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MANUFACTURERS' COMPLIANCE OF PRE-PACKED JUICE TO
LABELLING REQUIREMENTS, AND CUSTOMERS' USE OF
LABELLING INFORMATION FOR DECISION TO PURCHASE
PRE-PACKED FOODS AMONG CONSUMERS IN ADDIS ABABA,
ETHIOPIA

BY
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Manufacturers' Compliance of Pre-Packed Juice to Labelling Requirements,
and Customers' Use of Labelling Information for Decision to Purchase
Pre-Packed Foods among Consumers in Addis Ababa, Ethiopia

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This is to certify that the Thesis prepared by Tsega Kokobe, entitled: “compliance of pre-packed juice labelling requirements, and use of pre-packed foods labelling information for purchasing decision among consumers in Addis Ababa, Ethiopia” submitted in partial fulfillment of the requirements for the degree of Master of Sciences in Regulatory Affairs complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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Abstract

Background: In Ethiopia, there was limited information on food labels compliance with food labelling requirements and customers' use of labelling information for purchasing decision making. So, this study was designed with the aim of filling this information gap.

Methods: A cross- sectional study was conducted in Addis Ababa in, 2019. Thirty one juice products and 403 consumers from 15 supermarkets were included in the study. Compliance was assessed using the 17 standard requirements for food labelling information. Food labelling information use was measured by considering use of 10 food labelling information and practicing it frequently was considered good practice. Data was collected using semi-structured questionnaires and checklist. Data was entered in to Epi data entry and analyzed using SPSS. Descriptive statistics and binary logistic regression were performed.

Results: Two hundred and four (50.6%) were males and 248 (61.5%) attended college. Among respondents 105 (26.1%) were uses the food labelling information in good way. Sex, marital status, monthly income and level of awareness were associated ($p < 0.05$) with use of food labelling information. Only 6 (19.4%) fulfilled all standard requirements, while 1 (3.2%) fulfilled only 50% of the requirements.

Conclusion: Only about one fifth of juice products fulfill all required food labelling information and only about one fourth of customers use food labelling information. Sex, marital status, monthly income and level of awareness were associated with use of food labelling information. Attention should be given in creating awareness and regulating food product labelling requirements.

Keywords: Awareness, consumers, labelling, compliance, Use of labelling

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List of abbreviations and acronyms

AA	Addis Ababa
CI	Confidence interval
CSA	Central Statics Agency
EFDA	Ethiopian Food and Drug Administration
ESA	Ethiopia Standard Agency
FAO	Food and Agriculture Organization of the United Nations
FDRE	Federal Democratic Republic of Ethiopia
FMHACA	Food, Medicine and Healthcare-Administration and Control Authority
FSANZ	Food Standards Australia New Zealand
OECD	Organization for Economic Co-operation and Development
QSAE	Quality and Standard Authority of Ethiopia
SPSS	Statistical Package for Social Sciences
WHO	World Health Organization

1 INTRODUCTION

1.1 Background

With the changing of consumers' lifestyle and industrialization, the use of pre-packaged food products has become common across all communities of all ages. Information on Food labels on pre-packaged food products are considered as means to help consumers in making informed food choices. Food labelling includes “any written, printed or graphic matter that is presented on the label, accompanies the food, or is displayed near the food, including that for the purpose of promoting its sale or disposal” (WHO, 2004). The provision of appropriate and balanced labelling information is very critical from societal and public health perspectives.

Countries have taken different actions to implement the strategies recommended by WHO in relation to improving the quality of their food supply including establishing legislation on food labelling with the purpose of making it easier for consumers to choose healthier foods suited to their individual requirement; and also to help selecting critical nutrient content particularly for consumers with associated Chronic Non-Communicable Diseases (FAO/WHO, 2017).

According to the Food Standards of Australia and New Zealand (FSANZ) consumer label survey (2015), labelling plays a critical role as the primary interface between suppliers and consumers to convey messages to consumers, and others, and as a channel to convey public health and accurate food safety information to assist consumers (FSANZ, 2015). Consumers required accurate, standardized and comprehensive information on the content of food items (FDA, 2019, Tukuitonga and Keller 2005). Some types of information are required by government legislation as a means of ensuring that food produced and sold meet required standards and a means of protecting the interest of the general public (Mensah et al., 2012)

According to WHO report, there is an increase in nutrition-related public health problems due to poor selection of foods and associated chronic diseases. The burden of diet-related chronic disease increase on population; it suggested that individuals and populations should limit foods that are risk factors for such diseases (WHO, 2003).

In Ethiopia, the labelling requirement is based on the 1991 revised Codex Alimentarius Standards 1-1985 (ES 359 2009). The Ethiopian Food and Drug Administration (EFDA) is responsible for assuring that food products sold in Ethiopia are safe, wholesome and properly labeled (EFDRE, 2010). According to the Ethiopian food labelling requirements, food manufacturers or distributors are responsible to make sure their food product labelling is complying with Ethiopia's food labelling requirements (ESA, 359 2009)

Ethiopia Standard Agency (ESA) proclaimed that the following information to be clearly stated on a food label: labelling written in Amharic and English language, name of the product, name and address of the manufacturer or distributor's, country of origin, weight of the product, ingredients (listed according to amount, from highest to lowest) , Lot identification and expiry date or best before date or use by date (where applicable) (ESA, 2013).

Food labels serve as the tool for making need based food choices. Providing true and reliable food labelling information on food package and support the consumers to make the right choice of buying safe and good quality food are important aspects on consumer's health and rights. The aim of this study was to examine the food labels compliance with the Ethiopia food labelling requirements and the use of food labelling information for purchasing decision on pre- packed food products (ESA, 2013). Even though there are regulations to address compliance of products, products may compromise regulations, and consumers are expected to be aware of standards and have rights to know labelling information before purchasing products. But studies showed that due to low awareness, people simply purchase products without reading labels (Kaur et al., 2016, Jain et al., 2018, Kar et al., 2018).

So, the objective of this study was to assess compliance of pre-packed juice labelling requirements, and use of pre-packed foods labelling information for purchasing decision among consumers in Addis Ababa, Ethiopia.

1.2 Statement of the problem

Consumers can be misled by food labels, personal selling, sales promotions and advertising of food product through different Medias. Not much more informed food choices and get caught up in the misinformation of food labels will lead consumers to unhealthy diet.

Non-Communicable Disease (NCD) is the leading cause of disease worldwide and in Ethiopia, it accounts for 39% of deaths (World Health Organization, 2018). It is important for consumers to know about food labelling information on pre-packaged food as such information can make healthier food choices and achieve overall good health (WHO, 2003).

Study conducted in India (2018) reported that, merely regulating food labelling practices without assessing the awareness among the consumers regarding healthy choices and food labelling compliance would make the whole exercise unsuccessful (Kar et al., 2018).

So far different influencing factors were identified that consumers find labels difficult to read. Study conducted in Ghana in 2012, showed that advertisement (31.6%) and price (31.2%) were the major factors that influence most consumers decision to purchase prepackaged food (Mensah et al., 2012). Yet again, another investigation conducted in India (2017), identified being routine/familiar food to consumers, hurry/time constraints, and low price were the situation that the consumers purchase pre-packaged foods without reading labels. Use of small fonts in label writing, use of technical/scientific language and incomplete labelling were also the major difficulties/barriers towards reading food labelling information (Robert and AkshayChandran, 2017) Another study conducted in Tanzania by Samson (2012) revealed that unfamiliar language, use of technical/scientific language and incomplete labelling were reported as barriers of consumers' reading and using food labelling information in purchasing decision(Samson, 2012).

A standardized product tells the consumer through food labels information what consumers have tasted before and whether consumers has liked or disliked it.

However, in Ethiopia food registration and food labelling regulation is not well established or at its infant stage.

Study conducted in Ethiopia (2015) reported that the existing laws and regulations were outdated and could not respond to contemporary food quality and safety issues (Temesgen, 2015).

In most of our communities, people are not used to reading pre-packaged food labels. This often leads the consumers to purchase unhealthy packed foods. This condition might unintentionally predispose the community into buying under quality and unsafe food items aggravating public health problems including chronic non-communicable diseases.

However, to the best of our understanding, in Ethiopia, little is known about consumers' awareness level and whether the consumers' make long-term healthier food choices based on the use of food labelling information and the level of compliance of marketed pre-packed food labelling information to regulatory requirements.

1.3 Significance of the study

With the goal of ensuring consumer safety, the study findings could support the health sectors and media to enlightening the public concerning food labelling and healthier food choices. The food manufacturers and regulators could use the findings of this study as a baseline as well as reference for planning and intervention purpose to improving food labelling information and regulation. In addition, students and researchers could use it as reference for their work or as baseline information for further research.

2 LITERATURE REVIEW

2.1 Consumers' level of awareness: global experience

Awareness is important to Consumer to make the right choice and take the right decision. The awareness of consumer and choice of food is influenced by demographic characteristics education status, health status and by socio economic characteristics. Consumers who have no awareness on food labels can be subjugated through the ways of adulteration, dishonest practice, incomplete labels information on packaged and misleading advertisements. A review of literature done on use of food labelling information indicated that consumers with prior knowledge are more likely to use label information effectively, that is, focus on important information, understand information, and make healthful decisions based on this information (Miller and Cassady, 2015).

Samson (2012) in Tanzania conducted a study on awareness of food labelling among consumers; the awareness scores computed showed that all respondents who had primary education 16 (100%) had low level of awareness on food labelling(Samson, 2012).

A study conducted in Malaysia by AdbulLatiff and Ayob (2015) on consumption awareness of Indian community in Klang, Selangor towards food label, showed that 72% of the consumers were not aware of food labels(Adbul Latiff and Ayob, 2015). A similar study in Bhubaneswar, India showed that about half (51.66 %) of the consumers had middle level awareness while 19.16 % had low level of awareness about food labelling information(Priyadarshini, 2014).

From a cross-sectional study in Al-Ain, United Arab Emirates, 37% of the consumers were reported to low level of awareness, about the information on the food label even though 69.5% of the study participants were university graduates. Only 21 % of the consumers were found to have high level of awareness (Washi, 2012)

In a study conducted in Jaffna district to assess the awareness on food labels and the effect of the level of awareness on the purchasing prepackaged foods at super markets and retail shops, 92% of the consumers were aware of the information provided on the food labels (Simmaky et al., 2015), In a similar study conducted in Tanzania, only

23.5% of respondents had high awareness about basic food labelling information normally found on food labels (Samson, 2012).

A cross-sectional study conducted from United Arab Emirates, on the other hand indicated that higher level of awareness was found among female (23.62%) than male consumers (18.61%) reflecting significant gender differences. No significant relationship was found with the level of education (Washi, 2012). However, The study conducted in Anand city of Gujarat among statistically significant difference according to level of education ($p=0.000$) was observed (Dutta and Patel 2017).

2.2 The use of food labelling information for purchasing decision

Consumers must have access to enough food labelling information while making purchasing decisions. Such information can help them to choose what to purchase, how to store and use the product, at what price and etc.

According to a case study in Kumasi Metropolis in Ghana on consumers' use and understanding of food label information and on their purchasing decision, about 79.6% of the respondents access food label information before purchase but some read the information occasionally (29.6%) while others during initial purchase (37.2%) (Mensah et al., 2012). A study conducted on consumers' knowledge of food label information in Potchefstroom, South Africa reported that the majority of respondents were aware of food label legislation (69 %), and read labels during first-time purchasing (70%). and sometimes to always read labels (73 %) but cited sometimes to always label reading affect respondents' purchasing decisions (62 %). In another study, most respondents were regular label readers, the study revealed that only (30%) or fewer reported reasons for not often using food labels (Merwe et al., 2012)

According to the study conducted in Bhubaneswar, India respondents stated various circumstances for purchasing pre-packaged foods without reading labels with 36.66% of them reported the food was routine/familiar to them, while (31.66%) indicated the seller is familiar to them whom they trust (Priyadarshini, 2014). Another study in Ghana explored consumer knowledge and usage of label information and assessed label reading habits among respondents base on gender. From the results, (38.89%) of males and (34.56%) of females reported reading labels occasionally while (14.33%)

males and (19.11%) females reported reading labels always. A significant proportion of the respondents thus (24.44%) of male and (19.11%) of female rarely read labels at all (Azila-Gbette et al., 2013). In the same setting, studied by Affram and Darkwa (2015) the result revealed that, about 90% of the respondents stated that they were aware of nutrition information on food products, and 48 (8%) of them did not read food labels prior to purchasing food products; (37%)of those who stated that they read food labels prior to purchasing food products did so regularly whilst 39% did not read food labels regularly (Affram and Darkwa 2015).

