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No. 2



PEANUT BUTTER CONSUMPTION PATTERNS OF FILIPINOS

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ABSTRACT

One-on-one interviews were conducted in different regions in Luzon, Visayas, and the Mindanao Islands of the Philippines. A total of 387 households participated in the nationwide survey, comprising of 252 middle-income households and 135 low-income households. Most of the respondents purchased peanut butter at least once a month. The taste (sweetness), brand, and price of the product were the three major factors that influenced the choice of what peanut butter to buy. Approximately two-thirds of Filipino families preferred the firm (stabilized) type of peanut butter even when they buy the natural (unstabilized) peanut butter due to its lower price. There was also an indication of “brand loyalty” among Filipino consumers. Color was likewise not a major factor considered by consumers in buying peanut butter even if they preferred the medium brown color (color of the natural type) to the pale brown (color of the firm type) and dark brown colors. Some consumers (50%) would like to have added flavor (chocolate or fruit jelly) in their peanut butter and were willing to pay an additional price of more than 1.00 Philippine peso (PHP). Filipino consumers were, in general, aware and knowledgeable about vitamin A and the presence of vitamin A-fortified food products in the market. They were buying these products and indicated that they would buy vitamin A-fortified peanut butter when this is made available to them. Most of the respondents (>70%) were willing to pay more than PHP 0.25 additional price with a large proportion who were willing to pay more than PHP 1.00.

INTRODUCTION

The Consumer

Consumers play an important role in the success of products and new technologies in the market. A high level of acceptance to the consumers is an essential pre-requisite for such success. All successful product development starts with the consumer. Products that succeeded in the market did so because they offered attributes perceived by consumers as being pertinent to their needs and desires (Lyman, 1989).

Behavior always has a reason, no matter how illogical or irrational it may appear to the observer. Understanding consumers includes avoiding judgment, accepting the behavioral determinants, and presenting realistic choice alternatives through the products and services offered to them.

Consumer Research

There is a need to conduct an organized and unbiased investigation to measure qualitatively and quantitatively all factors influencing consumer knowledge, attitudes and behaviors. There are many underlying influences, both internal and external, from the social environment that can be very complex particularly when these factors are acting in combination with one another. Properly designed research can assess consumer motivation and behavior with considerable accuracy no matter how complex the underlying influences can be. It should be understood, however, that perfect prediction of consumer behavior is never possible.

Consumer survey is a type of consumer research that involves data-gathering activities for the analysis of some aspect(s) of a specific consumer group. Consumer surveys help food manufacturers and food scientists to understand their consumers. It is important not only to describe what consumers eat but also to understand why, to understand them in their own terms with regards to what, how and why they buy and eat certain foods. Attempts to introduce new food products into the market are likely to fail unless these products provide what the consumer demands. The acceptability of a new product may be improved if developed similarly into a culturally familiar food item (Lyman, 1989). Understanding existing food habits helps food scientists to comprehend how change in food acceptance is likely to occur. It may also be useful in planning interventions as well as in foreseeing the unintended consequences of these changes. Consumer surveys provide the following information which may be useful in implementing interventions: consumer geographic distribution and demographics, purchasing habits/shopping patterns, consumption patterns, consumer knowledge, attitudes and behaviors towards specific products, technologies and services, consumer perceptions/concerns, consumer preferences, new product ideas and modifications, and product specifications.

Food Preferences

The foods that we eat largely depends on the foods that we like. But why do we like some foods and dislike others? Because some foods taste good while some don't? Food preference is the degree of like or dislike for a food (Pilgrim, 1957). Food preference is commonly interchanged with food acceptability. Food acceptability is a different concept as it refers to the consumption of food accompanied by pleasure. A study on the relationship between food preferences and food acceptance ratings revealed that no linear relationship existed between the two (Cardello and Maller, 1982). In the same study, the panelists expressed that preference does not affect their acceptance ratings on the samples. There are several factors that influence food preference. These include food characteristics,

body weight, age, sex or race, self-concept, socio-economic status, peer or other models, parental attitude, family relations, nutrition knowledge, television viewing, familiarity, context, geography, culture, and food meanings (Lyman, 1989).

The sensory properties of food can be considered as the fundamental criteria in food selection. Willingness to try foods is significantly correlated with pleasantness of aroma (Raudenbush, 1995). Generally, sweet foods are preferred by children and adults. According to Lyman (1989) infants prefer sweetened water to milk. The preference of sweet substances and aversion to sour and bitter ones seem to be innate to humans. This could have been acquired as a form of adaptation since bitter tastes are mostly associated with poisonous substances (Lyman, 1989). Aside from aroma and taste, appeal to sight also affects food preference. Attractive packaging and presentation increase the chance of purchase of food commodities (Baron and Mueller, 1995).

Sex and age are factors that interact with each other. Among young children, there are no sex differences in food preferences but this eventually changes in older children (Lyman, 1989). However, sex difference in food preference is still not well established. Familiarity to foods presents a serious measurement problem in determining sex difference in food preference. Women are generally familiar with more foods than men (Sanjur, 1982). Unbiased results in studies are difficult to obtain since familiar foods are likely to be more acceptable than the unfamiliar ones. Nevertheless, prolonged exposure to familiar foods can result in a decrease in preference (Lyman, 1989). Repeated exposure results in boredom and dissatisfaction making consumers eager to try new and unfamiliar food products.

Family influence is the major factor affecting food preferences of young children until the school-age years. In fact, long-term food preferences can be acquired from family food habits. Children can learn to appreciate nutritious foods such as vegetables if their families constantly encourage this type of food. Children may acquire preference to fatty foods when exposed to adults who are fond of this type of food (Birch, 1992). However, a conflicting conclusion was made by a meta-analysis of the relationship in food preferences between parents and children (Borah-Giddens and Faciglia, 1993). This study revealed that a small significant correlation existed in the resemblance of the food preferences between parents and children.

As the child grows, outside influences such as peer choices, media, and fads and fashions can change their food preferences. As adults, their food habits are somehow affected by their lifestyles. Lifestyle includes household composition, household employment, family relationships, eating location, extracurricular activities and decision-making practices. A study on food habits and lifestyles of black female adolescents in Georgetown, Guyana, and Washington D.C. revealed that food habits and lifestyles are significantly related to obesity (Mitchell, 1979). With the fast changing world, modern lifestyle generally demands convenience foods; diet and health concerns; increased consumption of fresh fruit and vegetables; trends for flour and cereal products; substitutions (low-fat milk, sweeteners); and counter trends (Chou, 1991). Healthy lifestyle is popularly advocated these days causing a trend for preservative-free, low-sugar, and vacuum-packed food products. However, this trend is accompanied with an increase in botulism hazard. Insufficient treatment of food due to the desire of producing fresh and chemical-free food products has increased the incidence of botulism (Johansen, 1990).

Food preference also has an effect on the nutritional value of the diet. A study on food preferences of college students in USA revealed that dietary intake would be low in vitamin A if food preferences were the sole determinant of food intake (Einstein and Hornstein, 1970). The best sources of vitamin A were among the most disliked food in this study. Liver, which is one of the best sources of dietary Fe, is less favored to be included in meals.

Eastern and western food preferences also differ due to geographic location, degree of urbanization and culture. Japanese for instance have a strong preference for strong sour taste while panelists from Australia expressed aversion to this taste. However, there is no difference among Japanese and Australian in their preference for sweet, bitter, and salt taste (Tacey, 1992).

Context as a variable in food preference refers to the manner food is served and includes other components of the actual service and setting (Lyman, 1989). Perception of food varies when it is served in a different way. Examples are crackers and cheese. These are considered appetizers when served before a meal while they become an extra course when served after a meal. Context also includes the natural pairing of food. Examples are bacon and eggs, peaches and cream, and coffee and donut. Matching a member of these pairs with other foods may not be perceived as pleasant.

Food preference is also affected by time and place. There are foods that are associated only to breakfast like toasts, eggs, and jelly while others are exclusively for dinner. The type of occasion and people served also dictate food preference. Bacon, cake, and popcorn are examples of food with meanings closely associated with them. Breakfast, birthdays, and movies, respectively, immediately come into mind with these food products.

Food preference is principally acquired during the early stage of life and relatively stable unless changes occur in the preference of the group as a whole (Sanjur, 1982). Changes may have been triggered substantially by environmental factors. Aside from this, the characteristics of the individual and food also play important roles in determining food preference.

Peanut Butter

Among all peanut products in the Philippines, peanut butter was found to be the most preferred by consumers (Garcia *et al.*, 1990). The average monthly household consumption rate for peanut butter in the Philippines was 432 g valued at PHP 27.10, or an equivalent of about 73 g per individual consumption valued at PHP 4.70. Ilocos Region, Northern Mindanao, and Eastern Visayas were the 3 leading regions in terms of average household consumption of peanut butter ranging from 575 g to 641 g/month. The top three regions in terms of per capita peanut butter consumption were Ilocos Region, Central Mindanao and Southern Mindanao, with respective demands ranging from 95 to 105 g/month. Western Visayas was the region with the lowest household and per capita consumer, reporting only 289 g and 42 g/month, respectively. The national average frequency of consumption was approximately twice a month (2.61).

An unidentified St. Louis physician is believed to have invented peanut butter in 1870s; the first patent for its preparation was awarded to J.H. Kellogg of Battle Creek, Michigan. Since that time, the product has been enjoyed for its desirable flavor as sandwich spread and for its versatility as a snack and cooking ingredient (Lusas, 1979).

U.S. Standards for Grades of Peanut Butter as cited by Woodroof (1983) defines peanut butter as “a cohesive, comminuted food product prepared by grinding or milling properly roasted, mature peanut kernels from which the seed coats have been removed and to which salt is added as a seasoning agent.” Peanut butter should contain at least 90% peanuts and a maximum of 10% for seasonings and stabilizer. U.S. federal regulation does not allow the addition of artificial flavors and sweeteners, chemical preservatives, natural or artificial colors, purified vitamins or minerals (Woodroof, 1983). The fat content of peanut butter should not exceed 55%.

Peanut butter production is a simple process consisting of shelling, dry-roasting and blanching of peanuts, followed by fine grinding. Woodroof (1983) defined seven steps in peanut butter manufacture: roasting, cooling, blanching, picking and inspecting, grinding and cooling, salting of

peanut butter, and packaging. Proper roasting is essential in the processing of peanut butter because it eliminates raw taste and develops desirable aroma and color of peanuts that greatly affect the general acceptability of this product (Morris and Freeman, 1954). Under roasting and over roasting would be detrimental to the general acceptability of peanut butter. Roasting of peanuts tends to develop and yield higher oil content which is considered pleasant in making peanut butter because it contributes to better mouthfeel and less sticky product that bring about the spreadability of the product (Morris *et al.*, 1953).

OBJECTIVES

There was a need to identify new market opportunities for peanuts and peanut products in the Philippines so that research and development efforts of the peanut industry can be more focused thus consumer needs will be better addressed. Specifically, development and optimization of peanut butter products may be better facilitated if information on consumer perception and preferences for and consumption patterns of peanut butter in the Philippines were obtained. Additionally, efforts towards fortification of peanut butter with micronutrients, such as vitamin A, will be better directed towards addressing the concerns and needs of consumers when their attitudes, behaviors, and concerns on such fortification were determined. This study was undertaken with the following objectives: 1) to determine consumer perception and preferences for and consumption patterns of peanut butter in the Philippines, and 2) to determine knowledge, attitude, behaviors and concerns of Filipino consumers on vitamin A fortification of peanut butter.

METHODS

Questionnaire Development

A survey questionnaire was designed to be administered in a one-on-one interview. The questionnaire was seven pages long. The interviewers were briefly trained on the questionnaire and on interview techniques by role-playing. A pre-test was conducted in the Metro Manila area among 15 households. The questionnaire was revised based on the results of the pre-test. The revised questionnaire, was written in English and translated into the local dialects by the interviewers during the interviews.

The final version of the questionnaire was structured into four parts: (a) demographic and socio-economic questions which included the name, address, age, sex, marital status, status of households, educational attainment, occupation, household income and expenditures, purchasing and eating habits; (b) peanut butter consumption of households; (c) peanut butter preferences; and (d) knowledge, attitude and behavior towards vitamin A fortification. In addition, the respondents were asked how much they were willing to pay for all improvements that would be introduced in peanut butter. The questionnaire used is shown as Appendix A.

Data Collection and Processing

One-on-one interviews were conducted nationwide in different regions in the Luzon (Laoag City, Baguio City, Legazpi City, Sorsogon, Manila, Quezon City, Mandaluyong City, Pasig City and Makati City), Visayas (Cebu City, Tacloban City, Baybay and Ormoc City), and Mindanao Islands of

the Philippines. Prior to the interview, a visitor's permit to conduct a survey was obtained from the Mayor's office of the cities visited. Only those respondents who answered “yes” to the recruitment screener question “Do you buy peanut butter?” were taken as participants in the survey. Before the interview, the interviewers explained to the respondents what the study was about and its social usefulness. In addition, a statement of confidentiality was given to the participants. One hundred eight respondents were from Metro Manila. A total of 143 respondents from Northern and Southern Luzon, 69 from the Visayas and 67 from Mindanao, were interviewed. Both low-income families (with family income less than PHP 10,000 per month) and middle-income families (with family income more than PHP 10,000 but less than PHP 500,000 per month) were adequately represented in the total number of respondents. At least 25 of the respondents from every Region represented each of the two income levels. Fig. 1 shows how the interviews were conducted during the survey.

For questions on peanut butter preferences, respondents were shown samples of representative products. Samples presented were not identified by brand. Samples in petri plates were shown when questions on peanut butter color preferences were asked. Samples presented for color preferences included the following: pale brown (firm or stabilized type), brown (natural or unstabilized) and dark brown (a laboratory-prepared sample from over-roasted peanuts).

