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Research Article

Millet Purchase and Consumption Behaviour- Exploratory Evidence from Southern India

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Abstract: *Millets have been considered to be noble grain since time immemorial. During the evolution of humankind, the popularity, purchase and consumption pattern of millets has seen several transitions. In this context, the present study aimed to understand millet purchase and consumption behaviour in the Southern Indian context. Using a structured online questionnaire, data were collected from the respondents above 18 years of age and involved in the purchase or consumption of millet at least once. Insights on purchase decision makers of millets, purchase outlet of millets, frequency of purchase, money spent on millets purchase, most preferred millet types, frequency of cooking millets at home, preferred meal period to consume millets, cuisine preference to cook millets and the main reason for consuming or purchase millets is reported. The results reported in the study will be beneficial for millet marketers, retailers and other millet-promoting organizations to understand the purchase and consumption behaviour and take actions that will be mutually valuable.*

Keywords: *Millets, Purchase, Consumption, Southern India, Habits, Behaviour, Selection, Consumer.*

I. INTRODUCTION

Millets are good for you, for the farmer and for the planet. The reason millet is considered to be good for health is mainly due to its nutritional and health benefits. Millets are packed with excellent nutrition, such as protein, fiber, vitamins and minerals. The health benefits resulting from the consumption of millet include a reduction in the onset of diabetes and weight loss, as well as the protection of cardiovascular health and, mainly, the management of gut inflammation. Millets are good for farmers because they demand little to no water for cultivation and harvesting. These millets are considered drought-resistant crops. Millets are good for the planet because they consume little water and provide grains that are rich in nutritional and health benefits, thereby helping to conserve the environment and the health and wellness of the people. Millets used to be part and parcel of the lifestyle of ancient India. Unfortunately, during the evolution process, the popularity of millets faded. Again, millet is slowly returning to people's lifestyles due to its incredible benefits. The year 2023 is declared the International Year of Millets by the United Nations. Several countries across the globe are celebrating millets by creating awareness and promotion among consumers, producers and policymakers. To make any decision related to promoting millets, scientific literature on millets is essential. The number of scientific studies related to the purchase and consumption of millet is limited. In this context, the present study is aimed to understand the purchase and consumption of millets in the Indian context.

II. REVIEW OF LITERATURE

Literature related to the purchase and consumption of millet is limited. Efforts were made to report relevant literature to develop theoretical support for the present study and to identify the literature gaps.

Rizwana M et al. (2022) reported that most respondents consumed millet to preserve overall health. The study highlighted that building the self and immunity of the family was the most important factor influencing millet consumption. 80.6% of women knew millet, and Interestingly, only 62.7% of the women only consumed millet. The demographic factors, including age, qualification and income, are directly related to millet consumption. The authors recommended that FMCG companies (Fast-moving consumer goods) be encouraged to manufacture millet-based food such as cereals, biscuits and RTE foods (ready-to-eat foods). In addition, a workshop could also be organized to enhance awareness of how millet can be substituted in the place of traditional grains in the cooking process. With regards to the social implications, policies related to millets should be promoted via technology dissemination and awareness creation by explaining the advantages of millets and also, millets can be included in the public distribution system. The authors also highlighted the importance of promoting the local millet variety's cultivation, maintenance and processing to increase millet cultivation similar to other cash crops. Education of the farmers on the importance of minor millet cultivation also needs to be focused on.

Birol. E et al. (2015) reported that high-iron pear millet was valued the most by the majority of households, and it was mainly produced for household consumption. Such households had decreased quality of diets. Contrary to this, the household

cultivated millets for market sales had gained lower benefits from consumption characteristics such as colour and nutrition. Meier, C (2020) investigated whether non-farming consumers would pay a "good market price" for iron-biofortified finger millets. The results indicated that nearly half of the study participants were sceptical towards iron-biofortified finger millets. Still, the acceptance rate was high, closer to 98%, with the willingness to pay above zero. The average premium accounted for 27%, which can be enhanced by including health-related information.

Interestingly, the information about the breeding method could have been more effective. The willingness to pay for iron-biofortified finger millets was higher for high-income and lower for a higher age. The education and scepticism towards iron biofortified crops increased with rounds. The study concluded that non-farming consumers were willing to pay a good market price for the iron-binfortified finger millet. The study highlighted the importance of health-related information to raise consumers' willingness to pay.

