Research article

Ecology Journal

ISSN (Print): 2957-4471, ISSN (Online): 2957-448X, Website: https://journal.esbangladesh.org
Ecol. J. (2024) 6 (2) : 129-139

Value chain and consumer acceptance analysis of different types of cooking oil in Bangladesh

Mohammad Moziball Hoque[1], Rinki Akter[1] and Md. Abdul Karim*[2]

[1]Solidaridad Network Asia, House # 32, Road 10A, Dhanmondi, Dhaka 1209, Bangladesh; [2]College of Agricultural Sciences, International University of Business Agriculture and Technology, Uttara Model Town, Dhaka, Bangladesh

Corresponding email: akarim1506@gmail.com

Received: 10 October 2024, revised: 22 October 204, accepted: 14 November 2024, DOI: https: //doi.org/10.59619/ej.6.2.2

Abstract

The present study explored the potential of regional linkage among oil seed producers, retailers, wholesalers, crushers and consumers, with a particular focus on the production, processing and market systems in the major oilseeds production regions, like Thakurgaon, Dinajpur and Tangail districts of Bangladesh. The key stakeholders of soybean include producers (farmers), input suppliers (such as agro-dealers and corporation), assemblers, collectors, wholesalers, processors and exporters. Farmers typically get inputs, like seeds, pesticides and fertilizers from agro-dealers, corporation or fellow farmers. The oil quality is the most important factor for the majority respondents (60), while 58 consumers expressed the brand name as the key indicator of preference. Some consumers opined that both quality and brand are important in selecting cooking oil. Nearly all consumers used a combination of soybean oil and mustard oil, with a few incorporating olive oil and sunflower oil into their diets. The majority oil users consumed approximately one liter per month, followed by those used half a liter. A significant portion of the households consume up to 2 liters per month. In contrast, soybean oil consumption was significantly higher, with many households use more than 5 liters per month. About 61% of the respondents revealed the health benefits as the main reason for choosing mustard oil. Additionally, 20% of the consumers mentioned the organic nature of mustard oil as the key factor of their selection, while many noted that it enhanced the taste of food. The majority of the respondents prioritized the quality of the product above all other factors, including brand preference. While 50% of the respondents preferred to stick to a single brand, relying on the established credibility and quality of the product, the other 50% frequently switched to different brands. Price plays a significant role, as many consumers select a brand on affordability. When selecting of an oil brand, consumers prioritize company reputation. The mustard oil market varied from 270 BDT/liter to 400 BDT/ liter with an average price of 285- 290 BDT/ liter during the study period in 2024. Half of the consumers thought that the mustard oil price is exorbitant to afford for the commoners.

Keywords: Value chain, retailer, consumer, wholesaler

Introduction

Edible oil is an indispensable component of balanced diet of human being. It is considered as a vital source of energy (Chowdhury *et al.* 2007). The daily recommended oil intake per person is 6 gm for a diet 2700 kcal (Islam *et al.* 2021). Oilseeds are also widely used by people for health benefits, generating income and employment opportunities. The commonly grown oilseeds in Bangladesh are rapeseed mustard, soybean, sesame, sunflower and peanut (Miah and Mondal 2017, USDA 2023). The rapeseed and mustard, collectively known as mustard, account for more than 60% of the nation's total oilseed production (Sarkar *et al*. 2020). The second main crop used to make oil in Bangladesh is soybean. It is an outstanding source of protein, isoflavones, lecithin, and polysaccharides, as well as oil, protein, vitamins, and minerals that are necessary for human function (Islam 2019).

Mustard producers connect to value chains by gaining access to both short and long term credit, which enables them to improve production efficiency and reduce the risks associated with asset loss and financial insecurity. This financial strength made the producers competitive in the market (Shah and Devkota 2024). Dalipagic *et al*. (2014) defined value chain as the complete set of activities necessary to bring a product or service from its origin to the end customers. Though mustard and soybean are important oilseeds in Bangladesh and the cooking oil market is enormously big, study related with value chain analysis is limited. Solidaridad Network Asia

(SNA), an international development organization has been working with oilseed crops, especially soybean since 2017. SNA undertook a comprehensive study in Bangladesh to understand further the value chain mechanisms of mustard and soybean cooking oils. It is envisaged that the information will help to strengthen inter-linkages among different stakeholders of mustard oil and soybean oil.

Methodology

Study area selection and sampling technique: The study areas were selected three important oilseeds growing areas like Dinajpur (Birgonj upazilla), Tangail (Sadar upazilla), and Thakurgaon (Baliadanga upazilla; and Sadar upazilla) districts.

The study on oil seeds collection was carried out using multiple techniques including collecting primary data through survey questionnaires and conducting Key Informant Interview (KII) and Focus Group Discussions (FGD) with farmers along with a wide range of other relevant stakeholders.

Filed test of the primary survey: On the first day of the field visit there was a field test conducted to assess the feasibility and accuracy of the research tools towards collecting relevant and required data. Following the tools testing necessary changes were made in the survey questionnaire.

Desk research: Desk research was carried out on a regular basis following a list of relevant documents. The policy anatomy was considered with a view to exploring the policy support provisions and challenges/policy barriers in relation to oil seeds cultivation and throughout the complete value chain. The primary aim was to explore the supportive and challenging aspects as well as scope and opportunities in relation to oilseeds production to marketing.

To address different aspects and acquire relevant knowledge and information, the participants were selected from a wide range of stakeholders' groups. For conducting K-II, a semi-structured questionnaire as a tool was used. The semi-structured format was considered keeping provision of flexibility to ask probes and more relevant questions as when required to serve the specific purpose of conducting that particular K-II. Altogether 24 K-II and 100 FGDs were conducted.

