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INFLUENCE OF PRICE, HEALTH ASPECT, TASTE, AND SMELL ON MAKING DECISION OF MYANMAR'S PEANUT OIL PURCHASING

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KEY WORDS:
peanut oil, purchasing decision, price impact, health influence

ABSTRACT

This study aims to investigate the factors that influence consumer purchasing decisions regarding peanut oil brands in Myanmar, specifically examining the impact of price, health benefits, and taste and smell on purchasing behavior. A quantitative research approach was employed to analyze the data collected from 255 participants who are social network friends' netizens living in Yangon region. The gathered data was analyzed by using the logistic regression statistical tool. Tests such as Likelihood Ratio test, Wald test, the Hosmer-Lemeshow test, Cox and Snell R-square, Nagelkerke R-square and Omnibus test were used in this study for the model fitting purpose to achieve its objectives. The results show that peanut oil price had a significant impact on consumer purchasing decisions, while health considerations also played a role in decision-making. However, taste and smell did not significantly contribute to the prediction of the relationship between the dependent and independent variables.

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ВЛИЯНИЕ ЦЕНЫ, ВОЗДЕЙСТВИЯ НА ЗДОРОВЬЕ, ВКУСА И ЗАПАХА НА ПРИНЯТИЕ РЕШЕНИЯ О ПОКУПКЕ АРАХИСОВОГО МАСЛА В МЬЯНМЕ

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КЛЮЧЕВЫЕ СЛОВА:
арахисовое масло, принятие решения о покупке, влияние цены, воздействие на здоровье

АННОТАЦИЯ

Целью данного исследования было изучение факторов, влияющих на принятие потребителями решения о покупке брендов арахисового масла в Мьянме, изучая, в частности, влияние цены, пользы для здоровья, а также вкуса и запаха на покупательское поведение. Был использован количественный исследовательский подход для анализа данных, собранных от 255 участников, которые являются пользователями социальной сети друзей, живущих в районе г. Янгон. Собранные данные были анализированы путем использования статистического инструмента логистической регрессии. В этом исследовании были использованы такие тесты как тест отношения правдоподобия, тест Вальда, тест Хосмера-Лемешоу, R-квадрат Кокса и Снелла, R-квадрат Нагелькерке и универсальный критерий для адаптации модели для достижения её целей. Результаты показали, что цена на арахисовое масло оказывала значимое влияние на решение потребителей о покупке, в то же время соображения здоровья также играли роль в принятии решения. Однако вкус и запах не вносили существенный вклад в прогнозирование взаимоотношения между зависимыми и независимыми переменными.

1. Introduction

The global edible oil market has been characterized by unprecedented price fluctuations, influenced by various factors such as decreased output and increasing demand [1]. In Myanmar, edible oil is an essential component of daily life, often used for frying and mixed with food. The country has diverse edible oil types, including peanut, sesame, sunflower, palm, vegetable, olive, soybean, mustard, and mixed oil.

Htoon, K. L. [2] shows that from 2001 to 2017, Myanmar's peanut oil production increased significantly, with an average annual production of 270,000 tons. However, the edible oil industry has faced challenges in recent years, with 90 % of expeller mills ceasing operation due to the sale of lower-quality mixed edible oils and a lack of competition in the local market. While peanut oil production in Myanmar saw growth from 2001 to 2017, recent market trends have shifted significantly, causing a large proportion of production facilities to cease operations due to increased availability of cheaper, lower-quality oils and insufficient competition to drive improvement and viability in the market [3]. Furthermore, the palm oil industry has been criticized for its use of chemically modified peanut oil fragrances and lack of standardization, with the government attempting to regulate the sale of unhealthy and unstandardized oils. The country's reliance on imported palm oil has had a significant impact on the domestic edible oil industry, with monthly imports averaging 7,000 tons in the early 1990s and growing to 70,000 tons today [4]. Currently, local oil mills in Myanmar are struggling with declining production and high costs of electricity, raw materials, and labor, while the growing market for lower-quality mixed edible oils poses a significant challenge.

In Myanmar, oilseed crops cover approximately 16.4 % of the total agricultural land, with peanuts being one of the main crops. The production of peanut oil is a significant industry, but it faces challenges due to competition from imported palm oil. The Myanmar Edible Oil Dealers' Association and the Myanmar Edible Oil Manufacturers' Association have reported that the sudden imposition of import restrictions by India on beans and pulses led to a shift in farming practices, with many farmers

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switching to growing peanuts. However, this change has proven difficult due to the different skills required [5].

The demand for edible oil in Myanmar is high, with each person consuming an average of 9.3 kg of edible oil per year. The country imports significant amounts of palm oil to meet this demand, particularly from Malaysia. However, this has negatively affected the national economy and consumer base in Myanmar's oilseed crop industry. It is also important for consumers to be aware of the importance of eating nutritious oils, such as those found in peanuts, sesame seeds, and sunflower seeds [3]. According to a survey, peanut oil is the most popular edible oil in Myanmar, with 61.40% of respondents selecting it as their preferred oil type [2].

Understanding consumer behavior is crucial for businesses to gain a competitive advantage in today's market. A consumer is defined as an individual with sufficient income to purchase goods or services, and their demand for superior services plays a significant role in the success or failure of an industry [6]. To thrive in a competitive market, businesses must understand and adapt to the decision-making processes and actions of their customers [7]. Consumer decision-making involves a complex process, including information search, evaluation of alternatives, purchase decision, and post-purchase evaluation, with various factors influencing the decision-making process [8]. According to Philip Kotler, customer behavior is the study of how individuals or groups choose, use, and reject goods, services, concepts, or encounters to satisfy their wants and needs [9]. Researchers have developed various models to depict the decision-making process involved in purchasing and the factors that affect it [8]. By understanding what consumers like to buy, where they buy, how much they buy, how often they buy, and why they buy, businesses can reorganize their decision-making process at different stages [10].

The buying process begins with need recognition, where a customer identifies a desire or issue, often triggered by internal and external stimuli, such as cultural and social factors [11]. This initial phase involves recognizing a gap between the ideal and current circumstances, creating demand, and the need to fulfill that desire [12]. Marketers may influence consumers to buy by highlighting the difference between their ideal and present circumstances, creating a sense of urgency [8]. Factors such as financial considerations, past decisions, family characteristics, social status, marketing campaigns, and personal preferences can impact the identification of needs [8]. The genuine condition is influenced by various factors, including evaluation after purchase, excitement, and inappropriate group. Scholars argue that a need can be something one needs rather than something one just wants to preserve one's way of life [11]. The problem is detected when a consumer observes a significant difference between their current circumstances and an ideal or preferred state.

Consumers seek information from various sources, including personal, commercial, public, and experimental sources, during the information search process, which is a crucial step in the buying decision-making process. This search is often triggered by an unconscious desire, and once consumers are aware that a product or service can satisfy their needs, they will evaluate whether to purchase it. The level of consumer interest determines the amount of information needed during the search process, with consumers being more likely to make a decision quickly if the product is readily available or instantaneously accessible [12]. Consumers have the right to access knowledge from multiple sources, including both private and public data [13]. As consumers seek to make informed decisions, they often search for experiences associated with products and similar products or services. They may also seek advice from friends, family, and acquaintances who have experience with the products or solutions they need. Positive customer feedback can significantly increase the likelihood of purchase, while external data can also aid in decision-making. Additionally, consumers can obtain information through various channels, such as magazines, TV, and online resources. For example, advertising on TV or the Internet can serve as important cues to make a purchase [14]. Another study on internal and external consumer behavior examines the influence of internal factors (such as personality and motivation) and external factors (such as culture and social class) on purchasing decisions at Keboen Rodjo Kediri Restaurant, highlighting the importance of understanding consumer behavior in a competitive market [15].

Consumers are faced with a vast array of options, which can lead to overwhelming decision-making. To alleviate this, businesses can simplify the process by highlighting their products' unique qualities and guiding consumers toward more informed purchases. During this process, customers evaluate all available options, develop a mental framework of brand associations, and consider various factors such as brand, quality, originality, and usefulness [14]. Businesses must identify reliable information sources and understand what aspects of their products or services resonate with customers to effectively navigate this complex decision-making process.

As they gather more information, they may elevate their standards for evaluation and categorize options based on shared qualities, with emotional connections influencing their perception of different choices [8].

During the evaluation stage, consumers weigh their options, considering factors such as social influences and unexpected situations, to form a purchase intention and rank their preferred brands [8]. As they reach the "end goal", they have to select the product they wish to purchase, guided by their needs, wants, and challenges [14]. Purchase decisions are influenced by various factors, including social relationships, reference groups, and personal preferences [3], with some customers opting for exclusive brand loyalty if they have a positive perception of the brand.

