

Impact of Perception on the Purchase Decisions of Organic Food

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Abstract

The research paper discusses how the perception of organic food is impacting the purchase decisions of organic food by collecting evidence from Dhaka, Bangladesh. Applying convenience sampling and online survey techniques on a sample size of 100 (n=100), this paper has formulated a model for purchase decision has been formulated with variables namely environmental benefits, food and safety benefits, health concern, trust, education, age, gender and perception of organic food. Availability, Marketing Strategy and Perceived Price worked as moderating variables in the relationship between perception of organic food and perceived price. The research results suggest that the environmental benefits, food safety and benefits, marketing activities, and demographic factors do not have any significant relationship on that of people's perception of organic food. On the other hand, health concerns and trust are factors that seem to have a significant relationship with perception of organic food. Most consumers who look for and purchase organic food are concerned with wellbeing. Additionally, there are people who believe they are receiving value for their money when they purchase organic food. This suggests that their perception of the value of organic foods is increased by its value for health considerations. Since the paper has established a significant correlation between the perception and purchasing behavior towards organic food, the perception variable can be used to account for purchase intentions. Therefore, improving the public standpoint about organic food will influence consumers' intentions to buy it. The supply chain has a significant impact on the dynamics of consumer perception and purchasing decisions regarding organic food. Along the supply chain, variables such as availability, marketing strategy, and perceived price have a significant impact on consumers' perceptions of organic food. Effective administration of these factors, in conjunction with the consumer perception framework, has the potential to influence purchase intentions and behaviour. It indicates supply chain as a potential area for improvement. Practitioners of supply chain management can strategically position organic products by employing well-crafted marketing strategies and establishing competitive prices. This may effectively enhance consumers' favourable opinions and encourage them to favour organic alternatives.

Keywords: Organic Food, Sustainability, Green Supply Chain Management (GSCM), Structured Equation Modeling (SEM), Consumer Perception, Purchase Decision.

1.0 Introduction

Organic food, which is produced using eco-friendly methods and without the use of synthetic chemicals, has become a dominant force in the contemporary culinary world. The transition in agricultural production has been fueled by a growing awareness of the importance of health, the environment, and sustainable consumerism. The increased awareness of consumers regarding the origins and composition of their food has led to a substantial increase in the demand for organic food. The organic food industry, which was once considered a niche market, has undergone significant expansion and emerged as a major economic force, exhibiting immense market value and remarkable growth patterns. Organic food products are in high demand as a result of an increased emphasis on personal health, heightened environmental consciousness, and ethical considerations. This trend is also acquiring traction in Bangladesh.

1.1 Background of the study

Organic food has been gaining popularity worldwide due to its perceived health benefits and environmental sustainability. Bangladesh, as a developing country, has also witnessed a growing interest in organic food consumption among consumers in recent years. However, the purchase of organic food is still relatively low in comparison to other countries, and it is not yet clear how the perception of organic food impacts the purchase decision in Bangladesh.

1.2 Rationale of the study

This research proposal aims to investigate how the perception of organic food is impacting its purchase decision in Bangladesh. Specifically, the study will examine the factors that influence consumer perception of organic food, such as price, health benefits, demographic aspects, environmental concerns, and product availability. The research will also explore the relationship between perception and purchase behavior by analyzing the factors that affect consumers' decision-making process when purchasing organic food. As there has been few studies on Dhaka-focused organic food consumer behavior, this research will add value to the literature. This research aims to contribute to the existing literature on organic food consumption and the factors that impact consumers' purchase decisions in Bangladesh. The findings of this study will

be beneficial to organic food producers and marketers in developing effective strategies to promote organic food consumption and increase sales in Bangladesh.

2.0 Research Question and Objectives

2.1 Research Question

The primary question that this research strives to address is how the perception of organic food impacts the purchase decisions of organic food among consumers in Dhaka, Bangladesh.

2.2 Research Objectives

- I. To find out the factors that affect consumers' perception of organic food
- II. To find out how perception of organic food drives the purchase intention of consumers
- III. To find out to what extent the purchase intention of consumers is impacted by perceived price, marketing strategy and availability of organic food
- IV. To find out how demographic variables affect the perception of organic food
- V. To find out implications of consumer perception on Supply Chain of organic food

3.0 Literature Review

3.1 Overview of Organic Food Market

When the global population was lower, the majority of cultivation and food preparation was conducted in an environmentally responsible manner. Nonetheless, as the global population grew at an exponential rate, it became clear that the age-old techniques, which had been passed down from generation to generation, were unable to meet the most pressing needs. As a consequence of these factors, there was a "green revolution," in which producers adapted new technology to increase productivity and meet the rising demand for food from an expanding population. Unfortunately, as food production increased, so did the use of potentially hazardous chemical pesticides and fertilisers (Dholakia & Shukul, 2017).

To grow organic food, man-made compounds such as pesticides, fertilisers, and genetically

modified organisms (GMOs) must be avoided. In the latter half of the twentieth century, the organic food industry expanded dramatically. This resulted in the formation of a viable business with precise manufacturing, processing, distribution, and retail procedures (Duram, 2019).

The global organic food market was valued at USD 178.4 billion in 2021. According to a 2022 report by Precedence Research, if current trends persist, the industry will be worth approximately USD 497.3 billion by 2030. This projection is predicated on a CAGR of 12.06% between 2022 and 2030 (Precedence Research, 2022). The increasing global demand for organic products has a significant impact on the export markets of developing nations. This is especially true in prosperous nations.