Woomer, J (2020) experimented with the physical properties and organoleptic evaluation of gluten-free bread from proso millets. The findings indicated that the addition of starch to the bread had an impact on the bread volume, colour and fairness. The age of the consumers, gluten intolerance and familiarity with millet significantly influenced the consumption frequency of gluten-free products. A high frequency of consumption was observed among gluten-intolerant panellists and older panellists. Gender influenced the overall acceptability and crumb aroma. The formulation of the GF products impacted consumers' preference for crust colour and crumb aroma. Chatli et al. (2015) investigated the quality characteristics and storage stability of emu meat nuggets manufactured using finger millet. The findings reported that emu meat nuggets had better functional value due to the increase in calcium and dietary fiber due to the usage of the minor cereals. The authors mentioned that such products would benefit the agriculture and meat industry.

Anitha et al. (2021) conducted a study on the public knowledge and practices in millet consumption, particularly in urban areas. The survey was conducted in seven major cities of India using a structured questionnaire. The overall sample size of the study was 15139 observations. The descriptive and inferential statistics results indicated that people with health problems (28%) were the early adopters of millets and represented the largest group. 15% of the study population consumed millets to reduce or lose weight; only 14% of the sample selected millets for their taste. The study reported a gap between health-conscious people and people who perceived millet as healthy. The main reason for the non-consumption of the millet is due to the fact millet was not consumed at home (40%) and did not like the taste of the millet (22%). The study recommended that urban consumers must be reached via social media since social media is the major source of information for urban consumers.

Interestingly, no relationship was found between the production and consumption of millet in urban areas. The authors recommended strategies for enhancing the consumption of millet. This includes developing tasty millet products, disseminating the nutritional and health benefits of millets and enhancing the reachability/accessibility of millets in urban markets. Sukumaran Sreekala et al. (2022) reported that bajra and small millet production was surplus, but jowar and ragi will have a net deficit in the years to come. In this scenario, the authors recommended increasing the production of millets without increasing the area by focusing on new millet varieties, increasing certified seed distribution and enhancing millet crop management practices.

III. RESEARCH GAPS

Rizwana, M (2022) study was explicitly focused on awareness of the nutritional benefits of millets amongst women in Bangalore; Birol, E (2015) study was focused on the demand for biofortified millet seeds in developing countries; Meier's (2020) study was focused on the willingness of the non-farming consumers to pay a good market price for iron-biofortified finger millet, Woomer, J (2020) focused on physical properties, and organoleptic evaluation of gluten-free bread, Chatli (2015) study was based on quality characteristics, and storage stability of emu meat nuggets, Anitha, S (2021) assessed Millets and Sorghum Consumption Behavior in Urban India and Sukumaran Sreekala (2022) investigated Millet Production and Consumption in India.

Except for Rizwana, M (2022), Anitha, S (2021) and Sukumaran Sreekala (2022), other studies were not focused on the purchase and consumption behaviour of millets. Even Rizwana, M (2022), Anitha, S (2021) and Sukumaran Sreekala (2022) did not explore the comprehensive purchase and consumption behaviour of millets. Due to the limited literature and the need to clearly understand millet purchase and consumption behaviour, the present study is proposed.

IV. OBJECTIVES

The main objective of the study is to understand millet purchase and consumption behaviour in the Southern Indian context.

