on one type of dairy products which was yoghurt products in Tema. The research’s new topic was “consumer perception on the three categories of the yoghurt products in Tema” which are, ‘Cat A’ locally produced yoghurt with a local ingredient, ‘Cat B’ locally produced yoghurt with imported ingredient and ‘Cat C’ imported yoghurt.

3.2 Research Design

Creswell, (2009) argue that the choice of research design depends on the research objectives, the expertise of the researcher and the type of audience for the study. Researchers can either adopt the qualitative, quantitative or both methods. Most empirical research is usually linked with quantitative strategy while inductive is centred on the qualitative approach. Quantitative research explores the connection between variables, which is measured numerically and analysed using a range of statistical techniques such as SPSS (Bhattacharjee, 2012). Qualitative research, on the other hand, explores the studies of participants’, using a range of data collection techniques and analytical procedure, to develop a conceptual framework (Bhattacharjee, 2012; Martin and Bridgmon, 2012) (Martin and Bridgmon, 2012). However, the research employed the use of both quantitative and qualitative approach to assess consumer’s perception of the three categories of yoghurt consumed in the Tema District. Quantitative data was collected from consumers using an online structured questionnaire, while qualitative data was collected for key informants using online interviews (WhatsApp audio call).

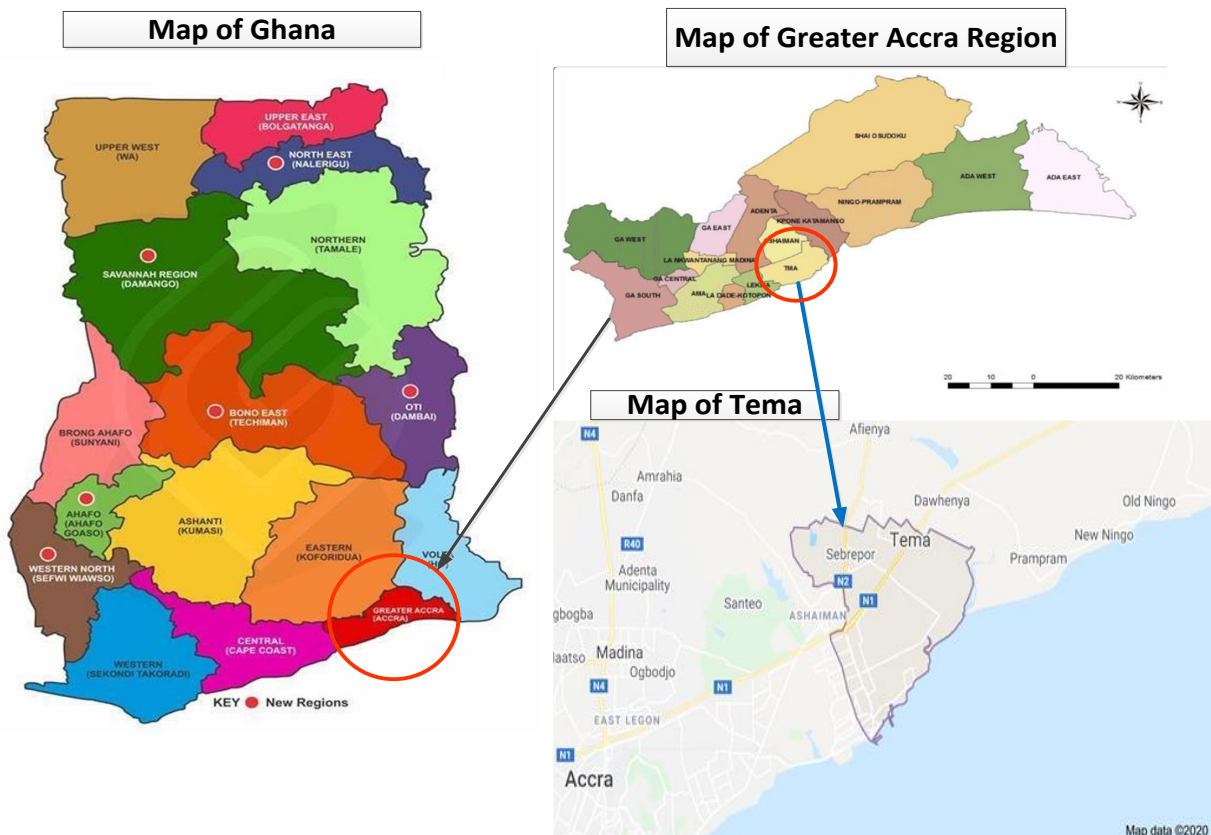
3.3 Description and selection of Study Area

To get a good and accurate result for research work, the selection of the study area is very important. The research was conducted in Tema, Greater Accra Region of Ghana. The Greater Accra Region has 16 districts of which Tema is one of the districts. Tema Metropolitan Assembly is one of the 260 Metropolitan, Municipal and District Assemblies (MMDAs) in Ghana. Tema is a city which employs the sale and consumption of all three categories of yoghurt products. (Tema, assessed 2020)

Tema also is known as the “Harbour City” because of its status as Ghana’s largest seaport is a coastal city situated 25 kilometres east of the national capital city Accra, in the region of Greater Accra. The Greenwich Meridian (00 longitudes) passes directly through the Tema city. Tema Metropolis covers an area of about 87.8km² and shares boundaries with Shai Osudoku District in the north-east, Adentan Municipal and Ga East Municipal in the north-west, Akuapim South District in the north, Ledzokuku

Municipal in the south-west and the Gulf of Guinea in the south (Tema, assessed 2020; Jackson and Oppong, 2014). The population of Tema Metropolis is at 292,773 with 152,815 females and 139,958 males (GSS, 2012).

Figure 3.1 Map of Tema



Source Researcher, 2020

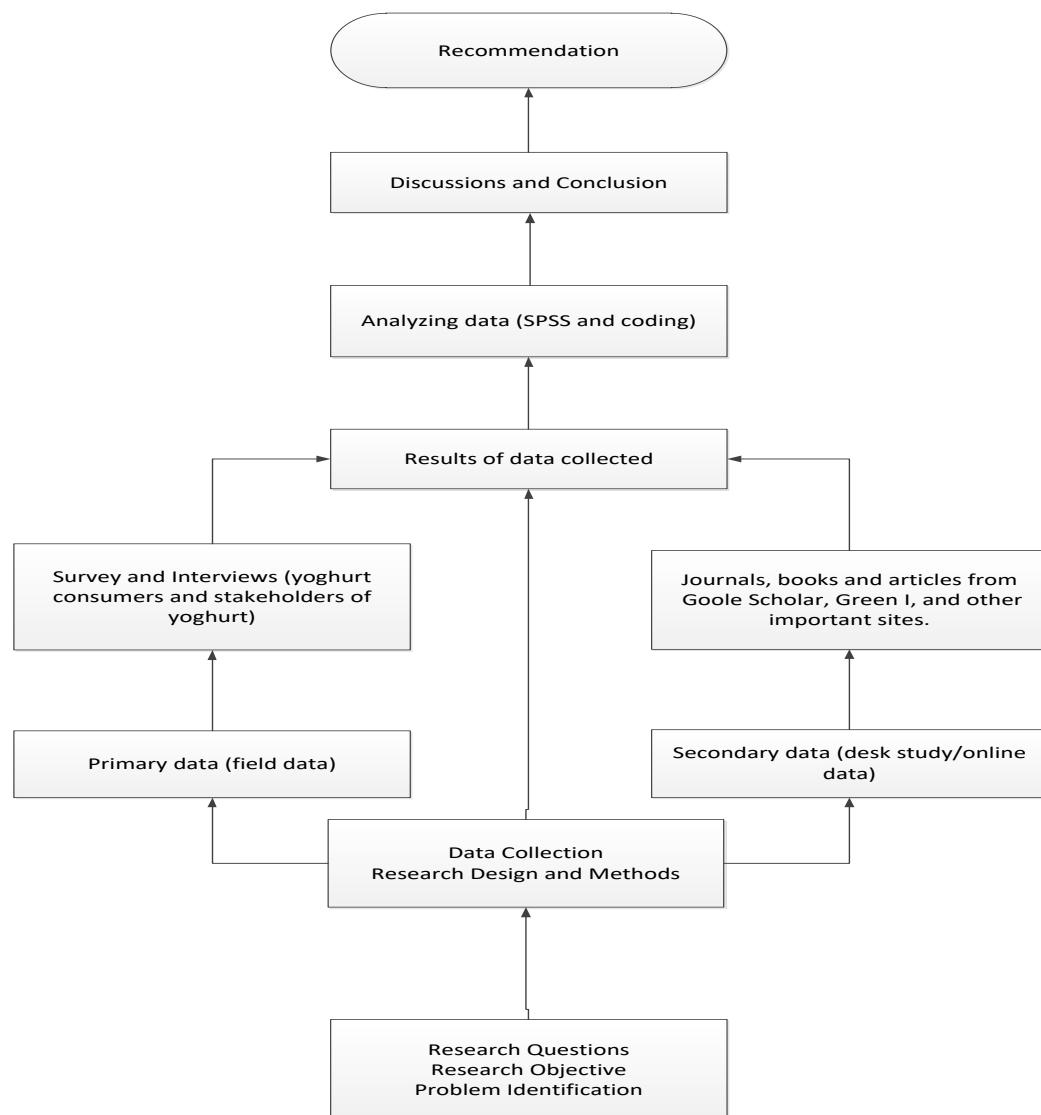
3.3.1 Sample size

A purposive sample size of 60 educated (bachelor's and/or master's degree holder or graduate) yoghurt consumers with a smartphone was selected for the online survey within the Tema District. 6 interviewees consisting of 2 processors of 'Cat A' locally produced with local ingredients, 2 processors of 'Cat B' locally produced yoghurt with imported ingredients, 1 retailer and 1 dairy expert were purposively selected from the Tema District for the interview. These audiences were purposely selected to get accurate results from the questionnaires and due to the COVID 19 restrictions in movement.

3.4 Research Framework

The research framework shown in the figure below indicate the flow of the research work; the problem of the research, the objectives, research question, literature would be viewed. Research design and methods for addressing the problem is stated. Mode of data collection and how data is collected. Data processing and analysis using Statistical Package for the Social Science (IBM SPSS) version 25, Strength, Weakness, Opportunity, and Threat (SWOT), transcribing, and coding. Finally, the findings and result, discussion, is explained and recommendation is addressing the research problem.

Figure 3.2 Research Framework



Source (Researcher, 2020)

3.5 Data Collection Method

This section describes the method used in collecting data for the research. Data collection method used consisted of desk study, online questionnaire, and online interviews.

3.5.1 Secondary Data (desk study)

Secondary data was conducted by reviewing existing literature from scientific journals, books, articles, and other official reports on yoghurt production, consumption, consumer behaviour, marketing mix strategies and other relevant information's for the research work. These information's was used to develop arguments on the importance of the study.

3.5.2 Primary Data (field data)

For primary data collection, a structured questionnaire was created using google forms and was administered to 60 yoghurt consumers in the Tema via their WhatsApp account numbers. A semi-structured questionnaire was used for the interviews, interviews were conducted using WhatsApp call. Six (6) key informants were interviewed thus two (2) from locally produced yoghurt with local ingredients, two (2) from locally produced with imported ingredients, one (1) retailer and one (1) dairy expert.

3.5.3 Survey

An online survey was administered to sixty (60) purposive selected educated (bachelor's and/or master's degree holder or graduate) yoghurt consumers between the ages of 18-60 years with smartphones who live or work within Tema. These consumers were selected because they had smartphones and can easily answer the questionnaires on the phones. They also enjoy the consumption of yoghurt with family and friends. These type of yoghurt consumers can provide detailed information on yoghurt categories stated their preference and reason for selection. Out of the sixty (60) questionnaires administered to selected consumers, fifty-seven (57) respondents answered the questionnaire, given a percentage of 95% of the respondents.

3.5.4 Interview

Due to the COVID- 19 pandemic and restriction of movement, an online interview was conducted using WhatsApp audio call for the six (6) selected key informants in Tema District. The interviewees were 4 processors; thus two (2) from locally produced yoghurt with local ingredients and two (2) from the locally produced with imported ingredients, one (1) retailer and one (1) dairy expert. These interviews were conducted to address the measurements taken during the production or processing, and sale of the three (3) categories of yoghurt.

3.6 Data Source

Table 3.1 below shows the sources used in collecting data.

Table 3.1 Data Source

Data collection	Purpose	Data collection tool	Source of data
Secondary Data Collection			
Desk research	Literature review on yoghurt production and consumption, consumer behaviour, value chain, marketing mix strategies, and benchmarking	An online site: Google Scholar, and Greeni search engine	https://scholar.google.com/ Google Scholar https://www.greeni-nl.hvhl.idm.oclc.org/iguana/www.main.cls?url=globalsearch Greeni search engine
Primary Data Collection			
Survey and Interviews	To support the information on the consumption of yoghurt	A Structured questionnaire and semi-structured online interviews	Sixty (60) purposively selected yoghurt consumers and six (6) selected key informants within the Tema Municipal.

Source (Researcher, 2020)

3.7 Data collection method

Table 3.2 shows the source of data, the method of collecting the data and the tool used in analysing the data on each research questions.