Data collection methods: The study followed a mixed approach including both quantitative and qualitative methods. Desk research was carried out on a regular basis following a list of relevant documents. The policy anatomy was considered with a view to exploring the policy support provisions and challenges/policy barriers in relation to oilseeds cultivation to end uses.

The Research Assistants who got engaged in collecting data from the fields were trained on the tools after finalizing the survey.

Results and discussion

Mustard value chain description: Figure 1 describes that farmers in Thakurgaon and Dinajpur use mustard seeds from different companies, including some local companies like Salam Seed and Malik Seed. Most of them mentioned that they use BARI sorisha-14 variety for mustard oilseeds production. They purchase seeds from company, and seeds of Ispahani Seed Company are popular among the farmers. In Tangail Sadar the farmers collect mustard seeds from Bangladesh Agricultural Development Corporation (BADC).

After harvesting the crop, small traders known as Faria/ Chatia collect the seeds from the farmers and sell it to the larger traders, referred to as Bepari/Arotders. Occasionally, some farmers directly sell their produced crops to larger traders, though this practice is less common due to transportation issues. The regional processors, such as mustard crushing mill owners, then procure mustard from the large traders for further processing. Not only regional processors, but national level processors like Radhuni and Pran also collect mustard seeds from the Arotders (large traders). After processing, the regional and national level traders market their packaged products to retailers under various brandings. These products then make their way to the end consumers through the retail distribution channels. Some well-known seed companies such as ACI Seeds Bangladesh, Lal Teer Seed Limited, BRAC Seed and Agro Enterprise, Supreme Seed Company Limited, Krishibid Seed Limited and Pioneer Seed Company Ltd, etc. closely involved in mustard and soybean oil market.

Major importers of mustard oil: The major mustard oil companies involved in oil production and sell are Partex Star Group, Bangladesh Edible Oil Ltd., Pran Foods Ltd., Wilmar International and City Group.

Soybean value chain description: From Figure 2 it is found that there are different actors in the soybean oil value chain, such as producers, input suppliers, assemblers, collectors, wholesalers, processors, retailers, exporters or large corporations and NGOs. The farmers produce oil seeds through purchasing inputs like seed, pesticides, and fertilizers from agro-dealers as well as from large corporations. Sometimes smallholder farmers also take inputs from the fellow farmers. Five groups basically buy seeds from the farmers and they are enterprises, medium-scale traders, village level assemblers, large wholesalers and big companies. Big companies basically buy from farmers through contract farming with a buyback guarantee system. Small scale or village level assemblers sell the collected seeds to the large wholesalers, who sell it to the animal feed or oil processing companies. Finally the

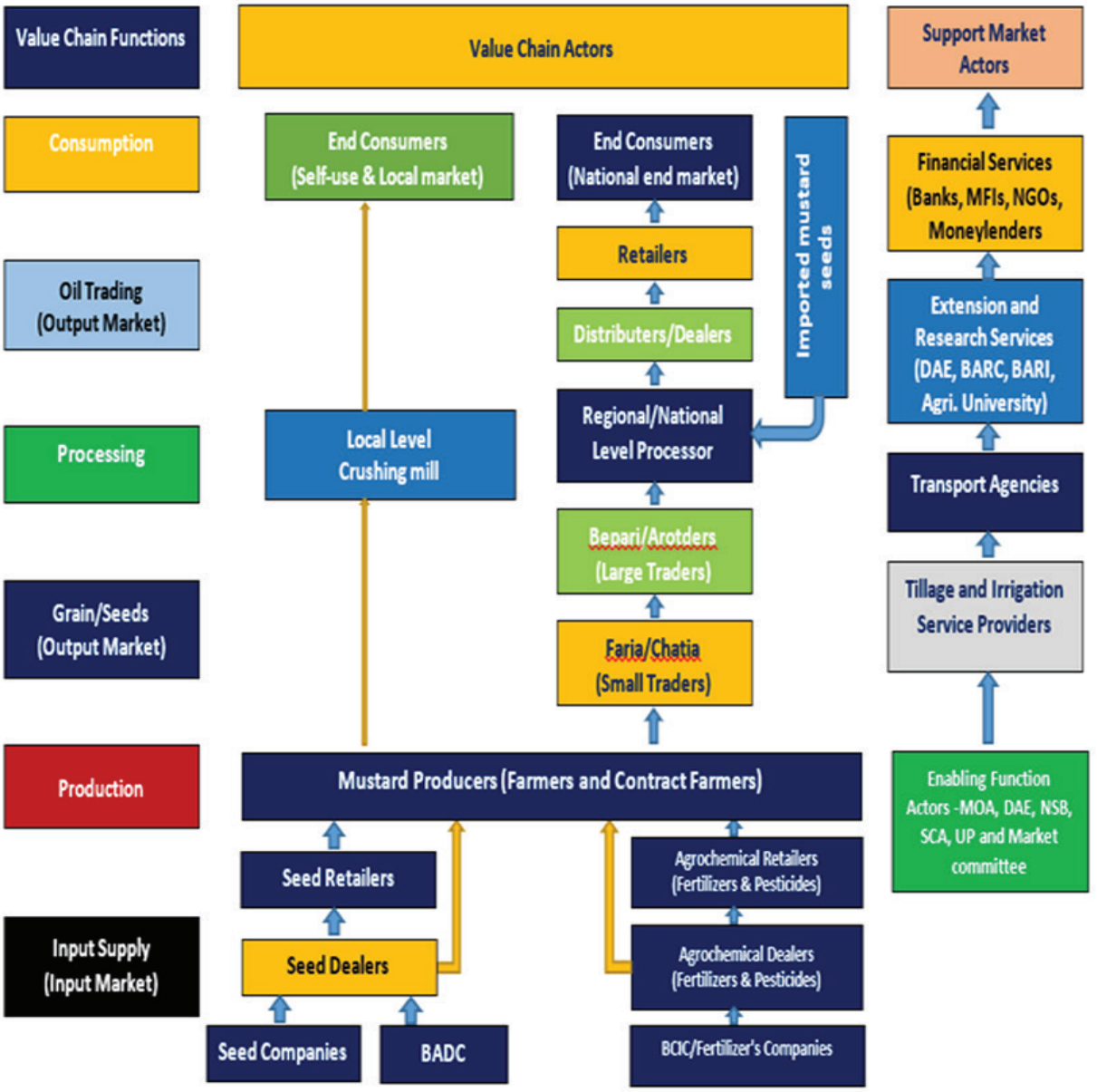


Figure 1. Schematic diagram of value chain of mustard seed in Bangladesh.

