Consumers' perceptions of organic foods in Bangladesh: Challenges and opportunities

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Abstract

This study aims at exploring the consumers' perceptions of organic foods. Additionally, this paper attempts to explore the existing problems to promote organic production. The significant issues include lack of awareness about organic technology and consumers' trust in products and marketing systems. It is revealed that multi-factors influenced the choices of purchasing organic food. Educational qualification had a positive relationship with health and environmental awareness. However, there is a great potential to produce organic foods, particularly in a hilly region, and collect wild honey as organic foods from *Sundarbans* in Bangladesh. The cheaper wage is an opportunity for Bangladesh to intensify organic food production, generating decent jobs concomitantly. Lack of awareness, ecological consciousness, consumers' trust, certification, quality control mechanism, modern technologies, information literacy, storage capacity, and crop insurance were identified as the hindrances of flourishing the organic markets. In addition, the agricultural market chain is fragile, which is full of several intermediary groups. Furthermore, the availability of cheaper labor forces is a significant advantage of producing organic products that need intensive care.

Keywords: Organic Products; market chain; awareness level; education; intermediaries; public policy

Introduction

The organic food product is derived from Organic Agriculture (OA), which is becoming popular throughout the world day by day. In general, OA includes the growing of crops by a set of guidelines that prohibit synthetic products or chemicals such as fertilizers, pesticides, and plant growth promoters like hormones. This concept evolved in the first half of the 20th century to respond to incremental chemical practices. The Codex Committee of the Food and Agriculture Organization of the United Nations defined, "Organic agriculture is a holistic production management system which promotes and enhances agroecosystem health, including biodiversity, biological cycles, and soil biological activity. This is accomplished by using, where possible, agronomic, biological, and mechanical methods, as opposed to using synthetic materials, to fulfill any specific function within the system" (FAO, 1999). Organic farming facilitates the usage of eco-friendly technologies and materials that enhances well-balanced agroecosystems. The other primary principle is the prohibition of artificial chemical use to ensure safe food production. It is noteworthy to mention that organic farming's primary goal is to balance soil health and productivity (FAO, 1999).

At present, this system seems to be an ideal and valid solution to produce safe food and pure foods that minimize the negative consequences to human health and the environment resulted from chemical agriculture. Consumers are currently becoming conscious and critical about the quality of food products and by-products for a healthy life (Mottalib *et al.*, 2018). OA has the potential to produce safe food in addition to environmental sustainability and preserving cultural heritage. Consequently, the demand for organic products has been growing significantly throughout the world, especially in developed countries, which indirectly control developing countries' export markets. Different studies in Africa, Asia, and Latin America indicate that organic farmers generally earn higher incomes than their conventional counterparts (UN, 2008). By realizing this fact, agricultural development in many countries has shifted from conventional agriculture to organic farming systems and introduced the organic agriculture policy.

Though Bangladesh is an agro-based country, most farmers are poor and equipped with traditional agricultural practices and systems. Conventional agricultural practices could not keep pace with the ongoing demands of the burgeoning population. Consequently, the government introduced the chemical-intensive farming system to meet increased needs. However, chemical agriculture contributed to achieving self-sufficiency in grain food production but created many negative consequences to human health and the environment. Agrochemicals have been linked to a wide range of human health hazards (Rahman *et al.*, 2015), ranging from short-term impacts such as headaches and nausea to chronic effects like cancer, reproductive harm, and endocrine disruption. More than 03 million people are affected by pesticides, and about 370,000 deaths occur per year (WHO 2018). In Bangladesh, every year, a noticeable number of people are affected by agrochemicals and suffering from diseases (Shammi *et al.*, 2020). Furthermore, depletion of soil organic matter is another concern of chemical agriculture (Biswas & Naher, 2019). As a result, overall crop productivity has been declining in Bangladesh. Even a lack of organic foods is considered one of the significant challenges for developing inbound tourism in Bangladesh (Rahman, 2021).

In addition, the food safety issue is one of the major concerns for expanding international trade in agro-products. Buyers in the mainstream markets are increasingly enforcing stringent conditions on the suppliers to comply with various standards. OA has become an alternative tool to have safe food, sustain crop productivity, and increase soil fertility under such situations. However, many growers have come forward to produce organic products and are being sold in different super shops, especially in Dhaka city at a higher price. Consumers are interested in buying such organic products.

In most cases, they are confused about whether the products are organic due to a lack of certification. Although the Bangladesh government adopted organic agriculture policy - 2106', its implementation has not yet formally started. People's perceptions of organic foods have rarely been studied (Rahman & Noor, 2016). The study aimed to assess the awareness level of consumers

about organic products in Bangladesh. The study also strived to determine the current status of organic farming and explore the problems related to the extension of organic farming in Bangladesh.

