

“Study On Consumer Acceptance Towards Millet Based Gluten Free Products with Special Reference to Pune City”

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ABSTRACT

People's need for quick food in urban and semi-urban regions is increasing as a result of the growth of QSRs (Quick Service Restaurants) and Cloud Kitchens. Due to millennials and Generation Z's demand for satisfying rapid meals, pizza and hamburger sales have increased to account for approximately 25% of the food and beverage sector. Yet, the gluten content of the pizza base and burger buns, which ranges from 9 to 15%, is harmful to human health since it promotes the development of gluten sensitivity and damages the small intestine in a significant portion of the population. Several people aware of this situation are more likely to choose to eat items with lower gluten content or gluten-free options. Millets don't contain gluten and are a healthy source of protein. They include a lot of insoluble fibre, which aids with weight loss and lowers blood sugar and cholesterol levels. According to research, urban residents' reliance on millet-based quick breakfast blends and other food products has dramatically increased. The working middle class group is steadily becoming interested in products like millets atta, millet dosa mix, millet pancake mix, and millet noodles. To satisfy the needs of its health-conscious clientele, well-known companies like "Aashirwaad" and "MTR" have added millet-based goods to their product lines. (Bansal, 2021)

With the use of primary data, the percentage of respondents in this study who would accept gluten-free items derived from millets as replacements for gluten-based dough, particularly in their pizzas and burgers, is noted.

It was discovered through critical research that the majority of fast food consumers were under the age of 30. As the alternative product includes health advantages, which is a big worry for most of them, they are quite happy about the philosophy of altering the main element from their regularly eaten food products.

Keywords: Millets, Gluten, Health, Food

INTRODUCTION

Due to its primary objective and the fact that every human being depends on food intake, agriculture has been shown to be the most sustainable industry in the world. Food companies and delivery services made more money during the Covid virus epidemic when these secondary and tertiary sectors were about to collapse because individuals were persuaded to purchase meals online in order to rapidly satisfy their hunger. In the past ten years, fast food consumption has also grown significantly, which has led to an increase in dietary and health

problems. The presence of gluten in products that are often consumed by urban consumers is the main factor contributing to this issue.

Pizza and hamburgers are the most often requested items from various restaurants and cafes, according to statistics from popular meal delivery apps like Zomato, Swiggy, Uber Eats, and Eatsure from past years. These goods contribute 25% to the food and beverage business. The wheat used to make pizza crust and hamburger buns contains 9–15% of gluten. Consuming gluten frequently damages the bowel and interferes with metabolism. According to research, the population's gluten intolerance is growing. This can be the case as superfoods like millets aren't part of the typical diet.

Yet, 2023 is reportedly the year of millets. The highest millet grower in the world is most likely India. All 11 types of millet have great nutritional value for everyone. As a result, the Indian government is pushing farmers to produce millet crops on their farms.

OBJECTIVES

1. To draw attention to benefits of millets' for human diet.
2. To understand why millets aren't consumed by urban residents.
3. To understand how consumers behave when buying millets with additional value that are gluten-free.

SIGNIFICANCE OF MILLETS

Improves mood:

- Due to its high concentration of the amino acid tryptophan, millet might elevate one's mood. A diet high in tryptophan, according to research Trusted Source from 2014, may help lessen the signs and symptoms of anxiety and despair.
- The tryptophan in millet increases the body's serotonin level, which aids in lowering stress. A cup of millet porridge each night can promote restful sleep.

Digestion & Weight loss:

- Millet is a fibre-rich meal that promotes intestinal motility and, by increasing the density of stools, promotes waste ejection. Insoluble and soluble fibres are both present in millet.
- The fibre content improves the efflux of food or solid waste, which benefits a person's intestinal health. Because they are high in fibre, grains are beneficial for gut health.
- Probiotic bacteria, which are insoluble fibres, are present in millet. It promotes the growth of helpful bacteria in the intestines. Among many other symptoms, insoluble fibre eases bloating, gas, cramps, and incontinence.
- It has a low Glycemic index, making it help control blood sugar levels and aid in weight loss. It contains few simple carbohydrates and more complex carbohydrates than other foods.

Aid for reproductive system:

- It aids in conquering ovarian, sperm, PCOD, and infertility issues. Both males and females can benefit from their assistance in treating illnesses of the reproductive system.
- This is beneficial to women who are experiencing period issues, to those who have STDs, and to males who want to increase their sperm count.
- It is high in iron, protein, antioxidants, dietary fibre, calcium, magnesium, potassium, and folate, all of which are elements that pregnant women need more of, millet is one of the nutrient-rich grains for them. Haemoglobin levels are raised by its high iron content.