After purchasing a product, the customer's job is not done, as they will either be satisfied or dissatisfied and engaged in post-purchase behavior. Satisfaction depends on the gap between expectations and disappointment, and vendors must evaluate customer needs, satisfaction, and retention. Some buyers may make impulsive purchases, leading to dissatisfaction and returns, while others may feel guilty, ashamed, or helpless after making an extravagant purchase [11]. The customer assesses whether the product meets, exceeds, or falls short of their expectations [8], and their satisfaction is influenced by whether the product meets their needs, exceeds their expectations, or falls short.

The edible oil market has various different types of edible oil for consumers to choose. Several factors are affecting the purchasing decision-making regarding edible oil. Among them, price, health, smell, and taste are explored in detail in the following section.

Price is the only instrument employed by businesses to generate income from marketing mix elements, and as such, the prices that companies establish for their goods are essential to ensuring a good return on their investments. In a competitive marketplace, the price is acknowledged as a financial amount regardless of the level of quality of the goods [16]. Consumers perceive price as a measure of quality and use it to compare reference rates in a marketplace, where comparable products are sold at a variety of prices [17]. Many scholars believe that price has a significant influence on purchasing decisions [18], and research has shown that price and product quality play significant roles in consumers' decisions [19,20,21]. The findings of these studies indicate a relationship between price-related variables and consumer purchasing decisions, as well as the potential for a positive or negative relationship between price and purchasing probability. In Myanmar, consumers have expressed that the price is high for them to consume edible oil, but even if the price is low and income increases, they will not increase their consumption [3]. This suggests that price might influence consumer purchasing decisions in Myanmar, particularly in terms of switching to high-quality edible oils.

The consumption of edible oil in Myanmar is high, with an annual per capita consumption of 14.39 kg, which has increased by 64% in recent decades [3]. However, this increase in consumption has led to a growing market demand for high-quality edible oils, which has resulted in the mixing of inexpensive oils and chemicals, leading to adulteration and health problems [22,23]. As a result, consumers are becoming more sensitive to the quality of edible oil they consume, and many countries are switching to healthier options. In Myanmar, consumers are complaining about the difficulty in distinguishing blended edible oil from contaminants and are demanding healthier options [24]. Previous studies aimed to create an oil blend that meets the recommended fatty acid ratio and to assess the impact of blending on the physicochemical properties of the resulting oil mixture. Groundnut oil was blended with palm oil and sunflower oil to achieve a balance of saturated fatty acids (SFA), monounsaturated fatty acids (MUFA), and polyunsaturated fatty acids (PUFA) as recommended by health agencies, ideally close to a 1:1 to 3:1 ratio [25]. These concerns highlight the importance of consumers finding brands and edible oil types that are healthier and more authentic.

Edible oils, particularly peanut oil, are refined to achieve a neutral flavor before consumption, but customers can detect even minute amounts of aromatic product residue. While flavorless oils are preferred in the United States and many Western countries, faint natural flavor notes, such as nutty, buttery, or oily, are acceptable and often necessary in African and Asian countries, for example, in Myanmar [26]. In Myanmar, peanut oil is a popular choice for cooking, frying, and adding flavor, with most variants having a mild, neutral flavor [3,27]. Myanmar people tend to appreciate nutty and oily smells and tastes, making peanut oil a suitable fit for their preferences. Additionally, people often use taste and smell as indicators of the state and quality of edible oil products, as each type of oil has its unique smell and flavor. For example, bad oil can have an acidic or peculiar smell, while a bitter or pungent taste can indicate an inferior product [28]. As a result, consumers are likely to choose edible oils based on their taste and smell.

Several studies have explored the factors influencing consumer purchasing decisions of edible oil, with one study conducted in Myanmar confirming that price, health, taste, and smell affect consumption rates, although the researchers noted that further research is needed to fully understand the effects of these variables [3]. A study in Kandy, Sri Lanka, found that price is the most significant factor influencing consumer purchasing decisions of edible oil, with consumers also considering how they use edible oil in a healthy way [18]. In another study in Surendranagar City, Gujarat, researchers found that taste and smell, health considerations, price, availability, and brand reputation are all factors influencing consumer purchasing decisions of edible oil, with consumers placing significant importance on health considerations and taste and smell [22]. These studies collectively suggest that health considerations, taste and smell, and price are all important factors influencing consumer purchasing decisions of edible oil.

A regression model can be used to predict consumer purchasing decision-making behavior, helping local peanut oil producers adjust their resources and remain competitive.

Therefore, this study was conducted to understand how price, health, taste and smell affect the consumer purchasing decision concerning peanut oil brands as well as the association and regression model to predict the consumer purchasing decision making in regard to the edible peanut oil brands.

Research questions:

Based on the above problem statement, the researchers attempted to answer the following questions:

1) How do price, health, taste, and smell affect consumer purchasing decisions when buying edible peanut oil?
2) What are the associations between edible peanut oil price, health, taste, and smell, and consumer purchasing decisions of peanut oil brands?
3) What recommendations can be provided to local edible peanut oil producers to improve their product offerings, packaging, and distribution strategies?

Drawing from existing research, literature, and reports, the conceptual framework presented here encompasses three independent variables: price, health, and taste and smell, with the dependent variable being consumer purchasing decision-making regarding edible peanut oil brands. This conceptual framework aims to explore the influence of price, health, taste, and smell on consumer purchasing decisions related to peanut oil brands (Figure 1).

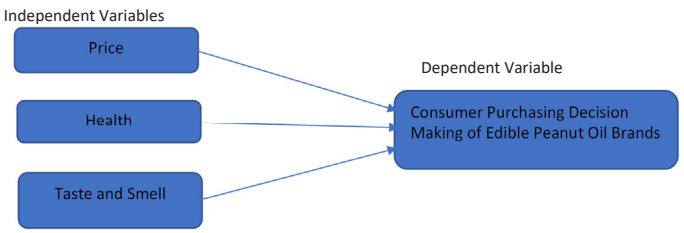


Figure 1. **Conceptual framework of the study**
Рисунок 1. **Концептуальная схема исследования**

This conceptual framework (Figure 1) is adapted from previous studies on consumer behavior and purchasing decision-making [28,29].

The study focuses on the binary logistic regression analysis of peanut oil brands and association between price, health, taste/smell and buying decision studied in the population of 760 social network users from thirty-nine townships in Yangon Region. This research was conducted to reveal a knowledge gap in understanding the consumer preference with regard to health, taste and smell when purchasing the edible peanut oil brands as well as the association between consumer preferences and health, taste and smell of the edible peanut oil brands.

2. Objects and methods

2.1. Problem statement

Myanmar is the fourth-largest peanut oil consumption country in the world [30]. Researchers have emphasized the need to identify the factors influencing consumer purchasing decisions toward peanut oil brands, including price, health, taste and smell as these factors can contribute to purchasing behavior [31]. As the import of edible oils continues to harm Myanmar's peanut oil producers, understanding the associations among these factors and their impact on consumer purchasing decisions has become crucial.

2. 2. Research methodology

This section describes the research design, data collections and methods as well as the explanation of a data analysis tool that was used in this study such as logistic regression.

2.2.1. Data analysis

The gathered data was analyzed using the logistic regression statistical tool. Tests such as the Likelihood Ratio test, Wald test, Hosmer-Lemeshow test, Cox and Snell R-square, Nagelkerke R-square, and Omnibus test were employed in this study for model fitting purposes. The statistical tools used in this study were explained in detail in the following section.

a. Logistic regression

Logistic regression is used to predict a discrete outcome, such as group membership, based on various continuous or categorical variables. *Typically, the dependent variable is dichotomous (e. g., price, taste and smell and health) and peanut oil consumption is the independent variable in this study.* Logistic regression is more flexible as it does not assume specific distributions for the predictor variables. This statistical modeling technique, initially developed for biomedical research, has expanded into fields such as business, finance, engineering, marketing, economics, and health policy. Its main applications are classification (predicting group membership) and profiling (differentiating between groups based on certain factors). The goal of logistic regression is to identify the best-fitting and most parsimonious model that describes the relationship between the dependent variable and independent variables. In logistic regression, the dependent variable is typically binary, taking a value of 1 (success) or 0 (failure), with probabilities represented as $P(Y=1)$ and $P(Y=0)=1-P(Y=1)$.

The binary logistic regression model in the usual form is

$$Y_i = E(Y_i) + \varepsilon_i. \quad (1)$$

Since the distribution of the error term ε_i depends on the Bernoulli distribution of the response Y_i. The expected value of each Y_i is

$$E(Y_i) = \pi_i = \frac{\exp(\beta_0 + \beta_1 + X_1 + \ldots + \beta_i X_i)}{1 + \exp(\beta_0 + \beta_1 + X_1 + \ldots + \beta_i X_i)}, \quad (2)$$

where $E(Y_i)$ = conditional mean given the value of X_i; β_0 = the constant of the equation; β_1 = the coefficient of the predictor variable i.