2.3 Influencing factors on the use of food labels

Consumers' use of foods labels information's on pre-packaged foods can be influenced by different situation for purchasing decision. Consumers have made choice of foods with respect to their preferences, socio- demographic characteristics, awareness of food label, socioeconomic status, food labels information, occupational status and product attributes. Food label use also can be influenced by regulation system; since food policy is help consumers in making informed food choices.

A study conducted in Iran revealed that the use of food labels during purchasing food varies according to the socio- demographic characteristics of consumers. Specifically, the youth, females, married individuals, employee, high income, and with high level education were significantly more likely to use food labels when purchasing food products (Bazhan et al., 2015).

However the Study conducted by Simmaky, et al (2015) in Jaffna district reported that label information is generally gender insensitive or has no significance difference. The study indicated, however, that awareness and use of food label information were significantly associated with age, level of education, income and occupation of the respondents.

A study conducted by ThembaG (2013), on consumer awareness and usage of nutrition information in Botswana, awareness of nutrition information does not differ according to demographic characteristics of consumers with the exception of family size. A Tanzania study reported low level of awareness on food labelling information among respondents with had primary education, male gender and self-employed (Samson, 2012).

Different study conduct in different country experience showed that consumers of pre-packaged foods use of foods labels influenced by food labelling information on the package of food product.

According to the study conducted in Bhubaneswar, India regarding awareness and use of food labelling information, majority of the respondents (75.83%) mentioned manufacturing and expiry dates as their first, second or third important information they look for in the label. It was also reported that the use of unfamiliar language, small font sizes, use of scientific/technical language, missed and/or hidden information were some of the difficulties encountered in the course of reading food labelling information. The use of various technical/ scientific terms on the packets, and the printing of labels in small fonts were the main problem for(40.83%) and(35 %)of respondents, respectively for understanding the food labels respectively (Priyadarshini, 2014).

In another study, 89.5% of participants considered the dates of expiry and manufacturing as the most important information. The consumers placed high importance for brand by graduates and postgraduate respondents; while low income group paid more attention to price of the product. (Simmaky et al., 2015). In a similar study, Bazhan et al. (2015) reported small front print on food labels as the main reason for not reading food labels information (29.3%), followed by lack of interest (26.3%), not believing its importance (12.6%), and (7.1%) of respondents not understanding of the labels

A study conducted by Ababio et al (2012) in the Kumasi metropolis of Ghana indicated that the most important factors that influence the respondents' choice of packaged food product in mean rate were the expiry date (4.88), nutritional information (4.45), ingredient (4.35), taste (4.33), appearance (4.10) and price (4.07). The language in which the label of a product is written was also the least (1.78) of the factors considered by respondents in their choice of packaged food products (Ababio et al., 2012).

2.4 The compliance of food labelling requirements

In Ethiopia monitoring and enforcement of food labelling requirements of the food standards (accuracy as well as the presence of labelling information) is regulated by Ethiopia Food and Drug Administration (EFDRE, 2010).

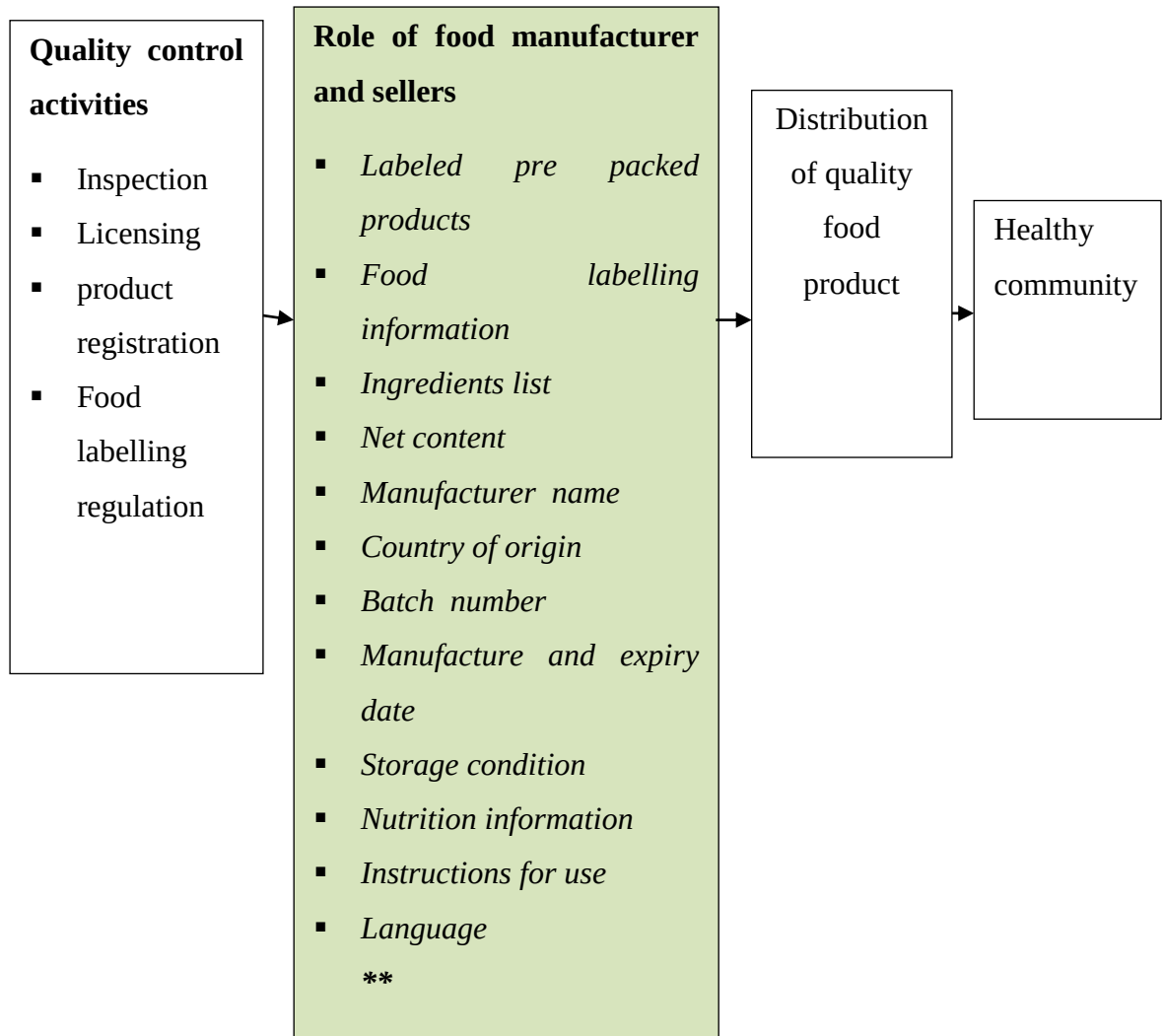
Imported and locally manufacture pre-packed food products must meet food labelling requirements, and the listed mandatory food labelling information shall be appear on the label. (Quality and Standard Authority of Ethiopia (QSAE), 2009).

However study conducted by Temesgen(2015) in Ethiopia, reported that there is no well-established and internationally acceptable food quality and safety certification system that guarantees the food exported to the importing country is in compliance with their quality and safety regulatory requirements (Temesgen, 2015).

Study conducted in India Jaipur city revealed that a packaged food with food labelling requirements is sub-optimal(Kothari et al., 2017). Another cross-sectional study conducted in the same country on consumer awareness and status of food labelling the result revealed that 70.2% in branded items and 62.8% in locally made food items were complete compliance of food labels according to the India labels standards(Jain et al., 2018) `

Study conducted in Ethiopia on labelling practices of water bottling firms revealed that labelling information of some parameters were mislabeled or unlabeled and a few brands were inaccurately characterized(Amogne, 2017)

As presented in figure 1, the overall guiding principles of quality control and regulations are to deliver quality products to community and thereby to produce healthy community. To assess compliance of food labelling information, this study focused on food labels that should be available on foods as required by country's policy and regulation.



****focus part of the compliance study**

Figure 1: Overall guiding principles of quality control and regulations

2.5 Conceptual framework for the study

Conceptual formwork in figure 2 for use of food label information in purchasing pre-packaged foods products shows how the particular variables in study connect with each other and identifies the variables required in the research investigation. To assess compliance of food labelling information, this study focused on food labels that should be available on foods as required by country's policy and regulation.

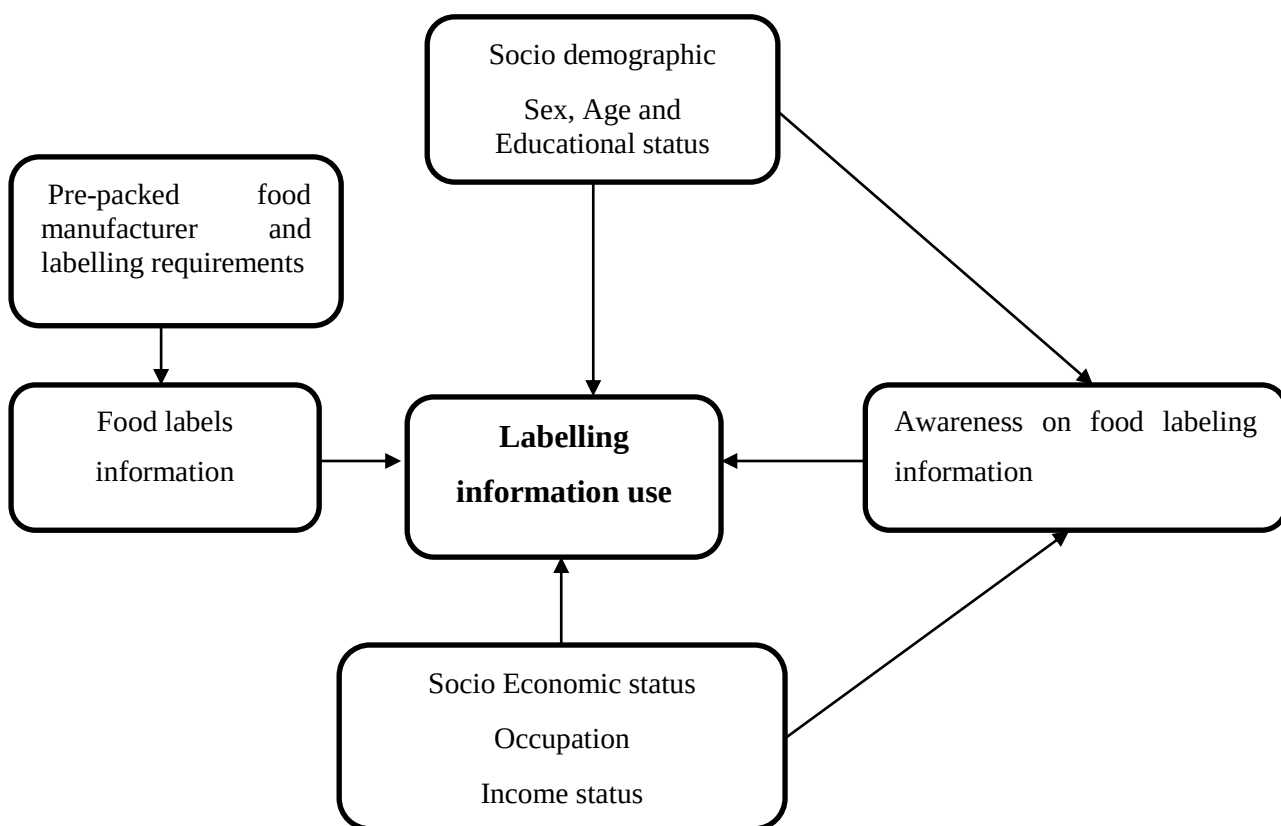


Figure 2: conceptual framework of the study

3 OBJECTIVES

3.1 General Objective

To assess manufacturers' compliance of pre-packed juice to labelling requirements, and customers' use of labelling information for decision to purchase pre-packed foods among consumers in Addis Ababa, Ethiopia

3.2 Specific Objectives

1. To assess the level of awareness on the basic packaged food labelling information among consumers in Addis Ababa.
2. To assess the consumers' use of food labelling information for purchasing decisions
3. To determine factors associated with consumers' use of food labelling information for purchasing decisions
4. To examine the manufacturers' compliance of labelling of imported and locally manufactured pre-packed juice products with Ethiopia food labelling requirements

4 METHODOLOGY

4.1 Study area and period

The study was conducted in Addis Ababa, July, 2019. Addis Ababa is the capital city of Ethiopia, the seat of African Union, and numerous international and regional organizations. According to adjusted population with central statistical agency (CSA) estimation on July 2017, the total population of Addis Ababa was 3,435,028; of whom 1,625,451 (47.7%) were male and 1, 809,577 (52.7) were female. Addis Ababa City Administration covers approximately 527 sq. km and divided into ten sub cities. According to Addis Ababa City Trade and Industry Bureau, there are 1672 registered pre-packaged food selling outlets including well-branded Hypermarkets, Supermarkets and Mini-markets in Addis Ababa (Addis Ababa City Adiminstration Trade and Industry Bureau, 2019).

