



# Level of Knowledge and Nutritional Attitudes of Consumers of Packaged UHT Milk in Lamongan Regency

M Riyanto<sup>1</sup>, Vivi Indriani\*<sup>2</sup> <sup>6869552</sup>, Wahyudi Himawan Sutanto<sup>2</sup>

<sup>1</sup>Livestock Product Technology, Faculty of Animal Science, Bogor Agricultural University, Dramaga, Bogor, 16680, Indonesia

<sup>2</sup>Animal Science Study Program, Faculty of Agriculture, Universitas Sumatera Utara, Padang Bulan, Medan, 20155, Indonesia

\*Corresponding Author: [viviindriani@usu.ac.id](mailto:viviindriani@usu.ac.id)

---

## ARTICLE INFO

### Article history:

Received November 18, 2024

Revised April 8, 2025

Accepted April 8, 2025

Available online April 8, 2025

E-ISSN: 2808-2753

---

### How to cite:

M Riyanto, Vivi Indriani, Wahyudi Himawan Sutanto. "Level of Knowledge and Nutritional Attitudes of Consumers of Packaged UHT Milk in Lamongan Regency". *Jurnal Peternakan Integratif*, Vol. 12, No. 03, pp.172-180 December.2024, doi: 10.32734/jpi.v12i3.18899

---

## ABSTRACT

UHT milk is a food commodity that plays an important role in fulfilling calcium nutritional sources. UHT milk consumption practices can be influenced by consumer nutritional knowledge. The general objective of this study was to analyze the relationship between nutritional knowledge and the characteristics of UHT milk consumers in Lamongan Regency and the relationship between nutritional knowledge and consumer nutritional attitudes. Sampling was carried out based on the calculation of the Slovin formula and obtained the number of 100 respondents. Data were analyzed descriptively and correlation test was performed. The results obtained as many as 77% of respondents have sufficient knowledge of nutrition. The nutritional attitude of the respondents showed that 63% of the respondents had adequate nutrition attitudes. The conclusion of this study is that there is a significant relationship between the education variable and the job characteristics of the respondents and their knowledge of nutrition. The test results of the relationship between nutritional knowledge and nutritional attitudes showed that there was a very significant and direct relationship between nutritional knowledge and nutritional attitudes.

**Keywords:** Education, Job characteristics, Nutritional attitude, Nutritional knowledge, Packaged UHT milk

---



This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International.  
<http://doi.org/10.32734/jpi.v12i3.18899>

---

## 1. Introduction

Milk is one of the food commodities that plays an important role in fulfilling nutrition. As a source of animal protein, milk has complex nutritional components that must be stored so that they are not damaged, one of which is UHT milk [1]. UHT milk is a liquid milk product obtained from fresh milk, reconstituted milk or recombined milk that is sterilized at a temperature of not less than 135 ° C for not less than 3 minutes and immediately packaged in aseptically sterile packaging. The basic characteristics of UHT milk are milk fat content of not less than 3%, total non-fat milk solids of not less than 7.8% and protein content of not less than 2.8% [2].

Liquid milk is one of the dairy products that has increased in the last ten years, including UHT milk. The growth of ready-to-consume UHT liquid milk will continue to increase along with consumer concern for

consuming practical, hygienic and healthy products. The advantage of UHT milk is its relatively long shelf life at room temperature even without the addition of preservatives and does not need to be refrigerated. This period is longer than the shelf life of other liquid milk products. UHT milk products are commercially sterile, which is a condition that can be achieved through heat inactivation of spores and/or other treatments sufficient to make the food free from microbes that have the ability to grow at room temperature (non-refrigerated) during distribution and storage.

One of the nutrients found in packaged UHT milk products is calcium. Calcium is needed by the body and plays an important role in maintaining strong bones and plays an important role in regulating cell function, such as for nerve transmission, muscle contraction, blood clotting and maintaining cell membrane permeability. Calcium deficiency in adolescence and adulthood will increase the risk of osteoporosis. Therefore, nutritional knowledge is one of the attitudes of the community towards certain products that is very important to know because it will be related to behavior in choosing certain products [3]. The more the nutritional knowledge of the community or a person increases, the better their nutritional attitude will be.