The emergence of organic food products in recent decades

In the early 1990s, organic farming was started in Bangladesh on a minor scale. In Bangladesh, few Non-government Organizations (NGOs) started organic farming at first. These NGOs organize interested farmers, provide training, technical advice, financial support, and help market organic products. The organic farmers form groups and co-operate with each other towards a sustainable farming system. Currently, 75 NGOs and some conscious farmers are working towards organic farming (Sharma, 2006). Among the NGOs, 47 are directly involved in the production, where few numbers in awareness building (Sarker & Itohara 2008). Among the NGO's *Proshika*, *Unnayan Bikalper Nitinirdharoni Gobeshona* (UBINIG), Bangladesh Resource Center for Indigenous Knowledge (BARCIK), and Research Initiatives, Bangladesh (RIB) ranked in the topmost position. Simultaneously, some private entrepreneurs like *Kazi* and *Kazi Ltd*, *Shams Enterprise*, *Shabajpur Tea Estate Ltd* are in the top place to invest in organic farming. Some entrepreneurs have already started to export their organic products in different developed countries. Today, horticultural crops, cotton, aromatic rice, and organic shrimp farming are being practiced on a small scale in Bangladesh to mainly export and target higher-income urban people. Currently, organic products are being sold through different super shops such as *Agora*, *Meenabazar*, *Nandan*, etc., they do not ensure fair prices for the producing farmers. Bangladesh Agricultural Research Institute (BARI) also took the initiative to conduct the necessary research regarding organic farming and established an Organic Block in her Experimental field at Joydebpur, Gazipur. Considering the global organic market trend and the expansion of OA by a private organization and NGO's in our country, the Bangladesh government adopted 'National Organic Agricultural Policy – 2016,' but the action plan has not yet started.

Methodology

The study examined the present status, prospects, and problems to disseminate organic technology. Secondary data, including books, journals, newspapers, and google searches of respective web addresses, were used. On the other hand, empirical data was collected using a structured questionnaire. A total of 100 respondents were interviewed from *Meena Bazar*, *Agora*, *Shopno*, *Shossay Probortona*, and *Nandan* super shop of Dhaka city. The questionnaire included demographic profiles, perception about organic foods, and cost-benefit analysis. The collected data were processed and analyzed using simple statistics. The respondents were categorized based on age, educational qualification, annual income, occupation, health consciousness, and environmental awareness. Based on health consciousness, the respondents were classified as low (0-3), medium (4-6), and high (7-8) using the rating scale

0-8. Similarly, based on environmental awareness, the respondents were classified as low (0-2), medium (3-4), and high (5-6) using the rating scale 0-6. Ten key informants, including academicians, researchers, NGO persons, government officials, farmers' leaders, and organic food entrepreneurs, were interviewed to know their opinions about this sector's opportunities and challenges. Content analysis was done based on the collected data (Krippendorff, 2004). Beforehand, the variables were categorized and coded accordingly.

Results

Demographic profiles

It is essential to know the consumers' demographic profiles, knowledge, and awareness level about organic foods to assess the domestic organic food market's potential. It is also essential to examine their attitudes and perceptions about the product and, ultimately, purchase decisions. The result indicates that the maximum number (42%) of consumers fell into the middle age class, followed by a young age (39%). About two-thirds of the consumers were male. The majority of the interviewees obtained a bachelor's degree, followed by a master's (Table 1). The study reveals that the higher educated male population from the middle-aged class tended to purchase organic foods.

Table-1: Demographic variables

<i>Characteristics of the consumers</i>	<i>Distribution</i>	<i>%</i>
Age (years)	Young (18 - 40)	39
	Middle-aged (41 - 55)	42
	Old (> 55)	19
Gender	Male	64
	Female	36
Educational Background	< PSC	11
	PSC to HSC	19
	Degree	39
	>Degree	31
Occupation	Service	19
	Business	33
	Students	25
	Others	22

The rich people were more significant in number (39%) whose monthly income was above fifty thousand takas. The trend declined with the decrease of the annual income. The lowest (6%) number of consumers was under the poor class category, whose monthly income was not above fifteen thousand takas (Figure-1). The tendency of buying organic food depends on the income level.

Figure-1: Distribution of the respondents according to their financial conditions

Health consciousness

The majority (42%) of the consumers were driven by higher personal health issues, followed by medium consciousness. The least number (22%) of consumers had low health consciousness (Figure-2). It can be argued that health consciousness works as a catalyst in consuming organic food products.

