CORRELATION OF FACTORS TO THE LEVEL OF AWARENESS OF CONSUMERS ON THE LABEL AND HEALTH RISKS OF ULTRA-PROCESSED FOOD IN SELECTED BARANGAYS IN GENERAL TRIAS CITY, CAVITE

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ABSTRACT

This study aimed to correlate different factors to the level of awareness of consumers on the label and health risks of ultra-processed food. Specifically, this study seeks to determine the consumers' sociodemographic profile, the level of awareness of consumers on the label and health risks of ultra-processed food, factors that affect the level of awareness of consumers and assess the correlation of the factors to the level of awareness.

The study was conducted from the month of October 2019 to February 2020 in 20 selected barangays in General Trias City, Cavite.

The correlational quantitative research design was used in the study and utilized a survey questionnaire as the research instrument.

The frequency, mean, percentage, chi-square test, and Kruskal and Goodman's Gamma was used for the statistical treatment with five percent significance.

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The researchers determined that the consumers were moderately aware on the label and health risks of ultra-processed food. The residential area, special dietary status, highest educational level and age were found to be significant to the level of awareness of consumers. Furthermore, attitude towards information on food has high positive correlation, social influence has very small positive correlation, and perceived behavioral control, and concerns about diet health and intention to use information have moderately small positive correlation to the consumer's level of awareness, and were all significant.

Reading, listening and watching about the contents and importance of the label and health risks of ultra-processed food on traditional media have correlation to the level of awareness but is not significant.

Reading, listening and watching about the contents and importance of the label and health risks of ultra-processed food on modern social media has very small and moderate positive correlation to the level of awareness of the consumers on the label and health risks and is significant.

INTRODUCTION

There have been many ways made on how food should be preserved, and it has changed and continuously improved within throughout the years. Through these improvements, more kinds of food and drinks became more available for consumers. Through food processing, there came chocolates, wine, and heavily processed foods like canned goods, carbonated beverages, and instant food. Eventually, there came the NOVA food classification, where they classified food into four groups depending on the level of food-processing (Cannon et. al, 2016). The fourth group is ultra-processed food and drink products, which undergo processes and mix with many ingredients (p.33).

In present time, different kinds of ultra-processed food are extremely accessible to consumers, and is popular around the world. There are many ultra-processed products that is enjoyed by many and people can easily buy almost everywhere. According to Goody(2019), she stated that ultra-processed foods had dominated the U.S. diet over the past 70 years ("Its Not Just

Salt, Sugar, Fat", para.1). According to Gunnars(2017), many processed food products have been engineered to be "rewarding" to our brains ("Nine Ways that Processed Foods", para. 4). Furthermore, sometimes, there are still health risks that go along with its consumption for food processing can lead to improvements in, or damage to, the nutritional value of foods ("Food Processing,"2010).

In the Philippines, the consumption of ultra-processed food is also popular. According to Baker, Kay and Walls (2014), the Philippines consume just as much carbonated drinks as high-income countries (p.12). Furthermore, in a study made in Metro Manila regarding urban food consumption, it states that almost all households said that they consume processed food (Chakraborty, Erkman, Rani & Sahakian, 2016, p.564). Now, in General Trias City, there are places where people can grab ultra-processed food, such as grocery stores located across the city. According to Moubarac (2018) in an observation in groceries, there are numerous types of ultra-processed foods from cookies to complete dinners in grocery stores in Canada ("Grocery Stores Bulking Up", para. 2).

The purpose of this study in relation to this is to focus on the consumers of these ultra-processed food products, and to be able to determine the factors that affect the level of awareness of consumers on the label and health risks of ultra-processed food products.

STATEMENT OF THE PROBLEM

The problem in recent times is that, ultra-processed food has emerged, and recently, studies on ultra-processed foods have proven that, they can be a factor to non-communicable diseases. According to the study, "The Role of Nutrition and Health Claims in Consumers' Perception", consumers do not read nutrition labeling because the information placed on the labeling is hard to understand(Burchi & Tarabella, 2012,p.2176). Due to this, the researchers sought to discover the level of awareness of consumers regarding the label and health risks of ultra-processed food. Furthermore, according to various studies, there are different factors that may affect a consumer's awareness on the label and health risks of ultra-processed food products. Thus, the researchers sought to identify the relationship of such factors to the level of consumers' awareness.

OBJECTIVES OF THE STUDY

Generally, this study aimed to correlate the factors to the level of awareness of consumers on the nutritional labels and health risks of ultra-processed food products in General Trias City, Cavite.

Specifically, this study aimed to:

1. Identify the socio-demographic profile of the participants of the study:
   a. age
   b. gender
   c. residential area
   d. special dietary status
   e. highest educational level
   f. occupation
   g. civil status
   h. children in family
   i. household size; and
   j. estimated household monthly income.
2. Determine the level of awareness of consumers on the labels and health risks of ultra-processed food products.
3. Determine the factors that may affect the level of awareness of consumers in General Trias City, which are:
   Dung and Ha's factors affecting use of information on label
   a. Attitude towards the information on food labels
   b. Social influence
   c. Perceived behavioral control
   d. Concerns about diet-health
   e. Intention to use the food labels; as well as Media
   f. Traditional media
   g. Modern social media

4. Assess the correlation between the sociodemographic profile and factors to the level of awareness of consumers on the label and health risks in selected barangays of General Trias City, Cavite.

SIGNIFICANCE OF THE STUDY

This study will be helpful to food manufacturers, for they will be able to use the information about the factors and their relationship to the level of awareness of the consumers in food manufacture.

To the Bureau of Food and Drug Administration of the Department of Health (BFAD), for in for the discovery of the relationship of factors to the level of awareness of consumers may help in finding solutions to raise consumers' level of awareness regarding ultra-processed food products.

To the consumers of ultra-processed food products, for this may affect their decision making in buying processed food products, as they may be influenced by the results presented.

To academic institutions, especially those in General Trias, Cavite, for they will be able to use this study to help improve the awareness of students on the labeling and health risks of ultra-processed food.

To future researchers who wish to make future researches that may relate to the level of awareness of consumers on the labels and health risks of ultra-processed.

TIME AND PLACE OF THE STUDY

The study was conducted in 12 selected barangays in General Trias City, Cavite, from September 2019 to January 2020. Three barangays were chosen in the north, east, south and west, basing on the central part of General Trias City, namely: Barangay Santiago, Barangay San Francisco, and Barangay Pasong Camachile II in the east, Barangay Pasong Camachile I, Barangay Santa Clara, and Barangay Pinagtipunan in the north, Barangay Pasong Kawayan I, Pasong

Kawayan II, Barangay Tapia in the west, and Barangay Buenavista I, Barangay Buenavista II, Barangay Buenavista III in the south.

SCOPE AND LIMITATIONS OF THE STUDY

This study focused on the topic regarding the correlation of factors affecting consumers' awareness on the labeling and health risks of ultra-processed food products. This study did not include information on confirmation on the truthfulness of the labels of the ultra-processed food products, for it will be a more intensive and different study, which would concern different participants. Furthermore, we excluded the knowledge on the nutritional label in the sociodemographic profile, for it will make this study more intensive as well. This did not include information from all the barangays of General Trias due to the time limit.

The researchers only used a survey questionnaire to assess the level of awareness of consumers due to time constraints. The questionnaire was validated by three professionals and one Filipino critic due to the same reason stated in the preceding sentence.

CONCEPTUAL FRAMEWORK

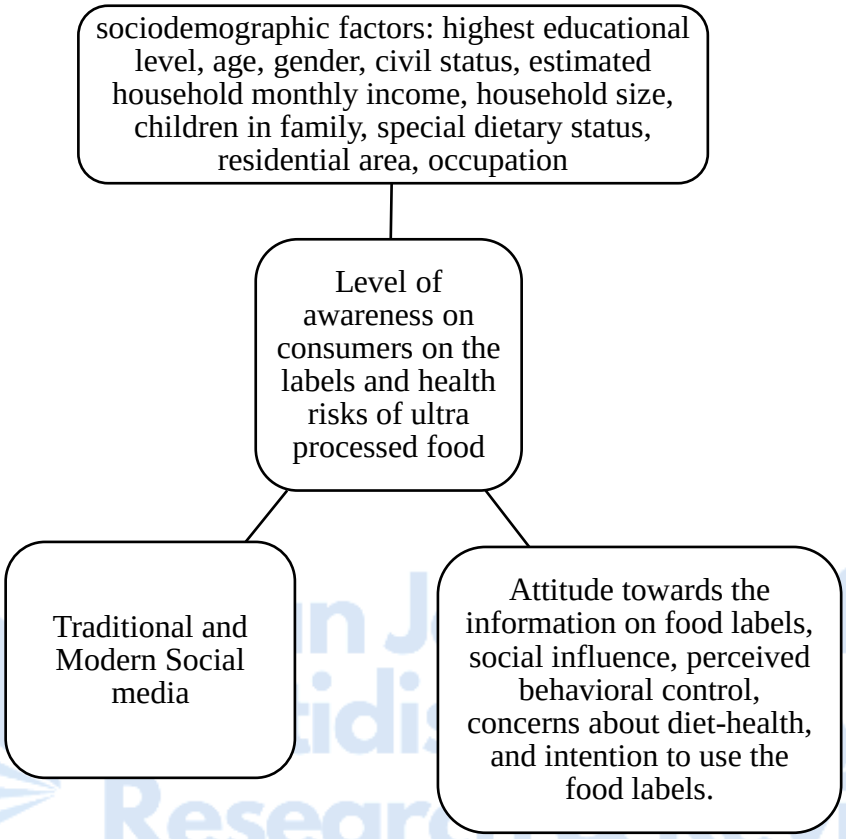

Figure 1. Conceptual Framework

The conceptual framework shows the possible relationship between the factors that affect the level of awareness of consumers on the label and health risks of ultra-processed food, as according to studies.

DEFINITION OF TERMS

The following key terms are used in the study are defined in order to not be confused in the reading of the study.

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Consumers are people or organizations that purchase products or services in order to consume them. Furthermore, they do not sell the item that they bought, but consume it.

Food labels are labels regarding information about the food products, its nutritional value, expiration date, and health claims.

Nutritional value refers to contents of food, relating to the amount of carbohydrates, fats, proteins, minerals, additives, enzymes, vitamins, sugar intake, cholesterol, fat and salt intake.

Expiration Date is the date after which a consumable product should not be used because it may be spoiled, damaged, or ineffective.

Ultra-processed food products are the food products that underwent extreme processes and have had many additives.

The NOVA food classification is the food classification that categorizes foods according to the extent and purpose of food processing, rather than in terms of nutrients. ... It specifies which foods belong in which group and provides precise definitions of the types of processing underlying each group.

Cardiovascular disease *(CVD)* is a class of diseases that involve the heart or blood vessels. CVD includes coronary artery diseases (CAD) such as angina and myocardial infarction (commonly known as a heart attack).

REVIEW OF RELATED LITERATURE

IMPORTANCE OF FOOD LABELING

Food labels are important information for the identification of food content. In the Philippines, there are requirements and regulations set by the Food and Drug Administration (FDA). According to FDA(2014), in the revised set of requirements and regulations of prepackaged food products, the minimum mandatory information on the food label is the food product's name, brand name or trademark, complete list of ingredients, net contents and drained weight, name and address of manufacturer, repacker, packer, trader, distributor, lot identification, directions for use, nutrition facts or nutritive value, storage condition, food allergen information and expiry date or best before date. In terms of expiration date, FDA director Pagayunan(2018)

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stated that FDA allows having 'best before' in the food labels as long as the expiration date is also there ("FDA, maghihigpit sa paglalagay", para. 4).