Lamongan Regency is one of the regencies in East Java. The population of Lamongan Regency reached 1,373,390 people spread across 27 sub-districts [4]. Lamongan Regency has a population of more than one million people, while the population aged teenagers to adults is more than 500,000 people. This figure shows that Lamongan Regency is occupied by the majority of the productive age population or as the workforce. This can have a positive impact on this study, because consumers of the UHT milk product samples used are mostly of productive age, namely 15-45 years old. Lamongan Regency is a regency that is quite representative as a location for consumers of UHT milk products in Indonesia. Therefore, this study is important to determine the characteristics of UHT milk packaging circulating in the community, especially in the Lamongan Regency area. This study was also conducted to determine consumer knowledge and attitudes towards products, nutritional content, and benefits of UHT milk drinks. Analysis of the relationship between respondent characteristics and knowledge and attitudes of consumer nutrition towards UHT milk products. This study focuses on two brands of packaged UHT milk that received the Top Brands 2020 award in Indonesia. The selection of the two UHT milk brands was based on their greatest availability in Lamongan Regency.

**2. Method.**

*2.1 Time and Place*

The research was conducted in July to August 2021. This study used a cross-sectional study design and was conducted purposively in 5 sub-districts in Lamongan Regency, namely Karanggeneng, Sekaran, Babat, Lamongan, and Paciran Districts. The locations of these 5 sub-districts were chosen because they represent rural, coastal and urban areas in Lamongan Regency. Lamongan Regency was chosen purposively with the consideration that Lamongan Regency is close to the center of the capital city of East Java so that it is expected that the number of samples taken will be diverse.

*2.2 Procedure*

*2.2.1 Sampling Technique*

The sample size in this study was calculated using the Slovin formula [5] as follows:

$$n = \frac{N}{1 + N (e^2)}$$

$$n = \frac{500.000}{1 + 500.000 (10^2)} = \frac{500.000}{1 + 5000} = 99,98 = 100$$

Note:

- n = Number of samples sought
- N = Population size
- d = Tolerable error rate (10%)

The population of adolescents to adults (aged 15-45 years) in Lamongan Regency reached 500,000 people. From the calculation of the Slovin formula, the sample used in this study amounted to 100 examples, with a percentage of 44% male and 56% female. The selected respondents had the criteria of being 15-45 years old

and were residents of 5 Districts in Lamongan Regency, and had or liked to consume packaged UHT milk products in the last three months.

### 2.2.2 Types and Methods of Data Collection

This study uses primary and secondary data. Primary data were obtained directly from questionnaires filled out by respondents, while secondary data were obtained from observations of UHT milk beverage product packaging consisting of nutritional claim data, net weight, and product price. The research questionnaire was distributed through social media and direct interviews. Nutrition knowledge data was assessed based on the most correct answer. Each question was given a score of one (1) if the answer was correct and a score of zero (0) if the answer was wrong or had no answer. The scores were then added up and categorized as good, moderate, and poor. Nutrition knowledge was categorized as good if the score obtained was more than 80% of the total score, moderate category if the score obtained was between 60-80% of the total score, and poor category if the score obtained was less than 60% of the total score [6].