At the end of every data collection day, the interviewers reviewed the completed questionnaires to check if all questions were answered. Incomplete questionnaires were discarded and more interviews were conducted the following day to reach the target number of respondents. The data collection lasted for three months. Questionnaires were decoded, 100% of the data were verified and frequency analysis, were done on the data gathered.



Fig. 1. Peanut -CRSP researcher interviewing one respondent during the survey.

RESULTS

Demographic Information

A total of 252 respondents from middle-income households (MI) and 135 respondents from low-income households (LI) participated in the survey. Only one respondent (the major food buyer) per household was allowed to participate in the survey. The figures do not include the 15 households that participated during the pre-test of the questionnaire.

Seventy-five percent of the respondents (187 MI and 103 LI) were between 20 and 50 years old, 13% (32 MI and 17 LI) were 51-60 years old. Forty-four per cent of the respondents from the middle-income households had monthly family income of >PHP 20,000, 23% had monthly income of PHP 15,000-PHP 20,000 and 30% had monthly income of PHP 10,000- PHP 15,000. Among the respondents from the low-income households, 67% had monthly family income of PHP 5,000- PHP 9,999 and 30% had monthly family income of PHP 1,000- PHP 4,999.

On the monthly family expenditure on food, approximately 39% MI and 78% LI spent a maximum of PHP 5,000 every month for food. Forty-two percent of the middle-income families spent about PHP 5,000-10,000 while only 18% of the low-income families spent this much on food every month. It must be noted that PHP 10,000 was the upper limit for income of LI. The rest of the middle-income families (16%) spent more than PHP 10,000 for food every month. Fig. 2 shows the monthly expenditures on food of the respondents by region. For both MI and LI, the wife was the person who buys and cooks the food (53% MI and 84% LI). Occasionally, the husband participated in these activities (14% MI and 22% LI). The presence of domestic helpers was noticeable in MI (12%) in which they were major preparers and purchasers in the household. Fig. 3 shows who buys and cooks the food in middle- and low-income families in the different regions visited.

Consumption of Peanut Butter

Most of the respondents purchased peanut butter at least once a month (for MI: 38% once a month, 27% twice a month, 7.0% once a week; for LI: 35.5% once a month, 20% twice a month, and 19% once a week). Fig. 4 shows the frequency by which the respondents in the different regions visited buy peanut butter. It was noted that more LI (19%) purchased peanut butter on a weekly basis than MI (7.0%). This may probably be due to the capability of MI to buy and use expensive spreads other than peanut butter on a weekly basis. The LI had limited budget thus they can only afford the natural peanut butter as their sandwich spread. Another possibility is that the MI buy peanut butter in large quantities every month thus they don't need to purchase on a weekly basis.

Results indicated that taste (75% MI and 70% LI), brand (44% MI and 42% LI), and price (35% MI and 52% LI) were the three major factors that influenced the choice of what peanut butter to buy across all regions visited (Fig. 5). Filipino consumers basically preferred sweet-tasting peanut butter, as will be shown later. Texture and color were considered by few respondents, 23% MI and 11% LI and 12% MI and 7% LI, respectively, as a basis of choice in the purchase of peanut butter. However, in a latter question on peanut butter preferences, it will be shown that the majority of the respondents preferred the firm type (stabilized) of peanut butter. Majority of respondents purchased the brands of peanut butter manufactured in the Philippines most of the time (81% for MI and 98% for LI) as shown in Fig. 6. The remaining portion purchased imported brands (14% MI and 2% LI) of peanut butter.

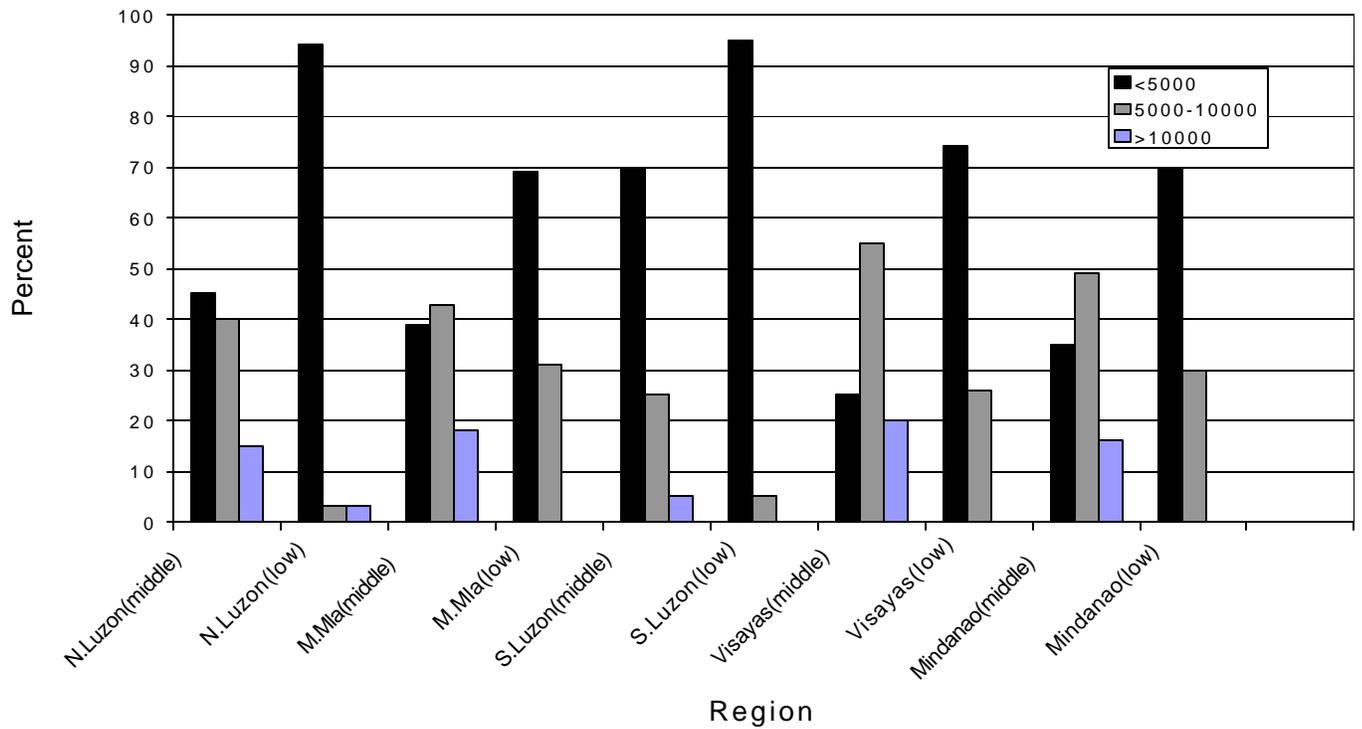


Fig. 2. Amount in peso (PHP) spent by Filipino consumers in different regions on food per month (N. Luzon and S. Luzon stands for Northern and Southern Luzon, respectively and M. Mla stands for Metro Manila).

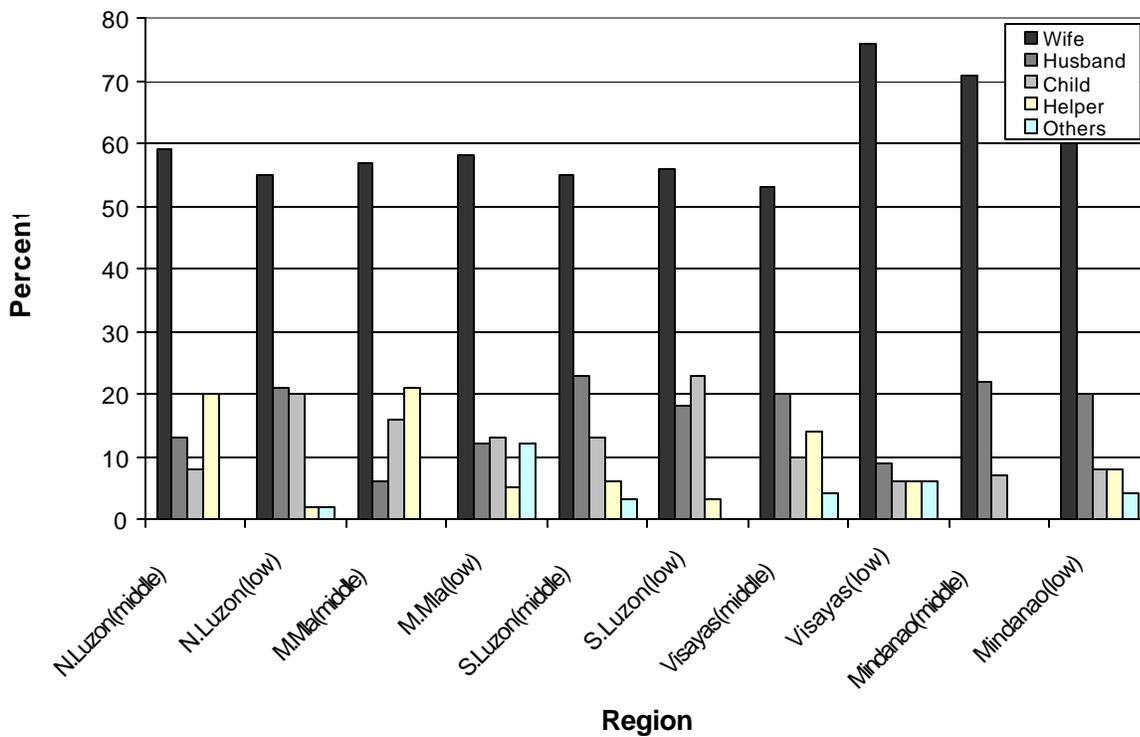


Fig. 3. Member of Filipino households in different regions who buys and cooks food (N. Luzon and S. Luzon stands for Northern and Southern Luzon, respectively and M. Mla stands for Metro Manila).

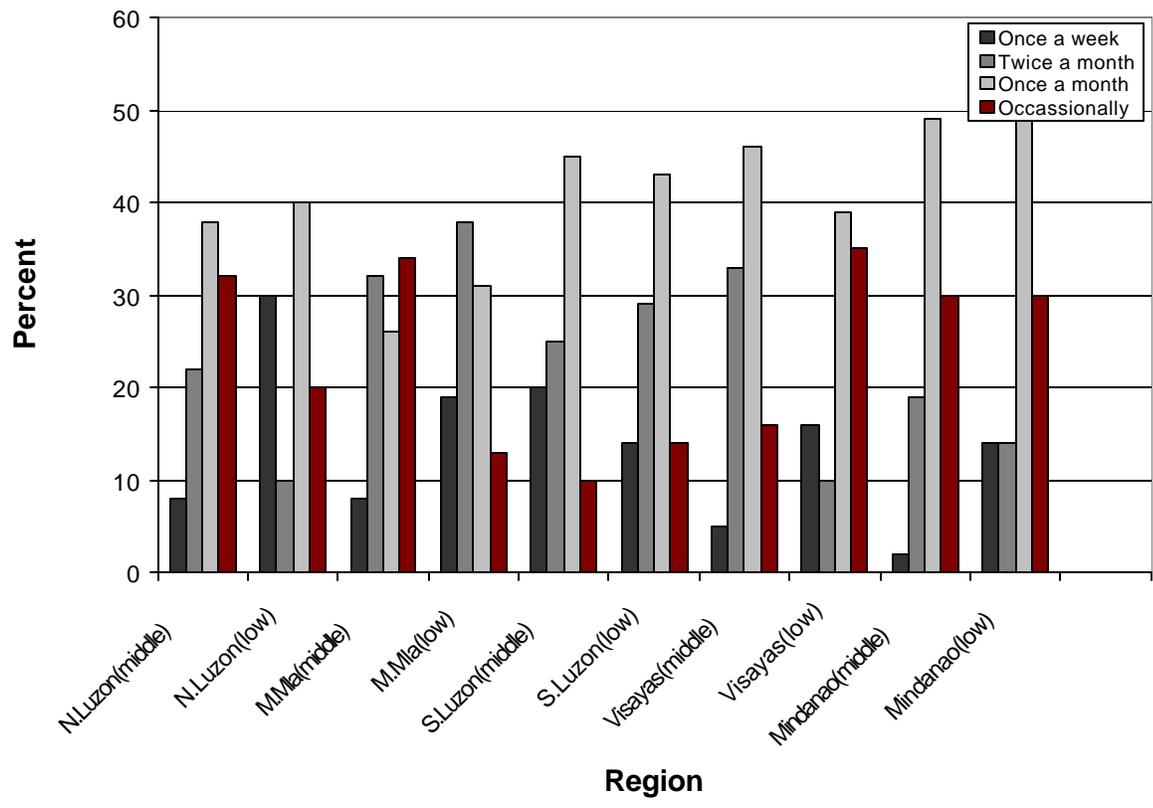


Fig. 4. Frequency of peanut butter purchase by Filipino consumers in different regions (N. Luzon and S. Luzon stands for Northern and Southern Luzon, respectively and M. Ma stands for Metro Manila).