3.2 Scenario of Organic Food in Bangladesh

In recent years, Bangladesh has made significant progress in agriculture. Historically, farming involved primarily the cultivation of rice and vegetables. However, as Bangladesh continues to develop, there is a greater possibility that more money will be invested in the cultivation of trees that can be used to generate income over longer timeframes. Despite the fact that there are still issues on the market, producers are currently cultivating foods with extended shelf lives, more nutrients, and improved genetics. The majority of these commodities are intended for export. In recent years, there has been a significant shift in the construction of transportation systems. This has made it easier for commodities to enter and leave an area, as well as for people to make diverse investments in different agricultural food products (Hassan, Juhayer, Islam, Sadique, & Samad, 2022).

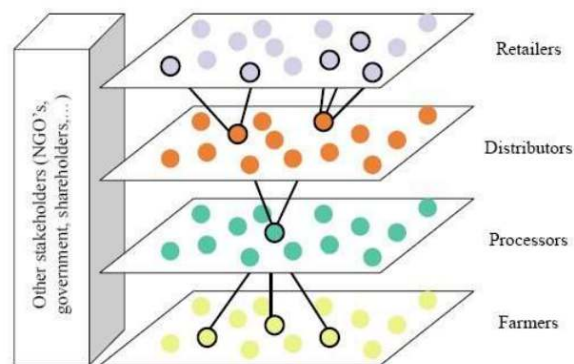


Figure 1: A Schematic Diagram of Bangladeshi Agro-products (Gazi, 2020)

Organic farming began on a small scale in Bangladesh at the beginning of the 1990s. Few non-governmental organizations (NGOs) initially began practicing organic gardening in Bangladesh. These NGOs unite interested farmers, offer instruction, technical guidance, financial assistance, and assistance in marketing organic goods (Rahman M. M., 2021). In Bangladesh, the supply chain for agricultural goods, regardless of their organic categorization, begins with the farmers. Afterwards, wholesalers, distributors, retailers, and other types of intermediaries contribute to the chain by making these items available to end users (Iftekhhar, Dollar, Mamun, & Ferdouse, 2020).

However, due to novelty factor and reluctance of agricultural producers to adopt organic food production and farming Moreover, when delving into the existing regulatory framework for organic foods in Bangladesh, it was discovered that no instructions relating to organic produces has been integrated within the national regulatory policy statements (Barua, 2021).

3.3 Consumer Perception Towards Organic Food

People choose to purchase organic food for a number of important reasons. According to popular belief, organic food is free of pesticides and chemicals and is safer, healthier, and more nutrient-dense. Another justification is that organic farming is more environmentally friendly and produces better-tasting food than conventional farming. (Wier & Calverley, 2002). The primary driving force behind acquiring and consuming organic food is often health concerns. (Fotopoulos & Krystallis, 2002).

Past research (Wandel & Bugge, 1997); (Thompson & Kidwell, 1998) has demonstrated that younger individuals are more aware of their surroundings than senior individuals. However, because they cannot purchase as much, they are frequently less willing to pay a higher price. Many people believe that organic products are typically expensive, which gives the impression that they are primarily purchased by the affluent (Magnusson, Arvola, Hursti, & Åberg, 2001). This association is also influenced by factors such as lifestyle choices (Goetzke & Spiller, 2014), and higher levels of education (Storstad & Bjørkhaug, 2003). The influence of attitude on purchasing decisions is a crucial aspect of the acquisition and utilisation of goods (Argyriou & Melewar, 2011).

In the Dhaka Metropolitan Area, consumers do not purchase and ingest enough organic foods. (Chowdhury, Meero, Rahman, & Islam, 2021). A lack of knowledge, a lack of licensure, market unavailability, along with excess price are the primary factors preventing people from adopting these dietary and behaviour patterns (Rahman & Noor, 2016). There has not been much academic research on how individuals feel about organic foods.

3.4 Effect of Customer Perception on Supply Chain Management

Supply chain management is an organization's management of internal business processes and connections with suppliers and consumers throughout the supply chain (Harland, 1996). Consumer behaviour is how people act when they buy things, talk to sellers and other customers, and deal with new situations. It includes a thorough look at everything that customers do (Asha, Shill, Alam, Talukdar, & Adhikary, 2022). In other words, consumer behaviour is how people act when they buy things, talk to sellers and other customers, and deal with new situations. It includes a thorough look at everything that customers do. Because they were ignorant of the supply chain in the past, consumers typically had no impact on it. Consumers now have unparalleled control over supply chain management thanks to easy access to information on procurement of raw materials, production processes, product quality and whatnot. The organic market has grown quickly - especially in countries in Europe and the US due to consumers' growing interest in sustainable food products. Moreover, Asia can be the next epicentre for the organic food market.

Increasing numbers of new products, services, and modifications to existing ones are introduced every day with the aim of making customer experiences more enjoyable and more efficient. Because of the rapid evolution of options, the methods of consumer decision-making have evolved as well. The consumers themselves are an essential part of this shift (Ayub, Chowdhury, Morshed, & Hossain, 2020) The supply chain may be impacted by consumer demand for more environmentally friendly corporate practices. Supply chain management ensures that end-consumers receive the desired products they require. The supply-demand mechanism of economics implies that the supplier is responsible for providing the manufacturer with the necessary primary materials. The manufacturer then conducts a thorough market analysis and attempts to forecast the future demand for consumer products (Asha, Shill, Alam, Talukdar, & Adhikary, 2022). Although someone on a restricted budget could be compelled to pay less

attention to sustainability issues, some consumers are ready to pay a premium for sustainably produced goods. Consumers that value sustainability will shop from other places if it turns out that a company's supply chain uses questionable labour or environmental practices. One must identify the threats that would negatively affect how the supply chain contributes to the customer value proposition and develop resilience skills to minimise significant dangers to cater to the customer value proposition. It is essential for organisations to determine what risks their capacity to deliver on promises and what risk mitigation techniques will work best in order to achieve resilience.