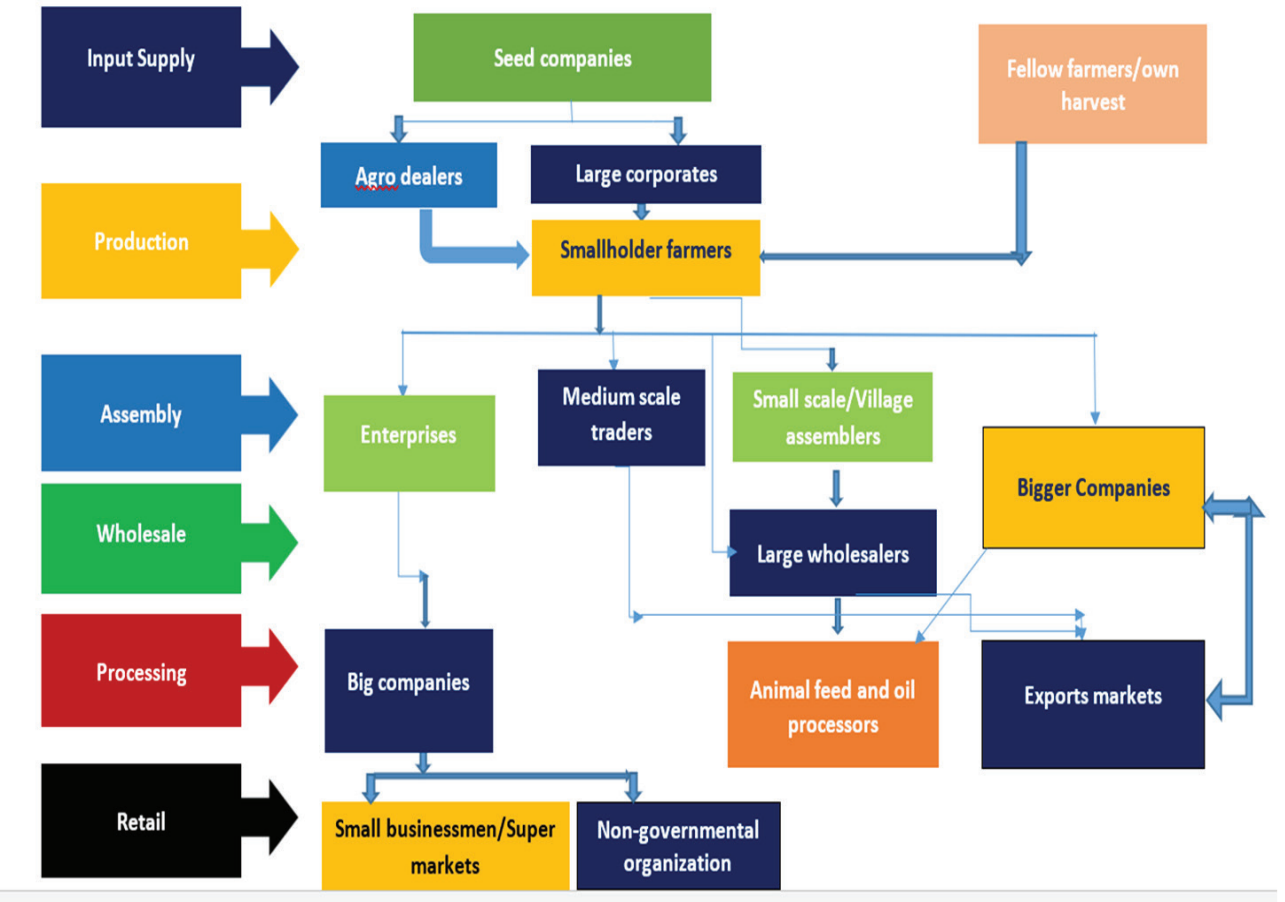


Figure 2. Schematic diagram of value chain of soybean seed in Bangladesh.

large companies go for exporting as well as supply the oils to the super markets or small business enterprises.

Consideration while buying edible oil: The participants were asked the question about their preferred indicators while buying edible oil from the market. Figure 3 indicates that out of 100 consumers, 60 respondents considered the quality of the oil, while 58 respondents preferred the brand name. Many respondents consider both quality and brand for their choice of cooking oil. Thus, the total count is more than hundred here. However, the understanding to

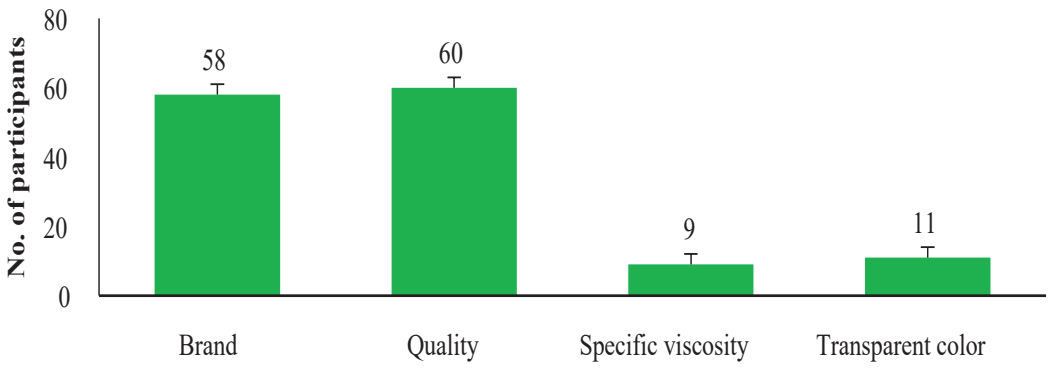


Figure 3. Customers' consideration while buying edible oil.