Furthermore, in an article, a food scientist, Francisco (2018), stated that consumers must be careful of what food products contain:

> *Consumers need to be conscious with the advertisements they see... Manufacturers work hard on their labels, because they have compliance standards to meet. So on our part as consumers, read the labels – it is better if you are informed of the contents of what you are eating, or else, it could affect your health without you knowing"(Food labels can be deceiving, para. 3).*

However, the food label is overlooked by consumers at times. According to the study of "The Role of Nutrition and Health Claims in Consumers' Perception", consumers do not read nutrition labeling because the information placed on the labeling is hard to understand(Burchi and Tarabella, 2012,p.2176).

ULTRA-PROCESSED FOOD

With the many types of food processing procedures that has emerged in recent times, a study was made in 2017 in order to classify the levels of food based on the processing procedures that they have gone through called the NOVA food classification (Cannon et. al, 2016). From the NOVA food classification, which consists of four groups that classified the types of processed food, group 4, or the ultra-processed food and drink products are products that have many ingredients, such as sugar, oils, fats, salt, anti-oxidants, stabilisers and preservatives (p.33). According to the NOVA food classification, products considered in this category are the common food consumers see today:

> *..carbonated drinks; sweet or savoury packaged snacks; ice-cream, chocolate, candies (confectionery); mass-produced packaged breads and buns; margarines and spreads; cookies (biscuits), pastries, cakes, and cake mixes; breakfast 'cereals', 'cereal' and 'energy' bars; 'energy' drinks; milk drinks, 'fruit' yoghurts and 'fruit' drinks; cocoa drinks; meat and chicken extracts and 'instant' sauces;*

> *infant formulas, follow-on milks, other baby products; 'health' and 'slimming' products such as powdered or 'fortified' meal and dish substitutes; and many ready to heat products including pre-prepared pies and pasta and pizza dishes; poultry and fish 'nuggets' and 'sticks', sausages, burgers, hot dogs, and other reconstituted meat products, and powdered and packaged 'instant' soups, noodles and desserts (p.33).*

Ultra-processed food goes through extreme processes, and as mentioned in the Nova Food Classification, it contains preservatives and other such ingredients (Cannon et.al, 2016, p.33). Furthermore, according to Rosenbloom(n.d.) from "What is ultra-processed food and how can you eat less of it?", the more one eats ultra-processed foods like candy and carbonated drinks, the nutritional quality of the diet lessens, for the body does not receive the right amount of the helpful nutrients it needed("What is Ultra-Processed Food", para. 3). As said by Carey and Sarachik(n.d.), highly processed foods contain lots of additives to make the food consumable, and preservatives to make the product last long. However, the food filled with these ingredients gives a person almost two times the healthy amount of salt and sugar, for it contains a lot of extra sugar, salt, oil and calories (10 Processed Foods to Avoid, para.7-10). This shows that ultra-processed food products have content that could affect the consumers. According to Moubarac(2018), these ultra-processed food products are not giving nourishment to consumers("Grocery Stores Bulking Up", para.2). A newsletter from Harvard University, states that, "the researchers suggested people read food labels when shopping and choose products with a shorter list of ingredients and few or no additives" ("Eating More Ultra Processed", 2019, para.6).

HEALTH RISKS OF ULTRA-PROCESSED FOOD

Ultra-processed food poses health risk to consumers although it tastes good, according to studies. A study on the consumption of ultra-processed foods and cancer risk stated that a 12 percent in the risk of overall cancer and 11 percent risk of breast cancer in people could be a result of a 10 percent increase of ultra-processed foods in the regular diet was associated (Allès et. al, 2018). Christensen(2018) also referenced this study regarding ultra-processed foods and cancer risk, stating, "What the scientists found was that a 10 percent increase in the proportion of ultra-

processed foods in the diet was associated with a significant increase of greater than 10 percent in risks for overall cancer and breast cancer" (Ultra-processed Foods Linked to High Cancer Risk, para. 5).

Other than cancer, the consumption of ultra-processed food also has effect on other noncommunicable diseases. According to a study on ultra-processed diets which cause excess calorie intake and weight gain, it states, "Body fat mass increased…during the ultra-processed diet and decreased…during the unprocessed diet" (Halls et. al, 2019, p.71); furthermore, the study stated that the mass change may be related to the differences of sodium intake in the diets(p.71), given that ultra-processed foods contain lots of additives and preservatives(Cannon et. al, 2019, p.71). Another study regarding cardiovascular diseases and ultra-processed food says that an increase with the risk of Cardiovascular Diseases may be due to the proportion of ultra-processed foods in the diet, given that ultra-processed foods are richer in sodium, energy, fat, sugar, and poorer in fibres(Srour et. al, 2019).

In a study regarding mortality and ultra-processed foods with approximately 20,000 participants, it was found that people who had a high consumption of ultra-processed foods have a higher hazard of all-cause mortality than those who consumed less. Furthermore, it found that additional servings of ultra-processed foods was related to 18 percent all-cause mortality (Alvarez-Alvarez et. al, 2019). In conclusion, excessive consumption of ultra-processed food products is related to illnesses that may be fatal. For example, high consumption of ultra-processed food could be related to cancer (Allès et. al, 2018).

POPULARITY OF ULTRA-PROCESSED FOOD

Even with the possible health risks ultra-processed food contain, consumers still consume these food products, for ultra-processed food are designed to taste good, and consumers prefer food that tastes good. According to Gunnars (2017), "…if a food manufacturer wants to succeed and get people to buy their product, it has to taste good. But today, the competition is fierce. There are many different food manufacturers, all competing with each other. For this reason, massive resources are spent on making foods as desirable as possible" ("Nine ways that Processed Foods",

para. 4). Furthermore, according to Moubarac (2018) as he describes what grocery stores have, stated, "The vast majority of the additional food items are a huge range of ready-to-eat products from cookies to snacks to complete dinners that have a characteristic in common: they are ultra-processed foods"("Grocery Stores Bulking Up", para. 2). This shows how popular ultra-processed food products are in grocery stores.

Ultra-processed food products are also known in Asia and in the Philippines. According to the study "Processed foods and the nutrition transition: evidence from Asia". It found that the Philippines consumed these ultra-processed foods, stating "…the Philippines a disproportionately high consumption of carbonated soft drinks" (p.9). Furthermore, it also found, that in Asia, diet-related non-communicable diseases are the leading cause of death and disability in the Asian region, as it states in the conclusion (Baker and Friel, 2014, p.11). This was also found in a study relating to ultra-processed food markets by Baker and Friel(2016). It was discovered that carbonated soft drink sales is increasing in the Philippines. In Thailand, that it may affect the population nutrition in the region(p.10). According to Baker, Kay and Walls (2014), they found that the Philippines have comparable volumes of carbonated drink consumption to the High-income countries (p.12). In relation, a study made in Metro Manila regarding urban food consumption, states that almost all households said that they consume processed food, ranging from 6 percent to 52 percent in their weekly food purchases. It also states that instant noodles, a type of ultra-processed food is popular because of its convenience (Chakraborty, Erkman, Rani and Sahakian, 2016, p.564). This shows that the Philippines also consumes these ultra-processed food products and this consumption could be affected by an unhealthy eating environment. So, in order to control this unhealthy consumption, there were policies formed in order to control such consumption.

REGULATIONS RELATING TO ULTRA-PROCESSED FOOD CONSUMPTION

Currently, there is a 6-peso tax for sweetened beverages that are mixed with caloric or non-caloric sweeteners and a 12-peso tax for sweetened beverages with purely high fructose corn syrup("Tax Guidelines on", para.3).

FACTORS AFFECTING CONSUMER AWARENESS

When it comes to the label of food products, sometimes, the consumers do not look at the nutrition labeling because they do not understand the information indicated (Burchi and Tarabella, 2012, p.2176). In the study about the "Factors that Affect Consumer Awareness on Organic Foods in India", it was found that, "education plays an important role to raise awareness among people" (Kumar, and Ali, 2011, p.6). Furthermore, sociodemographic factors like gender, education level, stream of education and income level are important, and that these affect the consumer's awareness on organic food (p.8). In addition, a study on the "Factors that Affect Consumer Awareness on Food Safety", it found that socioeconomic factors: age and education level, household income, household size, number of children; and the consumer's consumption behaviors: awareness of one certificate of food safety in the minimum, organic food consumption, and purchasing Genetically Modified food at the low price affected the consumer awareness on food safety(Erylimaz and Kilic, 2015, p.332).

In the study, they found that women have a lower chance of having low awareness, such as having higher education level and income, which they found to have raised their level of awareness (p.332).Furthermore, they found that having a bigger household size has affected the level of awareness negatively while having a child increased their level of awareness. The consumer's awareness on at least one certificate relating to food safety also affected the consumers' safety awareness, though they found it to not be statistically significant. Furthermore, the consumers' consumption of organic food affected their level of awareness and helped make it higher. In terms of consumption of genetically modified food, the more they consume it, the more their level of awareness lessen(p.333).

In a study made by Dung and Ha(2017), which aimed to determine the factors affecting consumer's awareness on food labeling information in Vietnam, it figured that there are four factors that affect the consumer's intention to use food labels: attitude towards the information on food labels, social influence, perceived behavioral control, concerns about diet-health. This leads to their intention to use food labels, and eventually, their use of the food label information (p.180-181). With this, the researchers would like to know if these would also affect their level of

awareness. Furthermore, in a review made by Donga and Patel (2018) regarding the various research studies on the factors affecting the consumer's use of nutrition labels, they found numerous factors:

> *...it can be concluded that the demographic factors like education, age, gender, marital status, income, household size, children in family, special dietary status, knowledge of nutrition label, body mass index, residential area, and health consciousness are factors play an important role in understanding and usage of nutrition label(p.6).*

Consumer awareness can also be affected by other factors. According to Smith (2016), consumer behavior can be greatly affected by their environment, from friends to social media. In a study regarding "Social Media and Consumer Awareness towards Manufactured Food", Abdulla, Hama Kareem, Mahmood and Rashid(2016) found that traditional social media, such as the written press, television and radio, play an important role regarding consumer awareness on manufactured food products, as well as modern social media, such as Facebook, Twitter and YouTube (p.6, 10-11).

METHODOLOGY

Research Design

The research design used was correlational quantitative research design. In using the correlational research design, the researchers related the factors that affect awareness of consumers to the level of awareness of the consumers on the ultra-processed food's label and health risks in General Trias City, Cavite, and find if the said factors do affect the consumers' level of awareness on the labels and health risks of ultra-processed food. The researchers formed the hypotheses after the data collection procedures.

Sources of Data

The primary sources of data was gathered through a survey form given to 240 people in General Trias City, Cavite. Twenty people were selected from the following Barangays: namely Barangay Santiago, Barangay San Francisco, Barangay Pasong Camachile II, Barangay Pasong Camachile I, Barangay Santa Clara, Barangay Pinagtipunan, Barangay Pasong Kawayan I, Pasong Kawayan II, Barangay Tapia, Barangay Buenavista I, Barangay Buenavista II, and Barangay Buenavista III.

Data were also gathered from secondary sources such as online articles, news articles and online journals, and other academic writings.

Data Gathering Procedures

The process for gathering the needed data in the study is described in the following steps:

1) The research instrument was checked and validated by professionals, before distributing the questionnaire.
2) The researcher presented a survey questionnaire to the participants of the study for them to answer. The researchers used the random sampling technique.
3) The survey questionnaire was then gathered and answers were encoded for the statistical treatment.

Data Analysis

The researchers used the results of the statistical treatment in order to determine the level of awareness of consumers on the label and health risks, the factors that affects the level of awareness, and the analysis of the significance between factors and the level of awareness of consumers.

Research Instrument

The survey questionnaire was used as research instrument. The questionnaire was answered by the participants. It is separated into three parts.