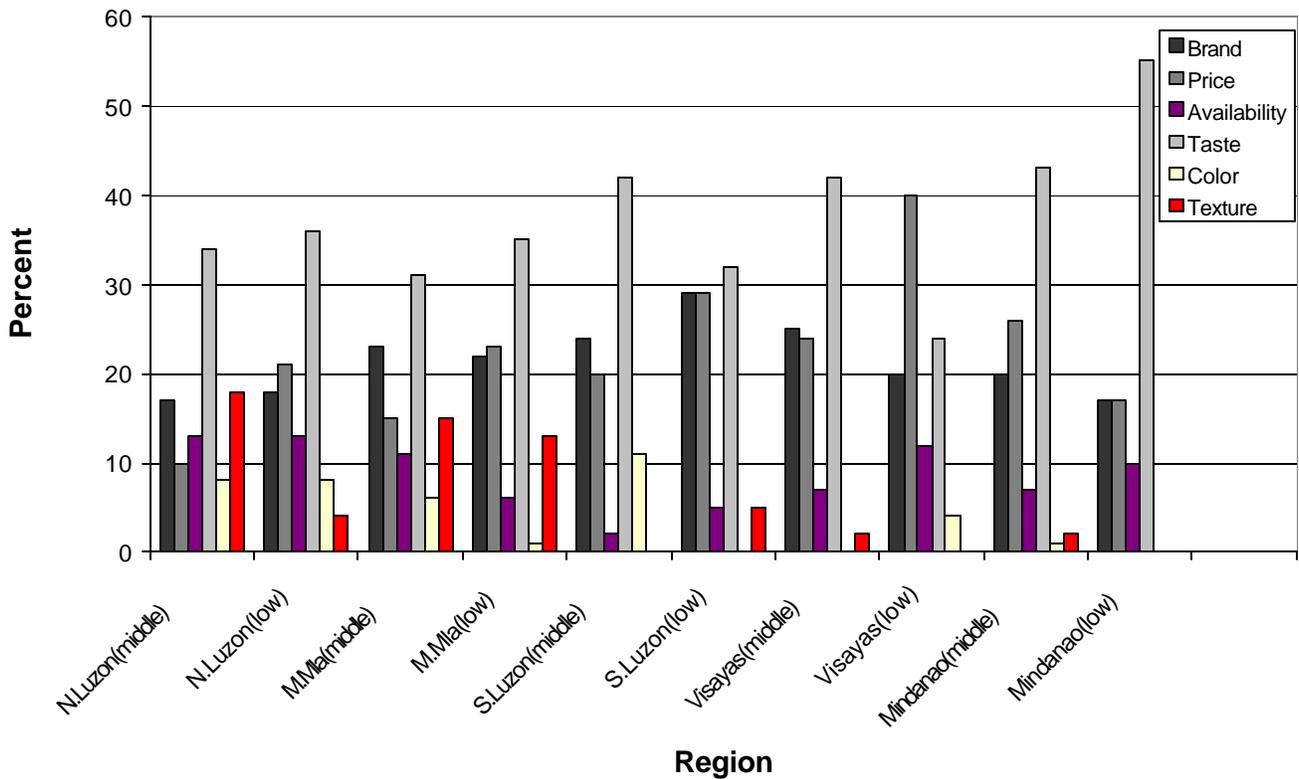


Fig. 5. Basis of choice for peanut butter purchase of Filipino consumers in different regions (N. Luzon and S. Luzon stands for Northern and Southern Luzon, respectively and M. Ma stands for Metro Manila).

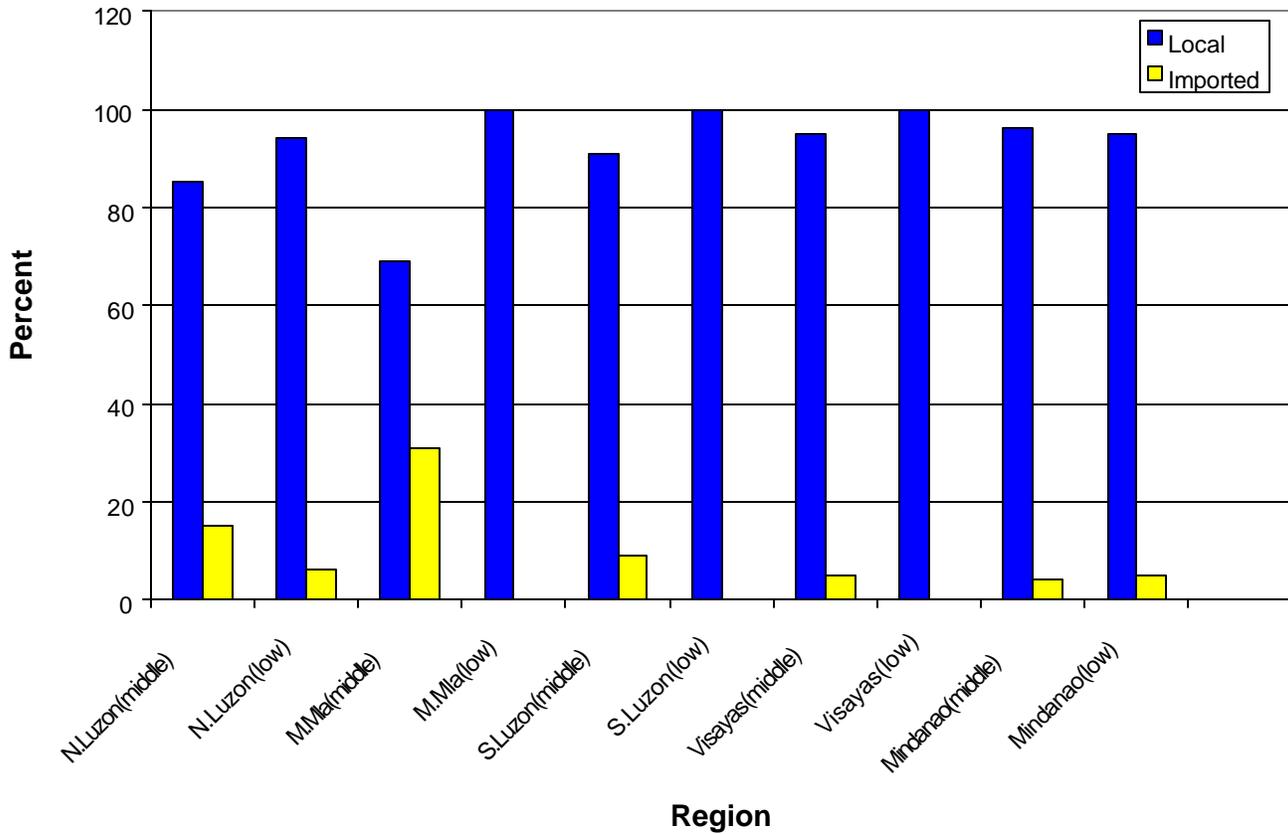


Fig. 6. Brand of peanut butter usually purchased by Filipino consumers in different regions (N. Luzon and S. Luzon stands for Northern and Southern Luzon, respectively and M. Mla stands for Metro Manila).

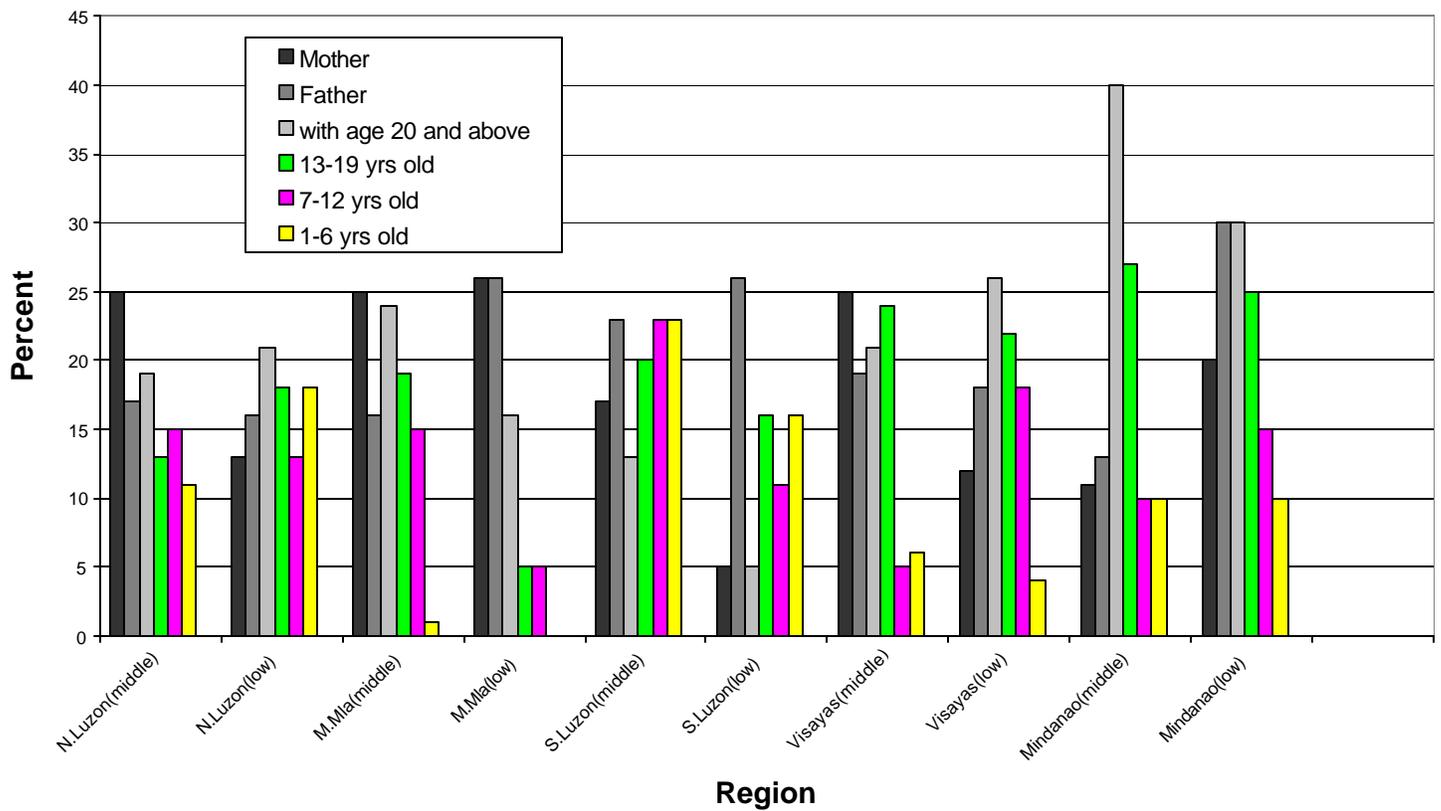


Fig. 7. Member of Filipino households in different regions who consumes peanut butter (N. Luzon and S. Luzon stands for Northern and Southern Luzon, respectively and M. Mla stands for Metro Manila).

The respondents were likewise asked who among the family members consume peanut butter the most. Surprisingly, as shown in Fig. 7 it was not the children (12 years old and younger) who ate peanut butter the most, as expected. Rather, the older members of the families (13 years old and older), in 80% of both the MI and the LI, were the major consumers of peanut butter in Filipino families.

Peanut Butter Preferences

There were regional differences with regards to preferences of Filipino consumers for the type of peanut butter. In the Northern Luzon and Metro Manila areas, the natural (unstabilized) and firm (stabilized) types of peanut butter were equally preferred by consumers as shown in Fig. 8. In the Southern Luzon, the Visayas and Mindanao areas visited, however, more consumers preferred the firm type. The reasons cited were spreadability and flavor, which would refer to the higher peanutty flavor of the firm type (Fig. 9). However, it was determined that the natural type of peanut butter was not being marketed extensively in Southern Luzon, Visayas and the Mindanao regions visited. The peanut butter markets in these places were dominated by the firm or stabilized type. There is, therefore, the possibility that the consumers in these places have not been exposed enough to the natural type of peanut butter to be familiar with the product and be able to like it. There is likewise the possibility of the influence of quality impressions on imported products. Many Filipinos have the perception that imported products (particularly from the U.S.A.), such as stabilized peanut butter, have better quality and so they tend to prefer these products. The respondents who preferred the natural peanut butter were asked which kind they prefer: with oil on top or without the oil on top. Majority preferred the one without the oil on top (63% MI and 52% LI).

Color (15% MI and 10% LI) did not seem to influence Filipino consumer preference for peanut butter as much as the other factors did. Fig. 11 indicates that medium brown color (77% MI and LI) was preferred to pale brown (15% MI and 33% LI) and dark brown (8% MI and 4% LI) colors.

The Filipino preference for sweetness is reflected in their preference for sweet-tasting peanut butter across all the regions visited. Results showed that, in general, 75% of respondents from the middle-income families and 70% of respondents from the low-income families preferred sweet peanut butter. Fig. 11 shows the preferences for sweetness in peanut butter of Filipino consumers in the different regions visited. With regards to texture preferences, Filipino consumers across all regions visited were one in their preference of smooth and creamy to chunky texture, as shown in Fig. 12.

When asked if they want peanut butter with added flavor, the respondents were, in general, equally divided, with 50% (for both MI and LI) stating that they wanted added flavor in their peanut butter and 50% saying that they did not like added flavor in their peanut butter. However, there were regional differences, similar to the observed preferences for the types of peanut butter (Fig. 13). Peanut butter consumers in Northern Luzon, Metro Manila and the middle-income families in Southern Luzon indicated that they did not want added flavor in peanut butter. Peanut butter consumers from the rest of the regions visited indicated they wanted added flavor. Most of those who liked added flavor in peanut butter would like to have either chocolate or jelly (fruit) added to the peanut butter (Fig. 14). When asked if they will buy peanut butter with added flavor even when the price is increased, the majority responded they would buy the product as shown in Fig. 15. Filipino consumers were willing to pay an additional price of more than PHP 0.25 for the added flavor as shown in Fig. 16 and some respondents were willing to pay more than PHP 1.00 (48% MI and 24% LI).

