Mekelle University

College of Veterinary Sciences

CONSUMER PERCEPTION AND PREFERENCE TOWARDS PROCESSED POULTRY MEAT SOLD AND CONSUMED IN BISHOFITU TOWN, OROMIA REGION, ETHIOPIA

By

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A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of

Master of Science in Meat Processing Technology

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February, 2024

Mekelle

Declaration

I hereby certify that I have read and evaluated this thesis titled as "Consumer's Perception and Preference towards Processed Poultry Meat Sold and Consumed in Bishofitu Town, Oromia region, Ethiopia", prepared under my guidance by Seyoum Hagos. I recommend that the thesis be submitted as it fulfills the thesis requirement

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As members of the Board of Examiners of the MSc Thesis Open Defense Examination, I certify that I have read and evaluated the Thesis prepared by Seyoum Hagos Mawecha and examined the candidate. I recommend that the thesis be accepted as it fulfills the thesis requirement for the Degree of Master of Science in Meat Processing Technology

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ACKNOWLEDGEMENTS

This major academic accomplishment would not have been possible without the dedicated support of many people. First of all, I would like to express my sincere gratitude to my advisors, Gebrehawerya Berihu (PhD) and Kiros Abebe (PhD).

To my father, Hagos Mawecha Gebregiorgis, and dear Sister and best friend, Helen Hagos, a heartfelt thanks you for taking this journey with me. I could not thank you enough for your unconditional prayers, support, motivation, and countless sacrifices you made in helping me achieve this goal. You gave me strength whenever I felt tired and reminded me of the reasons, I chose this path. I also like to thank brothers' siblings for the love, support, and constant encouragement given to me over the years. I undoubtedly could not have done this without their support.

I appreciate the survey work support provided by the team of enumerators. I would like to thanks Ato Tesfaye Alemu G/yohannise. This research was supported by funds of the Ethiopian Meat and Dairy Industry Development Institute. This financial support is gratefully acknowledged. I also acknowledge Mekelle University.

Above all, I thank the Almighty God for giving me strength and good health, guiding and helping me through all the difficulties, and making all things possible. To Him (God) who is able to do exceed abundantly above all that we ask, or imagine, be the Glory!

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LIST OF ABBREVIATIONS

CSA	Central Statistical Authority
ETB	Ethiopia Birr
FAO	Food and Agricultural Organization
FAOSTAT	Food and Agricultural Organization Statistical Database
FDA	Food and Drug Authority
GHP	Good Hygienic Practice
GMP	Good Manufacturing Practice
HACCP	Hazard Analysis Critical Control Point
KAP	Knowledge Attitude and Practice
OECD	Organization for Economic Cooperation and Development
WHO	World Health Organization

ABSTRACT

As there was no scientific information and data regarding consumer's perception and preference for processed poultry meat, this study was carried out with the objective of obtaining scientific information and data on consumer perception and preference of processed poultry meat sold and consumed in Bishofitu town, Oromia region, Ethiopia. Cross-sectional design was used. Pretested survey questionnaire was employed to collect the data. Chicken mortadella, fried chicken and chicken burger were mostly consumed processed poultry meat products in the town. Majority (54%) of the respondents pointed out that the reason to purchase processed poultry meat was availability, followed by (33%) saving time for preparation (33%). Mass media was not an important source of information toward processed poultry meat products, but shopkeepers or retailers were the main source of information, followed by window display. Majority of the respondents (67%) bought processed poultry meat directly from supermarket being advantaged to buy other food and goods at one way saving time, and more control on the selection, preparation of processed poultry meat products. P*rice was the most important attribute to purchase and consume processed poultry meat products. It was found that 94% of the respondents were unaware about the nutritional labeling of the products at point of purchase, and 93% of the respondents considered the quality of the products, based on product-oriented quality, but none of respondents responded quality control. Respondents perceived that perceived cost, sensory and healthiness were first and second most expected qualities, whereas, process and convenience were the most experienced qualities. Tenderness and flavor were the first and second most important preferred sensory qualities by the respondents. Around 94%, 88% and 87% respondents were unaware toward antibiotics, microbes and animal welfares, respectively. Respondents perceived that processed poultry meat freshness was the most helpful considered attribute when assessed the safety of processed poultry meat or food products. All domestically produced processed poultry meat was packaged by processors without controlling the quality and safety. Furthermore, food service providers stored processed poultry meat in refrigerators to increase shelf life and reduce meat quality losses. Majority of the food service providers (80%) responded that, fasting seasons affected sell of processed poultry meat products slightly.*

Keywords: processed, poultry meat, consumers, perception, preference

CHAPTER ONE

1. INTRODUCTION

1.1. Background

Meat food products that are subjected to drying, curing, cooking, smoking, seasoning, flavouring, freezing or any other method akin to above methods are called as processed food. Processed meat products, although in some regions still in their infancy, are globally gaining ground in popularity and consumption volume. According to Cranfield *et al.* (1998), Delgado (2003), Meade and Thome (2017) the global consumption of meat and meat products has experienced a significant increase in recent decades due to rapid population growth, rising incomes, and urbanization. The growth has been particularly strong for poultry meat. With an estimated mean worldwide consumption of 14.2 kg/capita in 2018, poultry meat is currently the most widely consumed meat in the world, outstripping pork (12.3 kg/capita) as the preferred animal protein (OECD-FAO, 2019a). Furthermore, preferred due to high nutritional value, attractive sensory qualities, ease of cooking and digestion, as well as economic reasons. The growing demand for poultry meat products has led to an increasing proportion of the total poultry meat production traded on the international market. By 2028, it is expected that demand will further rise and growth rates in consumption are projected to be faster in developing countries (OECD-FAO, 2019b). Poultry meat accounts for a larger part of additional meat consumption in sub-Saharan Africa including Ethiopia (OECD-FAO, 2018).

In Ethiopia chicken are synonymous of poultry. According to CSA (2016/17), Ethiopia owned around 59.5 million poultry population of which 95.86% were indigenous, 2.79% were hybrid and 1.35% were exotic breeds. The estimated annual production of poultry meat in the country was 61840 tons, which accounts 1.3% share of the production of Africa, and 11.7% of East Africa. An average poultry meat consumption of Ethiopia was about 0.66 kg per capita compared with about 1.64 kg in East Africa and around 6.73 kg in Africa (FAOSTAT, 2018).

The domestic market for poultry meat is constrained by seasonal fluctuations in demand and price. Such fluctuations are mostly associated to the fasting tradition that

prohibits consumption of livestock products for up to 250 days of the year particularly for Orthodox Christians, accounting for around 43 percent of the total population (CSA, 2007). During fasting period purchasing quantity of processed poultry meat would be declined, in and around Addis Ababa city chicken meat supermarkets (Teshome *et al*., 2019).

In Ethiopia, the contribution of poultry meat to the total meat production in 2013 was only around 9 percent (FAOSTAT, 2018). Therefore, the country has prepared a plan to promote chicken meat consumers through tasting and preference, as such practices are important to fill the shortage of animal origin protein in human diet and to replace red meat demands by consumers.

However, currently in major cities of Ethiopia, consumers buy processed poultry meat from supermarkets, top-rated shops, hotel and restaurants (Teshome *et al*., 2019). Although traditionally the meat from exotic breed is less preferred to the indigenous owing to the existing cooking and consumption habits, the trend is changing. There are also large numbers of bulk consumers such as full board public universities and colleges (serving over half a million students) and hospitals. Promotion and education on preparation of different food recipes was underway and public awareness on diverse cooking styles was on the rise (FAOSTAT, 2018). Even though, consumer perception and preference did not identify, rising incomes, rapidly growing population and also increasing urbanization of the country, the reasons for the increased of consumption (Teshome *et al*., 2019).

Consumers' preferences, behavior, and perception of meat and meat products depend on many factors, sensory, psychological and marketing. These aspects might be altered owing to individual behavior, context, culture, available information Font-i-Furnols and Guerrero (2014), concerns, lifestyles, and socio-demographic characteristics (Bernués *et al.*, 2003; Grunert *et al.*, 2004).

Consumer preference food is defined as the subjective tastes of individual consumers, measured by their satisfaction. The preferences are dictated by personal taste, culture, education and many other factors such as social pressure from friends and neighbors.

Consumers have many choices when they choose products to consume processed poultry products. They can get the product of their choice in good quality with convenience in the market. There are various types of consumer preferences for various types of processed poultry meat products. Furthermore, consumption of chicken depends on sociodemographic factors such as sex, age, educational level, household size, presence of children in the household (Escriba-Perez *et al*; 2017). Even though, there is no scientific research data in the country regarding to consumer perception and preference toward processed poultry meat products, the finding of some research indicated that, the increasing of consumer preference for poultry meat is due to a combination of factors, including lower cost, increased convenience and ease of preparation as well as increased consumer awareness of health factors such as lower cholesterol in poultry as compared to red meat (Haley, 2001; Resurreccion, 2004; Michel *et al.*, 2011).

Perception is defined as the act of apprehending by means of the senses and/or the mind. Hence, perception not only relates to basic senses such as visual, flavour and taste attributes, but also to formed experiences. It incorporates complex aspects of consumer behaviour such as learning, motivational and contextual factors. Consumer perceptions are not fixed and may change. How and in what direction consumer perceptions change is difficult to predict because of the complex dynamic which drives the change.

According to the perceived quality approach certain cues are by consumers to predict product quality attributes (Northen, 2000). Product attribute can be categorized according to weather they relate to the production process, including animal welfare and food safety issues or to specific product attributes associated with nutritional contents, sensory factors, and product image (Caswell, *et al*., 1998). Such cues

convey information which is taken in when shopping or product consumption and can be used to make inferences as to product quality (Olson and Jackoby, 2000). Intrinsic cues associated with meat include visual factors such as flesh colour, leanness, as indicated by visual fat and marbling, and odour, whilst packaging and information/labels are example of extrinsic product attributes (Northen, 2000).

1.2. Statements of the Problems

Since recently, the domestic demand for processed poultry meat products has increased due to urbanization, changing life style of the people and increasing income. In addition, there has been an increase in the capacity to provide up to standard processed poultry meat products in terms of quality and varieties to their consumers. Hence, on top of increased demand for processed poultry meat, likely there would be manifold consumer preference in terms of price, eating quality and safety of processed poultry meat in the near future. Consumer perception and preference toward processed poultry meat has not been studied in Bishofitu town. Thus, the poultry meat industries have been unable to use research output to find appropriate ways to improve consumers' satisfaction and to increase their profit.

1.3. Objectives of the Study

1.3.1. General objective

➢To determine the consumer's perception and preferences toward processed poultry meat sold and consumed in Bishofitu town, Oromia region, Ethiopia.

1.3.2. Specific objectives

➢ To determine the types of processed poultry meat products in Bishofitu town.

➢To assesses knowledge, attitude and practice of consumers toward processed poultry meat products in Bishofitu town

➢To assesses the most important factors that affect consumer perception and preference in Bishofitu town

➢To assesses the marketing practice of processed poultry meat products in Bishofitu town

1.4. Limitations of the Study

This study had limitations in terms of finance, instability of the country, lack of resources availability and interruption of communication with both main and co-advisors in Mekelle University due to the war.