An alternative form of the logistic regression equation is:

$$\log\log\left[\pi(X)\right] = \log\log\left[\frac{\pi}{1-\pi_i}\right] = \beta_0 + \beta_1 + X_1 + \ldots + \beta_i X_i. \quad (3)$$

b. Likelihood ratio test

The likelihood ratio test (LRT) is a statistical test used to compare the goodness of fit of two models: a null model (usually a simpler model) and an alternative model (usually a more complex model). The formula for the likelihood ratio statistic is given by

$$\Lambda = L_1/L_0, \quad (4)$$

where L_0 = maximum likelihood of the null model; L_1 = maximum likelihood of the alternative model.

c. Wald Test

Wald test is used as a test of significance for the coefficients in the logistic regression. Wald statistics follow a chi-square distribution and have stated that the likelihood-ratio test is more reliable for a small sample size than the Wald test.

$$W = S \cdot E\left(\hat{\beta}_i\right). \quad (5)$$

d. The Hosmer-Lemeshow test

Goodness-of-fit statistics assess the fit of a logistic model against actual outcomes. The inferential goodness-of-fit test for logistic model is the Hosmer-Lemeshow (H-L) test. The H-L statistic, $\hat{C}$ is a person chi-square statistic, calculated from $g \times 2$ table of observed and estimated frequencies, where g is the number of groups formed from the estimated probabilities. A formula defining the calculation of $\hat{C}$ is as follows:

$$\hat{C} = \sum_{k=1}^{g} \frac{\left(O_k - n'_k \bar{\pi}_k\right)^2}{n'_k \bar{\pi}_k \left(1 - \bar{\pi}_k\right)}, \quad (6)$$

where n'_k is the total number of subjects in k^{th} group, C_k denotes the number of covariate patterns in the k^{th} decile, $O_k = \sum_{j=1}^{ch} y_i$, is the number of responses among the C_k covariate patterns, and the average estimated probability is

$$\bar{\pi}_k = \sum_{j=1}^{ch} \frac{m_j \pi_j}{n'_k}. \quad (7)$$

e. Cox and Snell R-square

Cox and Snell's define R square is a transformation of the statistics of $-2\ln\left[L(M_{intersept})/(M_{Full})\right]$ that is used to determine the convergence of

a logistic regression. The ratio of the likelihoods reflects the improvement of the full model over the intercept model (the smaller the ratio, the greater the improvement).

$L(M)$ is the conditional probability of the dependent variable given the independent variables. If there are N observations, $L(M)$ is the product of N probabilities. Thus, taking the n^{th} root of the product $L(M)$ provides an estimate of the likelihood of each Y value. Cox and Snell's pseudo-R-square has a maximum value that is not 1. If the full model predicts the outcomes perfectly and has a likelihood of 1, Cox and Snell R-square will be $(1 - L(M_{Interc})^{2/N}$, which is less than one.

f. Nagelkerke R-square

It adjusts Cox and Snell's so that the range of possible values extends to 1. To achieve this, the Cox and Snell's R-square is divided by its maximum possible value,

$$1 - L\left(M_{intercept}\right)\frac{2}{N}, \tag{8}$$

$$R^2 = \frac{1 - \left[\frac{L\left(M_{intercept}\right)}{L\left(M_{Full}\right)}\right]\frac{2}{N}}{1 - \left(M_{intercept}\right)\frac{2}{N}}. \tag{9}$$

Then, if the full model perfectly predicts the outcome and has a likelihood of 1, Nagelkerke R-square will be equal to one.

g. Omnibus test

Omnibus tests are a kind of statistical test. They test whether the explained variance in a set of data is significantly greater than the unexplained variance, overall. In addition, the Omnibus test, as a general name, refers to an overall or a global test. Other names include F-test or Chi-square test. Omnibus test as a statistical test is implemented on an overall hypothesis regarding coefficients $\beta_1 = \beta_2 = . = \beta_k$ vs. at least one pair $\beta_j \neq \beta_j'$ in Multiple linear regression or in Logistic regression. Usually, it tests more than two parameters of the same type, and its role is to find the general significance of at least one of the parameters involved. Omnibus test commonly refers to either one of those statistical tests:

- ANOVA F-test to test significance between all factor means and/or between their variance's equality in Analysis of Variance procedure;
- The omnibus multivariate F-test in ANOVA with repeated measures;
- F-test for equality/inequality of the regression coefficients in Multiple Regression;
- Chi-square test for exploring significant differences between blocks of independent explanatory variables or their coefficients in a logistic regression.

These omnibus tests are usually conducted whenever one tends to test an overall hypothesis on a quadratic statistic (such as sum of squares or variance or covariance) or rational quadratic statistic (such as the ANOVA overall F test in Analysis of Variance or F-test in Analysis of covariance or the F-test in Linear Regression, or Chi-square in Logistic regression). While significance is found on the omnibus test, it does not specify exactly where the difference occurs, meaning, it does not bring specification on which parameter is significantly different from the other, but it statistically determines that there is a difference, so at least two of the tested parameters are statistically different. If significance was met, none of those tests will tell specifically which mean is different from the others (in ANOVA), which coefficient differs from the others (in Regression) etc. The model tested can be defined by y_i, whereas y_i is the category of the dependent variable for the i-th observation and x_{ij} is the j independent variable ($j = 1, 2...k$) for that observation, β_j is the j-th coefficient of x_{ij} and indicates its influence on and expected from the fitted model.

2.2.2. Research design

This study focuses on the impact of price, health, taste, and smell on consumers' decision-making regarding edible peanut oil. The authors employ a mixed-methods approach, combining both descriptive and analytical research methodologies. The descriptive approach is used to present demographic data from the respondents. Additionally, binary logistic regression analysis is employed to examine the relationship between price, health, taste of peanut oil, and peanut oil brands. To further investigate the associations between consumer behavior and taste, smell, health, and price of peanut oil, various statistical tests were conducted, including the Chi-square test, Hosmer and Lemeshow (H-L) tests, –2 Log Likelihood, Cox & Snell R-square, and Nagelkerke R-square tests. The analysis of the data was performed using the IBM SPSS statistical analysis tool, specifically designed for social science research.

A survey research strategy is preferred for its focused investigation, while a descriptive research approach provides a detailed data explanation. Structured questionnaires are used for their efficiency in gathering primary data, and a deductive approach is used to evaluate the study's hypotheses.

2.2.3. Population and sampling

The total population of this study includes all the consumers of edible oil. However, due to the limitation of time and cost, this study was only conducted on social network friends who live within the Yangon region. There were a total of 760 social network friends available to collect data. Thus, the study population was 760. Therefore, the sample size was based upon a 760 population with known population sample size calculation formula as follows.

N = Population size = 760

Z = Z score (confidence interval 95 %) = 1.96

E = margin of error (5 %) = 0.05

p = sample proportion uncertainty = 0.5, n = sample size

$$n = N\frac{\frac{z^2 \times p \times (1-p)}{e^2}}{\left[N - 1 + \frac{z^2 \times p \times (1-p)}{e^2}\right]} \tag{10}$$

$$n = N\frac{\frac{z^2 p(1-p)}{e^2}}{\left[N - 1 + \frac{z^2 p(1-p)}{e^2}\right]} \tag{11}$$

$n = 255.3987 \sim 255$

Therefore, the sample size for this study is 255.

2.2.4. Research instrument development

The participants completed a structured survey consisting of a series of questions. Survey methods commonly utilize structured questions. The primary aim of these questionnaires is to collect responses from participants while ensuring a systematic approach to addressing the questions and conducting the survey. In this study, the questionnaires utilized a five-point Likert scale.

The data were collected through a researcher-made instrument that was used in a peanut oil company. One of the researchers works in the sales and distribution department of this company. Due to time and financial constraints, the study was confined to the Yangon region. The sample size is therefore a limitation of this investigation.

Previous investigations serve as reviews for the questionnaires used in this study, helping to choose the questions that will best meet the goals and objectives of the investigation. Specifically, the survey questions have been used by a peanut oil company where a researcher works in the sales and distribution department. The survey was structured to follow a logical order, starting with demographic data, followed by questions related to smell and taste, price considerations, and health aspects influencing participants' decisions when purchasing edible peanut oil.

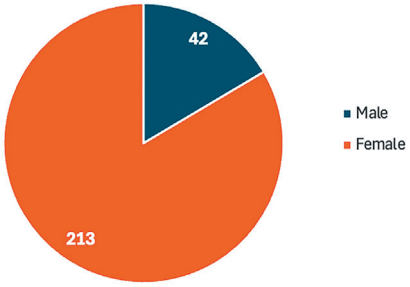
3. Results and discussion

This section analyzes the impact of brand image, taste, smell, price, and health on peanut oil consumption using regression analysis. The survey was conducted on a sample of social network friends from thirty-nine townships. Statistical analysis includes descriptive data analysis and regression analysis to identify key independent and dependent variables.