3.5 Green Supply Chain Management

Green Supply Chain Management focuses on maximizing business revenue through ensuring a limited negative environmental consequence, and assure high levels of customer satisfaction. Modern Bangladesh is presently confronting a widespread environmental disaster that is defined by a number of critical challenges. However, it is clear that the country's current logistical and legal systems are incapable of dealing with this situation successfully. Creating a sustainable supply chain is a noteworthy way for businesses to contribute to environmental preservation and waste reduction (Rahman, Sakib, Mim, & Sarker, 2020).

GSCM seeks to reduce resource consumption, waste, and pollution while also lowering the carbon footprint of goods and services. GSCM is increasingly becoming a practice that is utilised both internally and externally to decrease material costs and boost profitability while maintaining a strong brand image. This change is the result of increased customer demand for sustainable goods and services and tighter government regulation. Thus, it would appear vital for GSCM to incorporate customer opinions and perspectives to augment the enterprise profit. The cornerstone of business market orientation and a crucial tenet of business marketing is customer orientation. It is simpler to learn from customers and obtain more information and feedback over time the greater the level of customer orientation and the closer the interaction with customers. This makes it possible to respond to changes in consumer requirements more quickly and effectively.

4.0 Methodology

4.1 Research Design

This research is a mono-method quantitative investigation. The research will be exploratory in nature because its primary goal is to establish a theoretical framework to understand the interrelationships among the different variables. Firstly, the endogenous variable “Perception of Organic food” will be assessed via different latent variables including Environmental Benefit, Food and safety benefit, Health concern and trust. Demographic factors like age, gender and education will be taken as the control variables to assess the endogenous variable “Perception of Organic food”. Later, it will be analysed how “Perception of Organic food” impacts the “Purchase intention of organic food” and whether moderating variables like Availability, Marketing Strategy and Perceived Price have any impact on this relationship.

4.2 Sampling Technique

Choosing a subset of a population for study without using a random selection process is an example of a non-probabilistic sampling methodology. Convenience sampling, one of the non-probabilistic sampling methods, was used for this study. Due to time and resource constraints, as well as the fact that the sampling frame for the entire population is unavailable, we will employ convenience sampling. Those who are eligible and willing to engage in the study will be included in the sample.

4.3 Sample Size

Due to the absence of a simple random sampling strategy, it was not possible to theoretically calculate an adequate sample size for the research. As a result, Roscoe's rule of thumb was used to settle on a suitable sample size number. This rule of thumb suggests, “A sample size between 30 and 500 is good for a behavioural study, as anything less or more than this would lead to an increase in Type I and Type II error” (Roscoe, 1975). This is why, despite being settled on a sample size of 100, we were able to collect data from 71 individuals due to time constraints.

4.4 Data Collection Method

In this study, an online survey will be used to acquire data. Google Forms will be used to build the survey. We plan to design a structured questionnaire that includes a closed-ended questions. Participants' perceptions of organic food and purchasing behaviour will be quantified with a Likert scale. The survey will be offered in English. So, to circulate our survey questionnaire, we will use popular social media platforms like Facebook. The survey link will be distributed through chats, groups, and direct messages. The survey will have screening questions regarding their location and purchase behaviour to collect data from residents of Dhaka who have done grocery shopping at least 2 times in the last month.

4.5 Data Analysis Plan

The statistical software programmes Smart PLS and Microsoft Excel will be used to examine the research data. The structural equation modelling (SEM) analysis will be performed using Smart PLS. The collected data will also be extensively reviewed using Smart PLS to ensure its reliability and validity. Ms Excel will be used to do general analysis and generate graphs about the data and the findings.

4.6 Limitations

1. As non-probabilistic sampling technique has been used there might be some bias in the data, hence the findings might not be generalizable.
2. The sample will be collected only in Dhaka city due to convenience of the researchers in this specific study. And the generalisation for the country's population would not be possible.
3. This study will not be able to take into account all the variables that affect the perception of organic food.
4. This study will not be able to observe all factors responsible for the organic food consumption and purchase from perception.

5.1.1 Research Output Model



To derive a conclusion, we have conducted our model analysis and statistical analysis on SmartPLS. We have used likert scale data on our surveys and the SmartPLS output based on that. This is the initial model and some of the variables would be removed to correct the model. These are environmental benefits, food safety and benefits.

Steps to correct the model:

	Outer loadings based on p-value
Age <- Age	1
EB1 -> Environmental Benefits	0.096
EB2 -> Environmental Benefits	0.701
EB3 -> Environmental Benefits	0.815
Education <- Education	1
FS1 -> Food Safety & Benefits	0.825
FS2 -> Food Safety & Benefits	-0.009
FS3 -> Food Safety & Benefits	0.43
FS4 -> Food Safety & Benefits	0.49
Gender <- Gender	1
HC1 -> Health Concern	0.911
HC2 -> Health Concern	0.827
HC3 -> Health Concern	0.788
Income <- Income	1
T1 -> Trust	0.841
T2 -> Trust	0.955

