St. MARY UNIVERSITY

SCHOOL OF GRADUATE STUDIES

MBA PROGRAM

Determinants of Pasteurized Milk Consumption and Market in Addis Ababa

MBA. Thesis

Belete Tegegne

June, 2020

Addis Ababa, Ethiopia

St. MARY UNIVERSITY

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Determinants of Pasteurized Milk Consumption and Market in Addis Ababa

Advisor: Chalachew Getahun (PhD)

June, 2020

Addis Ababa, Ethiopia

Declaration

Belete Tegegne declare that this work entitled "determinants of pasteurized milk consumption in Addis Ababa city is an outcome of my own effort and study and that all sources of materials used for the study have been duly acknowledged. I have produced it independently except for the guidance and suggestion of the research advisor. This study has not been submitted for any degree in this university or any other university.

By Belete Tegegne

Signature ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

Date   ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

ENDORSEMENT

This thesis, titled "Determinants of Pasteurized Milk Consumption and Market in Addis" has been submitted to St. Mary's University, school of graduate studies for examination with my approval as a university advisor.

<u> Chalachew Getahun </u>	<u> </u>
Advisor	Signature
St. Mary's University, Addis Ababa	16 June 2020

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Determinants of Pasteurized Milk Consumption and Market in

Addis Ababa

Approved By Board of Examiners

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Dean of Graduate studies   **Signature & Date**

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Advisor   **Signature & Date**

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External examiner   **Signature & Date**

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Internal examiner   **Signature & Date**

Contents

Acronyms

UHT	Ultra Heat Treatment
FAO	Food and Agriculture organization of the United Nations
CSA	Central Statistical Agency
GDP	Gross Domestic Product
VAT	Value Added tax
SPSS	Statistical Packages for Social Science
GoE	Government of Ethiopia
LMP	Livestock Master Plan
SNV	Netherland Development organization
ES	Ethiopian Standard
ISO	International Organization for Standardization
HACCP	Hazard Analysis and Critical Control Point

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Acknowledgements

First and foremost, I would like to thank the almighty God and his mother St. Mary who helped me to reach at this end. Then, I would like to thank my research advisor Dr. Chalachew Getahun, who generously devoted his time, giving valuable suggestions and comments on the draft.

My particular thanks will go to my friend Dr. Fantahun Admas, AAU, he is a man of solution for me, I called to him when I face any difficulties, he always come with solution.

My wife Bezawit Bekele,my children Barkot Belete and Sunper Belete for giving me your time and making me happy in doing this paper. I was not forgetting you my little brother Yitbarek Tegegne for your help in providing valuable materials, Editing & commenting throughout the process.

My best friends Deneke Gebrie and Rishan Mezgebe and my brother Abel Bekele I gave you many thanks in supporting me in filling and collecting questioners in short period of time.

I also would like to say thank you, Ato andargachew Worku in St. Mary University, for your valuable information & for making things simple for me in the university.

Abstract

This study focused on analyzing the determinants of pasteurized milk consumption and market in Addis Ababa city. Data were collected through questioners from randomly selected sub cities Kolfe Keraniyo and Nifas- silk Lafto Households who consumed milk products. Structured questionnaires were designed so as to collect data on various attribute of milk such as milk quality, price, and promotion and distribution ways. The data collections were further stitched on cultural, social and behavioral spheres of the consumers. The questionnaires have been analyzed using SPSS 24 software. Factor analysis was undertaken in order to distinguish the basic factors which influenced pasteurized milk consumption and market in the city. Descriptive statics used to analysis the demographic part and socio economic conditions of the area under consideration. Multiple regressions were applied to analyze the relationship between milk consumption and the independent factors. Results from estimation of multiple regression models for consumption shown that culture (the fasting of orthodox Christians) decreased milk consumption by 25%. On the other hand, social factors affected pasteurized milk consumption positively. From the study, it is observed that, the milk market better to develop maintaining long term relationship along the chain. Finally, the findings suggest that milk processors better to develop a strategy to overcome the perishable nature of liquid milk during fasting time. This strategies may includes diversifying the product to long shelved products such as butter, provolone, Goda cheese, Ultra High Temperature (UHT) milk and mozzarella. Furthermore, it is better chilling equipments.

CHAPTER ONE

I.   INTRODUCTION

1.1   Background of the Study

Consumption is   the use of goods and services by households (*http://www.britannica.com)* while Marketing is about identifying and meeting human and social needs. The average milk consumption per individual level in Ethiopia remains very low as compared to neighboring countries. The national milk consumption is estimated at around 20-25 liters per year while the neighboring countries have 120-180lt.

 Particularly, the consumption habits of pasteurized milk are undeveloped. Obviously, consumption and marketing of milk products can be affected by different factors. At macro level milk consumptions can be influenced with population growth per capital consumption and rate of urbanization (Bingi and Tondel, 2015). In addition to these; culture, social and personal factors also affect milk consumption and market (Kotler and Keller, 2016). On house hold level milk consumption and marketing can be affected by income level, the presence of young children, age, level of education, quality of milk, price of milk, distribution efficiency, seasonality (fasting time), rainy season, fluctuation of the availability of raw milk and finished products (Kapaj and Mane, 2018).

Ethiopia is currently unable to meet increasing demand for milk and milk products for its growing population particularly in the urban areas. The demand for milk and milk products is higher in urban areas where there is high population pressure. The increasing trend of urbanization and population growth leads to the appearance and expansion of specialized medium-to-large scale dairy enterprises that collect, pasteurize, pack and distribute milk to consumers in different parts of the country (Gezu and Zelealem , 2018). The demand-supply variance for fresh milk is ever widening and the per capita consumption is diminishing (17 lit/year) which are lower than average sub-Saharan Africa rate. The consumption of milk in Ethiopia is estimated at 17 kg/capita per year

which is much less than Kenya = 90lt/capita, and Uganda = 50 lit/capita (GoE, Livestock Master Plan-LMP, 2007).

On the other hand, the country has been importing commercially on average 22,001 quintals of milk and milk products valued at 10 million Dollars every year due to limited capacity of milk processors in the industry. Nationally, of the total imported milk and milk products, milk accounts 85% on average (W. Brandsma and Dawit ,2018). This imported milk and milk products are competing for foreign exchange which otherwise could have been used for development of the sector. The value of commercially imported milk and milk products has tripled during the last four year from Birr 90 million in 2008 to Birr 281 million in 2012 which has been draining foreign exchange reserves.

Addis Ababa is the potential market for this milk processing plant products (pasteurized milk and other dairy products). According to CSA, population of Addis Ababa city for the year 2015 to 2030 is projected between 3,233,921 to 4,367763 respectively implying that a demand of 64 million liters per year for an average population of 3,778,449 in the city has been required. According to Addis Ababa agriculture office projection report in 2015, in the coming 15 years, average annual milk supply is about 43,314,765 liters.

1.2   Statement of the Problem

Consumers in Addis Ababa complained that there are quite limited dairy products available in the shops. Besides the study done by SNV (Netherland development organization) in 2015 showed that large portion of milk is distributed informally as it is raw with no value addition. On the other hand processors complain that dairy plants processed under-capacity (Zelealem *et al*, 2010) due to failure to act the dairy processing companies to reach the households to consume processed milk and milk products. On the other sphere, to fill the market gap the country expends foreign currency to import dairy products estimated to Dollars 10 million every year. And hence, the country is known as a net importer of milk and milk products (*Gezu and Yilma, 2018*). On the other hand, farmers and the small holders are unable to sell their raw milk (Yilma, 2010). This will have a meaning that there will be a problem in marketing system of the milk products.