Table 3.2 Data collection method

RQ	Research questions	Source of data	Method of Collecting data	Data Analysis tool
Main q. 1	What is the perspective of consumers towards locally produced yoghurt with local ingredients, locally produced with imported ingredients and imported yoghurt sold in Tema?			
Sub Q: 1.1	What are the types of consumer segments based on the consumption of the three selected categories of yoghurt?	Responses from the online survey and online interview	Structured questionnaire and semi-structured questionnaire	Ms Excel, Word, and SPSS version 25
1.2	What are the factors influencing the consumer's choice between the categories of yoghurt?	Responses from the online survey	Structured questionnaire	Ms Excel and SPSS version 25
1.3	What is the health benefit derived from their choice of yoghurt product?	Desk study and responses from the online survey	Literature review and structured questionnaire	Ms Excel and SPSS version 25
Main Q. 2	What strategies are suitable for penetration the yoghurt niche market in Ghana?			
Sub Q: 2.1	What are consumer expectations of local yoghurt produced with local ingredients?	Responses from the online survey and online interview	Structured questionnaire and semi-structured questionnaire	Ms Excel, Word, and SPSS version 25
2.2	What is the current benchmark for the three categories (a, b, c) of yoghurt sold in Tema?	Desk study and responses from the online survey	Literature review and structured questionnaire	Ms Word and Excel
2.3	What are the recommended marketing mix strategies to be used by the cooperative for successful market penetration?	Online interview and online survey	Structured questions and semi-structured questionnaire	Ms Word, Excel, and SPSS

Source (Researcher, 2020)

3.8 Data Processing and Analyzing

Quantitative data collected from an online survey was extracted using Microsoft excel and transported to IBM SPSS version 25 for statistical analysis. The analysis includes the demographic characteristics of the respondents thus the age, gender, educational background, occupation, monthly income, and household size. Demographics of consumer's choice thus most preferred yoghurt category, frequency

in consumption, place of purchase. Products attributes on taste/ flavour, yoghurt availability, price, the nutritive value being a ranked data were analysed using mean, health benefits and Chi-square of demographics, products attributes, health benefit were all analysed using IBM SPSS version 25. Chi-square was used to processes the data to the significant level of the data given.

Qualitative data collected from both the survey respondents and the interview recordings from the key informant was transcribed using Microsoft word and was coded using Microsoft excel. The findings were coded according to each research questions.

Triangulation method was employed to come up with results using, findings from the primary/ field data and findings from secondary data, to assess if the information was consistent or not consistent with previous literature.

3.9 Research Limitation

The COVID-19 pandemic has changed the proposed plan for this research. The first coronavirus case in Accra, Ghana was recorded on 10th March 2020 with two people affected and the current case recorded in Ghana during the research work from 28th June 2020 till 25th August 2020 was 43,769 people affected, 270 deaths and 42,048 recovered. The government of Ghana instituted emergency control protocol to manage the pandemic. On 15th March 2020, President Nana Akufo- Addo, President of Ghana placed a ban on all public gathering such as conferences, workshops, festivals, political rallies, sporting events, funerals, religious activities and other related. This includes all universities, senior high schools and basic schools, i.e. public and private schools, which are closed until further notice. All border in Ghana has been closed too and there is a partial lockdown within places in Ghana (*Coronavirus: Government bans religious activities, funerals, all other public gatherings*, 2020). This regulatory measure implies restricted movement for the researcher and inhibiting the facilitation of data collection relevant to this study.

Failure and delay in granting interview by the key informant. Key informant felt unsecured to grant an interview on the 1st call, some responded after several calls, but others simply did not want to be interviewed. Key informants who granted an interview did not want their names to be published.

Inability to connect to a key informant from imported yoghurt companies. Due to the importation of the finished product, there was no one to contact for interviews. Retailers purchase from wholesalers and didn't know much about the companies and refused to give the contact of the wholesalers.

3.10 Research Assistant

Due to the COVID-19 pandemic, there has been a closure of borders and restrictions in movement especially for people coming from abroad. A research assistant was employed to assist identify yoghurt consumers for a survey and key informant for the interview. The duty of the research assistant was to send the WhatsApp contact of the selected consumer as well as WhatsApp contact of key informants.

3.11 Description of the variables

Table 3.3 summary description of the variables included in the Chi-square test.

Variable	Description	Measurement
Gender	Female or Male	Nominal
Age	Years (18years – 35years or 36years – 60years, 61years and above)	Nominal

Educational level	Number of years of formal schooling	Nominal
JHS/SHS		
Diploma/HND		
Bachelor's degree		
Master's degree		
Doctoral		
Monthly income	Ghana cedis (GH¢)	Ordinal
Occupation		Nominal
Student	Still in school	
Vendor/Hawker	Sells along the road	
Business owner	Owns their own business	
Private Worker	Works with a private institution	
Government worker	Works with a government institution	
Household size	Number of people in the house	Ordinal
Frequency of consumption	Number of times of yoghurt is consumed	Ordinal
Place of purchase	Place where yoghurt is sold/ purchased	Ordinal
Supermarket		
Retail shops (local kiosk)		
Hawker/Roadside vendor		
Wholesalers		
From the processor		
Yoghurt attribution	The perception was ranked as 1 the lowest and 5 the highest	Ordinal
Taste/Flavour	Perception about the taste or flavour of the yoghurt (1 the lowest and 5 the highest)	
Nutritive attributes	Perception about yoghurt being nutritive and having nutritive contains (1 the lowest and 5 the highest)	
Price of the yoghurt	Perception about yoghurt on price (1 the lowest and 5 the highest)	
Availability of yoghurt	Perception of the availability of yoghurt (1 the lowest and 5 the highest)	
Safety/Quality of yoghurt	Perception of safety or quality of yoghurt (1 the lowest and 5 the highest)	
Health benefits	Perception of the health benefit of yoghurt was ranked as don't have an idea, not familiar, familiar and or familiar	Ordinal
Reduce constipation and diarrhoea		
Improves digestive system		
Reduce cholesterol		
Natural protein		
Rich in calcium		
Low blood pressure		

Safety and quality	Perception of safety and quality was ranked as 1 very unsatisfied and 4 as very satisfied.	Nominal
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CHAPTER 4: FINDINGS AND RESULTS

4.0 Introduction

This chapter highlights the findings and result of both the survey with consumers and interviews with key informants. It has seven main subsections. The first sub-section shows results on consumer segment based on the three categories of yoghurt sold in Tema. The next subsection shows the factors influencing consumer perception of yoghurt including the demographic characteristics of the respondents. The demographic characteristics consist of respondents' gender, age, household size, education, occupation, and income. Sub-section 4.3 shows results on the health benefits derived from consuming the different categories of yoghurt. Consumers' expectations of locally produced yoghurt with local ingredients are presented in sub-section 4.4. In sub-section 4.5, results of benchmarking the three categories are presented. Sub-section 4.6 shows the results of the recommendation given by consumers on locally produced yoghurt with local ingredients. The final sub-section shows the qualitative result from the key informants.

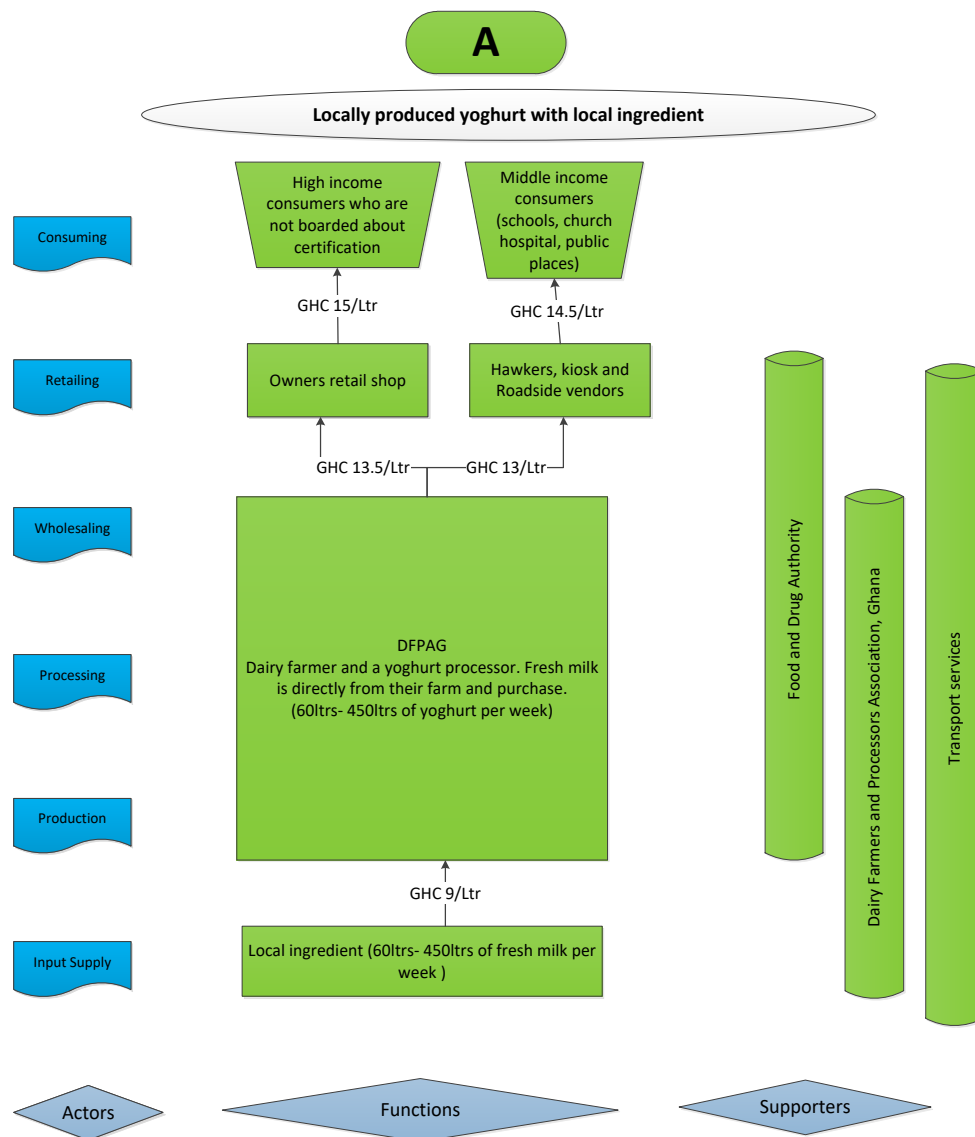
4.1 Consumer segments based on the consumption of the three selected categories of yoghurt

4.1.1 Yoghurt category 'A' Locally produced yoghurt with local ingredients.

Figure 4.1 shows the overflow of the value chain for locally produced yoghurt with local ingredients. The value chain indicates that fresh milk is sourced from the processors own farm. Dairy milk is processed into yoghurt and other dairy products, milk used for yoghurt products is between 60 litres to 450 litres per week depending on demand and the season during the year. Fresh milk is sold at Ghana cedi (¢) 9¹ per litre. Yoghurt is sold at the processors own shop and given to roadside vendors and hawker who sells the yoghurt at schools, churches, hospitals, and other social gatherings close by or within the community. Yoghurt is mostly sold at GH¢ 15 per litre. Yoghurt is packed into 250ml, 330ml and 500ml bottles which goes for GH¢ 3.5, GH¢ 5 and GH¢ 8, respectively.

