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## **Effect of the Covid-19 Pandemic on the Purchasing Behavior of Consumers**

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## **Effect of the Covid-19 Pandemic on the Purchasing Behavior of Consumers**

### **Abstract**

The COVID-19 pandemic and the mandates for lockdown and social distancing have affected the purchasing and shopping patterns of consumers. New patterns are being learned by customers. The eruption of the coronavirus (COVID-19) is very much novel viral disease and one of the foremost human disaster worldwide, impacting the lives of millions of people. The purpose of this paper is to discuss the effect of the COVID-19 crisis on the online purchasing behavior of fresh vegetables by consumers after two months of lockdown in Dhaka City. The research is focused on the analysis of the responses obtained from the Dhaka city (N =252) through a nationwide online questionnaire survey. The initial point of this paper is the study of socio-demographic factors prior to the declaration of lockdown in Dhaka city (26 March 2020) on the purchasing decision of fresh vegetables online. Further study was carried out by interpreting the shifts in the buying intentions of these products caused by the COVID-19 crisis before and after the end of the subsequent crisis. The chi-square test and descriptive statistics were employed to explore the changing behavior of consumers. The study found significant changes in consumer behavior while purchasing fresh vegetables through online. The findings indicate digital transformation of consumer behavior due to COVID-19. The findings of the research has important bearing in understanding the changes in consumer behavior that can affect the digital transformation of fresh vegetables supply chains. The study is of the first kind in Bangladesh that explores digital transformation of consumer of fresh vegetables hence, not without limitations. Limitations and future research scope are therefore delineated.

**Keywords:** COVID-19, supply chain, consumer behavior, online shopping, digital transformation.

## 1. Introduction

Pandemics are recorded since ancient times. Every pandemic brings major changes in the world policies, human behavior and economics polices as well. In the history, pandemics had direct effect on the key reactions of human habit as they affected right on health, financial and food security, life quality (LeMay, 2016). For example, when cholera or the Spanish flu hit, it affected the stability of economic and food supply systems also wrecked and caused famine (Le Goff, 1988). Like other pandemics, COVID-19 has caused changes on all level. COVID-19 has triggered substantial changes on all over the country (Li et.al., 2020). Our thinking and lifestyle have been squeezed by this pandemic (Eichenbaum, et.al., 2020) and maybe we can't get back to our normal life very easily (Zizek, 2020; Harris 2020). Meanwhile, most of the countries also call for lockdown and this lockdown and due to this it greatly effected in all levels of people.

COVID-19 has deeply changed the way we live and work. The heart of Bangladesh, Dhaka city got the flavor of lockdown due to COVID-19 from 26 March 2020. There were restrictions of people movement, shutdown of offices, restaurants, shopping mall, educational institutions also neighborhood stores and small vendors except for emergency transport. The corona virus pandemic has brought a rapid change in people's life of Dhaka city. The changes are very significant. Many people shift from Dhaka city and move towards their countryside as people's perceptions and priorities were changed. This lockdown leads to much vulnerability. Overall market of Dhaka city is affected by this lockdown and it is disconnected with other major cities. Consumer behavior to certain products has also changed due to this shutdown. Purchasing decision of the people has shifted towards online purchasing across the globe because online purchasing presents much lower risks due to less direct contact and risks of being infected by COVID-19. Several studies have confirmed this change (Oana, 2020; Pham et. al., 2020; Sharma and Jhamb, 2020; Varade and Makhija, 2020; Ali, 2020; Gao et. al., 2020; Butu et. al., 2020; Debnath, 2020). People of Dhaka city are also not beyond demonstrating this behaviour.

Empirical studies that focused on shift of consumer behavior towards online shopping examined it from several perspectives. One group examined this change in terms of identifying factors that affect the

purchase decision (Oana, 2020; Uddin, 2020; Gao et. al., 2020; Debnath, 2020). Another group examined it from overall effect towards online shopping behaviour (Sharma and Jhamb, 2020; Varade and Makhija, 2020; Ali, 2020, Butu et. al., 2020). The other group investigated this shift in terms of awareness level for using online shopping (Pham et. al., 2020). Moreover, the studies that analyzed overall effect towards online shopping did not analyze shopping trend for fresh vegetables. Only, Butu et. al. (2020) examined this for fresh vegetables but their study considered consumers' shopping behavior through online directly from producers. Therefore, there is a gap in the studies in terms of identifying consumer shopping behavior change for fresh vegetables from open market. Expenditure on vegetables during the COVID-19 pandemic has too transformed. Vegetables shopping are an essential activity, for many people in this city, as the virus is spreading at an increasing rate people are less willing to go to stores and supermarkets; they are more into in online purchasing. The people of mid and low income are affected due to the lockdown of Dhaka city. People who are used to go to open market, super stores to buy their day to day necessities, they can't do this anymore and they spent more time on online platforms. Hence, it becomes essential to understand the changes that happens in the people of Dhaka city. In light of above consideration, this study is aimed at identifying the impact of COVID-19 on consumer behavior towards online purchasing of fresh vegetables.