1) A cover letter addressed to the researchers will be placed on the front page of the questionnaire, indicating the study's rationale

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. 2) Second part of the questionnaire was about the demographic profile of the respondents, namely: age, gender, highest educational level, occupation, civil status, number of children, household size and estimated household monthly income.

The basis for the age range is from the study on the assessment of consumer awareness regarding food labels, which separated the age range from 15-25, 26-35, 36-46-55,56-65 and 66 and above (Madhujith, Simmaky, Vasantharuba, 2015, p.89). The basis that there will be a significant effect to awareness for having at least one child from the age of 0 to 6 a came from the study "Factors Affecting Consumer Awareness on Food Safety", where they (Erylimaz and Kilic, 2015, p.333).

In addition, the researchers based the types of occupation from the Philippine Standard Occupation Classification (2012) which classified the occupations into ten: managers, professionals, technicians and associate professionals, clerical support workers, service and sales workers, skilled agricultural, forestry and fishery workers, craft and related trades workers, plant and machine operators and assemblers, elementary occupations and armed forces occupations (para.7). The researchers then based the income on the National Statistical Coordination Board's (2017), separation of income into three groups and formed ranges based on the three separations. It stated that high income segments are families or people earning an average of P200,000 a month, the middle income class is said to earn an average of P36,934 per month and the low income segment earns an average of P9,061 per month(para. 18 and 19). Based on this, the researchers made the ranges to: P10,000 or less, P10,001-40,000, P40,001- 70,000, P70,001-100,000, and greater than P100,000, starting with P10,000, which is closest to P9,061, and dividing into equal range.

The second part of the questionnaire was regarding the level of awareness on the label and health risks of ultra-processed food, with the label focusing on the consumer's awareness of its importance: two questions for the level of awareness on the importance of the label, ten questions regarding ten parts that can be found in the label, which was based from the study study on the assessment of consumer awareness regarding food labels, which separated the age range and one question for the health risks which was answerable by a four-point Likert scale: Not Aware, Slightly Aware, Moderately Aware and Extremely Aware.

4) For the third part of the questionnaire, the researchers prepared four statements for factors found in Dung and Ha's study regarding the use of information labels in Vietnam, which are: attitude towards the information on food labels, social influence, perceived behavioral control, concerns about diet-health, and intention to use the food labels. The statements were adapted from the said study, but were edited according to the suggestion of the validators. For traditional and modern social media, the researchers prepared 12 statements on whether they have read, listened or watched about the label and health risks of ultra-processed food. These statements were answerable through four-point Likert Scale: Never, Seldom, Often, Always.

Statistical Treatment of Data

Frequency

The researchers input the data in Microsoft Excel. With the help of sort and filter, the researchers were able to find the frequency of the respondents.

Mean

The researchers used Microsoft Excel in solving for the mean, using the formula: Average (range of data). The researchers also used: 1.00-1.75 as Not Aware, 1.76-2.50 for Slightly Aware, 2.51-3.25 for Moderately Aware and 3.26-4.00 for Extremely Aware in assessing the level of awareness, and 1.00-1.75 as Never, 1.76-2.50 for Seldom, 2.51-3.25 for Often and 3.26-4.00 for Always for the factors.

Percentage

The researchers used the formula: $\frac{\text{Frequency}}{\text{Total Respondents}}$ x 100.

Chi-square

The chi-square test of independence was used in the study in order to determine the whether the sociodemographic factors relate to the level of awareness of the consumers on the label and health

risks of ultra-processed. It is commonly used to determine if variables depend or relate to one another. The formula used is:

$$x^2 = \sum \frac{(0-E)^2}{E}$$

Goodman and Kruskal's Gamma

The Goodman and Kruskal's gamma was used in order to determine the relationship between the factors and the level of awareness of consumers on the label and health risks of ultra-processed food. It is to determine correlation between ordinal variables of more than 30 samples. The formula used is:

$$r = \frac{x_r - x_1}{x_r + x_1}$$

In order to determine the degree of correlation, the range was: 0.00 for no correlation, 0.00-0.25 for very small positive correlation, 0.25-0.50 for moderately small positive correlation, 0.50-0.75 for high positive correlation, 0.75 to 1.00 for perfect positive correlation(Ferrer and Ymas, n.d., p.237).

Z-test

The z-test is a test statistic was used in order to determine the significance of the correlation coefficient solved using Goodman and Kruskal's Gamma. It is used to determine the significance of the correlation coefficient for a population of greater than 30.

$$z = r\sqrt{\frac{n-2}{1-r^2}}$$

The level of significance was also set to 5%, with a tabular value of 1.96.

RESULTS AND DISCUSSION

Socio-Demographic Profile

This shows the demographics of the respondents from 12 barangays in General Trias, which are the residential area, gender, age, highest educational level, civil status, special dietary status, children in family, household size, estimated household monthly income and occupation.

Barangay

There are 20 respondents from each barangay, which has taken an average of 8.33% of 240.

Table 1. Distribution by barangay

BARANGAY	FREQUENCY	PERCENTAGE (%)
Buenavista 1	20	8.33
Buenavista 2	20	8.33
Buenavista 3	20	8.33
Pascam 1	20	8.33
Pascam 2	20	8.33
Pasong Kawayan 1	20	8.33
Pasong Kawayan 2	20	8.33
Pinagtipunan	20	8.33
San Fransisco	20	8.33
Santiago	20	8.33
Sta. Clara	20	8.33
Tapia	20	8.33
TOTAL	**240**	**100**

Age

Table 2 shows that the majority of the respondents were at least 15-25 years old(34.17%) and the minority were from 66 years old and above(4.17%).

Table 2. Distribution by age

AGE	FREQUENCY	PERCENTAGE (%)
15-25	82	34.17
26-35	44	18.33
36-45	46	19.17
46-55	35	14.58
56-65	23	9.58
66 up.	10	4.17
TOTAL	**240**	**100**

Gender

Table 3 shows that majority (61%) of the respondents are female and the least are (39%) male. Similarly, in the study in the assessment of consumer awareness on food labels in Jaffna district, it was also found that majority of the respondents were female, taking up 54. 2% (Madhujith, Simmaky, Vasantharuba, 2015,p.88).

Table 3. Distribution by gender

GENDER	FREQUENCY	PERCENTAGE (%)
Female	146	60.83
Male	94	39.17
TOTAL	**240**	**100**

Residential Area

Table 4 shows that majority (66.67%) of the respondents are from rural areas and the least are (33.33%) from urban areas. The researchers were able to find this from the classification of barangays as of the 2015 census from Philippine Statistics Authority.

Table 4. Distribution by Residential Area

RESIDENTIAL AREA	FREQUENCY	PERCENTAGE (%)
Urban	160	66.67
Rural	80	33.33
TOTAL	**240**	**100**

Special Dietary Status

Table 5 reflects that majority (84.17%) of the respondents have no special dietary status and the least (1.25%) of them are pescetarian.

Table 5. Distribution by Special Dietary Status

SPECIAL DIETARY STATUS	FREQUENCY	PERCENTAGE (%)
None	202	84.17
Allergic	16	6.67
Vegetarian	8	3.33
Pregnant	4	16.67
Other	7	2.92
Pescetarian	3	1.25
TOTAL	**240**	**100**

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Highest Educational Level

Table 6 shows that majority (36.25%) of the respondents of this study are junior high school graduate and the least (0.42%) portion has no formal education.

Table 6. Distribution by Highest Educational Level

HIGHEST EDUC. LEVEL	FREQUENCY	PERCENTAGE (%)
Elementary	29	12.08
Junior High School Graduate	87	36.25
Senior High School Graduate	28	11.67
College Graduate	53	22.08
Undergraduate(College)	32	13.33
Grad Studies	6	2.50
Vocational Courses	4	1.67
No Formal Education	1	0.42
TOTAL	**240**	**100**

Occupation

Table 7 shows that majority (30.42%) of the respondents are self-employed. The least (2.08%) are retired.

Table 7. Distribution by Occupation

OCCUPATION	FREQUENCY	PERCENTAGE (%)
Plant and machine operators and assembler	6	2.50
Service and sales worker	20	8.33
Student	58	24.17
Skilled Agricultural, forestry and fishery	1	0.42
Self-employed	73	30.42
Professional	12	5.00
Clerical Support Worker	9	3.75
Unemployed	38	15.83
Craft and related trades	6	2.50
Manager	6	2.50
Elementary Occupations	6	2.50
Retired	5	2.08
TOTAL	**240**	**100**

Civil Status

Table 8 reflects that majority (49.17%) of the respondents are single and the least (1.67%) of are separated.

Table 8. Distribution by Civil Status

CIVIL STATUS	FREQUENCY	PERCENTAGE (%)
Single	118	49.17
Married	111	46.25
Widowed	7	2.92
Separated	4	1.67
TOTAL	**240**	**100**

Children in Family

Table 9 reflects that majority (79.58%) of the respondents have no children from 0 to 6 years old in the family and the least (20.42%) ohave children from 0 to 6 years old.

Table 9. Distribution by Children in family

CHILDREN IN FAMILY	FREQUENCY	PERCENTAGE (%)
No	191	79.58
Yes	49	20.42
TOTAL	**240**	**100**

Household Size

Table 10 shows that majority(38.33%) of the respondents have a household size of 3 to 4 people and the least(7.92%) have a household size of 7 to 8 and 9 or more people.

Table 10. Distribution by Household Size

HOUSEHOLD SIZE	FREQUENCY	PERCENTAGE (%)
1-2	27	11.25
3-4	92	38.33
5-6	83	34.58
7-8	19	7.92
9 or more	19	7.92
TOTAL	**240**	**100**

Estimated Household Monthly Income

Table 11 shows that majority (52.08%) of the respondents have an estimated monthly income of less than 10,000 pesos. The least (0.05%) have greater than 100,000 peso estimated household income every month.

Table 11. Distribution by Estimated household monthly income

MONTHLY INCOME (IN PESOS)	FREQUENCY	PERCENTAGE (%)
10,000 or less	125	52.08
10,001-40,000	92	38.33
40,001-70,000	8	3.33
70,001-100,000	3	1.25
Greater 100,000	12	5.00
TOTAL	**240**	**100**

Level of Awareness on Label and Health Risks

Table 12 shows the level of awareness on the respondents in different statements regarding the importance of the label, presence of some parts of the food label and health risks of ultra-processed food. The researchers found that the respondents were extremely aware of the importance of checking the labels of ultra-processed food. They found that the respondents were mostly extremely aware or moderately aware on the 10 parts of the label that was listed, except for the short phrases on food characteristics, to which the respondents were slightly aware. The respondents were moderately aware regarding the health risks of ultra-processed food. On the other hand, in Kar and Gomathi's study on Consumer Awareness and food labeling in groceries in Pudcherry, they have found that the consumers have a high level of awareness on the label(2018, p.39), while in the selected barangays of General Trias, the consumers are moderately aware about the labels.

Table 12. Level of Awareness

STATEMENT	MEAN	DESCRIPTIVE RATING
1. Checking the label of ultra-processed food is important	3.30	Extremely Aware
2. Checking what the ultra-processed food contains is important.	3.41	Extremely Aware
The food label contains the following information:		
3. List of Ingredients	3.07	Moderately Aware

4. Nutritional Information	3.13	Moderately Aware
5. Expiry Date	3.51	Extremely Aware
6. Information about serving size	2.63	Moderately Aware
7. Health Claims	3.27	Extremely Aware
8. Net weight/Package size	2.60	Moderately Aware
9. Health Warnings	3.38	Extremely Aware
10.Short phrases about special food characteristics	2.49	Slightly Aware
11. Country of Origin	2.65	Moderately Aware
12. Instructions for use	3.48	Extremely Aware
13. Consumption of ultra-processed food have health risks.	3.30	Extremely Aware

GRAND MEAN	**3.09**	**MODERATELY AWARE**

Dung and Ha's factors on the use of information on label

Attitude on information on Food Labels

Table 13 shows that the consumers often do the situations presented under the 'Attitude on Food Label' factor. The consumers often use the information to help them choose food and to identify healthy information. It also shows that the consumers often think if the information on the food label is true whenever they read it. They also often check if the food label if the information that they need is indicated on the label.