Figure 4.1 Value chain of yoghurt category A

¹ 1 Ghana cedi is equal to 0.15 euro

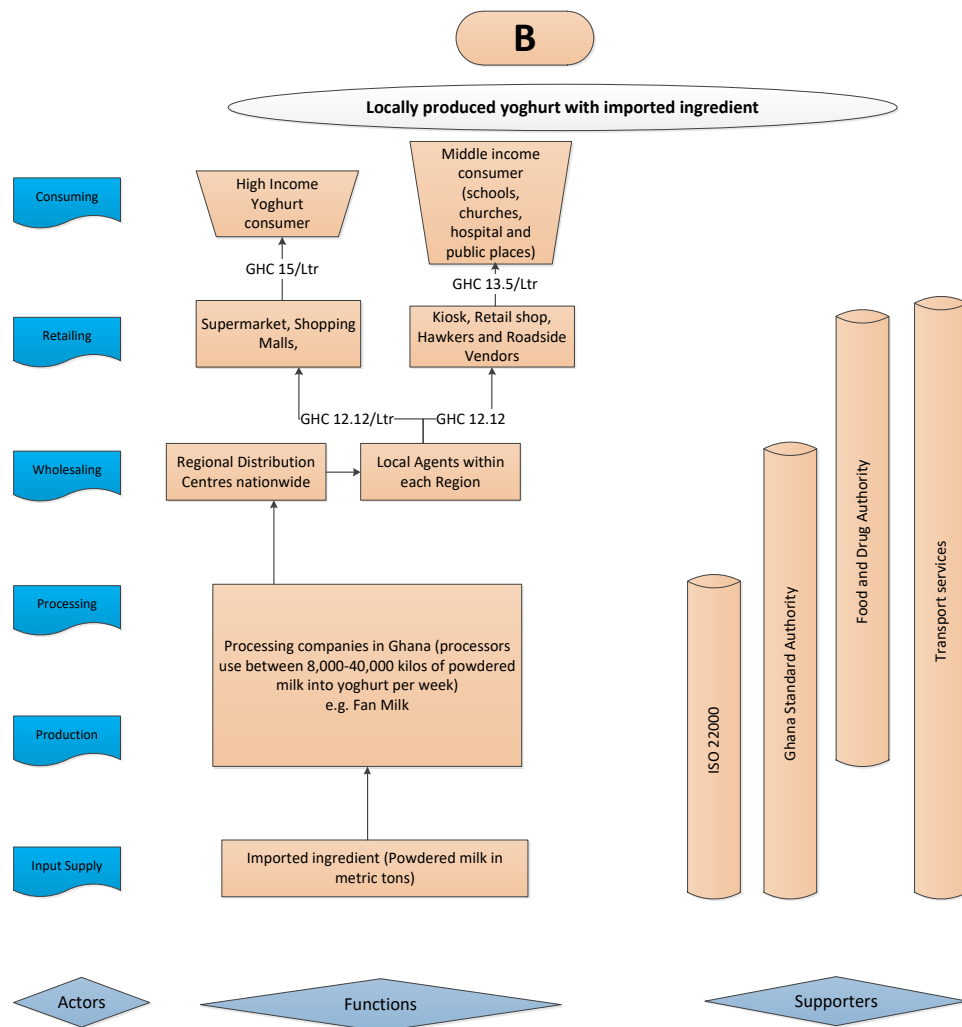


Source: Primary data, 2020

4.1.2 Yoghurt category 'B' Locally produced yoghurt with imported ingredients.

Figure 4.2 shows the flow of value chain for locally produced yoghurt with imported ingredients. Powdered milk is sourced from foreign countries (Europe) and processed into yoghurt in Ghana. The company distributes the yoghurt to the Regional Distribution Centres nationwide, who then gives the yoghurt produce to local agents within the region. These local agents then sell to shops, supermarkets, shopping malls, hawkers, and roadside vendors in the desired quantities.

Figure 4.2 Value chain of yoghurt category B

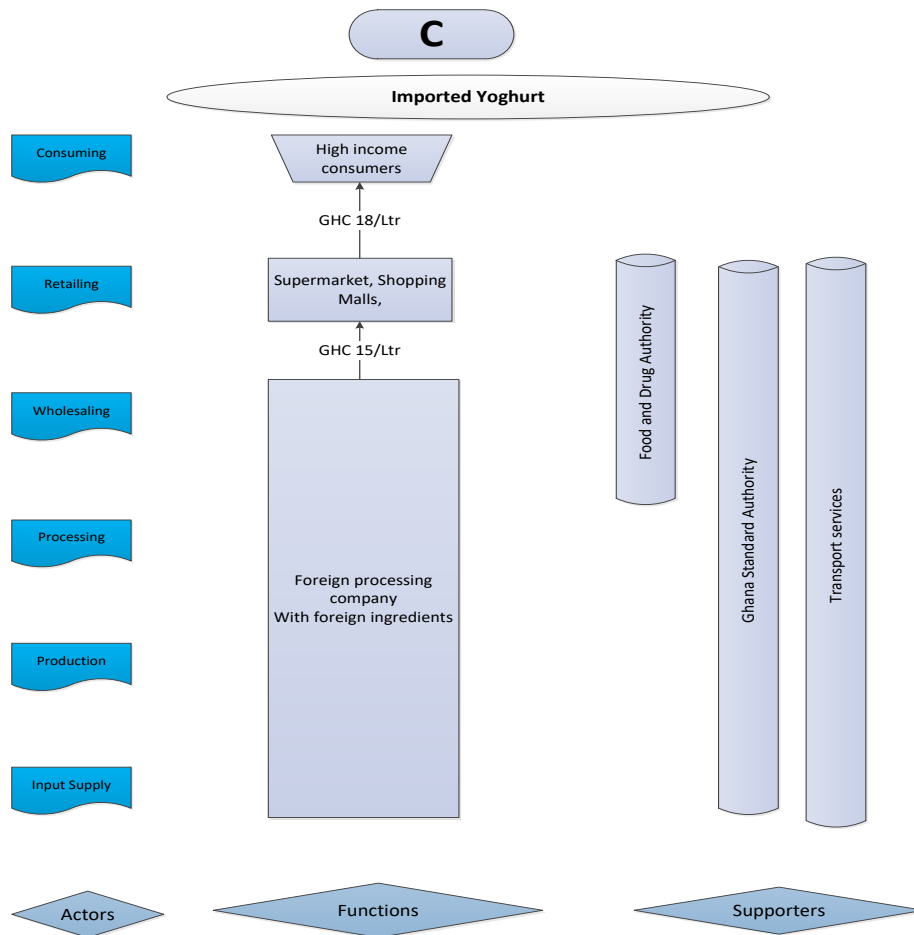


Source: Primary data, 2020

4.1.3 Imported yoghurt

Figure 4.3 shows the flow of imported yoghurt. Processing and packaging are done in a foreign country, only the final yoghurt products are imported to Ghana and sold in supermarkets and shopping malls.

Figure 4.3 Value chain of yoghurt category C



Source: Primary data, 2020

4.2 Factors influencing consumers choice of yoghurt products

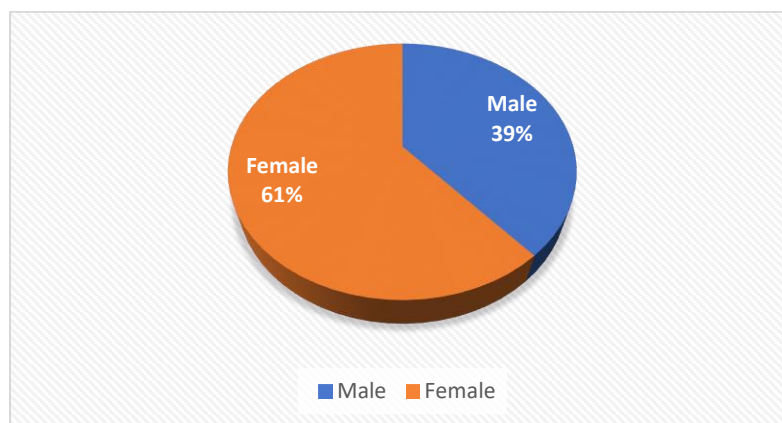
4.2.0 Demographics characteristics of respondents

This section highlights the respondent's demographics characteristics such as gender, age, household size, occupation, and monthly income.

4.2.1 Gender of the respondents

The distribution of respondents' gender is shown in Figure 4.4. The result shows that 61% constituting most of the respondents were female and the remaining 39% of the respondents were male. This shows that females responded more than males.

Figure 4. 4 Gender of the respondents

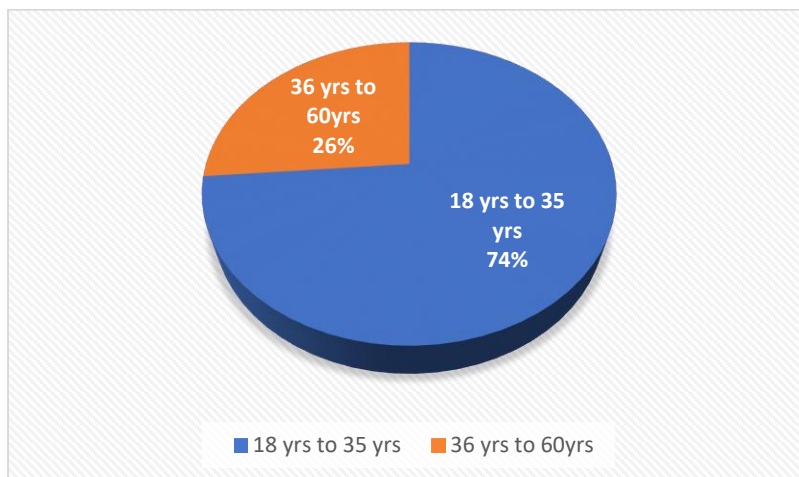


Source: Primary data, 2020

4.2.3 Age of the respondents

The ages of the respondents were grouped into three, namely 18yrs-35yrs, 36yrs-60yrs and 61yrs and above. The result of the distribution of consumers' age is presented in Figure 4.5. The result shows that 74% of the respondents were between the ages of 18 years-35 years and the remaining 26% of the respondents were between the ages of 35 years-60 years. From the result, it indicates that most yoghurt consumer is between the ages of 18 years to 36 years.

Figure 4. 5 Age of the respondents

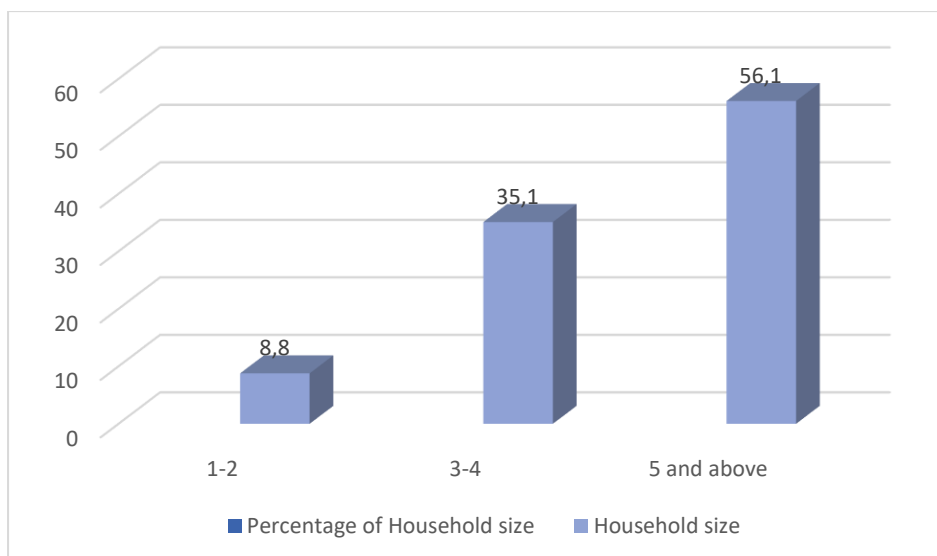


Source: Primary data, 2020

4.2.4 Household size

The distribution of respondents' household size is shown in Figure 4.6. The result shows that 56.1% constituting majority was 5 members and above, 35.1% was 3-4 members in the household and the remaining 8.8% which is the least are 1-2 members in the household.

Figure 4.6 Household size of the respondent

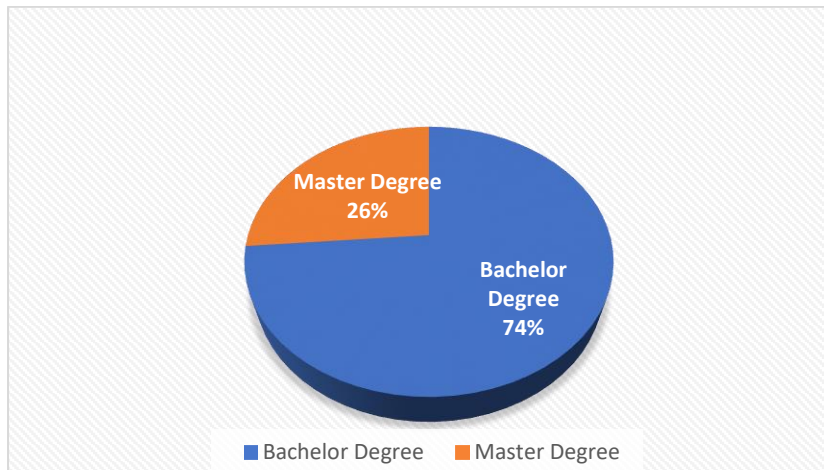


Source: Primary data, 2020

4.2.5 Educational Background of the respondents

The distribution of respondents' educational background is shown in Figure 4.7. The result shows that 74% of consumers were bachelor's degree students or holders and the remaining 26% of the respondents were master's degree holders or students. None of the respondents from the other educational categories like the JHS/SHS, HND/Diploma and the PhD holder and/or students were shown in the result.