## **2. Literature Review**

An uncommon retail customer behavior, like, accumulating bathroom tissue and food, was accounted everywhere on the world during March 2020 when the COVID-19 virus turned into a pandemic (Miri et. al., 2020; Wang et. al., 2020). It was not only just the danger of COVID-19 and of being isolated, but also a fear of the virus is affecting shut down of manufacturing activities and a worldwide interruption of supply chains. Retail and consumer services experienced this abnormal circumstance in a few different ways. The unwanted situations lead to the depletion of shelves items. Google's (2020) COVID-19 network portability report indicated that admittance to retail and recreational administrations diminished remarkably everywhere on the world because of the pandemic after March 2020. The alteration in buyers' behavior affected supermarkets, small stores, cafeterias, and cafés as well as with their providers. It is significant for shoppers to understand

to comprehend the basic cycles and reasons that prompted the announced bizarre conduct: first, to have the option to more readily respond to comparative circumstances later on; second, to support the presently enduring retail and purchaser administrations to manage the progressing COVID-19 pandemic; and third, to give information to an ideal change to the new business as usual of customer and retail benefits that is required to rise once the COVID-19 pandemic is controlled.

There have been many pandemics in the ongoing world history, for instance, Ebola, SARS, MERS, pig influenza, and dengue fever (Balinska and Rizzo, 2009). Most obviously, the occurrences have affected in two ways human and buyer behaviors (Miri et. al., 2020) and enhancement of wellbeing behavior (La Torre, 2019). Besides these pandemics are causing joblessness, vulnerability, and a fiscal downturn.

One model has been applied in pandemic literature to clarify the behavior is the RANAS model. This model was created to methodically understand the wellbeing related behavior by accepting challenges, outlooks, standards, competencies, and self-guideline into attention (Mosler, 2012). The model has been used to get an overall look in the consumer behavior during pandemics.

Researchers have seen there is a rise in buying of food, masks, hand sanitizers, and different things during the pandemic (Goodwin et al., 2019). Besides RANAS, the protection-motivation theory (PMT) has been utilized for understanding the fundamental intentions of human activity during pandemic (Farooq et. al., 2020). The COVID-19 pandemic circumstance is unparalleled and unique; it permits us to gather the knowledge of human behavior during a worldwide pandemic situation when the customers are clueless and they do not know how to react with this uncertainty. (Laato et.al., 2020)

According to current circumstance, it is seen that Coronavirus has changed work life, shopping propensities, communication changes, social meetings mobility and a lot more changes happened in an extremely short timeframe. Individuals began working from their home. In addition, with high danger of spread of this infection all the shopping centers were shut down thus individuals have to stay with their fundamental needs. This all changes in purchasing habit of buyers arose in an extremely little timeframe. Presently just neighborhood stores and

some nearby sellers are opened for the shoppers to get their necessities for restricted hours designated in every city by the Government. This demonstrates that nine in every ten customers have changed their conventional buying habit (Reddy, 2020).

A research reveals that over half of customers have changed to web-based purchasing instead of physical purchasing from nearby stores so they can avoid infection. They favor contactless safe distribution. It also shows that six in every ten people have changed to online platforms and are embracing the technological change for their wellbeing of them and their family, henceforth huge verities are found in use of digital platforms. Individuals who used to be inclined toward cash while shopping are presently attempting to move to utilize digital applications to contactless payment and are motivating others to utilize the same (Reddy, 2020).

A current report led by Mckinsey company recommends that individuals will be inclined internet shopping even when the lockdown closes: particularly for items like staple goods (fruits and vegetables) individual cleanliness, and limited basic things. This pattern of shopping will continue for quite a long time, as the same number of individuals will favor this as riskless method of shopping in contrast to going out. In short, it can be said that 2020 is the year where colossal use of technology by the people of Dhaka city will prevail and which will proceed for quite a while in future. (Reddy, 2020)

As the world fights the fast spread of Covid and long lockdown, people are restricted to their homes. The effect of the pandemic is extraordinary. It is changing people, altering the client habit and it has modified the manner in the way we think, we work, read and relax. Most of the country and metropolitan individuals are very quiet down at their places yet considering metropolitan poor and transient people and worker is yet battling for every day food and necessities. The effect of absolute closure brings an enormous effect on economy and other activities, and this will be going to last until the main quarter of 2020-21. Consequently, these purchasing behavior changes will proceed even after the pandemic circumstance over (Mallikarjunan, 2020).