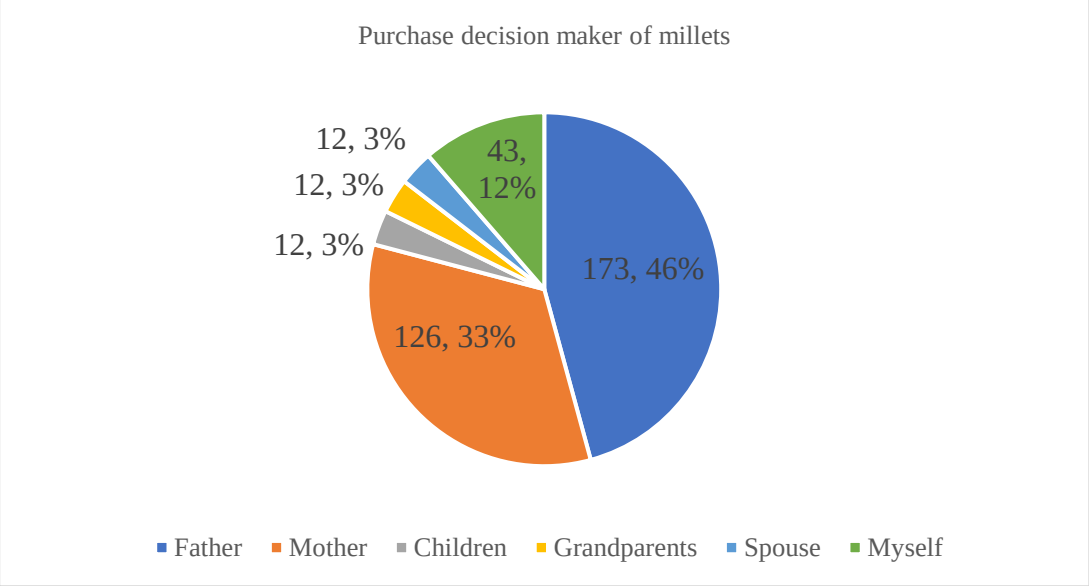
V. METHODOLOGY

Using a structured online questionnaire, the data for the study is collected from individuals who had purchased and consumed millet atleast once. Convenience sampling was used as the sampling method to reach diverse respondents. The

questionnaire captured nine purchase and consumption behaviours of millets. The total number of respondents who participated in the study was 376. After checking for the completeness of the response, all 376 samples were taken for descriptive analysis, such as frequency and percentage.