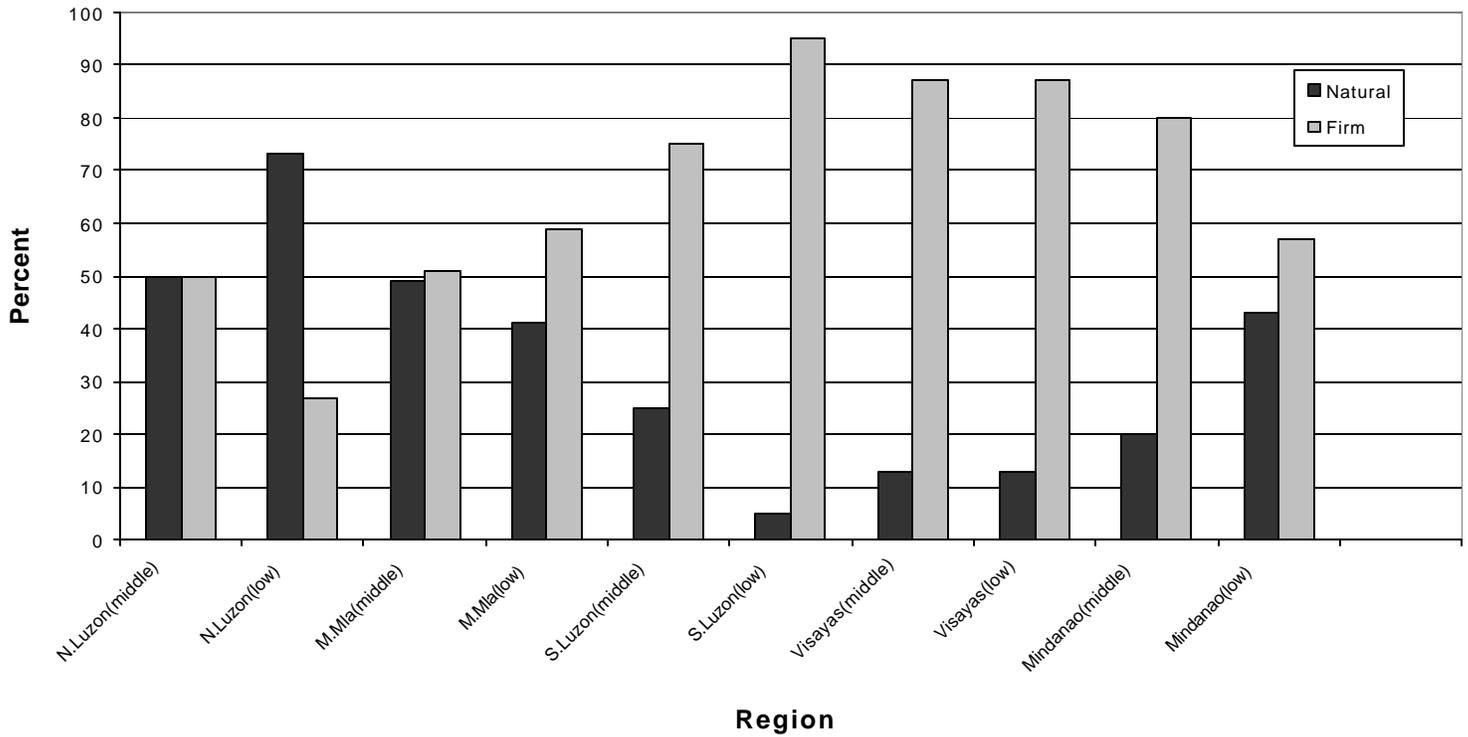


Fig. 8. Type of peanut butter preferred by Filipino consumers in different regions (N. Luzon and S. Luzon stands for Northern and Southern Luzon, respectively and M. Mla stands for Metro Manila).

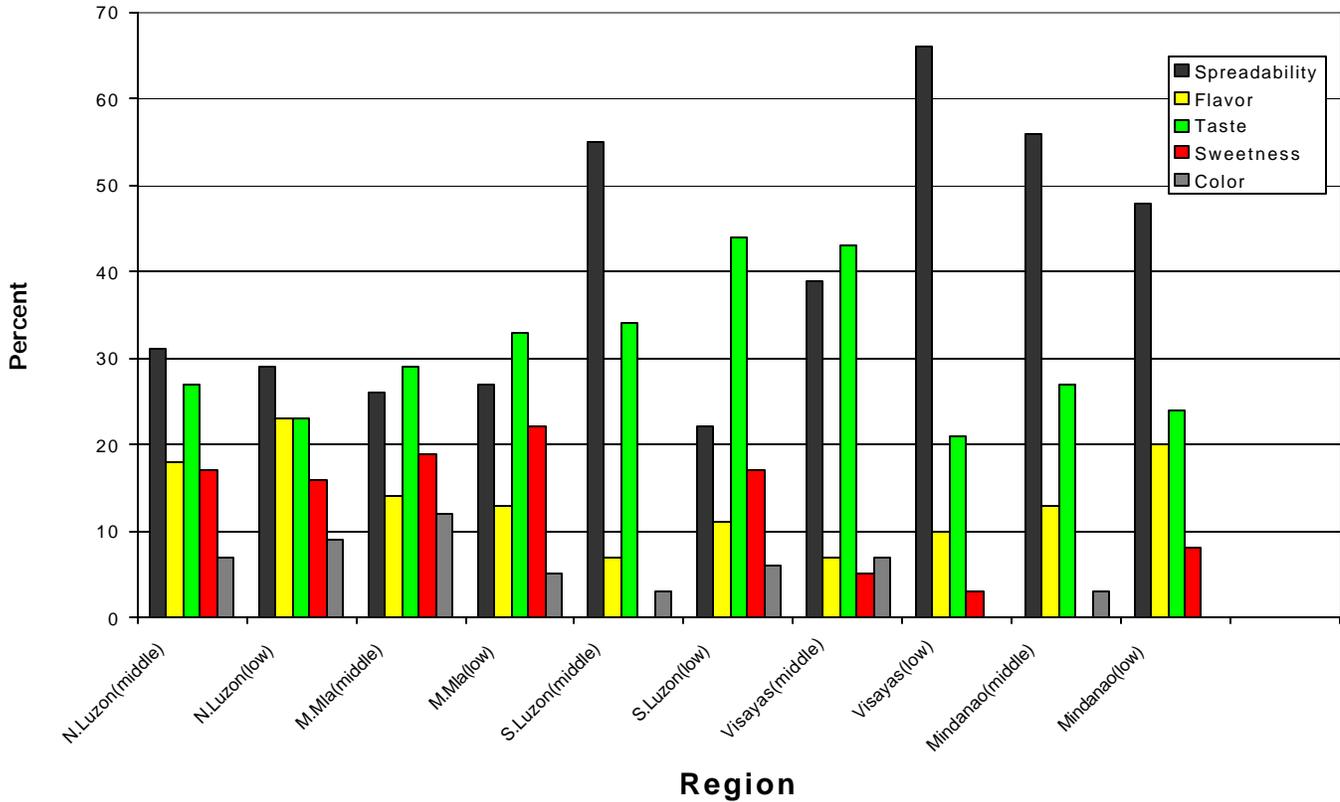


Fig. 9. Reason for peanut butter preference of Filipino consumers in different regions (N. Luzon and S. Luzon stands for Northern and Southern Luzon, respectively and M. Mla stands for Metro Manila).

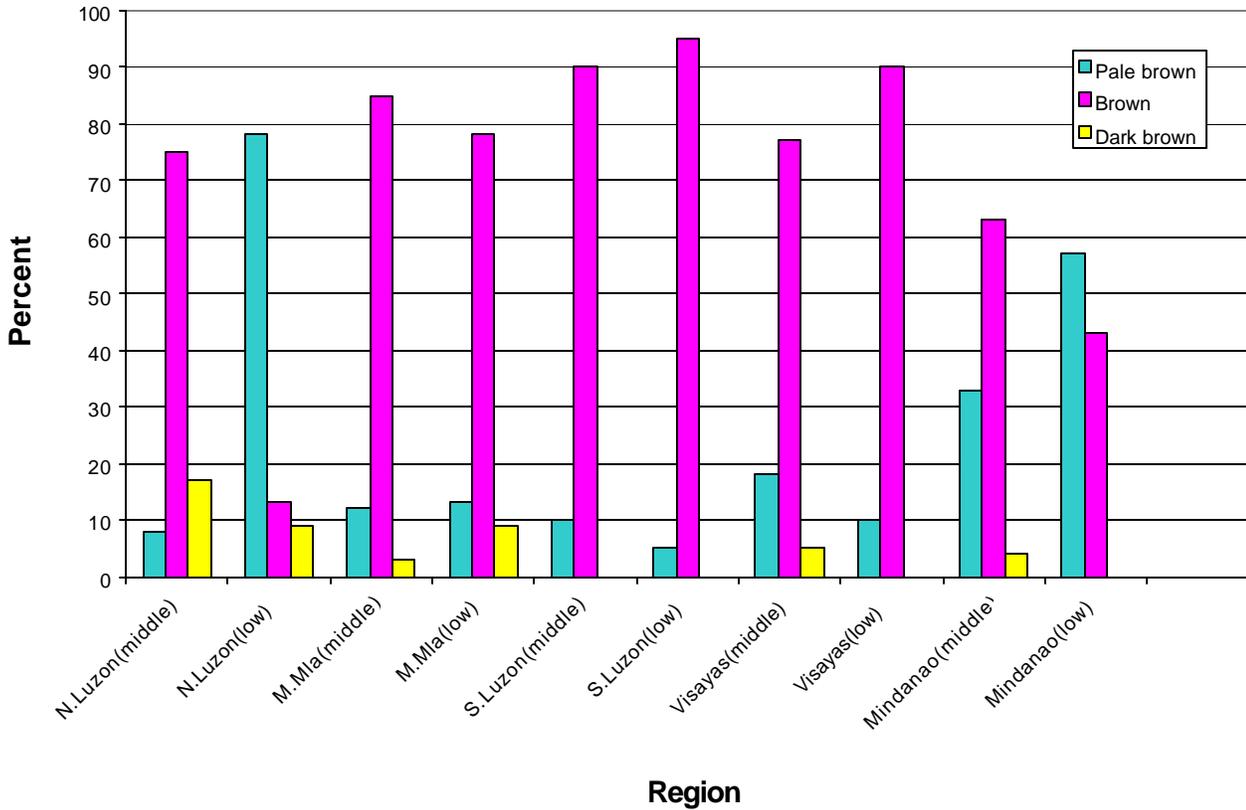


Fig. 10. Peanut butter color preference of Filipino consumers in different regions (N. Luzon and S. Luzon stands for Northern and Southern Luzon, respectively and M. Mla stands for Metro Manila).

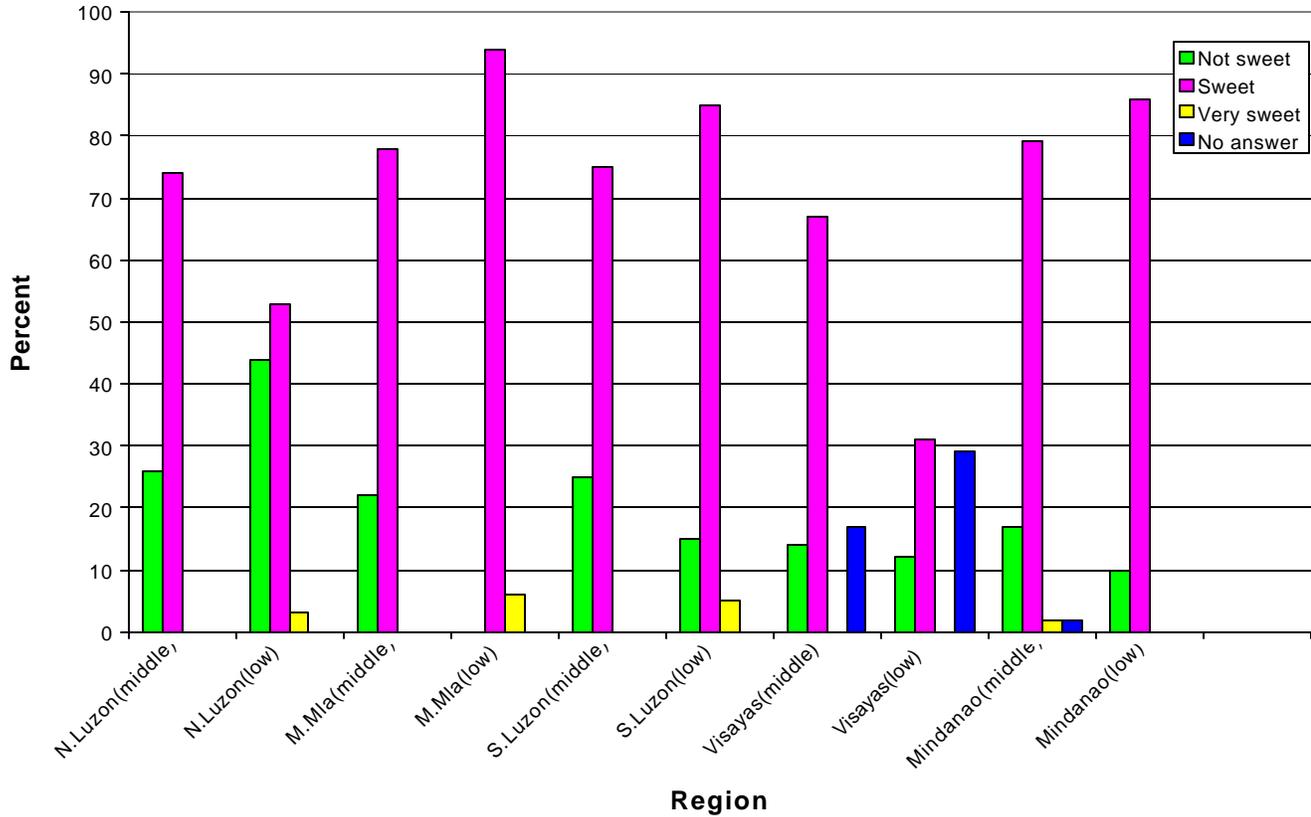


Fig. 11. Peanut butter sweetness preference of Filipino consumers in different regions (N. Luzon and S. Luzon stands for Northern and Southern Luzon, respectively and M. Mia stands for Metro Manila).

