
COVID-19 pandemic roles on consumer behaviour towards sustainable transitions: a retail industry survey

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Abstract: In this paper, we offer some initial examination on how Covid-19 pandemic impacted the consumer behaviour towards retail sector in India. We argue that Covid-19 pandemic offers a great opportunity for businesses. We also discuss some potential directions of how consumer sustainable decision making will be shifted to due to the pandemic. In this paper the data is collected from various Indian consumers from different cities who made

purchases from organised retail store. In our discussion of consumer behaviour we outline how COVID-19 has impacted retail sector and also the behaviour of the consumers towards sustainable transitions. It has been seen that consumers interest have been shifted towards retailing, online payments, sustainable food habits, and sustainable lifestyle. This study will help the businesses as well the academicians in determining what consumers prefer during this pandemic.

Keywords: COVID-19; consumer behaviour; retailing; online payments; Indian markets; sustainable lifestyle; sustainable buying habits; sustainable food habits.

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1 Introduction

In most countries, the latest COVID-19 impacted people. Millions of people around the world have been pushed into their homes, triggering global poverty and inequality (Barua, 2020; Gruszczynski, 2020). Our customers' behaviour has changed drastically in the past few months as we are divided into our homes from our families and friends. We deal with the increasingly growing literature that discusses the economic effects of the COVID19 pandemic. Binder (2020) indicates that the corona crisis, delayed travel and delayed sales of larger ticket products by March 2020 have left 30–40% of Americans extremely worried, but are more optimistic about the unemployment situation, and their inflation expectations have been revised as the federal funding target rate on March 3rd has decreased. Barari et al. (2020) demonstrate the arrival of the corona virus in a country contributing to a large rise in worldwide Internet searches. In a survey experiment with a US population, survey participants considered the rate of mortality and the infectiousness of the virus to be overestimated. Hanspal et al. (2020) analysed sales and income losses in a survey and the effect on economic recovery expectations. The use of Internet searches, survey data and smartphone travel data by Barrios and Hochberg (2020) and Allcott et al. (2020) is a document which documents political partisan perceptions of the risks associated with COVID19 and non-essential travel activity. During this pandemic era, most consumers have embraced the digital way of life and thus digital penetration in the country is growing. According to Nielsen, mobile time has risen to more than 5 h a day. However, Internet consumers have started to revisit their broadband program, as the use of the Internet has risen 4 times since April 2020. The search pattern has shifted drastically according to Google, for example in 2019 the frequency of customer search was directed towards the highest headset, best brand for skincare, etc. A new trend was also seen in online foodstuffs, online pharmacies, etc.

Consumer behaviours seem to have changed for good across below dimensions,

Digital customer journey: New customers continue to expand and online shops like the broad basket, grofers and superb daily order. The same situation can also be seen in the pharmaceutical and industrial sectors. Organisations such as Pharm Simple, Medlife have seen a high order spike. Keeping these developments into account, some firms have deviated from their traditional business line into food supply, such as Zomato.

Hyperlocal and online communication: After lockdown implementation, many India organisations started to digitally communicate through virtual collaboration tools like Zoom, Slack, Microsoft Teams, etc.

Healthy living: The other positive thing about lockdown is that businesses like cure live in an improved amount of health. Fit, Sarva, Portea and others provide a digital way of healthy living. There are few best examples which have been seen such as Portea giving live video consulting physiotherapy facilities and Rolled out lessons on Instagram earlier.

Digital content consumption: post locking, streaming song and binge watching show consumption, and films have been seen as an immense boost, with their online apps such as Netflix , Amazon prime and voots to name a few. Such OTTs have been launched into Level 2 cities and help them grow their market share in India.

In the early days of the pandemic, fear led to consumer behaviour when it was only toilet paper to protect people. More than all the earliest acts are reactive because people

are trained to respond to risks. Although discretionary expenditure has declined temporarily, consumer behaviour changes, for example:

- express production and distribution for the next day
- increased sales use and subsequent payment systems
- interest flight because of declining wages and rising unemployment.

Two changes have been intensified during COVID-19 in customer behaviour. Secondly, the pandemic promotes locally manufactured foods to be purchased as consumers want protection. Australia is now in the second spot only in Japan and has one of the strongest correlation rates for price and local products.