### 2.3 Data analysis

The data processing process includes editing, coding, entry, cleaning and analysis. The editing process is checking all questionnaires after the data is collected. Coding is giving certain numbers or codes that have been agreed upon for the answers to questions. Entry is entering questionnaire answer data according to the code. Cleaning is checking the data that is outside the answer. The data obtained is then presented in the form of tables and images and analyzed using descriptive statistics and correlation tests are carried out using Microsoft Excel and SPSS 25 for Windows programs. The data processed descriptively consists of respondent characteristics, nutritional knowledge, and consumer purchasing attitudes. The correlation test is used to analyze the relationship between respondent characteristics with nutritional knowledge and consumer purchasing attitudes towards packaged UHT milk. The method of assessing nutritional knowledge and consumer purchasing attitudes uses the provisions of the scoring system. The assessment of nutritional knowledge uses questions with answer choices in the form of correct-answer multiple choice or questions with one correct answer. A score of 1 is given for each correct answer and 0 for a wrong answer. The assessment of nutritional attitudes uses statements with 2 choices of agreeing or disagreeing with the statement. The assessment given for positive statements if agree is given a score of 1 and disagree is given a score of 0, while for negative statements the answer agree is given a score of 0 and disagree is given a score of 1.

The processing of questionnaire data regarding respondent characteristics, nutritional knowledge, product knowledge, nutritional attitudes, and consumption practices was processed using Microsoft Excel 2010. Data analysis was carried out using the SPSS 24.0 for Windows application. Data normality testing was carried out by testing each variable using the Kolmogorov-Smirnov test. Analysis of the relationship between variables was carried out using the Spearman and Chi square tests for nominal data types. Analysis of the suitability of nutritional claims was carried out by referring to BPOM regulation number 13 of 2016 concerning supervision of claims on processed food labels and advertisements. Nutritional knowledge and nutritional attitudes were measured using a questionnaire containing questions about packaged UHT milk and its benefits. The test of the relationship between these two variables was carried out using the Spearman test with a significance level of  $P < 0.05$ .

## 3. Discussin

### 3.1 Respondent Characteristics

#### 3.1.1 Consumer Preferences in Consuming UHT Milk

The respondents used in this study were people from 5 sub-districts in Lamongan Regency who like or have consumed packaged UHT milk beverage products, especially UHT X milk products and UHT Z milk products. Respondents who met the criteria numbered 100 people. The total number of respondents who filled out the questionnaire was 100 respondents. Most of the respondents were female, namely 56%, and male respondents were 44%. The Adequate Nutritional Intake (AKG) to meet calcium needs for the average adult is 1000 mg/day. The largest number of respondents came from the adolescent age category, namely 17-25 years old with 60 respondents, the age category <17 with 17 respondents, the age category 26-45 with 23 and the age category >45 with 10 respondents. This shows that some respondents are productive age teenagers. The highest level of education of respondents is high school with 44%, then junior high school with 19% and the smallest is postgraduate with only 2% of respondents.

The largest number of respondents' jobs are students/college students with 50%, then private employees with 20%, and the smallest is civil servants with only 5%. The respondents' monthly expenses vary widely, from <IDR 500,000.00 to >IDR 3,000,000.00. The majority of respondents come from the income group <IDR 1,000,000.00-3,000,000.00 per month, as many as 36%, then the income group of IDR.500,000.00-IDR.1,000,000.00 as many as 32%. This shows that some respondents already have their own income to meet their needs.

3.1.2 Distribution of Respondents by Region

Lamongan Regency has 27 sub-districts, including Karanggeneng, Sekaran, Lamongan, Babat and Paciran sub-districts. The distribution of the number of respondents and gender based on region can be seen in Figure 1. The distribution of respondents based on region is almost evenly distributed in each sample sub-district..