Addis Ababa city was selected due to the fact that it is the home of a larger number of civil servants and workers of national and international organization who are expected to use supermarkets as sources of pre-packed foods.

Even though there are numbers of food selling outlets, supermarkets were considered in this study because in the supermarkets, majority of the consumers have opportunities to freely choose and read labelling by their own due to nature of supermarkets' setup.

4.2 Study design

A cross-sectional study design was used to assess manufacturers' compliance of pre-packed juice labelling information with the Ethiopian food labelling requirements, awareness of food labelling information among customers and use of such information in purchasing pre-packaged foods.

4.3 Source population

All super markets, pre-packed foods and consumers purchasing pre-packed food from selected super markets in Addis Ababa.

4.4 Study population

The study population included consumers aged 18 years and above who were found purchasing pre-packaged foods in selected supermarkets and retail outlets. For juice products labelling compliance, the study units were all pre-packed juice products in the selected supermarkets during the study period.

4.5 Inclusion and Exclusion Criteria

4.5.1 Inclusion Criteria

Pre-packaged food selling outlets registered as supermarkets by Addis Ababa City Trade and Industry Bureau and customers of age 18 and above and willing to participate were included in the study.

All pre-packaged juice products were included. Juice products were selected because of its category under risky food and it is mostly preferred by risk group of consumers such as patients, pregnant mothers, children etc. It is categorized as risky because of product characteristics, which includes potential for microbial growth, presence or formation of toxins, and health status of consumers using the product (sick, pregnant, children, elderly etc.).

4.5.2 Exclusion Criteria

The study excluded consumers those working in health-related field as they have greater understanding and awareness of the information on food labels. Respondents identified themselves via self-declaration based on selection criteria stated in the consent form.

4.6 Sample size and sampling procedure

4.6.1 Sample size determination

The required sample size (n) was determined using single population proportion formula considering proportion of pre-packaged food consumers (p) who use food labelling information = 50 % as there was no similar study in the setting, margin of error (d) = 5% and non-response rate of 10 %.

Accordingly, the sample size determined by the formula below:

$$n = \frac{(Z_{\alpha/2})^2 P(1-P)}{d^2}$$

Where, n = sample size

$(Z_{\alpha/2})$ = level of statistical significance 1.96 at 95 % confidence level;

d= margin of error tolerated (0.05)

P= 50 %, q = 1-p= 0.5

Based on the above assumption,

$$n = \frac{(1.96)^2 0.5(1-0.5)}{0.05^2}$$

$$0.05^2$$

$$n = 384$$

After adjusting an estimated non-response (incompleteness of the data) of 10%, sample size was determined to be 422 samples. For labelling compliance study, all registered and none registered pre-packed juice products which were found in the studied super- markets during study period were included in the sample.

4.6.2 Sampling procedure

Lists of super markets in all (10) sub-cities were obtained from trade and industry office of Addis Ababa city Administration. Considering existing logistics, 15 random super markets were selected. Estimated sample size (422) was allocated to each sub-city proportionally and three sub-cities with proportion less than one were excluded from study (Figure 3). Accordingly, five from Bole, two each from Nifas Silk-Lafto, Arada, Kirkos, Kileleshaw and one each from Gulele and Yeka sub cities.

The estimated sample size of individual respondents for assessment of food labelling use (422) was equally distributed to 15 supermarkets, yielding 28 customers per each supermarket. From each of the selected supermarkets, 28 customers were selected using consecutive sampling method and interviewed until allocated sample size was fulfilled.

For compliance of food labelling requirements, all pre-packed juices in the selected super markets were examined.

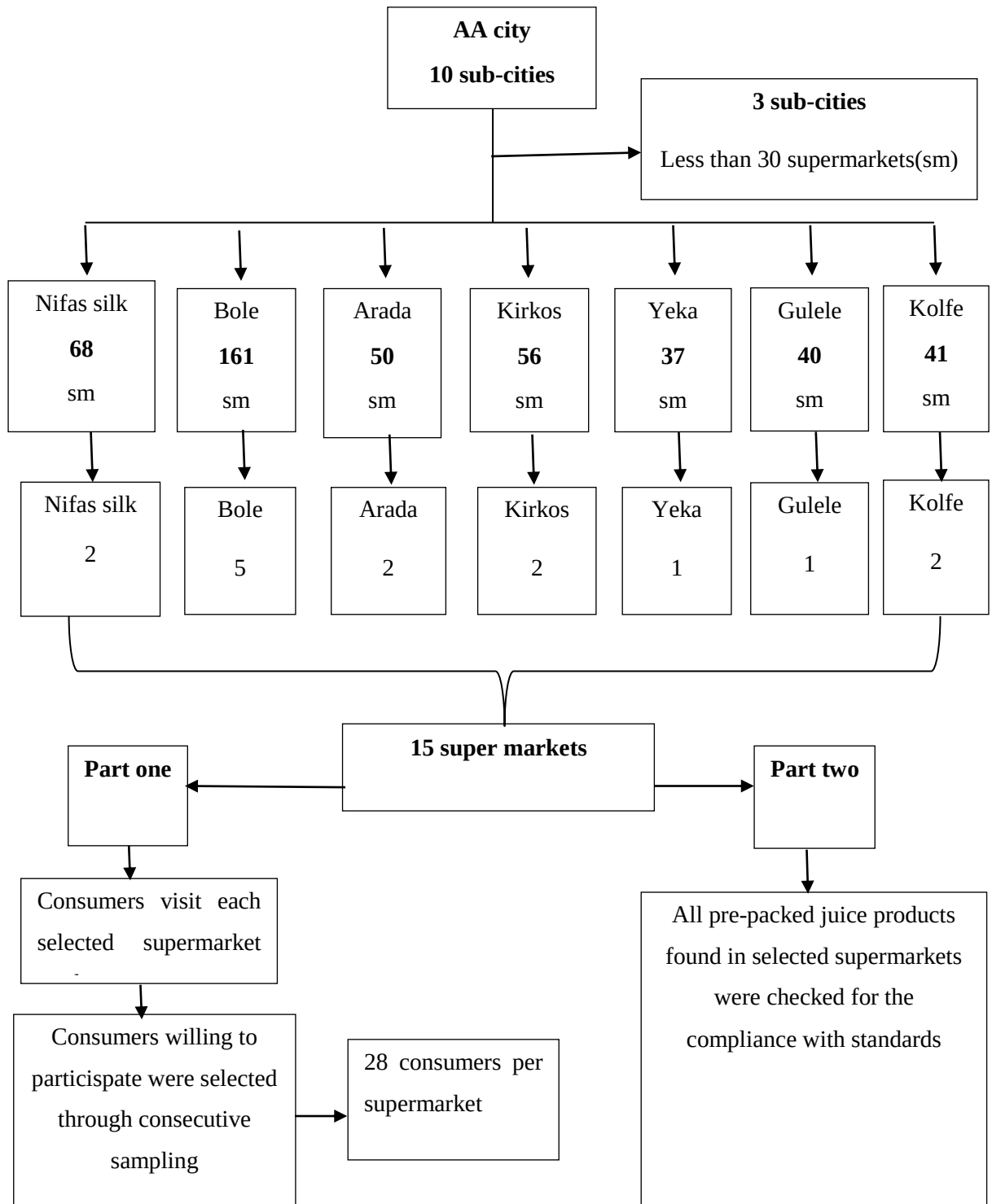


Figure 3: Study procedure and selection of study participants

4.7 Data collection methods

Data was collected by face to face interview using a modified questionnaire by referring previous literature containing semi-structured questions (Jain et al., 2018, Kar et al., 2018, Samson, 2012, Themba G, 2013). For the data collection, four food sciences graduates and one supervisor from similar profession were recruited and trained for one day. Pre testing of the data collection tool (questionnaire) was done on 5% consumers in Lideta sub-city, which was excluded from main study, to see the accuracy of responses. The questionnaire was translated to Amharic language to make it convenient to participant and again translated back to the original language (English) to check consistency. For the labelling compliance study the “General standard for prepackaged foods-labeling” Ethiopia was used to prepare the checklist (ESA, 2013).

Level of awareness on food labelling was obtained by asking respondents to express their familiarity with the selected basic standard information which is supposed to be found on pre-packaged food labels. Respondents who claimed that they would read the labels were asked if they encountered difficulties in reading and using food labels. On the other hand, respondents who did not read food labels were asked to briefly explain the reasons for not doing that.

4.8 Study variables

4.8.1 Dependent variables

- Compliance of food labelling information
- Consumer’s awareness
- Use of food labelling information

4.8.2 Independent variables

Independent variables included:

- Socio-demographic characteristics of respondents,
- Food labelling requirements,
- Food labelling information (format and language) and
- Food labelling compliance laws.

4.9 Data Quality Assurance

To maintain the data quality, training was given for the data collectors and supervisor for one day. The quality of the data was also assured to maintain the context by translating questionnaire from English to local language (Amharic). Besides, pretest was conducted in Lideta among supermarket users considering mix of age, sex and other variables and any discrepancy or gaps were corrected before the actual data collection period. Gaps identified and corrected were adding and/or ordering of questions, wording of some terms, listing options for open question like awareness and information use questions. Regarding compliance, two pre-packed juices were assessed. The principal investigator was also monitoring the overall data collection process and consulting the supervisor. The collected data was checked for consistency and completeness on daily basis.

4.10 Data processing and Analysis

Data was checked for completeness and coded for each question. Data entry was performed using Epi data 3 and transferred into SPSS version 24 computer software for cleaning and conducting the analysis.

Descriptive statistics was used to describe study items such as information mostly saw by participants when reading food labels, motivations to read food labelling information, importance of food labelling information, situations in which participants buying packaged foods without reading labelling information, difficulties faced in reading food labelling information, and compliance of labelling imported and locally manufactured packed food products with Ethiopia food labelling requirements.

Respondents' level of awareness on food labelling information was determined by the awareness score that was calculated using respondents' response on their familiarity with the selected 10 basic standard information found on pre-packaged food labels. The level of awareness was classified into 3 sets by using interquartile (first quartile-low, second and third quartile-medium and fourth quartile –high). Using labelling information by consumers was computed from responses of 10 items considering frequency of use. Mean score was used to categorize poor and good practice. In addition to scoring above mean, frequency of practicing was considered to categorize

good practice. Mean scores of both awareness and information use were calculated by summing scores and dividing scores to number of questions.

Bivariate and multivariate binary logistic regression was done to assess factors associated with use of labelling information at 95% confidence interval. Finally, results were presented using tables and figures. Independent sample t-test was done the level of mean difference in between imported and locally manufactured for labelling compliance requirements.

4.11 Ethical Consideration

This study was conducted after obtaining ethical clearance/approval from ethical review committee of the School of Pharmacy, College of Health Sciences, Addis Ababa University.

A support letter from Addis Ababa university, College of Health Sciences, was written to EFDA, Addis Ababa city Administration Food, Medicine and Health related Activities Control Authority, and Addis Ababa Trade and Industry Bureau. Their Permission was obtained prior to communicating the study participants. The selected supermarket managers/owners were also communicated for their cooperation using written letter from appropriate organ.

Before performing the actual procedure, for each study participant, verbal consent was obtained and only those who were willing to participate in the study were included. Each study participant was adequately informed about the purpose of the study and the importance of their participation to confirm willingness for participation. Also participants were informed that they have a full right to refuse or discontinue participating at any point of the study. The information that was collected from super markets as well as study participants kept confidential since neither of their names recorded as information.

4.12 Operational Definition of terms

Awareness of food labelling information (awareness score): Consumer's response to the importance of 10 basic food labelling items that was listed on consumer's study. The level of awareness was classified into 3 sets by using interquartile; accordingly score above (75%) (Scoring 7 and above) was considered high level,

score between (25%) and (75%) (Or scoring 4-6) was considered middle level of awareness and less than 25 (scoring 3 or less) was considered as low level of awareness.