Figure 4.7 Educational Background of the respondents

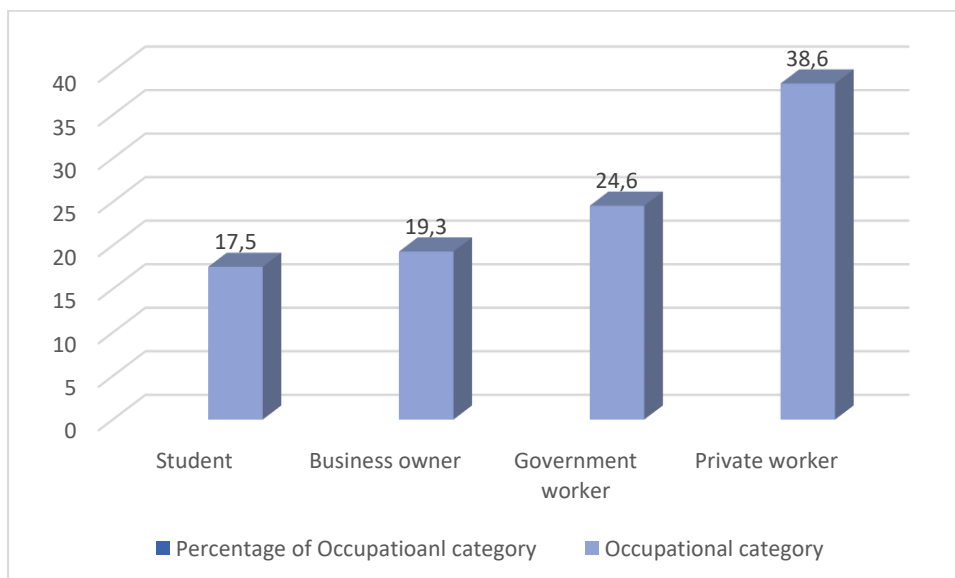


Source: Primary data, 2020

4.2.6 Occupation of the respondents

Figure 4.8 shows the distribution of the occupation of the respondents. The result shows that 38.6% which is the highest number of the respondents are private workers in the private sector, the remaining 24.6%, 19.3% are government workers and business owners or self-employed, respectively, the last group of respondents were the students with 17.5%.

Figure 4.8 Occupation of the respondents

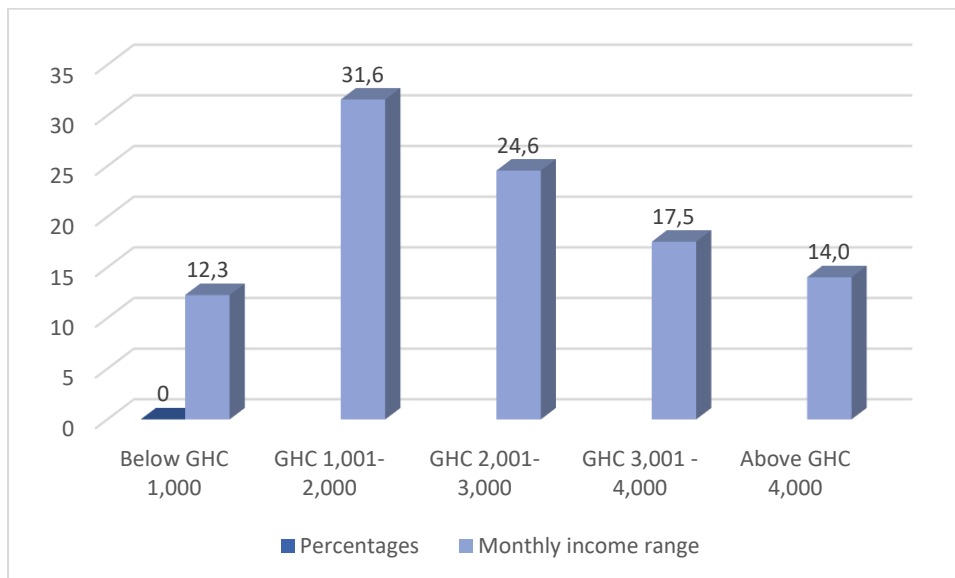


Source: Primary data, 2020

4.2.7 Monthly income (salary) of the respondents

The distribution of respondents' monthly income as one of the important aspects of the research is shown in Figure 4.9. The result shows that 31.6% constituting most of the respondents earn from GH¢ 1,001- 2,000², the remaining 24.6%, 17.5% and 14% were earning GH¢ 2,001-3,000, GH¢ 3,001-4,000 and above GH¢ 4,000, respectively. The least of 12.3% were respondents who earn below GH¢ 1,000.

Figure 4.9 Monthly income of the respondents



Source: Primary data, 2020

4.2.8 Products Attributes

Table 4.1 below shows the mean rank of the attributes of the products, with 1 being the lowest mark and 5 being the highest mark. Respondents were asked to rank from the highest to the lowest attributes of the most preferred products of yoghurt.

Table 4.1 Products Attributes

Variables	Mean Rank
Yoghurt Price	3.26
Taste/Flavour	3.19
Yoghurt Safety/Quality	3.10
Yoghurt Availability	3.01
Nutritive Attributes	2.44

Source: Primary data, 2020

Table 4.1 shows the mean distribution of product attributes of yoghurt. The tables indicate that yoghurt price with a mean mark of 3.26 was highly ranked while nutritional value with a mean mark of 2.44 was the lowly ranked. Taste/flavour, yoghurt safety/quality and yoghurt availability had a mean distribution of 3.19, 3.1 and 3.01, respectively. This implies that the price of yoghurt was the

² 1 Ghana cedi is equal to 0.15 euro

major determinant of yoghurt consumption while nutritive attributes were the least determinant in relation to yoghurt consumption by the respondents.

4.2.9 Chi-Square test

The table below shows the results of the chi-square test which is used to determine or examine the difference between the categorical variable in the same population. Chi-square determines the statistically significant difference between the expected frequencies and the observed frequency in one or more categories. The chi-square is used to determine the statistically significant in the two yoghurt categories thus 'Cat A' and 'Cat B' with the demographics.

Table 4.2 Chi-Square demographics of factors influencing yoghurt consumption

Social	Categories	Choice A (locally produced yoghurt with local ingredient)	Choice B (locally produced yoghurt with imported ingredient)	Total	Chi-Square
Gender	Male	12	10	22	8.746***
	Female	6	29	35	
Age	18-35yrs	7	35	42	16.426***
	36-60yrs	11	4	15	
Educational Background	Bachelor's degree	10	32	42	4.459**
	Master's degree	8	7	15	
Occupation	Student	5	5	10	4.317 ^{NS}
	Business owner	3	8	11	
	Government worker	6	8	14	
	Private worker	4	18	22	
Monthly income	Below GHC 1,000	3	4	7	9.925**
	GHC 1,001-2,000	3	15	18	
	GHC 2,001-3,000	4	10	14	
	GHC 3,001-4,000	2	8	10	
	Above 4,000	6	2	8	
Household size	1-2	1	4	5	2.763 ^{NS}
	3-4	4	16	20	
	5 and more	13	19	32	

Source: Primary data, 2020

Note: *, ** and *** denote 10%, 5% and 1% statistics significance, respectively. NS denote statistics insignificance even at 10%.

Table 4.2 shows the factor influencing yoghurt consumption. The results show that gender and age at 99% confidence level (1% statistics significance) are significant factors influencing yoghurt consumption. Educational background and monthly income at 95% confidence level (5% statistics significance) are significant factors influencing yoghurt consumption while occupation and household size is an insignificant factor influencing yoghurt consumption among the selected yoghurt category.

Table 4.3 Consumer's choice of yoghurt products

Variables	Categories	Frequency	Percentages
Products	Locally produced yoghurt with local ingredients 'A'	18	31.6
	Locally produced yoghurt with imported ingredients 'B'	39	68.4
	Imported yoghurt 'C'	0	0.0
Frequency of consumption	Once a day	0	0.0
	Multiple times a day	2	3.5
	Once a week	8	14.0
	Multiple times week	6	10.5
	Once a month	17	29.8
	Multiple times a month	24	42.1
Place of purchase	Supermarket	8	14.0
	Hawker/Roadside vendor	20	35.1
	Retail shops (local kiosk)	23	40.4
	Wholesalers	2	3.5
	From the Processor	4	7.0

Source: Primary data, 2020

Consumers were asked to select the most preferred yoghurt products among the three yoghurt categories given which are 'A' locally produced yoghurt with local ingredients, 'B' locally produced yoghurt with imported ingredients and imported yoghurt. Table 4.3 shows the statistical distribution of the selection, 68.4% of the respondents selected yoghurt category B as their most preferred yoghurt, 31.6% of the respondents selected yoghurt category A as their most preferred yoghurt and 0% of the respondent selected yoghurt category C.

Table 4.3 shows the statistical distribution of the frequency in yoghurt consumption by the respondents. The result shows that 42.1% of the respondents consume yoghurt multiple times a month, 29.8% of the respondents consume yoghurt once a month, while 14%, 10.5% and 3.5% of the respondents indicated that they consume yoghurt once a week, multiple times a week and multiple time a month (5 and more), respectively. None of the respondents consumes yoghurt once a day.

The place of purchase was enquired by the researcher, Table 4.3 still shows the statistical distribution of the place of purchase. The result from the survey shows that 40.4% of the respondents purchase selected yoghurt category at the supermarket, 35.1% of the respondents purchase the selected yoghurt category from the hawker/roadside vendor, while 14%, 7% and 3.5% of the respondents purchase the selected yoghurt category from retail shops (local kiosk), from the processor and wholesalers, respectively.

Table 4.4 Chi-Square of Frequency and Place of purchase

Social	Categories	Choice A (locally produced yoghurt with local ingredient)	Choice B (locally produced yoghurt with imported ingredient)	Total	Chi-Square
Frequency of consumption	Multiple times a day	0	2	2	6.351 ^{NS}
	Once a week	3	5	8	
	Multiple times a week	3	3	6	
	Once a month	8	9	17	
	Multiple times a month	4	20	24	
Place of purchase	Supermarket	2	6	8	18.868***
	Hawker/Roadside vendor	0	20	20	
	Retail shops (local kiosk)	12	11	23	
	Wholesalers	2	0	2	
	From the Processor	2	2	4	

Source: Primary data, 2020

Note: *, ** and *** denote 10%, 5% and 1% statistics significance, respectively. NS denote statistics insignificance even at 10%.

Table 4.4 shows the frequency and place of purchase of the yoghurt category. The results show that the place of purchase at a 99% confidence level (1% statistics significance) are significant factors influencing yoghurt consumption while the frequency of consumption is an insignificant factor influencing yoghurt consumption.

4.3 Health benefits derived from consumers' choice of yoghurt products

Table 4.5 shows a list of health benefits which are attributed to the consumption of yoghurt products. From literature, yoghurt has similar nutritional value as that of fresh milk. Yoghurt is an excellent source of protein, calcium, vitamins, low-fat varieties contain low cholesterol and reduces constipation and diarrhoea (McKinley, 2005).

Table 4.5 Health benefits

Variables	Categories	Frequency	Percentages
Reduce constipation and diarrhoea	Don't have an idea	24	42.1
	Not familiar	25	43.9
	Familiar	6	10.5
	Very familiar	2	3.5
Improves digestive system	Don't have an idea	12	21.1
	Not familiar	18	31.6
	Familiar	26	45.6
	Very familiar	1	1.8
Reduce cholesterol	Don't have an idea	15	26.3
	Not familiar	29	50.9
	Familiar	10	17.5
	Very familiar	3	5.3
Natural protein	Don't have an idea	5	8.8
	Not familiar	9	15.8
	Familiar	36	63.2
	Very familiar	7	12.3
Rich in calcium	Don't have an idea	6	10.5
	Not familiar	13	22.8
	Familiar	29	50.9
	Very familiar	9	15.8
Low blood pressure	Don't have an idea	23	40.4
	Not familiar	29	50.4
	Familiar	5	8.8
	Very familiar	0	0

Source: Primary data, 2020

Table 4.5 shows the distribution of the result from the survey on consumers perception of health benefits derived from consuming yoghurt.

The table indicates that 43.9% of the respondents were not familiar with the fact that consuming yoghurt reduces constipation and diarrhoea. 42.1% of the respondent didn't have an idea, 10.5% of the respondents were familiar and 3.5% of the respondent indicated that they were very familiar with the stated health benefits.

Consuming yoghurt improves digestion, 45.6% of the respondents were familiar with the stated health benefit whiles 21.1% of the respondents didn't have an idea. 31.6% of the respondents were not familiar and 1.8% of the respondents were very familiar with the stated health benefits.

Responses from the survey indicate 50.9% of the respondents are not familiar with the facts that consuming yoghurt reduces cholesterol, 26.3% of the respondents don't have an idea, 17.5% were familiar with the reduction in cholesterol and 5.3% were very familiar.

Form the survey 63.2% of the respondents were familiar with the fact that yoghurt serves as a natural protein, while 8.8% didn't have an idea. 12.3% were very familiar and 15.8% of the respondents were not familiar with the health benefit.

The survey shows that 50.9% of the respondent were familiar with the fact that yoghurt was rich in calcium while 10.5% didn't have an idea on that. 22.8% of the respondents were not familiar and 15.8% of the respondent were very familiar with the fact that yoghurt was rich in calcium.

The table still indicates that 50.9% of the respondents were not familiar with low blood pressure in the consumption of yoghurt, 40.4% of the respondent didn't have an idea while 8.8% were familiar with the low blood pressure in the consumption of yoghurt, none of the respondents was very familiar with the stated health benefit.

Table 4.6 Nutritive Attributes

Social	Categories	Choice A (locally produced yoghurt with local ingredient)	Choice B (locally produced yoghurt with imported ingredient)	Total	Chi-Square
Reduces constipation and diarrhoea	Not familiar	15	34	49	0.151 ^{NS}
	Familiar	3	5	8	
Natural Protein	Not familiar	3	11	14	0.885 ^{NS}
	Familiar	15	28	43	
Improves your digestive system	Not familiar	10	20	30	0.090 ^{NS}
	Familiar	8	19	27	
Reduce cholesterol	Not familiar	16	28	44	2.044 ^{NS}
	Familiar	2	11	13	
Rich in calcium	Not familiar	2	17	19	5.846 ^{NS}
	Familiar	16	22	38	
Low blood pressure	Not familiar	14	38	52	5.947 ^{NS}
	Familiar	4	1	5	

Source: Primary data, 2020

Note: *, ** and *** denote 10%, 5% and 1% statistics significance, respectively. NS denote statistics insignificance even at 10%.