Abrupt changes are seen in the different types of industries as the lockdown started, buyers begun purchasing and loading up their

fundamental things, like vegetables, rice etc. dairy items and so on as time span was assigned to each city, region, town to open staple shops for the buyers to purchase the basic things/items they need (Surri, 2020).

People are not getting enough healthy sources of food because of lockdown, trade interruption, and supply chain, specifically in those areas where corona virus affected badly and where they have food uncertainty. Government has given nationwide directions for manufacturers, vendors, and service providers etc. to be followed during the lockdown. Making the grains, leafy foods and other basic things accessible to customers in rural and metropolitan areas is the most difficult issue for government during the lockdown period. Government is also taking care of smooth running of the stock of all necessities with safety measures for individuals. The buyers purchasing habit for agrarian items changed radically. (Varade, 2020; Makhija, 2020).

### **3. Materials and Methods**

A cross-sectional survey was carried on the population of the Dhaka city. The basic premise consideration of this paper is that the state of emergency resulting from the complete quarantine has caused major changes in the purchasing behavior of consumers with regard to buying fresh vegetables. At the same time, these changes may lead to major changes in the digital transformation of purchasing behaviour within the customer of Dhaka city.

Our research identified sociocultural factors influencing consumer buying decisions before the COVID-19 crisis to test this hypothesis. In addition, the study centered on how the quarantine affected consumer purchasing behavior in the post-crisis era and its potential consequences. Figure 1 outlines the narrative-argumentative sketch for this study.

The survey was based on a questionnaire designed to classify the sociological profile of the respondents (age, marital status, gender, education, number of people): seven questions. Three questions aimed at identifying the individuals who purchased this form of goods before and after 26 March 2020 and those who announced that they would purchase after the end of the crisis; five questions related to the chosen purchasing process, the frequency of placing orders, the minimum order value and the method of payment.



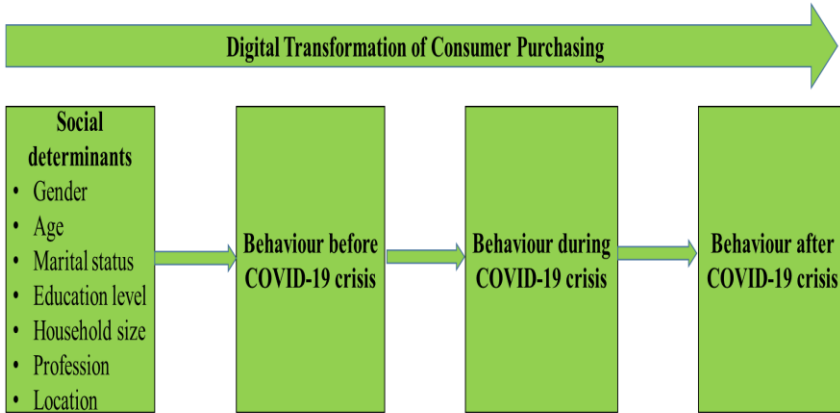


Figure 1: The methodology of the proposed research

The questionnaire was pretested among 20 individuals and all the requisite changes observed during this process were performed by rephrasing some questions and adding fresh response choices. The questionnaire was disseminated by email and through social media platforms. The nature of the survey and the study goals were made accessible to all respondents. The participants gave permission and entered the study voluntarily.

In total 265 responses were collected. Because of the lack of inadequate data we had to discard 13 responses. Finally, 252 responses were analyzed. In accordance with the research hypothesis and argumentative-narrative sketch, the data was compiled, tabulated and analyzed. Data analysis tool SPSS was used to help visualize and process the data gathered. We employed chi square test and conducted a descriptive study based on this graphic projection that led to anthropological conclusions on the purchasing behavior of the customer and its modifications and effects on the digital transformation of the purchasing behavior.

#### 4. Results and Discussions

##### 4.1. The Descriptive Data on Social Demographics

The primary interest of our study was focused on the possible determinations of the sociocultural context on the consumer buying

behavior before enforcing the free movement of people. Table 1 summarizes the frequencies of the demographic data of the respondents within this survey. The majority of survey respondents (60.3%) live in the Dhaka North city corporation area. Most answers (61%) from all survey respondents come from male. Other prevalent characteristics of respondents were being married (65%), between 21 to 40 years old (69.8%), having a master’s degree and/or bachelor’s degree (82.5%), living with four to five people in their household, and are involved in private job or doing business (54.8%).