1.5. Significance of the Study

This research was aimed to provide better understanding of the consumers' toward processed poultry meat products. Understanding of consumers' choice and preference behaviors and eating qualities can assist processors, hotels, restaurants, fast food stores and marketers who develop marketing strategies and as this can enable them to select the most salient attributes to attract and retain consumers. In addition to this, there has been little knowledge on this subject in the area. Furthermore, this research will serve as reference material for those who will be interested in conducting further research. Last but not least, the findings of this research could add something new to the global literature of meat science.

1.6. Organization of the Thesis

The thesis is organized in seven chapters. The first chapter introduced the background, statement of the problem, the objective, limitation of the study, as well as significance of the study. Literature is reviewed in the second chapter. The third chapter dealt with material and methods used to undertake the study. Results are presented and discussed in the fourth chapter. Chapter five consisted of conclusion and recommendation. The last two chapters dealt with references and appendixes.

CHAPTER TWO

2. LITERATURE REVIEW

2.1. Consumers Food Choice Trends

According to Furst *et al.* (1996), Verbeke (2005), Font-i-Furnols and Guerrero (2014), Thong and Solgaard (2017) noted that consumers' food choices are influenced by many interrelated factors, such as product properties, marketing, and personal (*i.e*., psychological and socio-demographic characteristics) factors (Furst *et al.*, 1996). Thong and Solgaard, (2017) noted that personal factors are very critical in driving food choice behavior. Guenther *et al.* (2005), Rimal (2005), Tambi (2001) and Yen *et al.* (2008) find that the influence of personal factors on meat consumption behavior has been the subject of many studies worldwide. However, existing studies on poultry meat concentrated mainly on sociodemographic factors, and attributes.

According to Udomkun *et al.* (2018) gender and age are key drivers of consumer's preference and willingness to pay for meat products in the Democratic Republic of Congo. Examining the consumption frequency of different types of meat in Spain, Escriba-Perez *et al*. (2017) find that the consumption of chicken depends only on sociodemographic factors such as sex, age, educational level, household size, and presence of children in the household, among others. Rimal (2005) finds that consumers with high education are more likely than those with low education to purchase poultry meat frequently. Bett *et* al. (2013) also find that age, income, education, and family size influence consumers' willingness to pay for underutilized indigenous chicken products in Kenya. Al-Hassan *et al.* (2014), Kwadzo *et al.* (2013), Woolverton and Frimpong (2013) find that on Ghana focused only on the choice of poultry meat and mainly on the influence of search and experience (sensory) attributes such as price, taste, and convenience in the selection of poultry meat. Kiran *et al.* (2018) find subjective norms are a key factor in understanding Indian consumers' new food purchase decisions regardless of their level of innovation. Choo *et al.* (2004) noted subjective norms are found to have direct effects on attitudes,

intention to buy, and purchase behavior for new processed food products. Chen *et al.* (2013) finds that consumer willingness to purchase and consumption also increased with level of education, educational level is positively linked to consumers' willingness to adopted new products. Caraher *et al*. (1999), Furey (2000) and Mitchell (1999) noted that consumers, particularly younger consumers are lack cooking skills to cook food products at home. Teshome *et al*. (2019) noted that major cities of Ethiopia, consumers buy processed poultry meat from supermarkets, top-rated shops, hotel and restaurants. Even though, consumers perception and preference are not identified. Promotion and education on preparation of different food recipes in Ethiopia was underway and public awareness on diverse cooking styles was on the rise (FAOSTAT, 2018). During fasting period purchasing quantity of processed poultry meat could be decline, but the price becomes similar compared with non-fasting period (Teshome *et al*., 2019).

According to Van der Sluis (2001) poultry products are in demand in all parts of the world, when there are no religious or cultural barriers, poultry meat usually led in consumer preference. Pettinger *et al.* (2004) and Mullen *et al.* (2000) find that religion is influences consumer attitude and behavior in general, and food purchasing decisions and eating habits in particular. Price and income are key factors affected meat consumption (Liang *et al*., 2014) creating larger differences in consumption levels between people (Yanwei *et al.*,2016). Increasing in income could lead to increased consumption of the income spent (Kazmi, 2012). FAO (2009) reported that there is a strong positive relationship between the level of income and the consumption of animal proteins. Ailawadi *et al.* (2011) noted the consumption of processed meat chicken such as nugget and sausage are more frequent than beef-based products. Rimal (2005) find that higher education is more likely than those with low education to purchase and consume poultry meat frequently. Escriba-Perez *et al.* (2017) find that consumption frequency of different meat products influenced by socio-demographic factors. According to Goldman and Hino (2004) consumers are often to buy fresh produced products from supermarkets if consumers emphasized the use of those products in their food preparation. Supermarkets are most popular

probably because they dominate about 65% of the South African meat market (Ncube, 2018). Maitiniyazi and Canavari (2021), Behrens *et al.* (2010), Cheng *et al.* (2016), Kendall *et al.* (2019), Knight *et al.* (2003) and Wertheim-Heck *et al.* (2019) find that supermarket is widely cited as a safe food outlet in several countries. Li (2012) education influence where processed meat purchase, and as the level of education increased consumers are more likely to buy meat from a supermarket.

According to Solomon *et al.* (2010), Kotler and Keller (2012) noted that, external search is when a consumer seeks additional information from the environment. Solomon *et al.* (2010) information search is the process whereby a consumer assessed its environment for appropriate data to make a reasonable decision. Tjärnemo and Södahl (2015) noted that food retailers suggested that animal-based foods are important to attract new and keep loyal customers. Verbeke (2008) also noted that information provision could be influence consumers' behavior. Liu (2014) find doctors or health professionals are the most trusted sources of information for several possible food related hazards. Hoffman *et al* (2005) find that consumers in Europe and the United States, healthcare professionals are a preferred source for food safety information. Kiran *et al.* (2018) noted consumers are pay a close attention to meat safety based on information from television, newspapers and the internet in Bengaluru city India.

Availability is one of the main important attributes that influence the purchasing of food products. According to Akinwumi *et al.* (2011) chicken meat is the most convenient to availability, most affordable, tastiest. Zundel and Kilcher (2007) find availability is one reason that can explain, for instance, the lack of access to markets and market information that has a negative influence on consumers' purchase behavior toward food products. Kiran *et al.* (2018) in India Bengaluru city about 66.9% correspondents were unaware of processed meat (processed poultry meat) available in market.

2.3. Intrinsic and Extrinsic Factors that Affect Consumer's Perception and Preference

2.2.1. Products quality

According to Henchion *et al.* (2014) suggested that quality would become a significant factor in consumer's food choices, while income and price factors were likely to decline over time. Steenkamp (1990) find that quality is a subjective matter as it based on measures of perception. According to Kotler and Keller (2012) noted that product quality is a characteristic of a product or service capable of bearing promises to satisfied customer needs. Luning *et al.* (2002) mentioned that quality represented the features or properties of a product that result in satisfied the consumers' physiological or psychological needs. Dransfield (2005) also suggested that appearance is normally used by consumers in quality judgements on processed meat. Grunert *et al.* (2004) also find that color, and fat structure and levels have observed as influential in calculating quality expectations. Food quality is a quality characteristic of food that has acceptable to consumers, such as size, shape, color, consistency, texture, and taste (Potter and Hotchkiss 2012).

2.2.2. Cost

Food cost is one of expected intrinsic quality of consumers. Food cost is simply how much you pay for the ingredient or product that you purchase. In West Africa, poultry consumption is stimulated by the availability of low-cost alternatives for consumers (Hollinger and Staatz, 2015). Haley (2001) and Resurreccion (2004), Michel *et al.* (2011) noted that lower cost of poultry meat is makes more preferable. Gruber and Kőszegi (2001), Wang and Sloan (2018) also noted that health effects can lead consumers to ignore costs and benefits of their decisions.

2.2.3. Sensory and Healthiness

Sensory and healthiness also one of expected intrinsic quality by the consumers. Chambers-IV (2019) noted that food sensory properties remain one of the most important reasons why consumers selected one food or another. Meiselman *et al.* (2022) intrinsic sources are the physical part of the food product that can be assessed before consumption such as sensory properties. Badar *et al.* (2021) consumers are highly demanded regarding the health benefits of food products. Shan *et al.* (2017) and Tobin *et al.* (2014) indicated that consumer concern about the health

characteristics of processed meats has increased in recent years. Brunsø *et al.* (2002) for a consumer, health may imply two main dimensions: the first one concerned nutritional aspect, and the second is related to food safety and risk related issues. Kubberød *et al.* (2002) noted that women view positive toward chicken meat products due to healthiness. Fagerli and Wandel (1999), Lea and Worsley (2001) women are more health conscious than men. Gender is influencing the healthiness of food products when purchase (Kapoor and Munjal, 2019).

2.2.4. Process and Convenience

Just and Gabrielyan (2016) noted that, convenient food is, the more likely its consumption. Grunert (2006) find consumer demand for convenience and good tasting food has ensure that processed meat remains a dietary staple. Akinwumi *et al.* (2011) better customary of living and changing of life styles has leads to the swing towards more convenience in received meat for food preparation. Webber *et al.* (2010) convenience is important, in food shopping. Kennedy *et al. (*2004) and Ripoll *et al*. (2015) processing of chicken would be relevant for consumers who attached importance to convenience and hence, time-saving and ease of preparation. Candel's (2001) criteria for convenience foods that they should not only be time saving but also energy saving. Worku *et al.* (2017) there is increasing willingness-to-pay for convenience foods. Kotler and Keller (2012) consumer purchasing behavior is characterized by a decision process that include post-purchase evaluation, like, process, convenience. Prevalent negative attitude toward convenience products is slowly diminishing, even in traditional foods such as meat and meat products (Vanhonacker *et al.,* 2013).

2.2.5. Tenderness

According to Deatherage (1963), Smith and Fletcher (1988), Morgan *et al.* (1991) noted that tenderness is a major quality determinant and also an important sensory characteristic of meat. Henry (1997) noted tenderness plays an important role in consumer preferences, determinant their ultimate satisfaction for whole cooked meat, and it is a major factor affecting the consumers' assessment of meat quality. Weston *et al.* (2002) noted chicken meat, tenderness strongly influences the preference of

consumers. Devatkal *et al*. (2019) tenderness considered as a great importance in the quality of cooked meat (Lee *et al.*, 2008b). Cooking methods affected quality characteristics of meat like as tenderness (Lee *et al.*, 2014). Most of the time juiciness is related with tenderness. According to Winger (1994) noted that juiciness is one of the most important quality attributes during consumption. Aberle *et al.* (2001) find that the overall juiciness can be affected by the addition of water, salts and phosphates as well as the effects of cooking method.

2.2.6. Flavor

According to, Mohan *et al*. (2022) flavour is an important eating quality after meat tenderness. Damaziak *et al.* (2019) in chicken meat, taste showed the greatest influence on the overall liking, followed by tenderness while the effects of aroma and colour is less significant. Drewnowski (1997) taste preferences is shaped by prior experience and associated learning, exposure to a food item thought to be strong factors in determining taste preferences (Garland and Carthy 2010). The work of Shahidi (1989) and Sitz *et al.* (2005) noted that taste and aroma and involved in consumers' meat-purchasing behavior and preferences even before the meat is eaten. For example, when cooked on the grill, chicken meat possessed a highly flavored exterior with moist interior. When roasted, the meat has been a rich, roasted aroma (Dawson and Spineli, 2007).