On top of this population growth and rising real income are expected to expand the demand for milk and milk products. Population in Ethiopia is estimated to grow at 2.9% per year while the urban population increases at a rate of 3.6% (GRM International BV, 2007). Therefore, increase in population growth and consumer income in the future is expected to increase the consumption of milk product (CSA, 2007). Obviously, there is a huge demand for pasteurized milk consumption in Addis Ababa given the factors that affect the milk consumption has been properly addressed.

There are various factors including consumer preference, consumer's income, population size, price of the product, quality perception of consumers on milk powder that determine the consumption of pasteurized milk in the city. However, it is difficult to get empirical researches that show the factor that affect the consumption and market of pasteurized milk in this particular city. In fact there are some studies that focused on the value chain assessment of dairy products (Haile *et al,* 2012), (Sintayehu *et al*, 2008), (Nardos, 2010) and (*Ali, 2017*). But such type of situation may not show factors that affect the milk consumption in area under consideration. Nationally there are studies conducted on factor of milk consumption in different part of the country. However, the Addis Ababa area is very diverse in its culture and heterogeneous community and thus, the outcome other study may not represent the milk consumption particular to Addis Ababa.

Thus there is no clear research done that on factor analysis of milk consumption particularly for the biggest dairy market of Addis Ababa. This makes the processers to fall in problem especially in low season where almost the whole year after 50 days of Easter. On the other hand the country expends more dollars to import dairy products while milk processors companioned about the presence of milk product demand. The research can give image about the market how to minimize the informal raw milk distribution and why the country imported milk products.   Hence this study focuses to clear out and show the basic factors which determine the consumption and   the market gap in the city.

1.3   Research Questions

- What does the milk consumption and marketing pattern in Addis Ababa look like provided it has a diversified population community?
- What are the factors that influences pasteurized milk consumption in Addis Ababa city?
- How the marketing channels of distribution of pasteurized milk market organized in the study area?

1.4   Objectives of the study

1.4.1   General objective:

The general objective of the study is to show how and in what level of determinants influence milk market and consumption in the area where the study was conducted.

The Specific objectives of the study were the following;

- To identify the milk consumption and marketing   patterns in Addis Ababa
- To identify the factors that affect consumption of pasteurized milk product in Addis Ababa city
- To evaluate the market channel practiced in marketing of pasteurized milk in the intended study area.

1.5   Significance of the Study

This study will help companies in dairy industry to get relevant information about the consumption and marketing of pasteurized milk. The findings may give practical and theoretical inferences for marketing managers, industry players and practitioners of the diary market in Addis Ababa. Second, future researchers might use the finding of this thesis as a reference for their further study on the area of pasteurized milk consumption and market determinants.

1.6   Scope of the Study

The study is delimited conceptually, geographically as well as methodologically. Conceptually, this study only focuses on the amount of pasteurized milk consumption

and marketing. Geographically, the scope of the study was delimited only within Addis Ababa city of Ethiopia. Methodologically, the research designs considered in the study were explanatory and descriptive research designs where quantitative research approach has employed. Additionally, the main source of this data was primary data. The questionnaires were distributed to collect the intended data in Addis Ababa.

1.7   Concepts and Definition of Terms

Consumption: means using up of utilities. When we take a glass of milk to satisfy our need, we are said to consume milk. We use marketing and consumption interchangeably. (Dictionary of Webster, 2003)

Quality: According to American Society for Quality's definition: Quality is the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs (Kotler and Keller, 2016)

Seasonality: According to the definition of Educalingo dictionary, seasonality is a component of a time series which is defined as the repetitive and predictable movement around the trend line in one year or less.

Fasting time: The period in which some of the people in the city abstaining from consumption milk, milk products and meat and eggs.

Price: is the quantity of payment or compensation given by one party to another in return for one unit of goods or services

Distribution Channel: is   display, sell, or deliver the physical product or service(s) to the buyer or user. (Kotller and keller, 2018).

Consumer behavior is the study of how individuals, groups, and organizations select, buy, use, and dispose of goods, services, ideas, or experiences to satisfy their needs and want (Kotler and Keller, 2000).

1.8   Organization of the study
The study organized in five chapters, which include the followings: In Chapter One: Introduction which contains background information, statement of the problem, basic research questions, objectives of the study, definition of terms, significance of the study, delimitation/scope and limitation of the study. In chapter two, review of related Literature that deals with the subject matter of the issues were

discussed. Research Methodology includes research design, data tools employed; the procedures of data collection; and the methods of data analysis would be shown in chapter three. The finding of this study along with its outcomes has been discussed in chapter four. Finally, the summery of the study, its conclusion and authors' recommendation has shown in the chapter five.

CHAPTER TWO

II.   LITRATURE REVIEW

2.1   Conceptual Literature on Milk Consumption and Market

Most of dairy production is consumed in the form of fresh dairy products. The share of fresh dairy products in world of global consumption is expected to increase over the coming decade due to stronger demand growth which in turn is driven by income and population growth.

Raw milk may contain disease-causing organisms (pathogens). Thus raw milk should be pasteurized to kill most organisms that can cause illness. Pasteurized milk must also be kept refrigerated to prevent the growth of harmful bacteria that are not destroyed by pasteurization (spore formers) (*Zelealem, 2010*).

The milk product consumption and marketing issues can be related and studied using consumer behavior model. According to professor Keller, consumer behavior can be defined as the study of how individuals, groups, and organizations select, buy, use, and dispose of goods, services, ideas, or experiences to satisfy their needs and wants.

Culture, sub-culture, and social class are particularly influencing on consumer buying behavior. Culture is the fundamental determinant of a person's wants and behavior (Kotler 1999). Each culture consists of smaller subcultures that provide more specific identification and socialization for their members. Subcultures include nationalities, religions, racial groups, and geographic regions. When subcultures grow large and affluent enough, companies often design specialized marketing programs to serve them (Kotler and keller, 2016).In addition to cultural factors, social factors such as reference groups, family, and social roles and statuses affect buying behavior. From

social factors family is the most influential reference group (Kotler and keller, 2016). There are also other factors in consumer behavior like role and status and personal factors (Kotler and Keller, 2000).

2.2   Theoretical Literature

Milk production systems in Ethiopia may be classified into two broad categories viz: commercial system which produces milk mainly for market and subsistence systems which produce milk mainly to meet household needs for milk products (Azage et al., 2003). The commercial system generally operates in urban and peri-urban areas with or without holdings of land for feed production. Whereas, the rural milk production system is part of the subsistence farming system and includes pastoralists, agro pastoralists, and mixed crop-livestock producers. Specifically, they are classified into four major systems. These are pastoralist, the highland smallholder, urban and peri urban and intensive milk production systems.

Urban and peri-urban milk farming system is concentrated in and around major cities, and towns characterized by a high demand for milk. This system has been developed in response to the fast growing demand for milk and milk products around urban centers (Asaminew, 2007). The system is estimated to consist of 5,167 small, medium and large milk farms, with about 71% of the producers selling milk directly to consumers (Tsehay, 2001).

Successful marketing builds demand for products and services. Consumer Market is one type of market which is selling mass consumer goods like pasteurized milk. Products should be distributed with proper distribution channel (Kotler and Keller, 2016). Distribution channel in turn can be defined as   displaying, selling, or delivering the physical product or service(s) to the buyer or user. (Kotler and Keller, 2000). In addition to distribution channel, marketers clearly face a challenge in choosing the best mix of communication, distribution, and service channels for their offerings.

According to the journal of (Florence N, 2015) milk consumption depends on population growth, degree of urbanization and per capita consumption of the country in general. But specifically, consumption of dairy products have socio-economic and demographic characteristics, like gender, age, income, education, presence of young children in the household, ethnicity and level of knowledge influence all over the world households' expenditure for dairy products. Accordingly, the potential of increasing household's income, higher level of education and greater presence of young children in the household have positive effects on the household's consumption of dairy products. (Ana Kapaj (Mane), 2016).