Table 1: Outer loadings based on p-values

5.2 Structural Model Analysis

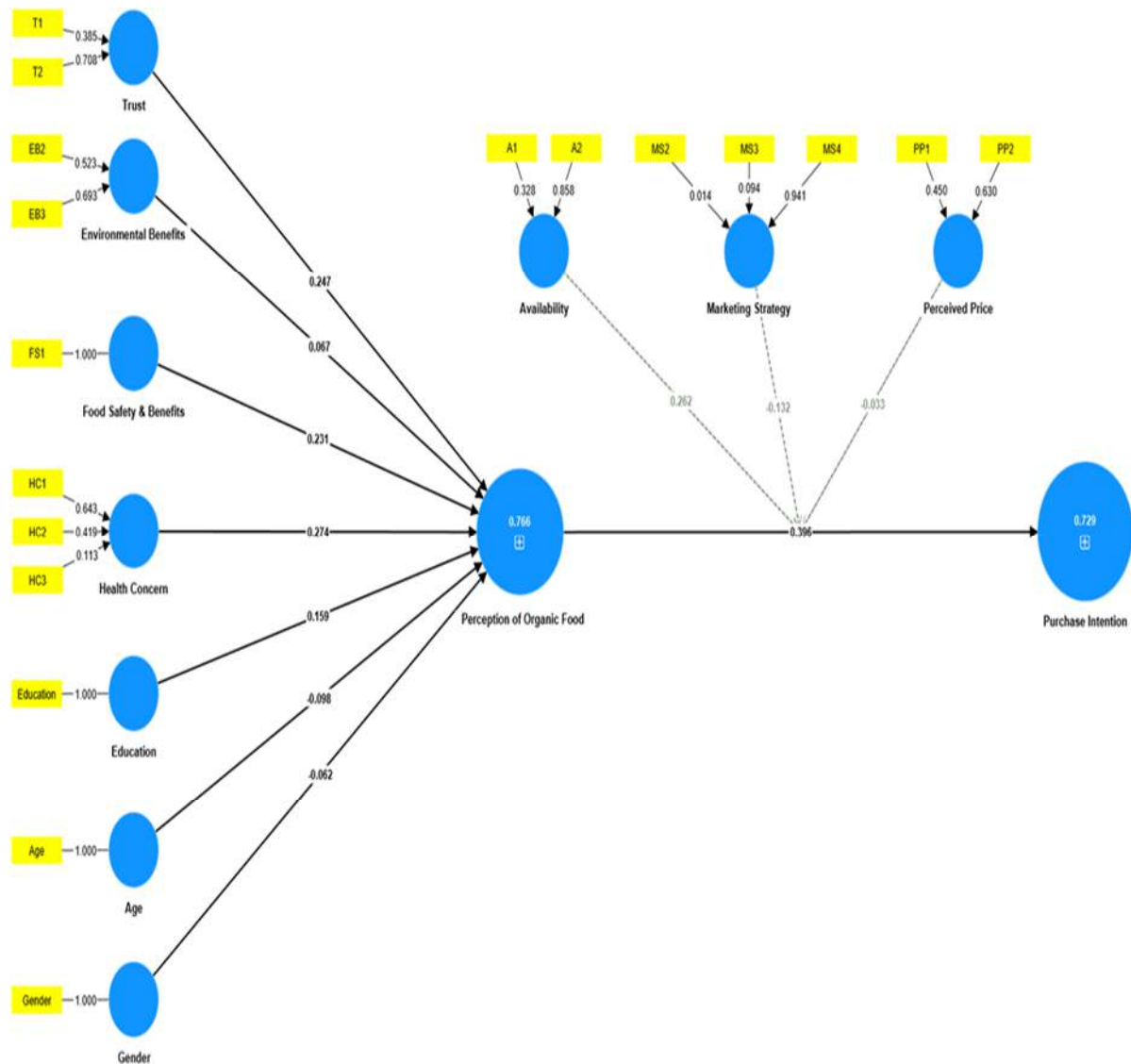


Figure 3: Final Research Output Model

5.2.1 Reliability and Validity Check

Initially the reliability and validity of the data collected from the survey were tested to make sure the model will be a good model. Cronbach's alpha and composite reliability were used to check the reliability factor. Average Variance Extract (AVE) was used to check for convergent validity, while HTMT ratio and cross loadings were checked to establish discriminant validity.

Reliability and Convergent Validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Perception of Organic Food	0.766	0.773	0.851	0.590
Purchase Intention	0.729	0.730	0.881	0.787

Table 2: Cronbach's Alpha, composite reliability, AVE

For the Cronbach's alpha test, 0.7 was considered as the threshold. If the value of the constructs exceeded this threshold, we could say it has established composite reliability. In the model, both the 'Perception of Organic Food' and 'Purchase Intention' construct surpassed the 0.7 level, hence establishing reliability.

All of the constructs met the composite reliability threshold of 0.70, as recommended by Ringle (2018). Therefore, composite reliability was established for each factor. Convergent validity was also proven because all the constructs had AVE greater than 0.5, which is the threshold for establishing convergent validity (Ali, Rasoolimanesh, Sarstedt, Ringle, & Ryu, 2018).

Discriminant Validity

HTMT (Hetero-trait Mono-trait) Ratio

Because none of the results were higher than the cutoff of 0.85 in the HTMT approach, discriminant validity was confirmed to have been achieved.

	Age	Education	Food Safety & Benefits	Gender	Perception of Organic Food	Purchase Intention
Age						
Education	0.606					
Food Safety & Benefits	0.177	0.055				
Gender	0.174	0.124	0.211			
Perception of Organic Food	0.147	0.152	0.389	0.136		
Purchase Intention	0.231	0.024	0.432	0.169	0.85	

Table 3: HTMT (Hetero-trait Mono-trait) Ratio

Cross loadings

Furthermore, the Cross Loading method revealed that the indicators exhibited a stronger correlation and higher loading with their respective parent constructs, in contrast to their loading with alternative constructs. Once more, the discriminant validity of the data we acquired was established.