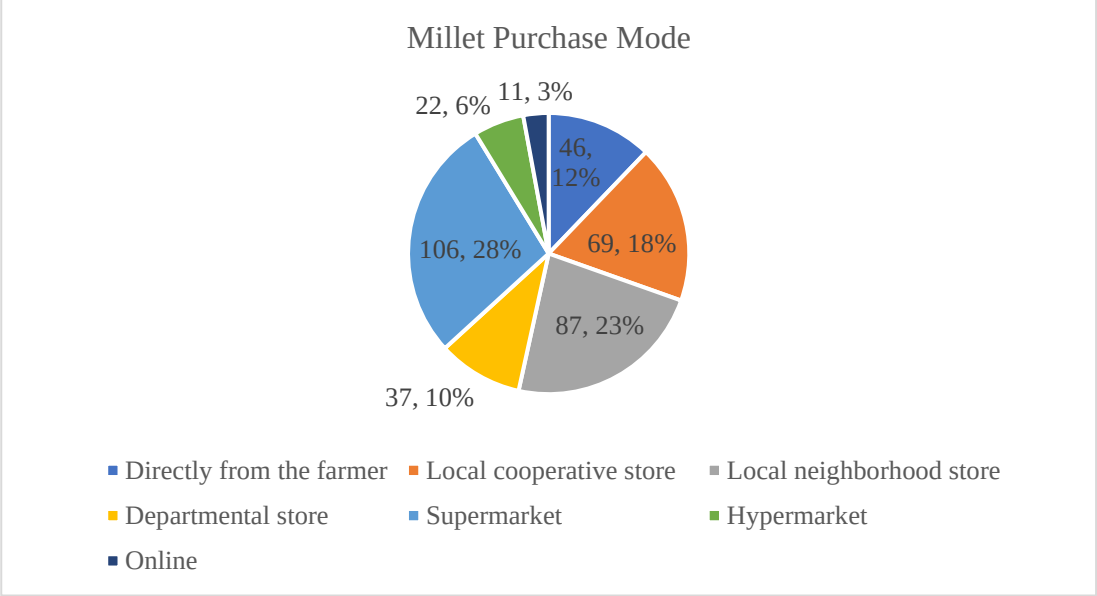
VI. ANALYSIS AND RESULTS

Figure:1: Purchase decision maker of millets



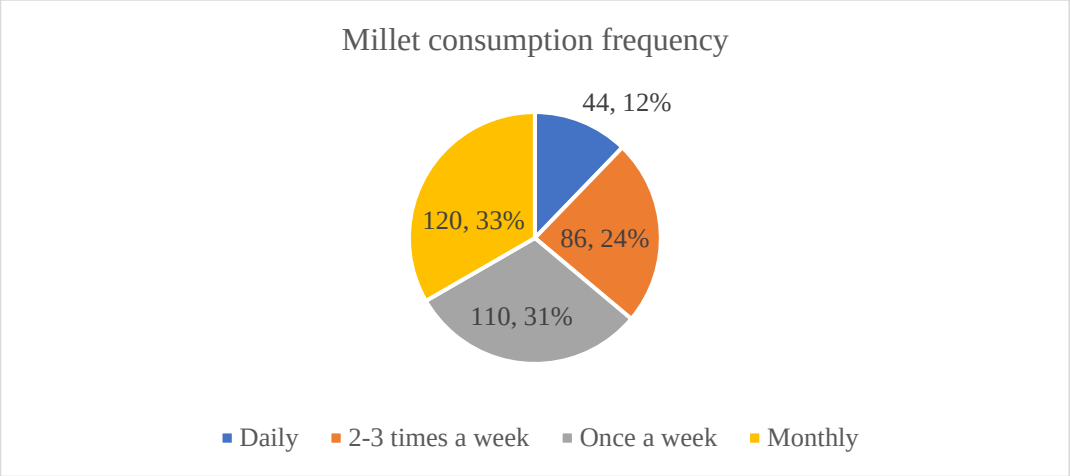
As presented in Figure 1, the main decision maker of millets is the father of the family, and the father of the family may be involved in the purchase of the millets. The findings of the present study are different from the usual practice in Indian homes where the mothers are usually involved in the purchase and decision on groceries.

Figure 2: Millets purchase mode



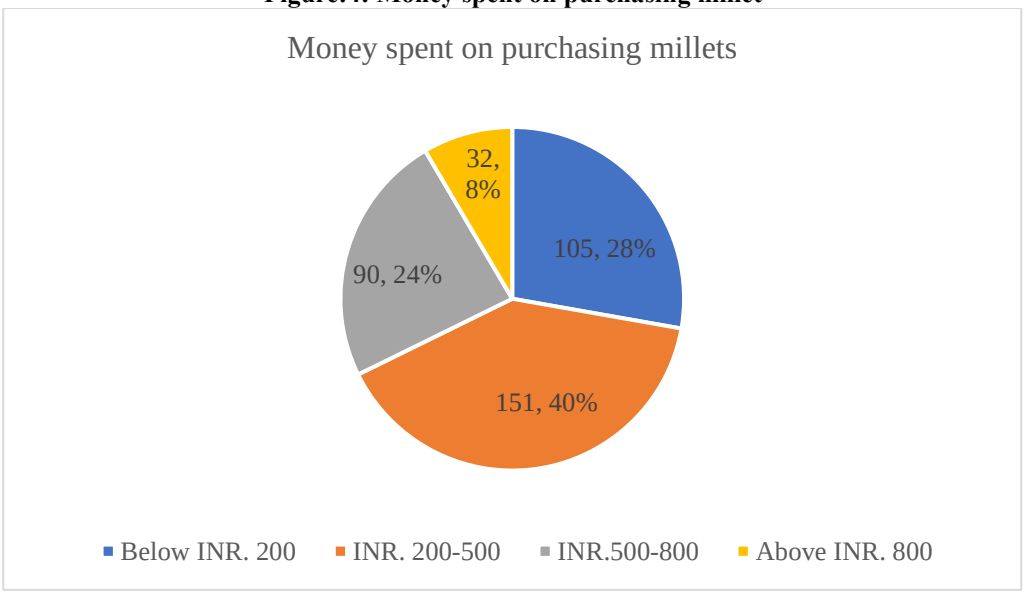
The purchase mode of millets is presented in Figure 2. The results indicate that purchase from the supermarket, followed by purchase from the local neighbourhood store and local cooperative store is the preferred purchase mode of millets. Given the advancement in online stores, millet purchase in the online platform is only 3%. This phenomenon can be attributed to the availability of the millet in the supermarket, local neighbourhood, and cooperative store, which may influence the purchase.