2.3   Empirical Literature

2.3.1   Consumption

Per capita consumption of dairy is very low in Ethiopia, well below international benchmarks. At 19 liters per annum, per capita, annual milk consumption is well below the world average of 105 liters and the African average of about 40 liters. A brief survey conducted for End market analysis (EMA) across four cities showed wide variation in consumption - Addis Ababa has the highest consumption, at 51.83 liters per capita, while Dire Dawa, Awassa and Bahir Dar average only 4.42 liters per capita (FAOSTAT ,2016). Some studies estimate suggest that 90% of the milk supplied to the Addis Ababa market and 95% to the national market passes through informal marketing channels – all unprocessed (FAO, 2011).

2.3.2   Seasonality

Fluctuations in the demand for milk and other dairy products, because of the various fasting periods, during which Orthodox Christians (comprising 43.5% of the population, 59.1% in Addis Ababa) who will abstain from consuming all kinds of animal products (CSA,2007). Demand drops during the long fasting seasons of Kudade (55 days, usually in March/April) and Filseta (16 days, in August). Wednesdays and Fridays of every week are also fasting days. There about 200 fasting days in a year (*FAO, 2011*)

Producers report a 50% drop in their milk sales during the major fasting periods. During these periods they process milk into butter and cheese, which have longer shelf lives and can be sold after the fasting period. Both milk and other products are sold at significantly lower prices during this period. (*LMD Research, 2013*)

Shortages of milk are also more severe during the dry months of April and May. Also, the low fat content of the milk yields relatively small portions of butter and cheese (e.g.:25 liters of milk yields only one kg of butter and two kg of cottage cheese).(FAO,2011).

Milk availability is inconsistent - Maintaining continuous supply of the required types and quantity of products to customers is also an area of concern – because of inefficient and unreliable milk supply systems (*Azage et al, 2000*).

2.3.3   Channel of distribution

Dairy products reach the consumer through several market channels. Smallholder producers sell their dairy products directly to consumers in nearby neighborhoods and towns, or indirectly through other intermediaries, such as collection cooperatives and processors (the latter buy the milk at temporary collection centers located along major highways passing near villages). Urban and Pre-urban producers sell directly to processors, cafeterias, hotels, supermarkets and retail shops, or to cooperatives. The urban and pre-urban production systems include many market-focused smallholders producers located close to and supplying urban centers – most importantly, Addis Ababa. These dairy farms distribute fresh milk to processors, cafeterias, hotels, supermarkets and retail shops (*USAID, 2013*).

2.3.4   Quality of milk

Milk quality is often not maintained, and not trusted by consumers. Long transport distances, use of local transport, the time required to reach market, and poor handling result in reduced milk quality, contamination and spoilage. Up to 20-35% of milk is spoiled or otherwise lost. There is only a very limited cold/chill chain in the form of refrigerated trucks or cooling centers. Also, many retail outlets are not adequately equipped with cooling facilities (LMD research 2013) and (*MoARD, 2008*).

There are no mandatory Ethiopian standards related to dairy production and processing. Non-mandatory Ethiopian standards exist for: Unprocessed whole/raw cow milk (ES 3460: 2009), Yoghurt and Sweetened yoghurt (ES 3468:2009), Cream (ES 3466:2009), Butter- Determination of moisture (ES ISO 8851-10-1: 2009), non-fat solids contents (Routine methods) and Pasteurized liquid milk (ES 3462:2009). However, these standards are reportedly not complied with by any of the producing or the processing firms. Currently there are no ISO or HACCP certified domestic dairy producers or processors operating in Ethiopia.

Domestically processed milk products are considered to be of suspect quality, and inferior to imported products. This is due to concerns about spoilage, adulteration and contamination risks during transportation and handling. These erode consumers' confidence in domestic dairy products. (Felleke, 2010). Rather Imported dairy products are viewed by consumers as being of better quality and safety than Ethiopian products (UN Comtrade, 2011)

Dairy products are often sold without conforming to packaging and labeling requirements. All major dairy processing firms pack and label their products in line with the mandatory Ethiopian standard for the labeling of prepackaged foods (ES 359:2006). However, non-formal milk sales typically do not adhere to this standard.

2.3.5   Price

Milk is unaffordable to many, especially to the middle class and populations at the base of the pyramid (Land O'Lakes, Inc., 2010). In the majority of the studied households especially the medium and low income groups there was a decreasing trend of milk products consumption due to the increasing trend of the price of milk and milk products (Kasahun and fikadu , 2009). As a result of limited milk supply to the processing plants, processing inefficiencies, high packaging and transportation costs, and the price of processed milk is high, and hence not affordable to the majority of consumers except those in the upper middle and high classes (Natinael *et.al, 2015*)

2.4   Syntheses of review

Milk consumption and marketing are affected by different factors. Some of the factors are related with culture, social and personal factors of the house hold. In addition to these proper management of the marketing mix. Which includes developing healthy products, setting fair price, communicate the product properly, and distributing products with appropriate distribution channels.

Fig.1 Some Factors Affecting Milk Consumptions
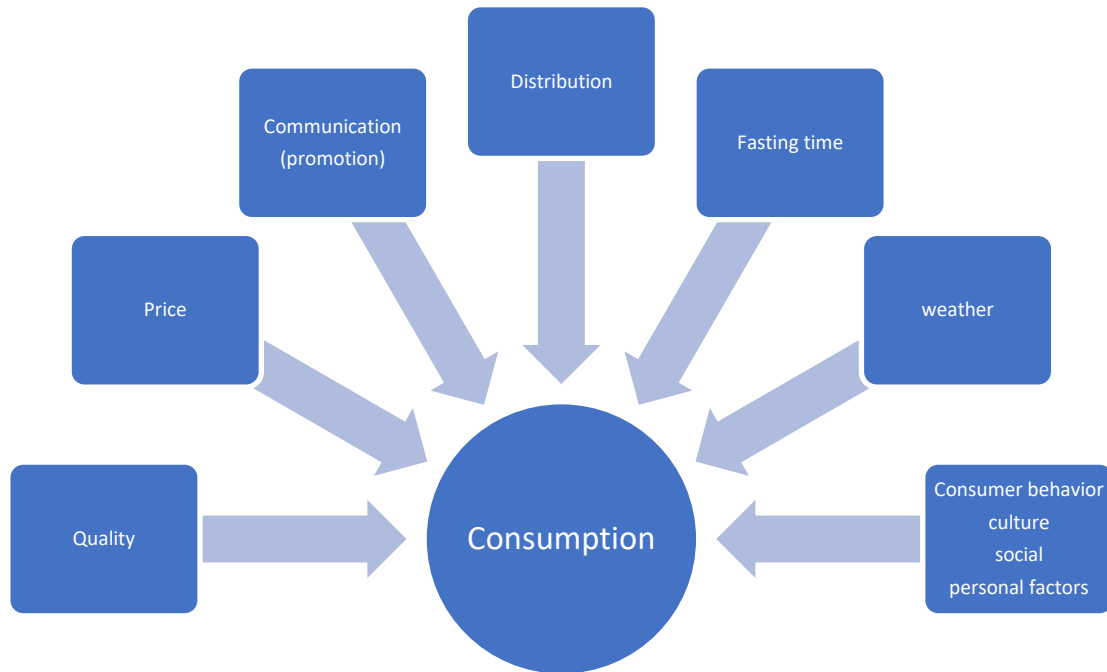
Most pasteurized milk is sold in Addis Ababa. Even though most pasteurized milk is consumed in the city, the consumption pattern and the market are not properly analyzed. Rather most researches are focused on the raw milk production and collection. Thus studying the consumption and the marketing of nature of the city it may give some hint for companies and new entrants.