Compliance – state of conformity of regulated parties with standard requirements. Compliance score was categorized to quartile and the first quartile was recoded as “poor”, second and third quartile were recoded as “fair” and fourth quartile was recoded as “good”.

Labelling includes any written, printed or graphic matter that is present on the label, accompanies the food, or is displayed near the food, including that for the purpose of promoting its sale or disposal

Prepackaged: means packaged or made up in advance in a container, ready for offer to the consumer.

Supermarket: is a supermarket which is registered and licensed by Addis Ababa City Trade and Industry Bureau

Use of pre-packaged food labelling information in purchasing food: Practice of reading and understanding food labelling information to make right decisions when buying pre-packaged foods.

Good practice: Scoring median or above of using labelling information and practicing it often or always was classified as good practice.

5 RESULTS

A total of 15 supermarkets, 31 juice products and 403 individuals (with a response rate of 95.5%) participated in the study.

5.1 Socio-demographic characteristics of respondents

About half of the respondents, 204 (50.6%), were males and more than half, 236 (58.6%) were single. Majority of the participants were college/university graduates 248 (61.5%) followed by secondary level education 115 (28.5%), while only 9 (2.2%) had none formal education. Regarding occupation, 287 (71.2%) were employed, 104 (25.8%) and 183 (45.4%) were government and private employees, respectively (Table 1).

Table 1 : Socio-demographic characteristics of the study participants at Addis Ababa, Ethiopia, 2019.

Socio-demographic characteristics (N=403)		Frequency	Percent
Sex	Male	204	50.6
	Female	199	49.4
Age(years)	<20	45	11.2
	21-25	100	24.8
	26-30	112	27.8
	31-35	70	17.4
	36+	76	18.9
Marital status	Single	236	58.6
	Married	152	37.7
	Separated/Divorced/Widowed	15	3.7
Level of education	No formal education	9	2.2
	Primary education	31	7.7

	Secondary education	115	28.5
	Collage/university	248	61.5
Occupation	Governmental employed	104	25.8
	Private employed	183	45.4
	Merchant	28	6.9
	Students	70	17.4
	Others*	18	4.5
Monthly Income	Lower wage	102	25.3
	Middle wage	193	47.9
	Upper wage	96	23.8
	Not willing to disclose	12	3.0

* - Others (housewife, retirees and day laborers)

5.2 Awareness about labelling information

From a total of 403 study respondents, 95 (23.6%) claimed that they were very much informed, while 192 (47.6%) claimed to be moderately informed, and 116 (28.8%) reported to be minimally informed about food labelling information. In terms of gender, 85 (41.7%) of males and 107 (54.3%) females responded to be moderately informed about food labelling information.

Almost half of respondents with higher level of education were better informed about food labelling where 127 (51.2%) and 56 (48.7%) college/university graduates, and secondary level education respondents, respectively were moderately informed. On the other hand respondents with lower level of education were minimally informed (Table 2).

Table 2 : Consumers claimed awareness on extent of labelling information in Addis Ababa, Ethiopia, 2019

Social-demographic variables		Very much informed N (%)	Moderately informed N (%)	Minimally informed N (%)
Sex	Male	42 (20.6)	85 (41.7)	77 (37.8)
	Female	53 (25.9)	107 (54.3)	39 (20.9)
Age	≤20	4 (8.9)	26 (57.8)	15 (33.3)
	21-25	15 (15)	54 (54)	31 (31)
	26-30	27 (24.1)	56 (50)	29 (25.9)
	31-35	25 (35.7)	28 (40)	17 (24.3)
	36+	24 (31.6)	28 (36.8)	24 (31.6)
Level of education	No formal education	3 (33.3)	2 (22.2)	4 (44.4)
	Primary education	3 (9.7)	7 (22.6)	21 (67.7)
	Secondary education	28 (24.3)	56 (48.7)	31 (27)
	Collage/university	61 (24.6)	127 ((51.2)	60 (24.2)
Occupation	Government employee	19 (18.3)	55 (52.9)	30 (28.9)
	Private employee	58 (31.5)	88 (48.1)	37 (20.2)
	Merchant	8 (28.6))	10 (35.7)	10 (35.7)
	Students	7 (10)	35 (50)	28 (40)
	Others	3 (16.7)	4 (22.2)	11 (61.1)
Monthly income	Lower wage	22 (21.6)	49 (48.0)	31 (30.4)
	Middle wage	45 (23.3)	92 (47.7)	56 (29.0)
	Upper wage	25 (26.0)	47 (49.0)	24 (25.0)
	Not willing to disclose	3 (25.0)	4 (33.3)	5 (41.7)

When asked to respond to specific questions about food labelling information, 395 (98%) reported that they were aware of expiry data and about three-fourths (77.7%) were aware about manufacturing date while only 6% were informed about batch number (Figure 4).

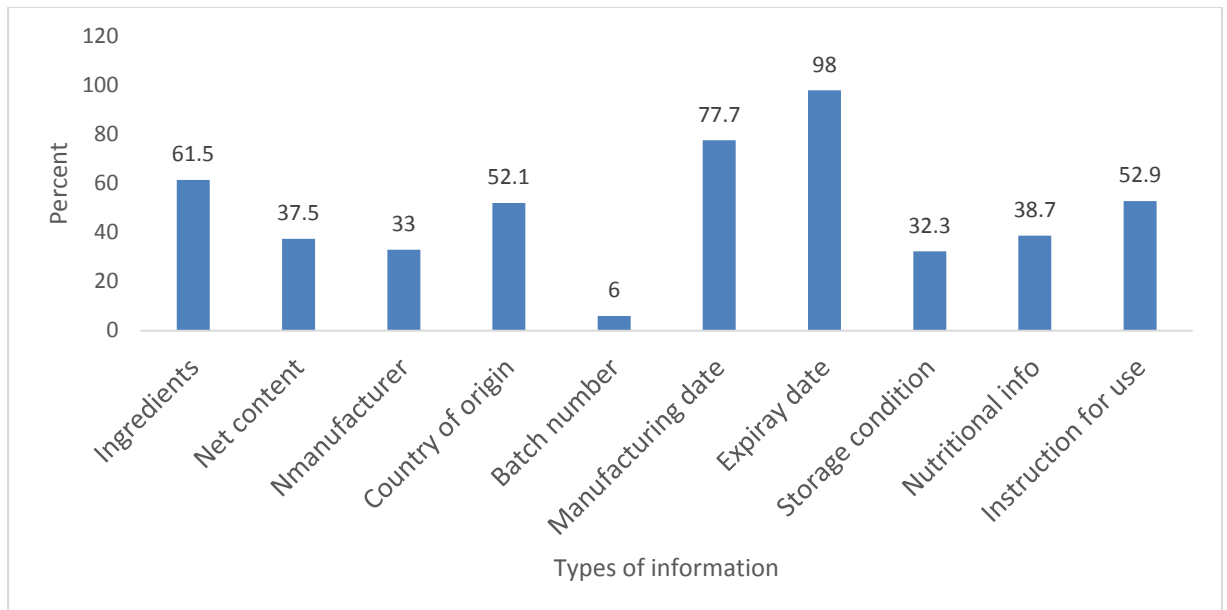


Figure 4: Consumers' awareness to specific food labelling information in Addis Ababa, Ethiopia, 2019

From a total of ten lists of labelling information, only 17 (4.2%) of respondents were aware of all 10 labelling information on food items.

To summarize the consumers' level of awareness about the information on the food label, score out of 10 was categorized using interquartile. The consumers' score of 0-3 labelling information items was considered as low level, score 4-6 information items was considered as middle level, and 7-10 information items was considered as high level of awareness. Accordingly, 142 (35.5%) of the respondents had low level of awareness, 135 (33.3%) middle level of awareness and 126 (31.3 %) of them had high level of awareness.

As shown in Table 3, the proportion of female respondents with higher and medium level of awareness 66 (33.2%), 70 (35.2%) were greater than the proportion of males with the same level of awareness, 60 (29.4%), 64 (31.3%), respectively. Respondents under 31-35 age groups 33 (47.1%) had high level of awareness while those within ≤ 20 age groups 26 (57.8%) had low level of awareness.

More than half of respondents who had primary education and under primary education together 23 (57.5%) had low level of awareness; while 96 (38.7%) of respondents with college/university education had high level of awareness. High level

of awareness on the other hand was observed government employed workers 39 (37.5%). Respondents with different income levels also showed different level of awareness with those having higher income had relatively higher level of awareness. Respondents under the income categories of upper wage and not willing to disclose had high level of awareness accounting 42 (43.8) and 6 (50.0) respectively.

Table 3: Consumers level of awareness on food labelling information with background characteristics in Addis Ababa Ethiopia, 2019

Consumers social-demographic variables		Consumers awareness scores		
		Low No (%)	Medium No (%)	High No (%)
Sex	Male	80 (39.2)	64 (31.3)	60 (29.4)
	Female	63 (31.6)	70 (35.2)	66 (33.2)
Age	≤20	26 (57.8)	13 (2.9)	6 (13.3)
	21-25	34 (34.0)	36 (36.0)	30 (30.0)
	26-30	35 (31.3)	48 (42.9)	29 (25.9)
	31-35	19 (27.1)	18 (25.7)	33 (47.1)
	36+	29 (38.2)	19 (25)	28 (36.8)
Level of education	No formal education	2 (22.2)	3 (33.3)	4 (44.4)
	Primary education	21 (67.7)	8 (25.8)	2 (6.4)
	Secondary education	42 (36.5)	49 (42.6)	24 (20.9)
	Collage/university	78 (31.5)	74 (29.8)	96 (38.7)
Occupation	Governmental employed	32 (30.8)	33 (31.7)	39 (37.5)
	Private employed	64 (34.9)	61 (33.3)	58 (30.6)
	Merchant	8 (28.6)	11 (39.3)	9 (32.1)
	Student	31 (44.2)	23 (32.9)	16 (22.9)
	Others	8 (44.4)	6 (33.3)	4 (22.2)
Monthly Income	Lower wage	37 (36.3)	43 (42.2)	22 (21.6)
	Middle wage	72 (37.3)	65 (33.7)	56 (29.0)
	Upper wage	28 (29.2)	26 (27.1)	42 (43.8)
	Not willing to disclose	6 (50.0)	0 (0.0)	6 (50.0)

5.2.1 Perceived importance of food labelling information

As it can be seen in figure 5, majority of respondents 386 (95.5%) perceived food labelling information as important enabler for consumers to make informed choices of pre-packaged food.

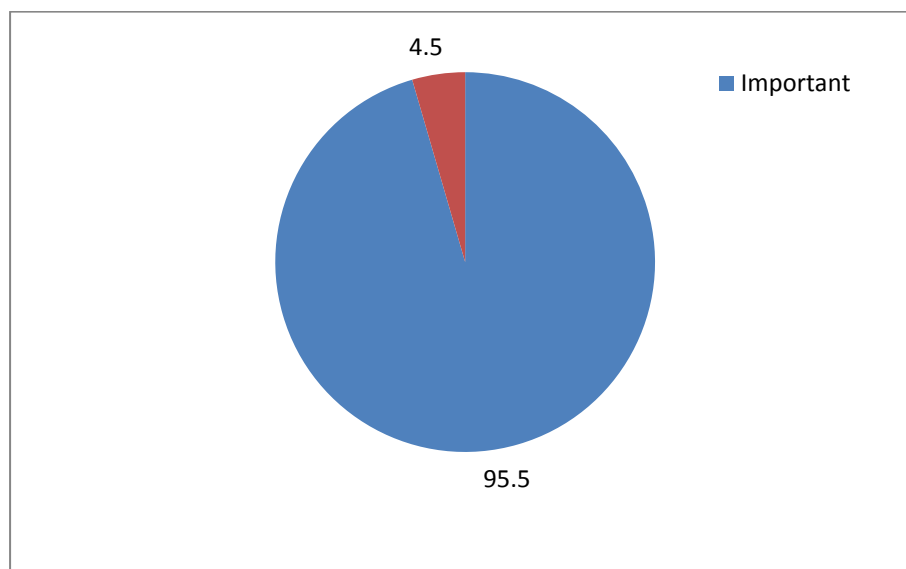


Figure 5: Consumers' perception on the importance of food labelling information in Addis Ababa, Ethiopia, 2019

5.3 Consumers' experiences in the use of food labelling information

5.3.1 Frequency and time of use of food label information

The respondents were asked if they ever read the food label information prior to purchase/consumption. Majority of them 381 (94.5%) stated that they have read at least once in their life time (Table 4). Regarding the situations under which the consumers refer food labelling information, majority of the respondents 163 (40.4%) indicated that they used labelling information when purchasing a product for the first time (initial purchase), while 133 (33%) claimed that they used the information when comparing food products and 82 (20.3%) said that they refer the food labelling information when buying some particular food products

Out of the 381 respondents who ever read food labels, 194 (48.1%) reported that they do it rarely, 115 (28.5%) claimed that they do it often and only 72, (17.9%) do it always (Table 5).