The result from Table 4.6 shows that nutritive attributes are insignificant as the consumer were not familiar with the health benefit derived from consuming yoghurt.

4.4 Consumers' expectations of locally produced yoghurt with local ingredients

Table 4.7 Price rate for locally produced yoghurt with local ingredients

Rate	Frequency	Percentages
Very cheap	3	5.3
Cheap	15	26.3
Expensive	32	56.1
Very expensive	7	12.3

Source: Primary data, 2020

Table 4.7 shows that 56.1% of the respondents stated that locally produced yoghurt with local ingredients was expensive, while 5.3% stated that it was very cheap. 26.3% stated it was cheap and 12.3% stated it was very expensive.

Table 4.8 Area of improvement for locally produced yoghurt with local ingredients

Variables	Frequency	Percentages
Improve processing techniques	5	8.8
Improve quality and safety	21	36.8
Improve taste/flavour	10	17.5
Reduce sugar content	4	7
Improve branding/packaging	17	29.8

Source: Primary data, 2020

Table 4.8 shows that 36.8% of the respondents indicated that the quality and safety of locally produced yoghurt with local ingredients should be improved while 7% indicated that sugar content should be reduced. 29.8%, 17.5% and 8.8% indicated that branding or packaging, taste and flavour, and processing techniques of locally produced yoghurt with local ingredients should be improved.

Table 4.9 Advertisement

Variables	Categories	Frequency	Percentages
More advertisement	Yes	50	87.7
	No	7	12.3

Source: Primary data, 2020

Tables 4.9 shows that 87.7% of the respondents wanted more advertisement to be done by processors of locally produced yoghurt with local ingredients while 12.3% were okay with the current advertise.

Table 4. 10 Education on the awareness of Health benefits

Variables	Categories	Frequency	Percentages
Education on the awareness of health benefits	Yes	50	87.7
	No	7	12.3

Source: Primary data, 2020

Table 4.10 indicates that 87.7% of the respondents wanted to be educated on the health benefits derived from consuming yoghurt while 12.3% did not want the education on the health benefits derived from consuming yoghurt.

Table 4.11 Education on the awareness of Quality and Safety

Variables	Categories	Frequency	Percentages
Education on the awareness of quality and safety	Yes	46	80.7
	No	11	19.3

Source: Primary data, 2020

Table 4.11 indicates that 80.7% of the respondents wanted to be educated on the quality and safety measures used in production, while 19.3% did not want to be educated on the quality and safety measures used in production.

4.5 Benchmark for the three categories (A, B, C) of yoghurt sold in Tema

Table 4.12 Benchmarking on Perception

Variables	Locally produced yoghurt with local ingredient 'A'		Locally produced yoghurt with imported ingredient 'B'		Imported yoghurt 'C'	
Perception	Mean	Rank	Mean	Rank	Mean	Rank
Freshness	2.40	3 rd	2.53	5 th	2.58	5 th
Packaging/Branding	2.18	4 th	2.63	3 rd	3.12	1 st
Taste	2.53	1 st	2.67	2 nd	2.81	2 nd
Quality and Safety	2.02	5 th	2.88	1 st	2.72	4 th
Nutritional value	2.42	2 nd	2.56	4 th	2.74	3 rd

Source: Primary data, 2020

Table 4.12 shows the benchmark ranking of the three-yoghurt category sold in Ghana. The survey indicates that consumers perception on locally produced yoghurt with local ingredients was ranked as taste being the first followed by nutritional value, freshness, packaging/branding, and final quality, and safety lastly ranked. Consumers perception on locally produced yoghurt with imported ingredients was ranked as quality and safety being first followed by taste, packaging/branding, nutritional value and finally freshness being last. Consumers perception of imported yoghurt indicates

that packaging/branding was ranked first followed by taste, nutritional value, quality, and safety and finally freshness as the last.

4.6 Recommended marketing mix strategies to be used by 'Cat A'

The result from the survey shows the following recommended strategies by respondents which can improve the marketing strategies of the cooperatives

4.6.1 Product

Respondents from the survey recommended that taste, branding, packaging, and labelling should be improved. The respondent who purchases yoghurt in the supermarkets recommended processors of locally produced yoghurt with local ingredients should acquire Food and Drugs Authority, Ghana (FDA) certification (*FDA, food division's main aim is to protect public health by ensuring the availability of safe and quality food on the Ghanaian market*) and improving on quality and safety of yoghurt products so it can be sold in the supermarkets.

Table 4.8 from the survey shows that 36.8% of the respondent wanted quality and safety should be improved. The respondents recommended processors to use of safe and nutritious ingredients for processing. Respondents from the survey recommended that the life shelf of yoghurt should be extended, more flavours should be added, and expiring date should be included in the labelling.

"I don't like how it turns into water once you take a few scoops and re-store it, the quality should be improved. I hope different flavours like chocolate, apple etc should be added to the existing flavours".
(Survey, Anonymous 2020)

4.6.2 Price

Survey respondents recommended that yoghurt should be made affordable, prices should be reduced so they can purchase the yoghurt in larger quantities. Table 4.7 from the survey shows that 56.1% of the respondents indicated that locally produced yoghurt with local ingredients was expensive.

"... reducing prices and make yoghurt more available". (Survey, Anonymous 2020)

4.6.3 Promotion

Survey respondents suggested that proper and more advertisement should be done, health benefits and nutritional values should be made known to consumers. Respondents for the survey recommended proper marketing strategies should be employed.

"The public should be made aware of the locally produced yoghurt through advertisement as advertisements seem to authenticate the quality of the products",

(Survey, Anonymous 2020)

4.6.4 Place

A survey respondent suggested that processors should maintain and keep a hygienic working space, clear processing area. Respondents from the survey recommended that distribution channels should be increased, and yoghurt should be made ready and available in the markets for consumers.

"increase their distribution channels and make products readily available for consumers and the general markets".

(Survey, Anonymous 2020)

4.6.5 People

Survey respondents also recommended that consumers should be enlightened on the nutritive values and health benefits derived from consuming yoghurt.

“...awareness on nutritive values and health benefits derived from consuming yoghurt should be stated to the public”.

(Survey, Anonymous 2020)

4.7 Qualitative Result from Key informant (Processors and Retailer)

4.7.1 Consumer segment for the different categories of yoghurt

4.7.1.1 Locally produced yoghurt with local ingredients ‘CAT A’

From the key informant, the study revealed that processors of locally produced yoghurt with local ingredients (Cat A) sell their yoghurt products to members of the communities, schools, hospitals, and church close to them. One of the key informants said:

“I sell my yoghurt to schools, hospital, churches and neighbours within my community and sometimes friends outside my community, I give about 30% of the yoghurt to hawkers who sell the yoghurt outside my community since those people are not focused on FDA quality certification but only wants to buy yoghurt and enjoy it”.

(Interview, Processor from ‘Cat A’ 2020)

The study revealed that producers of ‘Cat A’ do not have all the necessary certification to sell their yoghurt products in the supermarket, they then sell yoghurt in their own shop to consumers. The key informant also revealed the average production of yoghurt produced per week was between 60-450 litres per week. The processor reported that advertisement of yoghurt products was done via social media platform such as WhatsApp and posters on her shop.

4.7.1.2 Locally produced yoghurt with imported ingredients ‘CAT B’

From the key informant, the study revealed that processors of locally produced yoghurt with imported ingredients (Cat B) sell their yoghurt publicly since they have attained all the necessary certification to sell their yoghurt products nationwide even at the supermarkets and shopping mall. One of the key informants said:

“...we sell our yoghurt nationwide, our yoghurt is sold in a kiosk, retail shops, supermarkets, shopping mall and even roadside vendors and hawkers sell our yoghurt because of our existence, affordability and trust for our yoghurt”.

(Interview, Processor from ‘Cat B’ 2020).

The study also revealed that other ‘Cat B’ processors focused on university student and sells his yoghurt at the university campus. One of the key-informants said:

“...our yoghurts products are sold mainly on the university campus due to a large number of student who is ready to purchase, it’s a good market place to sell your yoghurt in university campus there is always a ready market for yoghurt at all time”,

(Interview, Processor from ‘Cat B’ 2020).

The key informant revealed that the average production of yoghurt produced per week was around 24,000 litres thus between 8,000-40,000 litres per week. Processors from Cat B revealed their yoghurt was always available in the market, supermarket, public place and even on the street. The processor reported that advertisement of yoghurt products was done on all available platforms and nationwide.

4.7.1.3 Imported yoghurt 'CAT C'

For imported yoghurt, there was no interview conducted for processors since the finished product was imported in the country. However, according to a key informant, imported yoghurt products are subjected to the regulations imposed by Ghana's quality monitoring agencies such as FDA, Ghana Standards Authority before they are introduced to the consumer markets. Yoghurt from 'Cat C' is available mostly at the supermarket and shopping mall.

4.7.2 Factors influencing yoghurt consumption

4.7.2.1 Quantity produced

The results from the interview show that advertisements, and availability of yoghurt products in the markets influences consumers to purchase the yoghurts.

Cat A: Locally produced yoghurt with local ingredients produces yoghurt in smaller quantity with an average of 255 litres ranging from 60 litres to 450 litres of yoghurt per week and target market are consumers within their community.

Cat B: Locally produced yoghurt with imported ingredients produces large quantity thus with an average of 24,000 litres ranging from 8,000 litres to 40,000 litres of yoghurt per week and their target consumers are nationwide.

4.7.2.2 Availability of yoghurt through distribution

The result from the key informant highlights that,

Cat A: processors of locally produced yoghurt with local ingredients sells about 70% of their yoghurt at own shops and gives about 30% of their yoghurt to hawkers and roadside vendors who are interest in selling their yoghurt products.

Cat B: locally produced yoghurt with imported ingredients distribution is done through their Regional Distribution Centres (RDC) nationwide, then to 900 agents who pick yoghurt products from the RDC and distribute them to over 6000 street vendors and shopping centres. Other processors have distribution agents who distribute yoghurt to all joint where yoghurt is sold within the university campuses.

4.7.2.3 Advertisements

The results from key informants show that

Cat A: producers of locally produced yoghurt with local ingredients only use posters and WhatsApp platform as their source of advertisement.

Cat B: producers of locally produced yoghurt with imported ingredients use all channels like TV, radio stations, billboards, large external advertisement platforms, digital marketing, and social media platforms for advertising their yoghurt products.

4.7.3 Health benefit derived from consumers' choice of yoghurt products

The results from the interview show that,

Cat A: producers of locally produced yoghurt with local ingredient reported health benefits derived consuming yoghurt were low in cholesterol, low fat but very nutritious, medicinal and serves as light food to be taken in the evening.

Cat B: Producers of locally produced yoghurt with imported ingredients reported health benefits derived from consuming yoghurt as essential vitamins and minerals needed by the body and serves as an energy booster.

4.7.4 Consumers expectation for locally produced yoghurt with local ingredients

The results from the interview show that,

Cat A: producers reported that consumers complained about the quality and safety of the yoghurt products. Table 4.11 from the survey shows that 80.7% of the respondents were not aware of the quality and safety measure used in processing yoghurt by the locally produced yoghurt with local ingredients.

Cat B: Producers from the interview reported that consumers trust the nutritive values in the yoghurt but did not trust the quality and safety of the yoghurt as shown in Table 4.12 of the survey on benchmark where nutritive value is ranked 2nd but quality and safety is ranked 5th.

4.7.5 Recommended marketing mix strategies to be used by Cat A

The recommendation given by the key informant shows that producers of locally produced yoghurt with local ingredients do not have a specific market or target group for their yoghurt and most of the consumers were community members. The expert reported that producers of 'Cat A' do not research into the existing market to understand the key drivers of the winning or accepting brands in the market before producing, but only produce what they think is right for the market.

4.7.6 Challenges faced by processors

Delay in issuing Quality Certification

The interviews revealed that producers of locally produced yoghurt with local ingredients 'Cat A' had challenges with regards to the quality regulatory bodies. Producers reported there is a delay in issuing quality certification to them making it difficult to sell their yoghurt products in the supermarket and the shopping mall. Interview according to a key informant from 'Cat A'

"I have attained all the necessary training and gotten all the facilities, I have been given 2 certificates out of 3, anytime I go there for the last one they tell me to go and come back another day. Due to the coronavirus crisis, I have not followed up again. I need it so I can start selling at the supermarkets."

(Interview, Processors from Cat A, 2020).

The producers of 'Cat B' also reported facing a similar problem with the regulatory bodies in issuing certifications for new yoghurt flavours. One of the key informants said:

"...there is a back and forth with the regulatory bodies when attaining certification for new products, even after launching the products they make us wait for some weeks before certifying the products even though all requirements have been met".

(Interview, Processor from Cat B, 2020).