CHAPTER THREE

III.   STUDY METHODOLOGY

This chapter presents detailed discussion of the research methodologies used in the study. Hence, the topics related to research approach and design, data type and source, target population, sampling technique and sample size determination, data collection procedure, method of data analysis, ethical issue, reliability and validity of the study addressed.

3.1   Description of the Study Area

According to UN- Habitant 2017 report, Addis Ababa was established in the late 19th century and in comparison, to other capital cities it is relatively young. Addis Ababa has evolved from a small rural settlement up to the 1950s into a vibrant modern metropolis today.

Addis Ababa lies between 2,200 and 2,500 meters above sea level. The city lies at the foot of the 3,000 meters high Entoto Mountains. Despite its proximity to the equator, Addis Ababa enjoys a mild, Afro-Alpine temperate and warm temperate climate. The lowest and the highest annual average temperature are between 9.89 and 24.64 degree centigrade.

Addis Ababa is the country's capital and home to 25% of the country's urban population. With the current pace of urbanization, the city's population is expected to double in the coming 10 to 15 years. This presents a number of challenges but also opportunities for the city that need to be better understood (World Bank, 2015).

According to the GoE, Addis Ababa comprises 10 sub cities and 328 dwelling associations (Kebelles). Amharic is the working language of the city administration. Addis Ababa is the diplomatic capital of Africa. More than 92 embassies and consular representatives cluster in the city where the Organization of African Unity and the UN Economic Commission for Africa have their head quarters

The City heterogeneous filled with different religions Orthodox Christians, Muslims, Protestants, Catholics and other religions. In addition there are different ethnic groups in the cities like Amhara, Oromo, Guragae, Trgrie and others (GoE , 2018).

3.1 Study Approach

This is quantitative research. This is an approach for testing objective theories by examining the relationship among variables such as quality, price, promotion, seasonality, weather condition and consumer behavior. These variables, in turn, can be measured, typically on instruments, so that numbered data can be analyzed using statistical procedures.

Quantitative research is the systematic and scientific investigation of quantitative properties and phenomena and their relationships (Kothari, 2005). The objective of quantitative research is to develop and employ mathematical models, theories and hypothesis pertaining to natural phenomena. The process of measurement is central to quantitative research because it provide the fundamental connection between empirical observation and mathematical expression of an attribute. The study will be designed to explain, understand, predict and control the relationship between variables (Abiy, 2009).

3.2 Study Design

The study is descriptive type of research which tells us current status of pasteurized milk consumption and marketing looks like, Descriptive research designs help provide answers to the questions of who, what, when, where, and how associated with a particular research problem; a descriptive study cannot conclusively ascertain answers to why. Descriptive research is used to obtain information concerning the current status of the phenomena and to describe "what exists" with respect to variables or conditions in a situation (Thousand Oaks, 2007).

The research focuses to study the current scenarios listed as research questions which are focused to answer what milk consumption looks like, what factors are affecting the milk consumption and marketing in Addis Ababa city.

3.3 Study method

3.3.1 Target Population, Sampling Methods and Sample Size

According to Sekeran (2001), the target populations of the study were communities who utilize various types of milk or those people usually consume milk and milk products. Population or universe represents the entire group of units which is the focus of the study. To make the samples representative of the population, the sample frame from which samples drawn from different sub-cities of Addis Ababa for milk consumers will be included. The target population will be the entire residence of Addis Ababa city who has the potential to consume milk and milk products.

Sampling is the selection of a fraction of the total number of units of interest for the ultimate purpose of being able to draw general conclusions about the entire body of unit (Parasurman, 2004). There are two main sampling methods, probability and non-probability sampling (Zikmund, 2000). In probability sample, every unit in the population has equal chances for being selected as a sample unit whereas ,non probability sampling, units in the population have unequal or zero chances for being selected as a sample u nit.

In this study, convenience sampling technique was used to describe a sample in which elements have been selected from the target population on the basis of their accessibility or convenience to the researcher and sometimes referred to as 'accidental samples' for the reason that elements may be drawn into the sample simply because they just happen to be situated, spatially or administratively, near to where the researcher was conducting the data collection.

The sampling methods to use in this study will be two stage sampling techniques where the first stage is selecting two sub cities of Addis Ababa randomly. After selecting, the two sub cities, five wered as will be randomly irrespective of any other character. With this respect, Nefas silk lafto and kolfe keranio sub-cities will be nominated as a target population. The two sub cities have each 15 woredas. Out of total 30 woreda, there will be 5 woredas from each sub city will be selected randomly.

The representative sample size will be determined by using estimation method given by Cochran (1963).

Equal sample size proportion was given for the sub-cities of the study area (Kothari, 2005). $n = Z^2 pq/e^2$ Where, n=stands for the sample size which was drawn; e = level of precision or sometimes called sampling error (is ranges in which the true value of the population would be estimated; p= population proportion; q= 1-p; Z= level of confidence (1.96). The sample was drawn from maximum variability of the population (p=0.5) with 92.5% level of confidence with 7.5% precision level. $n = 1.96^2 0.5 * 0.5/.075^2$, n=170

By considering the non-respondent rate, 5% of the calculated sample size was included that is (5%*170) + 170= 179. Thus, the final calculated sample size to be 179.

3.3.2 Sources, Research Instruments and procedure of data collection

The data for the study will be collected using structured questionnaires on the sample. Standard questionnaires adopted which will be designed on commonly employed questions for pasteurized milk products.

According to Fisher (2007), it is recommended to keep the questionnaire clear, brief, understandable to the respondents as well as covered the relevant aspects of the model used. Hence, the questionnaire was composed of three parts. The first part of the questionnaire consisted of socio-demographic information of respondents; the second part, questions related to dairy products and their consumption habits constructed into five Likert scale.

Pretested structured questionnaire was used to collect the data in Amharic version (It will be attached in Appendix I). The data will be collected by trained data collectors which includes distribution and collection the questionnaires in the selected areas. Since convenience sampling is employed, the researcher selects milk consumers from different areas with varying backgrounds and diverse living style.

3.3.3 Data Management and Analysis

The collected data will be entered and analyzed by using Statistical Package for Social Sciences (SPSS) version 21.0 software.

Descriptive statistics (frequency, percentage, mean, standard deviation) to describe the demography part and inferential statistics (logistic regression) model will be employed for the regression of factors that affect the milk consumption.

$$\Pr(y = 1/x = x\beta + \text{€}$$

If we assume we have the following basic model, we can express the probability that y=1 as a cumulative logistic distribution function to specify the statistical model:

$$y_i = \beta_0 + \beta_i xi + \varepsilon$$

Where yi is the probability of milk consumption

Xi, the the variables that hypothesized to affect milk consumption as explained above

β_0, β_i were the coefficients

ε, the error term

There is a problem with nonlinearity in the previous expression, but this can be solved by creating the odds ratio. By algebraic manipulation, the logistic regression equation can be written in terms of an odds ratio for success and failure. Finally, taking the natural log of both sides, we can write the equation in terms of logits (log-odds): Log-odds are a linear function of the predictors. Let us make sure that the transformation of z lies between 0 and1.

The logit is the natural log of an odds ratio; often called log odds even though it really is a log odds ratio. The logit scale is linear and functions much like a z-score scale. Logits are Continuous, like z scores. Taking the log yields z. Hence, z is the log transform of the odds ratio (the joint effects of all explanatory variables put together on the odds):

$$e^z = \frac{1+e^z}{1+e^{-z}} = \frac{p}{1-P}\, i$$

3.4   Validity and Reliability

3.4.1   Validity

Validity means the validity of the results that is how well the questions measure the matters chosen to be studied. Pilot test will be conducted with a small group in which the feedback to check validity and received to redefine it (Korb, 2012).