The researchers also found that the respondents often have a positive attitude toward the information on the food labels. This was also found by Dung and Ha in Vietnam (2017, p.180).

Table 13. Attitude on Food Label

STATEMENT	**MEAN**	**DESCRIPTIVE RATING**
1.Whenever I buy prepackaged food, I use information on the label to help me in choosing food.	3.02	Often
2. Whenever I buy prepackaged food, I use information on the label for health purposes	3.10	Often
3. Whenever I read information on The food label, I think if the information		

indicated is true.	3.08	Often
4. Whenever I read the information on the food label, I check if all the information I need is there.	3.00	Often
GRAND MEAN	**3.05**	**OFTEN**

Social Influence

In Table 14, it shows that the situations under social influence often apply to the respondents. It shows that they are seldom advised by their friends to use the information on food labels but are often advised by their family to use the information. The respondents also know people, as well as the people they see on social media, who often using the information on the food labels. The researchers found that the respondents are also influenced by the people around them in using the information on the food labels, wherein Dung and Ha found that consumers also use the advices of family and friends (2017, p.180).

Table 14. Social Influence

STATEMENT	MEAN	DESCRIPTIVE RATING
1.My friends advised me to use information on the labels to choose foods.	2.33	Seldom
2. My family advised me to use information on the labels to choose foods.	3.15	Often

3. People around me use the information		
On the labels to choose foods.	2.60	Often
4. People I see on social media		
Use the information on the labels		
To choose foods.	2.81	Often
GRAND MEAN	**2.72**	**OFTEN**

Perceived Behavioral Control

Table 15 shows that the respondents often possess perceived behavioral control, which, according to Dung and Ha, is the person's sense of difficulty or ease in performing behaviors (2017, p.180). The researchers found that the respondents often have ease on finding the information in buying prepackaged food, in understanding, and checking the information on the food labels a lot more closer when it comes to the food that they do not buy regularly, however, when they are on a hurry, they seldom check the information labels more closely.

Table 15. Perceived Behavioral Control

STATEMENT	MEAN	DESCRIPTIVE RATING
1.I easily find information on the		
Food label in buying prepackaged		
food.	3.06	Often
2. The information on the food		

labels is easy to understand.	3.05	Often
3. For food which has not been bought regularly, I will check the information on the labels more closely.	3.02	Often
4. If I have no more time for shopping, or in a hurry, I will check the information on the labels more closely.	2.41	Seldom
GRAND MEAN	**2.89**	**OFTEN**

Concerns about diet-health

Table 16 shows that the respondents often use the information on the food labels due to concerns about diet health. However, the respondents seldom use the information on the food labels because they are on a diet. On the other hand, they would often use information on food labels to avoid harmful nutrient composition, to avoid health problems such as allergy, and recognize good food for their health.

Table 16. Concerns about diet-health

STATEMENT	MEAN	DESCRIPTIVE RATING
1.I use the information on the food labels because I am on a diet.	2.01	Seldom

2. I use the information on food labels to avoid nutrient composition that harms my health.	3.14	Often
3. I use the information on food labels to avoid health problems such as allergy.	2.55	Often
4. Using the information on the labels Is the way I recognize good food for my diet health.	3.29	Often
GRAND MEAN	**2.75**	**OFTEN**

Intention to use the food label

Table 17 shows that the respondents often consider the information on the labels in making a choice when buying food. The respondents also have intention to often use the information on the labels when buying food and advise their friends to do the same. They also often think that the use of information on the food labels are necessary.

Table 17. Intention to use the food label

STATEMENT	MEAN	DESCRIPTIVE RATING
1.I consider the information found		

on food labels in making a choice when buying food.	3.05	Often
2. I will use the information on food labels when buying food.	3.12	Often
3. I advise my friends and relatives To use the information on food labels when buying food.	3.09	Often
4. I think that the use of information found on food labels is necessary and important.	3.55	Often
GRAND MEAN	**3.20**	**OFTEN**

Traditional and Modern Media

In traditional and modern media, the researchers had the newspaper, radio, and television and Facebook, Twitter and Youtube for modern media, based on the study "Social Media and Consumer Awareness towards Manufactured Food", Abdulla, Hama Kareem, Mahmood and Rashid(2016, p.6).

Traditional Media and Label

Table 18 shows that the respondents seldom read or listen about the importance and contents of the labels on both newspaper and radio, but always see it on television.

Table 18. Traditional Media and Labels

STATEMENT	MEAN	DESCRIPTIVE RATING
I have read, listened, or watched About the importance and contents Of the label of ultra-processed food In the following forms of traditional media:		
1.Newspaper	1.93	Seldom
2. Radio	2.08	Seldom
3. Television	3.51	Always
GRAND MEAN	**2.50**	**SELDOM**

Traditional Media and Health Risks

Table 19 shows that the respondents seldom read, listen, or read about the health risks on both newspaper and radio, but always see it on television.

Table 19. Traditional Media and Health Risks

STATEMENT	MEAN	DESCRIPTIVE RATING
I have read, listened, or watched About the health risks of ultra-Processed food in the following		

forms of traditional media:		
1.Newspaper	1.95	Seldom
2. Radio	2.10	Seldom
3. Television	3.45	Always
GRAND MEAN	**2.50**	**SELDOM**

Modern Social Media and Label

Table 20 shows that the respondents often read, listen or watch about the importance and contents of the label of ultra-processed food in Facebook and Youtube. The respondents, however, seldom read about in Twitter, because they do not have Twitter accounts.

Table 20. Modern Social Media and Label

STATEMENT	MEAN	DESCRIPTIVE RATING
I have read, listened, or watched		
About the importance and contents		
Of the label of ultra-processed food		
In the following forms of modern		
media:		
1.Facebook	2.97	Often
2. Twitter	1.68	Seldom

3. Youtube	2.68	Often
GRAND MEAN	**2.44**	**SELDOM**

Modern Social Media and Health Risks

Table 21 shows that the respondents seldom read, listen or watch about the importance and contents of the label of ultra-processed food in Facebook and, they always see it in Youtube. The respondents, however, seldom read about in Twitter, because they do not have Twitter accounts.

Table 21. Modern Social Media and Health Risks

STATEMENT	MEAN	DESCRIPTIVE RATING
I have read, listened, or watched About the health risks of ultra-processed food in the following forms of modern media:		
1.Facebook	2.94	Often
2. Twitter	1.67	Seldom
3. Youtube	2.68	Always
GRAND MEAN	**2.43**	**SELDOM**

Correlation of the Sociodemographic Factors to the Level of Awareness

The statistical treatment used for the correlation of the sociodemographic factors to the level of awareness was the chi-square test statistic**.** With five percent significance level, the results show that there are four values that are below 0.05. It showed that the residential area, special dietary status, highest educational level and children in family have significant relationship to the level of awareness of consumers on the label and health risks of ultra-processed food, with p-values 0.01, 0.0024, 0.00003 and 0.0021 respectively. Furthermore, the chi-square computed of these factors are higher than the tabular value, therefore the researchers rejected the null hypothesis. This means that there is relationship between the two. In other studies, it was found that these factors play an important role when it comes to consumer awareness.

Donga and Patel's (2018) review regarding the factors affecting the consumer's use of information on food labels have stated that all of these sociodemographic factors play an important role in comprehension and usage of the label, but in this study, it was found that only the four factors mentioned above have significance on the level of awareness on the label and health risks of ultra-processed food(p.6).

For example, in the study of the factors regarding the awareness of organic food in India, it has shown that "education plays an important role to enhance awareness among people". The result of the chi-square tests showed a significant difference in education level(Kumar, and Ali, 2011, p.6). Similarly, in this study, it showed that there is a significant difference in the chi square test results as well as the p-value.

Furthermore, in the study of factors affecting consumer awareness on food safety, it was found that having a child in the family affected their awareness positively (Erylimaz and Kilic,2013, p.333). On the other hand, this study found that there is a relationship between having a child in the family to the consumer's level of awareness.

Table 22. Socio-demographic profile to the level of awareness of consumers

Socio-demographic Profile	**Tabular Value**	**Chi-Square**	**p-value**	**Interpretation**

Age	25.00	19.40	0.20	Not Significant
Gender	7.81	6.19	0.10	Not Significant
Residential Area	7.81	10.61	0.01	Significant
Special Dietary Status	25.00	35.14	0.0024	Significant
Highest Educational Level	31.41	57.26	0.00003	Significant
Occupation	43.77	38.23	0.24	Not Significant
Civil Status	16.92	0.64	0.27	Not Significant
Children in Family	7.81	14.68	0.0021	Significant
Household Size	21.03	7.14	0.85	Not Significant
Estimated Household Monthly Income	21.03	8.02	0.78	Not Significant

Correlation of Dung and Ha's Factors to the Level of Awareness

The statistical treatment used is Goodman and Kruskal's Gamma. This is to test the relationship of ordinal variables. Furthermore, the researchers also used the z-test to test the significant relationship of the factors to the level of awareness of consumers. The level of significance was also set to five percent, with a tabular value of 1.96. To determine the degree of correlation, the range was: 0.00 for no correlation, 0.00- 0.25 for very small positive correlation, 0.25-0.50 for moderately small positive correlation, 0.50-0.75 for high positive correlation, 0.75 to 1.00 for perfect positive correlation(Ferrer and Ymas, n.d., p.237).

Attitude towards information on food label

The correlation coefficient solved was 0.502. This means that there is high positive correlation between the attitude towards information on food label and the level of awareness of consumers on the label and health risks of ultra-processed food.

The researchers found that the Zc=8.97>Ztab=1.96 with 5 percent significance level. Therefore, researchers rejected the null hypothesis. This shows that there is significant correlation between the attitude towards food label and the level of awareness of consumers on the label and health risks of ultra-processed food.

In comparison, Dung and Ha's (2017) stated that attitude towards information on food label has been significant to the use of information on labels of consumers at 1% significance (p.180).

Table 23. Attitude towards information on food labels to level of awareness

r	Interpretation	Level of significance	Tabular Value	Z-computed	Interpretation
0.502	High Positive Correlation	0.05	1.96	8.97	Significant

Social Influence

The correlation coefficient solved was 0.15. This means that there is very small positive correlation between social influence and the level of awareness of consumers on the label and health risks of ultra-processed food.

The researchers found that the Zc=2.40>Ztab=1.96 with five percent significance level. Therefore, researchers rejected the null hypothesis. This shows that there is significant correlation between social influence and the level of awareness of consumers on the label and health risks of ultra-processed food. Dung and Ha(2017) stated that social Influence has been significant to the use of information on labels of consumers at 5% significance(p.180).

Table 24. Social Influence to level of awareness

r	Interpretation	Level of significance	Tabular Value	Z-computed	Interpretation
0.15	Very Small Positive Correlation	0.05	1.96	2.40	Significant

Perceived Behavioral Control

The correlation coefficient solved was 0.40. This means that there is moderately small positive correlation between the perceived behavioral control and the level of awareness of consumers on the label and health risks of ultra-processed food.

The researchers found that the Zc=6.82>Ztab=1.96 with 5 percent significance level. Therefore, researchers rejected the null hypothesis. This shows that there is significant correlation between the perceived behavioral control and level of awareness of consumers on the label and health risks of ultra-processed food. Dung and Ha(2017) stated that perceived behavioral control is significant to the use of information on labels of consumers at 1% significance(p.180).