Figure-2: Distribution of the respondents according to their health consciousness

Environmental awareness

Half of the consumers were moderately conscious regarding environmental hazards that originate from chemical agriculture. About one-third of the consumers (28%) had a high level of consciousness about ecological degradation. Ironically, 22% of the respondents exhibited low consciousness about the environmental (Figure-3). Therefore, health issue prevails over environmental problem contradictorily.

Figure-3: Distribution of the respondents according to their environmental awareness level

Perceptions about the meaning of organic food

Despite having some knowledge and awareness about organic products, consumers are not consistent in interpreting the concept of 'organic.' Hence, they were requested to define organic food. The maximum number of consumers (42%) perceived organic food as 'Foods without chemicals.' A significant portion (17%) defined it as the 'Natural food' without further clarification. Interestingly, more than one-tenth of consumers had no idea about the meaning of organic food. Similarly, 6% of the consumers pointed out that organic food was something more though they could not explain (Table-2).

Table-2: *Consumer's perceptions about the meaning of organic food*

<i>Comments</i>	<i>Frequency (%)</i>
Not sure/no idea	11
Natural food	17
Foods without chemical fertilizers	42
Foods without pesticides	8
Traditional or Indigenous foods	6
Foods have grown with manure	3
Healthy Nutritious food	8
Something more	5

Attitude toward organic food and practice

Two-thirds of consumers (67%) believed that organic agriculture could reduce the negative impacts of chemical agriculture, while one-third opposed this statement. About 89% of the consumers expressed their interest in acquiring knowledge about organic food production. In contrast, a minimal number (11%) of the consumer did not show any interest. Total 72% of the respondents were ready to pay more money for the certification and quality control. A fragment of the consumers (28%) had shown a negative attitude to spend the extra money associated with organic certification (Table-3).

Table-3: *Consumers' attitude toward organic food and practice*

<i>Statements</i>	<i>Response to comments</i>	
	<i>Yes (%)</i>	<i>No (%)</i>
Organic agriculture has the potential to minimize the negative impacts of chemical agriculture	67	33
Interested to know organic food culture and practices	89	11
Willing to pay more money if needed for certification	72	28

Relationships among different factors of consumers

A decent relationship was observed between the educational level and financial solvency. The degree holders were more solvents who constituted the larger portion (Table-4). From illiterate to the Higher Secondary Certificates holders

represented the 'poor' class. It is inspiring that despite poverty and lacking degree, this segment is the consumers of organic food.

Table-4: Cross-tabulation between financial condition and educational background of consumers

<i>Educational background</i>	<i>The financial condition of consumer</i>				<i>Sub-total</i>
	Poor	Middle	High Middle	Rich	
<PSC ¹	3	6	3	0	12
PSC- HSC ²	3	5	5	6	19
Degree	0	6	11	22	39
>Degree	0	7	12	11	30
Total	6	24	31	39	100

¹PSC = Primary school certificate; ²HSC = Higher secondary certificate

It is revealed that the educated person is more conscious about their healths. Likewise, the health awareness level increased with the level of education (Table-5). Therefore, it can be argued that education is determinant in upscaling a healthy lifestyle.

Table-5: Cross-tabulation between educational background and personal health awareness of consumers

<i>Health awareness</i>	<i>Educational background</i>				<i>Sub-total</i>
	<PSC	PSC- HSC	Degree	>Degree	
Low	11	8	3	0	22
Medium	0	8	17	17	42
High	1	3	19	13	36
Total	12	19	39	30	100

Similarly, educated people were more conscious of environmental degradation and pollution. On the other hand, it was observed that the environmental consciousness was not as much a health issue (Table-6).

Table-6: Cross-tabulation between educational background and environmental awareness of consumers

<i>Environmental awareness</i>	<i>Educational background</i>				<i>Sub-total</i>
	<PSC	PSC- HSC	Degree	>Degree	
Low	8	6	6	8	28
Medium	3	9	25	13	50
High	1	4	8	9	22
Total	12	19	39	30	100

Most consumers were interested in paying more money for organic certification and quality control, which indicated a lack of trust in organic food products (Table-7). The willingness had a pragmatic relationship with the income level.

The 'poor' class did not show any interest in paying more. In contrast, the 'rich' consumers did not care about spending more on purchasing healthy organic foods.