	Age	Availability	Education	Environmental Benefits	Food Safety & Benefits	Gender	Health Concern	Marketing Strategy	Perceived Price	Perception of Organic Food	Purchase Intention	Trust
A1	0.061	0.566	-0.156	0.128	0.177	-0.028	0.205	-0.019	0.171	0.175	0.32	0.123
A2	-0.021	0.949	0.002	0.204	0.145	-0.051	0.401	0.321	0.06	0.467	0.538	0.44
Age	1	0.002	0.606	0.19	0.177	0.174	0.194	0.145	0.028	0.136	0.198	0.147
EB2	0.202	0.213	0.069	0.758	0.238	0.068	0.438	0.098	-0.075	0.246	0.274	0.301
EB3	0.122	0.152	0.041	0.871	0.519	0.149	0.213	-0.058	0.133	0.282	0.302	0.094
Education	0.606	-0.049	1	0.064	0.055	0.124	0.16	0.002	0.151	0.132	0.016	-0.097
FS1	0.177	0.182	0.055	0.485	1	0.211	0.314	0.134	0.214	0.347	0.369	0.054
Gender	0.174	-0.053	0.124	0.139	0.211	1	0.048	0.131	-0.012	0.058	0.144	0.062
HC1	0.221	0.324	0.176	0.412	0.305	0.053	0.912	0.157	0.003	0.382	0.501	0.133
HC2	0.112	0.389	0.081	0.24	0.224	0.013	0.827	0.364	0.187	0.346	0.346	0.196
HC3	0.05	0.353	0.109	0.097	0.207	0.074	0.588	0.168	0.012	0.246	0.156	0.051
MS2	0.08	0.076	-0.011	-0.05	-0.095	0.202	0.031	0.472	0.02	0.03	0.219	-0.015
MS3	0.086	0.377	-0.034	-0.004	-0.092	0.029	0.297	0.591	-0.087	0.186	0.274	0.153
MS4	0.144	0.248	0.005	0.012	0.153	0.134	0.26	0.997	0.049	0.39	0.462	0.082
P1	0.048	0.306	0.129	0.232	0.339	-0.031	0.241	0.207	0.276	0.827	0.414	0.278
P2	0.143	0.406	0.16	0.316	0.228	-0.078	0.234	0.246	0.306	0.802	0.472	0.316
P3	0.033	0.394	0.045	0.079	0.129	-0.008	0.388	0.544	0.21	0.662	0.576	0.081
P4	0.17	0.309	0.073	0.334	0.346	0.249	0.409	0.218	0.261	0.77	0.503	0.208
PI1	0.125	0.493	-0.005	0.29	0.353	0.118	0.416	0.368	0.214	0.581	0.884	0.219
PI2	0.224	0.511	0.032	0.335	0.302	0.138	0.444	0.453	0.171	0.555	0.89	0.323
PP1	-0.004	0.145	0.093	0.023	0.168	-0.03	0.015	0.076	0.895	0.296	0.194	-0.073
PP2	0.048	0.067	0.173	0.067	0.221	0.003	0.119	0.007	0.948	0.336	0.205	-0.089
T1	0.152	0.388	-0.105	0.17	0.073	0.064	0.215	0.128	-0.109	0.244	0.258	0.84
T2	0.125	0.379	-0.08	0.222	0.036	0.053	0.128	0.06	-0.066	0.277	0.292	0.955

Table 4: Cross Loadings

5.2.2 Hypothesis Testing

Structural equation modeling (SEM) has become a major tool to test and evaluate multivariate causal relationships. And so, using a structural equation model through hypothesis testing we attempted to find out if there was any significance between the variables or not. The t-value

quantifies the significance of the difference in terms of the standard deviation of the sample. If the t-statistic is high enough, it indicates that the difference between the means of the two samples is statistically significant. To be statistically significant, a two-tailed t-test with $df=533$ and $p=.05$ requires a t-value of 1.960 or higher. To test a hypothesis with real-world evidence, statisticians calculate a value called a "p-value." In most cases, a p-value of 0.05 or less indicates statistical significance. We checked the p-values of all the variables to make sure they were all significant. Any variable that had a p-value of 0.05 or below was considered to be supported and the hypothesis was accepted.

Hypothesis regarding factors impacting perception of organic food

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STD EV)	P values	Decision: reject/accept alternate hypothesis?
Environmental Benefits -> Perception of Organic Food	0.067	0.142	0.169	0.397	0.692	Reject
Food Safety & Benefits -> Perception of Organic Food	0.231	0.19	0.158	1.463	0.144	Reject
Health Concern -> Perception of Organic Food	0.274	0.3	0.106	2.574	0.01	Accept
Trust -> Perception of Organic Food	0.247	0.239	0.104	2.38	0.017	Accept

Table 5: Factors impacting perception of organic food

Although the model explains that the perception of organic food is explained 76.6% by the included variables. The above hypotheses show only the variables where the p value is significant for the perception of organic food. The variables include environmental benefits, food and safety benefits, health concern and trust.

Regarding the hypothesis pertaining to the factors influencing the perception of organic food, the association between environmental advantages and the perception of organic food exhibits a negligible positive beta coefficient of 0.067, with a p-value beyond 0.05. **Therefore, based on the rejection of the alternative hypothesis, it may be concluded that there is no substantial correlation between environmental benefits and the perception of organic food.** Subsequently, the correlation between food safety advantages and the perception of organic food exhibits a notable positive beta coefficient of 0.231. However, the corresponding p-value above the threshold of 0.05, indicating that **food safety benefits do not exert a discernible influence on the perception of organic food within the context of our sample.** Furthermore, there exists a notable positive correlation between health concerns and the perception of organic food, as evidenced by a significant beta coefficient of 0.274 and a p-value below the threshold of 0.05. **The beta coefficient of 0.274 indicates a positive correlation between health worry and the perception of organic food.** This suggests that for every unit increase in health concern, there is a corresponding increase in the perception of organic food by a factor of 0.274, among the target group.