Table 1: Frequency distribution table for the social demographics of the respondents

Variable	Frequency	Percent
<b>n=252</b>		
<b>Gender</b>		
Male	152	60
Female	100	40
<b>Age (Yrs.)</b>		
21-30	94	37.3
31-40	82	32.5
41-50	70	27.8
51-60	6	2.4
Above 60	0	0
<b>Marital Status</b>		
Single	88	34.9
Married	164	65.1
<b>Education Level</b>		
Primary	0	0
Secondary	0	0
Higher secondary	26	10.3
Diploma	12	4.8
Bachelor’s	118	46.8
Master’s	90	35.7
PhD	6	2.4
<b>Household Size (No. of People in household)</b>		
1	6	2.4
2	12	4.8
3	22	8.7

4	64	25.4
5	104	41.3
6	28	11.1
7	12	4.8
More than 7	4	1.6
<b>Location in Dhaka City</b>		
Dhaka north city corporation	152	60.3
Dhaka south city corporation	74	29.4
Outside city corporation	26	10.3
Rural	0	0
<b>Profession</b>		
Private job	74	29.4
Government job	34	13.5
Business	64	25.4
Home maker	38	15.1
Unemployed	42	16.7

#### 4.2. The Evolution of Buying Behavior

We intended to examine the evolution of online consumer purchasing behavior before, during and post-crisis. The frequencies for the purchase of fresh vegetables before and after March 26 are shown in Table 2 as well as what is projected to occur after the end of the crisis of COVID-19. The health crisis created by COVID-19 has led to a significant shift in the online shopping behaviour of fresh vegetables (Table 2). While 90% of respondents said they did not purchase vegetables online before the lockdown, the percentage of consumers who placed online delivery orders increased to 84% after that date. In addition, approximately 92% of the respondents preferred this choice after the crisis. It is noticeable that the balance of power between those who purchase and those who do not buy fresh vegetables online was reversed.

Table 3 shows the distribution of customers by age group who purchased fresh vegetables online before 26 March, after 26 March and after the crisis. It is evident from Table 3 that a good number of people from each age group did not purchase fresh vegetables online before 26

March. However, after March 26, this trend changed as a greater number of people became inclined to buy fresh vegetables online for each age group. In addition, respondents suggested that after the crisis is over, they would continue to shop online. For each of the instances, the chi square test is significant at 5% level. Moreover, this kind of behavior is more prevalent in the 21-50 age range. This kind of finding leads us to reach in conclusion that COVID-19 crisis has an effect on consumer buying behaviour of fresh vegetables online among the people of different age groups.

Table 2: Distribution of consumers according to their purchase before 26 March, after 26 March, and continue buying after crisis

<b>Response</b>	<b>Bought before 26 March (%)</b>	<b>Bought after 26 March (%)</b>	<b>Continue Buying After Crisis (%)</b>
<b>no</b>	90	16	8
<b>yes</b>	10	84	92

Table 3: Distribution of consumers purchase according to age who bought before 26 March, after 26 March, and continue buying after crisis

Age		Bought_before		Bought_during		Bought_after	
		No	Yes	No	Yes	No	Yes
21 to 30	Count	86	8	12	82	8	86
	% of Total	34.1%	3.2%	4.8%	32.5%	3.2%	34.1%
31 to 40	Count	76	6	12	70	6	76
	% of Total	30.2%	2.4%	4.8%	27.8%	2.4%	30.2%
41 to 50	Count	68	2	4	66	2	68
	% of Total	27.0%	0.8%	1.6%	26.2%	0.8%	27.0%
51 to 60	Count	6	0	2	4	0	6
	% of Total	2.4%	0.0%	0.8%	1.6%	0.0%	2.4%

Chi square Test	$\chi^2 = 10.659,$ df = 3 p = .026	$\chi^2 = 11.978,$ df = 3 p = .016	$\chi^2 = 10.655,$ df = 3 p = .025
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Table 4 shows the distribution by occupation of customers who purchased fresh vegetables online before 26 March, after 26 March and continued after the crisis. Table 4 indicates that each of the occupation groups did not purchase fresh vegetable online before 26 March. However, after March 26, this trend changed since greater number of people became inclined to buy fresh vegetables online. In addition, respondents indicated that after the crisis is over, they would continue to shop online. For each of the instances, the chi square test is significant at 5% level. Moreover, this kind of behaviour was prevalent among private job owners and those who are engaged in business,. This type of finding leads us to believe that the COVID-19 crisis affects the online purchasing behaviour of fresh vegetables by consumers among different professions.