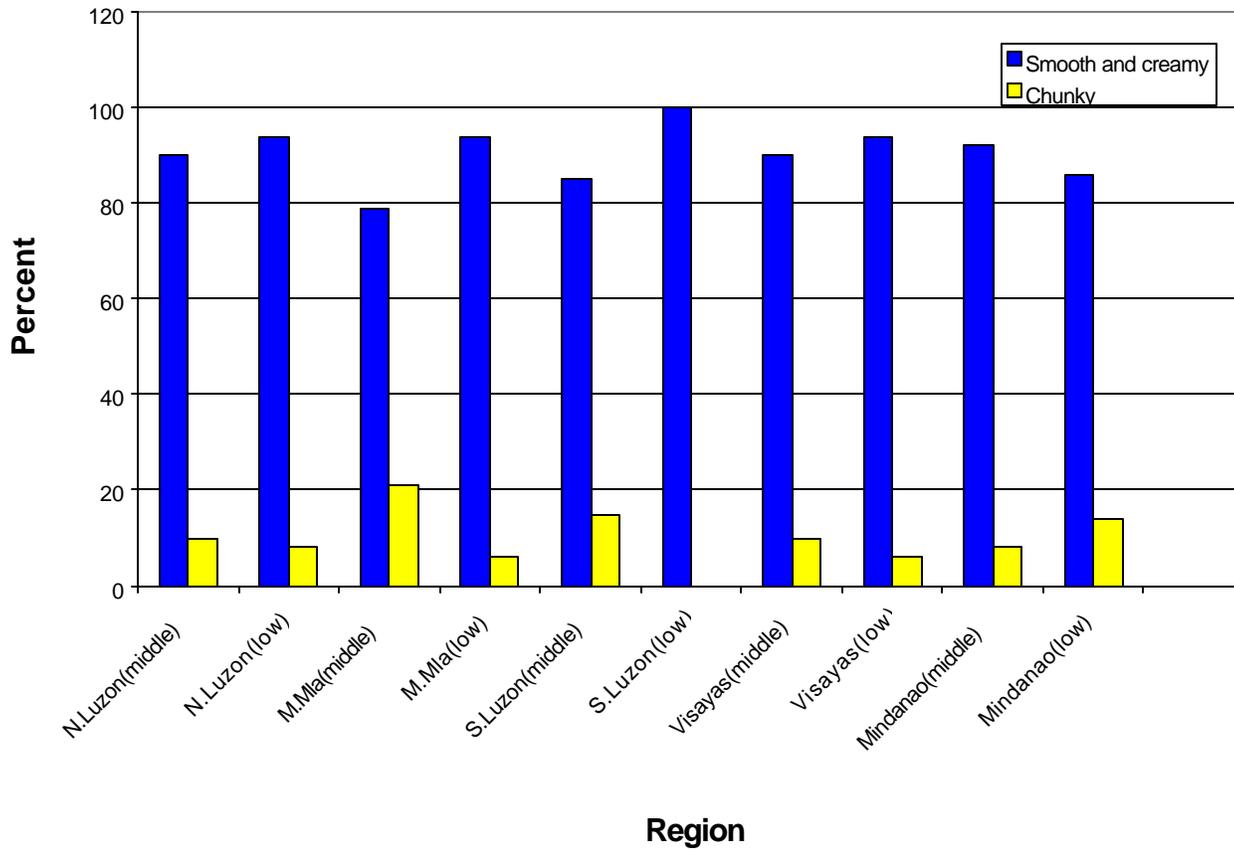


Fig. 12. Peanut butter texture preference of Filipino consumers in different regions (N. Luzon and S. Luzon stands for Northern and Southern Luzon, respectively and M. Mla stands for Metro Manila).

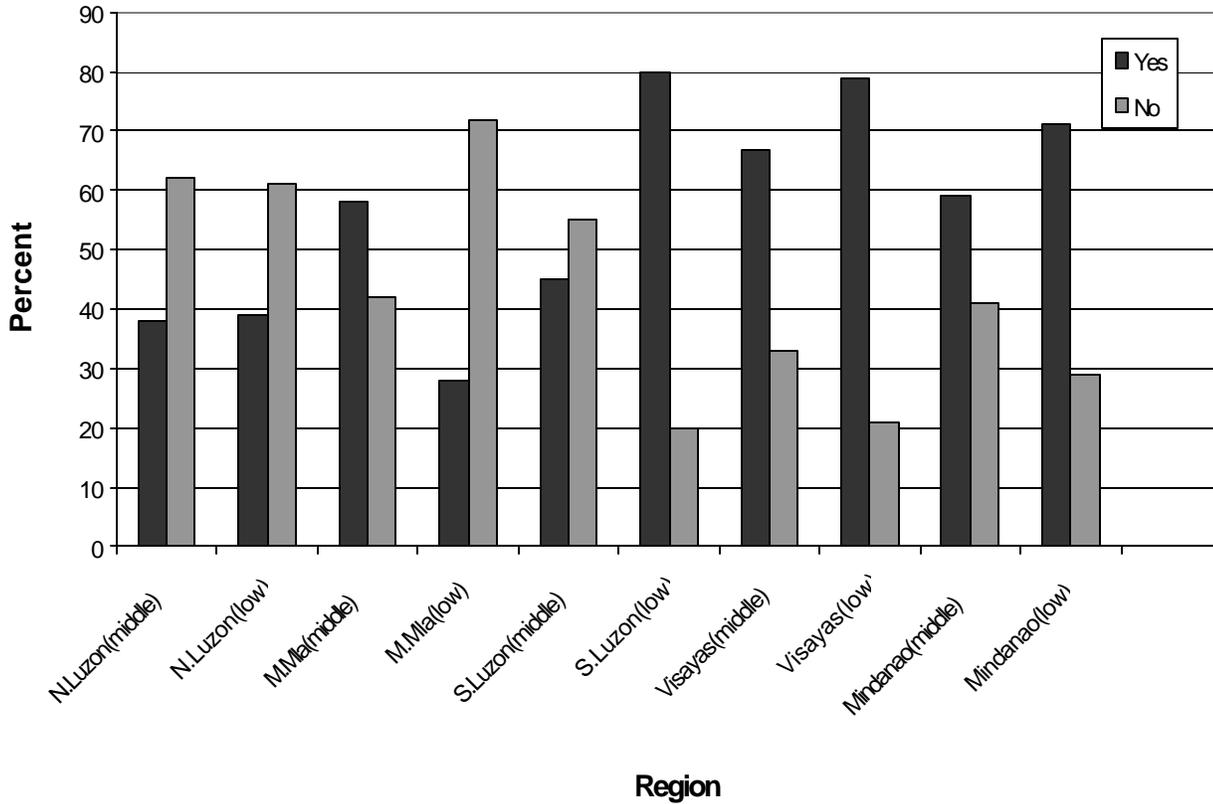


Fig. 13. Response of Filipino consumers in different regions if they like added flavor to peanut butter (N. Luzon and S. Luzon stands for Northern and Southern Luzon, respectively and M. Mia stands for Metro Manila).

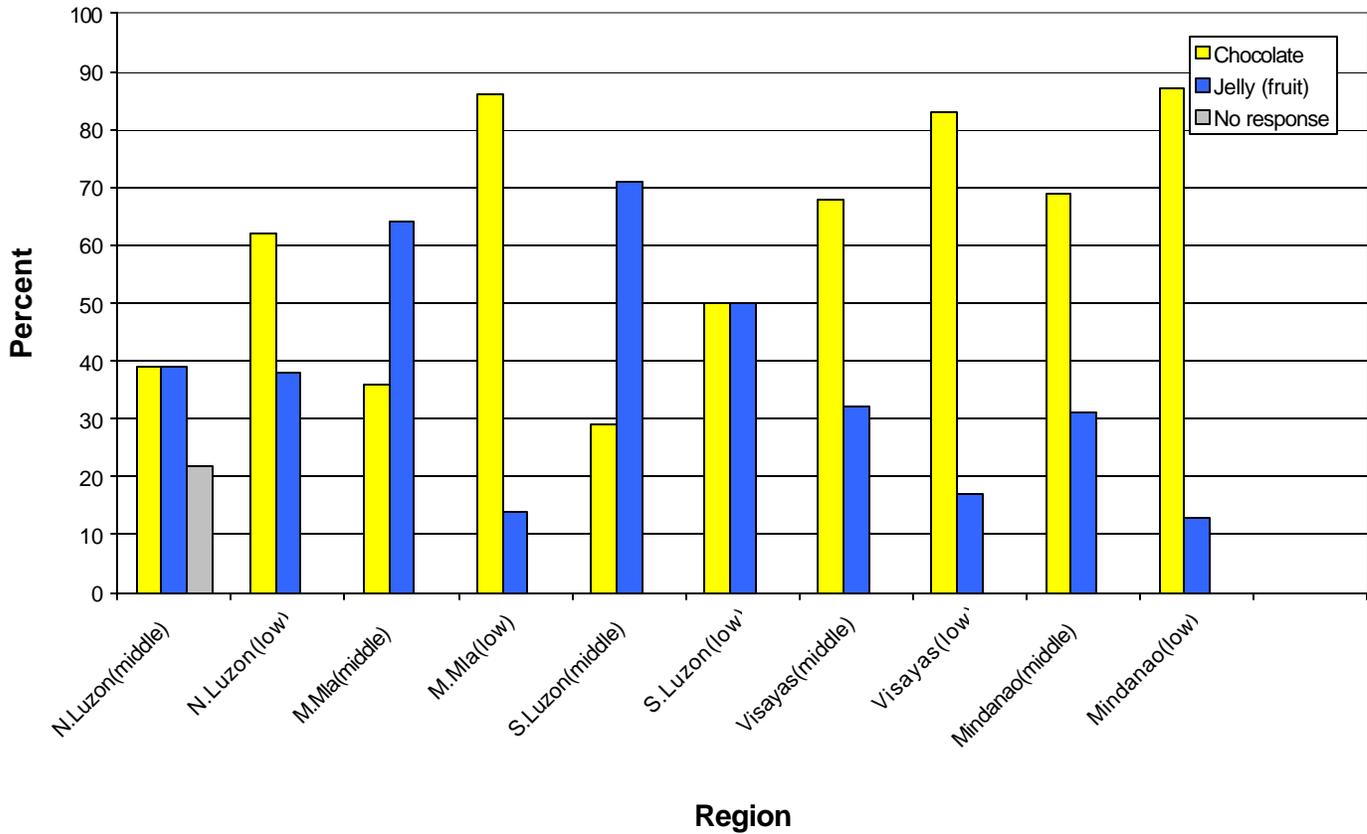


Fig. 14. Response of Filipino consumers in different regions on what flavor should be added to peanut butter (N. Luzon and S. Luzon stands for Northern and Southern Luzon, respectively and M. Mla stands for Metro Manila).

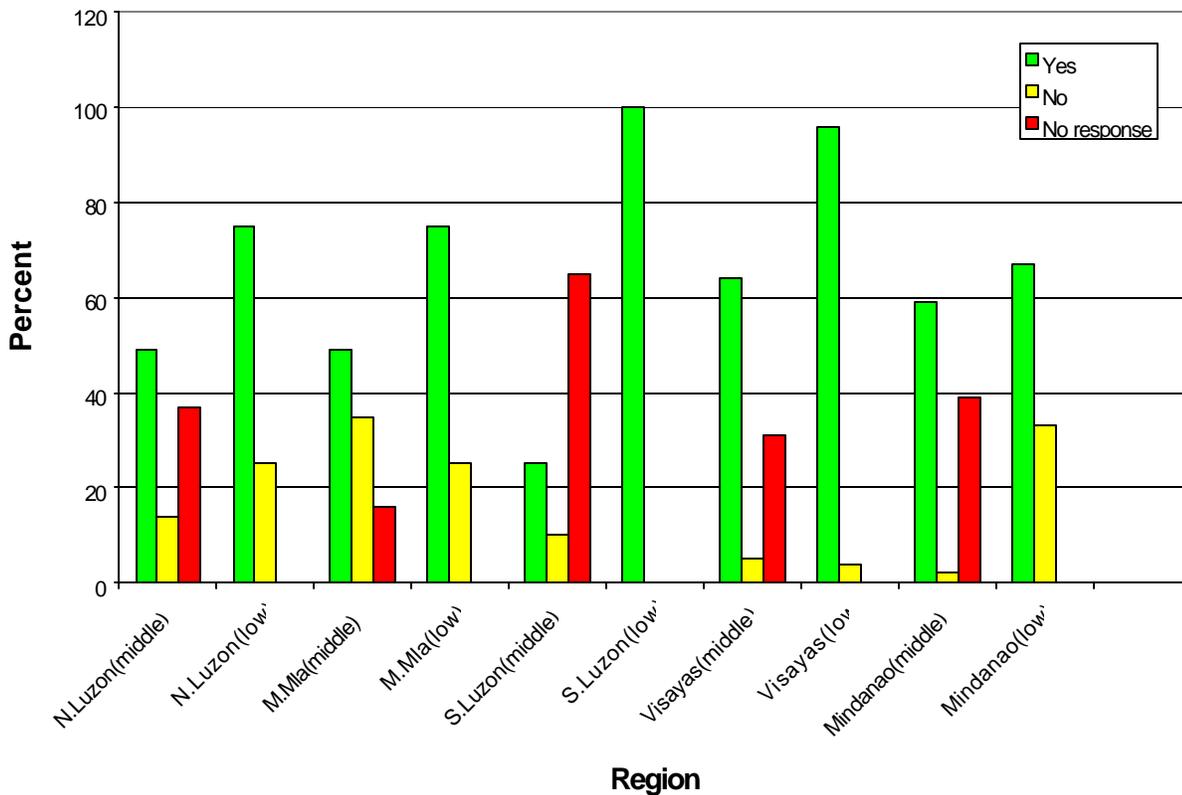


Fig. 15. Response of Filipino consumers in different regions if they would buy peanut butter with added flavor if price is increased (N. Luzon and S. Luzon stands for Northern and Southern Luzon, respectively and M. Mla stands for Metro Manila).