Many reasons are driving this trend, including:

- A national spirit of needing and encouraging Australians to improve our local economies.
- Worldwide trade chains broken, making it difficult to access imported goods.
- Food scarcity, particularly perishable food imported, will continue to occur for a period of time, as the pandemic progresses worldwide. During the current cycle Australians will become more important to identification and traceability of goods across the supply chain.

Second, there has been significantly increased growth in internet purchases and services. It differs in various categories, but particularly for food and regular shopping, exercise, personal training, remote learning and telehealth. About 30% in recent months, both of these groups have evolved for consumers. However, the pandemic is where company needs to change attention to value to sustain this digital development.

Taking for example the online segment of shopping for food, which already is projected to rise by 32%. Policy controls on social isolation and fear of publicity have increased this year's development to 56%. Most have been consumers for the first time. Customer analysis indicates that there is a clear desire to continue using new technologies, because more than half of the consumers say they intend to end the pandemic.

Woolworths is an outstanding case study to answer well. The old and vulnerable gradually participate in online food shopping to mitigate the risk of publicity. We believe that, during the pandemic era, ethnic and religious enterprises that supply their customers with specific products may not be heavily affected. Muslim businessmen have established themselves in Europe over the last decades and have created a religious climate. Islamic shops make certain Halal food available for Muslims in many European countries, a dietary requirement stated in Muslim scriptures.

2 Consumer behaviour prior to lockdown

Several lawmakers and food production companies told consumers before the lockout that retail food supply chains were fully functional (FGC, 2020; Newshub, 2020). Many citizens, in the week that the lockout was proclaimed (Mao, 2020), panicked and accrued products such as beverages, footwear, high carbohydrates staples, cane goods, hand-package and even bathroom paper. Crisis purchasing is a typical reaction when fear

and uncertainty occurs and is seen as rational (for instance, limited access to essential goods) or unreasonable (for example, inadequate storage of non – essential goods; Sterman and Dogan, 2015). While supply chains are operating as usual, there has been a lack of other items in the crisis bought on the market. Since people are particularly affected in unpredictable times by the actions of their peers, the disorder is eventually exacerbated from seeing others buy fear. The most recent cases of panic shopping have not been new: panic shopping is already linked to SARS-outburst waves of terror, confusion and disinformation that propagate throughout the network and in SMS communication (Ding, 2009).

2.1 The impact of COVID-19 on retailers

COVID-19, sometimes known as coronavirus, is an airborne pandemic virus that, on 10 April 2020, infected about 1.6 million workers and murdered over 100,000 people worldwide. Everyone has been influenced by this pandemic every day. A total of 316 million people from 42 US States were asked to stay at home, and businesses were consequently vulnerable to simulated jobs or employee labour. Most staff have reacted rapidly to the business change. Zoom reports 78% increase within profits in online video conferencing software, while Google Meet reports an increase of about 60% in UIs, whereby people spend 2 billion minutes in online meetings daily. But since the pandemic eases, workers might not want to return to the physical offices. Managers predict that some of COVID-19 impacts on workplaces may be lasting, where the traditional corporate community will increasingly be replaced through flexible working hours and digital meetings. The modern digital working culture is rendered effective and efficient by companies by decentralised decision -taking and by innovative software. While it is crucial for corporations to accomplish this transformation as effectively and as quickly as possible, some other effects which are essential to the survival of companies are often ignored – the customer and business impacts of COVID-19.

Workers can't get to work. This was dealt with urgency. Within answers to the COVID-19, managers and management analysis have been based primarily on digital workforce change. The 'Mere Emergency Effect' indicates that people prefer, irrespective of significance, to invest most of their resources and time on the urgent issue. Operations at the workplace are important. Sales, though, are a key corporate pillar. The pandemic contributed to lower sales prices for all kinds of goods, for example hand sanitisers. Managers should only expect sales to recover following the pandemic with increasing demand. Nevertheless, the pandemic has had a profound impact not only on society at work but also on consumer culture. The pandemic might, perhaps forever, have changed market structure. We address in this report how the pandemic influenced the digital revolution and how companies should respond to digital sales.