2.2.7. Color

According to Joo *et al*. (2013) colour is the most important quality attribute of cooked poultry meat because consumers the product's associated with freshness, and decided whether or not to consume the product based on their opinion of attractiveness. Damaziak *et al.* (2019) overall liking of processed poultry meat color was less significant. Color is a decisive sensory characteristic that influenced a consumer's purchase decision in the market the origins of human color preference for food in which concluded that people tended to prefer fresher that which is associated with high chroma (Lee *et al.*, 2013). Foroni *et al*. (2016) noted humans do use food color to determine food quality. Color the most important factors influenced the purchase

of processed chicken meat (Kennedy *et al.*, 2004). Color of processed chicken meat greatly influenced choices of consumers (Fletcher 2002). De Almeida *et al.* (2017) noted that color play an important role for consumers in their selection meat products. Grunert (1997), Altmann *et al.* (2022) and Lusk *et al*. (2018) find that final decision to purchase an animal product was heavily influenced by visual perception, particularly product color. Pathare *et al.* (2013) every food product has been an acceptable color range that depends on a wide variety of factors, including variability of age at the time of judgment. Mancini (2009) and Owusu-Sekyere *et al.* (2014) consumers normally used color to indicate wholesomeness or contamination meat products. Reshma and Santosh (2020) find that consumers always linked food color with other qualities such as ripeness, freshness, and food safety.

2.2.8. Freshness

According to Munoz (1998), Verbeke and Viane (1999) noted that one of the most influential variables on the consumers' decision to purchase meat product is freshness. It is evident from this study; freshness is a factor that attracted consumers purchase behavior. Furthermore, Kennedy *et.al* (2004) mentioned that there should be utilization to judge freshness, product appearance, which comprise the color and physical form of the meat products. Samotyja and Sielicka (2020) find that consumers often associated freshness food products with the best-before date. Van Rijswijk *et al.* (2008) freshness of meat and processed meat products are a crucial cue for consumers regarding their safety. Chicken meat freshness is the most important indicator of safety (Becker *et al*., 2000). Most consumers can be only judging meat safety from color and appearance of freshness (Li, 2012). Wertheim-Heck *et al.* (2019) noted that safe foods offered in the supermarket are also perceived as more expensive and less fresh.

2.2.9. Animal welfare

According to Salamano *et al.* (2013) in developed countries, consumers were requested not only for safe and quality foods, but also for a certification that animals have been bred and slaughtered ethically. Pouta *et al.* (2010) noted for many

European consumers, the impact of animal welfare factor has become more critical. Clark *et al.* (2016) noted there is a little awareness by the consumers regarding to animal welfare in developing countries, such as Brazil. Kjørstad (2005) find that there is considerable variability between different parts of the world regarding to animal welfare. Bonamigo (2012) and Akaichi *et.al* (2016) noted many consumers do not purchase the products from animals kept in better welfare because of the high price. Davidson *et al.* (2003) noted that animal welfare as a meat choice criterion ranked behind appearance and price. Est´evez-Moreno *et al.* (2021) find the importance of animal welfare for consumers' perception of meat and meat products is varied according to gender, rural or urban origin, educational level, and age. Blanc *et al.* (2020) animal welfare certification is more important for female Italian consumers than males. Kiran *et al.* (2018) find that animal welfare activities like transportation, stunning, on farm handling had any influence on meat purchasing decision of consumers in Bengaluru India.

2.2.10. Antibiotics

Although there is no evidence that antibiotics in food harm people directly, most people agree that overused of antibiotics in food produced animals are a problem, and contributed to the development and spread of drug resistant-bacteria, which is a potential risk to public health. Bernard *et al.* (2005), Yang *et al.* (2009) and Busch *et al.* (2020) indicate use of antibiotics in animal production is negatively perceived by consumers due to their associated with antibiotic resistances and residuals causing health problems in humans. Holmes *et.al* (2016) causes of the emergence of antibiotic resistance is the widespread use of antibiotics in livestock. Hoelzer *et.al* (2018) in commercial chickens, vaccination coupled with the use of biosecurity measured may significantly reduce antibiotic use without compromising levels of production.

2.2.11. Microbes

According to Mead (1989) and Waldroup (1996) live poultry is carry many different kinds of microorganisms on the skin, among the feathers and in the alimentary tract, and any of these organisms may ultimately become contaminants of processed products. Katiyo *et al.* (2019) in South African there is potential for foodborne

illnesses due to mishandling of chicken meat and lack of knowledge about factors affecting the safety of chicken meat by many consumers. Donelan *et al.* (2016) in developed countries, have concluded that consumers play an essential, active role in the safety of poultry products representing the final step for the prevention of foodborne illnesses. Cerveny *et al*. (2009) composition of micro flora in meat depends on various factors: preslaughter husbandry practices, age of the animal at the time of slaughtering, handling during slaughtering, evisceration and processing, temperature controls during slaughtering, processing and distribution, preservation methods, type of packaging and handling and storage by consumers.

2.2.12. Additives

According to WHO (2018) consumers everywhere would be confident that the foods they consume meet the agreed standards for quality and safety, no matter where they were produced. The World Health Organization also stated that substances which are added to foods to improved or maintain the taste, texture, appearance, safety, or freshness of foods were known as food additives (WHO, 2018). Food additives included the substances that may be indirectly introduced to foods (known as indirect additives) during the manufacturing process, by packaging, or during transport or storage (FDA, 2017; FDA, 2018). Di Vita *et al.* (2019) who stated that people are with a high level of education pay more attention to the additive content of processed meat.

2.2.13. Price

According to, Clark *et al*. (2017) and Escobedo *et al.* (2021) price is certainly among the most important attributes when make buying decisions for meat. McCarthy *et al.* (2004) find that for many European consumers, the impact of price has reduced significantly. Bello Acebrón and Calvo Dopico (2000) find that price is an important extrinsic quality cue related with consumers' purchasing decisions. Price is the extrinsic attribute considered most important in related to meat products Davidson *et al.* (2003), and is often considered highly important (Lagerkvist, 2013). Muzayyanha *et al.* (2022) find when purchasing processed meat products, consumers

no longer considered price as their purchasing decision. Trappey and Lai (1997) mentioned that offering lower prices is one of the reasons for consumers to shop at supermarkets. Webber *et al.* (2010) noted consumers may evaluate the role of price in terms of the importance of the food product, which is relative, because it is compared to the importance of other foods. Farhangmehr *et al.* (2000) price impose in the traditional markets is higher which motivated the consumers to buy goods from supermarkets. According to Brenes and Roura (2010) the consumption of chicken meat continues to increase the primarily due to lower price as compared to that of beef and pork. McEachern and Schröder (2001) noted that high price has found to be a barrier to eating processed meat. Jabir *et al*. (2010) mentioned that priority on choosing processed products are price, quality, variety, packaging, and non-seasonal availability. According to Solheim and Lawless (1996) females tend to react more to food prices than men. Steptoe *et al.* (1995) also find that women regarding low price in foods as more important than men.

2.2.14. Nutritional labeling

According to Rimal and Fletcher (2003) the use of nutritional label influences the customer especially females in choosing healthier meat such as chicken as compared to beef. Drichoutis *et al.* (2006) noted that the use of nutritional label affected the purchasing behaviour mainly because the consumers want to avoid the adverse nutrients in food products. Baltas (2001) find that nutritional label is intended to informed customer the available choices and to stimulated the consumption and production of healthy product. Nutritional labeling affected the consumers' purchasing behavior significantly because some evidences revealed that the provision of nutrition information may allow consumers to switch consumption away from 'unhealthy' products in those food categories toward 'healthy' products more easily (Zarkin and Anderson 1992). Scott and Worsley (1997), Higginson *et al.* (2002) noted that the consumers only glanced at the nutrition information and do not process the information further at the point of purchase. Cowburn and Stockley (2005) find lower levels of education likely to has been difficulties in understanding nutritional labelling

CHAPTER THREE

3. MATERIALS AND METHODS

3.1. Description of the Study Area

The study was carried out in Bishofitu town, Oromia region, Ethiopia. Bishofitu town is located in East Shewa zone of Oromia region of Ethiopia. The town is located at an elevation of 1920 meters above sea level, and 47.9 kilometers far from Addis Ababa. The 2007 CSA report indicated that, the total population of the town was around 99,928.00. At national level, the poultry research center of excellence is located there. There are also a number of poultry producers, meat processors, supermarkets, resorts, international standard hotels and restaurants, fast food stores and a sizable population of processed poultry meat consumers.

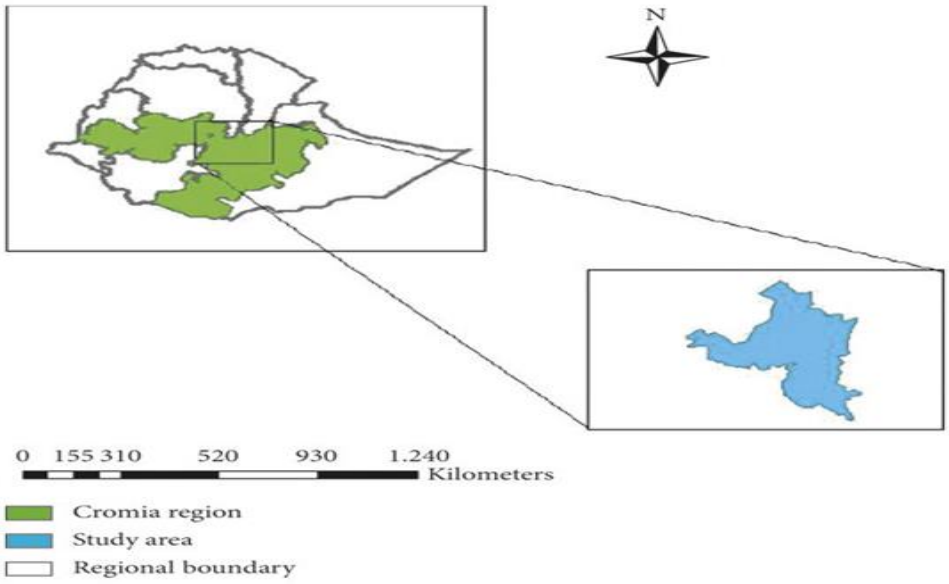

Figure 1: Map of Bishofitu town, East Shewa zone, Oromia region, Ethiopia (Abunna *et al*., 2018).

3.2. Study Design and Target Groups

A cross-sectional study design was used. Pretested survey was carried out to identify food service providers who serve processed poultry meat. Based on the pretested survey, 30 food service providers were selected by using purposive sampling

methods, i.e., based on the availability of customers with at least two years of experience.

3.3. Sampling Strategy and Sample Size Determination

Sample size determination to assess the knowledge, attitude and practice (KAP) of respondents was done using the following formula;

$$n= \quad N/N\text{-}1\ (e)^{2}$$

Where n= required sample size

N= population, 99,928

e= absolute precision, 0.05

Accordingly, the minimum sample size for the study was determined to be 400 respondents.

3.4. Data Collection Procedure

Semi-structured questionnaire was prepared to assess perception and preference towards processed poultry meat from the respondents. Simple random sampling method was used to gather the data from the respondents. And also, purposive sampling method was used to collect the data from food service providers (supermarkets, hotel and restaurants, and fast-food stores).

3.5. Perception and Preference

The study relied on primary data sources. Primary data was collected by using semi-structured questionnaire (Appendix II). Data was collected from respondents found in hotels, restaurants, supermarkets and fast-food stores. Before the start of interviews, the enumerator first explained the purpose of the study and when the respondent agreed to be interviewed, and the consent form was signed by the respondent. The randomly selected respondents were interviewed in different days.