Table 4: Distribution of consumers purchase according to profession who bought before 26 March, after 26 March, and continue buying after crisis

Profession		Bought_before		Bought_during		Bought_after	
		No	Yes	No	Yes	No	Yes
Business	Count	60	4	10	54	4	60
	% of Total	23.8%	1.6%	4.0%	21.4%	1.6%	23.8%
Government Job	Count	32	2	4	30	2	32
	% of Total	12.7%	0.8%	1.6%	11.9%	0.8%	12.7%
Home Maker	Count	38	0	4	34	0	38
	% of Total	15.1%	0.0%	1.6%	13.5%	0.0%	15.1%
Private Job	Count	66	8	4	70	8	66
	% of Total	26.2%	3.2%	1.6%	27.8%	3.2%	26.2%
Unemployed	Count	40	2	8	34	2	40
	% of Total	15.9%	0.8%	3.2%	13.5%	0.8%	15.9%

Chi square Test	$\chi^2 = 12.969,$ df = 4 p = .035	$\chi^2 = 11.523,$ df = 4 p = .013	$\chi^2 = 11.633,$ df = 4 p = .023
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Figure 2 demonstrates the frequency of purchase of fresh vegetables through online before 26 March, after 26 March, and continue after crisis. It is found from Figure 2 that people kept in purchasing once in every two weeks before 26 March, after 26 March, and continue after the crisis will over since the highest number of percentage of responses were involved in this kind of purchase. While, the next observed frequency was once in a month or when needed. This leads to have a perception about purchase frequency that people have not changed or will not change their behavior of purchasing.

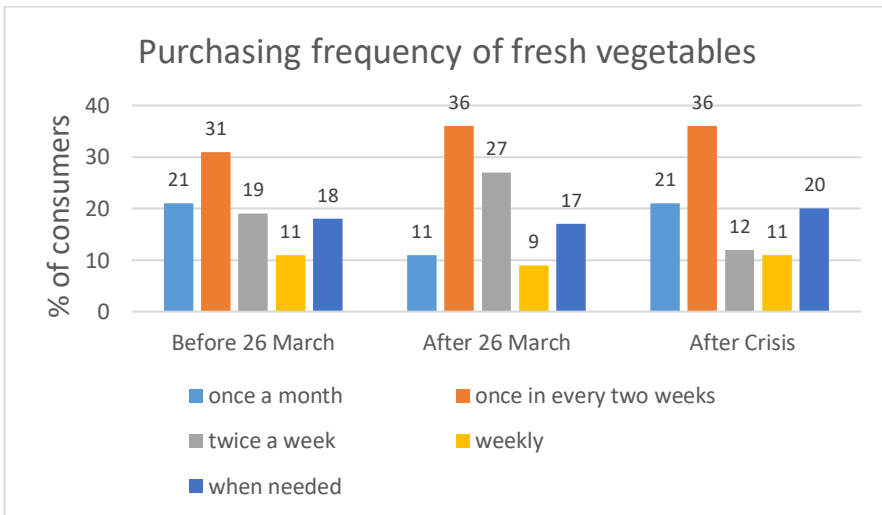


Figure 2: Purchasing frequency of fresh vegetable by consumers before 26 March, after 26 March, and continue buying after crisis

If we look at the monetary value of the quantity of fresh vegetables purchased by consumers (Figure 3), it is found that people typically buy between 500-1000 taka before COVID-19. However this activity has changed since individuals used to buy in the range of 1000-1500 after 26 March. But, when the crisis will over, people will return to their weekly buying amount of 500-1000 taka. This finding shows that during

COVID-19 time people used to buy more with the expectation of scarcity of fresh vegetables in the market.

#### 4.3. Key Factors of the Consumer Buying Behavior for the Digital Transformation

The main factors in the consumer's online shopping behavior of fresh vegetables consist of information and order networks, product selection methods, and preferred payment methods. Producers should consider these factors in the digital transformation of their consumers.

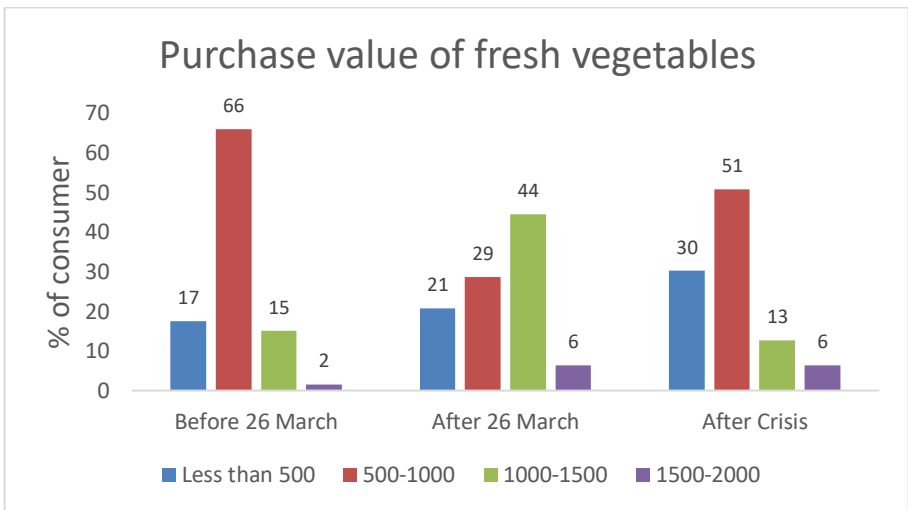


Figure 3: Purchase volume (in Tk.) before 26 March, after 26 March, continue buying after crisis

Figure 4 shows the consumers' online buying option. The result shows that 70% of the individuals used to purchase online according to their own preference. While, 3 percent had to buy according to vendors' choice.