Table 4: Use of food labels before purchasing the food by socio-demographic characteristics of the study participants in Addis Ababa, Ethiopia, 2019.

Variable		Do consumers read food labelling information before purchasing?	
		Yes	No
Sex	Male	189 (92.6)	15 (7.4)
	Female	192 (96.5)	7 (3.5)
Marital status	Single	220 (93.2)	16 (6.8)
	Married	146 (96.1)	6 (3.9)
	Separated/Divorced/ Widowed	15 (100)	0
Level of education	No formal education	7 (77.8)	2 (22.2)
	Primary education	27 (87.1)	4 (12.9)
	Secondary education	105 (91.3)	10 (8.7)
	Collage/university	242 (97.6)	06 (2.4)
Occupation	Governmental employed	98 (94.2)	06 (5.8)
	Private employed	171 (93.4)	12 (6.6)
	Merchant	26 (92.9)	02 (7.1)
	Student	70 (100)	0
	Others	16 (88.9)	02 (11.1)
Age	< 20	42 (93.3)	3 (6.7)
	21-25	96 (96)	4 (4)
	26-30	107 (95.5)	5 (4.5)
	31-35	66 (94.4)	4 (5.7)
	36+	70 (92.1)	6 (7.9)
Monthly Income	Lower wage	99 (97.1)	3 (2.9)
	Middle wage	181 (93.8)	12 (6.2)
	Upper wage	89 (92.7)	7 (7.3)
	Not willing to disclose	12 (100)	0 (0.0)
Total	403	381 (94.5)	22 (5.5)

Table 5: When and how often consumers refer food label information in Addis Ababa Ethiopia, 2019 (N=381).

	Frequency	Percent
When consumers read label		
Initial purchase	163	40.5
When comparing products	133	33.0
When buying some particular product	82	20.3
Others	3	0.7
How often they refer to label		
Sometimes/occasionally/rarely	194	48.1
Often	115	28.5
Always	72	17.9
Never	22	5.5

5.3.2 The kind of information on food labels consumers look for

As shown in Figure 6, expiry date label was found to be the information consumers most seek 375 (93%) on pre-packaged food labels before purchase followed by the manufacturing date 203 (50.4%) and food ingredients 137 (34%). However, batch /lot identification 5 (1.2%), storage condition 27 (6.7%) and name of the manufacturer 39 (9.7%) were the least referred food labelling information by the study participants before purchasing pre-packed food products.

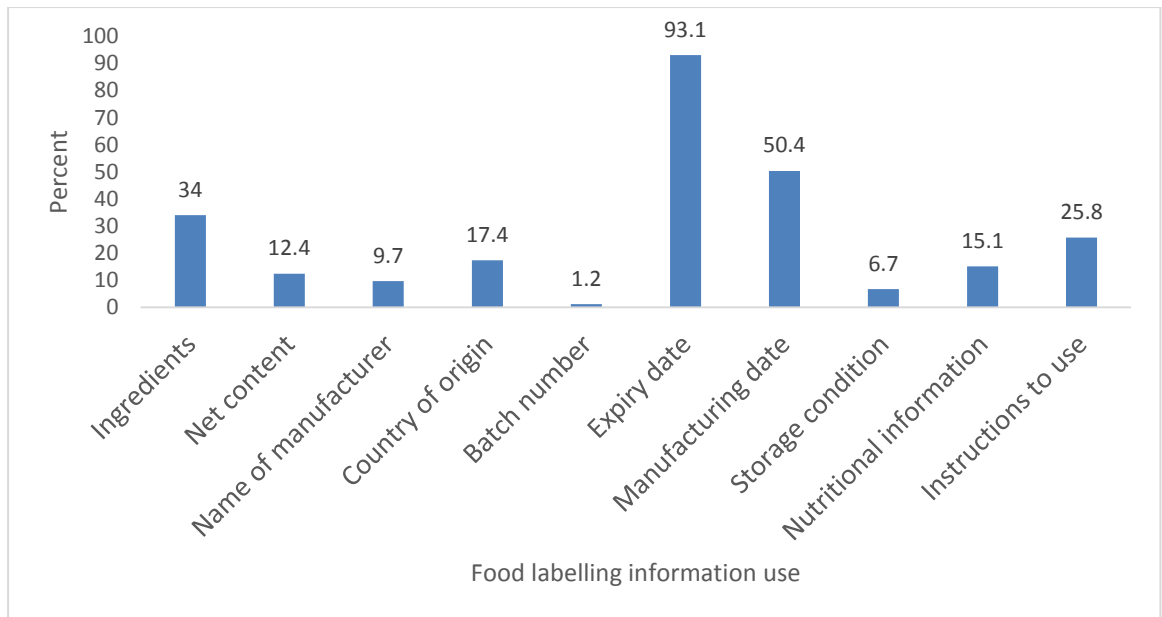


Figure 6: Food labels information that is sought by consumers before purchasing of pre-packed foods in Addis Ababa, Ethiopia, 2019.

In summary, the mean score was 2.66 out of 10 basic labelling information and scoring mean or above and practicing it frequently or usually was considered as good practice. Accordingly, only 105 (26.1%) respondents scored mean or above and practice it frequently or usually (Figure 7).

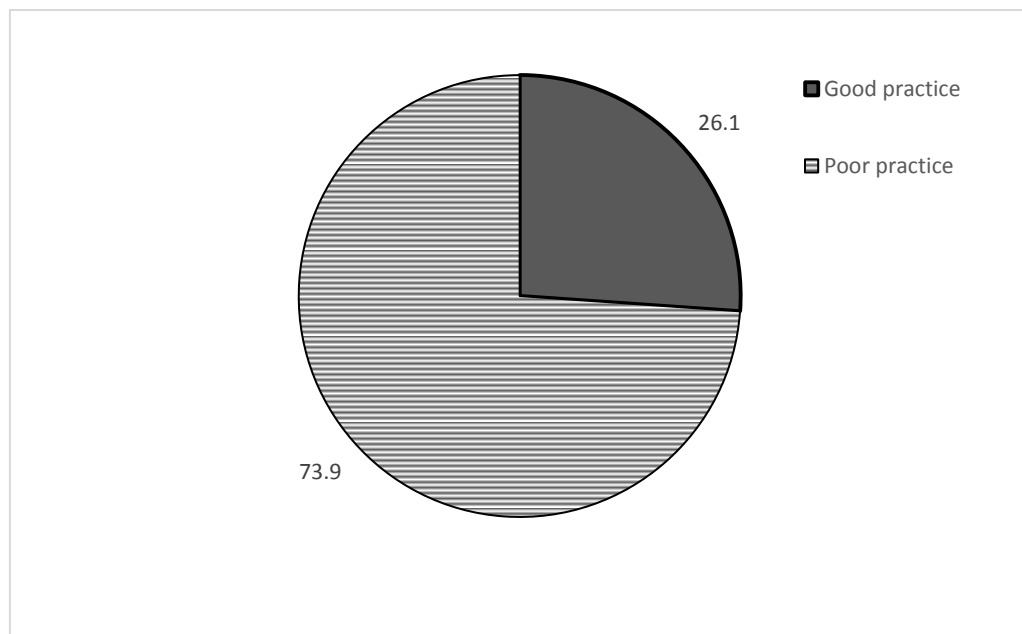


Figure 7: Food labelling information use by consumers before purchase of foods in Addis Ababa, Ethiopia, 2019.

5.3.3 Purchasing pre-packaged foods without reading labels

As shown in Table 6, 159 (39.5 %) of the respondents stated that they used to purchase pre-packaged food without reading labelling information because they were in a hurry/time constraints followed by the claim that purchasing food items is routine, making them familiar with the type of pre-packed foods and hence do not require to read the labels 137 (34.0%). Trusting the seller 79 (19.6%), unfamiliar language on the labels 37 (9.2%), when purchasing for or order by others 18 (4.5%) and advertisements/food promotion 7 (1.7%) were other reasons reported by participants as influencer for purchasing pre-packaged food without reading food labels information.

Table 6: Circumstances or reasons in which respondents purchase pre-packaged foods without reading labels in Addis Ababa, Ethiopia, 2019.

Circumstances (reasons)	Frequency	Percent
When the language on the label is unfamiliar	37	9.2
Purchase of routine/familiar foods	137	34.0
When they trust the seller	79	19.6
When they are in a hurry/time constraints	159	39.5
When they purchase to someone or order by other person	7	1.7
When purchasing based on advertisements/food promotion	18	4.5

Table 7, depicts the barriers reported by the consumers to reading food labelling information. Use of unfamiliar language was mentioned by more than half of the consumers 233 (57.8%) as the major barrier to reading food labels followed by hidden information due to overlapping packages at edges 215 (53.4%). Small font sizes and the use of technical/scientific language difficult to easily understand were mentioned as barriers by 144 (35.7%) and 142 (35.2%) respondents respectively. Incomplete information on the label was also mentioned by 72 (17.9%) of the respondents as barriers to reading food labelling information.

Table 7: Barriers to reading/using food labels in Addis Ababa, Ethiopia, 2019.

Barriers	Frequency	Percent
Use of small fonts	144	35.7
Hidden information due to overlapping packages at edges	215	53.4
Use of unfamiliar language	233	57.8
Use of technical/scientific language	142	35.2
Incomplete labelling	72	17.9

5.4 Factors associated with use of food labelling information

During bivariate analysis, six variables sex, marital status, level of education, monthly income, occupation and level of awareness had p-value less than 0.25 at 95%CI and were considered for multivariate analysis. During multivariate analysis, sex, marital status, monthly income and level of awareness were associated ($p < 0.05$) with use of food labelling information at 95%CI.

Females were 2.68 times more likely to use food labelling information than males (AOR 95%CI: 1.52 -4.73). Regarding marital status, divorced/separated/widowed respondents were 89% less likely to use food labelling information than males (AOR: 0.11, 95% CI: 0.01-0.94).

Concerning monthly income, respondents earning upper wage and those who were not willing to disclose the monthly income were 5.87 (AOR 95%CI: 2.36-14.57) and 6.15 (AOR 95%CI: 1.34-28.24) times more likely to use food labelling information than those who were earning low wage, respectively.

Regarding level of awareness of food labelling information, respondents who had medium and high level of awareness were 2.08 times (AOR 95%CI: 1.02-4.23) and 6.71 times (AOR 95%CI: 3.00-11.61) more likely to use food labelling information than those who had low level of awareness, respectively. However, age and level of education of consumers were not significantly associated with the use of labelling information (Table 8).

Table 8: Factors associated with the use of food labelling information among customers in Addis Ababa, Ethiopia, 2019.

Variable	Category	Use of labelling		COR 95%CI	AOR 95%CI
		No No (%)	Yes No (%)		
Sex	Male	164 (80.4)	40 (19.6)	1	1
	Female	134 (67.3)	65 (32.5)	1.99 [1.26-3.14]	2.68 [1.52 - 4.73]*
Marital status	Single	172 (72.9)	64 (27.1)	1	1
	Married	112 (73.7)	40 (26.3)	0.96 [0.61-1.52]	0.87 [0.49-1.52]
	Divorced/separated/widow	14 (93.10)	1 (6.7)	0.19 [0.03-1.49]	0.11 [0.01-0.94]*
Age(years)	≤20	34 (75.6)	11 (24.4)	1	
	21-25	75 (75)	25 (25)	1.03 [0.45-2.33]	
	26-30	87 (77.7)	25 (22.3)	0.89 [0.39-2.00]	
	31-35	48 (68.6)	22 (31.4)	1.42 [0.61-3.30]	
	36+	54 (71.1)	22 (28.9)	1.26 [0.54-2.92]	
Level of education	No formal education	8 (88.9)	1 (11.1)	1	1
	Primary education	27 (87.1)	4 (12.9)	1.18 [0.12-12.17]	1.39 [0.11-18.27]
	Secondary education	92 (80)	23 (20)	2.00 [0.24-16.80]	1.48 [0.14-15.36]
	Collage/university	171 (69)	77 (31)	2.60 [0.44-29.31]	2.00 [0.20-19.77]
Monthly income	Lower wage	87 (85.3)	15 (14.7)	1	1
	Middle wage	153 (79.3)	40 (20.7)	1.51 [0.79-2.90]	1.42[0.62-3.22]
	Upper wage	51 (53.1)	45 (46.9)	5.12 [2.59-10.09]	5.87[2.36-14.57]*
	Not willing to disclose	7 (58.3)	5 (41.7)	4.14 [1.16-14.78]	6.15[1.34-28.24]*
Occupation	Governmental employed	75 (72.1)	29 (27.9)	1	1
	Private employed	132 (72.1)	51 (27.9)	0.99 [0.58-1.71]	1.26 [0.67-2.36]
	Students	58 (82.9)	12 (17.1)	0.54 [0.25-1.14]	0.76 [0.26-2.24]
	Merchant	18 (64.3)	10 (35.7)	1.44 [0.59-3.48]	0.84 [0.28-2.53]

	Others	15 (83.3)	3 (16.7)	0.52 [0.14-1.92]	0.62 [0.12-3.29]
Level of awareness	Low	126 (88.1)	17 (11.9)	1	1
	Medium	105 (78.4)	29 (21.6)	2.07 [1.07-3.93]	2.08 [1.02-4.23]*
	High	67 (53.2)	59 (46.8)	6.53 [3.53-12.08]	5.90[2.99-11.61]*

5.5 Compliance level of food labelling information

The compliance level of the food label information to the national labelling requirements was studied on 31 different pre –packed juice products, 10 (32.3%) locally manufactured and 21 (67.7%) imported juice products which were available in selected supermarkets during the data collection time.