Table 25. Perceived Behavioral Control to level of awareness

r	Interpretation	Level of significance	Tabular	Value	Z-computed Interpretation
0.40	Moderately Small Positive Correlation	0.05	1.96	6.82	Significant

Concerns About Diet Health

The correlation coefficient solved was 0.27. This means that there is moderately small positive correlation between the concerns about diet-health and the level of awareness of consumers on the label and health risks of ultra-processed food.

The researchers found that the Zc=4.33>Ztab=1.96 with 5 percent significance level. Therefore, researchers rejected the null hypothesis. This shows that there is significant correlation between the attitude concerns about diet-health and level of awareness of consumers on the label and health risks of ultra-processed food. In Dung and Ha(2017) stated that concerns about diet-health has been significant to the use of information on labels of consumers at 1% significance(p.180).

Table 26. Concerns about Diet-health to level of awareness

r	Interpretation	Level of significance	Tabular	Value	Z-computed Interpretation
0.27	Moderately Small Positive Correlation	0.05	1.96	4.33	Significant

Intention to use information on food labels

The correlation coefficient solved was 0.30. This means that there is moderately small positive correlation between the intention to use information on food labels and the level of awareness of consumers on the label and health risks of ultra-processed food.

The researchers found that the Zc=4.95>Ztab=1.96 with 5 percent significance level. Therefore, researchers rejected the null hypothesis. This shows that there is significant correlation between the intention to use information on food labels and level of awareness of consumers on the label and health risks of ultra-processed food. Dung and Ha(2017) stated that intention to use information on food labels has been significant to the use of information on labels of consumers at 1% significance(p.180).

Table 27. Intention to use Food Label to level of awareness

r	Interpretation	Level of significance	Tabular Value	Z-computed	Interpretation
0.30	Moderately Small Positive Correlation	0.05	1.96	4.95	Significant

Correlation of Traditional Media and Modern Social Media to the Level of Awareness

The statistical treatment used is also Goodman and Kruskal's Gamma. Furthermore, the researchers also used the z-test to test the significant relationship of traditional media and modern social media to the level of awareness of consumers.

Traditional Media and Labels

The correlation coefficient solved was 0.03. This means that there is a very small positive correlation between reading, listening and watching about the importance and contents of the label on traditional media and the level of awareness of consumers on the label and health risks of ultra-processed food.

However, with five percent significance level, the researchers found that the Zc=0.45<Ztab=1.96. Therefore, researchers accepted the null hypothesis. This shows that there is no significant correlation between reading, listening and watching about the importance and contents of the label of ultra-processed food on traditional media and the level of awareness of consumers on the label and health risks of ultra-processed food.

Table 28. Importance and contents of the label on traditional media to the level of awareness

r	Interpretation	Level of significance	Tabular Value	Z-computed	Interpretation
0.03	Very Small Positive Correlation	0.05	1.96	0.45	Not Significant

Traditional Media and Risks

The correlation coefficient solved was 0.06. This means that there is very small positive correlation between reading, listening and watching about the importance and contents of the label on traditional media and the level of awareness of consumers on the label and health risks of ultra-processed food.

However, with 5 percent significance level, the researchers found that the Zc=0.92<Ztab=1.96. Therefore, researchers accepted the null hypothesis. This shows that there is no significant correlation between reading, listening and watching about the health risks of ultra-processed food on traditional media and the level of awareness of consumers on the label and health risks of ultra-processed food. In contrast, in the study social media and consumer awareness towards manufactured food, it was found that traditional media has a moderately strong and positive correlation on the consumer awareness(Abdulla, Hama Kareem, Mahmood and Rashid, 2016, p.9).

Table 29. Health risks on traditional media and level of awareness

r	Interpretation	Level of significance	Tabular Value	Z-computed	Interpretation
0.06	Very Small Positive Correlation	0.05	1.96	0.92	Not Significant

Modern Social Media and Labels

The correlation coefficient solved was 0.13. This means that there is a very small positive correlation between the reading, listening and watching about the importance and contents of the label on modern social media and the level of awareness of consumers on the label and health risks of ultra-processed food.

However, with five percent significance level, the researchers found that the Zc=2.11>Ztab=1.96. Therefore, researchers rejected the null hypothesis. This shows that there is a significant correlation between reading, listening and watching about the importance and contents of the label of ultra-processed food on modern media and the level of awareness of consumers on the label and health risks of ultra-processed food.

Table 30. Importance and contents of the label on modern social media to level of awareness

r	Interpretation	Level of significance	Tabular Value	Z-computed	Interpretation
0.13	Very Small Positive Correlation	0.05	1.96	2.11	Significant

Modern Social Media and Risks

The correlation coefficient solved was 0.25. This means that there is very small positive correlation between reading, listening and watching about the health risks of ultra-processed food on modern social media and the level of awareness of consumers on the label and health risks of ultra-processed food.

However, with five percent significance level, the researchers found that the Zc=2.11>Ztab=1.96. Therefore, researchers rejected the null hypothesis. This shows that there is a significant correlation between reading, listening and watching about the health risks of ultra-processed food on modern social media and the level of awareness of consumers on the label and health risks of ultra-processed food. In contrast, in the study social media and consumer awareness towards manufactured food, it was found that modern social media has a significant strong and positive correlation on the consumer awareness(Abdulla, Hama Kareem, Mahmood and Rashid, 2016, p.9).

Table 31. Health risks on modern social media and level of awareness

r	Interpretation	Level of significance	Tabular Value	Z-computed	Interpretation
0.251	Moderately Small Positive Correlation	0.05	1.96	4.01	Significant

SUMMARY, CONCLUSION AND RECOMMENDATIONS

SUMMARY

This study was conducted in selected barangays in General Trias, Cavite from September 2019 to February 2020.

This study was conducted to assess the correlation of factors to the level of awareness of consumers on their awareness on the labels and health risks of ultra-processed foods in selected barangays in City of General Trias, Cavite. Specifically, this aimed to identify the socio-demographic profile of the participants, the level of awareness of consumers on the labels and health risks of ultra-processed food products, and assess the correlation of factors that may affect the level of awareness of consumers in General Trias City, Cavite.

The correlational quantitative method was used in the study wherein a survey questionnaire was used to gather relevant data about the level of awareness, as well as the factors that affect their awareness of the ultra-processed label and health risks of ultra-processed foods.

The statistical tools used in analyzing the data gathered were the frequency, mean and percentage to present the survey results, chi-square and Goodman and Kruskal's Gamma for the assessment of the correlation between the factors and level of awareness.

FINDINGS

The results of the study found that the majority of the respondents come from urban, female, around 15-25 years old, junior high school graduates, single, have no children in the family, have no special dietary status, have a household size of 3 to 4 people, have an estimated household monthly income of 10,000 pesos or less, and they are also self-employed.

The study found that the respondents in General Trias City, Cavite are moderately aware about the label and health risks of ultra-processed food. The respondents are extremely aware about the importance of the label, contents, and health risks of ultra-processed food. The respondents are extremely aware on the importance of the label, contents, and health risks of ultra-processed food. They are also extremely aware on the expiry date, health claims, health warnings and instructions for use; and moderately aware on the list of ingredients, nutritional information, slightly aware on the label's part 'Short phrases about food characteristics.

As for the factors, the study learned that that the statements in the factors Attitude towards information on food labels, social influence, perceived behavioral control, concerns about diet-health and intention to use food labels often apply to the respondents of the study. They also found that the respondents seldom read, listen or watch about the labels of ultra-processed food on traditional media on both traditional and modern social media. The respondents watch it more often on television or see it on Facebook and Youtube.

Using the chi-square test statistics, the researchers found that the the residential area, special dietary status, highest educational level and children in family relates and has significance to the level of awareness of consumers on the label and health risks of ultra-processed food with p-values 0.01, 0.0024, 0.00003 and 0.0021 respectively.

In addition, in using the Goodman and Kruskal's Gamma, the researchers found that attitude towards information on food labels have high positive correlation to the level of awareness with a correlation coefficient of 0.502. Having a p-value that is less than 0.05, this said factor is significant. Social influence, on the other hand, has very small positive correlation to the level of awareness of consumers, but is significant with a correlation coefficient of 0.15. Perceived behavioral control, concerns about diet-health and intention to use information on food labels also have significance and has moderately small positive correlation on the level of awareness of the consumers, with the correlation coefficients of 0.40, 0.27 and 0.30 respectively.

Traditional media has very small positive correlation to the level of awareness of the consumers with correlation coefficients of 0.03 for reading, listening and watching about the labels, and 0.06 for reading, listening and watching about the health risks on traditional media. However, the researchers found that even though it has very small positive correlation, it is not significant.

On the other hand, modern social media has very small and moderate positive correlation to the level of awareness of the consumers with correlation coefficients of 0.13 for reading, listening and watching about the labels, and 0.251 for reading, listening and watching about the health risks on modern media. These are significant.

CONCLUSION

Majority of the respondents came from urban, female, around 15-25 years old, junior high school graduates, single, have no children in the family, have no special dietary status, have a household size of 3 to 4 people, have an estimated household monthly income of 10,000 pesos or less, and they are also self-employed.

The respondents are moderately aware on the label and health risks of ultra-processed food and received a mean of 3.09. The researchers also found that the respondents often have positive attitude towards information on food labels, have social influence that uses information on food labels, have ease on performing behaviors that are related to using information on food labels, often use the labels due to concerns on diet-health and often have intention to use the food labels. The researchers also found that the respondents seldom read, listen or watch about the importance and contents labels and health risks of ultra-processed food on both traditional and modern social media.

Sociodemographic factors like the residential area, special dietary status, highest educational level and children in family were found to be significant to the level of awareness of consumers on the labels and health risks of ultra-processed food.

Dung and Ha's factors on the use of information on the food label were all found to be correlated to the level of awareness of consumers on the label and health risks of ultra-processed food. The attitude towards information on food label was found to have high positive correlation, social influence has very small positive correlation, and perceived behavioral control, concerns about diet health and intention to use information all have moderately small positive correlation to the consumers level of awareness. In addition, all these were significant.

In addition, reading, listening and watching about the contents and importance of the label and health risks of ultra-processed food on traditional media has very small positive correlation to the level of awareness of the consumers, but is not significant.

However, reading, listening and watching about the contents and importance of the label and health risks of ultra-processed food on modern social media has very small and moderate

positive correlation to the level of awareness of the consumers on the label and health risks. In addition, these are significant.

RECOMMENDATIONS

In accordance with the findings of the research study, the researchers recommend the following to the beneficiaries of the study:

1. For the Bureau of Food and Drugs as well as food manufacturers, they could coordinate together to raise more awareness for the importance of the labels, as similarly suggested in Dung and Ha's study, when they found that social impact has bearing on the use of information labels(p.181). This study found that social influence has significance on the level of awareness of consumers regarding the label, especially if raising awareness on an area is needed. They can also make use of modern social media in order to raise awareness on the labels and health risks of ultra-processed food.
2. For the consumers of ultra-processed food, continue to advise their family and friends regarding the labels and the health risks of ultra-processed food since related literature has stated that ultra-processed foods has popularity and almost all households said that they consume processed food in a study made in Manila(Chakraborty, Erkman, Rani and Sahakian, 2016, p.564) for it will help maintain and raise awareness of other people regarding the label and health risks of ultra-processed food.
3. For the academic institutions, make use of this study in order to start more researches regarding the labels and health risks of ultra-processed food in different areas or use this study in order to see what will help raise awareness of the next generations on the label and health risks of ultra-processed food.
4. For future researchers, explore other factors that may affect the level of awareness of consumers on the label and health risks of ultra-processed food, since the researchers observed that the respondents are more aware on both the label and health risks if they are the ones buying food in their household, based on conversations with them. They may also have studies with different methodologies in order to objectively test their level of awareness on the label and health risks of ultra-processed food. Furthermore, as the level

of awareness is found, they can also study on how the consumers use the information on food labels.