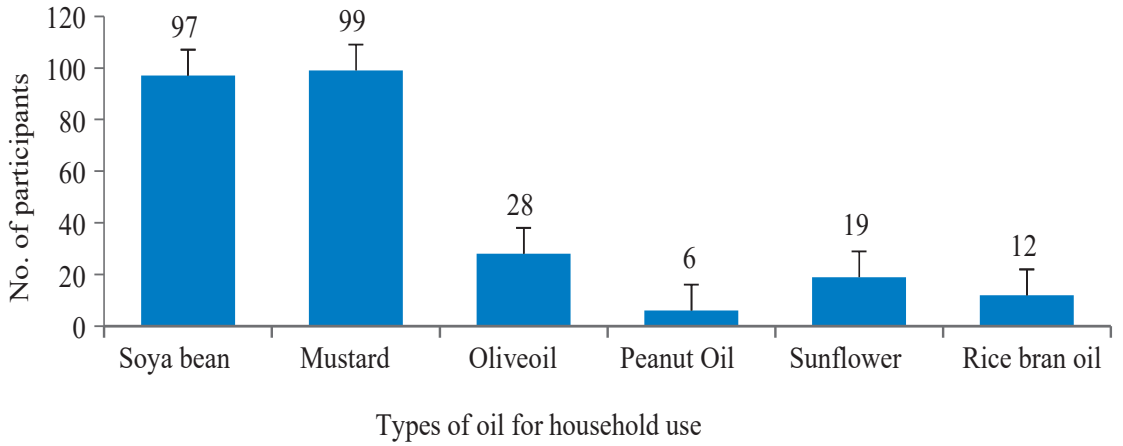


Figure 4. Types of edible oil used by the consumers.

the consumers for both quality and brand is almost equally important, while 11 consumers also added that color is an issue to them.

Types of oil used by the consumers: Figure 4 reflects about the types of edible oil that the households prefer to use. It was found that almost all consumers use both soybean and mustard oil in their kitchens. There are also a considerable percentage of consumers who use olive oil and sunflower oil. Rice bran oil is also used by a few numbers of consumers, such as 12 households out of 100 families. Thus, it is well understood that the market demand is mostly for mustard oil and soybean oil, though some consumers started to using sunflower oil.

Purpose of using mustard oil: Since the study was focused on the use of mustard and soybean oil, it was learned that soybean oil is used only for cooking purpose, while mustard oil has multiple uses. The uses of mustard oil as the respondents reply is shown in Figure 5.

Amount of mustard and soybean oils use monthly/ household: The data reveals that the majority of mustard oil users (in 100 households) consume one liter per month, followed by those who use half a liter per month. A significant number of households consume 2 liters per month. On the other hand, most households consume more than 5 liters soybean oil per month. The difference in boiling point between mustard and soybean oils can be one of the significant factors for comparative higher volume requirement of soybean oil. According to Hasan *et al*. (2016), the best edible oils have a relatively high boiling point and a low peroxide value, and low quantities of free fatty acids.

The Figure 6 represents the monthly usage of mustard and soybean oil among the 100 surveyed households,

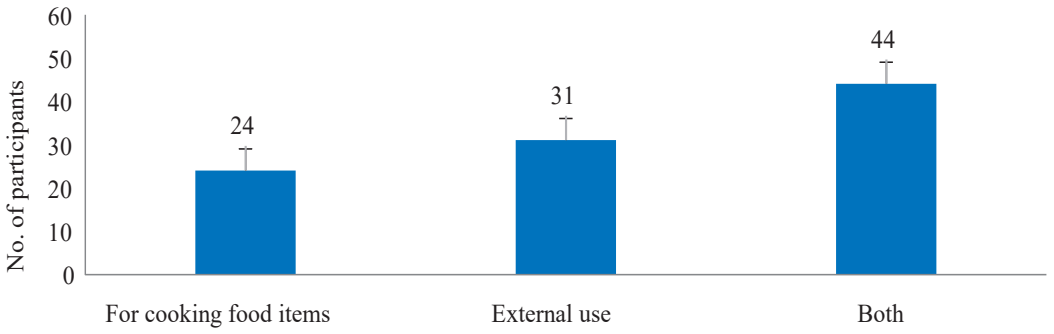


Figure 5. Uses of mustard oil.