Anti-ageing properties-

- L-lysine and L-proline, two amino acids, are abundant in millet. Collagen, a material that provides the tissue of the skin structure, is produced in the body with the aid of millet. Consuming millet boosts collagen levels, improving skin's suppleness and reducing wrinkle risk.

LITERATURE CITED

(: **Basavaraj G, 2010**) Pearl millet production is concentrated in the developing countries which account for over 95% of the production and acreage. Exports and imports of pearl millet grain are negligible suggesting low demand, and/or unreliable availability of marketable surpluses for this commodity in world markets.

(**Mallesh, 2021**) In India and other Asian and African countries, millets commonly include sorghum, pearl millet, and a range of small millets ([Vetriventhan et al., 2020](#)). The term “millets” in this paper refers to all of these crops. India is the leading producer and consumer of different types of millets, such as finger millet, pearl millet, kudo millet, foxtail millet, barnyard millet, pros millet, and little millet (www.smartfood.org^{1,2}). India is the sixth largest producer of sorghum globally

(**Mohan, 2023**) Although genetic factors are obviously important, it is clear that the genetics did not change during the 50-y period when diabetes rates increased by almost 10-fold in India [9]. This clearly points to the role of environmental factors having a greater role in the causation of the diabetes epidemic [10]. Indeed, the rapid socioeconomic changes in the region has led to changes in both the quantity and quality of diets consumed along with markedly reduced physical activity leading to obesity, one of the main contributors to T2D.

(**Nitya Sharma a, 2023**) . Considering their climate resilience and potential role in nutritional and health security, the year 2023 has been declared as ‘International Year of Millets’ by the United Nations. Cereals being the major nutrient vehicle for a majority population, and proteins being the second most abundant nutrient in millets, these grains can be a suitable alternative for plant-based proteins

(**Vali, 2019**) Food items made with maida are converted within 10 minutes into glucose and join the bloodstream and the chemicals used to make maida are harmful to the pancreas. Normally there are only 6 to 7 grams of glucose in our blood (4-5 litres).

(FSSAI, 2023) Tribal Co-operative Marketing Development Federation of India (TRIFED), the 'Nutri hub' India is honoured to be at the forefront of popularising millets, whose consumption furthers nutrition, food security and welfare of farmers. - Shri Narendra Modi Hon'ble Prime Minister of India the technology business incubator hosted by ICAR-IIMR and TRIFED is collaborating for the marketing of millets and mainstreaming tribal through livelihood opportunities. Promotion of millet value chain activities in the Van Dhan Vikas Kendra's in the tribal belt and scaling up for the national security of the tribal population, these examples vouch for the active efforts of the Indian government in the advocacy of millets in diet especially through the tribal route.

(APEDA, 2023) "The millets market is set to grow from its current market value of more than \$9 billion to over \$12 billion by 2025. Favourable government initiatives to proliferate the global millets market size over 2019-2025".

METHODOLOGY

A combination of primary and secondary sources are used to get the necessary information. Using a custom created questionnaire with open-ended and closed-ended questions, the data on millets intake was gathered from 120 respondents with the help of online survey method. The responses were all primarily from Pune city. Secondary materials, such as newspaper articles, research papers, and magazines, were also used to analyse how consumer attitudes regarding millets have changed over time. Table below portrays the data collected.

Table 1: Primary data recorded of participants from Pune city and converted into figures for study.

Pizza and Burger consumption	71.7% people are fond of pizza and burger. 28.3% dislike pizzas and burgers.
Awareness about "gluten" and its effects	83.3% respondents were aware. 16.7% respondents weren't aware.
Want to have nutritious gluten free cuisine	95.8% desire healthy food. 4.2% are fine with the normal.
Believe millets make a wonderful all-purpose flour alternative for preparing pizza and burger dough.	89.2% Agree 10.8% Disagree
Parameters considered while accepting gluten free products	Nutrition - Highly Taste - Highly Price - Likely Appearance – Neutrally
Age of respondents	84.2% Between 20-30 years 6 % Between 10-20 years 6% Above 40 years 3.2% Between 30-40 years
Gender of respondents	62.5% Male 37.5% Female