All 31 juice items assessed had product name, net content and expiry date. According to Ethiopian packed foods labelling compliance requirements standards (ES 359:2009), the name of ingredients used in the food product shall be listed in descending order of their composition/predominance. However, in our study, only 10 (32.3%) juice items listed ingredients in descending order of their weights expressed in percentages (Table 9).

Table 9: Presence of mandatory food labelling information on pre-packed juice products in Addis Ababa, Ethiopia, 2019.

Juice Label Details (n=31)	Frequency	Percent
Brand or trade or generic name	30	96.8
Visibility of the name of the product	31	100
Net content	31	100
List of ingredients	29	93.6
Ingredients list according to amount, from highest to lowest	10	32.3
Nutrition facts	29	93.6
Expiry date	31	100
Date of manufacturing	28	90.3

Batch number	21	67.7
Country of origin	30	96.8
Address of manufacturers	29	93.6
Instructions for use	24	77.4
Instructions for storage	26	83.9
Label legible to read	19	61.3
Label written with indelible ink	30	96.8
Written in Amharic or English language	30	96.8
Declarations	22	71.0
Manufacturer specific premises location/address	5	50.0
*		

*Additionally mandatory food labels information for locally manufactured and packed food products.

Imported items were observed for 17 standards, while locally manufactured items were observed for 18 standards mandatory labels information items including specific premises location. From 31 items observed, 6 (19.4%) fulfilled all requirements, while one product fulfilled only 50% of the requirements. The mean level of compliance to labelling requirements for all products was 84.9% (SD $\pm$ 14.2). The quartile of overall score was presented in Table 10. The imported juices had mean of 89.3% (SD $\pm$ 11.26), while locally manufactured products had 75.6% (SD $\pm$ 15.75) level of compliance. The difference in the mean level of compliance between imported and locally manufactured products was significant (P=0.01) in independent sample t-test (Table 11).

Table 10: The level of compliance to food labelling requirements on pre-packed juice products in Addis Ababa, Ethiopia, 2019.

Compliance	Frequency	Percent
Poor compliance	8	25.8
Fair	16	51.6
Good	7	22.6
Total	31	100.0

Table 11: Packed juice product group statistics within imported and locally manufactured products in Addis Ababa, Ethiopia, 2019.

Categories of juices	N	Mean	Std. Deviation	Std. Error Mean	Mean difference	t-test for equality of means
Imported	21	89.36	11.26	2.46	13.8	p-0.01
Locally manufactured	10	75.56	15.76	4.98		

As showed in Figure 8 below, imported juice items scored better compliance level in all food labelling information components than locally manufactured products. Nutritional information was provided in 100% of imported juices and 80% of the locally manufactured items. Listing ingredients according to amount from highest to lowest was the least labelling information observed in both imported (42.9%) and (10%) local manufactured juice products.

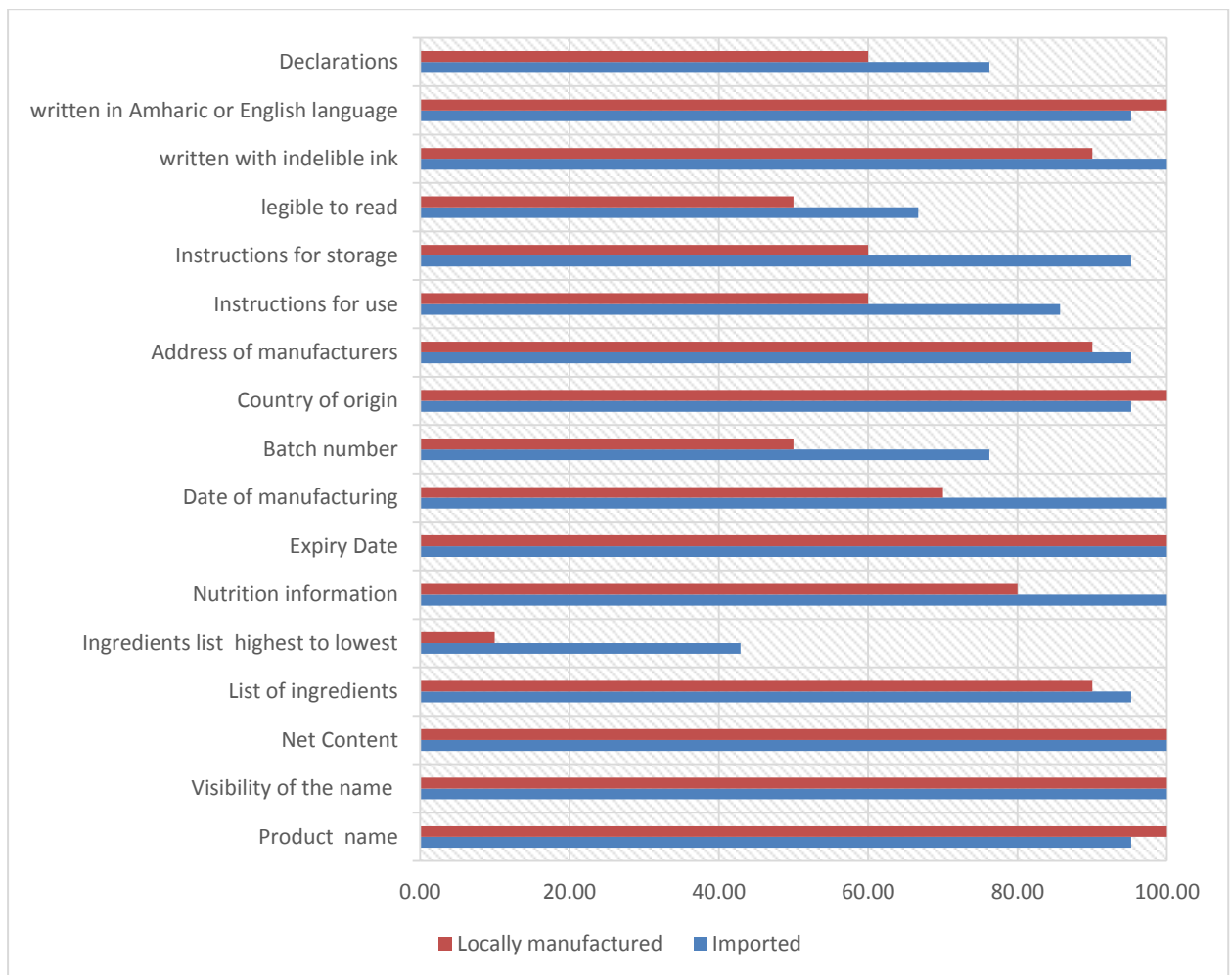


Figure 8: Percentage compliance to EFDA labelling requirements on imported and locally manufactured packed juice products in Addis Ababa Ethiopia, 2019.

6 DISCUSSION

This cross-sectional study was designed to assess customers' level of awareness and use of food labelling information in purchasing decision and its associated factors and to examine compliance of prepackaged juice products to the Ethiopia food safety and quality standards of labelling information requirements. The findings from the study have been interpreted and discussed in accordance with existing practices and previous research findings.

In this study, though majority of respondents (61.5%) attended college and above education, only about one fourth (23.6%) of respondents perceived that they were very much informed about food labelling. This finding was consistent with the study done in Tanzania where only 27.4% of respondents perceived they were very much informed about food labelling (Samson, 2012). Besides, only about one third (31.3%) of our respondents had high level of awareness. Similarly, studies in Tanzania, UAE, and India documented low level of awareness (Washi, 2012, Priyadarshini, 2014, Samson, 2012). This may be related to limited information dissemination system for public on food labelling information needing government attention.

When respondents were asked whether they read or not food labelling before purchasing, majority (94.5%) of respondents said that they simply read food labelling information and was similar to a study done in Tanzania that revealed 93.8% of participants read food labelling information (Samson, 2012). But out of 10 foods labelling information assessed, respondent's response revealed that they were reading only few items. The mean score of items read was 2.66 and only (26.1%) of respondents scored mean or above mean and practiced it frequently. This indicates that respondents were not actually addressing key labelling information. This finding was in line with study done in South Africa (Jacobs. et al., 2010) that reported (24.7%) frequently use food labelling information but lower than reports of study done in Iran (Bazhan et al., 2015) and India (Jain et al., 2018) that reported 60% and 76% of participants usually read food labelling information. This difference could be due to limited information dissemination for public on food labelling information about the use, level of consumption of pre-packed foods and its information use in African settings.

In the present study, it was noted that the expiry date was found to be highly referred labelling information by consumers of pre-packed foods. This is consistent to the findings of another study in Ethiopia and studies conducted elsewhere in the world (Tadesse et al., 2019, Washi, 2012, Samson, 2012, Priyadarshini, 2014, Bazhan et al., 2015).

In our study, time constraints, familiarity with the foods, trust in the seller, being unfamiliar with language used for labelling, order by others, use of small fonts and relaying on the information on advertisements/food promotion materials were reported as factors contributing for buying pre-packed foods without reading labels. Similar reasons were reported by other studies (Samson, 2012, Bazhan et al., 2015, Dutta and Patel 2017) .

In the current study, multivariate analysis showed that sex, income, marital status and level of awareness of food labelling information were associated with food labelling information use. In this regard, respondents with medium and high level of awareness were more likely to use food labelling information than those who had low level of awareness. A review of literature done on use of food labelling information indicated that consumers with prior knowledge are more likely to use label information effectively by focusing on important information, understanding the information, and making healthful decisions based on this information (Miller and Cassady, 2015). Though level of education was associated with use of food labelling information in some studies (Bazhan et al., 2015, Robert and AkshayChandran, 2017, Tadesse et al., 2019), in this study, there was no association between level of education and use of food labelling. Similar to the finding of our study, a study done in the UAE showed that there was no statistically significant relationship between level of education and use of labelling information (Washi, 2012). This might be due to homogeneity of respondents in our study as (90%) of study participants attended secondary school and above and only(2.2%)and (7.7%) had no formal education and primary education, respectively.

Respondents earning high income were more likely to use food labelling information than those earning low income. This finding was similar to the study in Jaffna

District, Sri Lanka (Simmakya et al., 2015). People with higher earning focus on quality and safety or brand.

Regarding sex of respondents, females were 2.39 times more likely to use food labelling information than males. This is consistent to other study in Ghana (Azila-Gbette et al., 2013). This might be due to women's social responsibility concerning their family health.

Concerning marital status of respondents, divorced/separated/widowed respondents were 89% less likely to use food labelling information than singles. This might be due to small sample size of the category including only 15 respondents (3.7% of the sample size).

Regarding compliance of labels according to the labelling requirements stated by the national law, the compliance completeness was observed better on imported products than locally manufactured packed juice products. In our study the mean level of compliance was 84.9% (SD 14.2). The imported juices had mean of 89.3% (SD=11.26), while locally manufactured products had 75.6% (SD=15.75) level of compliance. The difference in the mean level of compliance between imported and locally manufactured products was significant ($P=0.01$). Our study finding is consistent with the study conducted in India in 2018 (Jain et al., 2018). Similarly Amongne (2017), noted that there were inaccuracies such as incomplete and mislabeling of information on locally bottled water in Ethiopia (Amogne, 2017), indicating the need to focus on locally manufactured products by concerned regulatory bodies.