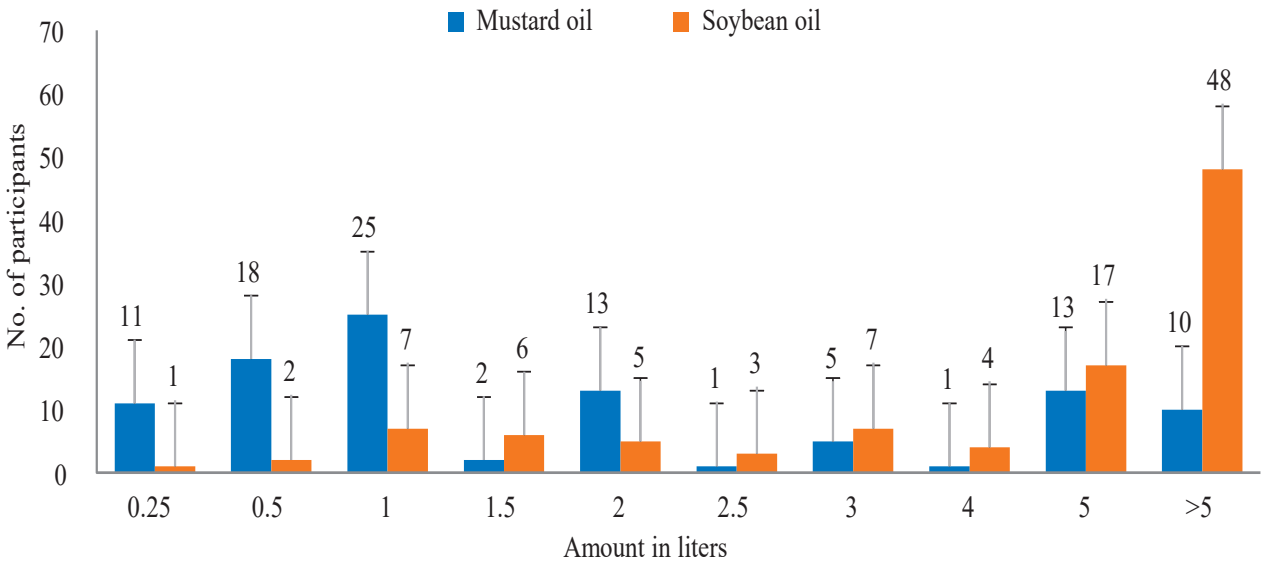


Figure 6. Amount of mustard and soybean oil monthly used by the consumers.

with one respondent not using mustard oil. This data provides valuable insights into the oil consumption habits of the surveyed households and highlights the prevailing trends in oil usage within the community. Further, the consumers were asked to learn whether their use of mustard oil was increasing or not. In response, 70 % of households shared that it was almost the same amount that they were using monthly for at least last year, while 30 % of the respondents shared that their use is increasing.

Motivation or reasons for using mustard oil: In response to the question about the reasons for using mustard oil, 61% respondents opined the health benefit was their consideration, while 20% opined the organic nature of mustard oil. The rest respondents replied that the good taste was their preference of using mustard oil (Figure 7).

In response to the question about whether any health problem facing for using mustard oil or soybean oil,

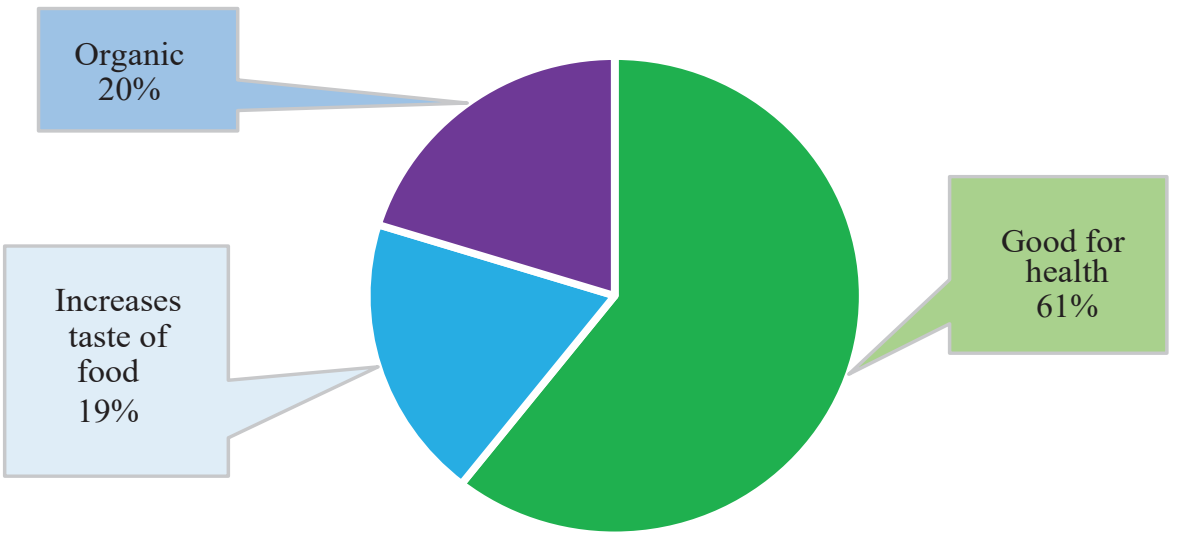


Figure 7. Reasons of using mustard oil by the consumers.

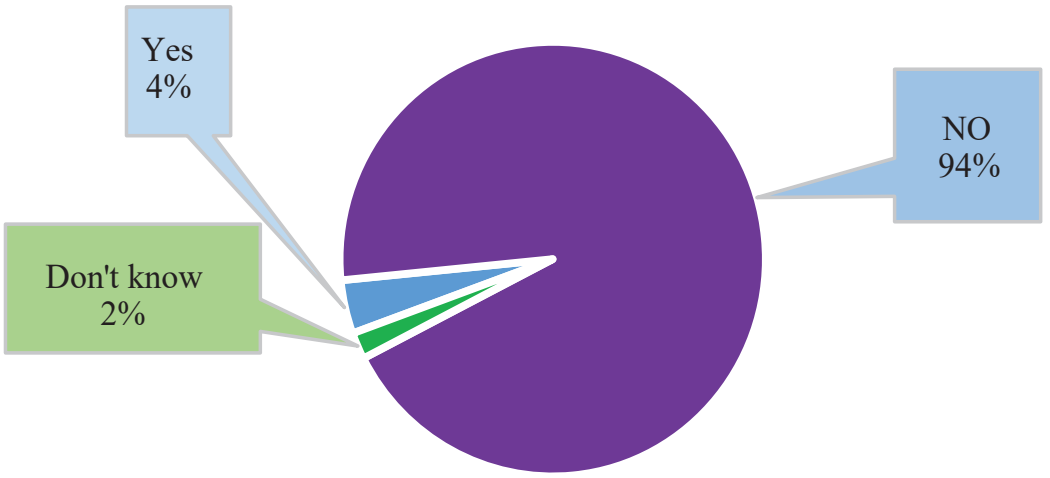


Figure 8. Respondents on facing problems for using mustard or soybean oil.

most of the participants (94%) opined that they did not face any problem with using mustard oil or soybean oil, though 4% said they had a problem and 2% had no idea (Figure 8).