3.1. Socio-demographic characteristics of respondents

3.1.2. Respondents by gender

The socio-demographic characteristics of the respondents by gender for social network friends who are consuming peanut oil are in Figure 2.



Source: Peanut Oil Survey Data, 2023

Figure 2. **Respondents by gender**

Рисунок 2. **Распределение респондентов по полу**

In this survey, the total number of respondents was 255. There were 42 male respondents and 233 female respondents.

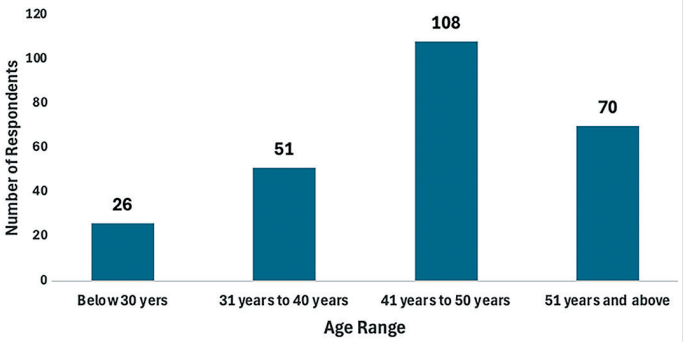
The data reveals a significant gender disparity among responders, with a male-to-female ratio of around 1:5.5. This notable gap indicates that the sample is not representative of the wider population in terms of gender, thereby affecting the overall findings and interpretations.

The predominance of female responders may create a bias in the findings. It is crucial to ascertain whether the preferences or behaviors of female consumers of peanut oil diverge from those of male customers, as this could distort the findings if generalizations are applied.

3.1.3. Total respondents by age range

The data indicates that consumers of peanut oil are primarily aged 41 to 50, with a significant portion over 50, suggesting a greater preference among middle-aged and older adults relative to younger groups (Figure 3). This indicates that marketing tactics ought to focus on these age demographics, highlighting the health advantages and culinary adaptability of peanut oil. Customized communication that aligns with their lifestyles and dietary awareness may significantly enhance engagement with this target demographic.

The limited presence of responders under 30 (10.2%) indicates a possible deficiency in attractiveness of peanut oil to younger customers, who may be influenced by modern dietary trends and brand recognition. To engage this population, marketing strategies can emphasize the adaptability and health advantages of peanut oil, utilizing platforms favored by younger consumers. Subsequent research could investigate the underlying factors of these consumption patterns and the potential evolution of preferences over time, guaranteeing that marketing efforts stay pertinent across various age demographics.



Source: Peanut Oil Survey Data, 2023

Figure 3. **Total respondents by age range**

Рисунок 3. **Распределение респондентов по возрастному диапазону**

3.1.4. Respondents by township

The chart shows the breakdown of 39 townships in survey (Figure 4).

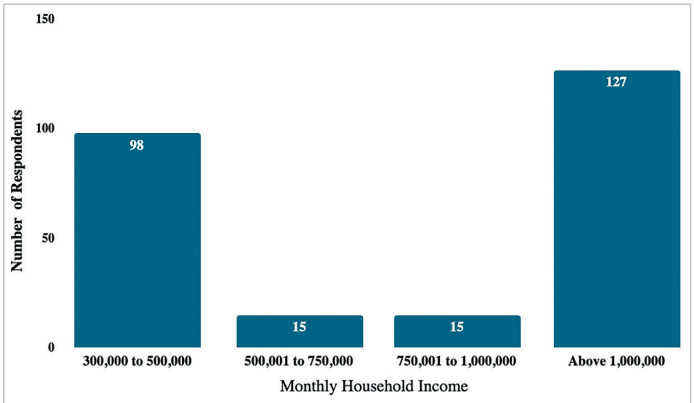
The data shows the regional distribution of respondents, reflecting differing levels of interest in the topic. Yankin had the most respondents (16), suggesting a higher population density or interest in the topic. Shwe Bo (11) and Tarmwe (13) also had notable replies, suggesting that community projects or targeted marketing methods boost involvement.

However, Kyimyinttine (2) and Mandalay (2) had low responder counts, raising questions about interest and accessibility. It is worth investigating whether these lower numbers are due to a lack of awareness, geographic isolation, or demographics that do not fit the study's goal. Magway (9) and Mingalardon (9), with moderate replies, may be good candidates for outreach or focused initiatives if they share qualities with high-participation areas.

The varied response rates across regions highlight significant disparities that warrant deeper analysis. Understanding the drivers behind high and low engagement levels can improve future surveys and enhance overall engagement in underrepresented areas, ensuring a more comprehensive understanding of the topic or product being studied.

3.1.5. Monthly income by households' range

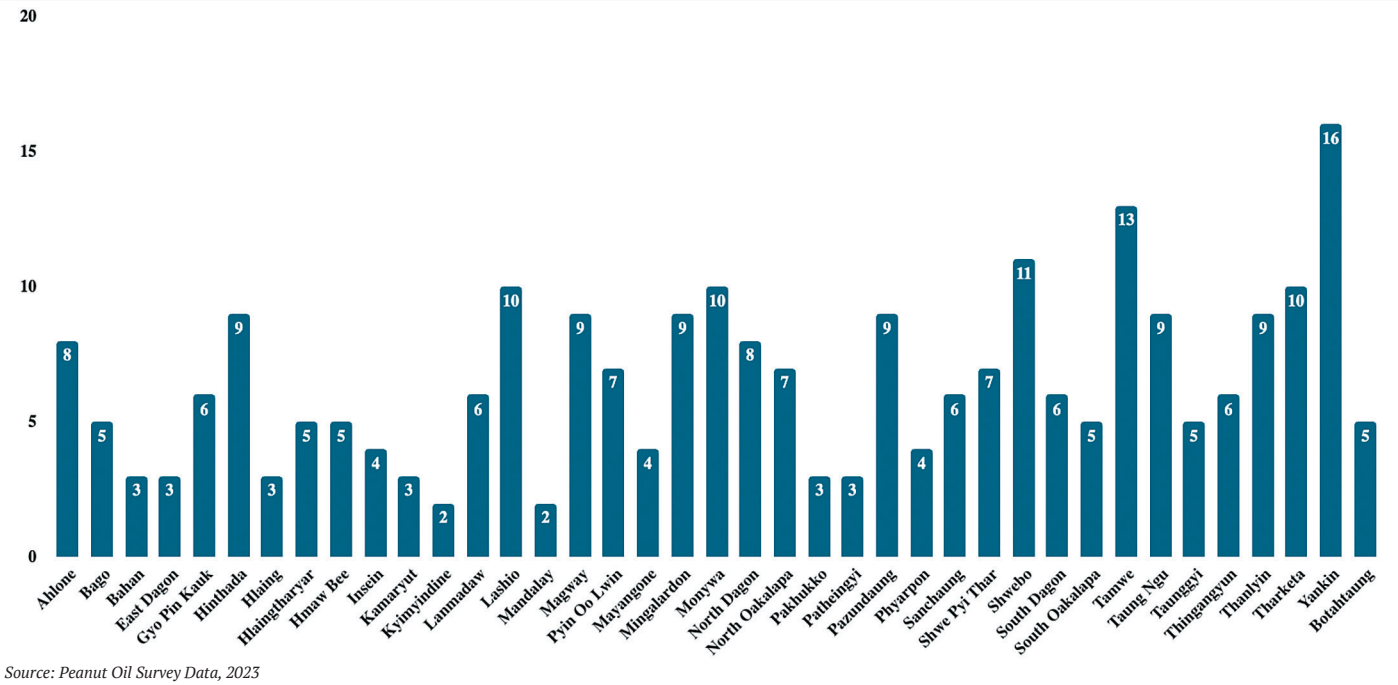
The survey results demonstrate a clear market segmentation based on household income, with a large concentration of respondents in the high-income category (above 1,000,000 kyats, or $500) and a significant representation in lower income categories (Figure 5). The high-income group has 127 respondents, whereas the two moderate income groups have 15. This suggests upper-class purchasing power and a chance to attract price-sensitive lower-income consumers.



Source: Peanut Oil Survey Data, 2023

Figure 5. **Monthly income by households' range**

Рисунок 5. **Распределение респондентов по диапазону дохода домохозяйств**



Source: Peanut Oil Survey Data, 2023

Figure 4. **Respondents by Township**

Рисунок 4. **Распределение респондентов по месту жительства**

With 44% of respondents earning below 750,000 kyats (about $375), affordability may influence their purchases. For this population, marketing should highlight cost-effectiveness, while higher-income consumers (56% of respondents) may choose premium products and health benefits of peanut oil. This suggests that alternative marketing strategies can be used to meet these income groups' interests and financial needs.