In our current study, name of the product, net content and expiry date were available on all assessed products. Such high level of completeness with respect to name, content and expiry date was also reported by study conducted in Jaipur city, India (Kothari et al., 2017).

For locally manufactured packed food products, location of specific premises is additionally required information on food labels. However, the present study revealed that only (50%) of locally manufactured packed food products had manufacturer specific premises location/address. The finding is inconsistent with study conducted in India which revealed (100%) completeness (Kothari et al., 2017). In Ethiopia, such challenges including incomplete labelling are reported at different times on media and

on the EFDA annual reports. Some local manufacturers do not label the specific premises location and not regulated properly by concerned bodies.

Limitations of the study

The study included supermarkets and its customers and the study results may not be generalized to customers utilizing pre-package food products from small retailers. Also regarding on food labels information compliance, the compliance of food labels were checked for only one items from risk based food categories, resulting either under or overestimating the compliance of food labelling items as per the standards.

In addition, the reading of pre-packed food labelling was judged by single data collector because of shortage of logistics and there might be personal reading discrepancies. Moreover, during compliance assessment, the size of bottle was not considered.

7 CONCLUSION AND RECOMMENDATIONS

7.1 Conclusion

Although several consumers mentioned that they read food label information, significant numbers still did not necessarily do so. Only about one third of respondents had high level of awareness and only about one fourth use food labelling information. The most frequently referred labelling information's were manufacturing and expiry dates.

Use of unfamiliar language, hidden information, technical/scientific language, small font sizes and incomplete labelling were reported as some of the difficulties consumers encounter in reading and using food labelling information when purchasing pre-packed food.

Sex, income, marital status and level of awareness of food labelling information were associated with the use of food labelling information.

Regarding mandatory food labels information compliance assessed, mean level of compliance was 84.9%. And locally manufactured food items scored less compliance than imported items in most of the food labelling standards.

7.2 Recommendations

With the changing lifestyle and industrialization, the use of pre-packaged food products has become common across all communities of all ages. The provision of appropriate and balanced labelling information is very critical from societal and public health perspectives. In this regard, the study has outlined some gaps. In order to improve the attention given by manufacturers and consumers regarding the importance of food labelling information, initiatives should be taken by both the regulatory bodies and manufacturers to enforce legal provisions and to comply to legal requirements to provide accurate and easy to understand information on food labels and enable consumers make informed decision for healthy food choices.

Customized and regular public education is required by relevant stakeholders to improve the level of awareness by consumers regarding the importance of food labelling information and to utilize it to improve their purchasing behavior, giving

attention to males and low income groups. Consumers need to develop their knowledge and practice for properly understanding the content of food labels to make informed decisions suited to their individual needs and prevent unintended problems associated to the use of pre-packaged food products.

Improved follow up and monitoring is also required by the regulatory bodies to ensure that all locally manufactured and imported pre-packed food products marketed in the country meet the food labelling formation regulatory requirements. The regulatory and other stakeholders should also work collaboratively on the reported difficulties encountered by consumers in reading and using the information presented on food labels and to ensure that pre-packaged food labels are presented in a manner that can help consumers to make informed choices.

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Annexes

Annex I: -Information sheet

Dear respondent, my name is _____. I am working as a data collector for the study being conducted in super market on the consumer's awareness and use of food label information for purchasing prepackaged food products by Tsega kokebe who is studying for his Master's degree at Addis Ababa University. Consumers working in a health-related field and Consumers who only purchase non packed food do not include this study. I kindly request you to give me your attention to explain you about the study and study participant.

The study title: Manufacturers' compliance of pre-packed juice to labelling requirements, and customers' use of labelling information for decision to purchase pre-packed foods among consumers in Addis Ababa, Ethiopia, 2019.

Purpose of the study: The main aim of this study is to write a thesis as a partial fulfillment of a Master's degree in Regulatory science for the principal investigator. After completion of this study results will be used for the institutions, SNNPRs Health Bureau, food manufacturer and EFMHACA as evidence and input to intervention programs based on the gap identified.

Procedure and duration: I will be interviewing you using a questionnaire which needs your full cooperation to provide me with pertinent data that is helpful for the study. The interview will be taking about 10 to 15 minutes. I hope you will help me by answering this question.

Risks and benefits: Risk of participating in this study is nil, do not anticipate any harm to occur to you or your family as a result of participating in this study, but only taking few minutes from your time. There would have no any direct benefits for being study participant but indirectly the findings from this research will important for raising awareness on food labelling information among consumers as well as improvement of food labelling information by food manufacturers and regulators, and for scientific knowledge.

Confidentiality: I assure you that all the information collected from you will be kept confidential. Your names will not be written or specified and will never be used in connection with any of the information you tell me. The findings of the study will be general for the study population and will not reflect anything particular of individual persons.

Rights: Giving permission for this study is fully voluntary. If you decide to participate, you have the right to discontinue at any time in the process and this will not label you for any loss of benefits. You do not have to answer any questions that you do not want to answer, if you consider something related to the study is wrong. However, your honest answers to these questions will help us to understand the level awareness on food labelling and use of the information in purchasing pre-packaged foods among consumers

Contact address: If you ever have questions about this study, you should contact Principal investigator.

Investigator: Tsega kokebe

Cell phone +251-911034964

Email tsegakokeb12@gmail.com

Addis Ababa University, school of Pharmacy

Annex II: Informed voluntary consent

I have detail information about the study is explained to me. I have clearly understood the purpose of the research, the procedures, the risks, and benefits, issues of confidentiality, the rights of participating and the contact address for any queries. I have been given the opportunity to ask questions for things that may have been unclear. I am informed that I have the right to withdraw from the study at any time or not to answer any question that I do not want. Therefore, I declare my voluntary consent to participate in this study with my initials (signature).

Signature of participants_____ date _____

Name and signature of data collector_____ date _____

Annex III: English version of the questionnaire

A questionnaire designed for consumer's awareness and use of food label information for purchasing prepackaged food products among consumers in Addis Ababa city, Ethiopia, 2018.

General information

100. Date of interview: -----dd ----- mm ----- yyyy

101. Supermarket code:-.....

102. ID number of Participant: - -----

Part 1. Socio-demographic characteristics of respondents(consumers)			
s/no	Questions	Response	Skip
103	Gender	1. Male 2. Female	
104	Age?	---- years	
105	Marital status?	1. Single 2. Married 3. Separated 4. Divorced 5. Widowed	
108	What was the highest level of education you attend?	1. Unable to read and write 2. Can read and write 3. Primary education 4. Secondary education 5. Preparatory education 6. College/university	
109	What is your occupation?	1. Employed(private/ government) 2. Merchant 3. Student 4. Housewife	

		5. Laborer 6. Others (specify)	
110	Monthly income	-----Birr	
Part 2. Awareness on the basic pre-packaged food labelling information			
111	How well informed would you say you are about food labelling information?	1. Very much informed 2. Moderately informed 3. Minimally informed 4. Not informed	
112	Which of the following terms are you most familiar with in relation to the basic information found on pre- packaged food labels? (tick all mentioned)	1. List of ingredients 2. Net content 3. Name of the manufacturer 4. Country of origin 5. Batch /lot identification 6. Manufacture date 7. Expiry date 8. Storage condition 9. Nutrition information 10. Instructions for use 11. Others (Specify	
113	Do you read food labelling information before purchasing pre-packaged foods?	1. Yes 2. No	If yes, proceed with question No. 115.

114	Explain why you do not read food labelling information before purchasing pre-packaged foods?	_____ _____ _____	After explain proceed with question No. 118
115	When you refer to Food label information	_____ _____	
116	How often you refer to Food label information?	1. Sometimes 2. Occasionally 3. Often 4. Always 5. never	
117	What information do you seek on pre-packaged food label before deciding to purchase or eat a particular food?	1. List of ingredients 2. Net content 3. Name of the manufacturer 4. Country of origin 5. Batch /lot identification 6. Manufacture date 7. Expiry date 8. Storage condition 9. Nutrition information 10. Instructions for use 11. Others (Specify	
Part3.Consumers perception on the importance of food labelling information			
118	How important do you consider categories of information on food labelling to be?	1. Very important 2. Somewhat important 3. Not important 4. Undecided	If the answer is 1 and 2 proceed with question No. 120

119	Please explain briefly why you are undecided or you think that food labelling information is not important		After explain proceed with question No. 122
120	If the answer is very important or Somewhat important explain briefly why you think that food labelling information is important?		
Part 4. Factors associated with use/ reading food labels			
121	What motivates/derives you to read labelling information on pre-packaged foods?		
122	What Factors that influences you decision to purchase a pre-packed product?	1) Price of the food 2) Food label 3) Advertisement 4) Packaging 5) Taste of the product 6) Product name 7) Convenience Other specify.....	
123	In which circumstances do you buy pre-packaged foods without reading Labelling information?		
124	What difficulties do you come across in reading pre Packaged food labels?	1. Unfamiliar language 2. Small fonts 3. Use of direction 4. technical/scientific language	

		5. Time constraints 6. Incomplete labelling 7. Hidden information 8. Calendar interpretation in Ethiopia calendar	
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Name of data collector: _____signature_____

Checked by (supervisor name): _____signature_____

Annex IV: Checklist for compliance

Checklist for Compliance of labelling imported and locally manufactured packed food products with Ethiopia food labelling requirements

General information

100. Data collection date: -----dd ----- mm ----- yyyy

101. Supermarket code:- _____

102. Name of the food items _____

103. Types of food _____

104. Categories of food imported / locally manufactured

Part 1. Check all of the following information on the labelling package			
s/no	Questions	Response	Skip
105	Brand or trade or generic name accompanies with true nature of the food	1. Yes 2. No	
106	Is the name of the product Visible?	1. Yes 2. No	
107	Net content information in weight/ volume	1. Yes 2. No	
108	List of ingredients information	1. Yes 2. No	If no or the food is single ingredient skip to Q. no.110
109	Are Ingredients listed according to amount, from highest to lowest	1. Yes 2. No	
110	Nutrition information	1. Yes 2. No	
111	Manufacture date	1. Yes 2. No	
112	Expiry date or Best before date or use by date(where applicable)	1. Yes 2. No	

113	Batch or lot identification	1. Yes 2. No	
114	Country of origin	1. Yes 2. No	
115	Name and complete address of the manufacturer/agent	1. Yes 2. No	
116	labels of locally manufactured food the specific premises location address of the manufacturer Ethiopia digital post address/ mailing code	1. Yes 2. No	
117	Direction for use	1. Yes 2. No	
118	Instructions for handling /storage	1. Yes 2. No	
119	Does the label legible to read?	1. Yes 2. No	If yes skip to Q. no.121
120	If Q. no.120 is No, which labelling parts are not legible?	_____ _____ _____ _____	
121	Does the label written with indelible ink?	1. Yes 2. No	
122	Is labelling is written in Amharic or English language?	1. Yes 2. No	
123	Declarations of the product	1. Yes 2. No	

Name of data collector: _____signature_____

Checked by (supervisor name): _____signature_____

Annex V: Amharic version of the questionnaire

አዲስ አበባ ዩኒቨርሲቲ ጤና ሳይንስ ኮሌጅ የፋርማሲ ትምህርት ክፍል

የታሸጉ ምግቦችን ገዝተው የሚጠቀሙ የህብረተሰብ ክፈሎች ግንዛቤ እና ገላጭ ጸሁፉን አጠቃቀም መጠየቁ ይቻላል፡፡

ክፍል አንድ፡ -ጠቅላላ መረጃ

100. ቃለ-መጠይቅ የተደረገበት፡- -----ቀን -----ወር -----ዓ/ም

101. የሱፐር ማርኬቱ መለያ ኮድ፡-.....