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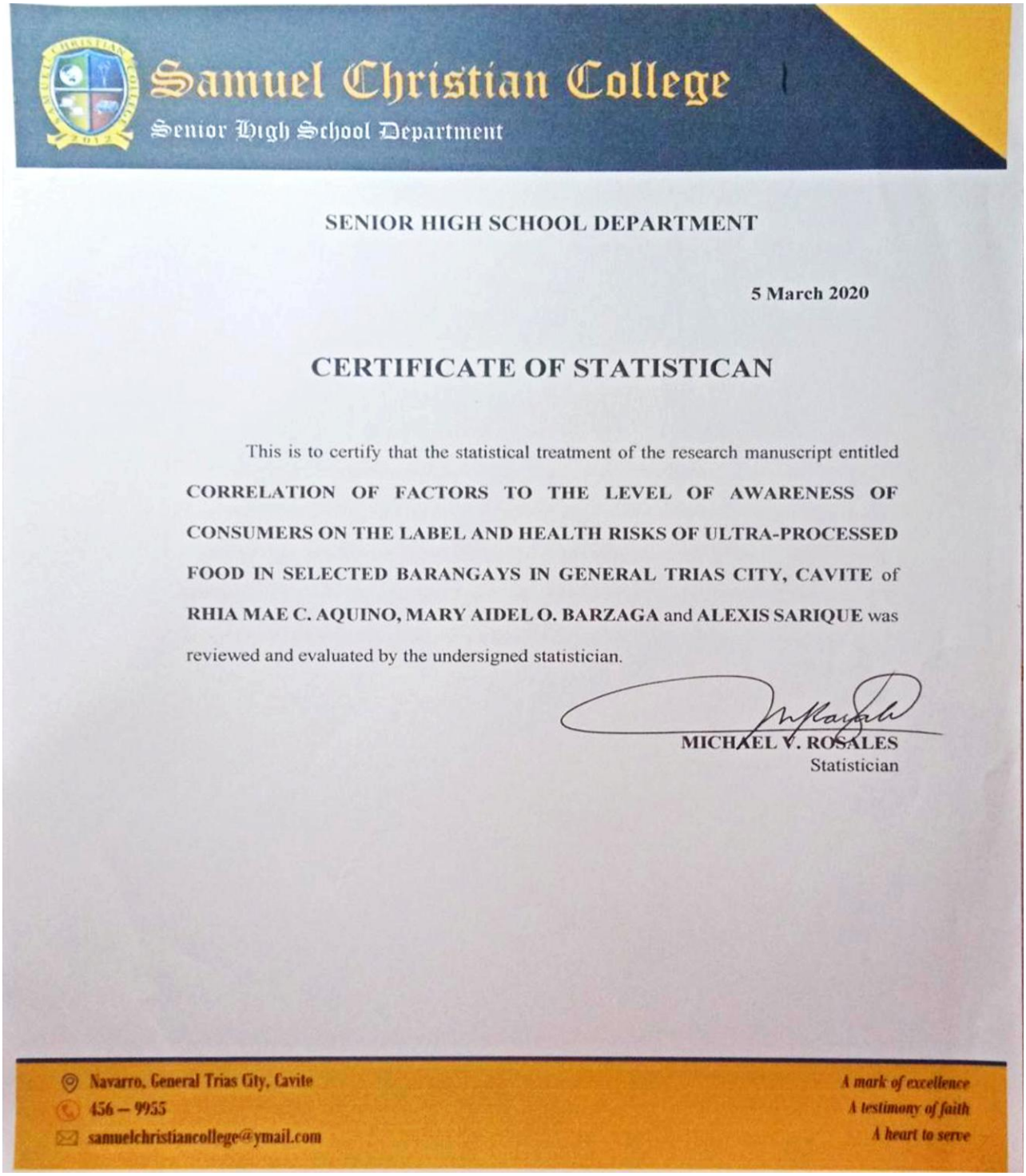
APPENDICES



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Senior High School Department

SENIOR HIGH SCHOOL DEPARTMENT

5 March 2020

CERTIFICATE OF STATISTICAN

This is to certify that the statistical treatment of the research manuscript entitled **CORRELATION OF FACTORS TO THE LEVEL OF AWARENESS OF CONSUMERS ON THE LABEL AND HEALTH RISKS OF ULTRA-PROCESSED FOOD IN SELECTED BARANGAYS IN GENERAL TRIAS CITY, CAVITE** of **RHIA MAE C. AQUINO, MARY AIDEL O. BARZAGA** and **ALEXIS SARIQUE** was reviewed and evaluated by the undersigned statistician.

MICHAEL V. ROSALES
Statistician

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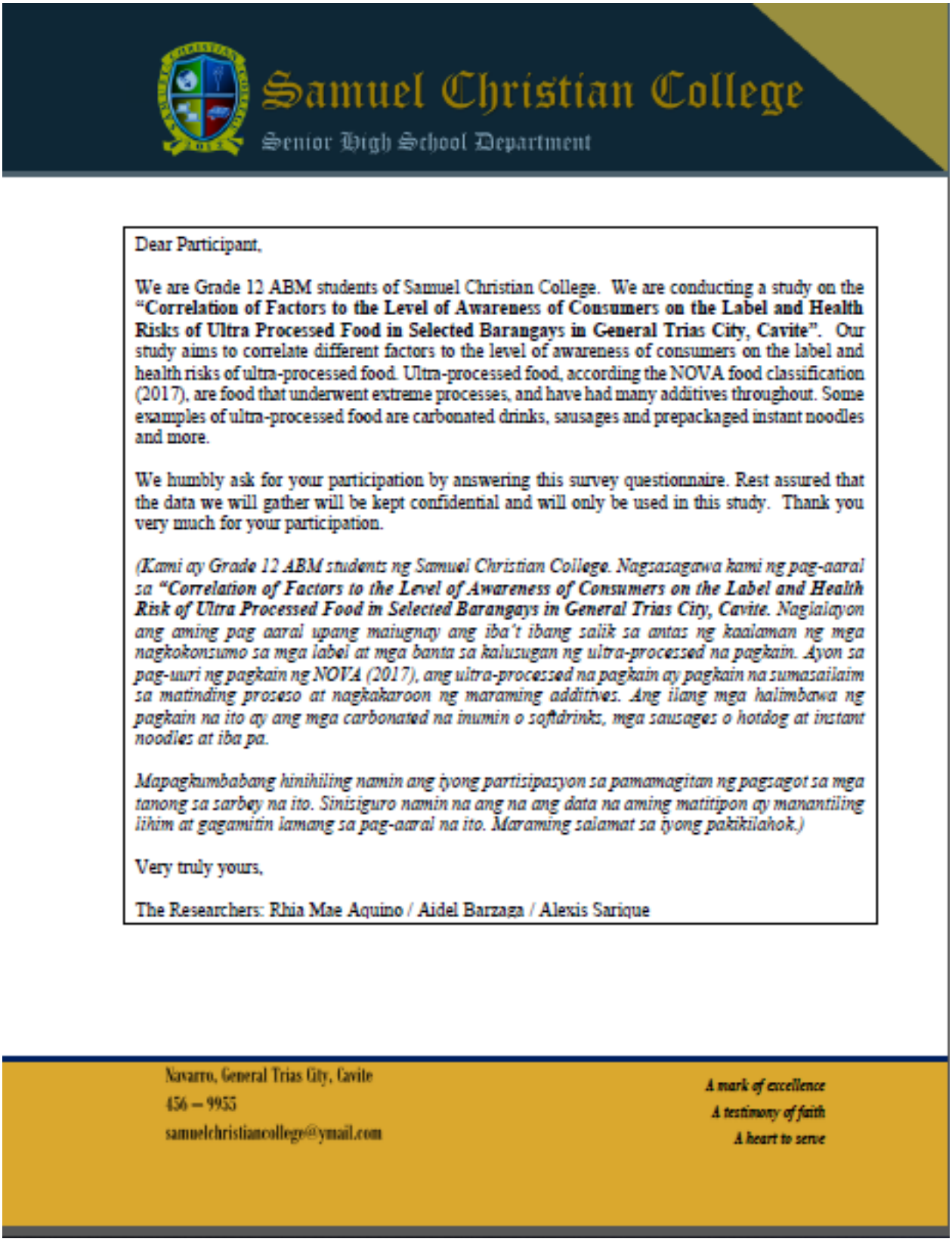

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Dear Participant,

We are Grade 12 ABM students of Samuel Christian College. We are conducting a study on the "**Correlation of Factors to the Level of Awareness of Consumers on the Label and Health Risks of Ultra Processed Food in Selected Barangays in General Trias City, Cavite**". Our study aims to correlate different factors to the level of awareness of consumers on the label and health risks of ultra-processed food. Ultra-processed food, according the NOVA food classification (2017), are food that underwent extreme processes, and have had many additives throughout. Some examples of ultra-processed food are carbonated drinks, sausages and prepackaged instant noodles and more.

We humbly ask for your participation by answering this survey questionnaire. Rest assured that the data we will gather will be kept confidential and will only be used in this study. Thank you very much for your participation.

*(Kami ay Grade 12 ABM students ng Samuel Christian College. Nagsasagawa kami ng pag-aaral sa "**Correlation of Factors to the Level of Awareness of Consumers on the Label and Health Risk of Ultra Processed Food in Selected Barangays in General Trias City, Cavite.** Naglalayon ang aming pag aaral upang maiugnay ang iba't ibang salik sa antas ng kaalaman ng mga nagkokonsumo sa mga label at mga banta sa kalusugan ng ultra-processed na pagkain. Ayon sa pag-uuri ng pagkain ng NOVA (2017), ang ultra-processed na pagkain ay pagkain na sumasailalim sa matinding proseso at nagkakaroon ng maraming additives. Ang ilang mga halimbawa ng pagkain na ito ay ang mga carbonated na inumin o softdrinks, mga sausages o hotdog at instant noodles at iba pa.*

Mapagkumbabang hinihiling namin ang iyong partisipasyon sa pamamagitan ng pagsagot sa mga tanong sa sarbey na ito. Sinisiguro namin na ang na ang data na aming matitipon ay manantiling lihim at gagamitin lamang sa pag-aaral na ito. Maraming salamat sa iyong pakikilahok.)

Very truly yours,

The Researchers: Rhia Mae Aquino / Aidel Barzaga / Alexis Sarique

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QUESTIONNAIRE

Part I. PERSONAL PROFILE

Instruction: **Please answer the following items either by filling up the blank or checking (✓) the appropriate box which applies to you.**
(Pakisagutan ang mga tanong sa pamamagitan ng pagsasagot sa patlang o paglalagay ng tsek (✓) sa tamang kahon)

Name(optional): _____

Barangay: _____

Gender:

- ☐ Male
- ☐ Female

Age:

- ☐ 15-25
- ☐ 26-35
- ☐ 36-45
- ☐ 46-55
- ☐ 56-65
- ☐ 66 or greater

Highest Educational Level:

- ☐ Elementary
- ☐ Junior High School Graduate
- ☐ Senior High School Graduate
- ☐ Undergraduate
- ☐ College Graduate
- ☐ Graduate Studies
- ☐ Doctorate Studies
- ☐ Vocational courses
- ☐ No formal education

Civil Status:

- ☐ Single
- ☐ Married
- ☐ Divorced
- ☐ Widowed
- ☐ Separated

Special Dietary Status:

- ☐ Pregnant
- ☐ Vegetarian
- ☐ Pescetarian
- ☐ Allergic (to some types of food)
- ☐ None
- ☐ Other: _____

Do you have children from 0-6 years old?