Furthermore, the relationship between trust and perception of organic food has a significant positive beta of 0.247 and a **p-value less than 0.05**. The beta value for trust signifies that the perception of organic food is **positively correlated** with trust by **24.7 percent** indicating that each unit of trust increases the perception of organic food positively amongst the target population by 0.247 times.

So, both of these alternative hypotheses can be accepted and we could establish that the effect of health concern and trust on perception of organic food is significant.

Hypothesis regarding demographic variables impacting perception of organic food

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values	Decision: reject/accept alternate hypothesis?
Gender -> Perception of Organic Food	-0.062	-0.073	0.207	0.3	0.764	Reject
Age -> Perception of Organic Food	-0.098	-0.084	0.098	0.995	0.32	Reject
Education -> Perception of Organic Food	0.159	0.14	0.132	1.201	0.23	Reject

Table 6: Demographic variables impacting perception of organic food

In case of the hypotheses regarding demographic variables impacting perception of organic food, the relationship between gender and perception of organic food has a insignificant negative beta of -0.062 and a p value more than 0.05. Besides, age and perception of organic food has a relationship containing negative insignificant beta of -0.098 and a p value more than 0.05. Even though the relationship between education and perception of organic food has a positive significant beta of 0.159, the p-value is more than 0.05. **Hence, we could Derive how demographic variables like gender, age and education do not have a significant impact on the entire perception of organic food.**

Hypothesis regarding impact of moderating variables

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STD EV)	P values	Decision: reject/accept alternate hypothesis?
Availability x Perception of Organic Food -> Purchase Intention	0.262	0.235	0.114	2.298	0.022	Accept
Marketing Strategy x Perception of Organic Food -> Purchase Intention	-0.132	-0.121	0.092	1.445	0.149	Reject
Perceived Price x Perception of Organic Food -> Purchase Intention	-0.033	-0.039	0.094	0.347	0.728	Reject

Table 7: Impact of moderating variables

In case of the hypotheses regarding impact of moderating variables, the relationship between availability x perception of organic food and purchase intention has a significant positive beta of 0.262 and a **p value less than 0.05**. So, **the alternative hypothesis is accepted and**

illustrates how availability has a significant impact on perception and purchase intention of organic food. The beta value for the moderating variable of availability on the perception of organic food and subsequent purchase intention signifies that the availability is **positively correlated** and increases users purchase intention by 26.2 percent from their evaluated perception of organic food. This indicates that each unit of availability drives the purchase intention of organic food positively with their perception amongst the target population by 0.262 times.

Moreover, the relationship between marketing strategy x perception of organic food and purchase intention has a significant negative beta of -0.132 and a p-value more than 0.05. Thus, **the alternative hypothesis gets rejected and illustrates that the effect of marketing strategy is non-existent in our sample.** In addition to that, the relationship between perceived price x perception of organic food and purchase intention has a insignificant negative beta of -0.033 and a p-value more than 0.05 **which again signifies that perceived price does not have a significant impact on the entire perception of the organic food and purchase intention.**

Hypothesis regarding purchase intention

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values	Decision: reject/accept alternate hypothesis?
Perception of Organic Food -> Purchase Intention	0.396	0.38	0.12	3.29	0.001	Accept

Table 8: Purchase Intention

Lastly, in case of hypothesis regarding purchase intention, the relationship between perception of organic food and purchase intention has a significant positive beta of 0.369 and a **p value less than 0.05**. Therefore, we accept the alternative hypothesis. To conclude, we could establish that perception of organic food significantly affects the purchase intention.

The results of the study should be interpreted with caution because the adjusted **R-square was 72.9%**, which indicates that the latent variable purchase intention is explained only 72.9 per cent by the perception of organic food amongst the users. The composite variable, i.e., perception of organic food can be explained by its underlying constructs up to 76.6 per cent. It implies that 23.4 percent is attributable to constructs that have not been included in the model. The adjusted R-square value of 72.9% implies that the model is a good framework for the assessment of purchase intention of organic food.

5.3 Discussion

From our statistical analysis done on the collected data, the inferences found show multiple constructs having higher correlation and significance in driving the perception and purchase

intention in Bangladeshi market. From the research results, we identified that the environmental benefits, and food safety and benefits do not have any significant relationship on that of people's perception. Although organic food is free of antibiotics and hormones, food safety of the same is not rendered as highly as it should be. One of the reasons for this is attributable to the fact that while consuming, consumers do not perceive the benefits of organic foods.

Again, our study shows that demographic variables included i.e., age, gender, education do not have a significant impact on perception of organic food as well. This contradicts findings from literature review which states that females possess a greater willingness of consuming organic food than males (Rimal, Moon, & Balasubramanian, 2005). However, for the other demographic factors, the insignificant relationships can be attributed to the fact that the data collected for the survey was collected from a homogeneous audience belonging from a middle-class background, educated and young (18-35) age.

Although according to literature, consumers would pay extra on green items as a result of marketing campaigns (García-Gallego, 2011). The constructs, i.e., marketing strategy and perceived price did not show any significant relation with perception of organic food and therefore purchase intention. However, health concerns and trust are factors that seem to have a significant relationship with perception of organic food. Trust in organic food brands has also been identified as a key parameter to users' perception of organic food, the stronger the trust, the better the perception of organic food. This correlates with the findings from literature of consumers' behavior and consumption of organic food in Dhaka Metropolitan Area is poor. Although the main barriers identified for the lack of trust in organic food brands include a lack of education, low certification, high prices, and a scarcity of organic food (Chowdhury, Meero, Rahman, & Islam, 2021). As such, it is impertinent to increase consumer trust in these organic food brands to drive purchase of organic foods.