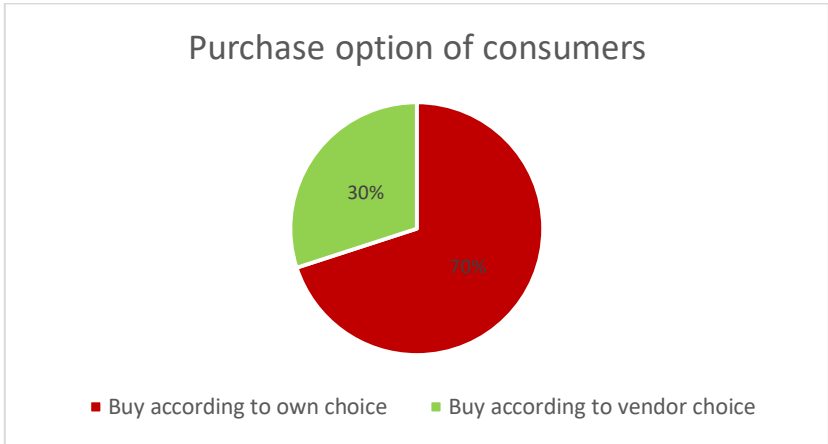


Figure 4: Distribution of consumers purchase according to own choice versus vendor choice

The channel used to collect customer information for online sales of fresh vegetables is sketched in Figure 5. It is noticed from the figure 5 that people collected information about fresh vegetables from store's website (30%) in most instances followed by direct from vendor (28%) and Facebook page (18%).

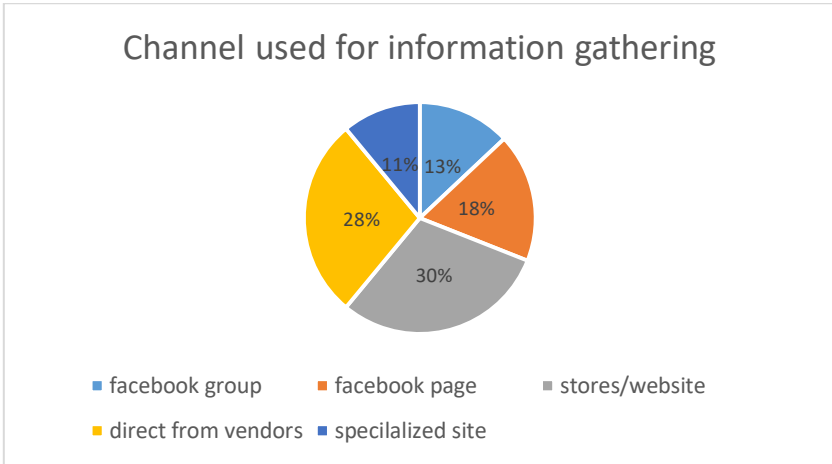


Figure 5: Channel used by consumers for gathering information about fresh vegetable

Figure 6 demonstrates the methods used to order for fresh vegetables by consumer. It is revealed that individuals have used phone calls (74%)



primarily when purchasing fresh vegetables, accompanied by a messenger (25%).

The frequency of the preferred payment methods for ordering fresh vegetables online is presented in Figure 7. 72% of respondents preferred cash payment, as shown in Figure 7, while none of the respondents used bank transfer as the payment form. The most widely used payment method found is bkaash (56%) if we examine the conduct during the COVID-19 crisis, while 27% of the respondents choose the cash payment method. It is also noteworthy that 67% of respondents still prefer to use bkaash even after crisis get over as the most popular payment form, while 22% prefer after crisis cash payment method. This shows that the population became aware during the COVID-19 crisis that online payments could be safe preventive measures against the COVID-19 epidemic because it is a contactless process. At the same time, this type of behavior is reinforced by the fact that during this era of crisis, buyers lack cash, because the regulations imposed by government have significantly decreased ATM cash withdrawals. Local suppliers need to adapt and encourage the payments of their customers using bkaash to be able to commercialize fresh vegetables with home delivery.