- ☐ Yes; Indicate how many:_____
- ☐ No

Household Size:

- ☐ 1-2
- ☐ 3-4
- ☐ 5-6
- ☐ 7-8
- ☐ 9 or more

Estimated household monthly income:

- ☐ PHP10,000 or less
- ☐ PHP 10,001-40,000
- ☐ PHP 40,001-70,000
- ☐ PHP 70,001-100,000
- ☐ Greater than PHP100,000

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Occupation:

- **Manager:** Group, plan and direct overall activities of enterprises, governments and other organizations. *(Nagsapangkat, nagpaplano at nagdidirekta ng pangkalahatang gawain ng mga negosyo, gobyerno at iba pang organisasyon)*
- **Professional:** Apply and increase knowledge of concepts and theories *(Naglalapat at nagdadagdag ng kaalaman sa mga konsepto at teoryas)*
- **Technician or associate professional:** Perform mostly technical and tasks related to research, and application of concepts and operational methods *(Gumagawa sa karamihan ng mga teknikal na gawain at gawain na may kaugnayan sa pananaliksik at aplikasyon ng mga konsepto at pamamaraan ng pagpapatakbo)*
- **Clerical Support Worker:** Record, organize, store, compute and retrieve information, and perform clerical duties. *(Nagtatala, nag-aayos , nag-iimbak , nagkokompyute at kumukuha ng impormasyon at nagsagawa ng mga tungkuling clerical)*
- **Service and sales worker:** Provide personal and protective services related to travel, housekeeping, catering, personal care, or protection against fire and unlawful acts, or demonstrate and sell goods. *(Nagbibigay ng mga serbisyo sa personal at proteksiyon na may kaugnayan sa paglalakbay , pag aayos ng bahay , pagtutustos ng pagkain , pansariling pangangalaga , o proteksyon laban sa sunog at kilos na labag sa batas, o nagpapakita at nagbebenta ng mga kalakal)*
- **Skilled agricultural, forestry and fishery:** Grow and harvest crops, and produce animal products and cultivate fish. *(Nagtatanim at nag-aani ang mga ani, at gumagawa ng mga produktong hayop at nagtitinang ng mga isda.)*
- **Craft and related trades:** Apply specific knowledge and skills to construct and maintain buildings, form metal, structures, set machine tools, or maintain and repair machinery, printing work, produce or process foodstuffs and other handicraft goods. *(Nag-apply ng mga tiyak na kaalaman at kasanayan upang mabuo at mapanatili ang mga gusali, bumuo ng mga metal, istruktura, magtakda ang mga kagamitan sa makina o mapanatili at ayusin ang makinarya , gawain sa pagpi-print , makagawa o magproseso ng mga foodstuff sa iba pang mga panindo sa handicraft.)*
- **Plant and machine operators and assemblers:** Operate and monitor industrial and agricultural machinery equipment, drive and operate trains and motor vehicles, or assemble products from component parts. *(Nagpapatakbo at nagmumubayay ng mga kagamitan sa makinarya na pang industriya at agrikultura , nagmamaneho at nagpapatakbo ng mga tren at mga sasakyan na motor, o bumubuo ng mga produkto gamit ang mga bahagi nito.)*
- **Elementary Occupations:** Performance of simple and routine tasks. *(Pagsagawa ng mga simple at nakagawiang gawain)*
- **Armed Forces Occupations:** Members of the army, navy, and other military services. *(Miyembro ng hukbong katihan, pandagat, himpapawid at iba pang serbisyong pangmilitar.)*
- **Student**
- **Unemployed**
- **Self-employed**
- **Retired**

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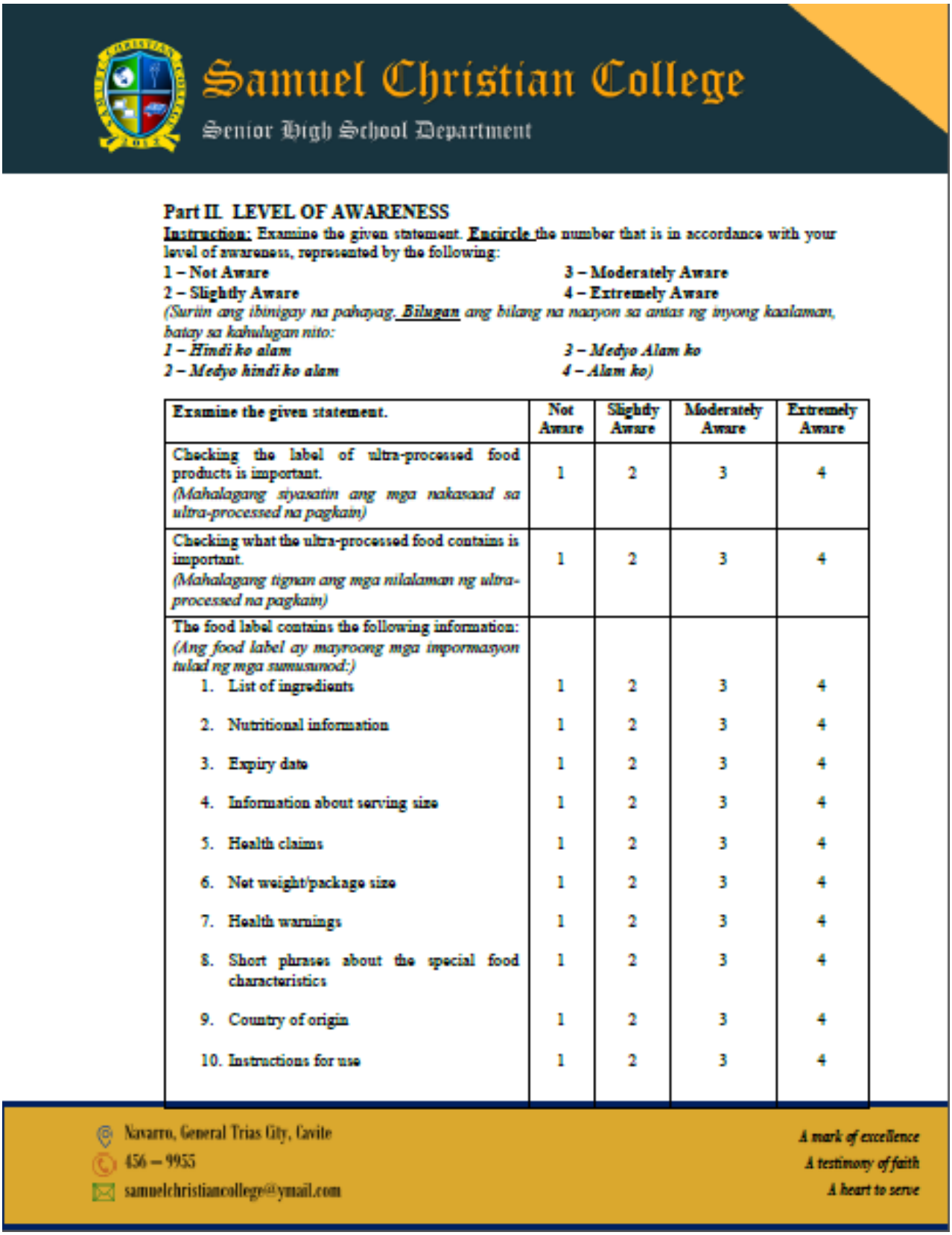

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Part II. LEVEL OF AWARENESS

Instruction: Examine the given statement. **Encircle** the number that is in accordance with your level of awareness, represented by the following:

1 – Not Aware **3 – Moderately Aware**
2 – Slightly Aware **4 – Extremely Aware**

*(Suriin ang ibinigay na pahayag. **Bilugan** ang bilang na nasyon sa antas ng inyong kaalaman, batay sa kahulugan nito:*

1 – Hindi ko alam ***3 – Medyo Alam ko***
2 – Medyo hindi ko alam ***4 – Alam ko)***

Examine the given statement.	Not Aware	Slightly Aware	Moderately Aware	Extremely Aware
Checking the label of ultra-processed food products is important. *(Mahalagang siyasatin ang mga nakasaad sa ultra-processed na pagkain)*	1	2	3	4
Checking what the ultra-processed food contains is important. *(Mahalagang tignan ang mga nilalaman ng ultra-processed na pagkain)*	1	2	3	4
The food label contains the following information: *(Ang food label ay mayroong mga impormasyon tulad ng mga sumusunod:)*				
1. List of ingredients	1	2	3	4
2. Nutritional information	1	2	3	4
3. Expiry date	1	2	3	4
4. Information about serving size	1	2	3	4
5. Health claims	1	2	3	4
6. Net weight/package size	1	2	3	4
7. Health warnings	1	2	3	4
8. Short phrases about the special food characteristics	1	2	3	4
9. Country of origin	1	2	3	4
10. Instructions for use	1	2	3	4

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Examine the given statement.	Not Aware	Slightly Aware	Moderately Aware	Extremely Aware
Consumption of ultra-processed food products have health risks. *(Ang pagkonsumo ng ultra-processed na pagkain ay mayroong mga banta sa kalusugan.)*	1	2	3	4

Part III. FACTORS AFFECTING THE LEVEL OF AWARENESS

Instruction: Examine whether the given statement describes your answer. **Encircle** the number of your choice, representing the following:

1 – Never **3 – Often**
2 – Seldom **4 – Always**

(Suriin kung ang ibinigay na pahayag ay naayon sa inyong sagot. ***Bilugan*** *ang bilang na inyong pinili, batay sa kahulugan nito:*

1 - Hindi ***3 – Madalas***
2 – Minsan ***4 – Palagi)***

Examine the statements below.	Never	Seldom	Often	Always
Attitude towards information on food labels				
1. Whenever I buy prepackaged food, I use information on the label to help me in choosing food. *(Sa tuwing bumibili ako ng mga nakabalot na pagkain, ginagamit ko ang mga impormasyon sa label upang makatulong sakin na pumili ng pagkain.)*	1	2	3	4
2. Whenever I buy prepackaged food, I use the information on the label for health purposes. *(Sa tuwing bumibili ako ng mga nakabalot na pagkain, ginagamit ko ang mga impormasyon sa label para sa aking kalusugan.)*	1	2	3	4
3. Whenever I read information on the food label, I think if the information indicated is true. *(Sa tuwing binabasa ko ang mga impormasyon sa label ng pagkain, pinag-iisipan ko kung wasto ba ito.)*	1	2	3	4
4. Whenever I read the information on the food label, I check if all the information I need is there. *(Sa tuwing binabasa ko ang mga impormasyon sa label ng pagkain, sinusuri ko kung nandoon ang lahat ng impormasyon na kailangan ko.)*	1	2	3	4