Figure 3: Millet consumption frequency



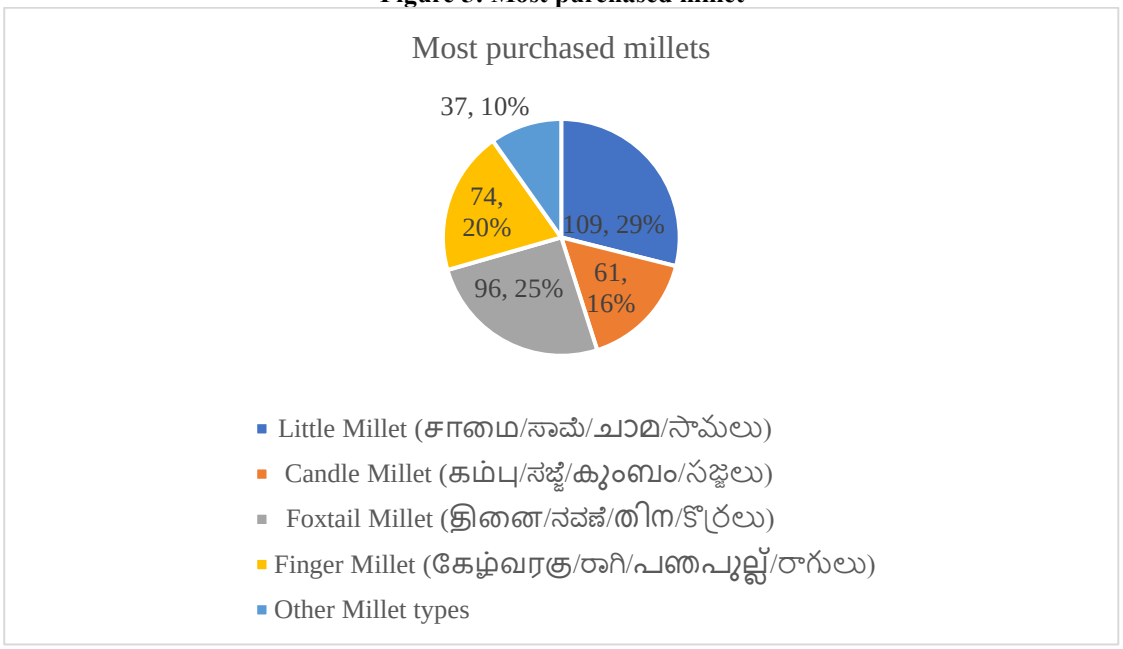
Regarding the consumption frequency of millets, as presented in Figure 3, the daily consumption of millets is not evident. The percentage of customers consuming millet monthly once is high at 33%, followed by once weekly. This indicates that millet is consumed as an occasional food. Efforts need to be taken to enhance the millets consumption daily to get the nutritional and health benefits from the millets.

Figure:4: Money spent on purchasing millet



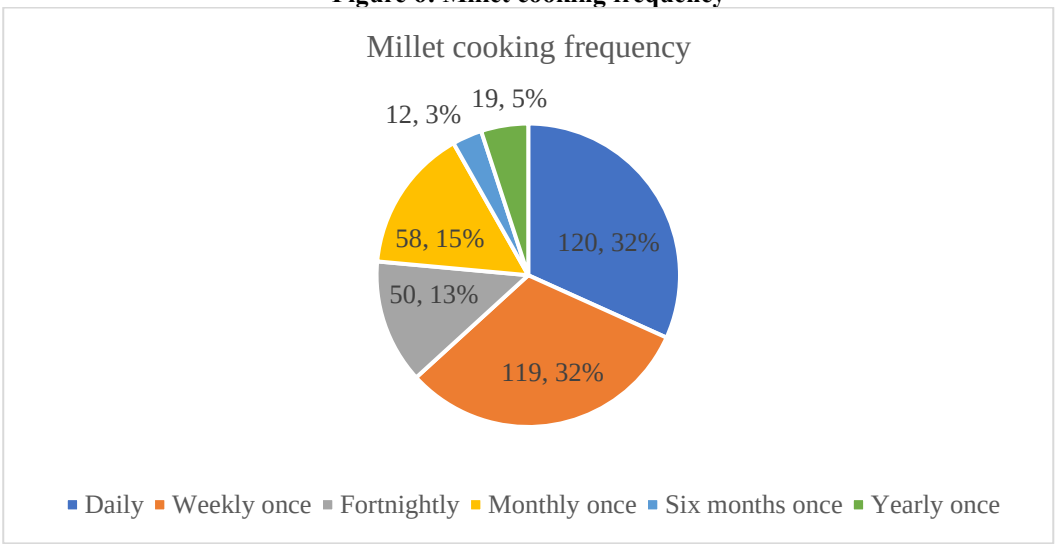
The money spent on purchasing millets is given in Figure 4. The results indicate that a majority of the customers, 40%, are spending 200-500 rupees in purchasing the millets. The volume of consumption of millets and the money spent on purchasing millets can be related. As indicated in Figure 3, millets are consumed as an occasional food, and this may be why the average money spent on purchasing millets was only 200-500 rupees.