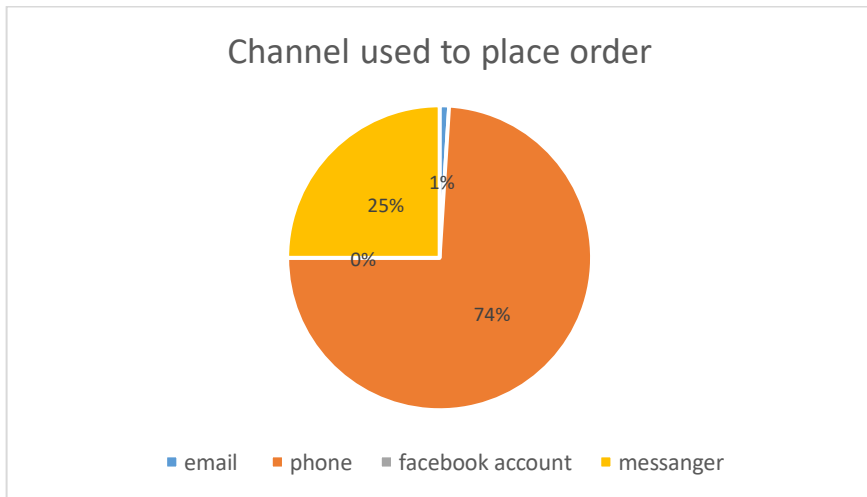


Figure 6: Channel used by consumers for ordering fresh vegetables

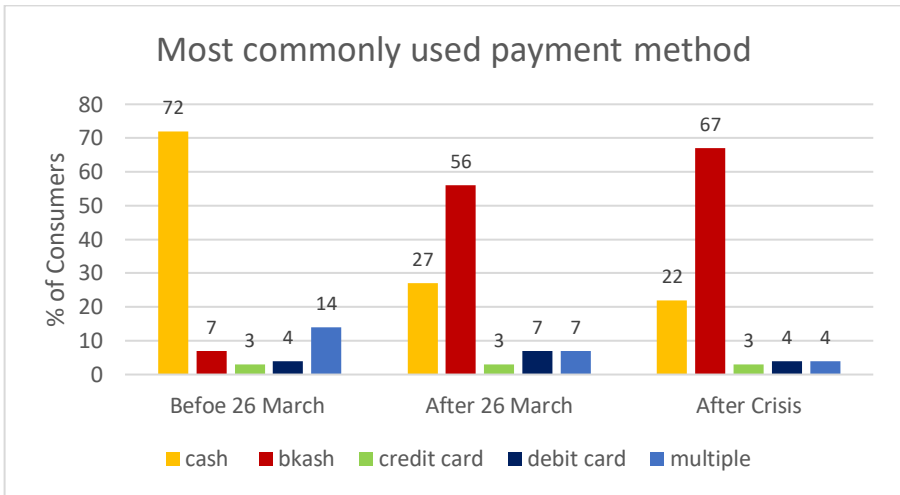


Figure 7: Payment method used by consumers for purchasing fresh vegetables before 26 March, after 26 March, and continue buying after crisis

## 5. Discussion

A variety of benefits emerge in terms of buying fresh vegetables through online ordering and direct delivering, including the combat to reduce the spread of infection with the new coronavirus. Consumers, however, avoid buying at grocery stores, farmers' markets and/or supermarkets that during the pandemic were frequently crowded. Social isolation is maintained and contact is avoided with unknown, potentially infected individuals.

Small local vendors need to adhere to changing consumer tastes and innovate their marketing strategies to increase local fresh vegetable sales in Bangladesh. In the national agri-food market, cultivation of native varieties, interconnection with local requirements and environmental protection measures may be advantages for the promotion of local products. Taking into account the high degree of growth of the internet infrastructure, the development of e-commerce for vegetable farmers and the market or platforms of virtual farmers may also be solutions for the development of online shopping businesses in times of crisis and beyond.

A collection of general guidelines stand out for local vendors based on the studies performed in this study. First it is advisable for agricultural producers to adapt to the payment methods, namely bkash system, preferred by the customer. They also need to establish their own brands and products with integrated (in analog and digital) promotion. At the same time, and of equal significance, it is crucial for manufacturers to develop their own specialized websites and social media by adopting up-to-date technologies for placing online orders. In addition, creative marketing and logistics planning should be performed in line with the demands of consumers. Last but not least, for better market access, local vendors should be affiliated with cooperative organizations.

The digital transformation of small vendors in Bangladesh will have a positive impact on the economy as a whole. However some local factors are also affecting the digital transformation. For example small vendors need to invest in infrastructure to build distribution channels. However, their financial resources are somewhat scanty, and rather than financing in infrastructure for commercialization and marketing, they prefer to invest in means of manufacturing (Boboc et. al., 2017). In addition, many small companies are in desperate need of time, another barrier to digital transformation, as they devote much of their operations to the collection and selling of goods. In addition, vendors' scarce digital literacy is an obstacle that prevents and restricts the production of these creative marketing tools (Szalavetz, 2020).