RESULTS AND DISCUSSION

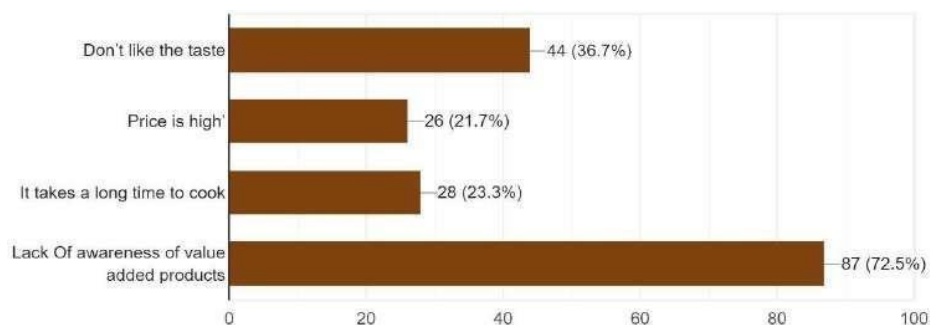
Gender: It's been seen that males consume fast food more frequently than women; this might be due to the greater proportion of men who work in the workforce. Men are more socially active than women, and since fast food is simple to prepare and enjoyable to eat with friends, most men choose to do so while they are spending time with loved ones.

Age: Those younger than them tend to like fast food the least, followed by those between the ages of 10 and 30. Fast food is far more affordable, accessible, flavourful, and fully fills hunger than fruits or other healthful choices. In other instances, marketing tactics, peer pressure, and fads also cause people to gravitate towards junk food. Our hormone of motivation, dopamine, drives the brain to repeat pleasurable behaviours. Large dopamine spikes in the brain are caused by the ideal ratio of sugar, salt, fat, artificial flavours, and sweeteners in ultra-processed food, which makes people want to keep eating it.

Awareness: Several individuals are aware of gluten's detrimental impact on human health. Yet, the explosive rise of QSRs (quick service restaurants) over the last few decades has pushed people to select food products that are simple to get in order to state their hunger. Millets are nutritious cereal crops, but older generations who once devoured them failed to carry on their eating habits. Because of this, relatively few people in the younger age group know about and consume millets on a daily basis. Currently, consumers choose packaged foods or quick mixes over cooking since they save time while still providing nutritional advantages. Few people are aware that millet powder, which is used to make baby food, is also healthful for adults.

Availability: Very few millets-based value-added goods are readily accessible on the market. While they are rather expensive, those with lower incomes do not really favour them. Health-conscious people make sure to regularly consume millets while keeping in mind the advantages they provide for the body; yet, other people avoid them owing to their expensive cost, unappealing colour and texture, or unpleasant taste. The fig1.1 shows the major reasons behind less consumption of millets.

Fig 1.1 Reasons given by participants for not consuming millets



The statistics shows that the main cause of the poor purchase and consumption of millets is a lack of knowledge about value-added goods. The processing sector makes insufficient expenditures in NPD (new product development), as well as in marketing and promoting the already-available products. One of the explanations might potentially be the low social standing of tiny millet meals. (thehindu.com, 2021)

Fig 1.2 Ratio of respondents seeking healthy gluten free products



Fig 1.3 Ratio of respondents thinking millets are good for changing consumption habits of future generations.



The abovementioned pie charts i.e. fig 1.2 and 1.3 show that individuals have a highly good attitude regarding embracing the value-added millets products. In the upcoming years, it will be necessary to satiate customer demand with a greater emphasis on necessities for health. It is obvious that the majority of urban residents do not consider price to be a problem when nutrition is their top priority. Appropriate steps should be implemented to improve Pune city inhabitants' consumption and shopping habits, with a concentration on millets.

RECOMMENDATION AND CONCLUSION

Greater attention should be made on production and consumption of millets. People will be quite concerned about their health in the years to come, especially those who live in metropolitan areas. According to Prime Minister Narendra Modi, 2023 will be the year of

millet in India. Farmers should be encouraged to plant millets since they can be utilised as both a food source and a raw material by the processing sector to create new goods with value additions. Brands should invest the proper amount in promoting and advertising their already-released goods. Some considerable recommendations by the respondents collected through primary data are stated below.

- The government ought to make millet or items made from millet a component of meal plans like midday meals for public schools.
- Together with rice, wheat, pulses, cooking oil, and kerosene, millet products ought to be distributed to the general people as rations through the Public Distribution System.
- Make millets readily available to individuals who truly wish to incorporate nutritious food products in their diet, and raise knowledge of millets and its advantages.
- If millet goods are made more pleasant and savoury, people are more inclined to consume it more.

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