The high cost of importing inputs

From the interview, producers of 'Cat A' reported that machinery was expensive and difficult to import as the exchange rate and import duties are high. Unexpected breakdown of machinery can take a long time for an expert to fix or repair them.

"... it's expensive to buy machines from other countries due to the unstable nature of the Ghana cedi and high duties paid at the port to clear your goods. Also, when machines breakdown it difficult to get an expert to fix them for you and when you get one, they delay in fixing them".

Poor cold chain management

The producers of 'Cat A' reported they find it challenging transporting and preserving fresh milk, as fresh milk used is either from their farms or buys fresh milk from other dairy farmers within the cooperative. It was also revealed the poor cold chain management which affects the quality of the yoghurt products, as well as a change of ingredients affecting the taste of the yoghurt products by producers of 'Cat A' and 'Cat B'.

4.8 SWOT Analysis for Locally produced yoghurt with local ingredients

INTERNAL FACTORS	
Strength <ul style="list-style-type: none">✚ Highly nutritious✚ Enormous health benefits✚ Processors own fresh milk	Weakness <ul style="list-style-type: none">✚ Low production making yoghurt unavailable in the markets✚ Inadequate machine and equipment for production✚ Expensive machine and equipment✚ Poor quality of fresh milk✚ High prices✚ Not consumed as the main meal✚ No preservatives leading to short shelf life✚ No variety in flavour✚ No advertisements✚ Poor marketing strategies✚ Poor packaging and branding
EXTERNAL FACTORS	
Opportunity <ul style="list-style-type: none">✚ Available market✚ Preferred by the elderly✚ Niche market	Threat <ul style="list-style-type: none">✚ Feeding and sickness of dairy cows✚ Seasonal milk production✚ Low financial support✚ Low awareness of health benefits✚ Poor quality standardization✚ Delay in regulations bodies on certificates to sell✚ Competitions among themselves and other yoghurt producers

SWOT analyses are used to identify the strength and weakness of the company or firm. From table 4.8 the key areas for the market penetration of 'Cat A', is the need for quality certification, packaging and branding, advertisement, and the available market for the elderly and school children.

4.9 SWOT Analysis for Locally produced yoghurt with imported ingredients

INTERNAL FACTORS	
Strength <ul style="list-style-type: none">✚ Variety in flavours✚ High market and trust of products due to years of existence	Weakness <ul style="list-style-type: none">✚ Too much sugar✚ Too sweet for the elderly ones

<ul style="list-style-type: none"> ✚ Attractive packaging, labelling, and branding ✚ High advertisement and awareness of yoghurt products ✚ Low prices ✚ High production ✚ Quality and nutritious ✚ Well planned marketing strategies 	<ul style="list-style-type: none"> ✚ Poor cold chain management by retailers
EXTERNAL FACTORS	
Opportunity <ul style="list-style-type: none"> ✚ Available market ✚ Preferred by the youth ✚ Opportunity to grow to other parts of the country and international markets 	Threat <ul style="list-style-type: none"> ✚ Delay in regulations bodies on certificates on new flavours ✚ Competitions among themselves and other yoghurt producers ✚ Unexpected breakdown of machines during production ✚ Price fluctuation of imported ingredients

SWOT analyses are used to identify the strength and weakness of the company or firm. From table 4.9 the key areas for 'Cat B', is to focus on the opportunity to grow to become international markets.

Chapter 5: Discussions and Reflection

5.0 Discussions

The purpose of the study was to assess consumers' behaviour and choice of yoghurt product and recommend an effective strategy for Dairy Farmers and Processors Association, Ghana. This chapter discusses the results from both the survey and the interview conducted. The first subsection discusses the demography of the respondent, followed by the health benefit and factors influencing consumers' choice of yoghurt products. The other subsection highlights consumers' expectations, benchmarking, and recommendation on the effective marketing mix strategies.

5.1 Demographic characteristics

The result of the study showed that most of the consumers were educated and young with more than 5 members in the household. This result is to support existing studies of Donkor et al., (2020) with 82% of her sample size having at least primary formal education and Donkor et al., (2020) and Owusu et al., (2017) whose research was on willingness to pay extra premium educated potagurt consumers. This indicates that young educated people to purchase more yoghurt and serves as a target market for local processors.

It also indicated that females constituted 61% of the sample, which is consistent with the result from Metropolis and Twenefour, (2017) that 81% of the consumers of dairy products were female in Ghana. Processors of 'Cat A' should target the female when marketing their products as they purchase more than the male. The result in the study showed that 31.6% of the consumers were private workers with income group of GH¢ 1001-2000. This result is consistent with findings of Donkor et al., (2020) which showed that most dairy consumers were low-income earners in Ghana. The study shows that 56.2% of the respondents are low-income earner as average income per person from the survey is around GH¢ 2,500³. The proposed average income per person in Ghana is around GH¢ 5,070, but this average does not apply to all citizens as every region or city, working or non-working, educated or not educated has a different average income. (*Average Salary in Ghana 2020 - The Complete Guide, 2020*)

5.2 Health benefits and attributes

The result from the survey showed that 60.76% were not familiar with the stated health benefit (reduced constipation and diarrhoea, improves digestive system, reduces cholesterol, natural protein, rich in calcium and low blood pressure.) derived from consuming yoghurt. The result is inconsistent with the findings of Donkor et al., (2020) which shows that consumers ranked health benefits vitamins content, nutritional value and Food and Drugs Board (approval certification) as the topmost important attributes in the three Region of Ghana thus Ashanti, Eastern and Greater Accra Regions.

It also indicated that 87.7% of the respondents wanted to be educated on the health benefit derived from yoghurt consumption as shown in Table 4.10. This result is consistent with Metropolis and Twenefour, (2017) as consumers' were not aware of the health benefits derived from either choosing full cream milk or skimmed milk, they consume the products as far as it has been in existence for long. The study indicated that 80.7% of the respondents were not focused on the quality and safety of the product. Processors of 'Cat A' can target the market using health benefit derived from consuming locally produced yoghurt with local ingredients.

5.3 Factors influencing consumers' choice

The result of the study showed that most consumers preferred locally produced yoghurt with imported ingredients (Cat B). This result is consistent with the findings from Donkor et al., (2020) which

³ 1 Ghana cedi is equal to 0.15 euro

report that consumer was more willing to pay for locally produced yoghurt with imported ingredients. Aidoo et al., (2009) stated that 61% of the respondents at Kumasi and Accra preferred locally produced with imported ingredients and Addo et al., (2011) and Parry-Hanson Kunadu et al., (2019) 81% consumers in Ghana consider commercially produced dairy products with well-known international brands as safe and quality for consumption.

The result of the study showed that 61% of the respondent were female which can be considered as females purchase more yoghurt than the male. The result is consistent with Donkor et al., (2007) and Addo et al., (2011) that females (women) are responsible for purchasing food items for households and this responsibility of women tend to stimulate their interest in purchasing yoghurt for the healthy growth of their children. Donkor et al., (2007) results show that females were willing to pay an extra premium for new dairy products.

The finding from the study showed that 80.7% of the respondents were not aware of the quality and safety of the locally produced yoghurt with local ingredients. 36.8% of the respondent wanted an improvement in the quality and safety of the yoghurt. This result is consistent with Donkor et al., (2007) that majority of the raw milk had coliforms, Addo et al., (2011) and Omore et al., (2009) also stated that poor farm mishandling of milk during milking affects the quality of the raw milk especially in the coastal area of Ghana. This suggests that promotion strategies for 'Cat A' producers should target women and children.

5.3 Consumers' expectations of locally produced yoghurt with local ingredients

The result from the study showed that consumer expects an improvement in the quality and safety of locally produced yoghurt with local ingredients and need to be made aware of the improved quality and safety. This study agrees with Parry-Hanson Kunadu et al., (2019) that intervention to improve microbial quality and strong marking strategies would promote a positive influence on consumers on the safety and quality of the yoghurt products. Behrens et al., (2015) stated that consumers focus on the hygienic environment of a food company as the level of safety and quality of that food products

The results from the study showed that more advertisement on locally produced yoghurt with local ingredients would make the yoghurt quality and safe for consumers. This study is inconsistent with Lassoued and Hobbs, (2015) that brand trust was different from the quality and safety of the products. This serves as a strategy for 'Cat A' processors to consider branding for penetrating the market.

5.4 Benchmarking for the three categories of yoghurt sold

The results from the study showed that consumers of locally produced yoghurt with local ingredients preferred the taste. This study is consistent with Verbeke and Viaene, (2001) that consumers preferred yoghurt with fruit taste or different flavours.

The results from the study revealed that consumers of locally produced with imported ingredients preferred the quality and safety of the yoghurt products. This study is consistent with Zanolli et al., (2007) and Rheinländer et al., (2008) that as food quality, safety, and quality standard certification is important for consumers.

The results of imported yoghurt consumer-preferred packaging and branding. This study is consistent with Lassoued and Hobbs, (2015) that improved branding, packaging, and labelling coupled with advertisement would promote consumer confidence and trust in the products, also packaging and branding attract consumers.

5.5 Recommendations on marketing mix strategies

Products: The results from the study showed that consumers of locally produced yoghurt with local ingredient expect improvement in quality and safety, packaging, branding and labelling, more flavours should be added and should improve on the life span of the yoghurt. This is consistence with Ergönül, (2013) that government are responsible for the safety of food products sold in a country and consumers depend on the information provided by the manufacturers, and the certification bodies in relation to food safety. The study agrees with Parry-Hanson Kunadu et al., (2019) that improving packaging, branding, and labelling of low fresh milk products is a way of communicating quality and safety of the products to the consumers. The producers of 'Cat A' can consider this approach and use it as a market penetration strategy to sell more.

Price: The results from the study showed that consumer of locally produced yoghurt with local ingredient stated the price of the yoghurt was expensive. This study is consistent with Aidoo et al., (2009) that consumer switch from local fresh milk products to imported milk products as their household size increase and increase in the level of income. Reducing the price of local fresh milk and improving on the quality can serve as market penetration for 'Cat A'.

Promotion: The results from the study showed that more advertisement and promotion on health benefits should be done on the locally produced yoghurt with local ingredients. This study is consistent with Metropolis and Twenefour, (2017) consumers prefer dairy products due to the advertisement and the acceptance by the public, but they are not well educated on the health benefit especially on fat content. It is recommended that if the emphasis is placed on advertisement and health benefit by 'Cat A' producers, they use that approach to penetrate the market.

Place: The result showed that yoghurt was sold mostly by hawker or roadside vendors and local shops (kiosk). Distribution was focused on the public and whoever was ready to purchase the yoghurt products. This study is consistent with Donkor et al., (2020) that target market of potagurt should be at the university campus since student purchases more and are willing to pay extra for yoghurt products. This can recommend to 'Cat A' producers to focus more on schools.

5.6 Reflection as a Researcher

As an Agriculture Production Chain Management (APCM) master's student of Van Hall Larenstein University of Applied Science (VHL) with livestock production chain as my speciality, my final task was to write my thesis work to attain my master's degree certificate. The purpose of the research was to identify effective marketing strategies for Dairy Farmer and Processors Association, Ghana to benefit from the growing market of the dairy industry (yoghurt product) in Ghana.

Reflecting on the Research Topic

Before working on my project, I contacted the president of DFPAG, to identify how my research work will benefit the association. He only wanted to know why members were not benefiting from the growing market of the dairy industry.

I started my thesis work with a proposal in April 2020 with the topic "ASSESSING CONSUMER'S PERCEPTIONS of LOCAL DAIRY MILK PRODUCTS compared to IMPORTED DAIRY MILK PRODUCTS IN ACCRA, GHANA". I struggled to write the thesis proposal since I was not getting current materials on dairy milk production in Ghana. I managed to come up with something which I had to submit on the stated deadline. Fred Bomans supervised my thesis proposal work, he thought how a thesis proposal

should look like, not leaving out my commissioner the president of DFPAG who connected me to lecturers who can link me to get current literature from previous work done on dairy products. Due to the COVID-19 pandemic, all meeting with my supervisor was on MS Teams and all calls to my commissioner were on WhatsApp call.

After the submission of my thesis proposal, I had to defend my topic to my assessor to check on originality, feasibility, and to generally assessing my work to get a 'GO' 'NO GO'. After the presentation, I got an orange which means I have to make corrections on my work, but in my case, my assessor felt the topic was not SMART so I should change my topic and compare specific dairy products instead of all dairy milk products as stated earlier. After a discussion with the supervisor and commissioner, we came up with this current topic "ASSESSING CONSUMER'S PERCEPTION OF YOGHURT PRODUCTS IN TEMA, GHANA". I decided to focus on the 3 yoghurt categories we have in Tema thus: category A was locally produced yoghurt with local ingredients, category B was locally produced yoghurt with imported ingredients and category C was imported yoghurt. I manage to finish the thesis proposal on time.

Reflecting on the Methodology

The research employed both qualitative and quantitative approach with a purposive sampling method for primary/field data collection. The research work was biased towards educated yoghurt consumer who had access to a smartphone within the Tema Municipal. The study exempted consumers without smartphones due to the method of questionnaire distribution in the COVID-19 pandemic period. For processors, my focus was on processors within Tema, Greater Accra Region. Processors were also selected based on the use of smartphone for easy communication on WhatsApp.