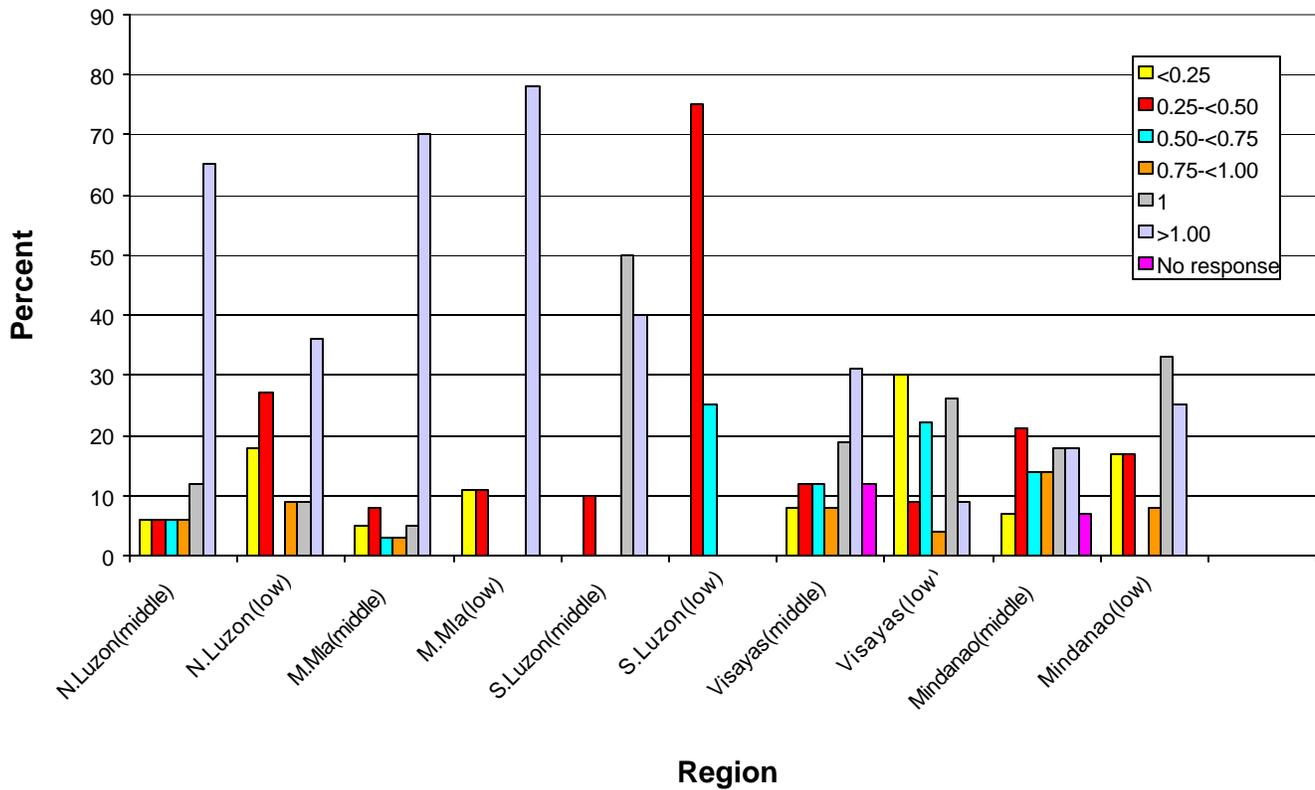


FIG. 16. Response of Filipino consumers in different regions on the additional price (PHP) they were willing to pay when flavor is added to peanut butter (N. Luzon and S. Luzon stands for Northern and Southern Luzon, respectively and M. Mla stands for Metro Manila).

Knowledge, Attitudes and Behaviors Towards Vitamin A Fortification

All respondents had heard about vitamin A, or claimed to know something about this vitamin as shown in Fig. 17. Vitamin A is a fat-soluble vitamin which promotes healthy eyes and aids in the development of bones, glands, hair, nails and skin. It is an important nutrient needed for growth and reproduction (Maynard, 1999). It also helps detoxify pollutants such as pesticides, fertilizer residues, industrial poisons and toxic drugs. Vitamin A can act as a scavenger and block the oxidizing effects of free radicals that cause cancer. Vitamin A likewise increases the body's immune system and promotes proper bowel functioning (Bowles, 1993). Vitamin A comes from animal and plant sources. Retinol, active form of vitamin A, is derived from milk, eggs, cheese, animal meats or fish liver oil. Beta-carotene which can be found in all yellow and green vegetables, plants and fruits is converted to retinol in the intestines (Bowles, 1993).

When asked, specifically, what they knew about vitamin A, 41% of the respondents from the middle-income families surprisingly answered they did not know specific benefits of this vitamin, while only 20% of the respondents from the low-income families did not know specific facts about vitamin A. Forty-six percent of MI and 55% of LI knew that vitamin A is "good for the eyes". Other information about this vitamin that the respondents cited were that vitamin A is present in yellow foods, it is good for the skin, and it fights cancer (Fig. 18).

Ninety-eight percent of MI and LI that participated in the survey were aware of the presence of vitamin A-fortified foods in the Philippine market as shown in Fig. 19. In Fig. 20 it can be seen that only 2% did not buy vitamin A-fortified food products. Filipino consumers purchased vitamin A-fortified foods because they are "nutritious", "necessary", "convenient", "delicious", or they simply "like it" as shown in Fig. 21. Vitamin-A fortified products in the market had gained popularity due to the extensive campaign of the Philippine government in the mid-90's on the eradication of nutrient deficiencies such as vitamin A deficiency especially in children. The Sangkap Pinoy Seal Program (SPSP) which started in 1995 is a program to encourage food manufacturers to fortify their products with essential micronutrients such as vitamin A, iron and iodine. Food manufacturers in the Philippines were authorized by the Department of Health (DOH) to use a seal of acceptance known as Sangkap Pinoy Seal (SPS) on products that were fortified with micronutrients such as vitamin A (DOH, 2000). This also served as a great marketing tool for food manufacturers as a recent survey on the use of fortified foods in the Philippines revealed that 97% of Filipinos use fortified foods in their daily meals (Samonte, 2002).

When asked if they would buy vitamin A-fortified peanut butter, almost all (98% for MI and 96% for LI) will buy the product (Fig. 22). Majority (89% for MI and 72% for LI) was willing to pay more than PHP 0.25 additional price for vitamin A-fortified peanut products. A large percentage (46% for MI and 28% for LI) was willing to pay more than PHP 1.00 additional price. The additional price that Filipino consumers in the different regions visited were willing to pay for vitamin A fortification of peanut butter is shown in Fig. 23.

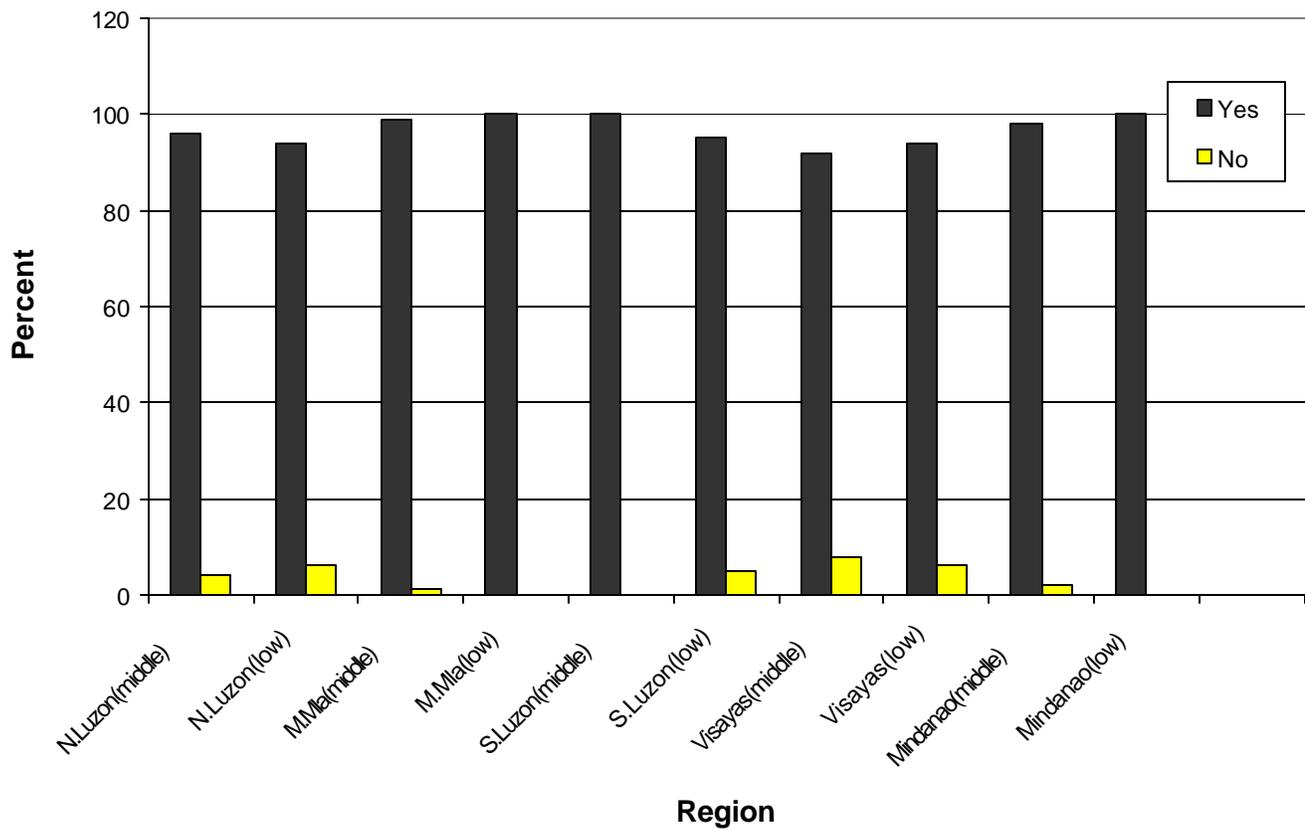


Fig. 17. Response of Filipino consumers in different regions regarding their knowledge on vitamin A (N. Luzon and S. Luzon stands for Northern and Southern Luzon, respectively and M. Mla stands for Metro Manila).

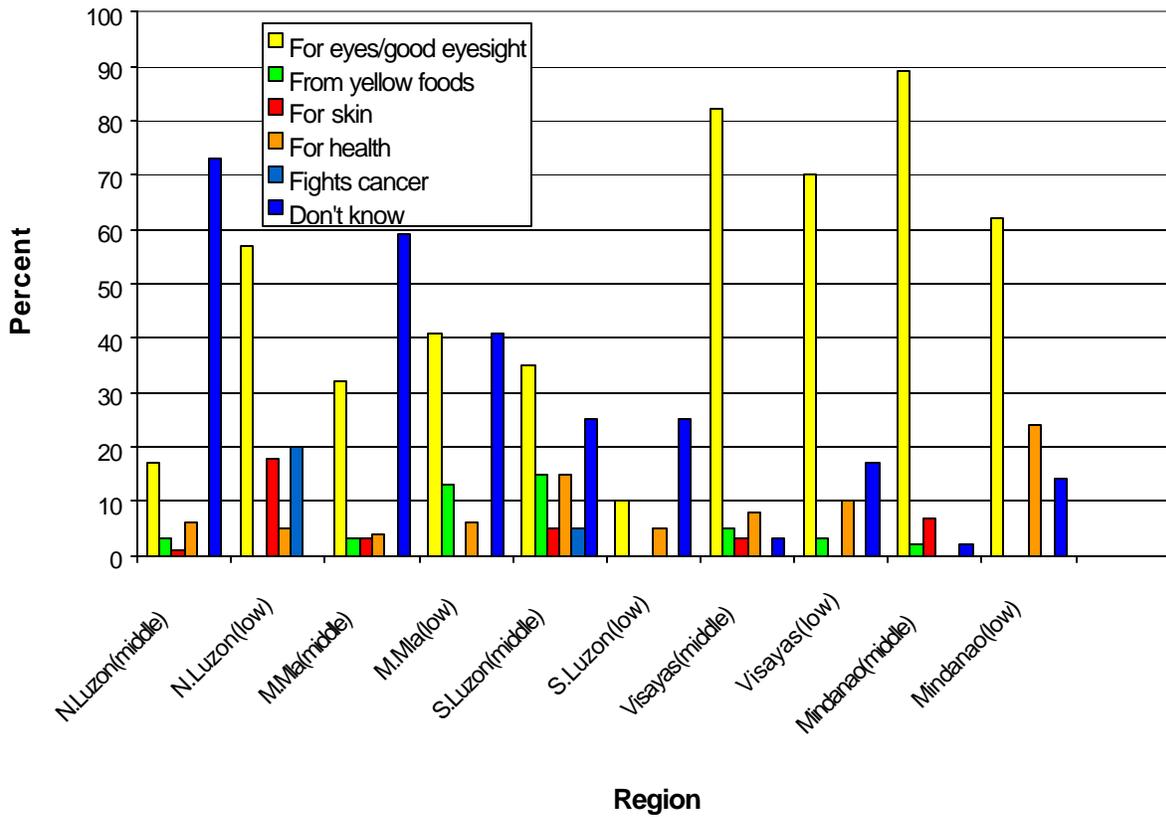


Fig. 18. Purpose of vitamin A according to Filipino consumers in different regions (N. Luzon and S. Luzon stands for Northern and Southern Luzon, respectively and M. Mla stands for Metro Manila).