3.6. Analysis

After the completion of data collection, data clearing and organizing was done. The data were analyzed descriptively using Microsoft Excel (2018). Data were presented using tables.

CHAPTER FOUR

4. RESULTS AND DISCUSSION

4.1. Demographic Characteristics of the Respondents

Table 1: Sociodemographic characteristics of respondents (n = 400)

Variables	Category	Percentage (%) of the respondents
Age (year)	18-25	30 %
	26-36	53 %
	37-45	13%
	>46	4%
Gender	Male	28%
	Female	72%
Family size (family members)	Single	32%
	Small (2-5)	63%
	Medium (6-8)	5 %
	Primary	11%
Education levels	Secondary	21%
	Diploma	31%
	Undergraduate	33%
	Post graduate	4 %
Occupational status	Student	14%
	Government employee	48%
	Non-government employee	12%
	Self-employee	26%
Income (ETB/ month)	<2000	14%
	2000-5000	33 %
	5001-10000	40%
	>10000	13%

The sociodemographic characteristics of respondents is presented in Table 1. Of the 400 respondents, 28% were males and 72% were females. This might reflect that women were mostly responsible or more active on marketing (i.e., purchasing and selling) and shopping decision for food, particularly processed meat in Bishofitu town. With regard to age groups, majority of respondents (53%) were between the age group of 26-36 years and the second largest (30%) were aged between 18-25 years. This implied that, majority of the respondents were relatively young, and this in turn could indicate that the age group between 18-36 years (particularly 26 -36 age group) were very much involved in the marketing of meat products and potential consumption of processed poultry meat. With regard to family sizes, majority (63%)

had 2-5 family size and the second largest (33%) were single. This could indicate that the family size between 1-5 (particularly 2-5 family size group) had an ability to purchase and consume processed poultry meat products more compared to the other categories. With respect to level of education, majority of the respondents had undergraduate degree and diploma, 33% and 31% respectively. This can imply that when respondents are more educated, they can have better understanding towards quality and safety of the products. Governmental organization played an important role in employing the majority of the respondents (48%) and the second largest (26%) were self – employed. With regard to income, majority of the respondents received between 5001-10000 ETB (40%), and the second largest (33%) earned between 2000 - 5000 ETB. This implied that, the income group 2000-10000 ETB (particularly 5001-10000 ETB income group) could be very much involved in purchasing and consumption of processed poultry meat products.

4.2. Processed Poultry Meat Product types

Table 2: Types of Processed Poultry Meat Products Consumed in the Town

Whole chicken marinated	Chicken stew	Chicken leg marinated
Chicken burger	Chicken hot dog	Chicken shiskebab carnivor
Fried chicken	Chicken shewarma	Chicken ham burger
Chicken mortadella	Chicken meat ball carnivor	Roasted chicken
Chicken shiskebab	Chicken soup	Chicken drumstick roasted
Grilled chicken	Chicken cubes	Chicken nuggets
Chicken boiled fillet	Chicken patties	Chicken hut

Most of the products are produced in Alema and Prima meat processing industry. Whole chicken marinated, chicken shiskebab, chicken cubes, chicken leg marinated, chicken shiskebab carnivor, chicken meat ball carnivor, chicken boiled fillet, chicken mortadella, chicken hot dog and chicken shewarma. Those processed poultry meat products are sold in supermarkets. Among those processed poultry meat products, supermarkets are sold mostly chicken mortadella to the respondents by sliced 100 grams, and kilograms. Whole roasted chicken, fried chicken, chicken patties, chicken stew, chicken hut and chicken nuggets are consumed in hotel and restaurants. Among

those products, fried chicken is mostly consumed in hotel and restaurants. Whereas, grilled chicken, chicken drumstick roasted, chicken burger, chicken ham burger and chicken soup are consumed in fast food stores in the town. Among those products found in fast food stores, chicken burger is mostly consumed by respondents.

Table 3: Knowledge, attitude, practice, perception and preference of processed poultry meat products (n = 400)

Factors				Percentage (%) of respondents	
Knowledge, attitude and practice of respondents					
Consumption patterns	Once	2-3 times	3-4 times	Varies	
	39%	12%	1%	48%	
Place of purchase	Super markets	Hotel and restaurants	Fast food stores		
	67%	24%	9%		
Motivated for the consumption	Price	Taste	Healthiness		
	80%	11%	9%		
Source of information	Shopkeepers/ retailers	Window display	TV	Newspaper	Friends
	45%	25%	13%	7%	10%
Reason for purchase	Availability	Save time for preparation	Taste	Liked by family	
	54%	33%	9%	4%	
Perception and preference of respondents toward processed poultry meat products					
Perceived product quality	Product-oriented quality	Process-oriented quality	Quality control		
	93%	7%	0%		
Perceived expected quality	Very important	Moderatelyimportant	Slightly important	Not important	I do not know
Cost	86%	14%	0%	0%	

Sensory and healthiness	80%	14%	6%	0%	
Process and convenience	10%	2%	56 %	32 %	
Perceived experienced quality	Very important	Moderately important	Slightly important	Not important	
Process and convenience	76%	14%	9%	1%	
Sensory and healthiness	14%	6%	64%	16%	
Preferred sensory quality	Very important	Moderately important	Slightly important	Not important	
Tenderness	74%	26%	0%	0%	
Flavour	54%	44%	2%	0%	
Juiciness	25%	53%	21%	1%	
Color	16%	72%	12%	0%	
Preferred attributes at point of purchase	Very helpful	Moderately helpful	Slightly helpful	Not helpful	I did not know
Price	82%	18%	0%	0%	
Color	74%	21%	5%	0%	
Freshness	72%	23%	5%	0%	
Nutritional labelling	1%	0%	5%	0%	94%
Perception toward processed poultry meat product safety					
Perception of safety prior to purchase	Very concerned	Moderately concerned	Slightly concerned	Not concerned	I do not know
Animal welfare	6%	3%	3%	2%	86%
Antibiotics	1%	5%	0%	0%	94%
Microbes	1%	6%	4%	1%	88%
Perception of safety at point of purchase	Very helpful	Moderately helpful	Slightly helpful	Not helpful	
Freshness	81%	14%	5%	0%	
Color	79%	15%	1%	5%	
Additives	6%	13%	70%	11%	
Tendency to seek information toward product safety	Government organization	Health professional	Retailers	Friends	Media

	12%	73%	8%	2%	5%
Tendency to experiment new products	Strongly agreed	Agreed	Undecided	Disagreed	
Liked to experiment new product	48%	38%	12%	2%	
Needed to buy and consume new products	21%	49%	1%	9%	

4.3. Knowledge, Attitude and Practice of Respondents toward the Products

4.3.1. Consumption patterns of processed poultry meat products

During the survey, all respondents liked to consume processed poultry meat, without restriction of religious. Similar study conducted by Van der Sluis (2001) who found there was no religious or cultural barriers, poultry meat usually led in consumer preference. Contrary, Pettinger *et al.* (2004) and Mullen *et al.* (2000) who found religion influenced consumer attitude and behavior in general, and food purchasing decisions and eating habits in particular. According to most respondents, the consumption of processed poultry meat in the household was increase and changed more in the last five year. The consumption frequency of most respondents found to be, varies (48%) and followed by once a week (39%), and the income level of most respondents was falls between (5001-10000 ETB), this makes to consumed the products frequently. Similarly, price and income are key factors affected meat consumption Liang *et al*. (2014) creating larger differences in consumption levels between people Yanwei *et al. (*2016), increasing in income could lead to increase consumption of the income spent Kazmi (2012), there was a strong positive relationship between the level of income and the consumption of animal proteins (FAO, 2009), Ailawadi *et al*. (2011) consumption of processed meat chicken such as nugget and sausage was more frequent than beef-based products. The educational levels of most respondents were higher. Similar study conducted by Rimal (2005) who found higher education was more likely than those with low education to purchase and consume poultry meat frequently. The sociodemographic characteristics

of respondents were varying. Similar study conducted by Escriba-Perez *et al.* (2017) who found the consumption frequency of different meat products are influenced by socio-demographic factors, age, income, education, and family size has influenced consumers' willingness to pay for underutilized indigenous chicken products in Kenya (Bett *et al;* 2013). The family size of most (63%) respondents were falls between (2-5 size group), followed by (33%) single or one. This indicated that small family size and single person could be an ability to purchase and consume processed poultry meat products frequently.

4.3.2. Place of purchase processed poultry meat products

The current study indicated that 67% of respondents mainly bought processed poultry meat directly from supermarkets being advantage to buy other food and goods at one way saving time and more control on the selection, preparation of the processed poultry meat products, and also to buy fresh processed food. Similar study conducted by Teshome *et al*. (2019) major cities of Ethiopia, consumers are bought process poultry meat from supermarkets, top-rated shops, hotel and restaurants, Goldman and Hino (2004) showed that consumers are often to buy fresh produced products from supermarkets if consumers emphasized the use of those products in their food preparation. Supermarkets are most popular probably because they dominated about 65% of the South African meat market, Maitiniyazi and Canavari (2021), Behrens *et al.* (2010), Cheng *et al*. (2016), Kendall *et al.* (2019), Knight *et al.* (2003) and Wertheim-Heck *et al.* (2019) supermarkets are widely cited as a safe food outlet in several countries. In the present study, the educational levels of the most respondents were indicated that higher being diploma and first degree. Similar study conducted by (Li, 2012) education is influenced where processed meat purchase, and as the level of education increased consumers are more likely to buy meat from a supermarket.

4.3.3. Motivation for the consumption of processed poultry meat products

Majority (80 %) of the respondents responded that, motivated to consume processed poultry meat products was price**.** According to the respondents, the low price of poultry meat products was motivated for the consumption. Similar study by Brenes and Roura (2010) showed that, the consumption of chicken meat continued to

increase the primarily due to lower price as compared to that of beef and pork, Webber *et al.* (2010) consumers might evaluate the role of price in terms of the importance of the food product, which is relative, because it is compared to the importance of other foods, McEachern and Schröder (2001) high price has found to be a barrier to eating processed meat, priority on choosing processed products were price, quality, variety, packaging, and non-seasonal availability (Jabir *et al*.,2010). Most of the respondents in this study were females. Similar study conducted by Solheim and Lawless (1996) females tend to react more to food prices than men, women have been regarding low price in foods as more important than men (Steptoe *et al.,* 1995). From this concluded that, affordability is contributed to make processed poultry meat consume for most respondents in the town.

4.3.4. Sources of information toward processed poultry meat products

The result revealed that, most of the respondents (45%) were an important means of obtaining information from shopkeepers or retailers, followed by window display (26%). Similar study conducted by Tjärnemo and Södahl (2015) food retailers suggested that animal-based foods have been important to attract new and keep loyal customers, Verbeke (2008) showed that information provision could be influence consumers' behavior, Solomon *et al.* (2010), Kotler and Keller (2012) external search were when a consumer seeks additional information from the environment. According to, Solomon *et al.* (2010) who said that information search is the process whereby a consumer assessed its environment for appropriate data to make a reasonable decision. The result showed that, mass media was not an important source of information for the respondents toward processed poultry meat. This means that, mass media advertisements about processed poultry meat were not common in the town -except during special occasions such as Christmas and Easter. So, personal information by shopkeepers or retailers was more common in the town regarding to processed poultry meat products, followed by window display.