3.4.2 Reliability

Reliability tells about stability of the results that is how accurately the study or measuring has been carried out. It refers to whether a measurement instrument is able to yield consistent results each time it was applied. It is also the property of measurement device that causes it yield similar outcomes for similar inputs. In this study, Alpha reliability was used to measure internal consistency of the mean of the items at the time of administration of the questionnaire. Cronbach's Alpha is a reliability coefficient that indicates how well the items in a set are positively related to one another (c 7orth, 2015).

3.5   Ethical Consideration

Ethical clearance was obtained from Research Ethical Review Board of St. Mary University, and Department of Management. In addition, full informed consent was also obtained from the study participants then the purpose of the study was clearly explained and information kept in strict confidential

CHAPTER FOUR

IV.   RESULT AND DICCUSSION

4.1   Results

The aim of this study was to analyze the effects of determinants towards milk consumption & marketing in Addis Ababa. Structured close ended questionnaire used to collect the data (Appendix I). The questioners were designed on commonly employed questions for different milk quality, price, promotion, distribution, cultural, social & behavioral & some environmental related studies were used. For the data analysis SPSS version 24.0 was used. The methods used in data analysis include descriptive statistics, multiple regression and multicollinearity test & Cronbach's alpha. Descriptive analysis was employed to summarize the general profile of respondents while multiple regression analysis was applied to determine whether the proposed independents variables (quality, price, promotion, and distribution, social, cultural & seasonal factors) had effect on the dependent variable (milk consumption). Cronbach's alpha was also used to test the reliability. In doing so, the questionnaires were distributed to 210 respondents while 179 were properly filled and returned back.

4.1.1   Data cleaning and coding

The data was cleaned & coded in order to make the collected data's suitable for the analysis. A total of 179 complete questionnaires were being used for the study with 85.23% response rate. Coding of the data is necessary for transferring & editing data in to SPSS. The questions & possible responses were corresponded in the order of the actual questionnaire & coded for further analysis using SPSS.

4.1.2   Reliability test

The reliability of the data was measured using Cronbach's alpha; which is a single core relation coefficient so as to estimate the average of all correlation coefficients the item within the test. Cronbach's alpha is a reliability coefficient that indicates how well the items in a set are positively related to one another (Shuttleworth,

2015). So before analyzing the collecting data, the main items of the questionnaire was tested by using Cronbach's alpha as given below in table 4.1

Table 4.1: reliability statics

Cronbach's Alpha	No of Items
.875	21

Sources: (own survey result, 2019)

The reliability Coefficient greater than or equal (a> 0.7) is lies in the acceptable range. So that reliability of the questions was evaluated in the result (Cronbach's Alpha) was used to test the reliability the materials used in this study. Hence, the reliability coefficient of the above item is above greater than 0.7 and / or the overall reliability test for the item is obtained to be .875. This implied that the items were reliable & understandable to the respondents.

4.1.3 Demographic characteristic of the sampling area;

The survey was conducted in to sub cities of Addis Ababa city: Nifas silk Lafto & Kolfe Keraniyo sub cities. The demographic information of the study area summarized here under Table 4.2;

Table 4.2 Gender information

Gender	Number	Percent
Male	93	52.0
Female	86	48.0
Total	179	100.0

Source: (on survey result, 2019)

According to the survey results, the male respondents were constituted 52% of total respondents while the remains were female respondents. On the other hand, out of the total respondents, approximately 49.9% of the respondents were fellow Orthodox Christian, 30.2% of the responds were Islamic followers, 16.8% were non-Orthodox Christian (protest and the like) and the remaining 3.4% were follow other types of religions.as it is shown in table 4.3

Table 4.3 Religion category

Sr.No.	Religion type	No. of Followers	Percent	Valid Percent
1	Orthodox Tewahido	89	49.7	49.7
2	Muslim	54	30.2	30.2
3	Protestant and other Christians	30	16.8	16.8
4	Others	6	3.4	3.4
	Total	**179**	**100**	**100**

Source: (Own Survey Result, 2019)

Looking the job categories of the respondents, it can be classified in to four main groups. The majority (30.2%) of the respondents were engaged in private jobs (27.37%) of respondents were merchants, 17.87% were government employees, 8.38% were jobless and the remaining 16.2% were did not mentioned their job categories.

Table 4.4 Job types of respondents

Job Engaged	No	Percent	Valid Percent
Government institution	32	17.877	17.877
Private Institution	54	30.168	30.168
Merchant	49	27.374	27.374
Jobless	15	8.380	8.380
Other	29	16.201	16.201
Total	179	100.0	100.0

Source: (Own Survey Result, 2019)

When we look the family size of respondent, family member ranges from single individual to 14 per house hold. 24% of the respondents has a family member of five. Households who possessed family members of above five individuals were approximate to 30% which implied that around 70% of households has a family

member below five and below per household. Whereas the age distribution is depicted as follows.

Table 4.4 Size of Age distribution

Age Group			
Se.no	Age category in years	Frequency	Percent
1	18-25	51	28.3
2	25-35	69	38.3
3	35-45	35	19.4
4	>45	24	13.3
	Total	179	100.0

Source:(Own Survey Result, 2019)

Survey results showed that 20.1% of households preferred packed (pasteurized) milk while 16.8% unpacked milk (raw milk). 27.4% consumed powder milk but 34.6% consumed any of the products available in the market. On the other hand, the milk consumption varies in a house hold which had children less than 5 years old 33.4%, 18.4%, 33.0% and 16.2% raw milk, pasteurized milk, powder milk and any of them respectively.

Table 4.6 milk preference

Consumers milk preference				
Types of Milk	Consumption for house hold		Consumption for children less than 5 years	
	Frequency	Percent	Frequency	Percent
Raw milk	30	16.8	58	32.4
Pasteurized milk	69	38.5	33	18.4
Powder milk	18	10.1	59	33
Any of them	61	34.6	29	16.2
Total	179	100.0	179	100.0

Source:(Own Survey Result, 2019)

Some information about consumer's milk preference and for their children is reported in Table 4.5. Pasteurized milk is highly preferred for the house hold consumption while powder milk is the first-choice children which accounted 38.3% & 33 % respectively. Powder milk was less preferred (10.1%) for house hold consumption.

4.2   Determinants of Pasteurized Consumption

4.2.1   Quality

Buyers expect products to have a high conformance quality, which is the degree to which all of the produced units are identical and meet the promised specifications. The problem with low conformance quality is that the product will disappoint some buyers (Kotler & Keller, 1999).

Table below presented respondents result of the quality awareness with mean and standard deviation of values for each variable.

Table 4.7 Quality Analysis

Quality variables analysis	Mean	STD. Deviation
PM has better than other	1.83	1.165
PM has no adulteration	2.69	1.391
M package is comfortable for handling	3.16	1.176
PM has enough fat content	2.68	1.104
PM has uniform quality across time	3.56	0.995
PM has good aroma & test	2.88	1.273
PM does not expire before its expiry date	3.55	1.329

Source: (own survey results 2019)

Quality of pasteurized milk is explained basically with the following attributes in this paper. Milk purity which is the level how much the milk product is free from adulteration, the contents on the milk ingredients including fat, protein, calorie and mineral and also the expiry date as it has been stated, the natural flavor and aroma, package easiness and attractiveness were considered.