3.1.6. Household size by range

The survey found that most peanut oil consumers (196 respondents) were from four- to six-person families (Figure 6). The peanut oil market may be pushed by mid-sized households due to their increased consumption needs and frequency of cooking oil-heavy meals.

Smaller households (one to three people) and bigger households (above seven members) make up only 42 and a small number of respondents, respectively, of the survey sample. This suggests that peanut oil marketing should focus on value and culinary variety for mid-sized families. Understanding this majority group's cooking habits and preferences can inform product offerings and promotional strategies.

3.2. Peanut oil usage by quality

Peanut oil users choose higher-quality goods, with 72% using medium (64 respondents) or very good (120 respondents) peanut oil (Figure 7). This shows that health concerns and the potential benefits of better-quality cooking oils are driving consumer awareness and demand for quality versus lower-grade options.

Only 28% of respondents use low-quality peanut oil, suggesting that a large minority may prefer cost over quality or be uninformed of the health risks. Marketers can educate customers about the benefits of higher-quality peanut oils to change the preferences of 28% of consumers. In addition, as most consumers value quality, brands may emphasize certifications, sourcing processes, or health benefits in their marketing.

This result opposes what Htar et al. [3] found when they looked at how people in Myanmar used vegetable oil and how they felt about brands, prices, and health issues. According to their research, Myanmar's peanut oil production went up from 2001 to 2017, but the market has changed a lot since then. Many factories have had to shut down because of the flood of cheaper, lower-quality oils, which makes the market less stable because there is not enough competition.

3.3. Peanut oil price range

With these results, peanut oil pricing should be converted from viss to kilograms, where 1 viss equals 1.6 kilograms, to examine consumer behavior in the local edible oil market (Figure 8).

Oils priced below 12,000 kyats per viss cost under $4.75 per kg, those between 12,000 and 18,000 cost between $4.75 and $6.55 per kg, those between 18,000 and 20,000 cost between $6.55 and $7.85 per kg, and those above 20,000 cost over $7.85 per kg.

The survey found that 49% of respondents choose peanut oil under $4.75 per kg, indicating economic price sensitivity. Additionally, 44% of consumers are willing to pay between $4.75 and $6.55 per kg for better quality, but few are buying oils above $6.55 per kg, indicating low interest in premium options. Marketers should target oils below $6.55 per kg to meet consumer preferences and enhance sales, as 93% of respondents prefer them. This information can help create effective marketing strategies and boost market competitiveness.

The findings support the result of the previous research that says that in a competitive market, price is seen as a monetary amount that has nothing to do with product quality. However, consumers see price as a quality measure for comparing similar items at different price points, which, along with product quality, has a big impact on buying choices [16–21].

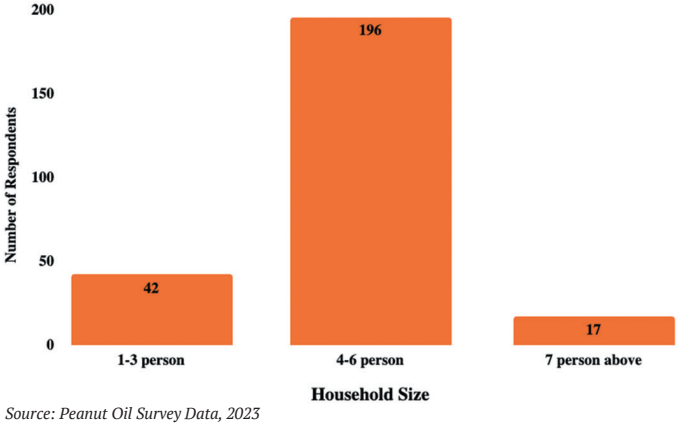
3.4. Buying place of peanut oil

Peanut oil consumption patterns show a fragmented market driven by convenience with various purchasing preferences. Respondents buy peanut oil from supermarkets, grocery stores, wet markets, oil wholesalers, and rice and oil outlets. This diversity shows how important accessibility is in consumer purchase decisions, as customers prefer convenient and reputable retail venues.

According to Figure 9, the results show that supermarkets are the most popular shopping choice, selected by 102 respondents. This likely stems from their wide variety of products, competitive pricing, and promotional offers that make them convenient and cost-effective.

Wet markets are the second choice, with 60 respondents favoring them, possibly for their fresh produce and local goods. However, the significant difference in numbers indicates that supermarkets are more appealing overall due to their convenience and selection.

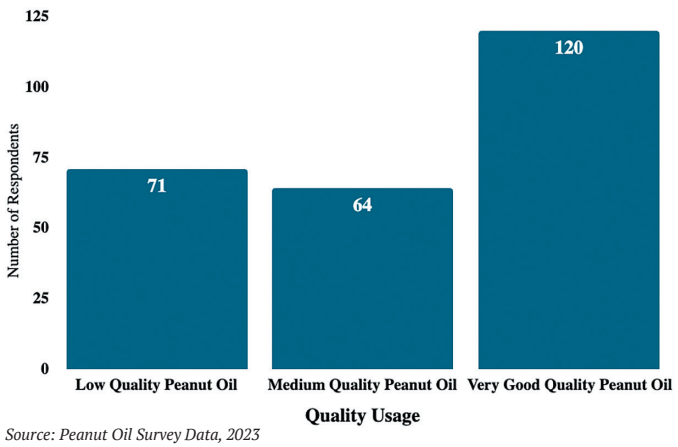
Other options, including nearest grocery stores (49 respondents), rice and oil outlets (19), and oil wholesalers (16), are less popular, likely due to their limited offerings and convenience compared to supermarkets. Nine



Source: Peanut Oil Survey Data, 2023

Figure 6. **Household size by range**

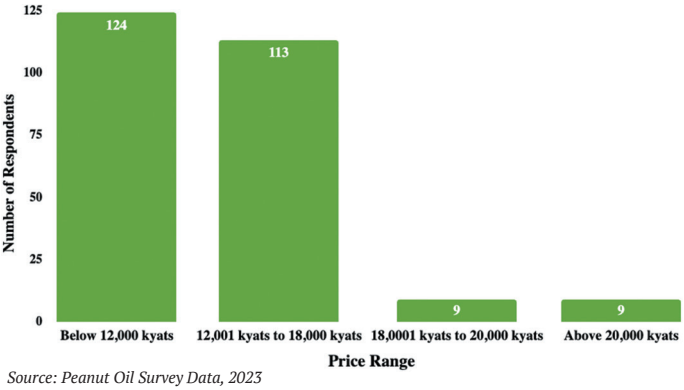
Рисунок 6. **Распределение респондентов по размеру домохозяйств**



Source: Peanut Oil Survey Data, 2023

Figure 7. **Peanut oil usage by quality**

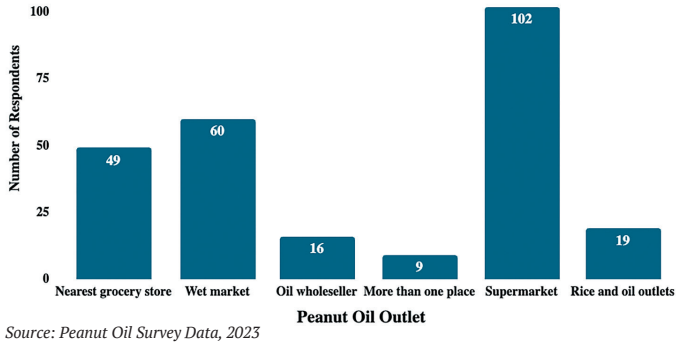
Рисунок 7. **Распределение использования арахисового масла по качеству**



Source: Peanut Oil Survey Data, 2023

Figure 8. **Peanut oil price range**

Рисунок 8. **Диапазон цены арахисового масла**



Source: Peanut Oil Survey Data, 2023

Figure 9. **Buying place of peanut oil**

Рисунок 9. **Место покупки арахисового масла**

respondents who shop at multiple locations may be trying to mix convenience with the freshness offered by wet markets.

While supermarkets are the clear favorite, there is still a segment of consumers who appreciate the unique benefits of other shopping options, underscoring the importance of convenience, variety, and pricing in consumer choices.

3.5. Peanut oil monthly consumption

Peanut oil consumption by month reflects consumer patterns in the examined population. Figure 10 shows that 74 % of respondents consume 1.5 viss to 2 viss of peanut oil per month, or 2.25 kg to 3 kg, as 1 viss equals 1.5 kg. Peanut oil is used by a large percentage of homes, indicating its relevance in cooking and eating. The majority of responders (184) consume this amount, indicating that this is the most common.