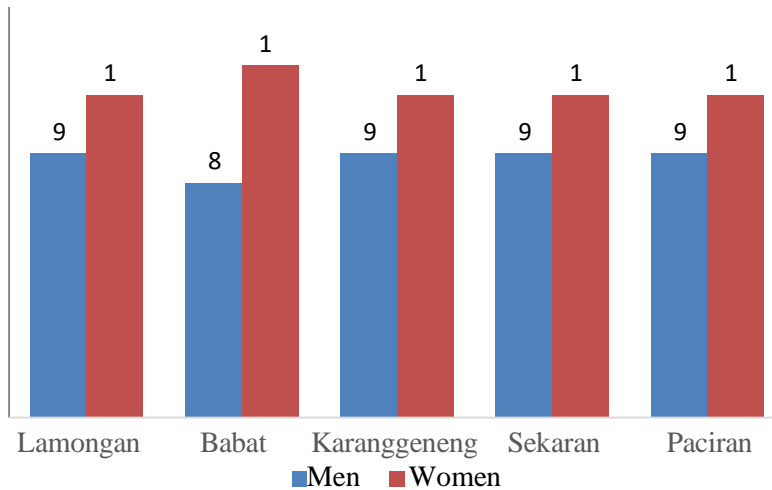


Figure 1. Distribution of number of respondents and gender by region

The division of areas for the research sample is seen from the demographic factors in each sub-district. Respondents representing urban areas were selected from Lamongan and Babat Sub-districts, Karanggeneng and Sekaran Sub-districts represented respondents in rural areas, while Paciran Sub-district represented respondents in coastal areas. Respondents in Karanggeneng Sub-district numbered 19, Sekaran Sub-district numbered 19, Lamongan Sub-district numbered 21, Babat Sub-district numbered 21 and Paciran Sub-district numbered 20.

3.2 Characteristics of Packaged UHT Milk Products

Direct observation was conducted in minimarkets and other shopping places in 5 sub-districts in Lamongan Regency, namely in Karanggeneng, Lamongan, Paciran, Babat and Sekaran sub-districts. Packaged UHT milk beverage products are quite easy to find in all shopping places, from supermarkets to stalls. The following is the characteristic data of packaged UHT milk products X and Z that are often consumed by respondents.

Table 1. Characteristics of UHT milk products in packaging X and Z

Characteristik	UHT Milk X (pcs)	UHT Milk Z (pcs)	Average Price (IDR)
Packaging Type	Tetrapack	18	
	125 mL	2	2.500
	180 mL		3.800
	200 mL	6	4.000
Netto	225 mL		5.000
	250 mL	6	5.500
	450 mL		10.000
	900 mL		19.000
	1000 mL	4	18.900

The observed UHT milk beverage products in X packaging were 18 products with various sizes and packaging. The observed UHT milk beverage products in Z were 18 products with various sizes and packaging. The types of packaging used by products X and Z did not vary or only used one type of packaging, namely tetrapack. The net weight of each product X and Z varied from 125 mL to 1000 mL. The selling price of UHT milk products X and UHT milk products Z varied according to the net weight. The selling price of UHT milk products X and Z were relatively the same. The price range for product X was around IDR 2,500 for the smallest size, namely 125 mL, to IDR 18,900 for the largest size, namely 1000 mL, while the price range for

product Z was around IDR 3,800 for the smallest size, namely 180 mL, to IDR 19,000 for the largest size, namely 900 mL. This price range is still affordable for the community. The difference between products X and Z in terms of net weight and price.

3.3 Consumer Nutrition Knowledge and Consumer Nutrition Attitudes

Nutritional knowledge can influence the differences in habits carried out by a consumer. A person who has good nutritional knowledge can also be said to be healthy because they have attitudes and behaviors in choosing food according to the benefits and nutritional content needed by each individual's body. The instrument used to measure the level of nutritional knowledge of respondents is a questionnaire in the form of correct-answer multiple choice or questions that are given the choice of correct answers. Data on the distribution of respondents' correct answers will be presented in Table 2.