I Managing demand fluctuations

Virtually every retail outlet, excluding grocery stores and pharmacies, has closed its doors in 'road zones' markets where the virus is spreading. For those countries that were not in the quarantine group saw a shaky decline in retail and shopping centres. Nevertheless, although some retailers see demand drop and clients change networks, others face an unparalleled demand increase. Particularly in many key items, grocery retailers deal with severe out-of-stocks situations, as customer supplies are seen to be

important. It has never been more critical to be able to anticipate and control demand.

II Shoring up the cash reserves

Retailers, especially physically impaired, rethink their current cash positions and see how they can keep on paying bills should the decline in demand continue for an extended period. In particular, retailers will review their actual and expected liquidity profile and assess any adjustments in their dynamics for working capital or short-term cash predictions. Despite its strong cash dependence, retailers are now debating how they could manipulate and take advantage of any distress funds, lease deals and wage holidays, despite the heavy reliance on cash to pay for stocks, real estate and-primarily-workers.

In addition, many retailers are now evaluating their overall financial stability in a number of scenarios and participate in the refinancing of loans or amending financial agreements which can be impacted if appropriate.

III Protecting the people

Conclusions in workplaces and quarantines were already caused by the virus COVID-19. Retailers have to have a plan for the health of their workers and for business as usual. In addition to simply having a crisis management strategy, retailers will understand how they handle their employees in a number of ways.

China's experience demonstrates how creative companies can overcome these challenges; at the height of the epidemic, food operators immediately hired thousands of dining workers who were idle because of the closure of restaurants to help them meet demand spikes. Many companies also relocated staff to fix shortages and overworked divisions across the company.

IV Thinking about the longer-term supply challenges

While food retailers are attempting to tackle important challenges of supply due to customer uncertainty and subsequent stockouts, most non-food retailers have yet to experience the full impact of disruptions in supply; declining demand combined with long lead times and stock warehousing usually doesn't render short-term supplies a issue. However, in the future the frequency and the timetable of supply chain disturbances in geographies and subsectors are likely to differ considerably. Distributors will assess their risks with their main suppliers, define indirect exposures and draw up contingency plans.

V Talking to customers

Retailers also should consider the impact on the client and the customer relationship of these massive changes. How are you going to maintain trust in your brand? When are you going to fix today's expectations? So how are you going to restore your customer experience? In this setting it is equally important to optimise the consumer relationship as to and the bottom line.

2.2 The impact of COVID-19 on consumers

Although the pandemic was thought to be an unlikely event well before the COVID-19 epidemic, according to a 2007 survey, it was one of the key business risks. Even before the pandemic, automated gatherings and project management systems were increasingly implemented and various organisations remained largely unfamiliar with digital transformation (Craven et al., 2020).

- a *Hoarding*: Hoarding is a common response to the insecurity of the future supply of basic needs goods in Venezuela. In addition to mining, the gray market often emerges, in which illegal intermediaries stockpile the product and increase costs. The temporary additional demand from hoarding also promotes the commercialisation of fake products, according to research.
- b *Improvisation*. The coronavirus has unlocked customers' ingenuity and endurance in traditional activities such as weddings and funeral services. This also occurred on Easter Sunday in particular with religious services.
- c In times of crisis and instability, the general tendency is that surplus products or services be bought and consumed. Jugaad of India is the closest study in improvisation. It needs developing solutions that overcome social or government policy constraints. The growing need of services such as parks and recreation, film and entertainment is a recognised result when they are refused access to the market for a short time. But nothing is being done to investigate the nature and scope of rising demand in terms of consumer behaviour, says Radjou.
- d *Digital technology engagement*. Consumers have taken on several new technologies and applications because of absolute necessity. Zoom video services is a clear example. Most families on the internet have started to engage and keep up with family and friends.
- e *Embracing digital technology*. Zoom Video Services are a clear example. Many households with the web have started to frequent zoom gatherings just for keeping up with family and friends. Influencer marketers are one of the fastest growing areas. It will be important to see if the use of technology violates old customs. The nature and scope of words of mouth and suggestions, as well as information sharing, is drastically changed. The Web is an affluent and worldwide platform. China and India are no longer the biggest nations in the world.