In contrast, 43 respondents (17 %) consume less than one viss (1.5 kg) of peanut oil each month, demonstrating a decreased reliance on this commodity. A minority of 28 respondents consume more than 2 viss, or 3 kg monthly, suggesting higher demand in homes that use peanut oil heavily. The data shows that peanut oil is essential to family consumption patterns, with a preference for moderate usage, and offers market expansion prospects targeting high-consuming areas.

This result is more than the percentage found in the survey made by Statista (2024), which says that peanut oil is the most popular edible oil in Myanmar, with 61.40 % of respondents selecting it as their preferred oil type [2].

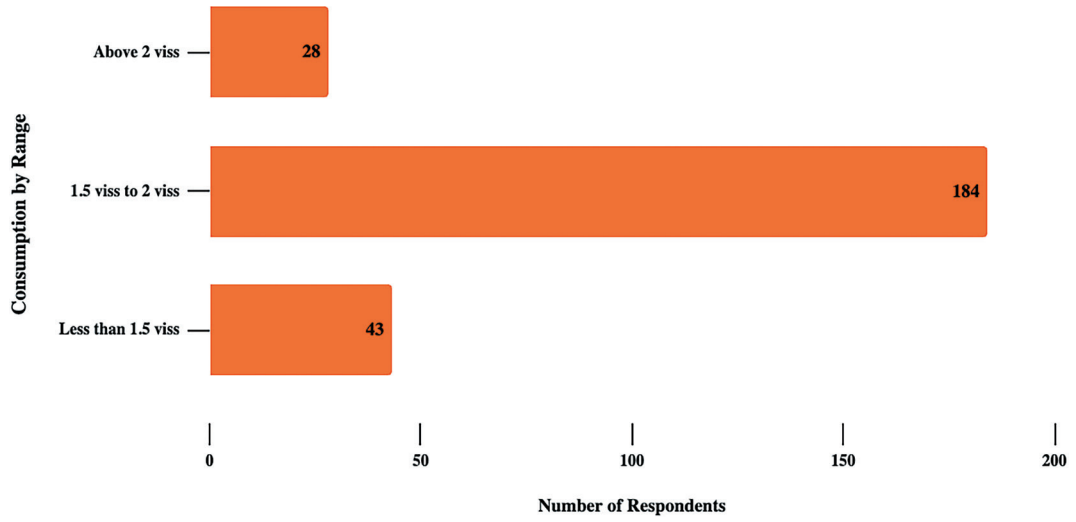
3.6 Brand orientation

The study results indicate a notable trend in brand preference among survey respondents (Figure 11). Brand development is a primary concern for marketers in diverse sectors. The study reveals that 59 % of respondents (150 persons) do not emphasize brand while choosing peanut oil, but 41 % (105 participants) demonstrated brand-oriented preferences. This indicates that for the majority of peanut oil users, brand loyalty is minimal, as they are inclined to move to an alternative brand if their chosen option is not accessible. Conversely, the brand-oriented segment exhibits heightened commitment to a certain brand, even when their preferred choice is unavailable. The research underscores the significance of branding, since a robust brand identity can facilitate sustained corporate expansion. Moreover, a favorable brand reputation can attract non-brand-oriented people to switch their loyalty to a particular brand.

3.7. Peanut oil brand currently used by respondents

The findings with respect to peanut oil brand utilization in the local market indicate a varied spectrum of customer preferences and competitive interactions. Figure 12 illustrates the diverse array of brands, highlighting a dynamic market environment influenced by regional preferences, product accessibility, and marketing tactics. Ngwe Tha Zin Min peanut oil is the preferred brand for 111 respondents, establishing its dominance. This substantial market presence indicates good positioning, likely resulting from vigorous marketing, perceived quality, and excellent distribution capabilities. The significant difference between Ngwe Tha Zin Min and its nearest competitor, Meizen peanut oil (with 47 mentions), signifies robust brand loyalty and customer confidence in Ngwe ThaZin Min.

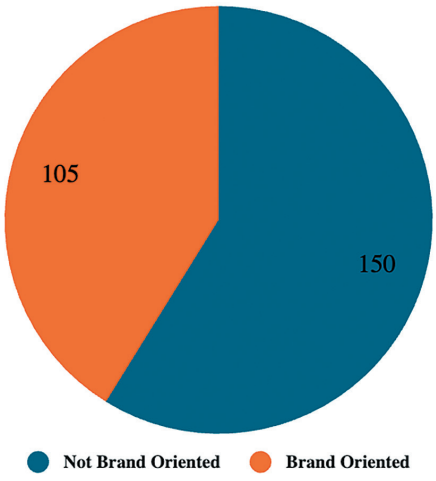
Although several brands are present in the market, most exhibit much reduced usage frequencies, leading to a fragmented consumer base. Brands such as Yangon and A May Htwar peanut oils have received merely 21 and 20 mentions, respectively, indicating that, except from Ngwe Tha



Source: Peanut Oil Survey Data, 2023

Figure 10. **Peanut oil monthly consumption**

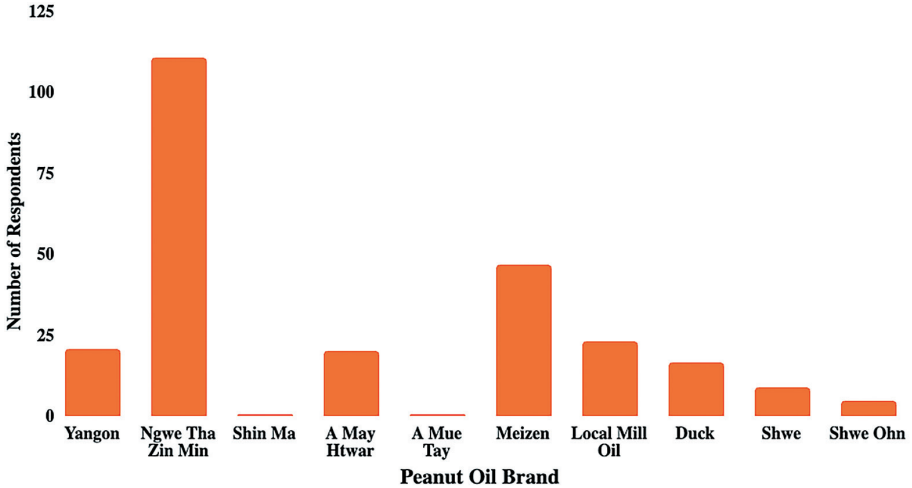
Рисунок 10. **Ежемесячное потребление арахисового масла**



Source: Peanut Oil Survey Data, 2023

Figure 11. **Brand orientation**

Рисунок 11. **Ориентация на бренд**



Source: Peanut Oil Survey Data, 2023

Figure 12. **Peanut oil brands currently used by respondents**

Рисунок 12. **Бренды арахисового масла, используемые респондентами в настоящее время**

Zin Min, no other brand commands a significant portion of the market. Comprehending the factors influencing consumer preferences, including affordability, perceived quality, and appeal of locally based items, may yield significant insights for marketers. The utilization of local mill peanut oil by 23 respondents indicates a preference for traditional or locally sourced products. In conclusion, although Ngwe Tha Zin Min is the market leader, the diversity of brands presents both problems and opportunities for differentiation, enabling other brands to effectively target certain consumer interests.

3.8. Peanut oil consumers' responses to price and quality

The results show that a strong 98% of consumers think that higher prices mean better quality (Figure 13). This suggests that many people use price as an instinctual way to judge a product's value. Customers are more likely to think this way when they do not know much about a product and think that a higher price usually means better quality.

For companies, this means that pricing their goods below what customers expect may make people doubt their quality, even if the quality is actually very good. Companies must carefully look at their pricing plans to make sure they match how customers see them. People who care about prices may be drawn to lower prices, but people who think that higher prices mean better quality may feel alienated. Businesses must put a high priority on maintaining a strong brand reputation and clearly explaining the value of their goods in order to build trust and boost sales.

3.9. Consumers' responses to peanut oil taste and smell

The results show that peanut oil has a very positive response, with 99% of people saying they like the way it tastes and smells (Figure 14). This strong preference shows that peanut oil is liked by consumers, which means it might be useful in cooking and making food items. Nearly everyone likes peanut oil, which could mean that it has a special place in the market and affects people's choices when they are looking for aromatic and flavorful food oils.

The one negative answer shows that there are not many people who disagree, which supports the idea that peanut oil could be a safe and popular choice for cooking. These results give businesses a chance to sell peanut oil with confidence, focusing on how good it tastes. However, it is important to think about the product's positioning and target audience, especially for people who may have peanut allergies or dietary limits. Overall, people's strong desire for peanut oil could help its marketing as an ingredient that can be used in many different foods.