Table 2. Distribution of correct answers to nutritional knowledge

Question	N	%
The most appropriate temperature to use for storing milk	81	81
The difference between UHT milk and fresh milk	85	85
The function of calcium in UHT milk products for the human body	88	88
Can UHT milk be consumed every day (except for people with <i>lactose intolerance</i> )	68	68
Nutrition claims on packaged UHT milk	75	65
Mandatory information to be included on product packaging	74	74
Understanding <i>lactose intolerance</i>	60	60
The suitability of consuming UHT milk for sufferers <i>lactose intolerance</i>	62	62
The impact of the UHT process on the nutritional content of the product	70	70
Maximum shelf life of packaged UHT milk products	68	68

Table 2 shows the data of the questions tested along with the number of respondents who answered correctly. Based on Table 2, the question most often answered correctly by respondents was the question about the difference between fresh milk and UHT milk with 85% of respondents answering correctly. The question with the fewest number of correct answers was the question about the definition of lactose intolerance with 52% correct answers. In general, the respondents' nutritional knowledge about packaged UHT milk is quite good. Until now, there are still many people or consumers of packaged UHT milk who do not know about lactose intolerance and its relationship to body health. Lactose intolerance is a condition in which the body cannot digest lactose properly due to lactase enzyme deficiency. Lactose that is not broken down into glucose and galactose will cause several clinical manifestations such as diarrhea, nausea, abdominal pain and bloating [7]. The nutritional knowledge scores that have been answered by respondents are categorized into three categories, namely: less, if respondents answer <60% correct answers; sufficient category, if respondents answer 60 - 80% correct answers; and the high category if the respondent answers >80% correctly [8].

Table 3. Distribution of respondents based on nutritional knowledge category

Classification	Total (Individual)	Total (%)
High	13	13
Enough	77	77
Less	10	10
Total	100	100

Based on Table 3, most respondents have sufficient nutritional knowledge, namely 77%, 13% of respondents have high nutritional knowledge, and 10% of respondents have poor nutritional knowledge. Factors that influence knowledge according to [9], consist of internal factors, namely: education, work, age, experience, and interests and external factors, namely: environment and information.

Nutritional attitude is a readiness to react to a certain environment as an appreciation of a certain object. The levels of attitude include accepting, responding, appreciating and being responsible [10]. Data on the distribution of respondents who answered correctly on the nutritional attitude question are presented in Table 3. Based on Table 3, questions with more than 80% correct answers are questions about calcium content in UHT milk, UHT milk as an ingredient in food or beverages, nutritional claims on product packaging, differences in content and hygiene of UHT milk and fresh milk and storage of packaged UHT milk products. Calcium is a common nutritional claim listed on several packaged UHT milk products. People aged 19-29 years have a calcium requirement of 1000 mg/day. The amount of calcium in packaged UHT milk products is 20% according to the AKG for an energy requirement of 2150 kcal. The results of Table 4 prove that many

people are classified as having sufficient to high nutritional knowledge, this shows that people pay enough attention to nutritional knowledge when purchasing UHT milk products. Factors that influence attitudes are personal experience, the influence of other people who are considered important, the influence of culture, mass media, educational institutions and religious institutions, and emotional [11].

Table 4. Distribution of respondents based on nutritional attitude categories

Classification	Total (Individual)	Total (%)
Good	25	25
Medium	63	63
Less	12	12
Total	100	100

Based on Table 4, as many as 25 respondents from the total respondents have a nutritional attitude towards the consumption of packaged UHT milk products with a high category. As many as 63% of respondents have a sufficient nutritional attitude and 12% of respondents have a category of poor nutritional attitudes. This shows that most consumers have implemented good nutritional attitudes for daily consumption of packaged UHT milk.

### 3.5 Consumption Practices

Well-known consumption practices can potentially be useful in preparing strategies to increase milk consumption that are in accordance with the preferences of milk consumers in Indonesia. Consumption practices in this study include; Nutritional Value Information, Frequently consumed beverage brands, Places to Purchase Packaged UHT Milk Drinks, Information about the product, Atmosphere or conditions for consuming packaged UHT milk drinks, Main reasons for consuming packaged UHT milk drinks, Taste of packaged UHT milk and Temperature of UHT milk when consumed.