From the table 4.7 list of quality comprising questions for respondents, the mean score of "pasteurized milk has uniform quality across time is the highest with 3.56 and SD 0.995 while pasteurized milk has enough fat content is the lowest in mean the score of 2.68 with slandered deviation 1.104

4.2.2 Price

Price was measured is the following parameters, the believe of the respondents to the current price of pasteurized milk is explained in the Table 4.8 below

Table 4.8 Price Analysis

Price Analysis		
Price Variables	Mean	N
The price of pasteurized milk is uniform for reasonable time	2.97	179
Is pasteurized milk fairly priced	2.30	179
What will be your action if the price of milk increases	2.00	179

Source: (Own survey Results, 2019)

The average score of the respondents out of five is 2.97, 2.3 &2.00 for respective questions mentioned in the Table (price of pasteurized milk is uniform for reasonable time, pasteurized milk fairly priced & the action if the price of pasteurized milk increases) respectively milk.

4.2.3 Communication

Consumers have got information about the product from different sources of information as it is depicted in the fig4.1 below 35% of the respondents get from word of mouth, 33% of the respondents get information from the shop or the sales person, 25% from the advertising campaign and the remaining 7% from other sources.
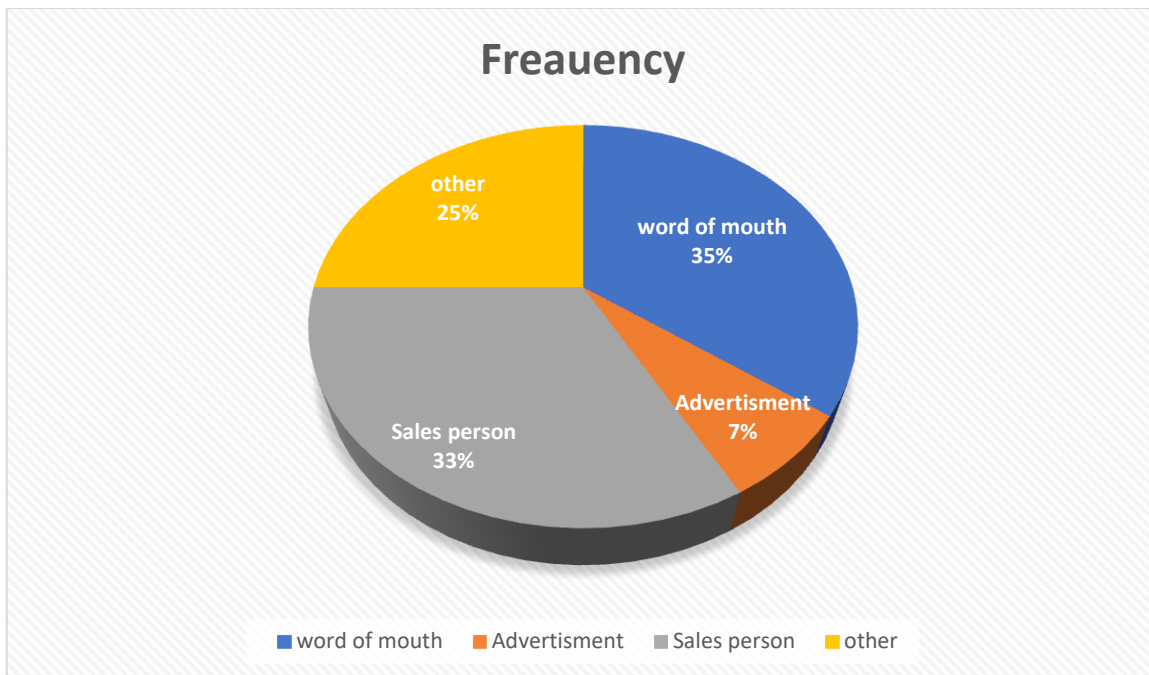
Fig 4.1. Information access statics

4.2.4 Distribution

Involves choice of a set of warehouses (stocking points) and transportation carries that deliver the goods to final destinations in the desired time or at the lowest total cost. For such perishable items like milk effective cold chain logistics meet the marketing requirement. (Roy,2016). If there is a problem of delivery to the final consumer 48.8% of consumers went to other competitive product ,39.7% permanently and only 19.6% would come a back again. (Owen source, 2019).

4.2.5 Culture

Culture comprises religion in this context the fasting time of orthodox Christians is only considered. From the table 4.9 below the average strength of decrement of their consumption out of five points consumers score 3.63 in ABIY TSOM ,3.50 in FILSETA TSOM, and 3.01 in REBU and ARIB Tsom.

Table 4.8: mean score of fasting seasons

Decrease consumption of Milk	N	Minimum	Maximum	Mean	Std. Deviation
P.M demand decreases in ABIY TSOM	179	1	5	3.63	1.324
P.M demand decreases in GENA and SENE TSOM	179	1	5	2.58	1.307
P.M demand decrease in FISLETA TSOM	179	1	5	3.50	1.168
P.M demand decreases in REBU &ARIB	179	1	4	3.01	1.170
Valid N (listwise)	179				

Source: (Own Survey Result, 2019)

4.2.6 Social

Social and environment influences, associated with social marketing provide a broader context to examine marketing practice. (Manikam, *et al*, 2016). Out of five consumers 3.13 and 2.81 of them were influenced in consumption and marketing of milk products.

4.2.7 Seasonality / Rainy time:

It is very difficult to had literatures the relationship between rainy time and liquid milk consumption. But in practice the demand of milk decreased. Out of five respondents 3.16 of them decreased in milk consumption in Ethiopian summer and 2.91 of them in other raining time. (Own survey, 2019)

4.2.8 Interpretation of Multiple Regressions

In regression analysis in which all predictors are entered into the model and examine the output to see which predictors contribute substantially to the model's ability to predict the outcome (Andy Field, 2005).

The correlation table shows the value of Pearson correlation coefficient between every pair of variables. The social factor had greater positive contribution to milk consumption, R=0.218. The one tailed significance of each correlation is displayed. The correlation is significance at $p<0.001$. The number of cases contributing to each correlation (N=179) is shown (Annex III). We can see also that the predictors, the supply correlate best with the outcome (R=0.344, $p<0.001$) and so It is likely that this variable will predict milk consumption.

The model summary table is shown in SPSS labeled R are the values of multiple correlation coefficient between the predictors and the outcome. R2 is measured how much of variability in the outcome is accounted by the predictors. For this model the value is 0.047 which is 4.7%. However, when the other predictors enter to the model the value increases to .107 or 10.7% of the variance in consumption of milk.

The adjusted R2 gives some idea of how well our model generalizes and ideally, we would like the same or close to be R2. In this case (0.103-0.092=0.015 which is 1.5%)

The Dubin – Waston statistic is 1.681 in hierarchal enter method which tell us the assumption of the independent errors is acceptable. Since it is closer to 2 that the assumption has almost certainly been meet (Andy Field, 2005). The first model (F-ratio is 8.157, $p<0.05$). For the second model the value F is greater. (F= 9.368, $p<0.001$). Thus the initial model is improved to predict the outcome variable.

Multiple linear regressions are looks like linear equation which is $Y=b + b_1x_1 + b_2x_2+ \varepsilon$
Where X1 and X2 social and culture as predictors
Then the equation be Y(dependent)- 2.08(constant)+0.28(culture)+0.29(social)+ ε

Where Y is the milk consumption b and bi are coefficients of the predictors and xi the predictors runs from 1 to i. The (b -values). If the b value is positive, the relationship is in opposite direction if the b- value is zero there is no relationship between the outcome and the predictors.

The equation becomes $Y = b + \ldots\ldots b_i x_i + \varepsilon$

(In this case the consumption of milk and quality, price, promotion, distribution, culture, social and seasonality).

The b-value is significantly different from zero. In simple regression it is checked by t-test. However, in multiple regressions it is very difficult to represent significance using t-value. But indirectly it is valuated using sig. if it is less than (0.5), then predictors is making greater contribution to the model. Even though b-value is a good indicator of significance it should have been standardized to (β) not to be affected by unit of measurement. (Andy Fild,2005).