Factors that influence brand preference: Figure 9 reflects the opinion of the respondents on the considerations for selecting the brand of the mustard and soybean oils. Most of them (69%) opined that quality is the preference for selecting the brand. However, few of them also said that they also consider the trust and confidence in the brand value of the company.

Choices for a single company or multiple companies: Figure 10 shows the ratio of single or multiple brands for using cooking oils by the respondents. It was found that 50:50 ratio of using single and multiple brands of cooking oil.

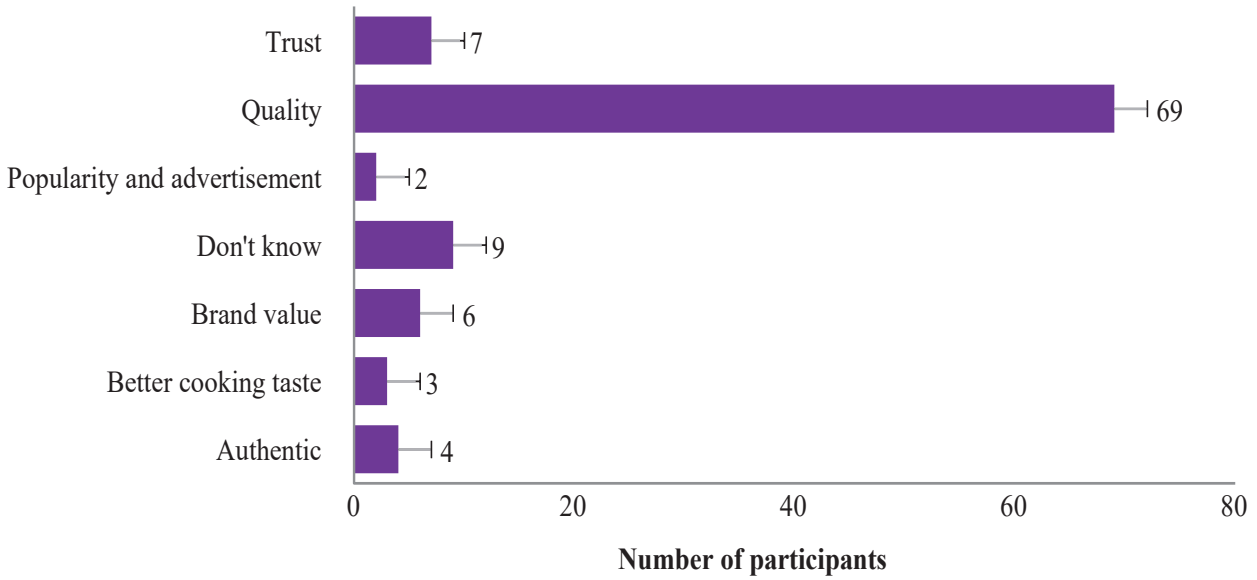


Figure 9. Factors those consumers consider for brand preference.

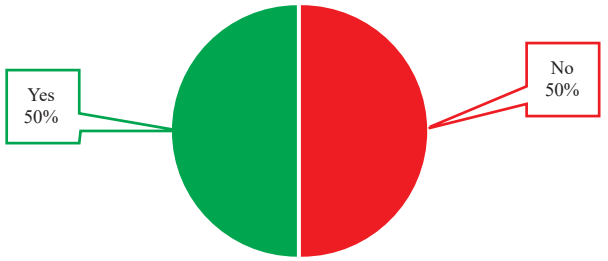


Figure 10. Choice the product of a single or multiple company.

However, Figure 11 revealed that the consumers have considered quality as an influencing factor to decide the product. However, the consumers also considered price of the product to select the brand of oil. Among the 50% participants who had the preference of a single brand opined that the less price is one of the fundamental considerations of choosing any company product. Not only the price, consumers also considered regular supply of the product, good color and odor in selecting oil.

The consumers also added less price, trust about quality, availability of the product, color and odor are the considerable factors to choose the oil brand shown in figure 12.

It was learned that most of the consumers buy oil from the shop (Figure 13), while there is a new trend that many of the consumers also buying oil either directly from the mills or from the small entrepreneurs. Some of them also directly go to the small mill and buy the oil directly. The Figure 13 reveals the number of consumers based on the source of purchasing their cooking oil.