Figure 5: Most purchased millet



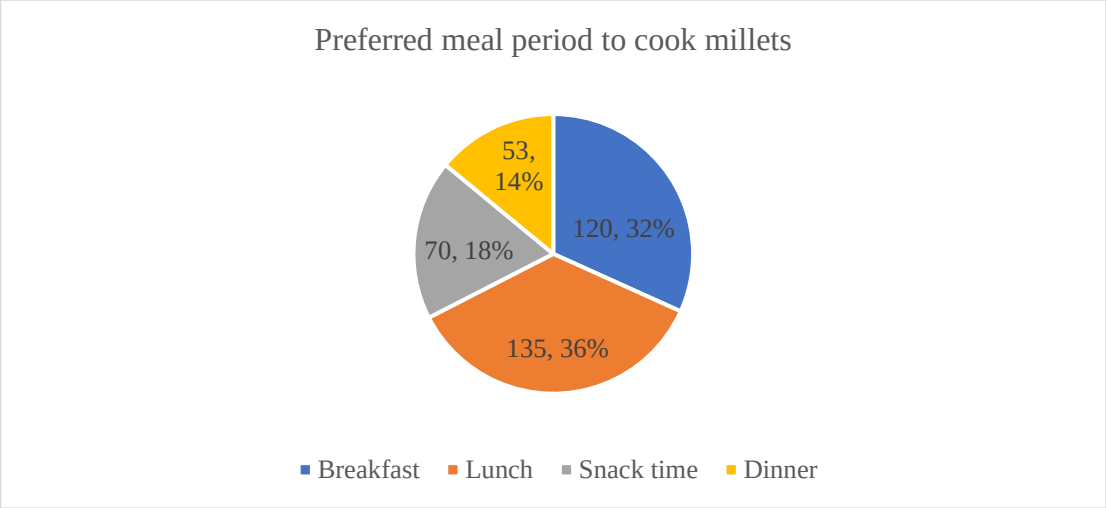
The most purchased millets are represented in Figure 5. The top most purchased millets are little millets (29%), followed by foxtail mail (25%) and then finger millet (20%). This may be because little millet is the best substitute for rice and the little millet pairs with any food quickly and provides the best taste.

Figure 6: Millet cooking frequency



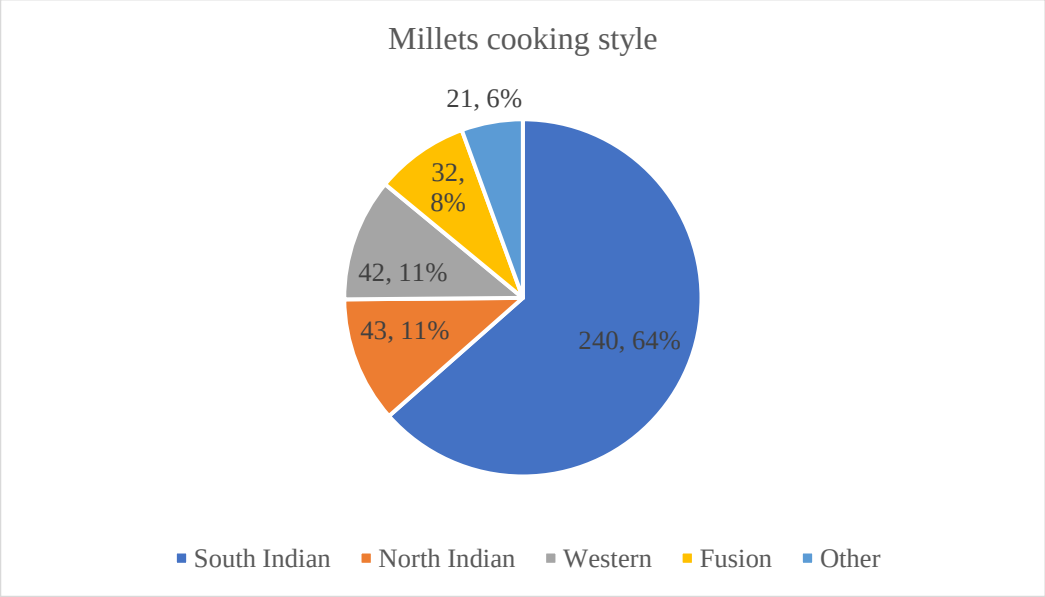
The frequency of cooking millets is presented in Figure 6. The results indicate that 32% of the customers have cooked millets daily and weekly once. The frequency of cooking millet in the home needs to be improved.