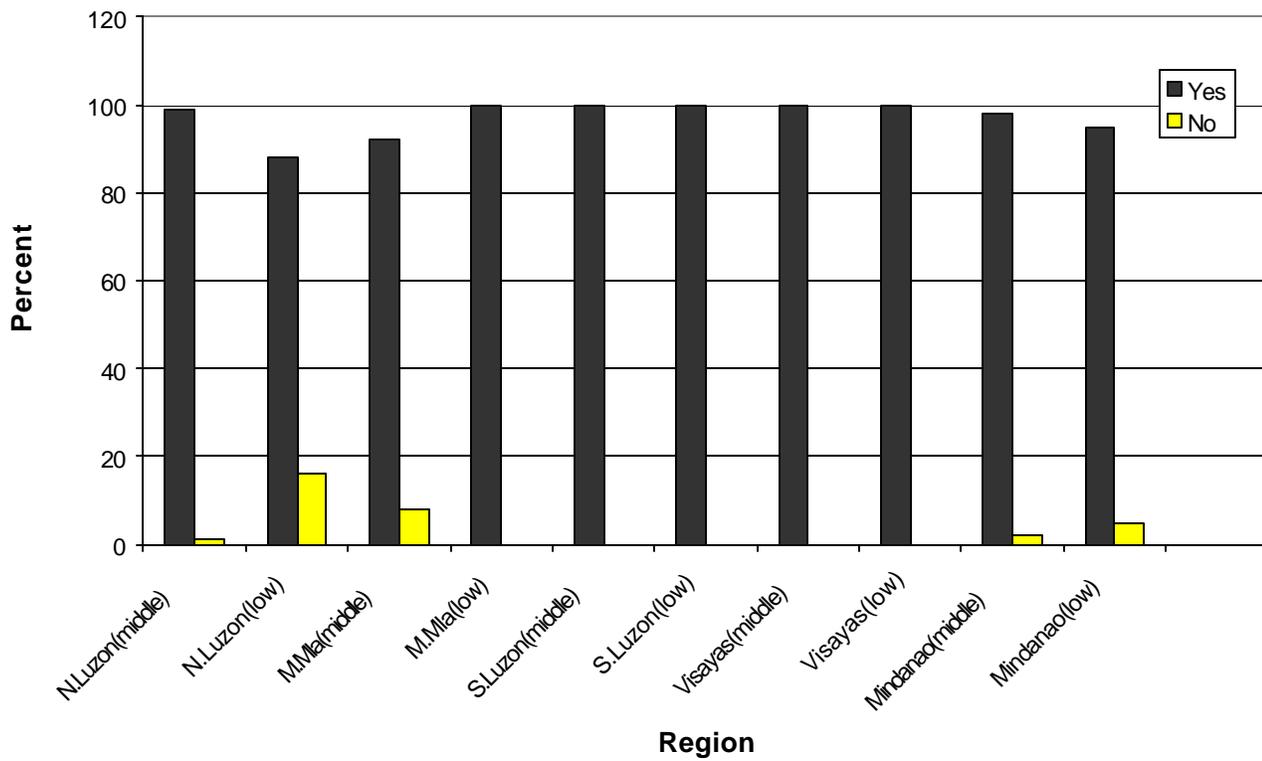


Fig. 19. Response of Filipino consumers in different regions on their awareness regarding vitamin-A fortified foods available in the market (N. Luzon and S. Luzon stands for Northern and Southern Luzon, respectively and M. Mla stands for Metro Manila).

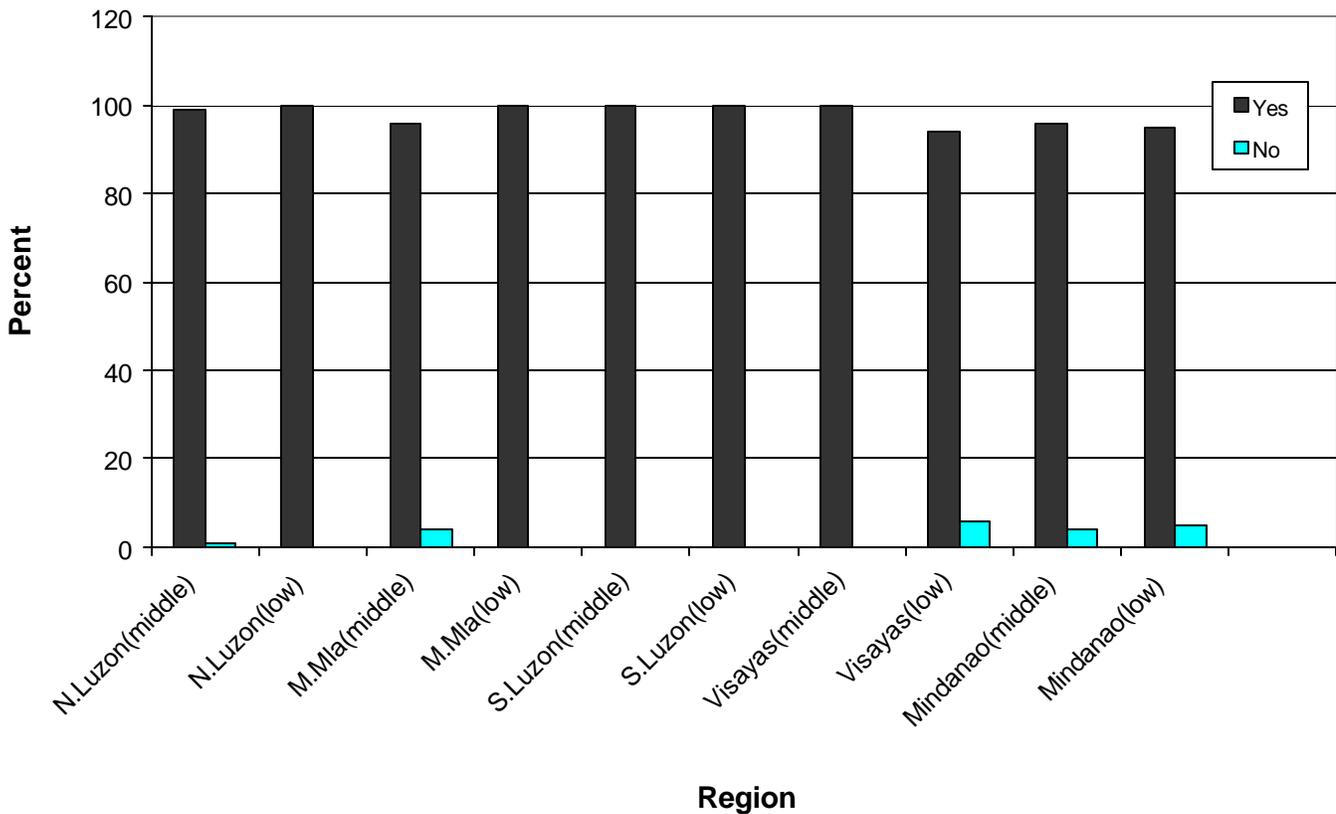


Fig. 20. Percentage of Filipino consumers in different regions who buy vitamin-A fortified foods (N. Luzon and S. Luzon stands for Northern and Southern Luzon, respectively and M. Mla stands for Metro Manila).

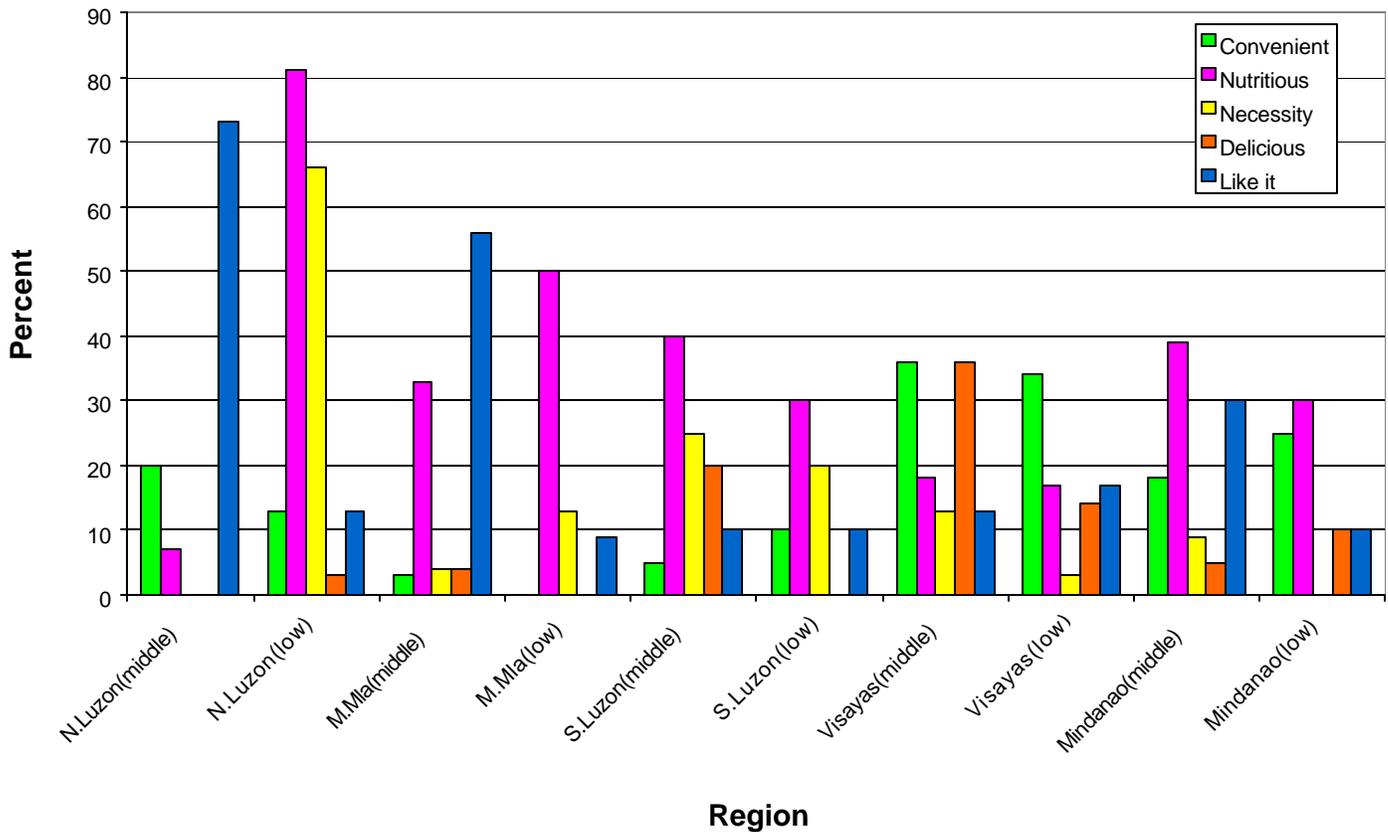


Fig. 21. Reason of Filipino consumers in different regions for buying vitamin A-fortified foods (N. Luzon and S. Luzon stands for Northern and Southern Luzon, respectively and M. Mla stands for Metro Manila).

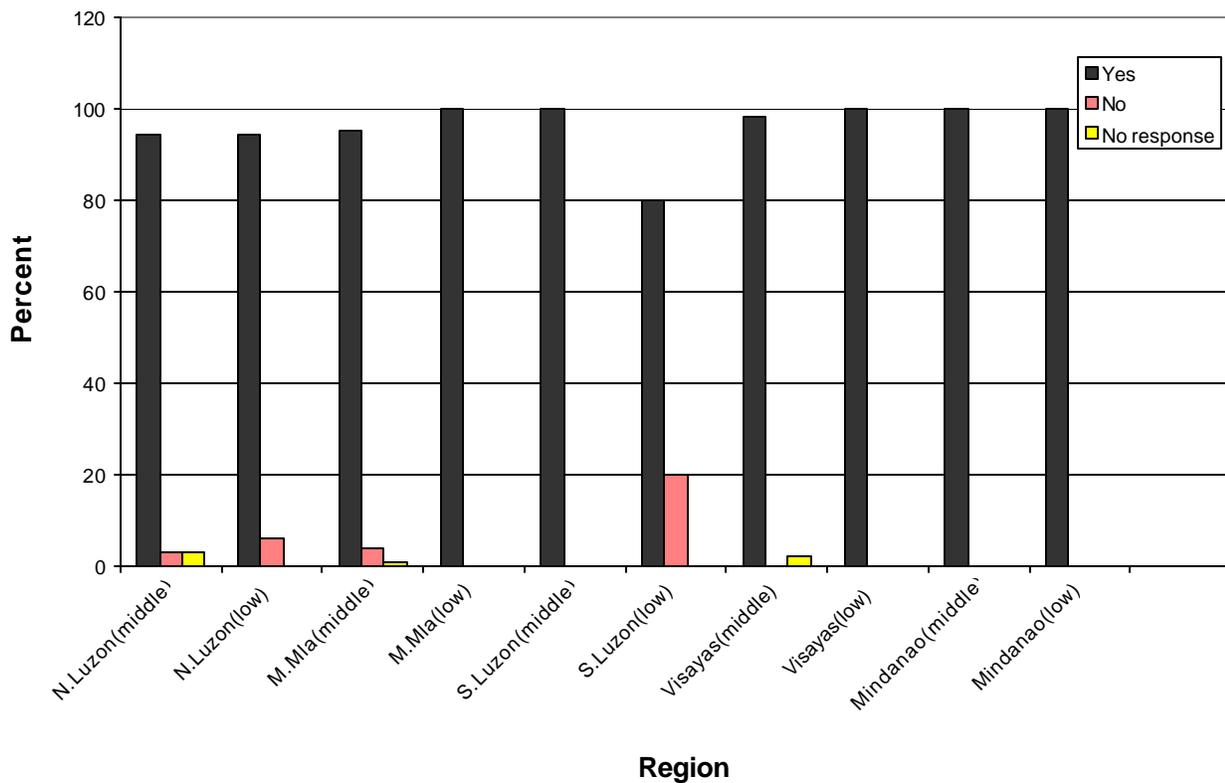


Fig. 22. Response of Filipino consumers in different regions if they would buy vitamin-A fortified peanut butter (N. Luzon and S. Luzon stands for Northern and Southern Luzon, respectively and M. Mla stands for Metro Manila).