4.3.5. Reasons to purchase processed poultry meat products

The current result indicated that, majority of the respondents (54%) the reason to purchase process poultry meat products was availability, followed by (33%) save time for preparation. Respondents suggest that availability was one of the main important attributes that influence the purchasing of processed poultry meat products. Similar study conducted by Akinwumi *et al.* (2011) who stated that chicken meat was the most convenient to availability, most affordable, tastiest, availability is one reason that could explain, for instance, the lack of access to markets and market information that had a negative influence on consumers' purchase behavior toward food products (Zundel and Kilcher 2007). Contrary study conducted by Kiran *et al.* (2018) found in India Bengaluru city about (66.9%) correspondents were unaware of processed meat (processed poultry meat) available in market. The consumption of processed poultry meat was increase in the last five years in the town, one of the reasons indicated that, due to easily availability of processed poultry meat products in the market. This suggested that further efforts to enhance the relative availability of processed poultry meat compared to other meat products would lead to increase consumption.

4.4. Factor that Affects Perception and Preference of the Respondents

4.4.1. Processed poultry meat products quality

The current study revealed that, most respondents (93%) perceived the product quality, based on product-oriented quality, but none of the respondents were responded quality control. Similar study was conducted by Kotler and Keller (2012) who stated that product quality is a characteristic of a product or service capable of bearing promises to satisfy customer needs. According to Luning *et al.* (2002) quality represented the features or properties of a product that result in satisfied the consumers' physiological or psychological needs. Dransfield (2005) also reported appearance is normally used by consumers in quality judgements on processed meat. According to Grunert *et al.* (2004) color, and fat structure and levels have been observed as influential parameters in calculating quality expectations. Food quality is a quality characteristic of food that has been acceptable to consumers, such as size, shape, color, consistency, texture, and taste (Potter and Hotchkiss 2012). Henchion *et*

al. (2014) suggested that quality would become a significant factor in consumer's food choices, while income and price factors are likely to decline over time. Earlier study reported that quality is a subjective matter as it based on measures of perception (Steenkamp, 1990).

4.4.2. Perception toward processed poultry meat products expected quality

4.4.2. 1. Cost

Food cost is simply how much consumers pay for the ingredient or product that consumers purchase. The result revealed that, majority of the respondents (86%), expected perceive cost of the products was very important to motivate for purchasing. Similarly, in West Africa, poultry consumption is stimulated by the availability of low-cost alternatives for consumers, Hollinger and Staatz (2015), Haley (2001) and Resurreccion (2004) and Michel *et al.* (2011) who found lower cost of poultry meat has been more preferable by the consumers. So, respondents were buying poultry meat products by considering the cost. This means that, respondents expected the ingredients, further cooking time, labor before purchase processed poultry meat. Contrary study conducted by Gruber and Kőszegi (2001), Wang and Sloan (2018) who found that health effects could lead consumers to ignore costs and benefits of their decisions. Similar to this, most of respondents in the present study perceived that process and convenience were slightly important before purchase of processed poultry meat products.

4.4.2. 2. Sensory and healthiness

Most of respondent (80%) responded that expected intrinsic quality (sensory and healthiness) was very important that motivate for purchasing processed poultry meat products. Sensory of the products were most important to the respondents before purchase. This is helped to the respondents to observe the texture (firmness and coarseness) shape, colors, fat contents and freshness of food products. Similar study was conducted by Chambers-IV (2019) who found that food sensory properties remain one of the most important reasons why consumers selected one food or

another, Meiselman *et al.* (2022) found intrinsic sources are the physical part of the food product that can be assessed before consumption such as sensory properties. Most of the respondents perceived healthiness of processed poultry meat products as a quality cue. Similar study conducted by Badar *et al.* (2021) stated that consumers are highly demanded regarding the health benefits of food products. Shan *et al*. (2017) and Tobin *et al.* (2014) reported consumers concern about the health characteristics of processed meats has been increased in recent years. Brunsø *et al.* (2002) stated that a consumer health might imply two main dimensions: the first one concerned nutritional aspect, and the second is related to food safety and risk related issues. Majority of the respondents in the present study were females. Similar study conducted by Kubberød *et al.* (2002), Fagerli and Wandel (1999), Lea and Worsley (2001) who showed that women have been positive view towards chicken meat products due to healthiness. Gender is influenced the healthiness of food products when purchased (Kapoor and Munjal, 2019).

4.4.3. Perception toward processed poultry meat products experienced quality

4.4.3.1. Process and convenience

Convenience is one of the factors attracted to shop from the hypermarket and supermarket. In this study majority of the respondents (76%), responded experienced extrinsic quality (process and convenience) were very important after purchasing and consumption of processed poultry meat products. Similar study conducted by Just and Gabrielyan (2016) stated that convenient food was, the more likely its consumption. Grunert (2006) reported consumers demanded for convenience and good tasting food has been ensure that processed meat remains a dietary staple. Akinwumi *et al.* (2011) showed that better customary of living and changing of life styles had led to the swing towards more convenience in received meat for food preparation. As Webber *et al.* (2010) convenience was important, in food shopping. Kennedy *et al. (*2004) and Ripoll *et al*. (2015) indicated that processing of chicken would be relevant for consumers who attached importance to convenience and hence, time-saving and ease of preparation. A study conducted by Worku *et al.* (2017) stated that there was increasing willingness-to-pay for convenience foods.Candel's (2001) stated that

convenience foods were not only be time saving but also energy saving. Prevalent negative attitude toward convenience products was slowly diminishing, even in traditional foods such as meat and meat products (Vanhonacker, Kühne, *et al.,* 2013). This means that, if the respondents decided to purchase, there would be a post-choice evaluation of the purchase decision. The outcome of this evaluation was one of satisfaction or dissatisfaction, which might provide inputs for future purchase decisions. Similarly, study conducted by Kotler and Keller (2012) indicated that consumer purchasing behavior is characterized by a decision process that included post-purchase evaluation, such as, processes and convenience. Similar to this, most of the respondents in the current study perceived that sensory and healthiness were slightly important after purchase of processed poultry meat products.

4.4. 4. Preferred sensory quality

4.4.4.1. Tenderness

Tenderness is the most important palatability attribute in determining consumer satisfaction and become the most researched poultry meat quality attribute contributing to overall eating satisfaction. Majority of respondents (74%) responded that, tenderness was the first most important choice during consumption of one processed poultry meat over another. This is in line with previous studies by Deatherage (1963), Smith and Fletcher (1988), Morgan *et al.* (1991) who found that tenderness was a major quality determinant and also an important sensory characteristic of meat. According to Henry (1997) tenderness play an important role in consumer preferences, determined their ultimate satisfaction for whole cooked meat, and it is a major factor affecting the consumers' assessment of meat quality.Weston *et al.* (2002) reported that chicken meat tenderness strongly influenced the preference of consumers Devatkal *et al.* (2019) also reported that tenderness was considered as a great importance in the quality of cooked meat.Most respondents in the present study responded that, the overall acceptability of tenderness was affected by the contents of fat in the meat and cooking methods.

Similarly, cooking methods affected quality characteristics of meat like as tenderness (Lee *et al.*, 2014).

4.4.4.2. Flavor

Even though tenderness is commonly known as the most important factor in determining consumer satisfaction some studies show flavor rated more highly correlated with consumers overall liking**.** Flavour was the second most important sensory quality choice during consumption of processed poultry meat over another meat type. Majority (54%) of the respondents responded that, flavor was very important during consumption of processed poultry meat products over another, followed by (44%) moderately important. Similar study conducted by Mohan *et al*. (2022) found that flavour was an important eating quality parameter after meat tenderness. Drewnowski (1997) also reported that taste preferences are shaped by prior experience and associated learning, exposure to a food item thought to be strong factors in determining taste preferences (Garland and Carthy, 2010). The work of Shahidi (1989) and Sitz *et al*. (2005) showed that taste and aroma were involved in consumers' meat-purchasing behavior and preferences even before the meat was eaten. In contrary a study conducted by Damaziak *et al.* (2019) stated that in chicken meat taste showed the greatest influence on the overall liking, followed by tenderness while the effects of aroma and colour have been less significant. For example, when cooked on the grill, chicken meat possessed a highly flavored exterior with moist interior. When roasted, the meat has been a rich, roasted aroma (Dawson and Spineli, 2007). This sowed that the difference of flavour existed with in processed or cooked poultry meat products. According to the respondents, flavor of poultry meat products affected by the level of fat contained, cooking methods and kinds of additives used.

4.4.4. 3. Juiciness

When considered the juiciness, (25%) responded that juiciness was most important when consume one processed poultry meat products over another, followed by (53%) moderately important. Similar study conducted by Winger (1994) who found that juiciness was one of the most important quality attributes during consumption. Most

respondents perceived that, the overall juiciness can be affected by the addition of water and cooking method. A similar result obtained by Aberle *et al.* (2001) stated that the overall juiciness can be affected by the addition of water, salts and phosphates as well as the effects of cooking method. This means that processed poultry meat products juiciness was preferred by respondents next to tenderness and flavour.

4.4.4.4. Color

Processed poultry meat color was the fourth most important sensory quality choice by respondents. The present result showed that, 73% 16% of the respondents stated that colour was moderately important during consumption of one processed poultry meat over another, followed by 16% of the respondents stated colour was most important . Inline to the present study, Joo *et al*. (2013) indicated that colour is one of the most important quality attribute of cooked poultry meat because consumers associated the product's with freshness, and decided whether or not to consume the product based on their opinion of attractiveness. Respondents perceived that, color was one of the most important, since increasing the appetite, but it is less preferred with respect to tenderness, flavor and juiciness. Similarly, Damaziak *et al.* (2019) who found the overall liking of processed poultry meat color is less significant. This gives emphasis the importance of color up on consumer choice of processed poultry meat.

4.4.5. Preferred attributes for the decision making at point of purchase

4.4.5.1. Price on purchasing decision

There are many factors that influence consumers in their purchasing decision-making process. The main factors that may influence the choice of point of sale when shopping and consumption for meat and meat products are certainly price. Price is the primary factor in food product selection in underdeveloped countries. Majority (82%) of respondents seem to be price-conscious as price tends to be the primary decision factors used to make a purchasing decision, even though respondents were getting different income. Furthermore, within processed poultry meat products, respondents preferred the affordable one. Similar study conducted by Clark *et al*. (2017) and

Escobedo del Bosque *et al.* (2021) indicated that price was certainly among the most important attributes when make buying decisions for meat.Bello Acebrón and Calvo Dopico (2000) indicated that price is an important extrinsic quality cue related with consumers' purchasing decisions. Additionally, Davidson *et al.* (2003) showed that price is the extrinsic attribute considered most important in related to meat products, and is often considered highly important Lagerkvist (2013). In contrary to the present study Muzayyanha *et al.* (2022) stated that when purchasing processed meat products, consumers no longer considered price as their purchasing decision. A study by McCarthy *et al.* (2004) reported that for many European consumers, the impact of price has reduced significantly. The age and gender of the present study had influenced consumers' willingness to pay. Similar study conducted by Udomkun *et al.* (2018) indicated that gender and age were key drivers of consumer's preference and willingness to pay for meat products in the Democratic Republic of Congo. The current result indicated that, most of the respondents were mainly bought processed poultry meat products from supermarkets. Similar study conducted by Trappey and Lai (1997) who mentioned that offering lower prices was one of the reasons for consumers to shop at supermarkets. Farhangmehr *et al.* (2000) stated that the prices imposed in the traditional markets are higher which motivated the consumers to buy goods from supermarkets. However, as there were many respondents who usually prefer low prices and, for respondents, the price was a major factor for their purchase decisions. So, lower price was attracted more the respondents.