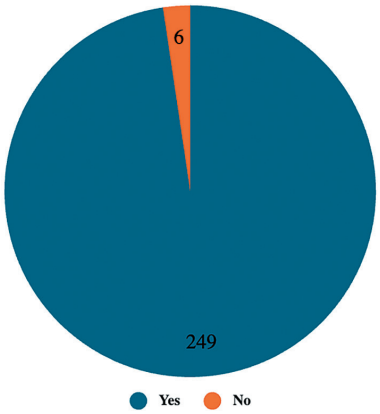
3.10. Health awareness of peanut oil consumers

The findings reveal that 90% of participants consider peanut oil advantageous for health, reflecting significant consumer awareness (Figure 15). This corresponds with the increasing emphasis on health regarding cooking oils. The uncertainty of 10% of respondents on the health advantages of peanut oil underscores the necessity for further education on the subject. This uncertainty may arise from insufficient knowledge regarding different cooking oils. This presents a chance to educate the public of the health advantages of peanut oil and to rectify any misunderstandings.

This result aligns with the 2023 report from Global New Light Myanmar, indicating an increased awareness among consumers about cooking oil quality and a desire for healthier options amid concerns about distinguishing blended oils from potentially harmful alternatives [24].

3.11. Suggestion by respondents

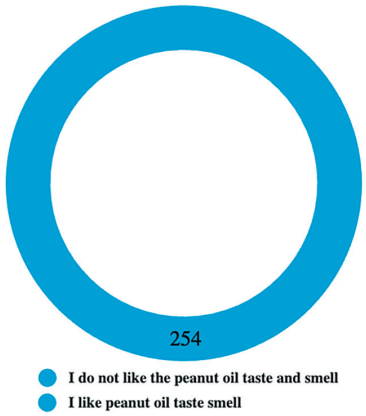
The results show that people who buy peanut oil are passionate about it, with a big focus on how delicious it is (Figure 16). Sixty-seven respondents especially mentioned how delicious peanut oil tastes in cooking



Source: Peanut Oil Survey Data, 2023

Figure 13. **Peanut oil consumers' responses to price and quality**

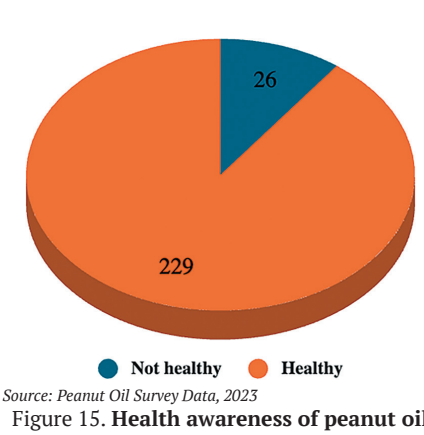
Рисунок 13. **Реакции потребителей арахисового масла на цену и качество**



Source: Peanut Oil Survey Data, 2023

Figure 14. **Consumers' responses to taste and smell of peanut oil**

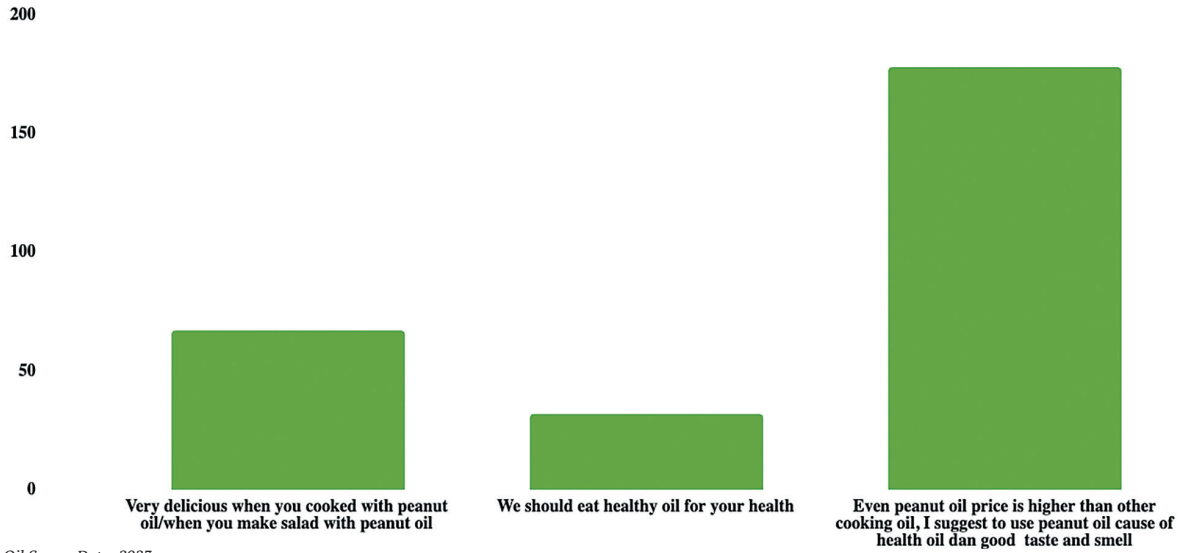
Рисунок 14. **Реакции потребителей на вкус и запах арахисового масла**



Source: Peanut Oil Survey Data, 2023

Figure 15. **Health awareness of peanut oil consumers**

Рисунок 15. **Осведомленность потребителей арахисового масла о пользе для здоровья**



Source: Peanut Oil Survey Data, 2023

Figure 16. **Suggestion by respondents**

Рисунок 16. **Предложения потребителей**

and salads. This shows how versatile and tasty it is. Also, 32 responders talked about how good it is for health, which is a big selling point for consumers who might start using it. Notably, even though prices are going up, 178 of those who answered the survey still suggest peanut oil, showing that they value its benefits and perceived value more than cost. This means that there is a good chance that more people will start using peanut oil if the marketing is good and stresses both the taste and health benefits.

3.4. Binary logistic regression model of purchasing decision-making regarding peanut oil based on price, health, taste and smell

3.4.1. Variable in the binary logistic regression model

Based on the survey data of binary logistic regression analysis (Table 1), peanut oil consumption is considered as an independent variable and peanut oil price, taste and smell and health are considered as dependent variables. In this survey, the respondents are peanut oil consumers being friends in social network. Purchasing decision making regarding peanut oil brand is considered a dependent variable. Peanut oil price, peanut oil taste and smell, and health are considered independent variables.

Table 1. **Variables in binary logistic regression model**

Таблица 1. **Переменные в модели бинарной логистической регрессии**

Dependent variables	Independent variables
Peanut oil price, taste and smell and health	Peanut oil consumption

Source: Peanut Oil Survey Data.

3.4.2. Binary logistic regression analysis for purchasing decision making depending on price

The value of omnibus test of model coefficient given Chi-square, Hosmer and Lemeshow (H-L) tests, –2 Log Likelihood, Cox & Snell *R*-square and Nagelkerke *R*-square are included in the model fitting information for peanut oil price in Table 2.

Table 2. **Model fitting information for binary logistic regression model for price**

Таблица 2. **Информация по подгонке модели для модели бинарной логистической регрессии для цены**

Model fitting criteria	Chi-square	Df	p-value
Omnibus test of model coefficient	10.670	1	0.001ss
Hosmer and Lemeshow (H-L) tests	0.813	4	0.937
-2Log Likelihood		185.816	
Cox & Snell R-square		0.041	
Nagelkerke R-square		0.076	

Source: Peanut Oil Survey Data.

In the Omnibus tests of model coefficients, the inclusion of the four predictor variables yields a chi-square value of 10.670 with 1df, $p < 0.001$. Thus, the overall model is *statistically significant,* and the model *is a good fit,* which means that adding the pricing predictor variables to the model have significantly increased the ability to predict whether the pricing variable influences the purchasing decision making regarding peanut oil brands. There is no evidence of lacking fit based on the H-L statistics (Chi-square = 0.813, df = 4, p-value = 0.937). The Hosmer and Lemeshow test is a model fit test. P-value = 0.937 is greater than 0.05, it shows the model adequately fits the data. Hence, there is no difference between the observed and predicted model. Since –2 log likelihood statistic is 185.816, it can be said that the existence of a relationship between the independent variables and dependent variables is supported. The model fitting information includes two different ways of estimating *R*-square (Cox & Snell *R*-square and Nagelkerke *R*-square). This pseudo-*R* estimate indicates that 4.1 % of variation in purchasing decision making regarding peanut oil brands based on price and 7.6 % of variation in purchasing decision making regarding peanut oil brands based on peanut oil price can be explained by the variation in independent variables. The results of purchasing decision making regarding peanut oil brands based on peanut oil price in Binary Logistic with selected socio-economic and demographic characteristics model are shown in Table 3.

Binary logistic regression model is performed on the purchasing decision making regarding peanut oil brands based on price. The results are shown in Table 4.