Due to the COVID-19 pandemic and restrictions in movement, I had to employ the service of a research assistant. I created the online survey questions using Google Forms, my research assistance duty was to identify educated yoghurt consumers who had a smartphone and get their WhatsApp contact number so I can administer the question to them directly. Before administering the questionnaires, a pilot test was done to get a comment from ten (10) selected people within the Greater Accra Region. I administered forty (40) questionnaires and my research assistance also administer twenty (20) questionnaires. Out of sixty (60) questionnaires administered fifty-seven (57) consumers responded to the questionnaire given a response rate of 95%. I got the 57 responds to the survey in 2 weeks' time after administering. I closed the link so I can analyse the data gotten.

A semi-structured questionnaire was set and used for the interviews, one (1) part for processors, one (1) part for the retailer and the other part for the dairy expert. Six (6) key informants were interviewed thus two (2) processors from the locally produced yoghurt with local ingredients, two (2) processors from locally produced yoghurt with imported ingredients, one (1) retailer and one (1) dairy expert were interviewed within the Tema Municipal.

Being granted interviews was a bit difficult since the processors from 'Cat B' felt insecure about me and thought I would share their information with other processors. For 'Cat C' I was unable to get any connection to their processing personal for an interview since the finished product was imported into the country. I had to call processors of 'Cat B' constantly call for a month and after a month of calling, I was granted interviews. I conducted all interviews using WhatsApp call due to convenience by the interviewees.

Reflecting on the Data Results, Processing, and Analysis

Working on the results and findings was another headache on its own. I had to read more books to get the basics idea of how findings and results are presented in a research report. Working on the quantitative analysis, I had to develop different hypothesis from SPSS to find a suitable test to use, I finally conclude on Chi-square test. Using the chi-square test I was able to identify the significant level of each sub-question.

For the qualitative analysis, I had to translate the language since some spoke the local dialect, then transcribe and code according to research questions. Knowledge gotten from the mini-thesis and reading results from published journals gave me an insight on how to write the result. Thematic analysis was used to analyse the qualitative data from both the survey and interview.

I was pleased when Marco the module coordinator sent us a format on how applied research should be presented. I managed to write the findings and results within some few weeks with the help of colleagues and friends.

Reflecting on the Discussions, Conclusions, and Recommendations

Working on the discussion, conclusion and recommendation was also stressful, since I had to triangulate with literature, and I had to read more journals, books, and articles on dairy and dairy products. For correct and effective discussion, the literature had to either be consistent or inconsistent (agree or disagree) with my findings. I got few publications on dairy and dairy products in Ghana which either agreed or disagreed with my finding and results. Conclusions were also in line with my research question.

The recommendation was SMART, Marco said, “your recommendations should be SMART to get a higher mark”, this statement made me think deeper and recall the advice the expert gave as a recommendation during the interview. His recommendations were Specific, Measurable, Achievable, Realistic and Time-bound as the processors of locally produced yoghurt with local ingredients already had all the needed equipment to undertake the recommended approach within some few months.

Reflection on the Reliability

The research is reliable due to the percentage in response to the survey. Points raised in the survey agree with most of the journals on dairy products in Ghana and other African countries. Even though the method used for the data collection was focused on educated consumers who used smartphones within the Tema district the information gotten from the survey is very reliable and recommendation given can improve the objective of the research.

Reflection on Validity

The research covered a crucial matter in yoghurt production and consumer behaviour on yoghurt. The information given is real, valid, and very useful to a member of the cooperatives. The recommendation given is feasible and can be applied by the commissioner.

Reflecting on the Limitations

The research faced limitations like limited research journals, article, and books on dairy and dairy products especially on the three categories on yoghurt I used. Finding literature was hard in the beginning but as time went by, I was able to work on that.

COVID-19 pandemic was one of the biggest limitations for these research work, due to the restrictions in movement and close of borders in Ghana and other countries. Data were collected using the online method, which limited the target respondents to only educated people with smartphones.

The interview was difficult especially with 'Cat C', as I did not get any worker or processor from the foreign countries to interview. The interview was only limited to processors within the Tema Municipal

Reflection on the Relevance of the Research

The research was relevant because it gave me and my commissioner an in-depth knowledge of the reason why most consumers preferred 'Cat B' or all the other category and also recommendations provided can help 'Cat A' improve and benefit from the growing market in the dairy industry.

Reflection Overview of the Report Writing

The thesis report was stressful, however, I manage to finish on time with countless sleepless nights. It was a bit confusing in the beginning, with determination and reading lots of journals, I can confidently say I have learnt how to write a thesis report. The research may have been biased towards educated people within Tema, but the information gotten from the research is very important and reliable. The information can be applied by the cooperative for better result of their yoghurt products. I did not have any influence or interest on both the respondents and key informant who took part in the research, I played my part as a researcher and they as an informant for my research work. The result gotten from the research is true and valid.

Chapter 6: Conclusion and Recommendations

6.0 Introduction

This chapter highlights the conclusion and recommendation of the study. It is in 2 sections thus: section 6.1 summarizes the key findings of the study and section 6.2 summarizes recommendation which will be explained by the research to the commissioner (Dairy Farmers and Processors Association, Ghana).

6.1 Conclusion

The conclusion from the study is as follows. First, most 74% of the consumers were between the ages of 18years to 35years, educated and working, 31.6% had monthly income between GHC 1,001-2,000 and had a family size of 5 and above. The study showed that consumers of locally produced with local ingredients and locally produced with imported ingredients were low-class income earners, while consumers of imported yoghurt were middle-class income earners. Most (75.5%) of the consumers preferred to purchase yoghurt at a retail shop (local kiosk) or from hawker/ roadside vendors and purchase yoghurt multiple times a month (5 and above).

Secondly, most (68.4%) of the consumers preferred and purchased the known yoghurt brand and yoghurt which were mostly advertised. Consumers were focused on the price of the yoghurt more than the quality and safety of the yoghurt, consumers believed that advertising a product on TV, radio, billboards and other public space and platform made the yoghurt quality and safe for consumption. Consumers reported that 'Cat A' producers should improve on the packaging, branding, quality, and safety of the yoghurt products, more advertising was done to attract consumers.

Consumers had little knowledge of the health benefits derived from consuming yoghurt and were ready to be educated on the health benefits in yoghurt consumption.

Also, consumers believed the taste of locally produced yoghurt with local ingredient was better than the rest of the other yoghurt produced but the quality and safety were poor, the well-known brands locally produced with imported ingredient was believed to be of a higher quality.

Consumers reported that the packaging/branding, freshness, and nutritive value of locally produced yoghurt with local ingredient should be worked on. Consumers wanted producers of Cat A to improve on their processing techniques, more advertisement, and improvement of taste and flavour of the yoghurt.

Finally, consumer recommended that 'Cat A' producers should improve on the yoghurt products by making it more attractive, prices should be made affordable. More advertisement of 'Cat A' products and availability of 'Cat A' yoghurt at markets for consumers to purchase. New branding and improved marking strategies should be employed by 'Cat A' producers for the better sake of their yoghurt products.

6.2 Recommendations

The objective of the research was to assess consumer behaviour and choice for selecting yoghurt products and recommend effective marketing strategies. Market penetration is based on the 4P's framework thus Product, Price, Place and Promotion for improvement and better returns for the members of the DFPAG. Recommendations to the members DFPAG which is evidence-based findings from the research include the following:

Product

To improve packaging, branding, and labelling: processors of DFPAG should engage the services of persons who can design attractive packaging materials, with all recommended labelling such as including health benefit derived, nutritive value, quality standard acquired and expiring date.

To improve taste and add more flavours: processors of DFPAG should consider investing in other flavours such as chocolate, apple flavour, the orange flavour also works on the taste on the yoghurt to suit consumer's desire.

To attain and fast track quality certification of the DFPAG, members of the cooperative should collectively approach quality certification agencies in Ghana such as Food and Drugs Authority, Ghana Standard Authority and apply for the quality standards. Applying as a group may enable the association to obtain quality certification on time. Also, the member should comply with quality standards, practices and training required by quality certification agencies after obtaining quality trademarks and certifications.

"Note: The reference journal and link contain the requirement need for the certification by the FDA. (FOOD AND DRUGS AUTHORITY GUIDELINES FOR REGISTRATION OF BIOLOGICAL PRODUCTS, 2013) and <https://www.fdaghana.gov.gh/food.php>".

Price

Price is an important factor for purchasing a product: members of the cooperative (DFPAG) within the same district can pull resource together and produce as a team, by doing that production increases while the cost of production reduces, the cost can be shared among member making yoghurt affordable and more in the market.

These can lead to an increase in consumer as they would not have to compete among themselves, yoghurt can be produced in smaller quantities like 100ml, 200ml for school children.

To attain financial support from the financial bodies: members of the cooperative DFPAG should visit the financial bodies (bank) as a group to obtain loans for processing. So, they can increase productivity and enjoy benefits associated with economies of scale thus: reducing the cost of production, which will reduce the price of yoghurt.

Promotion

Advertisement: When selling, the promotion of a product should be the first thing to be taking into consideration. Members of the cooperative DFPAG must make it a daily responsibility to promote their yoghurt through advertising their yoghurt on the radio stations, television, and social media platform. This is an effective way of getting their products to consumers. From the survey conducted, consumers trust products when it's always advertised.

To run a school feeding program: since processors of DFPAG sells about 60% of their yoghurt to school children within their community, members can come together and run a school feeding program for schools within their district. A single brand can be created, and school authority should be made aware and educated on the benefit of running a school feeding program for the children using dairy and dairy products, especially yoghurt. This act can reduce malnutrition among vulnerable children within their communities. Lactose intolerant is very common among Ghanaian, but the amount of lactose in yoghurt is very low which will not cause-effect on children if yoghurt is consumed 2 times per week. School children get to benefit from education on the health benefit in fresh milk and milk products.

Place

The place is another important factor for producers and marketers. Knowing where to sell your yoghurt products after production influences the quantity produced. Member of DFPAG should focus on getting yoghurt products to schools, retail shops, hawkers, or roadside vendors. DFPAG producers should target female between the ages of 18-35 years as they purchase more yoghurt and the younger generation as dairy products are important for their developments.

CHAPTER 7: REFERENCES

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Annex 1 Time Planning

Table 3.1 Time planning

Activities/Events	April	May	June	July	August	September
Research Proposal						
Formulating questionnaire for online survey and checklist for interviews						
Administering questionnaires and booking an appointment for online interviews						
Conducting online interviews						
Transcribing and coding						
Analysing data						
Writing discussions, conclusions, and recommendations						
Editing and finalising of research work						
Defence/Presentation of final research work						

Source Researcher, 2020

Annexe 2 Survey Questions

Questionnaire on consumer perception of the three categories of yoghurt in Tema.

A = Locally produced yoghurt with local ingredients, (fresh milk yoghurt)

B = Locally produced yoghurt with imported ingredients (powdered milk yoghurt, like fan milk and yumi)

C = Imported yoghurt (Hollandia)

Those who fall under categories B and/or C and have less idea on category A can ignore some questions.

Please the survey questions will take up to 10 mins. Thank you

*** Required**

Can you indicate which category you fall under *

- ☐ only A= Locally produced yoghurt with local ingredients (fresh milk yoghurt)
- ☐ only B= Locally produced yoghurt with imported ingredients (powdered milk yoghurt, like fan milk and yumi))
- ☐ only C= Imported yoghurt (Hollandia)
- ☐ A (fresh milk yoghurt) and B (powdered milk yoghurt)
- ☐ A (fresh milk yoghurt) and C (imported yoghurt)
- ☐ B (powdered milk yoghurt) and C (imported yoghurt)
- ☐ A, B and C (all 3 categories of yoghurt)

Consumer Segment

1. Gender *

- ☐ Female
- ☐ Male

2. What is your age? *

- ☐ 18 yrs to 35 yrs
- ☐ 36 yrs to 60yrs
- ☐ 61 yrs and above

3. Educational Background *

- ☐ JHS/SHS
- ☐ Diploma/HND
- ☐ Bachelor Degree
- ☐ Master Degree
- ☐ Doctoral

4. Occupation *

- ☐ Vendor/ Hawker
- ☐ Private worker
- ☐ Business owner
- ☐ Student
- ☐ Government worker

5. What is you monthly income (your take home salary)? *

- ☐ Below GHC 1,000
- ☐ GHC 1,001- 2,000
- ☐ GHC 2,001- 3,000
- ☐ GHC 3,001 - 4,000
- ☐ Above GHC 4,000

6. What is the number of people in your household? *

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 or more

Reason for the selected category.