Table 4.9: Multiple regressions result for forced enter way values

Significant variable	B	SE B	B
Constant	2.1		
Culture	.75	-0.26	-0.25
Social	.80	0.25	0.24

(Source own survey, 2019)

$R^2 = .34$, $\Delta R^2 = 0.09$, P<0.01 Dubrin Waston statistics 1.397 for forced entry

The equation becomes $Y = \beta + \beta_1 X_1 + \varepsilon$

Y =2.1 (constant)-0.25 (culture)+0.24(social) + ε

4.3   Discussion

The study was carried out to analyze determinants of pasteurized milk consumption in the study area. Out of the variables enumerated in this study, fasting time and social influence found to be significantly affected the consumption and marketing of milk.

Though some variables-commonly mentioned as 4Ps (price, product quality, promotion and distribution) enumerated in the regression result could not found to have a significant influence on consumption of milk, the descriptive analysis shown that they have an influence on marketing sphere of milk industry. The milk products quality can be explained by its product diversification (varieties of cheese, yogurt, butter, naturalized). The diversified milk (varieties) products mostly preferred by business to business industries (B$_2$B) where the type of products will be delivered to Hotels, Airline, restaurants, universities and hospital.

The other variable considered in the descriptive part of the study is the quality attributes of milk which are the natural ingredient of the milk, ease of handling and design of packaging, and the warranty and returns given for the product. With this respect, milk producers particularly those who engaged in pasteurized milk production needs to focus of maintain the quality of the product.

Concerning the price of the product; Even though the product's price in Addis Ababa seems expensive, the descriptive outcomes shown that the consumers are not sensitive for price change. The other marketing mix is product promotion, contained advertisement, public relation and personal selling. The descriptive result gives us that the effective ways of promotion is word of mouth and personal selling. The distribution mechanisms adopted in the study area is indirect distribution mechanisms which require the involvement of many intermediaries. This is in favored due to the perishable nature of the product.

The regressed output gave us; the average milk consumption level could be reduced by 25% during the fasting time. The study conducted by (Natinael M, *et al., 2014*), with the sponsor of wagengen university also projected that the milk consumption or market has been reduced with the range 20-25% during the Orthodox fasting time.   The study

conducted by (*Sintayehu Yirga et. al, 2008),* supported that the religious actions particularly the fasting time of the orthodox followers reduced the demand of milk and milk products. During fasting time producers would have surplus milk so they will processes traditionally in to butter or sell the milk with lesser price (Natinael M, *et al., 2014*). In fact butter and cheese were important products in Ethiopian because fresh dairy products can't be sold and consumed during the long fating period.

The social factors which is defined as the influence of common social contacts such as families, friends and neighbors that can have a direct or indirect influence on the decision individual milk consumption preference. The influence may extend to friends, working partners who have been potential cruise as initiator (Larry P, 2008). The variable regressed in the model gave as social factors affected positively and significantly towards the consumption of milk and its derived products. For instance, many family decisions were made through a husband/wife or any family member's consensuses and many business purchase decisions are the result a group effort.

CHAPTER FIVE

V.   SUMMARY, CONCLUSION AND RECOMMANDATIONS

This chapter focused on the outcome of the results of the model so as to summarize, make conclusions and draw recommendations based on the analysis and basic findings on determinants of pasteurized milk consumption and market in Addis Ababa.

5.1   Summary

The prime aim of the study was to assess determinants of pasteurized milk consumption and market in the capital city, Addis Ababa. The population of the country and rate urbanization rate growing in higher rate on one counter which resulted the country imported plenty milk products that have relatively long shelf value. On the contrary, the domestic products usually faced market problems. Irrespective of solving such type of marketing challenges, there are new milk companies emerging to the dairy industry regularly. The industry is composed of privately-owned companies in a rigid competition in the field of market such as quality, price, and communication, distribution the culture especially the fasting time the social orientation of the community and the raining time in the city. The study was initiated just to estimate in what level these factors disturb the consumption and marketing of milk and milk derived products.

This study attempted to answer what are the determinants of milk consumption and in what extent the variables influence on milk consumption and tried to answer the research questions raised in the stated objective.

To analyze diary Industry the study considered five determinants which are quality price distribution culture (fasting time) social and the weather condition (seasonality). A sample size was selected using random sampling of the sub cities and convenience sampling technique distributed to milk consumers. Based on the theoretical frame work and objectives of the study 21 items were provided in a five-point Likert scale to the respondent. The gathered data was analyzed by using SPSS version 24.0. The methods used in data analysis include descriptive statistics, regression, One-way ANOVA and

multi-co-linearity test and Cronbach's Alpha and multiple regressions. The average milk consumption of the house hold is 2.26lit/week. Individual milk consumption 0.54lit/per week.

Consumer preferred (38.3%) pasteurized milk for their household consumption. But powder (33%) is the first choice for their children.

5.2 Conclusion

The determinants of pasteurized milk consumption were analyzed by using SPPS version 24.0. The methods used in data analysis include descriptive statistics, multiple regressions, one way ANOVA and Cronbach's Alpha. The study found that two of the determinants; cultures (fasting time) and social influence had been found influential factors on the consumers pasteurized milk consumption in Addis Ababa.

The results gave a good insight for the industry managers owner new entrants how to sale and hold milk products by designing strategies to the cultural influence in long fasting time.

The social interaction in the city in favors among family members friends and other group even in marketing activities. Thus, the marketing managers provide relevant information to spread out individual households. But me marketing elements like quality, pricing, method distributing and weather condition were not significant in this studies multiple regression model.

This study experienced that; different groups would react differently to pasteurized milk consumption. Consumers are more interested pasteurized milk consumption for household but they were choosing powder milk for their children less than five years old.

5.3 Recommendations

The demand of milk consumption in Addis Ababa decreases during Orthodox Christians fasting time, thus producers better to make long shelf life dairy products in this time. The fasting time on average extended to 180 days per annum fasted with different intensity. If

the case is so, balancing the milk supply by the producer should proportionately contest with the level of consumption. Thus, fasting for 180 days should be an issue during marketing of milk and milk products. This in turn implied that, commercial dairy farms better to be concerned on the fasting time before getting inseminated the dairy cows. For shorter fasting time, producers should facilitate the cold systems to keep the products safe for health. It is important to invest on overcoming the perishable nature of milk by converting to powder milk and other forms. This may help the country to reduce its foreign expenditure to import powder milk. In addition to the powder milk investment, procedures and new entrants better to shift value added milk products like cheese, table butter and yoghurt as well.

Social influence has vital on milk consumption, thus the industry tried to manage the negative information distributed to the consumers. Rather marketing managers of the industry need to design strategy to use the informal social communication to raise product knowledge of the consumers.

Consumers used pasteurized milk, raw milk and powder milk, interchangeably Pasteurization is meaningless in this sense, and thus controlling mechanism would be in place to minimize the informal market of raw milk and quality control pasteurization processors simultaneously to keep the health of consumers profitably.

5.4 Limitations and Further Research

In this study, a convenience sampling technique was used in which the generalizability of the findings is limited to the study respondents and area, where the sample is taken.

This study has mainly focused to examine the determinants of milk consumption using multiple regressions. The research would have been more conclusive if it had considered more models and different assumptions to the marketing part of dairy industry. The determining strength of social and culture particularly fasting time of Ethiopian Orthodox Church and social aspect the interaction of families and friends in milk purchasing and consumption.