4.4.5.2. Color on purchasing decision

This study showed that, color of processed poultry meat was the second most helpful factors at the point of purchase. Majority (74%) of the respondents responded that color was very helpful at point of purchase processed poultry meat products. Similar study showed that processed poultry meat color is one of the decisive sensory characteristic that influenced a consumer's purchase decision in the market the origins of human color preference for food in which concluded that people tended to prefer fresher that which are associated with high chroma (Lee *et al.,* 2013). Foroni *et al*. (2016) also found that humans used food color to determine food quality. Color

the most important factors influenced the purchase of processed chicken meat (Kennedy *et al.*, 2004). Color of processed chicken meat greatly influences choices of consumers (Fletcher 2002) De Almeida *et al.* (2017) also stated that color played an important role for consumers in their selection of processed meat products. Even though, color was the second choice by respondents, contrary study was conducted by Grunert (1997), Altmann *et al.* (2022) and Lusk *et al*. (2018) who showed that the final decision to purchase an animal product is heavily influenced by visual perception, particularly product color. The age group of the most respondents were varying from (26-36 years). Similar study conducted by Pathare *et al.* (2013) who found that every food product has been an acceptable color range that depends on a wide variety of factors, including variability of age at the time of judgment.

4.4.5.3. Freshness and purchasing decision

According to the respondents, processed poultry meat product freshens was the third most helpful factors at point of purchase. Processed poultry meat or food freshness is an indicator of healthiness of the products. The result revealed that, majority of the respondents (72%) responded, freshness was very important to purchase processed poultry meat. Similar study conducted by Munoz (1998), Verbeke and Viane (1999) stated that one of the most influential variables on the consumers' decision to purchase meat product is freshness. Kennedy *et.al* (2004) also mentioned that there should be utilization to judge freshness, product appearance, which comprised the color and physical form of the meat products. Most respondents did not know about the labelling of the products. This means that, respondents did not use best-before date of processed meat products in order to know the freshness of the products at point of purchase. In contrary, a study conducted by Samotyja and Sielicka (2020) stated that consumers often associated freshness of food products with the best-before date. Therefore, price, color and freshness were the first, second and third most important preferred factors at point of purchase of processed poultry meat products.

4.4.5.4. Nutritional labeling on purchasing decision

The current finding showed that, most respondents (94%) responded that, they did not know about nutritional labeling at point of purchase processed poultry meat products.

This means that, there was no nutritional labeling in local processed poultry meat products. In contrary to the present study, a study conducted by Drichoutis *et al.* (2006) indicated that the use of nutritional label affected the purchasing behavior mainly because the consumers want to avoid the adverse nutrients in food products. Baltas (2001) stated that nutritional label is intended to informed customer the available choices and stimulated the consumption and production of healthy product. Nutritional labeling affected the consumers' purchasing behavior significantly because some evidences revealed that the provision of nutrition information might allow consumers to switch consumption away from 'unhealthy' products in those food categories toward 'healthy' products more easily (Zarkin and Anderson, 1992). Scott and Worsley (1997), Higginson *et al.* (2002) stated that the consumers only glanced at the nutrition information and did not process the information further at the point of purchase. The current survey result showed that most of the respondents were females, but they did not know about nutritional labeling. In contrary to the present study, a study conducted by Rimal and Fletcher (2003) reported that the use of nutritional label influenced the customer especially females in choosing healthier meat such as chicken as compared to beef. The educational level of most the respondents was higher education, but were unaware toward nutritional labeling at point of purchase. In contrary, a study conducted by Cowburn and Stockley (2005) stated that respondents with lower education level likely has difficulties in understanding nutritional labeling. In other word, this author said that higher level of education made the consumers to understand the nutritional labeling easily.

4.4.6. Perception toward processed poultry meat product safety prior to purchase

4.4.6.1. Animal welfare

There is a growing concern by consumers with regard to how meat produced especially in related to animal welfare and organic or natural production. Consumers demand that animals are reared, transported and slaughtered under humane conditions. In the current study, most (86%) respondents did not know toward animal welfare prior to purchase of processed poultry meat products. Similar study was conducted by Kiran *et al.* (2018) who found animal welfare activities like

transportation, stunning, on farm handling had any influence on meat purchasing decision of consumers or animal welfare was not a matter of concern in Bengaluru city India. A contrary study was conducted by Salamano *et al. (*2013) who stated that in developed countries, consumers are requested not only for safe and quality foods, but also for a certification that animals have been bred and slaughtered ethically. A study by Pouta *et al.* (2010) indicated that for many European consumers, the impact of animal welfare factor has been become more critical. According to Clark *et al.* (2016) there was a little awareness by the consumers regarding to animal welfare in developing countries. Such as in Brazil, Kjørstad (2005) there were considerable variability between different parts of the world regarding to animal welfare. Bonamigo (2012) and Akaichi *et.al* (2016) showed that many consumers did not purchase the products from animals kept in better welfare because of the high price. Davidson *et al.* (2003) also found that animal welfare as a meat choice criterion ranked behind appearance and price. In the present study, the gender, educational levels and age of respondents were varying, but most of respondents were unaware (did not know) toward animal welfare. This was in contrary to the study conducted by Est´evez-Moreno *et al.* (2021) who stated that, the importance of animal welfare for consumers' perception of meat and meat products are varied according to gender, rural or urban origin, educational level, and age. From the present study most of the respondents was females, but were unaware about animal welfare. Contrary study was conducted by Blanc *et al.* (2020) who found animal welfare certification was more important for female Italian consumers than men.

4.4.6.2. Antibiotics

Antibiotics are sometimes used to ensure livestock and poultry health. Media stories sometimes say "antibiotics in meat" or "antibiotics in meat production." Antibiotics is not used to produce meat. Although there is no evidence that antibiotics in food harm people directly, most people agree that overused of antibiotics in food produced animals are a problem, and contributed to the development and spread of drug resistant-bacteria, which is a potential risk to public health. The present result revealed that, most (94%), respondents did not know about antibiotics prior to

purchase the products. This implied that, respondents were unaware regarding to antibiotics during the production of poultry and processing of the meat, as well as the hazard of excess use of antibiotic in the meat. Contrary study was conducted by Bernard *et al.* (2005), Yang *et al.* (2009) and Busch *et al.* (2020) who indicated the use of antibiotics in animal production is negatively perceived by consumers due to their association with antibiotic resistances and residuals causing health problems in humans. Holmes *et.al* (2016) reported that causes of the emergence of antibiotic resistance are the widespread use of antibiotics in livestock. A study by Hoelzer *et.al* (2018) mentioned that in commercial chickens, vaccination coupled with the use of biosecurity measured might significantly reduce antibiotic use without compromising levels of production. Despite, the educational levels of most of the respondents were higher, most of the respondents were unaware toward antibiotics during production, processing, and also purchasing of processed poultry meat products.

4.4.6.3. Microbes

Majority of the respondents (80%) responded that, as they did not trace back public health importance of food born microorganisms toward processed poultry meat prior to purchase, due to lack of awareness. These implied, most of the respondents were unaware about the risks of contamination of food born bacteria of processed poultry meat products. Similar study was conducted by Katiyo *et al.* (2019) in South African, there were potential for foodborne illnesses due to mishandling of chicken meat and lack of knowledge about factors affecting the safety of chicken meat by many consumers. In contrary to the present study, a study conducted by Cerveny *et al*. (2009) stated that composition of micro flora in meat depends on various factors: pre-slaughter husbandry practices, age of the animal at the time of slaughtering, handling during slaughtering, evisceration and processing, temperature controls during slaughtering, processing and distribution, preservation methods, type of packaging and handling and storage by consumers. Mead (1989) and Waldroup (1996) further mentioned that live poultry is carried many different kinds of microorganisms on the skin, among the feathers and in the alimentary tract, and any of these organisms might ultimately become contaminants of processed products. According to Donelan *et*

al.(2016) in developed countries, it has been concluded that consumers play an essential, active role in the safety of poultry products representing the final step for the prevention of foodborne illnesses.

4.4.7. Perception toward product safety at point of purchase

4.4.7.1. Freshness on product safety

Food safety is a global issue that requires an integrated global response. Food chain approve is a complex process of farming where poultry production, transportation, slaughtering, packaging, sold and consumed products. According to the respondents, food freshness was the first helpful attributes when assess the safety of food products. The present study indicated that, majority of respondents (81%) perceived that, freshness was very helpful when they assess the safety of processed poultry meat products. Similar study conducted by Van Rijswijk *et al.* (2008) stated that freshness of meat and processed meat products were a crucial cue for consumers regarding the safety andmost consumers could only judge meat safety from color and appearance of freshness. (Li, 2012), Lee *et al*. (2013) reported that humans used the skill of visual perception to evaluate freshness to avoid non-contaminated foods. Chicken meat freshness was the most important indicator of safety (Becker *et al.*, 2000). Respondents of the present study also perceived that, processed poultry meat found in supermarkets were low price and fresh. In contrary to the current study, a study conducted by Wertheim-Heck *et al*. (2019) mentioned that safe foods offered in the supermarkets are also perceived as more expensive and less fresh. In this study respondents judge freshness of the product, simply by observing the physical appearance of the processed poultry meat products.

4.4.7.2. Color on product safety

According to the respondents, color of processed poultry meat or food products was the second most helpful attributes to assess the safety of products. Around (79%) respondents responded that color was very helpful to assess safety of processed poultry meat products. Similar study conducted by Mancini (2009) and Owusu-Sekyere *et al.* (2014) stated that consumers normally used color to indicate wholesomeness or contamination of processed meat products. Reshma and Santosh

(2020) also mentioned that consumers always linked food color with other qualities such as ripeness, freshness, and food safety.

4.4.7.3. Additive on product safety

Most processed poultry meat products produced by domestic processors are sold without labeling (ingredient composition). Most (70%) of respondents had a little knowledge and also they lack confidence about the contents of the additives added in the processed poultry meat products. In addition to this, local meat processors had not quality and safety certification from the concerned body. This means that additive added in locally processed poultry meat products did not fulfill the required World Health Organization standards and there was no nutritional labelling on the products. In contrary to the present study, WHO (2018) stated that consumers everywhere would be confident about the foods they consume meet the agreed standards for quality and safety, no matter where they were produced. The World Health Organization also stated that substances which are added to foods to improve or maintain the taste, texture, appearance, safety, or freshness of foods were known as food additives (WHO, 2018). Food additives are the substances that might be indirectly introduced to foods (known as indirect additives) during the manufacturing process, by packaging, during transport or storage (FDA, 2017; FDA, 2018). The educational level of most respondents was higher, but majority of the respondents gave less attention to the additives added in the processed poultry meat products. In contrary to the present results, a study conducted by Di Vita *et al.* (2019) stated that people are with a high level of education and paid more attention to the additive content of the processed meat. Therefore, freshens and color were the first and second most helpful factors in assessing the safety of the products, but additives was slightly helpful due to lack of awareness of the respondents.