#### 3.5.1 Nutritional Value Information

Nutritional information labels are information contained in packaged food products that aim to choose healthy packaged food products according to consumer needs. The habit of reading nutritional information is important and is recommended for consumers to know the content of packaged food or drinks, so that it can be adjusted to the body's nutritional needs. As many as 52% of the total respondents have the habit of sometimes reading nutritional information, as many as 27% of respondents always read nutritional information, 19% rarely read nutritional information, and 2% never read nutritional information. Based on the analysis of consumer attitudes, in terms of strength of interest, nutritional information is ranked fourth after the expiration date, halal, and BPOM distribution permit. Therefore, not everyone always reads nutritional information. Research from BPKN states that 36.5% of people in Indonesia pay more attention to halal labels, 34.9% pay attention to expiration dates, 20.6% pay attention to the inclusion of product names, and finally 7.9% pay attention to the nutritional information section [12].

#### 3.5.2 Frequently consumed beverage brands

Respondents were asked to write down the brands of UHT milk that are often consumed along with the type of packaging. The UHT milk brands listed in the questionnaire are the two top brands of UHT milk 2020. Respondents were allowed to write down the UHT milk brand D as an alternative when the two main brands were not available. UHT milk X ranked first among the milk that respondents often consumed, followed by UHT milk Z. UHT milk X is the milk that won the Top Brand 2020 so that UHT milk X products are quite well-known and popular among Indonesian consumers, including in Lamongan Regency. UHT milk X and other brands of UHT milk generally have tetrapack packaging, because tetrapack packaging has several advantages including being light, strong and practical. The packaging sizes of UHT milk X include 125, 200, 250 and 1000 mL with various flavors. The product brand will influence the perception of quality and the perception of quality will influence a consumer's purchasing power [13].

#### 3.5.3 Places to Purchase Packaged UHT Milk Drinks

The place of purchase of the product is one of the questions in the questionnaire because it is one of the factors that influences product selection. The place most frequently visited by respondents to buy packaged UHT milk beverage products is a minimarket. Based on the survey results, packaged UHT milk beverage products are easier to find in minimarkets. On average, consumers buy products in minimarkets because there are many minimarkets found around residential areas and also provide many variations of packaged UHT milk products, in addition, in minimarkets, packaged UHT milk usually has two storages, namely in cold temperatures using a refrigerator and at room temperature. Shops and canteens are less popular with consumers because of limited products and limited storage methods. Meanwhile, supermarkets are very unpopular with consumers because

in the consumer area there are only a few supermarkets. People tend to like and make purchases of food and beverage products in modern places such as supermarkets or minimarkets because of the comfortable place and complete facilities [14].

*3.5.4 Product information*

Information is important in marketing a product. Information about a product is information that can be known by consumers, including taste, price, packaging, and place of purchase. Respondents can get information about the product through advertisements in the mass media, friends, family, certain events, or brochures. As many as 51% of respondents get information through mass media advertisements. Mass media here can be interpreted as broadcasts, newspapers, or social media. And 49% of respondents get information from friends, family, certain events and brochures.

*3.5.5 The atmosphere or conditions for consuming packaged UHT milk drinks*

Packaged UHT milk drinks are usually consumed in certain situations or conditions. Most respondents chose the uncertain option in consuming packaged UHT milk drinks with a percentage of 41%. This could mean that respondents did not determine a certain situation when consuming packaged UHT milk. As many as 19% of respondents chose to consume packaged UHT milk during breaks or relaxation. UHT milk is good to consume as a daily drink to maximize the fulfillment of the human body's calcium needs. While other respondents chose to consume packaged UHT milk when eating, gathering, exercising, and traveling.

*3.5.6 The main reason for consuming packaged UHT milk drinks*

Consumption of packaged UHT milk drinks is certainly accompanied by reasons for consumption. As many as 31% of respondents consume packaged UHT milk drinks because they taste good. Respondents who want to take advantage of packaged UHT milk drinks are 20%. Other respondents consume packaged UHT milk drinks because they quench thirst, are cheap, habitual, easy to get, and want to try packaged UHT milk drink products.