Product, health protection, time saving, and payment factors dramatically affect the internet purchasing behavior of customers. The products and services provided online must ensure the quality of the goods and services. Payment methods need to be clearer, more convenient, and safer. Since most online customers have trouble using the online payment system and are not familiar with the electronic payment system, businesses can also accept cash on delivery. safety, product availability, product choice, information channel, ordering channel are the important factors that have a major impact on the decision of consumers to shop online in Bangladesh, since most customers prefer electronic payment rather than cash on delivery, in future (Hossain et. al., 2018). The most important factors for attracting customers to purchase electronically are infrastructure, internet security, transport, time saving, and distribution.

Online shopping helps to minimize shopping time for customers and enables customers to access a lot of product and service-related details and compare prices with other businesses. Hence, reaching the business to rural and remote areas of Bangladesh have been highlighted by the e-commerce industry. In order to attract customers to e-commerce and online shopping, businesses should ensure rapid delivery throughout the country.

Consumers can gain more advantage if e-commerce is able to meet the challenges. Thus, the willingness of consumers to buy online will be enhanced and e-commerce in Bangladesh will be more prominent. The e-commerce industry has the potential to make an impactful contribution to the Bangladesh's GDP and dominate country's economy, despite having many problems related to the e-commerce barriers. In order to strengthen the e-commerce sector, the country's government has undertaken various developmental actions.

## **6. Conclusion**

Our findings provide evidence that the COVID-19 pandemic triggered major changes in the buying behaviour of consumers for fresh vegetables. The findings confirm the assumption that pandemic has caused consumers' to shift towards online purchasing. The main findings are summarized in table 5.

Consumers' preference for digital information collection, ordering and payment methods indicates that shifts in customer purchasing behavior are not only evident in the purchasing intent of this distribution system, but also in their desire for digital transformation in buying new vegetables. The fact that 70% of respondents said they prefer a personal choice of items indicates that they want to be personally and emotionally involved in the selection and purchasing process. This is a function that has not undergone any shift in the timeline set by the period prior to 26 March, after that date and after the outcome of the crisis of COVID-19.

Another interesting finding of this study was that more consumers used the website of the store (30 percent) to collect information about fresh vegetables, followed by direct vendor information (28 percent) and Facebook page (18 percent). Individuals have used phone calls (74%) predominantly when buying fresh vegetables, accompanied by a messenger (25%).

This epidemic has certainly come up with a lifetime lesson that has affected every aspect of human heritage. Therefore, internet marketing and customer purchase behaviour are no exception. The best advice strategy to adjust or survive in this challenging period is to adapt to changing customer needs as the need for the hour is not the privilege or availability of fresh vegetables at the particular price range and of particular choice, but collectively everyone participates and fights for the passage of this period. So, desires have moved from exploring the globe to remaining at home and buying fresh vegetables for survival online.

Although the global economy has revolved around the special effects of the COVID-19 pandemic, consumer behavior is shifting at the same time and customers are increasingly shifting towards online shopping. As international borders have been closed for the exchange of goods, many new problems have been placed on business units, so survival will be a tough job for many. It may be an option for certain firms to stop running in the short term, and few would face prolonged shutdowns. This will add to financial instability among members of staff.

**Table 5: Summary of main findings**

Criteria	<b>Before COVID-19 Crisis</b>	<b>During COVID-19 Crisis</b>	<b>After COVID-19 Crisis</b>
Percentage of people purchasing vegetable online	10%	84%	92%
Prevalence of purchasing behavior according	21-50 yrs	21-50 yrs	21-50 yrs

to age			
Prevalence of purchasing behavior according to profession	Involved in business and private job	Involved in business and private job	Involved in business and private job
Purchasing frequency of fresh vegetables	Once in a month or once in every two weeks	once in every two weeks or twice in a week	once in every two weeks or when needed
Purchase volume in Tk.	500-1000 per week	1000-1500 per week	500-1000 per week
Payment method used by percentage of consumers	Cash (72%)	b-Kash (56%)	b-Kash (67%)

Economic, industry, employee financial instability and the possibility of a simple and long-term potential recession that will set the economy in the backdrops for the long term. This would contribute to a long-term effect on the understanding and preference behavior of customer shopping patterns.

### 7. Limitations and Future Research Scope

The study was conducted only in the lockdown area of Dhaka city and it is the main drawback of this study. The Dhaka city corporation and its neighboring localities were the focus of the research. The geographic limit was the major limitation of our current research. Given the previously mentioned limitations, the results of our study will add to the growing body of research on online purchasing if conducted nationwide in Bangladesh as well as globally. Also, the study focused on fresh vegetables as the main product. Future study can ensure such kind behavioral changes among consumer is significant if it is conducted for other products. Lastly, this study was a cross sectional study. If a longitudinal study is conducted then true future behavior will validate the current findings.

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