4.4.8. Tendency to seek information toward processed poultry meat safety

Interestingly, most respondents (73%) the tendency to seek information from health professionals was high among respondents toward processed poultry meat product safety. Similar study conducted by Liu (2014) mentioned that doctors or health professionals are the most trusted sources of information for several possible food

related hazards: additives, residues and nutritionally imbalanced food. According to Athearn *et al.* (2010) and Hoffman *et al.* (2005) consumers in Europe and the United States stated that healthcare professionals are a preferred source for food safety information. In contrary to the present study, a study conducted by Kiran *et al.* (2018) reported that consumers were paid a close attention to meat safety based on information obtained from television, newspapers and the internet in Bengaluru city of India.

4.4.9. Tendency to experiment and consume new processed meat products

More respondents were strongly agreed (48%) and (38%) agreed for experimenting new processed poultry meat products. In contrary a study conducted by Kiran *et al.* (2018) found that subjective norms were key factors in understanding Indian consumers' new food purchase decisions regardless of their level of innovation. Subjective norms found to have direct effects on attitudes, intention to buy, and purchase behavior for new processed food products (Choo *et al.*, 2004). The educational level of most respondents in the present study was higher (Diploma and Undergraduate Degree). Similarly, Chen *et al.* (2013) showed that consumer willingness to purchase and consumption also increased with level of education.Educational level has positively linked to consumers' willingness to adopted new products (Huotilainen *et al.*, 2006). In addition to this, majority (49%) of the respondents in the current study were agreed to buy and consume a new processed meat product, but did not have a tendency to cook at home, followed by (21%) strongly agreed, and (21%) undecided. Majority of respondents (53%) were between the age group of (26-36) and were relatively young. Similar study conducted by Caraher *et al*. (1999), Furey (2000) and Mitchell (1999) found that consumers, particularly younger consumers were lack cooking skills.

4.5. Processed Poultry Meat Marketing

The results presented in (Table 4) revealed that, most (80%) of food service providers (Supermarket, hotel/restaurant and fast-food store) business in the town were managed by managers. This means that, food service providers have led by higher educated or qualified person, this makes to attract the customer, and enabled the business more profitable. Around, (93 %) respondents were buying processed poultry meat from local suppliers or processors. This implied that, processors found in the town were substitutes the imported, and easily accessed fresh processed poultry meat products to the customers. In addition, (93%) customers were local consumers. This showed that the presence of an aware customers toward the benefits of processed poultry meat products in the town. Food service providers perceived that, (80%) consumers were earned middle income. This showed that middle income customers could be an ability to buy and consume higher quantity and frequently.

Another interesting finding of the present study was majority (87%) of processed poultry meat service providers were ordered and pick up processed poultry meat from suppliers in the morning by their own truck without chiller. This showed that, there were quality losses and the products was expose to spoilage and bacterial growth when transported or processors found in Bishofitu town did not provide delivery service to the customers in order to arrive the products in reliable time. Around, (74%) food service providers were stored new poultry meat products weekly, and (87%) food service providers were brought and sold to the customer more than 25kg per/week. This showed that, the demand of processed poultry meat product would be higher in the town. According to food service providers, (87%) responded that, the price was predetermined by their own business. This implied that, respondents did not have a chance to negotiate the price when consuming the products. All domestic produced processed poultry meat products were packaged by processors. This implied that, most processed poultry meat was packaged by unstandardized packaging materials, and customers did not know the uses, nutritional information and quality of food packaging materials in detailed. The whole food service providers were stored poultry meat in refrigerator. This showed that food service providers were aware

about the use of meat storage. Surprisingly (80%) of food service providers in the town responded that fasting seasons were slightly affected to sold processed poultry meat to the customers, because there were an increasing number of people of other religious background and faiths who also consumed processed poultry meat products during these fasting periods. This implied that during fating seasons, there were a trend of consumption processed poultry meat in Bishofitu town. According to the respondents, in the last five years, processed poultry meat customers were increased. This showed that, the rising of consumer demand, and has been good marketing opportunity toward processed poultry meat products in Bishofitu town.

Table 4: Practice of processed poultry meat marketing in the town

Factors		n=30	Percentage (%)
Position of food service providers	Managers		80%
	Sells person		20%
Processed poultry meat suppliers	Local meat processors		93%
	Local and imported		7%
Method of service to obtained meat products	Delivery		13%
	Pick up		87%
Frequency of new meat product stored	Daily		0%
	Bi-weekly		13%
	Weekly		74%
	Whenever needed		13%
Time of new meat product arrived	Morning		67%
	Afternoon		33%
Processed poultry meat purchased per week	15-25kg		13%
	>25kg		87%
Processed poultry meat sold per week	15-25kg		13%
	>25kg		87%
Price determination of meat product	Per kg		13%
	Predetermined		88%
Meat packaging providers	Processors		100%
	own business		0%
Equipment used to store the meat	Refrigerator		100%
	Freezer		0%
	Cooler		0%
Customers of food service providers	Local		93%

	consumer	
	Local and Foreigners	7 %
Income level of local customers	Low income	13%
	Middle income	80%
	Higher income	7%
Influence of fasting seasons for the consumption	Slightly affected	80%
	Not affected	20%
Trends of customers for the consumption of processed poultry meat in the last five years	Increased	100%
	Decreased	0%

CHAPTER FIVE

5. CONCLUSION AND RECOMMENDATION

5.1. Conclusion

The study showed that women were mostly responsible or more active on marketing (i.e., purchasing and selling) and shopping decision for food, particularly processed poultry meat products in Bishofitu town. The age group of most respondents were relatively young. Majority of the respondents were higher educated, and earned middle income. Chicken mortadella, fried chicken and chicken burger were mostly sold and consumed products from supermarkets, hotel and restaurants and fast-food stores in the town, respectively. Most of the respondents were obtained information from shopkeepers or retailers toward processed poultry meat products, followed by window display. Mass media was not an important source of information regarding to processed poultry meat. Availability of processed poultry meat in the market was makes the respondents to purchase the products easily, followed by save time for preparation. Supermarkets was the most preferred purchasing place of processed poultry meat products. Price was the most important for the purchasing and consumption of processed poultry meat products. Most of the respondents did not aware toward nutritional labelling at point of purchase of the products. Majority of respondents perceived the quality of the processed poultry meat products, based on product- orientated quality. None of respondents aware toward quality control of the products. Cost, sensory and healthiness of the products were perceived as most expected (before purchase), respectively. Process and convenience of the products were perceived as most experienced quality (post food evaluation). Processed poultry meat tenderness was the most important preferred sensory quality by the respondents, followed by flavour. Most of the respondents were unaware concerned with animal welfare, antibiotics and microorganisms when buying the products. Processed food or poultry meat products freshness was most important attribute when assessed the

safety of the products, followed by color. There was higher marketing demand of processed poultry meat products in Bishoftu the town.

5.2. Recommendation

On the basis of the above conclusions, the following recommendations are suggested to be considered in the future intervention strategies which are aimed at promoting of processed poultry meat:

- In order to increasing the consumption of processed poultry meat products, promotion of processed poultry meat by mass media together with human nutritionist or health professional should be very critical, since, mass media address a million of people.
- Education and training toward, convenience, method of preparation, affordability, nutrient contents, digestibility, sensory quality, safety, healthiness, and the whole benefits of processed poultry meat products should be needed.
- Awareness creation of young people in other town and big cities should be very important, simply, in order to get them cheap protein and to make more productive.
- Currently, the migration of people from rural area to big town and cities are increasing, and income, life style will be changed. The finding of this study indicated that, there were higher demand of processed poultry meat products. To address the demand of processed poultry meat to the people, expansion of fast-food store in the town, other big cities and towns should be very important.
- Capacitating of processors should be needed, in order to improve the production quantity, quality and safety of processed poultry meat products.
- The result showed that, respondents were need experimenting new processed poultry meat products. So, food service providers, like, poultry meat processors, supermarkets, hotels and fast-food stores should be preparing diversified products to satisfy consumers demands, and increasing their profitability.

- Processed poultry meat should be transport with the appropriate transportation trucks from processors to supermarkets, hotels and fast-food stores in order to minimize microbial contamination, and meat quality losses.
- Processors should be providing service delivery to the customers in order to maintain the quality and safety of the products, and also to arrive the products appropriate time.
- Quality control system, like HACCP, GMP, GHP, Quality and Food safety management systems/ certification, and processed poultry meat standard should be needed from the concerning body to provide quality, safe and healthier food/ processed poultry meat products to the consumers.
- Domestic processors should be added additives based on World Health Organization standard.
- Nutritional labeling of food products is very important to get consumers information about the products. So, the domestic poultry meat processors should be labeled nutritional composition on the products. This helps consumers in order to purchase and consume safe processed poultry meat products.
- Further research should be needed, in other big cities and town, to investigate, consumer demand, understanding, attitude, expectation and eating qualities toward processed poultry meat.

CHAPTER SIX

6. REFERENCES

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7: APPENDICES

Appendix I :Summary of variables, their definitions and measurements

Dependent variables Processed poultry meat consumers		
Independent Variables	Definitions of variables	Unit of measurements
Age	Age of the consumers	Years
Gender	Gender of the consumers	1. Male 2. Female
Family size	Family size of the consumers	Number
Educational levels	Educational level of the consumers	Grade attended
Occupation	Occupation of the consumers	Employment status
Income	Income levels of the consumers	ETB

Appendix II: The questionnaire used for the survey

Consumer Perception and Preference toward Processed Poultry Meat Sold and Consumed in Bishofitu Town, Oromia, Region, Ethiopia.

MSc Thesis Research

Survey Questionnaire

DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS

1. Age of the respondents

A. 18-25 B. 26-36 C. 37-45 D. >46

2. Gender

A**.** Male B. Female

3. Family size

A. Single B**.** Small (2-5 C. Medium (6-8) D. Large (>9)

4. Education level of respondents

A**.** Illiterate B. Primary (Grade 1-8) C. Secondary (Grade 9-12) D. Diploma

E. Undergraduate degree (BSc) F. Postgraduate degree (MSc, PhD)

5. Occupation

A. Student B. Government employee C. None-government employee D. self employed

6. Income/month (Gross, ETB)

A**.** <2000 C. 5001-10,000

B. 2000-5000 D. >10,000

CONSUMERS' PERCEPTIONS AND PREFERENCES

1. What types of processed poultry meat products are you familiar with/ do you know? Name the products. ----------

2. Do you like consuming processed poultry meat products?

A. Yes B. No

3. Which, if any, of the available processed poultry meat products do you eat now a day?

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4. On average, how often is processed poultry meat consumed in your household each week?

A. Once B. 2-3 times C. 4-6 times D. daily E. It varies

5. Has the amount of processed poultry meat consumed in your household changed or not in the last five years that is since 2008?