*3.5.7 The taste of packaged UHT milk*

Packaged UHT milk drinks have several types of flavors including plain, chocolate strawberry and others. Most consumers buy UHT milk with other flavors such as green beans, vanilla and others with a percentage of 58%, 21% of respondents choose chocolate flavor, 11% of respondents choose strawberry flavor and only 10% of respondents choose plain flavor. Most respondents do not like the plain flavor because they do not like the original taste of milk.

*3.5.8 UHT Milk temperature when consumed*

UHT milk is milk that has a very long shelf life at room temperature, which is 6-10 months without preservatives and does not need to be refrigerated. Of the various types of processed milk, the most recommended is UHT milk. Milk that is processed using UHT can maintain nutritional value better than other processing. Most respondents, namely 76%, consume packaged UHT milk at refrigerator temperature or cold temperature. The refrigerator temperature is generally below 4°C. Another 24% of respondents consume packaged UHT milk at room temperature. Based on the results of the nutritional knowledge analysis, 58% of respondents answered correctly regarding the storage temperature of packaged UHT milk. This is directly proportional to the consumption practices of respondents who mostly consume packaged UHT milk at refrigerator temperature. This can also be caused by packaged UHT milk drinks which are more delicious when eaten cold.

*3.6 Relationship between variables*

*3.6.1 Characteristics of respondents with nutritional knowledge*

The characteristics variables tested include gender, age, education, occupation and monthly income. The characteristics of each respondent can affect nutritional knowledge. The results of the analysis of respondent characteristics with nutritional knowledge will be presented in Table 5.

Table 5. Relationship between respondent characteristics and nutritional knowledge

No	Variabel	Asymptailed Sig (2-
1	Gender – Nutritional knowledge	0.821
2	Age – Nutritional knowledge	0.229
3	Education – Nutrition knowledge	0.000
4	Job – Nutrition knowledge	0.027
5	Monthly income – Nutrition knowledge	0.600

Based on Table 5, the results of the relationship test conducted on 5 variables. Several respondent characteristic variables show significance  $>0.05$ , namely gender, age, and monthly income variables. While the education and employment characteristic variables show significance results  $<0.05$ , even educational characteristics show very significant results. There is a significant relationship between education, monthly income, and employment status with nutritional knowledge [15]. Age and education have a positive effect on nutritional knowledge [16]. Respondents who have a high educational background tend to have high nutritional knowledge about packaged UHT milk. This is because some respondents already know the benefits of packaged UHT milk products. Respondents' jobs also affect the answers to nutritional knowledge. Most of the respondents' jobs are students or college students, this gives a positive relationship with respondents' nutritional knowledge.

### 3.6.2 Nutritional knowledge with nutritional attitudes

The results of the relationship test showed that there was a significant and unidirectional relationship between nutritional knowledge and nutritional attitudes. The higher the level of nutritional education, the better the nutritional attitude. The results of this analysis are in accordance with previous studies which stated that there was a significant and unidirectional relationship between nutritional knowledge and nutritional attitudes [17]. The level of nutritional knowledge can influence attitudes and behavior in choosing foods that determine understanding the benefits of the nutritional content of the food consumed [18]. Meanwhile, consumer purchasing decisions are a process of integration between nutritional knowledge and advertising role factors. However, the influence of this advertisement only applies to products that have brand recall or products with easy and memorable pronunciation [19].

## 4. Conclusion

Most respondents have nutritional knowledge and nutritional attitudes about packaged UHT milk in the good or sufficient category. The results of the relationship test between respondent characteristics and nutritional knowledge show that there is a significant relationship between the variables of respondent education and work characteristics with nutritional knowledge. The results of the relationship test between nutritional knowledge and nutritional attitudes show that there is a very significant and unidirectional relationship between nutritional knowledge and nutritional attitudes.