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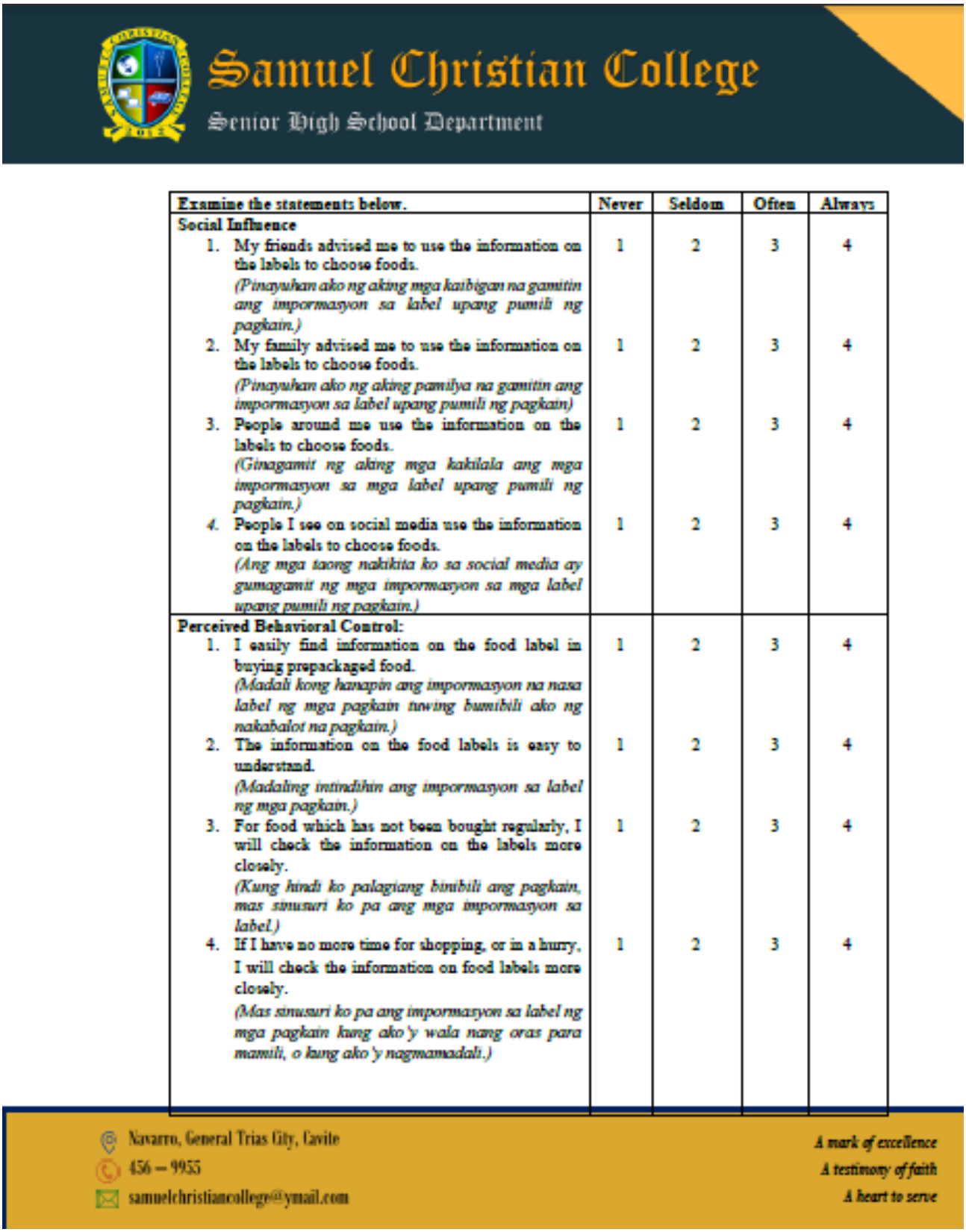

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Examine the statements below.	Never	Seldom	Often	Always
Social Influence				
1. My friends advised me to use the information on the labels to choose foods. *(Pinayuhan ako ng aking mga kaibigan na gamitin ang impormasyon sa label upang pumili ng pagkain.)*	1	2	3	4
2. My family advised me to use the information on the labels to choose foods. *(Pinayuhan ako ng aking pamilya na gamitin ang impormasyon sa label upang pumili ng pagkain)*	1	2	3	4
3. People around me use the information on the labels to choose foods. *(Ginagamit ng aking mga kakilala ang mga impormasyon sa mga label upang pumili ng pagkain.)*	1	2	3	4
4. People I see on social media use the information on the labels to choose foods. *(Ang mga taong nakikita ko sa social media ay gumagamit ng mga impormasyon sa mga label upang pumili ng pagkain.)*	1	2	3	4
Perceived Behavioral Control:				
1. I easily find information on the food label in buying prepackaged food. *(Madali kong hanapin ang impormasyon na nasa label ng mga pagkain tuwing bumibili ako ng nakabalot na pagkain.)*	1	2	3	4
2. The information on the food labels is easy to understand. *(Madaling intindihin ang impormasyon sa label ng mga pagkain.)*	1	2	3	4
3. For food which has not been bought regularly, I will check the information on the labels more closely. *(Kung hindi ko palagiang binibili ang pagkain, mas sinusuri ko pa ang mga impormasyon sa label.)*	1	2	3	4
4. If I have no more time for shopping, or in a hurry, I will check the information on food labels more closely. *(Mas sinusuri ko pa ang impormasyon sa label ng mga pagkain kung ako'y wala nang oras para mamili, o kung ako'y nagmamadali.)*	1	2	3	4

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Examine the statements below	Never	Seldom	Often	Always
Concerns about diet-health				
1. I use the information on food labels because I am on a diet. *(Ginagamit ko ang impormasyon sa label ng pagkain dahil nagdadiet ako.)*	1	2	3	4
2. I use the information on food labels to avoid nutrient composition that harms my health. *(Ginagamit ko ang impormasyon sa mga label ng pagkain upang maiwasan ang mga komposisyon ng nutrisyon na masama sa aking kalusugan.)*	1	2	3	4
3. I use the information on food labels to avoid health problems such as allergy. *(Ginagamit ko ang impormasyon sa mga label ng pagkain upang maiwasan ang mga problema sa kalusugan tulad ng allergy.)*	1	2	3	4
4. Using the information on the labels is the way I recognize good food for my diet health. *(Ang paggamit ng impormasyon sa mga label ay ang paraan kung paano ko makilalaman na mabuti sa aking kalusugan ang pagkain.)*	1	2	3	4
Intention to use the food label				
1. I consider the information found on food labels in making a choice when buying food. *(Isinaalang-alang ko ang impormasyon na makikita sa mga label ng mga pagkain sa paggawa ng desisyon tuwing bumibili ng pagkain.)*	1	2	3	4
2. I will use the information on food labels when buying food. *(Gagamitin ko ang mga impormasyon sa mga label ng pagkain tuwing bumibili ng pagkain.)*	1	2	3	4
3. I advise my friends and relatives to use the information on food labels when buying food. *(Papayuhan ko ang aking mga kaibigan at kapamilya na gamitin ang impormasyon sa mga label ng pagkain tuwing bumibili ng pagkain.)*	1	2	3	4
4. I think that the use of information found on food labels is necessary and important. *(Sa tingin ko, ang paggamit ng impormasyon sa label ng pagkain ay mahalaga at kinakailangan.)*	1	2	3	4

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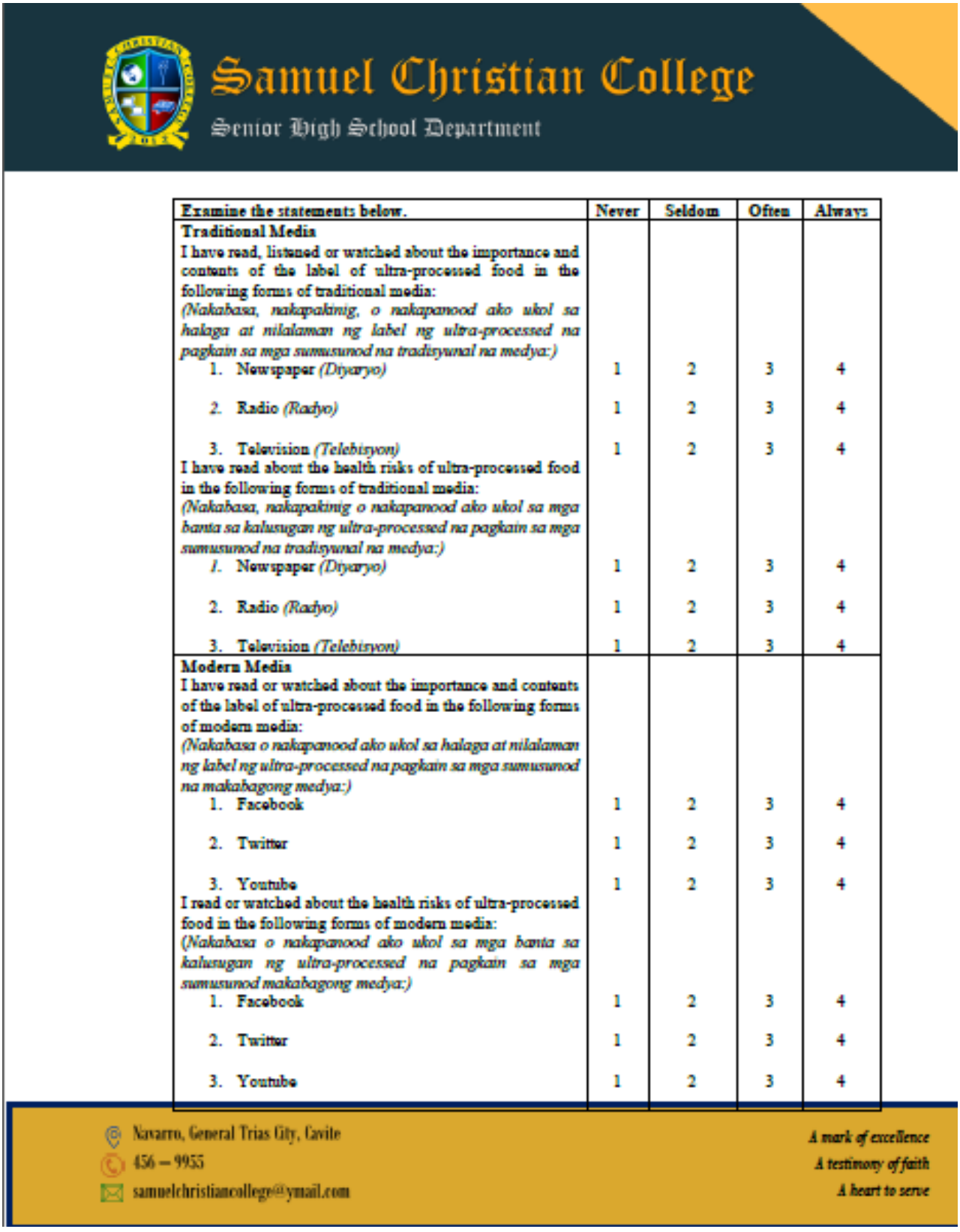

Samuel Christian College
Senior High School Department

Examine the statements below.	Never	Seldom	Often	Always
Traditional Media				
I have read, listened or watched about the importance and contents of the label of ultra-processed food in the following forms of traditional media: *(Nakabasa, nakapakinig, o nakapanood ako ukol sa halaga at nilalaman ng label ng ultra-processed na pagkain sa mga sumusunod na tradisyunal na medya:)*				
1. Newspaper *(Diyaryo)*	1	2	3	4
2. Radio *(Radyo)*	1	2	3	4
3. Television *(Telebisyon)*	1	2	3	4
I have read about the health risks of ultra-processed food in the following forms of traditional media: *(Nakabasa, nakapaking o nakapanood ako ukol sa mga banta sa kalusugan ng ultra-processed na pagkain sa mga sumusunod na tradisyunal na medya:)*				
1. Newspaper *(Diyaryo)*	1	2	3	4
2. Radio *(Radyo)*	1	2	3	4
3. Television *(Telebisyon)*	1	2	3	4
Modern Media				
I have read or watched about the importance and contents of the label of ultra-processed food in the following forms of modern media: *(Nakabasa o nakapanood ako ukol sa halaga at nilalaman ng label ng ultra-processed na pagkain sa mga sumusunod na makabagong medya:)*				
1. Facebook	1	2	3	4
2. Twitter	1	2	3	4
3. Youtube	1	2	3	4
I read or watched about the health risks of ultra-processed food in the following forms of modern media: *(Nakabasa o nakapanood ako ukol sa mga banta sa kalusugan ng ultra-processed na pagkain sa mga sumusunod makabagong medya:)*				
1. Facebook	1	2	3	4
2. Twitter	1	2	3	4
3. Youtube	1	2	3	4

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A testimony of faith
A heart to serve

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