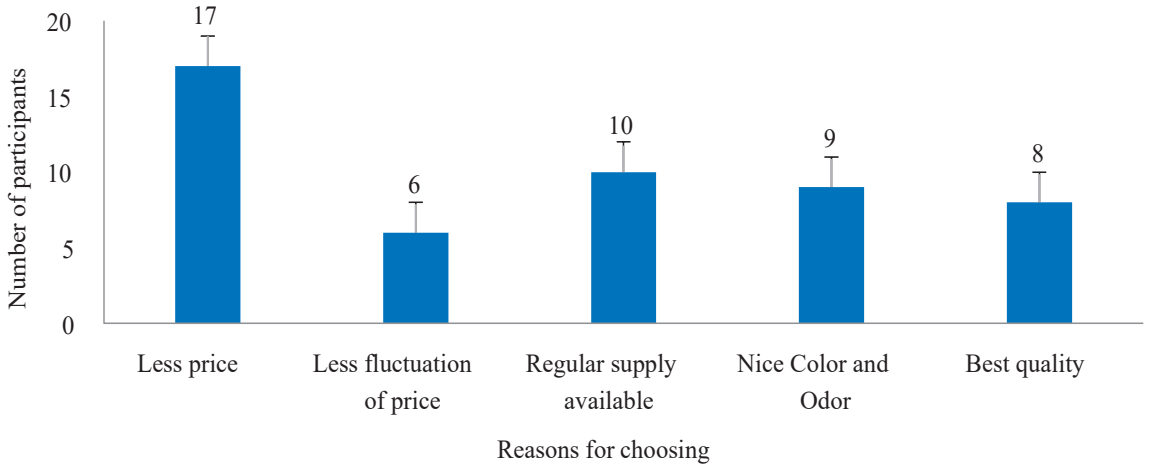


Figure 11. Reasons the consumers' preference a particular company's product.



Figure 12. Factors those consumers consider for selecting oil brand.

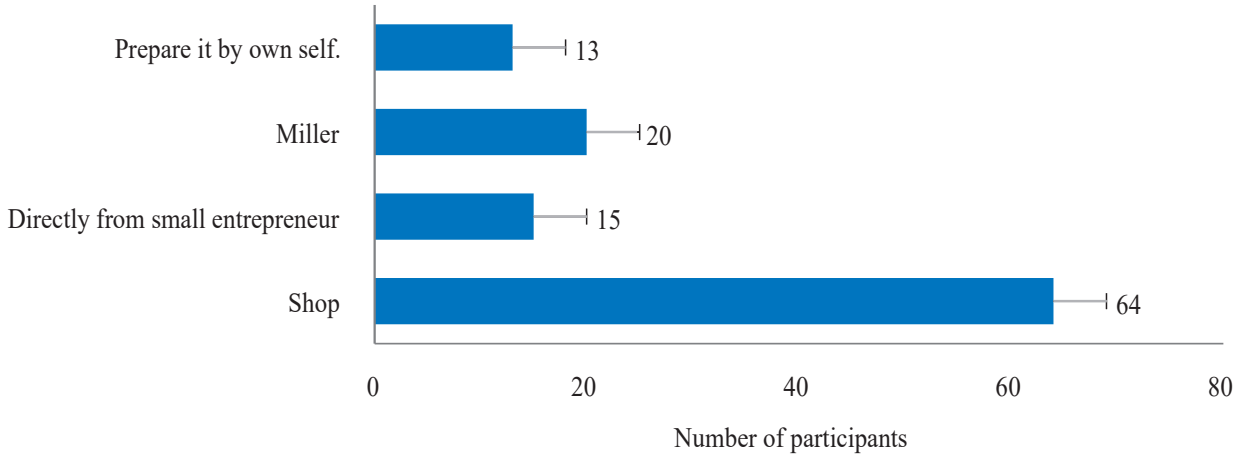


Figure 13. Source from where consumers buy oil.

Different brands and pricing of mustard oil: There are more than hundred branded mustard oils in the market and accordingly the price range also varied, ranging from 270 BDT/liter to 400 BDT/liter. However, the average price of per liter mustard oil in the market was 285 -290 BDT/liter. The most sold mustard oil brands are: Radhuni, Suresh, Telghor, Grammen Jibon, Desh, Khaas food, Fresh, Acme, Rokomari food, Panash, Ifad, Nababi, Pran, Soul and Rochon. Out of all these brands, the price of Nababi's per liter mustard oil is 400 BDT/liter. In relation to price reasoning, almost 50% consumers opined that the price per liter of mustard oil was very high and they did not think that the price was reasonable. The consumers also shared the opinion that the price of mustard oil was almost double than that of soybeans oil which was also a reason for not using mustard solely for cooking. They further opined that the price should be less than that of the soybean oil as mustard seed is produced in the country. The consumers opined that the price of mustard oil should be within 230 BDT/liter.

Brand preference for soybean oil in Bangladesh: Many companies in Bangladesh have established their own distinct soybean oil brands, such as Teer (City Group), Fresh (Meghna Group), Muskan (SA Group), Pusti (TK Group), and Rupchanda (Bangladesh Edible Oil Limited). Figure 15 revealed the participants preferences regarding the branded soybean oil.

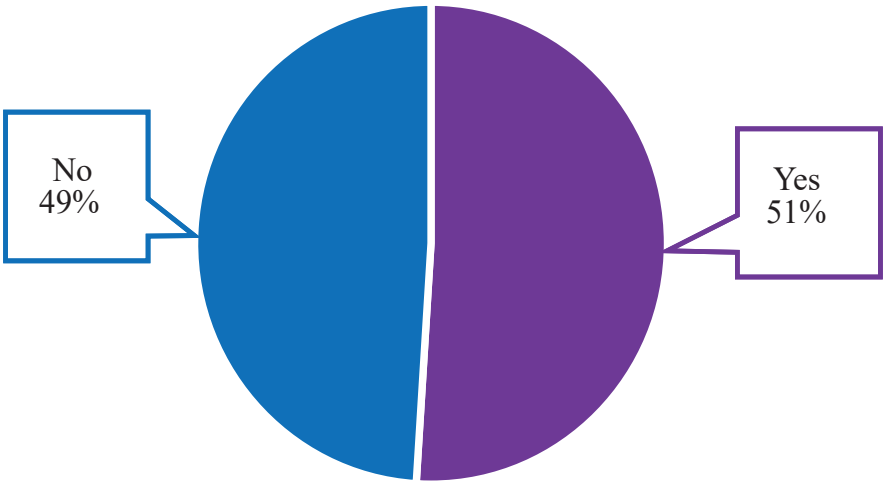


Figure 14. Consumers perception about price of mustard oil.