Table-7: Cross-tabulation between financial condition and willingness to pay more

Willingness to pay more money for organic food	The financial condition of consumers (%)				Sub-total
	Poor	Middle	High Middle	Rich	
Yes	0	14	23	36	73
No	6	10	8	3	27
Total	6	24	31	39	100

Opportunities

The key informants opined that Bangladesh's hill tracts, comprising 10% of the total area, can quickly meet the buffer zone's requirement, particularly for producing organic fruits and vegetables (Figure 4). The principal criterion of organic farming is maintaining the buffer zone. Furthermore, indigenous knowledge of the local inhabitants (mostly tribal) is the additional advantages for introducing organic agriculture. They are rich in traditional knowledge and habituated not to use the chemicals for agricultural productions. Coupling the traditional experience with modern farming technologies and practices like biocontrol and integrated soil nutrient management can offer large-scale organic farming in the hilly areas.

Figure 4: Key opportunities of organic agriculture in Bangladesh identified by the key informants

Furthermore, the *Sundarban* forest area is rich in pure, safe, and natural food like fishes, crabs, and honey. Wild honey, notably 'lotus honey,' is world-famous considering its aroma, taste, nutrient composition, and sanctity (Rahman, 2020). Again, organic farming is a labor-intensive production method. Bangladesh is a densely populated country where laborers are available at cheaper wages. The availability of a labor force can be utilized for intensive care of highly valued organic products to achieve the product's global

quality standard and earn more foreign currency. Thus, organic farming can generate employment and may open new trading opportunities for large farmers or entrepreneurs.

Overreaching challenges

The key informants opined that most people have lack awareness about the importance of organic food products. On the flip side, the producers are not acquainted with modern technology and agricultural practices. The populations have low ecological and environmental consciousness. The consumers are skeptical about the originality and authenticity of the products and rarely trust the advertisements. One of the crucial problems is that there is no effective quality control mechanism and a lack of trusted organic certification. It is highly challenging or near to impossible to distinguish organic products from conventional ones. Consequently, the consumers have to depend on producers' or sellers' statements entirely in favor of organic. The regulatory and institutional framework for the certification of organic products has not been developed yet. Other facilities like cold storage, vacuum packing units, processing unit, etc., are not well developed. There is not sufficient information on organic management strategies and market opportunities. The operational and institutional mechanism of risk insurance in organic farming is not well-defined. The agricultural market chain is fragile, where several intermediaries like *Faria*, *Bepari*, *Aratdar*, and wholesalers make the highest return. Resultantly, the producers are deprived of market services and earn less than expected. Simultaneously, consumers have to pay a high price.

Figure 5: Key challenges of organic agriculture in Bangladesh identified by the key informants

Discussion

Organic food is getting attention throughout the world due to rapidly increasing the consciousness of consumers. This study showed that the demographic and socioeconomic factors influenced interest and willingness to pay more for organic products. The result was supported by other studies (Meludu et al., 2011; Sanjay et al., 2011; Javanmardi et al., 2011). Educational level is a pivotal factor in determining the awareness level about health and the environment. Javanmardi et al. (2011) and Sharon & Jonathon (2011) revealed that higher education increased both knowledge and awareness of health and the environment. Most of the consumers had a basic concept of the meaning of organic food. This implies the potential of the domestic organic food market in Bangladesh, although organic food has not been extensively available.

However, the willingness to pay more money for organic food increased with the income level or social status as it is involved with the extra money. Similarly, Cunningham (2002) reported a positive relationship between income and the willingness to purchase organic food. In contrast, few studies found no association between income and desire to pay for organic products (Wolf 2002). But in Bangladesh, annual income is a vital factor to buy organic food. Despite the higher cost, many consumers showed their interest in organic food and even paid a price premium to purchase such foods considering their health and environmental benefits. Sarker & Ithora (2008) reported that most of the consumers (90%) of Dhaka City want certified organic foods.

Many studies were carried out globally to examine the level of consumer awareness and knowledge about organic foods (Environics, 2001; Kenanoğlu & Karahan, 2002; Cunningham, 2002). Ki & Lee (2011) reported that nearly 90% of the organic food producers had little knowledge of organic agricultural products. They observed that many respondents preferred organic farming practices due to potential health benefits. Sharon & Jonathon (2011) observed a positive feeling towards organic food products. He stated that a majority (80%) of the respondents had the basic idea about organic food due to their higher educational background. They also reported that increasing health-conscious and environmental concerns had created a demand for organic food in recent years. Meludu *et al.* (2011) showed that most of the respondents were aware of the health benefits of organic agricultural products and environmental services in Nigeria. The majority of the respondents had a favorable attitude toward organic agricultural products. Similarly, maximum respondents were willing to pay more premiums to purchase organic agricultural products. Trust is the most critical factor that affects the buying intention (Sumi & Kabir 2018; Hossain *et al.*, 2007; Iqbal, 2015, Ashraf *et al.*, 2019; Sekhon *et al.*, 2014; Paul & Rana 2012; Basha *et al.*, 2015; Nasser *et al.*, 2014; Mukul *et al.*, 2013).