2.3 Sustainable transition during COVID-19

For nearly 30 years since 1992, in Rio de Janeiro, the United Nations Conference on Climate and Development, sustainability advocates have tried in different ways to facilitate a "transition to sustainable consumption", Chapter 4 of Agenda 21 for example states, "while hunger is triggered by certain kinds of environmental tension, which is the main cause of ongoing depletion of consumption". Several of the following decades have been working together to establish a strategy to minimise use of energy and to protect prosperity without transgressing world borders (Royal Society of London and the United States National Academy of Sciences, 1997; Nash, 2009; Scholl et al., 2010). In the following years, other nations, multilateral institutions, scientific societies and others

have developed comprehensive strategies. For example, in 1998 a ‘runaway consumption train’ was identified by the United Nations Development Plan in the circumstances of rich countries (UNDP, 1998). The Nordic Council of the European Commission, the Royal London Society and the United States National Academy of Sciences stressed the complexities of creating more sustainable means of production and use in accordance with this characterisation. More recently, the Paris Climate Agreement acknowledged that “sustainable use and development practices play an vital part in combating climate change”, leading to the near correlation between consumption activity and emissions of greenhouse gases (United Nations, 2015; see also Alfredsson et al., 2018).

After the Rio Summit, the topic of sustainable use has developed in three broadly demarcated phases on the foreign policy agenda. Firstly, in the 1990s, much focus was focused on encouraging safer and more efficient technologies for the processing of consumer products and their intermediate inputs (Hertwich, 2005). Second, since the beginning of the 2000s, focus switches to ‘greener’ styles of household supply, as exemplified by consumer awareness campaigns, the production and ‘customer-friendly’ eco-labels (Lehner et al., 2016; Sunstein, 2015). Finally, in 2008, we have seen a increasing understanding of the need for structural reform in the social and institutional structures that, in brief, sustain current consumerist habits to achieve total reductions in consumption production (Cohen, 2019; Foden et al., 2019; Akenji et al., 2016).

Under this context, the impacts of COVID-19 are now impossible to predict. The major capital markets are crashing and foreign trade chains are in flux, forcing executives to find alternative suppliers of imported products to sustain industrial production. Tourism ceases as travellers abandon trips, airlines terminate services and hotels are empty more and more. There are postponements of sportive activities, festivals, theatre displays, gallery exhibits and other cultural showcases. Growing percentages of businesses urge staff to stop and to consider enforcing mandatory burglary. Economic predictors advise that several countries will contract gross domestic product in the coming months – likely quite substantially. Whereas this situation is being faced with as an ongoing economic crisis it is worth acknowledgment that, through a sustainable consumption transformation – though with greater subtlety and an understanding of the adverse social consequences – sustainability scholars and politicians have been actively trying to achieve largely similar targets over the past decade (see O’Rourke an example). Social scientists have long known that disasters appear to catalyse cycles of social change, particularly when their catastrophic effects are on a modest but steady track. For example, in 1942 the well-known Russian-American sociologist Pitirim Sorokin observed that culture “is never the same as before the catastrophe. The prime disrupters and transformers of social structure and structures are, beyond doubt, calamities of good or evil” (Sorokin, 1942).

If the current situation poses significant difficulties in predicting the future, it is noteworthy that scientific experts now equate the 1918-1919 Spanish influenza that triggered the death of 50 million people on an international basis (Chen et al., 2020; Lambert, 2020). While it is exceedingly early to suggest that the global public health crisis is approaching this troubling point, there are deep political regimes that are raising their fears about the coronavirus outbreak in some of the worst-affected countries. As far as supply chains are concerned, at least some of the stopover actions to be enforced over the weeks or months ahead will be held in longer term. Public procurement requires no disclaimer about the need to ration or other restrictions on demand for customers or stockpiling non-perishable food and other resources.

The realistic consequence is that we are likely to witness traditional face-to-face interactions shift to interactive networks as people are gradually acclimatised by electronic business environments, education programming and a broader spectrum of social events. Experience in China to date reveals that prolonged quarantine times generate new sources of market demand as individuals fulfil isolation criteria. The longer the possibility of contagion is, the more these adaptive responses are strengthened and immune to reversal. As is always the case after crises, 'as things used to be' can be easily overlooked.