7. What category of yoghurt products do you purchase/consume MOST? *

- ☐ Locally produced yoghurt with local ingredients ("Fresh milk yoghurt")
- ☐ Locally produced yoghurt with imported ingredients ("Fan milk", "Yumi")
- ☐ Imported yoghurt ("Hollandia")

8. How often do you consume the yoghurt you selected in Question 7? *

- ☐ once a day
- ☐ multiple times a day
- ☐ once a week
- ☐ multiple times a week
- ☐ once a month
- ☐ multiple times a month

9. Where do you often purchase your yoghurt as selected in Question 7? *

- ☐ Supermarket

- () Retail shops (local kiosk)
- () Hawker/Roadside vendor
- () Wholesalers
- () From the Processor

10. Rank the following which influences your choice of selected yoghurt category in Q.7? *

	1 (lowest)	2	3	4	5 (highest)
Taste/Flavour					
Nutritive attributes					
Yoghurt price					
Yoghurt Availability					
Yoghurt Safety/Quality					

Health benefit derived from the selected category

11. Which health benefits are you familiar with, from your selected yoghurt category Q.7?
(Select the MOST applicable) *

	Don't have an idea	Not Familiar	Familiar	Very Familiar
Reduces constipation and diarrhoea				
Improves your digestive system				
Reduces cholesterol				
Natural Protein				
Rich in calcium				
Low blood pressure				

Expectations of consumers on locally produced yoghurt with local ingredient

12. Rate product quality and safety with regards to locally produced yoghurt with local ingredients (fresh milk yoghurt)

Very Unsatisfied					Very Satisfied
	1	2	3	4	

13. What is your expectation on quality and safety with regards to locally produced yoghurt with local ingredients (fresh milk yoghurt)?

- () Quality and safety of yoghurt should be improved
- () Quality and safety of yoghurt should be maintained
- () Quality and safety of yoghurt is not up to standard

14. Rate the hygiene of Yoghurt processing Facilities of locally produced yoghurt with local ingredients (fresh milk yoghurt)?

Very Unsatisfied					Very Satisfied
	1	2	3	4	

15. What is your expectation on the hygiene of the processing unit of locally produced yoghurt with local ingredients (fresh milk yoghurt)?

- () Improve the quality of the ingredients
- () Attain quality certification
- () Improve worker's hygiene

() Adequate sanitation of production facilities

16. In general, what do you expect from local processors of locally produced yoghurt with local ingredients (fresh milk yoghurt)?

Your answer

17. What is your perception of locally produced yoghurt with local ingredients (fresh milk yoghurt)? Rank the following *

	Poor	Fair	Good	Excellent
Freshness				
Packaging/Branding				
Taste				
Quality and Safety				
Nutritional Values (Proteins, Vitamins)				

18. What is your perception of locally produced yoghurt with imported ingredients (fan milk, yumi and powered milk yoghurt)? Rank the following *

	Poor	Fair	Good	Excellent
Freshness				
Packaging/Branding				
Taste				
Quality and Safety				
Nutritional Value (Proteins, Vitamins)				

19. What is your perception of imported yoghurt (Hollandia yoghurt)? Rank the following *

	Poor	Fair	Good	Excellent
Freshness				
Packaging/Branding				
Taste				
Quality and Safety				
Nutritional Value (Proteins, Vitamins)				

Recommendations for Processors of locally produced yoghurt with local ingredients.

20. Recommendation on the area of improvement for locally produced yoghurt (fresh milk yoghurt)?

- () Improve processing techniques
- () Improve quality and safety
- () Reduce sugar content

- () Improve taste/flavour
- () Improve branding/packaging

21. Rate the price of locally produced yoghurt (fresh milk yoghurt)?

Very Cheap

Very Expensive

1

2

3

4

22. What is your recommendation for the advertisement and medium of communication to consumers?

No

Yes

More advertisement

Awareness of health benefits

Awareness of quality and safety

23. What is your recommendation on the distribution channel?

No

Yes

Improve distribution channel

Improve availability of local yoghurt

Improve distribution channel

24. What other recommendations do you have for locally produced yoghurt (fresh milk yoghurt)? *

Your answer

Annexe 3 Checklist

Checklist for Processors

- Background of the company
- How is yoghurt production done?
- Kilo of (powdered milk) milk per week do you use for the production?
- The volume of yoghurt produced per week.
- Where do you get the powdered milk from?
- State the health benefit derived from consuming your yoghurt.
- Quality standards used for yoghurt production
- How is marketing done?
- Who are your target consumers?
- How is distribution done?
- Price of yoghurt per litre?
- How is advertisement done?
- What challenges do you face as a processor?

- Interns of market penetration, how do you enter the existing market?

Checklist for Retailer

- Do you sell all three-yoghurt category?
- Price of each yoghurt category.
- Which class of consumers purchase each category?

Annexe 4: Unprocessed Interviews Cat A Interviews

Interview	Responds
Ekua Tell me a little bit about your background.	Interviewee: I am an executive director of Child Focus, we support the needy people and empower women, thus the caregivers that takes care of the children. We also empower to them, as part of the beneficiaries to earn income to support the children. Main reason for the yoghurt production.
how many products you produce a day like a week, how many times to produce a week	for now I am only doing 4 buckets (40 litres) a week, because I don't have my full certification from FDA, so I can't supply to supermarket and others. I will follow up next week.
if that, how do you sell it? Do you have anyone give it to?	I do, someone calls for yoghurt and those I know or those who know I do yoghurt calls me for yoghurt. I have a small shop around the community, I sell it to the community, the children and the people in the community, some come outside the community to buy from me.
okay! How well do you know your product? Means like how in well do people trust your product? Okay, like, how do you know that? Oh, this my product sells a lot in how do people trust it?	I meet people that talks about how nice the products is and which shop should I go to purchase your products, and I tell them its not yet in shops we are in the processes and that soon we will bring it to where they are. Most school children patronize it as well as the members of the community
: In terms of quality, how do you view with that? Is it quality like the standard, do you meet the quality standards set?	Yeah, We have a book that at every stage we test how we want we expect it to be so it tell on how it has to be done permanently and if it not correct we check why its not correct.
do you know of any health benefits	I know it's a lot but... really, lighting the skin, its light food to eat in the evening but nutritious.
you were talking about the skin. So what is the main purpose that or why do someone like maybe I want to buy your yoghurt. What is the main health benefits the person is looking for, for buying your yoghurt. You said some say it nutritious, light food and others it good for the skin, so in general why would someone buy your yogurt. What is the perception about majority of them.	because it good for children and elderly and its not fatty, but medicinal and enjoyable. I think I have to do my homework to get all fact correct
Do you get feedback from customers? No, like, negative	sometimes when the buy from me the put it in the refrigerator and when it takes like week they put it in the freezer, because somebody will buy more thinking that he is going to use for 2 week

feedback? Oh, not necessarily positive.	and because its in the freezer the yogurt separate from the water, you know, so they call back so I ask how is the taste like so they say the taste is good we see that the water separator and I said we don't put in deep freezers, we put yoghurt in refrigerator o that you will get it creamy as it is. But I tell them that, well I encourage them to take it because I feel that the water around it is whey and its also nutritious, they can use the water as whey and they should blend the rest of it will become smooth again, that is my own style. For them to gain back the creamy yoghurt they want and the whey for another nutritious benefits.
What challenges do you face as a processor?	right now I need to market my products, the way these school children are interested in it, I wish I could get a machine which I can use to produce in smaller quantities like the pouches/ rubber machine. I think I have a market with the children and because I work with children and the community it is a little less expensive they will patronise.
Quality standards certifications	I have the facilities, I have the trainings but due to the lockdown (coronavirus crisis), I went there once they told me to come back later, I have been busy to follow up, I will do that within the week. If I get that certificate, I am ready to go. Hopefully I will get it haven't been there so I don't know what they have for me, I think I should have it, we are suppose to have 3 cert and I have 2 cert remaining the last one, which I haven't heard the opportunity to go for the last one.
Distribution, you say you sell on your own. Your target consumers are school children and community members	other outside the community, my friends
So how do you intend to grow your markets?	I can grow my market when I get go ahead from FDA to go out, so when I get my certification and can distribute to all channels, I can grow my market
with fan ice people in the market. How do you intend to enter the market because you said fan ice have pouches and you don't have the equipment's like them. So, how do you intend to enter the market?	I will not enter their market, I will enter with a other packages.
So in what way like how are you doing it? but fan ice also have them in bottles	I have them in bottles, that is why I saying I can't go to that direction, I doing my in only bottles
Okay, okay, so you are entering the market your main focus is just the bottles. Do you have any plans of doing cup with spoon or anything?	yes I have that one too
What's your price of Litre per yoghurt? it's in 25 but those two are 50 ml. So let's see someone was wanting to how much do you said it?	litre is GHc15
Do you do anything like advertisement or something like that	posters, social media platform.

So what's your source of milk? Where do you get the milk from?	from my own farm.
Okay, and how much is the milk per litre from your own farm? If you're supposed to sell it How much is it?	litre is GHc9
Volume of yoghurt after processing	12litre per bucket Okay, okay, so you get 12 liters
If you're an outsider, what would be your recommendation in terms of marketing and things like production marketing, just find yourself like you're not a processor. If you put yourself as an outsider, how do you let say, you give a recommendation or maybe yoghurt a recommendation on the prize, a recommendation on how the advertisement is done like a marketing strategy like if you are doing marketing, how do you see what is the other product like? How is the price in relation to the product and the quality? Maybe How is advertisement to done	more advertisement, quality is okay, packaging is a bit better, taste is nice/desirable, more distribution/ supplies should go out.
	Audio recordings for the other comments

Cat B: Interview

- Background of the company

Founded by a Danish entrepreneur (Erik Emborg), Fan Milk Limited has been in existence since 1962. The company was converted to a public limited liability in 1969 and is currently engaged in the production and distribution of quality refreshing milk-based and fruit-based products. Our milk-based products consist of a range of ice creams, frozen flavoured milk drinks and yoghurt drinks (both frozen and ambient or drinkable). Our brands in this segment are FanYogo, FanChoco, FanIce, FanMaxx, SuperYogo and FanVanille.

Our fruit-based products include fruit drinks and frozen lolly. Brands in this segment are FanDango and FanJoy.

FanMilk has a strong commitment to produce quality, healthy and nutritious products for consumers. We are certified by ISO, Ghana Standards Authority and the Ghana Food and Drugs Authority.

- How is yoghurt production done?

Yoghurt is a fermented milk product. The fermentation is done using lactobacillus bulgaricus and streptococcus thermophilus mainly. There are other bacteria used though. Depending on the recipe, other ingredients are added to the milk. Ingredients such as stabilizers, fruit flavours, sweeteners, vegetable fats etc. The milk may be fresh or reconstituted.

FanMaxx is not different, the process is the only difference.

Depending on the recipe and ingredients the process parameters also differ. One has to select the most optimal to give the best taste and also keep products safe for consumption.

Addition of culture can be done directly putting the culture into the milk substrate or by preparing a mother culture and dosing into the mix.

In preparation of mother culture, a milk substrate is prepared based on recommendations from starter culture manufacturer. Then the milk is inoculated with the culture and allowed to ferment. This mother culture is then used to ferment the milk mix to become yoghurt.

- Kilo of (powdered milk) milk per week do you use for the production?
8000 – 40,000 kg

- Where do you get the powdered milk from?

Importation from abroad

- How well do you trust your yoghurt product?

As a company with a One Planet, One Health vision, and a historic integrity to protect, the health and safety of our consumers is our first consideration in all our food chain processes. We are and will continue to be committed to producing quality healthy food products to support a healthy ecosystem.

- State the health benefit derived from consuming your yoghurt (FanMaxx).

FanMaxx has been enriched with essential vitamins and minerals that the body needs to produce energy. Vitamins in FanMaxx provides minimum of 15% of the official daily recommendation of enriched vitamins per serving unit.

- Quality standards used for yoghurt production

ISO 22000_2018(E)

- How is marketing done?

Before the launch of every product, there's a bit of consumer research that is carried out to precisely establish our target audience, what tribes they belong to, to understand the wants and need state of these consumers, and where they can be found. There are three key pillars of the marketing team that work together to drive the success of any new product, thus the creative, media and experiential activation channels. All three pillars work interconnectedly to establish the communication objective, which media channels to communicate on and effective consumer engagement modules. The creative team is responsible for the generation of engaging communication materials, the media team is responsible for rolling out of communication materials on mileage driving media channels, and the experiential or BTL teams are responsible for on-ground consumer engagements to drive consumer trial of products as well as sales. Digital / Social Media engagements are managed by the creative team to drive top of mind awareness among consumers who are mostly online.

- Who are your target consumers (FanMaxx)?

Age range: 18-35yrs

Socio-economic classification: A, B and C.

- How is distribution done?

We have a unique route to market which begin from the factory to six regional distribution centres (RDC) nationwide. Our over 900 agents pickup from these RDC's and distribute to our over 6000 street vendors who sell in markets, lorry stations, in traffic and on the streets. We also have sales officers who distribute to shops and other shopping centres.

- Price of yoghurt per litre (FanMaxx).

Ghc 12.12

- How is advertisement done?

There are three major advertising channels we consider for advertisement of products;

Out of home advertising channels ie billboards and large external advertisement platforms

TV and Radio channels

Digital / Social Media

- What challenges do you face as a processor?

Delays from Regulatory bodies

Breakdown of factory Machinery

Competition

Cold chain management

- Interns of market penetration, how do you enter existing market?

It starts with research into existing market to understand the key drivers of winning or accepted brands in the market.

This feeds into strategy builds into product development, unique positioning and distribution modules, as well as communication methods

Note: Most of the interviews were in the local dialect and recorded. I only translated a few to show the source of information used in my research work. I have all the recordings of the interviews. For the survey, raw data was too large for the word document.

Thank you.