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VII.   Annex I

የመረጃ መሰብሰቢያ ቃለ መጠይቅ

የቅድስት ማርያም ዩኒቨርሲቲ ድህረ ምርቃ ፕሮግራም

የዚህ መጠይቅ ዓላማ ለአዲስ አበባ ከተማ ነዋሪዎች የተከነባበረ ወተት ለመጠቀም እና ለመግዛት ተጽእኖ የሚያደርጉባቸውን ምክንያቶች ምን ምን እንደሆኑ መረዳት ነው

በወተት ተጠቃሚ ግለሰቦች (አንድ የቤተሰብ) የሚሞላ መጠይቅ ነው፡፡

ትእዛዝ አንድ ይህንን መጠይቅ የሚያስሞሉ ባለሙያዎች መጠይቁን ከማስሞላታቸው በፊት የሚከተሉትን ከግንዛቤ ማስገባት አለባቸው፡፡

- ስለ መጠይቁ ዓላማ በቂ ግንዛቤ ይኑረዎት
- መጠይቁን ለሚሞሉ ሰዎች ትክክለኛ ሰላምታ ይስጡ
- ስለ መጠይቁ ዓላማ ይግለጹላቸው እና እያንዳንዱኝ ጥያቄ በግልጽ እና በትግስት ያቅርቡላቸው
- ሁሉም ጥያቄዎች እንደተጠየቁ እና ምላሽ እንደተሠጠባቸው እርግጠኛ ይሁኑ በመጨረሻም ያመስግኑ
- በክፍት ቦታዎቹ ላይ ይህንን ምልክት √ ይጠቀሙ

    ክፍል 1. የመላሹ አጠቃላይ መረጃ

1. የሚኖሩበት አካባቢ የት ነው ክፍለ ከተማ ---------------ወረዳ ----------------
2. ጾታ   ወንድ ------------- ሴት----------------
3. እድሜ   -------------- ከ18 እስከ 25 ዓመት -----------ከ25 እስከ 35 ዓመት
    -----------ከ35 እስከ 45 ዓመት   ---------------ከ45 ዓመት በላይ
4. የሚከተሉት ሃይማኖት ምንድነው ----------አቶዶክስ ተዋህዶ   ----------እስልምና
    --------ፕሮቴስታንት እና ሌላ የክርስትና ሃማኖት -----------ሌላ
5. የተሰማሩበት የስራ መስክ

----------- የመንግስት ሰራተኛ   ----------- ነጋዴ ---------- የግል ድርጅት ሰራተኛ   -----------------
--ሌላ   ---------- ስራ የሌለው

6. የትምህርት ደረጃ

--------ማንበብ እና መጻፍ የሚችል -------- እስከ 8ኛ ክፍል የተማረ --------እስከ 12ኛ ክፍል የተማረ ---
----- ዲፕሎማ---------የመጀመሪያ ዲግሪ እና ከዚያ በላይ

7. የትዳር ሁኔታ ----------- ያገባ /ች --------ያላገባ/ች ------------- የፈታ/ች ------------ ሌላ
8. የቤተሰበዎ ብዛት ስንት ነው (በቁጥር) --------ወንድ ---------ሴት -------- ድምር
9. በቤተሰቡ ውስጥ ከአምስት ዓመት በታች የሆኑ ልጆች አሉ   ------አዎ-------አይ
    መልስዎ አዎ ከሆነ ስንት ----------------------------

    ክፍል 2

1. የሚጠቀሙት የውትት ዓይነት ምን ዓይነነት ነው ------- ያልተቀነባበረ የላም ውተት --------- የዱቄት ወተት -------- የተቀነባበረ /ፓስቸራዝድ ወተት ------------ የተገኘውን እጠቀማለሁ ------ ----ሌላ ከሆነ ይግለጹ---

2. ከአምስት ዓመት በታች ለሆነ ልጅዎ ሚሰጡት የወተት ዓይነት ምን ዓይነት ነው

------- ያልተቀነባበረ የላም ወተት   --------የዱቄት ወተት

-------- የተቀነባበረ /ፓስቸራዝድ ወተት ------------ የተገኘውን እጠቀማለሁ

13. የፓስቸራዝድ ወተት ጥራትን በተመለከተ	በጣም አልስማማ ም	አልስማ ማም	ምንም ማለት አልችልም	እስማ ማለ ሁ	በጣም እስማማለሁ
• በጥራት የተሻለ ነው					
• ጥራቱ ሁል ጊዜ ተመሳሳይ ነው					
• በቂ ቅባት አለው(ወፍራም) ነው					
• ማሽጊያዎች ለአያያዝና ለአቀማመጥ ምቹ ነው					
• ምንም ዓይነት ባዕድ ነገር ያልተቀላቀለበት ነው					
• ጥሩ ጣዕምና መዓዛ አለው					
• በሽፋኑ ላይ ከተቀመጠው የአገልግሎት ጊዜ በፊት አይበላሽም					
14. የፓስቸራዝድ ወተት ዋጋን በተመለከተ					
• ዋጋው ተመጣጣኝ ነው					
• ዋጋው በየጊዜው አይለዋወጥም					
• ፓስቸራይዝድ ካልሆኑ የወተት ምርቶች አንጻር ሲታይ ተመጣጣኝ ነው					
15. የፓስቸራዝድ ወተት አቅርቦትን በተመለከተ					
15.1 አመቱን ሙሉ በቂ አቅርቦት አለው					
15.2 የወተት አጣቃቀምዋ ሚቀንሰው በምን ወቅት ነው					
• በአቢይ ጾም					
• በገና እና በሰኔ ጾም					
• በፍስታ					
• ዓርብ እና ረቡዕ					

• በክረምት					
• በሌሎች ዝናባማ ወቅቶች					
16. ወተት ምርጫዋ ተጽእኖ የሚያደርጉበዋ እነማን ናቸው					
• ጎደኞች					
• ቤተሰብ					
• የኑሮ ደረጃዋ					
• የራስዋ ማንነት					
• ሌሎች ምርቶች					
17. ከፓስቸራይዝድ ወተት ውጪ የሚፈልጉት የወተት ውጤቶች					
• የገበታ ቅቤ					
• አይብ					
• ችዝ					
• እርጎ					

VIII. Annex II

Correlations

Pearson correlation	Average milk consumption per week	Average milk consumption per week	Quality	Price	supply	Culture	social
		1.000	.157	.136	±031	±.116	.218
	Quality	.157	1.000	.533	±.026	.279	.443
	Price	.136	.533	1.000	±.161	.218	.308
	Supply	±.031	±.026	±.161	1.000	±.062	.005
	Culture	±.116	.279	.218	±.062	1.000	.440
	Social	.218	.443	.309	.005	.440	1.000
Sig.(_1 ailed)	Average milk consumption per week		.021	.041	.344	.068	.002
	Quality	.021		.000	.372	.000	.000
	Price	.041	.000		.019	.002	.000
	Supply	.344	.372	.019		.213	.474
	Culture	.068	.000	.002	.213		.000
	Social	.002	.000	.000	.474	.000	
N	Average milk consumption per week	179	179	179	179	179	179
	Quality	179	179	179	179	179	179
	Price	179	179	179	179	179	179
	Supply	179	179	179	179	179	179
	Culture	179	179	179	179	179	179
	Social	179	179	179	179	179	179

Model summary

Model	R	R square	Adjusted R square	Std. Error of the estimate	Change statistics				
					R square change	F change	Df1	Df2	Sig.
1	.342[a]	.117	.089	.81651	.117	4.225	5	197	

a. Predictors (constant), social, supply, price, culture, quality
b. Dependent variable Average milk consumption per week

ANOVA[a]

Model		Sum of squares	df	Mean square	F	sig
1	Regression	14.083	5	2.817	4.225	.001[b]
	Residual	106.670	195	.667		
	Total	120.753	200			

a. Dependent variable Average milk consumption per week

b. Predictors (constant), social, supply, price, culture, quality