A. Changed B. Not changed C. Don't know

5.1. If changed, to what direction?

A. Less B. More C. Don't know

6. Where do you mainly buy/consume processed meat products?

A. Supermarket B Fast food stores C. Restaurant / hotel D. Bucher shop/abattoir

7. On what occasions, do you often consume the processed meat?

A. Feeling Hungry B. Parties/ Celebration C. To save time D. Without any reason

8. What induces you to eat processed poultry meat?

A. Price B. Quality C. Taste D. Healthiness

9. Source of information for awareness

A. Television B. Radio C. Newspaper D. Magazine E. Window display

F. Shopkeepers/ Retailers

10. Reasons for purchasing processed poultry meat

A. Easily available B. Taste C. Liked by family members D. Influenced by others

E. Convenient for use F. Save time for preparation

11. Reasons for not purchasing processed poultry meat

A. Lack of awareness of products available in the market. B. Dislike the product

C. High Price D. Religious E. Not available in the shops F. Health conscious

12. How do you, as a consumer or seller, perceive the quality of processed poultry meat?

A. Product-oriented quality B. Process-oriented quality C. Quality control

13. How important or unimportant are each of the following quality expectations (i.e. before purchase) influence your perception/intention/motivation to purchase/consume/sell processed poultry meat products?

13.1. Perceived cost

A. Very important

B. Moderately important

C. Slightly important

D. Not important

13.2. Perceived extrinsic quality (process, convenience)

A. Very important

B. Moderately important

C. Slightly important

D. Not important

13.3. Perceived intrinsic quality (sensory, health/nutrition)

A. Very important

B. Moderately important

C. Slightly important

D. Not important

14. How important or unimportant are each of the following quality experience (i.e. after purchase) influence your perception/intention/motivation to purchase/consume/sell processed poultry meat products?

14.1. Experienced extrinsic quality (process, convenience)

A. Very important

B. Moderately important

C. Slightly important

D. Not important

14.2. Experienced intrinsic quality (sensory, health/nutrition)

A. Very important

B. Moderately important

C. Slightly important

D. Not important

15. How important or unimportant are each of the following attributes for preferring one product over another during consumption?

15.1. Tenderness

A. Very important B. Moderately important

C. Slightly important D. Not important

15.2. Juiciness

A. Very important B. Moderately important

C. Slightly important D. Not important

15.3. Flavour (taste, smell)

A. Very important B. Moderately important

C. Slightly important D. Not important

15.4. Colour/appearance/attractiveness

A. Very important B. Moderately important

C. Slightly important D. Not important

15.5. Leanness/marbling

A. Very important B. Moderately important

C. Slightly important D. Not important

15.6. Texture

A. Very important B. Moderately important

C. Slightly important D. Not important

16. How helpful or otherwise are each of the following attributes for preferring one product over another while purchasing?

16.1. Price

A. Very helpful B. Moderately helpful

C. Slightly helpful D. Not helpful F. Don't know

16.2. Place of purchase (supermarket, fast food store, hotel, restaurant, and processor).

A. Very helpful B. Moderately helpful

C. Slightly helpful D. Not helpful F. Don't know

16.3. Promotion

A. Very helpful B. Moderately helpful

C. Slightly helpful D. Not helpful F. Don't know

16.4. Brand

A. Very helpful B. Moderately helpful

C. Slightly helpful D. Not helpful F. Don't know

16.5. Certificate/award

A. Very helpful B. Moderately helpful

C. Slightly helpful D. Not helpful F. Don't know

16.6. Additives/preservatives

A. Very helpful B. Moderately helpful

C. Slightly helpful D. Not helpful F. Don't know

16.7. Nutritional labelling/ingredients

A. Very helpful B. Moderately helpful

C. Slightly helpful D. Not helpful F. Don't know

16.8. Colour/appearance/attractiveness

A. Very helpful B. Moderately helpful

C. Slightly helpful D. Not helpful F. Don't know

16.9. Freshness

A. Very helpful B. Moderately helpful

C. Slightly helpful D. Not helpful F. Don't know

17. How concerned or unconcerned are you about each of the following when buying processed poultry meat products?

17.1. Animal welfare

A. Very concerned B. Moderately concerned C. Slightly concerned D. Not concerned

E. Do not know

17.2. Production systems (Intensive, extensive, organic**)**

A. Very concerned B. Moderately concerned C. Slightly concerned D. Not concerned

E. Do not know

17.3. Hormones

A. Very concerned B. Moderately concerned C. Slightly concerned D. Not concerned

E. Do not know

17.3. Antibiotics

A. Very concerned B. Moderately concerned C. Slightly concerned D. Not concerned

E. Do not know

17.4. Fat/ cholesterol

A. Very concerned B. Moderately concerned C. Slightly concerned D. Not concerned

E. Do not know

17.5. Microbes/ bacteria

A. Very concerned B. Moderately concerned C. Slightly concerned D. Not concerned

E. Do not know

17.6. Storage

A. Very concerned B. Moderately concerned C. Slightly concerned D. Not concerned

E. Do not know

18. How helpful or otherwise are each of the following attributes in assessing the safety of processed poultry meat products?

18.1. Price

A. Very helpful B. Moderately helpful

C. Slightly helpful D. Not helpful F. Don't know

18.2. Place of purchase (supermarket, fast food store, hotel, restaurant, and processor).

A. Very helpful B. Moderately helpful

C. Slightly helpful D. Not helpful F. Don't know

18.3. Promotion

A. Very helpful B. Moderately helpful

C. Slightly helpful D. Not helpful F. Don't know

18.4. Brand

A. Very helpful B. Moderately helpful

C. Slightly helpful D. Not helpful F. Don't know

18.5. Certificate/award

A. Very helpful B. Moderately helpful

C. Slightly helpful D. Not helpful F. Don't know

18.6. Additives/preservatives

A. Very helpful B. Moderately helpful

C. Slightly helpful D. Not helpful F. Don't know

18.7. Nutritional labelling/ingredients

A. Very helpful B. Moderately helpful

C. Slightly helpful D. Not helpful F. Don't know

18.8. Colour/appearance/attractiveness

A. Very helpful B. Moderately helpful

C. Slightly helpful D. Not helpful F. Don't know

18.9. Freshness

A. Very helpful B. Moderately helpful

C. Slightly helpful D. Not helpful F. Don't know

19. When looking for information on the safety of processed poultry meat who or what do you most trust?

A. Government/GO

B. NGOs

C. Retailers / Food service providers

D. Friends / colleagues

E. Family member

20. Please tell us how much you agree or disagree with the following statements.

20.1. I like experimenting with new processed meat products

A. Strongly agree B. Agree C. Undecided D. Disagree E. strongly disagree

20.2. I do not enjoy cooking very much that is why I buy and/or consume processed meat products. A. Strongly agree B. Agree C. Undecided D. Disagree E. strongly disagree

FOOD SERVICE PROVIDERS (SUPERMARKET, FAST FOOD STORES, RESTAURANTS OR HOTEL …)

Position_____

1. Where does the meat product come from?

A**.** Imported B. Local meat processors C. Prepared there D. Other

2. How does the meat product get to your business?

A. Delivery B. picks up C. Other

3. How often does your store get new meat product?

A**.** Daily B. Bi-weekly C. Weekly D. Other

4. When does new meat product arrive at your business?

A**.** Morning B. Noon C. Afternoon D. Night E. Other

5. How much meat product is brought to your business per week?

A**.** < 5 Kg B. 5-15 Kg C. 15-25 Kg D. > 25 Kg

6. How much meat product is sold at your business per week?

A**.** < 5 Kg B. 5-15 Kg C. 15-25 Kg D. > 25 Kg

7. How does the price of meat products determined at your business?

A. Per kg B. per package **C.** Predetermined D. Negotiation E. Other

8. Who packages the meat?

A. Supplier

B**.** Your business

C. Other

9. Where is the meat stored while at your business?

A. Freezer B. Refrigerator C. Cooler D. Shelves E. Other

10. Who buys most meat at your business?

A. Local consumers B. Foreigners C. Both

11. Of the local customers, who buys most meat at your business?

A. Low-income B. Mid-income C. High-income D. Difficult to identify

12. How important or unimportant are each of the following attributes for your customers at your business while purchasing/consuming the meat products?

12.1. Price

A. Very important B. Moderately important

C. Slightly important D. Not important E. Don't know

12.2. Place of purchase (supermarket, fast food store, hotel, restaurant, and processor)

A. Very important B. Moderately important

C. Slightly important D. Not important E. Don't know

12.3. Promotion

A. Very important B. Moderately important

C. Slightly important D. Not important E. Don't know

12.4. Brand

A. Very important B. Moderately important

C. Slightly important D. Not important E. Don't know

12.5. Certificate/award

A. Very important B. Moderately important

C. Slightly important D. Not important E. Don't know

12.6. Additives/preservatives

A. Very important B. Moderately important

C. Slightly important D. Not important E. Don't know

12.7. Nutritional labelling/ingredients

A. Very important B. Moderately important

C. Slightly important D. Not important E. Don't know

12.8. Colour/appearance/attractiveness

A. Very important B. Moderately important

C. Slightly important D. Not important E. Don't know

12.9. Freshness

A. Very important B. Moderately important

C. Slightly important D. Not important E. Don't know

13. How do you, as a consumer or seller, perceive the quality of processed poultry meat?

A. Product-oriented quality B. Process-oriented quality C. Quality control

D. User-oriented quality

14. How important or unimportant are each of the following quality expectations (i.e., before purchase) influence your customers' perception/intention/motivation to purchase/consume/sell processed poultry meat products?

14.1. Perceived cost

A. Very important

B. Moderately important

C. Slightly important

D. Not important

14.2. Perceived extrinsic quality (process, convenience)

A. Very important

B. Moderately important

C. Slightly important

D. Not important

14.3. Perceived intrinsic quality (sensory, health/nutrition)

A. Very important

B. Moderately important

C. Slightly important

D. Not important

15. Regarding meat purchases, how is your business affected in times of fasting?

A. lightly affected B. Moderately affected C. Highly affected D. Not affected

16. Has the amount of processed poultry meat sold/consumed in your business increased or not in the last five years (or since you started selling the meat product)?

A**.** Increased

B. Decreased

C. Not changed

KEY INFORMANT INTERVIEWING: POINTS OF DISCUSSIONS AND DISCUSSION GUIDE

There are a number of determinants of perceived and preferred quality/safety characteristics/attributes of a given processed meat product. It expressed:

1. Prior to purchase

2. At the point of purchase.

3. Up on consumption

QUESTION ONE

Prior to purchase, how concerned or unconcerned are you about each of the following when buying/consuming processed meat products?

1.1. Animal welfare

1.2. Antibiotics

1.3. Microbes/ bacteria

1.4. Fat/ cholesterol contents

1.5. Storage

QUESTION TWO

At the point of purchase, how helpful or otherwise are each of the following attributes for preferring (perceiving better) one processed meat product over another while purchasing?

2.1. Price

2.2. Additives/preservatives

2.3. Nutritional labelling/ingredients

2.4. Colour/appearance/attractiveness

2.5. Freshness

QUESTION THREE

Upon consumption, how important or unimportant are each of the following attributes for preferring (perceiving better) one processed meat product over another during Consumption?

Tenderness
Juiciness
Flavour (taste, smell)

Colour/appearance/attractiveness
Additives/ preservative
Texture

QUESTION FOUR

At all times: How helpful or otherwise are each of the following attributes in assessing the safety of processed meat products?

Price
Additives/preservatives
Nutritional labelling/ingredients
Colour/appearance/attractiveness
Freshness

QUESTION FIVE

Concluding remark: Anything you would like to mention on the consumers' preferences and consumers to processed meat product, and your final remark, please?

Procedures

Key Informant Interviewing

Interviewee: 1 person at a time (individually/separately)

Total KIIs: 5-10 interviews (different participants in each interview)

Time/duration: 15 - 20 minutes (per interview)

Place: in silent place (office, meeting room, quiet outdoor areas …)