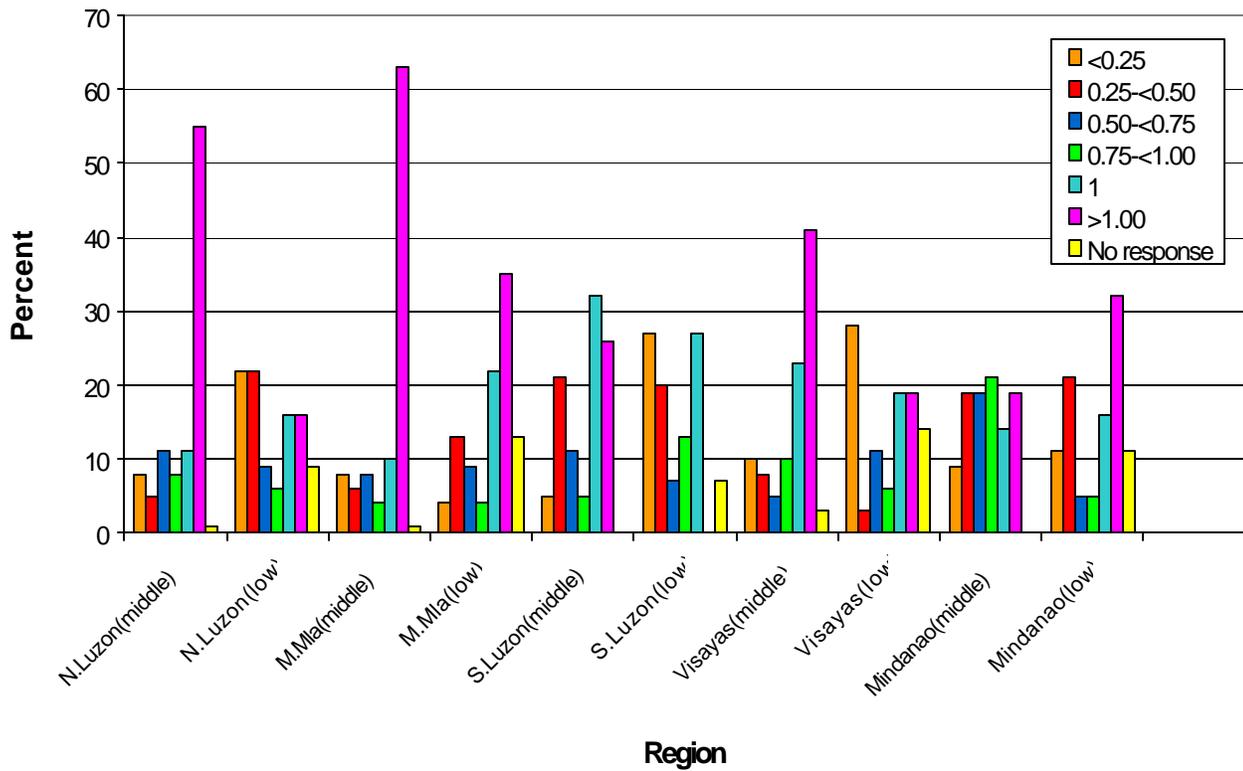


Fig. 23. Response of Filipino consumers in different regions on the additional price (PHP) they were willing to pay for vitamin-A fortified peanut butter (N. Luzon and S. Luzon stands for Northern and Southern Luzon, respectively and M. Mla stands for Metro Manila).

CONCLUSION

Results indicated that taste (sweetness), brand and cost/price of the product, were the major factors affecting the choice of Filipino consumers of what peanut butter to buy. These factors contribute to the popularity of the natural (unstabilized) or locally manufactured brands popular to consumers. However when presented with peanut butter samples, the respondents, in fact, preferred the stabilized or firm type of peanut butter to the natural peanut butter when presented with the peanut butter samples. Although color did not affect the choice of peanut butter to buy as much as the other factors did, Filipinos preferred the medium brown color of the natural peanut butter to the pale and dark brown colors. Filipino consumers would like to have additional flavor (specifically, chocolate flavor) in peanut butter and were willing to pay additional price (>PHP 1.00) for this. Filipino consumers were, in general, aware and knowledgeable about vitamin A and the presence of vitamin A-fortified products in the market. They purchase these products and indicated that they would buy vitamin A-fortified peanut butter when this is made available. Majority of the respondents (> 70%) was willing to pay more than PHP 0.25 with a large portion who were willing to pay more than PHP 1.00 additional price for vitamin A-fortified peanut butter.

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APPENDIX A

**QUESTIONNAIRE
USED IN THE SURVEY**

A Survey of Peanut Butter Consumption in the Philippines

Code No. _____
Area: _____
Interviewer: _____
Date: _____

Name (Pangalan) _____
Address (Tirahan) _____

I. General Background

1. Age (Edad): _____
2. Sex: Male (Lalaki) _____ Female (Babae) _____
3. What is your marital status? (Ikaw ba ay?)
Single (Binata/Dalaga) _____
Married (May Asawa) _____
Separated (Hiwalay) _____
Widowed (Biyudo/Biuda) _____
4. How many people in each group live in your household? Include yourself in the count (Ilan kayo sa bahay? Isama and inyong sarili sa bilang.)
0-3 years old _____ 40-49 _____
4-6 (taon) _____ 50-65 _____
7-12 _____ Over 65 _____
13-19 _____
20-39 _____ Total _____
5. What is your educational attainment? (Antas ng pag-aaral na natapos mo?)
Elementary _____ College _____
High School _____ Graduate School _____
Vocational _____ (M.S., PhD, Law, etc.)
6. Please check which one best applies to you: (Alin ang pinakaangkop sa iyo?)
Homemaker (Maybahay) _____
Employed full-time (May pirmihang trabaho) _____
Employed part-time (Hindi pirmihan) _____
Student (Estudyante) _____
Unemployed (Walang trabaho) _____
Retired (Retiro) _____
7. How many people in your household contribute to the household income? Include yourself in the count. (Ilan miyembro ng pamilya ang may suweldo? Isama ang iyong sarili sa bilang.)
 - a. Number of people employed full-time _____
(Bilang ng tao na may pirmihang trabaho)
 - b. Number of people employed part-time _____
(Bilang ng tao na hindi pirmihan ang trabaho)
 - c. Number of people with other sources of income _____
(Bilang ng tao na may pinagkakakitaan)

8. What is the total income of your family?
(Gaano ang kinikita ng inyong pamilya sa isang buwan?)
- Under P1,000.00 _____
P1,000-P4,999 _____
P5,000-P9,999 _____
P10,000-14,999 _____
P15,000-P20,000 _____
Over P20,000 _____(please specify)
9. How much does your household spend for food “per week”, not including money spent for meals eaten away from home? (Magkano ang ginagastos ninyo sa pagkain para sa isang linggong konsumo, hindi kasali sa gastos kung kumakain sa labas?) P_____.
10. How many persons eat their meals regularly in your home? Do not include visitors. (Ilang tao and pirmihang kumakain sa bahay ninyo? Huwag ibilang ang bisita.) _____persons.
11. Do you buy and cook the food in your household most of the time? (Ikaw ba ang laging namimili at nagluluto ng pagkain sa inyong bahay?)
Yes (Oo) _____ No (Hindi) _____
12. Person who buy and cook food most of the time is the- (Ang laging namimili at nagluluto ng pagkain ay ang-)
- Wife (Ina) _____ Helper (Katulong) _____
Husband (Ama) _____ Others, specify (Iba) _____
Child (Anak) _____
13. What do you consider important when buying food? (Ano ang importante sa iyo sa pagbili mo ng pagkain?)
- Nutrients
- Most important _____
Moderately important _____
Not important _____
No response _____
- Price
- Most important _____
Moderately important _____
Not important _____
No response _____
- Convenience
- Most important _____
Moderately important _____
Not important _____
No response _____
- Nutrients
- Most important _____
Not important _____
No response _____

14. How many times a month do you market for food? (Ilang beses kayo namamalengke sa loob ng isang buwan?) _____time (beses).
15. How many times a day do you eat, including snacks and meals? (Ilang beses ka kumakain sa isang araw, kasama ang meryenda?)_____times(beses)

II. Consumption of Peanut Butter

1. Do you buy peanut butter? Yes_____ No_____ (Bumibili ka ba ng peanut butter?)

2. How often do you buy peanut butter? (Gaano ka kadalas bumili ng peanut butter?)

- _____ Once a week
 _____ Once every two weeks
 _____ Once a month
 _____ Others (please specify)

3. What is the basis of your choice of peanut butter? (Ano ang basehan mo sa pagpili ng peanut butter?)

- _____ brand _____ taste _____ texture
 _____ price _____ color _____ others

4. What brand do you usually buy? (Anong klase at tatak ang binibili mo?)

_____local(pls. Specify) _____imported(pls. Specify)

Why?_____

5. Who among the members of the family eat peanut butter? Please rank these members with 1=the one who eats the largest amount to 10= the one who eats smallest amount. Please specify amount.

Family Member	Rank	Approximate amount eaten 1= less than one tablespoon 2= one tablespoon 3= more than one tablespoon (please specify)
Mother		
Father		
Children: 20 and above		
13-19		
7-12		
1-6		
Others (pls specify)		

6. How do you eat peanut butter? Please check all that applies.

1=by itself	
2= with something (please specify)	
Bread	
Rootcrops	
Banana	
Others (please specify)	

III. Peanut Butter Preferences

1. What kind of peanut butter do you prefer? (Anong klase ng peanut butter ang gusto mo?)

_____ flowing (malabnaw) _____ firm

Why?

- _____ Spreadability
- _____ Flavor
- _____ Taste
- _____ Sweetness
- _____ Color
- _____ Others (please specify)

If you prefer natural, please proceed to No.2
 If you prefer firm peanut butter, please proceed to No. 3

2. What kind of peanut butter do you prefer (Ano ang mas gusto mo?)

- _____ One where you can see the oil on top
- _____ One without oil on top

2.1 Do you look for oil layer in a peanut butter product? (Hinahanap mo ba ang langis sa ibabaw ng peanut butter sa pagpili mo ng produkto?)

_____ Yes _____ No

2.2 If you see oil layer in the peanut butter, what do you do with it?
 (Kung may nakikita kang langis sa ibabaw ng peanut butter, ano ang ginagawa mo dito?)

- _____ Mix the oil with the peanut butter
- _____ Remove a little oil
- _____ Throw the oil
- _____ Others, pls. Specify

2.3 If oil layer is present in peanut butter, how would you comment on it?
(Ano ang masasabi mo sa peanut butter na may langis sa ibabaw at bakit?)

Desirable, because _____

Undesirable, because _____

2.4 How much oil is present in peanut butter for you to consider it unacceptable?
(Gaano kadaming langis ang nasa peanut butter para ito ay maituring mong hindi katanggap-tanggap?) _____

3. How do you want the texture of your peanut butter? (Ano ang gusto mong tekstura ng peanut butter?)

_____ Smooth and creamy _____ Chunky

4. Do you want your peanut butter to have flavor? (Gusto mo bang ang peanut butter ay may dagdag na lasa or flavor?)

_____ Yes _____ No

4.1 If yes, what flavors have you tried? (Kung Oo, anong mga flavor ang nasubukan mo na?)

_____ Chocolate
_____ Jelly
_____ Others, pls. specify

5. Will you buy flavored peanut butter if the price is increased? (Bibili ba kayo ng peanut butter na may dagdag na lasa kung ang presyo ay mas mataas?)

_____ Yes _____ No

If yes, How much more will you be willing to pay?

- a. _____ ₱0.25 or less
- b. _____ >₱0.25 but <₱0.50
- c. _____ >₱0.50 but <₱0.75
- d. _____ >₱0.75 but <₱1.00
- e. _____ ₱1.00
- f. _____ >₱1.00

IV. Awareness/Knowledge of Vitamin A Fortification

1. What do you know about Vitamin A?
(Ano ang inyong kaalaman tungkol sa Vit.A?)

2. Are you aware of the Vit. A-fortified foods in the market like instant noodles and Star Margarin? (Alam ba ninyo na marami ng pagkain ang dinadagan ng Vit. A tulad ng instant noodles at Star margarine?)_____
3. Do you buy the products mentioned in #2 above? (Bumibili ba kayo ng mga produktong nabanggit sa #2)? Yes ____ No_____
4. Will you buy Vitamin A-fortified peanut butter? (Kung ang peanut butter ay dadagdagan din ng Vitamin A, bibilhin n'yo pa ba ito?)Yes____ No_____
5. Will you buy Vitamin A-fortified peanut butter if the price is increased? (Bibili ba kayo ng peanut butter na may dagdag na Vitamin A kung ang presyo ay mas mataas?)

Yes_____ No_____

If yes, How much more will be willing to pay?

- a. _____P0.25 or less
- b. _____>P0.25 but<P0.50
- c. _____>P0.50 but<P0.75
- d. _____>P0.75 but<P1.00
- e. _____P1.00
- f. _____>P1.00

MARAMING SALAMAT PO.