102. የጥናት ተሳታፊው ስው መለያ ቁጥር፡- -----

ተ.ቁ	ማህበራዊ ሁኔታ መረጃ ጥያቄ	ምላሽ	ይለፍ
103	ፆታ	ወንድ 2. ሴት	
104	እድሜ	_____	
105	የጋብቻሁኔታ	1. ያላገባ(ች) 2. ያገባ(ች) 3. ተለያይተው የማይኖሩ 4. የፈታ(ች) 5. የሞተባት(በት)	
108	የትምህርት ደረጃ?	1. ማንበብና መጻፍ የማይቻል 2. የመጀመሪያ ደረጃ ትምህርት 3. የሁለተኛ ደረጃ ትምህርት 4. የመካከለኛ ደረጃ ትምህርት 5. የኮሌጅ ዲፕሎማ	

		6. ዲግሪ እና ከዛ በላይ	
109	የ ሚካኤል ደረሰት የ ሥራ ዘርፍ ?	1. የ መንግስት ተቀጣሪ 2. የ ግል ድርጅት ተቀጣሪ 3. ነጋዴ 4. የ ቤት እመቤት 5. የ ቀን ሰራተኛ 6. ሌላ ካለ ይገለጽ_____	
110	የ ወራዊ ገቢዎ መጠን ስንት ነው?	_____ብር	
ክፍል 2. በታሸጉ ምግቦች ላይ የ ሚክሮ ሚኒስቴር ገንዘብ ማጠቃለያ			
111	በታሸጉ ምግቦች ላይ ስለ ሚክሮ ሚኒስቴር የምግብን ሁኔታ ገንዘብ መጠን ምን ያህል ግንዛቤ/ መረጃ አለህ/ሽ?	1. በደንብ መረጃ አለኝ 2. መካከለኛ መረጃ አለኝ 3. መጠንኛ መረጃ አለኝ 4. ምንም መረጃ የለኝም	
112	ከሚከተሉት በታሸጉ ምግቦች ላይ ከሚክሮ ሚኒስቴር የምግብን ሁኔታ ገንዘብ ማጠቃለያ ዝርዝር ወስጥ በየትኞቹ ላይ ነው ግንዛቤው ያለዎት? (በተዘረዘሩት ላይ የራዕይ ምልክት ያስቀመጡ)	1. የ ምግብ ንጥረ ነገር ይዘት መረጃ 2. የ ምግብ ጠቅላላ ክብደት 3. የ አምራቹ ስም 4. የ ተመላሽ ተባብሮ 5. የ ምርቱ መለያ ባች	

		6. የተመረተበት ቀን/ዓም 7. የመጠቀሚያ ጊዜ ቀን/ዓም 8. የአከማቻቸው ሁኔታ 9. ምግቡ የያዘው ቅመማቸውም ዝርዝር 10. የአጠቃቀም መመሪያ	
113	የታሸጉ ምግቦች ከመገዛትዎ በፊት በምግቡ ላይ የሚጠፉ የምግቡን ሁኔታ ገላጭ ፀሐፍ መረጃዎችን ያነባሉ?	1) አዎ 2) አይደለም	መልስዎ አዎ ከሆነ ወደ ጥያቄ ተ/ቁ 115 ይለፉ
114	በምግቡ ላይ የሚጠፉ የምግቡን ሁኔታ ገላጭ የፀሐፍ መረጃዎች ለምን እንደሚገኙት ምክንያቱን ያብራሩ? ?	_____ _____ _____ _____ _____	ካብራሩ በኋላ ወደ ጥያቄ ተቁ 118 ይለፉ
115	መቼ መቼ ነው የምግቡን ሁኔታ ገላጭ የፀሐፍ መረጃዎች የሚገኙበት?	1. ምግቡን ለመጀመሪያ ጊዜ የምግብ ከሆነ 2. የምግብ ወን ምግብ ማወዳደር ወይም ማጋጠሚያ ስፈልግ 3. ወትሮ ከምግብ ለየት ያለ የምግብ አይነት በምግብ በት ጊዜ 4. ሌላ ካለ ይግለፅ _____	

116	ብዙ ጊዜ የታሸጉ ምግቦችን ሲገዙ እንዴት ነው የምግቡን ገላጭ መረጃዎችን በመረጃነት የሚጠቀሙባቸውሁኔታ?	1. አልፎ አልፎ ነው 2. አብዛኛውን ጊዜ ነው 3. ሁልጊዜ ነው የምጠቀመው	
177	የታሸጉ ምግቦችን ከመገዛትዎ ወይም ከመግባብዎ በፊት ምን አይነት መረጃ ነውላቸው የሚፈልጉት?	1. የምግቡ ንጥረ ነገር ይዘት መረጃን 2. የምግቡ ጠቅላላ ክብደትን 3. የአምራቹን ስም 4. የተመረተበትን ሀገር 5. የምርቱ መለያ ባችን 6. የተመረተበትን ቀን/ዓም 7. የመጠቀሚያውን ጊዜ ቀን / ዓም 8. የአካላቸውን ሁኔታውን 9. ምግቡ የያዘውን ቅመማቸውን ዝርዝር 10. የአጠቃቀም መመሪያውን	
ክፍል3: - የታሸጉ ምግቦችን ተጠቃሚዎች የሚጠቀሙትን የምግብ ሁኔታን ገላጭ መረጃዎች ጠቀሜታ የሚደብት አግባብ ጥያቄዎች			
118	በታሸጉ ምግቦች ላይ የሚገኙ የምግብ ሁኔታን ገላጭ መረጃዎች ምን ይህል ጠቀሜታ አላቸውብለው ያስባሉ?	1. በጣም ጠቃሚነት ው 2. በከፊል ጠቃሚነት ው 3. ጠቃሚ አይደለም 4. አልወሰንኩም	መጠን 1 ወይም 2 ከሆነ ወደ ጥያቄ ተቁ.120

			ይለፉ
119	እባክዎትን የምግብ ሁኔታን ገላጭ መረጃዎች ለምን አይጠቅሙም ብለው እዳሰቡ ወይም አልወሰንኩም ያሉበትን ምክንያት በአጭሩ ያብራሩ ?		ካብራሩ በኋላ ወደ ጥያቄ ተቁ 122 ይለፉ
120	በታሸጉ ምግቦች ላይ የሚገኙ የምግብ ሁኔታን ገላጭ መረጃዎች ለምን ጠቃሚ ናቸው ብለው እዳሰቡ በአጭሩ ያብራሩ?		
ክፍል4: - የምግብ ሁኔታን ገላጭ መረጃዎች ከማንበብ ጋር ተዛማጅ የሆኑ ምክንያቶችን በተመለከተ			
121	የታሸጉ ምግቦችን ለመግዛት ለወሳኔ የአነሳሳዎት ምን አይነት ምክንያቶች ናቸው?	1. የምግቡ ዋጋው ሁኔታ 2. የምግቡ ሁኔታን ገላጭ መረጃዎች 3. ማስታወቂያ 4. እሽግ በመሆኑ 5. የምግቡ ጣኦት 6. የምርቱ ስም 7. ምቹ በመሆኑ 8. ሌላ	ካለ

		ይገለጽ _____	
123	በምን አይነት አካሄድ ወይም ሁኔታ ወስጥ ሲሆኑ ነው የምግብን ገላጭ መረጃዎች ሳያነቡ የታሸጉ ምግቦችን የሚዘዙት?	_____ _____ _____	
124	በታሸጉ ምግቦች ላይ የምግብ ሁኔታን ገላጭ መረጃዎች በሚገኝበት ወቅት ምን ድን ነው ከባድ ወይም አስቸጋሪ የሚሆኑባቸው?	1. ያልተለመደ ቋንቋ 2. ጥቃቅን ፊደል አጻጻፍ 3. የአጠቃሞ መመሪያ 4. መቼዊ/ሳይንሳዊ ቋንቋ 5. ሙሉ ያልሆኑ ገላጭ ጽሁፎች መረጃዎች 6. ለመጽሐፍ የሚያስቸግሩ የተደበቁ ጽሁፎች 7. የኢሮፕያን ዘመን አቆጣጠር	

መረጃውን የሰበሰበው ሰው ስም: _____ ፊርማ _____

መረጃውን ያረጋገጠው የሱፐርሻይዘሩ ስም _____ ፊርማ _____

Annex VI: Ethical clearance and support letter

Ethical clearance

የኢትዮጵያ ሪፖብሊክ



Ethical Review Board

ቀን

May 13, 2019

Date
ቀን

ERB/SOP/92/04/2019

Ref. No.

To: **Tsega Kokebe**

School of Pharmacy

Re: **Ethical Clearance**

It is to be recalled that you submitted a study proposal entitled "**Compliance of food labeling requirements and use of labeling information for purchasing decision among consumers in Addis Ababa city Ethiopia**" for ethical approval by the School's Ethical Review Board (ERB). The Board thoroughly reviewed the proposal based on its operational guidelines and found it to fulfill all ethical requirements stipulated in the guidelines. This is, therefore, to inform you that the proposal is ethically approved for implementation.

With best regards,

Arebu Issa

Chairperson, ERB



☎ 00251156 02 12

✉ 1176

ቴሌክስ

Telex: 21205

ፋክስ

Fax: 00251(11)1558566

ኬብላ

Cable: AAUNIV

Support letter

አዲስ አበባ ዩኒቨርሲቲ

በፋርማሲ ት/ቤት
የፋርማሲዩቲክስ ሶሻል ፋርማሲ
ትምህርት ክፍል



School of Pharmacy
Department of Pharmaceutics
and Social Pharmacy

Date: April 22, 2019
Ref No: Ph/ceutics/258/11/2019

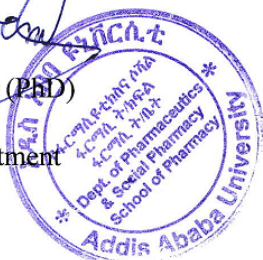
To Whom It May Concern

Mr. Tsega Kokebe Taye is a student in the Regulatory Affairs MSc program run by our Department and is about to embark on his thesis entitled, **“Compliance of food labeling requirements, and Use of labeling information for purchasing decision among consumers in Addis Ababa city, Ethiopia”**. This is therefore, to kindly request your good office to facilitate the conduct of the research by providing the necessary information. I would like to extend my sincere appreciation for your usual and unreserved support in this regard.

With best regards,

Bruck Messele (PhD)

Head of Department



+251118697102

1176

ቴሌክስ
telex: 21205

ፋክስ
Fax: 00251(11)1558566

ኬብላ
Cable: AAUNIV



የኢትዮጵያ የምግብ፣ የመጥጋትና ጤና ክብካቤ አስተዳደርና ቁጥጥር ባለሥልጣን
**FOOD, MEDICINE AND HEALTH CARE ADMINISTRATION AND CONTROL
 AUTHORITY OF ETHIOPIA**

15 ሚያዝያ 2019
 ቀን
 ቁጥር 45/መ/ረ/2018
 02/12/15-2/16

ለሚመለከተው ሁሉ

ጉዳዩ: ትብብር እንዲደረግላቸው ስለመጠየቅ

አቶ ፀጋ ኮከብ የ Regulatory Affairs MSc program ተማሪ መሆናቸውን የአዲስ አበባ ዩኒቨርሲቲ በቁጥር ph/ceutics/230/11/2019 በቀን April 8, 2019 በተፃፈ ደብዳቤ ገልፀው በ “compliance of food labeling requirements and use of labeling information for purchasing decision among consumers in Addis Ababa city, Ethiopia” በሚል የመመረቂያ ጽሁፍ ለማቅረብ ስለፈለጉ በእናንተ በኩል አስፈላጊው ትብብር እንዲደረግላቸው እናሳስባለን፡፡



ከሰላምታ ጋር

ሕይወት ታደሰ
 የምግብ ጤናና ጤናክ ተቋማት
 ኢንስፔክሽን ዳይሬክቶሬት
 ረዳት ዳይሬክተር

ግልባጭ

- ✚ ለምግብ ተቋማት ኢንስፔክሽን ዳይሬክቶሬት
ኢ.ም.መ.ጠ.አ.ቁ.ባ
- ✚ ለ አቶ ፀጋ ኮከብ
ባሉበት

ፋክስ/Fax: 251-11-552 13 92

P.O.Box: 5681 Tel: 251-11-552 41 22/552 41 23

E-mail: daca@ethionet.et

ሚስ በሚጠየቅ ጊዜ የእኛን ደብዳቤ ቁጥር ይጥቀሱ
 IN REPLY REFER TO OUR RE.NO.

Annex VII: Declaration

This is to certify that this thesis entitled “Compliance Of Food labelling requirements, and use of labelling information for purchasing decision among consumers in Addis Ababa, Ethiopia” submitted in partial fulfillment of the requirements for the award of the degree of Master of Science in “Regulatory Science” to the Graduate Program of College of Health Sciences , Addis Ababa University by Mr. Tsega Kokebe is an authentic carried by him under our guidance. The matter embodied in this thesis work has not been submitted earlier for award of any degree or diploma to the best of our knowledge and belief.

Name of the student

Tsega Kokebe Taye

Signature and date:_____

Name of the Supervisor

Professor Teferi Gedif

Signature and date:_____

Mr. Tesfa Marew (**MSc, BPharm**)

Signature and date:_____