Nevertheless, as long as conditions warrant, a concerted sales campaign will enable people to return to "natural" stuff, and we will expect a steady supply of offers from governments and corporations to persuade us to get out of the car. Central banks have already indicated a willingness to lower interest rates – in certain countries even in negative territory – so far as that can be achieved. Many individuals are likely, at least initially, to respond positively to these appeals, but we should not be surprised in due course to discover that other predilections have supplanted once-familiar practices.

While it may seem both fanciful and insolent, COVID-19 is an opportunity to reduce over the longer term the prevalence of lifestyles premised on large volumes of energy and material throughput. At the same time, imperatives to reduce the possibility of group sharing must sadly reinforce efforts against individualised rather than collective and cooperative user models. Given a public health situation that is becoming extremely serious, politicians will work to ensure a transition to a healthy diet through the spread of coronavirus. This would be one way to offset some of the unfortunate suffering and disruption caused by this event.

2.4 Hypothesis development

H₀: There is significance difference between shopping patterns and consumer preference

H_{0b}: There is significance difference between digital payments and consumer preference

H_{0c}: There is significance difference between safety measures and consumer preference

H_{0d}: There is significance difference between sustainable lifestyle and consumer preference

H_{0e}: There is significance difference between sustainable food consumption and consumer preference

H_{0f}: There is significance difference between sustainable buying patterns and consumer preference

3 Research methodology

To assess the impact of COVID-19 on the consumer behaviour and on sustainable consumption in India, an online survey was conducted. The form was developed on google forms and later circulated by forwarding the link of the questionnaire. The

variables taken in the study are shopping patterns, digital payments, safety measures, sustainable lifestyle, sustainable food consumption and sustainable buying patterns. Out of 17 questions asked 5 were related to shopping patterns, 2 digital payments, 3 safety measures, 3 sustainable lifestyle, 2 sustainable food consumption and 2 on sustainable buying patterns. A concise analysis was carried out after the assessment of various responses. The Likert scale was used to allow participants to reply to particular questions and indicate whether or they have a viewpoint. The survey was distributed to 300 consumers of India, since it has been a new normal in the world the responses were varying. For the analysis descriptive, ANOVA, independent sample t test and regression was used. For the rest of the analysis it was shown with the help of pie charts as to what consumer's perceptions regarding their buying behaviour are.

3.1 Distribution of results

There have been 300 absolute and open responses collected from various regions in India. Table 1 showing the respondents profile below:

Table 1 Demographics

<i>Variable</i>	<i>Total responses</i>	<i>Percentage</i>
<i>Gender</i>		
Male	161	53.6
Female	139	46.3
<i>Age</i>		
20–30	120	40
30–40	78	26
40–50	102	34
<i>Occupation</i>		
Student	100	33.3
Employed	73	24.3
Others	87	29
Government employee	40	13.3

Demographics highlights

- Male respondents were higher than the female respondents.
- Majority of the respondents were in the age group of 20–30 years old.
- Majority of the respondents were students.

3.2 Statistical methods

The methods used in the study are as follows:

- KMO and Bartlett's test*: The EFA attempts to determine the nature of the mechanisms influencing a number of responses. Aspect research that is exploratory in nature. The Kaiser-Meyer-Olkin (KMO) sample adequacy is used to further assess

the factorability of the samples. This index compares the observed coefficient values to the size of the partial correlation coefficient. The KMO ranking varies from 0 to 1. A bare minimum

- b *Reliability analysis*: A questionnaire's repeatability, stability, or internal consistency is referred to as its reliability. Cronbach's alpha is one of the most popular methods for demonstrating the reliability of a survey instrument. This statistic employs inter correlations to determine whether or not the constituent things calculate the same area. In the case of intelligence t , the sufficient value of alpha in reliability analysis is 0.8.
- c *CFA*: In Operations Management, SEM is becoming a more common method of data analysis. Chi-square, CFI, and RMSEA should all be monitored. Complete indices, Gradual indices, and Parsimonious indices were the three types of indices. The fit for RMSEA ranges between 0.08 and 0.10 (Hair et al., 2006). Researchers suggest a value greater than 0.9 for GFI and AGFI (Jöreskog and Sörbom, 1993). A strong fit predictor should be able to.
- d *ANOVA*: ANOVA is a statistical tool for checking the significant differences among the means for more than two groups. Levene's test for equality of variances needs to be checked before employing ANOVA.