## References

- [1] Miskiyah. (2011). Kajian standar nasional Indonesia susu cair di Indonesia. *Jurnal Standardisasi*. 13(1):1-7
- [2] Badan Pengawas Obat dan Makanan. (2016). Peraturan Kepala Badan Pengawas Obat dan Makanan Republik Indonesia Nomor 21 Tahun 2016 Tentang Kategori Pangan. Jakarta: Badan Pengawas Obat dan Makanan Republik Indonesia.
- [3] Sumarwan. (2014). Pengetahuan Produk, menurut kutipan Buku Perilaku Konsumen. Jakarta: Ghaila
- [4] Badan Pusat Statistik. (2019). Kabupaten Lamongan dalam Angka. Jakarta (ID): BPS RI.
- [5] Singarimbun, Masri, Effendi S.(1989). Metode Penelitian Survey. LP3ES, Jakarta. Spear BA. 2004. Nutrition in Adolescence. Dalam Mahan K & Stump SE (Eds.) Food, Nutrition & Diet Therapy 11th ed. Pennsylvania: Saunders. Sumarwan U. 2014. Perilaku Konsumen. Bogor: Ghalia Indonesia
- [6] Aulia, N. R. (2021). Peran pengetahuan gizi terhadap asupan energi, status gizi dan sikap tentang gizi remaja. *Jurnal Ilmiah Gizi Kesehatan (JIGK)*, 2(02), 31-35.
- [7] Heyman M. B. (2006). Lactose intolerance in infants, children and adolescent
- [8] Mawaddah N, Hardinsyah. (2008). Pengetahuan, sikap, dan praktek gizi sertatingkat konsumsi ibu hamil di Kelurahan Kramat Jati dan Kelurahan Ragunan Provinsi DKI Jakarta. *J Gizi dan Pangan*. 3(1): 30-42.
- [9] Notoatmodjo. (2007). Promosi Kesehatan dan Ilmu Perilaku. Jakarta: Rineka Cipta
- [10] Anida M. (2015). Hubungan pengetahuan sikap dan perilaku gizi ibu terhadap status gizi balita (6-24bulan) pada komunitas nelayan Kota Karang Raya Teluk Betung Bandar Lampung [skripsi]. Lampung: Universitas Lampung
- [11] Badan Perlindungan Konsumen Nasional. (2007). Hasil Kajian BPKN di Bidang Pangan Terkait Perlindungan Konsumen. Jakarta (ID): BPKN
- [12] Aberdeen N. I. (2016). Pengaruh kesadaran dan citra merek terhadap persepsi mutu dan minat beli konsumen (studi kasus: coca cola, pepsi dan big cola di Kota Bogor) [skripsi]. Bogor: Institut Pertanian Bogor



- [13] Haryadi K.K. (2017). Faktor-faktor yang memengaruhi konsumsi susu pada level rumah tangga [skripsi]. Bogor: Institut Pertanian Bogor
- [14] Amrin A.P. (2011). Pengetahuan dan sikap gizi, praktek konsumsi susu serta status gizi ibu hamil [skripsi]. Bogor: Institut Pertanian Bogor
- [15] Azizah F. (2019). Pengetahuan dan perilaku terkait label gizi dan keputusan pembelian makanan ringan siap santap [skripsi]. Bogor: Institut Pertanian Bogor
- [16] Alfiani F. (2017). Perilaku konsumen minuman teh kemasan [skripsi]. Bogor Institut Pertanian Bogor
- [17] Saputri, R. (2013). Hubungan antara pengetahuan gizi dan konsumsi soft drink dengan kejadian obesitas pada remaja di SMP Budi Mulia Dua Yogyakarta. Universitas Muhammadiyah Surakarta. [skripsi]. DIY: Universitas Muhammadiyah Yogyakarta.
- [18] Stephen A, Canthika A, Subrata D, Veronika D. (2019). Pengaruh iklan terhadap keputusan pembelian konsumen. *Jurnal Indonesia Business*. 2(2): 233-247
- [19] Danesi, M. (2007). *Why it sells: Decoding the meanings of brand names, logos, ads, and other marketing and advertising ploys*. Rowman & Littlefield Publishers.