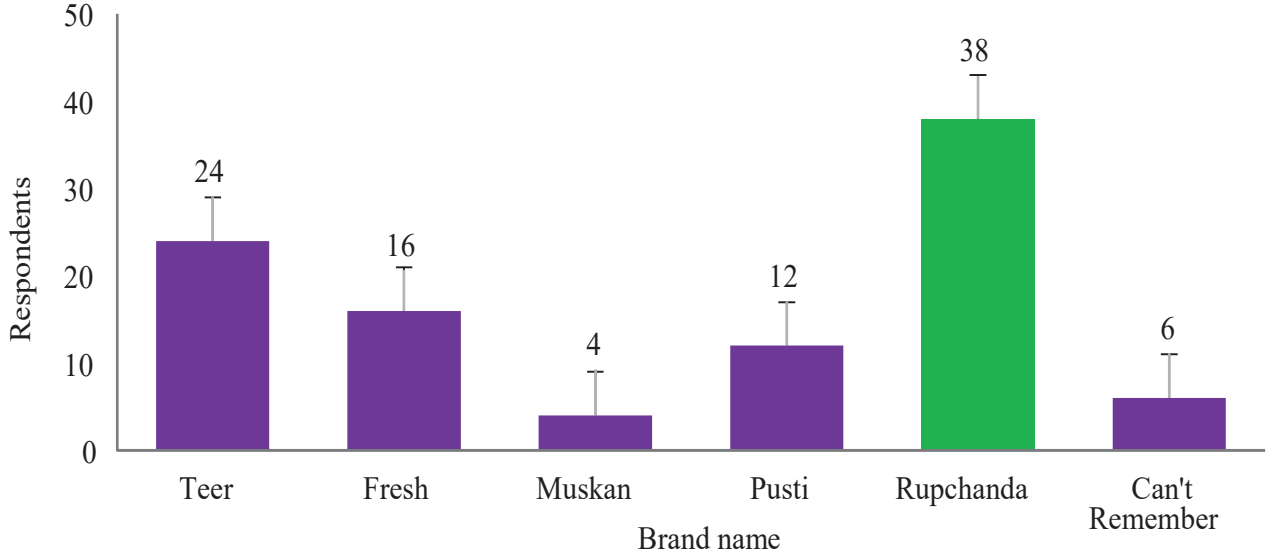


Figure 15. Brand preferences for soybean oil in Bangladesh.

Rupchanda was the most widely used soybean oil brand in the market, exhibiting unmatched popularity. About 38 respondents chose Rupchanda among 100 participants, 24 people chose Teer, 16 people Fresh, and 12 people Pusti brand soybean oil. Six individuals were unable to recall the brand they currently use and 4 chose Muskan. According to the respondents, many new brands are entering in the market. This influx occasionally leaves consumers struggling to find their preferred brands. Considering these findings, it was evident that effective advertising like Rupchanda holds immense potential to capture a larger share of the soybean oil market. The data underscored the importance of brand awareness and visibility in influencing consumer choices and gaining a competitive edge in this thriving market.

Conclusion

The study was conducted to find out the value chain mechanisms of mustard and soybean cooking oils through undertaking FGDs and KII involving consumers and related stakeholders including farmers, processors, retailers and general consumers. The findings revealed that oil quality and brand reputation are the primary factors that influence the consumer choices of the cooking oil. In addition affordable price and health consciousness also play a role on selecting the oils. Reputed brands like Rupchanda, Teer, Fresh and Pusti are dominating the markets. About 70% of households shared that it was almost the same amount that they were using monthly for at least last year, while 30 % of the respondents shared that their use is increasing. The majority respondents opined that mustard oil price is exorbitant for the general consumers.

References

Chowdhury K, Banu LA, Khan S and Latif A. 2007. Studies on the fatty acid composition of edible oil. Bangladesh Journal of Scientific and Industrial Research. FAOSTAT. 42: *311-316*. http://www.fao.org.

Dalipagic I and Elepu G. 2014. Agricultural value chain analysis in northern Uganda: Maize, rice, groundnuts, sunflower and sesame. Action Against Hunger (ACF) International.

Hasan MS, Jahan R, Alam MA, Khatun M and Al-Reza SM. 2016. Study on physicochemical properties of edible oils available in the Bangladeshi local market. Archives of Current Research International. 6: 1-6.

Islam M and Khatun H. 2021. Problems and prospects of soybean production in Bangladesh. Annals of Bangladesh Agriculture. 252: 97-104.

Islam MR. 2019. Analysis of genotypic variation in photo- and thermo-sensitivities in soybean (*Glycine max* (L.) *Merrill*) adaptable to tropical Areas. Kagoshima University, P. 616.

Miah MAM, and Mondal MRI. 2017. Oilseeds sector of Bangladesh: challenges and opportunities. SAARC Journal of Agriculture. 15: 161-172.

Precedence Research. Oilseed Market Size, Growth, Trends, Report. 2024-2033. https://www.precedenceresearch.com/oilseed-market.

Sarkar MMA, Rahman MH, Haque MR, Islam S and Sultana R. 2020. An economic study of the oilseed mustard variety Binasarisha-4 Production in Some Selected Areas of Bangladesh. DOI:10.36348/sjef.2020.v04i11.001.

Shah S, and Devkota N. 2024. Analysis of mustard oil value chain in province 2 of Nepal: evidence from logistic regression. Quest Journal of Management and Social Sciences. 6: 338-359.

USDA. 2023. Oilseeds and products. United States Department of Agriculture. Foreign Agricultural Service. Dhaka. Bangladesh. https://apps.fas.usda.gov/.