The second key parameter, health concern has also been a rising issue in the context of users specifically from Bangladesh. More than 3 million people are affected by pesticides, and about 370,000 deaths occur per year (World Health Organization, 2019). Not only this, according to a survey, the majority of the organic food consumers in Bangladesh are aware of the harmful impact that pesticides and chemical fertilizers have on the environment and human health (Sarker & Itohara, 2008). As such, people who seek and buy organic food are mainly those who are conscious about their health. And these are also people who trust that they are getting value

for their money when getting organic food. This implies that their value for health concerns adds to their perceived value of organic foods.

Moreover, due to the glaring absence of regulatory frameworks to promote and protect organic farming in the country, the organic food market has yet to create a notable positive shift in perception within the prevailing consumer demographic (Barua, 2021).

The perception of organic food and purchase behavior have a strong relationship, which means the purchase intention can be explained with the perception variable. So, undertaking a clear strategic decision will develop a better perception of organic food, which will ultimately drive the purchase intention of organic food.

5.3.1 Identifying Broken Links in Bangladeshi Agro Supply Chain

According to Gazi (2020), Agro supply chain in Bangladesh faces a multitude of challenges, and the following broken links contribute to the inefficiency of the system.

- **Insufficient storage facilities** lead to challenges in preserving harvested produce. This lack of proper storage infrastructure results in a higher risk of spoilage, wastage, and reduced overall product quality. Without adequate storage, farmers are compelled to sell their products quickly, often at lower prices.
- **Inadequate transportation infrastructure** hampers the timely movement of agricultural goods from production areas to markets. This can lead to delays, increased costs, and lower product quality due to extended travel times. Poor road conditions and limited transportation options further exacerbate this issue.
- The absence of proper storage and transportation facilities contributes to **higher wastage rates**. Delays, improper handling, and lack of temperature-controlled transport lead to spoilage and damage, reducing the quantity and quality of products available for sale.
- The involvement of **numerous intermediaries** between farmers and consumers leads to fragmented supply chains. Each intermediary adds a layer of cost and complexity, reducing the profit margins for both farmers and consumers. These intermediaries can also lead to inefficiencies in communication and decision-making.
- The absence or **inadequate maintenance of a cold chain** – a temperature-controlled supply chain – results in the deterioration of perishable products like fruits and

vegetables. The lack of proper temperature control accelerates spoilage, limits shelf life, and restricts the range of potential markets.

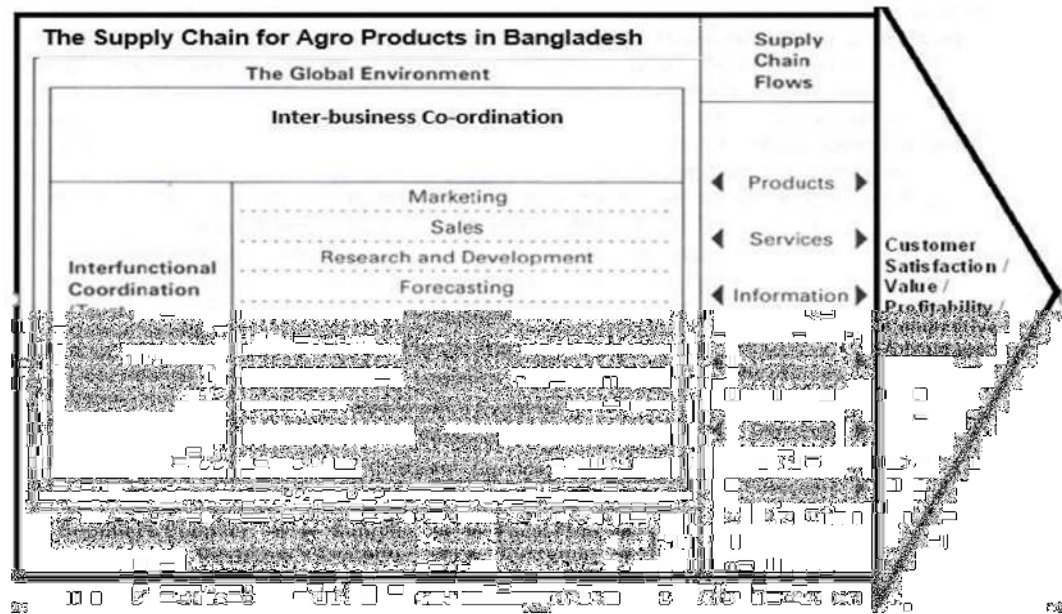


Figure 4: An SCM Model for Bangladeshi Agro Products (Gazi, 2020)

5.3.2 Establishing the 3D Framework

In our qualitative analysis, respondents elucidated the role of consumers in reshaping conventional supply chain management and its impact on farm-to-table practices concerning organic food within the context of Bangladesh.

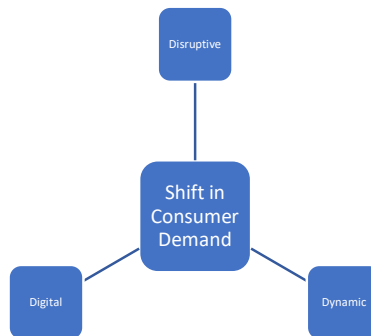


Figure 5: 3D Framework (Dynamic, Digital, Disruptive)

Historically, consumer demand primarily dictated supply chain decisions based on production and delivery capabilities. However, the emergence of digitization has rendered consumer demands increasingly **dynamic** and real-time. Consequently, a harmonious equilibrium

between economic value and the mitigation of disruptive events is imperative. This paradigm shift necessitates enhanced supply chain agility to promptly accommodate evolving consumer preferences and external variables.