Sanjay *et al.* (2011) conducted a study on consumer behavior about India's organic products market. They revealed that the customers were motivated to

purchase organic products due to their taste, quality, and environmentally friendly. The willingness to pay the premium price for organic products was attributed to its quality consideration. Jung (2011) found food safety as the biggest reason for purchasing organic food. The majority of the consumers (78.9%) were satisfied with organic food. It was also reported that maximum respondents (62.5%) intended to buy more organic food in the future. Javanmardi *et al.* (2011) showed that with an increased level of education, the rate of intention to consume organic products was raised in Iran. It further stated that 77% of respondents preferred to purchase organic products over non-organics, and the majority of respondents would pay a 25% or more price premium for organic products.

Sema (2011) identified the various constraints for expanding organic farming in India and reported that the lack of awareness of technology for organic production, high cost of certification, weak extension services, and weak market linkage was the critical limiting factors for organic production in India. The conversion period involved with organic agriculture was difficult due to temporarily declining yields and a lack of information and experiences (Lukas & Cahn 2008). This is likely to be a significant constraint for poor farmers from adopting organic farming. Socioeconomic analysis has brought out by Grover & Singh (2011) and stated that the organic growers were comparatively younger in an age that supported young farmers' tendency to adopt the new farming system. The literacy was marginally higher among organic growers. Organic farming was adopted by those farmers whose primary income source was agriculture. The overall operational size of organic and inorganic growers was not significantly different in the study area. Alam (2011) reported about three-fourths (73%) of organic farmers grew vegetables, and the majority (37%) of them sold their products to their respective providers. It was also reported that lack of capital and technical back up, insufficient organic inputs, marketing problems, and social and cultural barriers were the significant challenges of organic farming.

Policy interventions

In most countries, organic farming has been taken by either NGOs or by private organizations. Lately, government interventions have become obvious to formulate as well as to execute the National Organic Programme. Bangladesh is not the exception, and now it is time to promote organic farming by implementing the National Organic Agriculture Policy – 2016. The policy's success depends on how fast the policy is implemented. Developing Organic Standard and setting up the criteria for substances to be used or used in organic production in compliance with the International Federation of Organic Agriculture Movements (IFOAM) or any other well-established standards has become inevitable to boost organic culture.

The establishment of an Association of Organic Farmers and Entrepreneurs at the National and Regional level will allow them to be organized. Rahman and Akter (2020) reported that the pilot project, Village-based organization (VSO),

helped the farmers unite and restore their inherent natural resources rights. The skills of the producers and processors can be improved by providing training and information sharing. Rahman et al. (2020a) found that the training improved knowledge, skills, and attitude towards sustainability. In this regard, educational institutions can take over the responsibility to update the syllabus relating to OA. Dissemination of information is highly warranted to develop organic markets. Incentives should be provided among the farmers for producing good quality organic manure, bio-pesticides, biofertilizers, etc. More action research should be carried out to formulate organic farming practices in the context of Bangladesh. Based on the dissemination of those findings, the farmers can bridge their knowledge gap.

Organic Agriculture should be considered the 'topmost priority sector' (under the export promotion policy), realizing the continued demand for organic products globally. *Khas* land should be leased among the proactive entrepreneurs and progressive farmers to establish "Export Agro-village" in each district. Contract farming will be important in the case of producing organic food products. Participating in national and international organic fair/trade shows, searching for the market, and strengthening the bondage is highly necessitated.

The agricultural market chain is distorted and fragile. A group of intermediaries determine the fate of the producers and consumers (Alam et al. 2020; Rahman et al. 2020b; Rahman and Neena 2018). The Department of Agriculture Extension should work closely with the Trading Corporation of Bangladesh (TCB) to uproot the intermediaries from the market and clear all market barriers. The target 2c of SDGs stresses adopting measures to ensure the proper functioning of food markets.

Conclusions

Consumer demand and organic trade-in products are rapidly increasing and becoming a reality throughout the world. Considering OA's trend, many developing countries have shifted from chemical to organic farming and accordingly formulated a national organic program. On the contrary, Bangladesh's organic farming progress is still at the primary stage compared with other developing countries and even Least Developed Countries. However, there is an excellent potential for organic farming, and Bangladesh could exploit the prospective global organic markets' opportunities. Certification is a prerequisite to popularize OA. Organic product legislation, standardization, and infrastructure in such development are also significant issues of policy concerns. It is quite difficult for poor Bangladeshi farmers to address these issues on their own. The success of organic markets depends entirely on how fast the organic agriculture policy is implemented.

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