Figure 7: Preferred meal period to cook millets



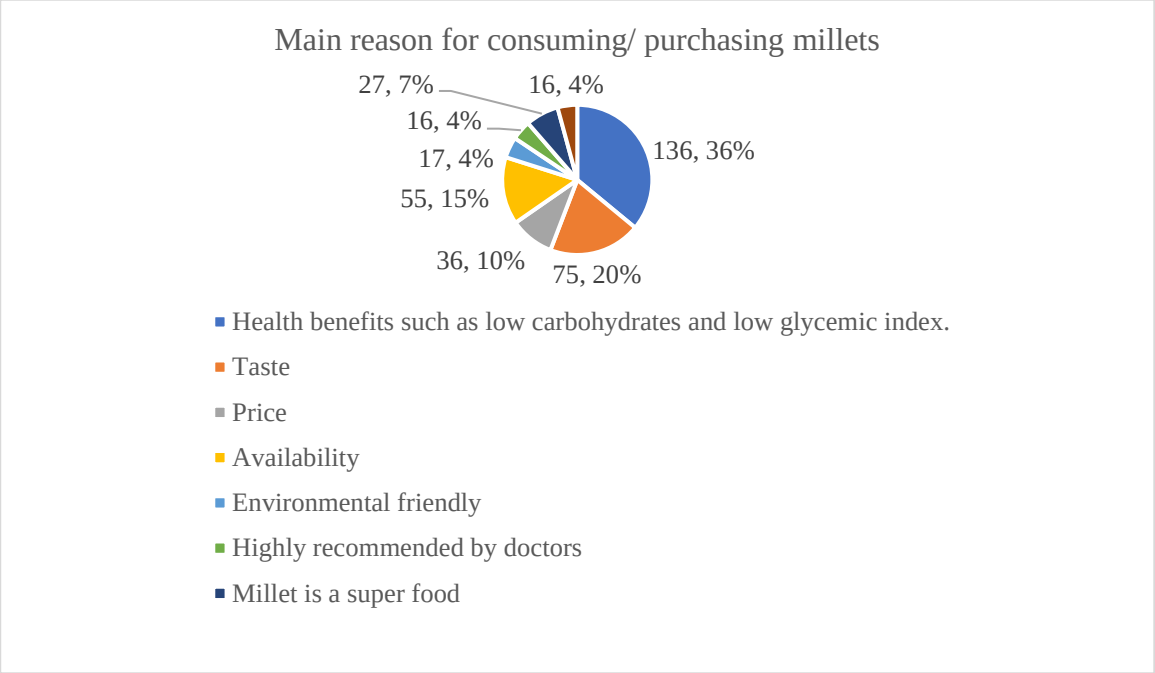
The preferred meal period to cook millet, as presented in Figure 7, indicates that millets cooked for lunch are 36% and then breakfast is 32%. This may be because millet is considered healthy, and eating healthy food for breakfast or lunch will benefit health.

Figure 8: Millet cooking style



The study captured the millet's cooking style, presented in the figure:8. The results indicate that 64% of the customers preferred to cook millet in the South Indian style. Since the study's respondents are primarily from South India, hence the preference for cooking style as South Indian may be high. Cooking millet in the native style (south Indian) is a positive sign.