The ‘**digital**’ phenomenon has profoundly overhauled supply chains, furnishing consumers with unparalleled access to information. This digital empowerment has revolutionized consumer engagement with supply chains, affording them insights into product provenance, availability, and other attributes that significantly influence their purchasing choices. Moreover, digital tools empower supply chain stakeholders to optimize procedures, amplify transparency, and effectively respond to consumer requisites.

A considerable proportion of consumers expressed dissatisfaction with the accessibility of organic food within local supermarkets. Given the embryonic stage of the organic food market in our nation, there exists a deficiency in substantial demand to effectively orchestrate established supply chain channels. However, latent market potential exists, necessitating the prioritization of consumer preferences, demands, and behaviors to embrace a timely **disruptive** market component.

6.0 Conclusion and Recommendations

6.1 Conclusion

Perception of organic products drives purchase behavior of organic food. From the detailed structural equation analysis performed on the variables chosen from secondary data, some were found significant, others were not. Our data consisted of survey findings of people aging between 18 to 35 years. Environmental benefits, food safety, trust, health concern, and demographic variables were our variables to see the relationship of each of them with that of organic food’s perception. Only health concerns and trust were found to have statistical evidence to prove that these are relevant. Which means that in order to change or create a perception about these products, marketers need to focus on these factors. Availability of product, marketing strategies, and perceived price are the factors that we tested to see relation with purchase behavior of organic products. Availability was the only variable found significant in this scenario. And last but not the least, perception of organic food is highly significant for predicting purchase behavior of these products.

6.2 Recommendations

In order to make sure that all the variables are significant, here are some recommendations-

- Health concern is one of the variables that was statistically shown to impact the people's perception of organic food. In other words, if marketers put user imagery of increased health benefits of consumers on the TVC/OVCs of organic food, they can indirectly impact the purchase intention of that brand of organic food.
- For the consumer of organic food, if the trust on brands increases, it in return creates better perception of organic food. Hence, the marketing activities should be focused on creating trust that this/that product is good and that they are receiving value in exchange for money. The credibility of the company and its products should be bringing in and retaining customers.
- As marketing strategies were proved insignificant, it can be said that pop up ads and generic channels are not working for what is a more niche clientele. The trust factor discussed above can be brought in the marketing strategies because that would be a sustainable way of building customer relationships.
- Social media and TV ads are saturated with environmental benefit points of organic products, whereas people are far less likely to care about that. Since environmental and food safety benefits do not have significant impact on perception, marketers can ignore these aspects in TVC and OVCs.
- There is not much significance of the demographic variables on the perception, especially for the age range that we focused on. Marketers could move from focusing on age and income-based segmentation strategies to more health concerns and trust building channels that would create affective or emotional interpretation of the product.

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Appendix

Appendix A: Questionnaire

What is your most recent educational qualification? *

- ☐ Secondary or equivalent
- ☐ Higher Secondary or equivalent
- ☐ Bachelor's degree
- ☐ Master's degree
- ☐ Doctorate degree

What is your age? *

Your answer _____

What's your gender? *

- ☐ Female
- ☐ Male
- ☐ Prefer not to say
- ☐ Other: _____

What's the range of your personal income? *

- ☐ 0-10,000
- ☐ 10,000-25,000
- ☐ 25,000-50,000
- ☐ 50,000-75,000
- ☐ 75,000-100,000
- ☐ Above 100,000

Please rate (from strongly agree to strongly disagree) depending on what you think of these statements below. *

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I trust that organic food certification is extremely reliable.	☐	☐	☐	☐	☐
I trust that organic food brands are credible.	☐	☐	☐	☐	☐
I am a firm believer in nature and wildlife preservation.	☐	☐	☐	☐	☐
When making a majority of my purchases, I consider the potential environmental consequences.	☐	☐	☐	☐	☐
I believe natural food should be consumed more.	☐	☐	☐	☐	☐
I am concerned about the quality and safety of food today.	☐	☐	☐	☐	☐
Most foods now contain pesticide spray and fertilizer residues, which should be avoided.	☐	☐	☐	☐	☐
The number of artificial additives and preservatives in food is highly worrying.	☐	☐	☐	☐	☐

I now purchase a greater variety of fresh fruits and vegetables than I did a few years ago.

☐☐☐☐☐

I choose food carefully to ensure good health.

☐☐☐☐☐

As I go about my day, I am conscious of the state of my health.

☐☐☐☐☐

I often think about health-related issues.

☐☐☐☐☐

I buy organic products simply because it was available in the store.

☐☐☐☐☐

If I see both organic products and non-organic products are available in the shop, I pick the organic one.

☐☐☐☐☐

If I see the price of organic products is low compared to standard organic products, I buy it.

☐☐☐☐☐

If I see the price of organic products is low compared to non-organic products, I buy it.	☐	☐	☐	☐	☐
I think even if the organic products have higher cost, it is justified.	☐	☐	☐	☐	☐
I have bought organic products just because it had discounts.	☐	☐	☐	☐	☐
I have bought organic products just because I feel the brand is more trustworthy than others.	☐	☐	☐	☐	☐
I may buy organic products if the packaging is beautiful and elegant, compared to other brands.	☐	☐	☐	☐	☐
If I see compelling ads of organic products, I want to buy the product.	☐	☐	☐	☐	☐
I think organic foods are better than regular food in terms of quality.	☐	☐	☐	☐	☐

I think more people should consume organic foods for health benefits.

☐☐☐☐☐

I think buying organic food is worth it even if its costly.

☐☐☐☐☐

I believe more people should consume organic food due to environmental benefits.

☐☐☐☐☐

If organic products are available, I usually want to purchase those products.

☐☐☐☐☐

I plan to purchase organic products during my next grocery shop.

☐☐☐☐☐