According to the results, peanut oil price has a positive influence on purchasing decision making of peanut oil brand. Although peanut oil price is found to be statistically significant at 1 %, the 95 % confidence interval suggests that the magnitude of the effect could be anywhere from a 0.691 to a 0.914-fold decrease.

Table 4. **Variable in binary logistic regression model of purchasing decision making based on health benefits**

Таблица 4. **Переменная в модели бинарной логистической регрессии принятия решения о покупке на основе пользы для здоровья**

Dependent variables	Independent variables
Y_1 = *Purchasing depending on healthy oil* = 0, do not purchase, peanut oil is not healthy. = 1, I think peanut oil is healthy.	X_{i1} = Consumer purchasing decision making regarding peanut oil brands

Source: Peanut Oil Survey Data.

3.4.3. Binary logistic regression analysis for purchasing decision making based on health

The values of omnibus test of model coefficient given Chi-square, Hosmer and Lemeshow (H-L) tests, –2 Log Likelihood, Cox & Snell *R*-square and Nagelkerke *R*-square are included in the model fitting information for "peanut oil is healthy" in Table 5.

Table 5. **Model fitting information for binary logistic regression model for health**

Таблица 5. **Информация по подгонке модели для модели бинарной логистической регрессии для пользы для здоровья**

Model Fitting criteria	Chi-square	Df	p-value
Omnibus test of model coefficient	10.179	1	0.001
Hosmer and Lemeshow (H-L) tests	1.724	4	0.786
–2Log Likelihood		157.8	
Cox & Snell *R*-square		0.039	
Nagelkerke *R*-square		0.081	

Source: Peanut Oil Survey Data.

In the Omnibus tests of model coefficients, the inclusion of the four predictor variables yields a chi-square value of 10.179 with 1df, $p < 0.001$. Thus, the overall model is statistically significant, which means that adding the healthy predictor variables to the model has significantly increased an ability to predict whether the health variable influences the purchasing decision making regarding peanut oil brands. There is no evidence of lacking fit based on the H-L statistics (Chi-square = 1.724, df = 4, p-value = 0.786). The Hosmer and Lemeshow tests are model fit tests. P-value = 0.786 is greater than 0.05, it is showing the model adequately fits the data. Hence, there is no difference between the observed and predicted model. Since –2 log likelihood statistic is 157.800[a], it can be said that the existence of a relationship between the independent variables and dependent variables is supported. The model fitting information includes two different ways of estimating *R*-square (Cox & Snell *R*-square and Nagelkerke *R*-square). This pseudo-*R*-square estimate indicates that 3.9 % of variation in purchasing decision making regarding peanut oil brands based on health and 8.1 % of variation in purchasing decision making regarding peanut oil brands based on peanut oil healthy aspect can be explained by the variation in independent variables. The results of purchasing decision making of peanut oil brands based on peanut oil health aspect in binary logistic with selected socio-economic and demographic characteristics model are shown in Table 6.

Binary logistic regression model is performed on the purchasing decision making because of the healthy aspect of peanut oil brands. The results are shown in Table 6. According to the results, peanut oil is healthy which has influence on the purchasing decision making regarding peanut oil brand. It is found to be statistically significant at 2 %, the 95 %

Table 3. **Parameter estimates of binary logistic regression model for purchasing decision making based on peanut oil price**

Таблица 3. **Оценки параметров модели бинарной логистической регрессии принятия решения о покупке на основе цены на арахисовое масло**

	B	S. E	Wald	Df	Sig.	Exp(B)	95 % C.I. for EXP(B)	
							Lower	Upper
Constant	2.978	0.420	50.273	1	***0.000	19.641		
Purchasing decision making of peanut oil brands	-0.230	0.071	10.341	1	***0.001	0.795	0.691	0.914

Note: ***, **, * represent 1 %, 5 % and 10 % levels of significance.

confidence interval suggests that the magnitude of the effect could be anywhere from a 0.667 to a 0.911-fold increase.

Table 6. **Parameter estimates of binary logistic regression model purchasing decision making based on health considerations**

Таблица 6. **Оценки параметров модели бинарной логистической регрессии принятия решения о покупке на основе соображений здоровья**

	B	S. E	Wald	Df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Constant	3.360	0.482	48.658	1	***0.00	28.792		
Purchasing decision making regarding peanut oil brands	0.249	0.08	9.761	1	***0.002	0.780	0.667	0.911

Note: ***, **, * represent 1%, 5% and 10% levels of significance.

Table 7. **Variable in binary logistic regression model of purchasing decision making based on taste and smell**

Таблица 7. **Переменная в модели бинарной логистической регрессии принятия решения о покупке на основе вкуса и запаха**

Dependent Variables	Independent Variables
Y_1 = *Purchasing depending on Taste and Smell* = 0, purchase depending on taste and smell (taste and smell are good)) = 1, do not purchase depending on taste and smell.	X_{i1} = Consumer purchasing decision making regarding peanut oil brands

Source: Peanut Oil Survey Data.

3.4.4. Binary logistic regression analysis for purchasing decision making based on taste and smell

The value of omnibus test of model coefficient given Chi-square, Hosmer and Lemeshow (H-L) tests, –2 Log Likelihood, Cox & Snell *R*-square and Nagelkerke *R*-square are included in the model fitting information for "peanut oil has good taste and smell" (Table 8).

Table 8. **Model fitting information for binary logistic regression model for taste and smell**

Таблица 8. **Информация по подгонке модели для модели бинарной логистической регрессии для вкуса и запаха**

Model Fitting criteria	Chi-square	Df	p-value
Omnibus test of model coefficient	0.309	1	0.579
Hosmer and Lemeshow (H-L) tests	3.960	4	0.411
-2Log Likelihood		108.17	
Cox & Snell R-square		0.001	
Nagelkerke R-square		0.003	

Source: Peanut Oil Survey Data.

In the Omnibus tests of model coefficients, the inclusion of the four predictor variables yields a chi-square value of 0.309 with 1df, $p > 0.001$. Thus, the overall model is not statistically significant, which means that adding the taste and smell predictor variables to the model have not significantly increased an ability to predict whether the taste and smell variable influences purchasing decision making regarding peanut oil brands. There is no evidence of lacking fit based on the H-L statistics (Chi-square = 3.960, df = 4, p-value = 0.411). Since the –2-log likelihood statistics is 108.170[a], it can be said that the existence of a relationship between the independent variables and dependent variables is supported. The model fitting information includes two different ways of estimation *R*-square (Cox & Snell *R*-square and Nagelkerke *R*-square). These pseudo-*R*-square estimates indicate that 4.1% of variation in purchasing decision making regarding peanut oil based on taste and smell and 7.6% of variation in purchasing decision making regarding peanut oil based on peanut oil taste and smell can be explained by the variation in independent variables. The results of monthly consumption per person based on peanut oil price in Binary Logistic with selected socio-economic and demographic characteristics model are shown in Table 8.

Table 9. **Parameter estimates of binary logistic regression model for purchasing decision making based on taste and smell**

Таблица 9. **Оценки параметров модели бинарной логистической регрессии принятия решения о покупке на основе вкуса и запаха**

	B	S. E	Wald	Df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Constant	2.608	0.498	27.381	1	***0.000	13.575		
Brands	0.061	0.111	0.298	1	0.585	1.063	0.854	1.322

Note: ***, **, * represent 1%, 5% and 10% levels of significance.

The binary logistic regression model was used for the purchasing decision making based on taste and smell of peanut oil brands. According to the results, taste and smell of peanut oil (independent variable) was not significantly influenced by the purchasing decision making regarding peanut oil brands.

4. Conclusions

The study findings reveal several key insights regarding consumer behavior and preferences related to peanut oil.

Firstly, the majority of respondents have sufficient income to afford peanut oil for their daily consumption, with most prices falling within the range of 10,000 to 20,000 kyats or $3.57 to $7.14. Consumers strongly associate price with quality, indicating that they view price as a crucial indicator of product quality. Additionally, a significant portion of consumers (59%) exhibit brand orientation, suggesting that brand loyalty plays a role in their purchasing decisions. However, fluctuations in prices may prompt non-brand-oriented consumers to switch to other brands.

Concerningly, 10% of respondents perceive peanut oil as unhealthy, highlighting the importance of marketers' efforts to ensure that their products are perceived as part of the healthy oil category. On the contrary, 90% of consumers are aware of health benefits of peanut oil and perceive it as a healthy option.

Regarding the factors influencing consumer decision-making, binary linear regression results indicate that while taste and smell are not significant predictors, both price and health considerations significantly impact consumer choices.

Even slight changes in price or health perceptions can lead to shifts in consumer purchasing decisions. Logistic regression analysis further confirms the significance of price and health concerns in influencing consumers' choices of peanut oil brands.

The data accuracy for these factors is high, indicating a strong relationship between price, health considerations, and brand preferences among consumers.

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