Figure 9: Main reason for consuming/ purchasing millets



The top reason for consuming/ purchasing the millet was its health benefits. The 2nd two reasons for choosing/ purchasing the millets were their taste and availability in the market, indicating that customers are aware of the health benefits of millet.

VII. DISCUSSION

The present study sheds light on the purchase and consumption behaviour of millets. In particular, insights on millets purchase decision makers, where the customers are purchasing millets, consumption frequency of millets, money spent on purchasing millets, most preferred millets, cooking frequency of millets and foremost reason for consuming/purchasing millets. Contrary to the norm where the mothers are usually the decision makers of grocery purchases such as millet, the present study found that the father is the main decision maker in purchasing millet. Although it is a positive finding where the male family member is also involved in purchasing millets, more awareness is needed among the mothers that will lead to increased involvement of mothers in purchasing millets. The second behaviour investigated in the study was the place where the customers purchased millets. The study findings revealed that most millets were purchased in supermarkets, local neighbourhood stores and cooperative stores. This platform should stock more millet varieties to cater to the customers' needs to purchase millet. Such a practice will help the customer to purchase millets from wide varieties, and it will also help to enhance the revenue by selling millets.

The third behaviour explored in the study was the consumption frequency of millets. Unfortunately, daily consumption of millets is relatively less when compared to weekly or monthly consumption trends. More strategies for increasing the daily consumption of millet are required. The fourth behaviour investigated in the study was money spent on purchasing millet. The average money spent on purchasing the millets was INR. 200-500. The amount spent on purchasing millets is on average. Enhanced marketing promotions are required to increase the average spending of millets. The fifth behaviour identified in the present study was the top most purchased millets.

Interestingly, little millets were the most preferred since it is easy to substitute them with rice. The finger millet production in southern India is relatively higher when compared to other millets. Active promotion is recommended to enhance the consumption of all millets, including finger millets.

The sixth behaviour identified in the study was the cooking frequency of millets. Only 32% of the customers have cooked millet daily and weekly once. Again, efforts are required to enhance the frequency of cooking millet at home. The seventh behaviour identified in the study was the preferred meal period to cook millet. Mostly, the customers have mentioned that they prefer to cook millet for lunch and breakfast. The percentage of people cooking millet for dinner is relatively less when compared to lunch and breakfast. More innovations are required to enhance the practice of cooking millet for dinner meals. The study investigated the preferred style of cooking millet. Predominantly, customers have mentioned that they prefer the South Indian

style. Although it is good to cook millets in the native cuisine, such as the South Indian style, the opportunity to cook millets in other styles can also be explored. Such efforts may enhance the purchase and consumption of millet.

The final behaviour investigated in the present study was understanding the reason for choosing or purchasing millets. It is interesting to note that customers choose millets because of their health benefits, taste and availability. These reasons should be part of the marketing of millets to enhance the purchase and consumption of millets.

VIII. IMPLICATIONS

More attention is required from the millet marketers and the policymakers to enhance awareness of millets among mothers to make decisions on millets. Efforts are required to enhance millet consumption and cooking frequency. In addition, money spent on purchasing millets can be increased by focusing on innovating millet-based products, unique promotion mix and advertisements that will motivate the customers to spend more money purchasing millets. In addition, more awareness of different types of millets is required to enhance the purchase of other types of millets apart from little, foxtail and finger millets.

IX. LIMITATIONS

The current study is limited to respondents from Southern India. Although the present study's findings provided exploratory evidence on the millet's purchase and consumption, the findings need to be generalized cautiously due to the limited sample size. Only basic descriptive analysis was employed for the present study since the study is only exploratory.

X. FUTURE RESEARCH DIRECTIONS

Future research can include more sample size and use probability sampling to generalize the study findings. More questions related to the purchase and consumption of millet can be included. In addition, the relationship between demographic factors and the purchase and consumption of millet can be an interesting area to explore.

XI. CONCLUSION

Changing people's lifestyles overnight or within a shorter period is practically impossible, and this will also be true in the case of millet purchase and consumption. A consistent effort towards promoting millets by showcasing their health and environmental benefits along with the promised taste proportion will attract people to try millets and continue using them as part of the dining lifestyle. To achieve this, collaboration among the farmers, marketers, retailers and policymakers from private and government institutions is required. Such partnerships will help to project the millets uniformly and consistently in the customers' minds, leading to better purchases and consumption.

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