4 Analysis and discussion

4.1 KMO and Bartlett's test

The KMO test is used to determine if a sample is suitable for EFA use (Barrett et al., 2011). According to Leech et al. (2005), the KMO value should be greater than 0.5 for sampling adequacy. According to Table 2, the KMO value is 0.921. As a result, the sample size of this analysis is adequate to conduct the EFA test and other tests. Furthermore, the Sphericity test (Tobias and Carlson, 1969).

Table 2 KMO and Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.911
Bartlett's test of sphericity	Approx. chi-square	17677.641
	df	323
	Sig.	0.000

4.2 Exploratory factor analysis

Factor analysis is the main focus of data reduction and definition analysis. This mathematical method helps to reduce the number of correlated variables independently. The relationship between many different variables can be analysed using a set of underlying dimensions known as 'factors' or 'parameters'. Exploratory factor analysis (EFA) was used to incorporate less of the variables or factors of the original variables in order to improve the definition. Table 3 is showing the factors loading for each question.

Table 3 Exploratory factor analysis

<i>S. No.</i>	<i>Items</i>	<i>Extraction</i>
1	I am becoming more mindful where I spend my money	0.662
2	I am changing to less expensive products to save money	0.339
3	I research brands before buying those products	0.626
4	I like the choice of more brands	0.497
5	I purchase non-perishable items	0.426
6	I prefer buying food items	0.344
7	I prefer going out to go grocery myself	0.390
8	I prefer buying products which are healthy and hygienic	0.437
9	I prefer buying quality products	0.686
10	I buy products which have eco-friendly logo	0.799
11	I prefer making payments through digital mode	0.672
12	I am fearful for my health	0.465
13	I am worried about the impact on the economy	0.315
14	I prefer cooking food at home rather than ordering	0.422
15	I prefer going to retail stores which follow the guidelines issued by WHO	0.325
16	I prefer going to stores which have sanitisers at their entrance	0.546
17	I prefer going to stores which have strict policy for not allowing customers without masks	0.435

The above 17 items measure various constructs under study as indicated.

4.3 Reliability analysis

Nunnally et al. (1967) defines the degree to which measurements can be repeated as accuracy, and any effect that differentiates between measurement cases is the reason for the error. Reliability means how a device consistently produces similar results. Cronbach alpha is a standard reliability metric because the overall reliability of each item is taken into account (Fried and Ferris, 1987; Cronbach, 1951; Hogan and Illingworth, 2000).

Cronbach’s alpha value greater than 0.7 indicates a large scale (Hair et al., 2010; Nunnally and Bernstein, 1978). The Cronbach alpha value of more than 0.5 was also right. For each structure the value of Cronbach alpha exceeded the accepted level as shown in Table 4.

The degree of legitimacy in which a system tests what is expected is referred to (Kimberlin and Winterstein, 2008). The efficiency of a procedure can be determined by incorporation and exclusion. Inter-item correlation analysis supports convergent validity. As previous researchers have suggested, the correlation values between the sections of our sample were 0.6 to 0.9 (De Vellis, 2003; Blankson and Kalafatis, 2004). Psychometric scale tests have thus ensured the strength and efficiency of the unit. The results show that Cronbach alpha is the greatest element in reliability. The value is usually shown to be a high reliability of 0.6–0.8.

Table 4 Cronbach alpha

<i>Construct</i>	<i>Cronbach alpha</i>	<i>Overall Cronbach alpha</i>
Shopping patterns	0.876	0.763
Safety measures	0.743	
Digital payments	0.701	
Sustainable lifestyle	0.839	
Sustainable food consumptions	0.700	
Sustainable buying habits	0.799	

4.4 *Confirmatory factor analysis*

Variables are grouped into EFA variables, and the measurements are limited to factor loads, cross loads, and section independence. In order to resolve the EFA's cap, Lee (2008) suggested conducting a confirmatory factor analysis. After EFA and the reliability evaluation, this variable contains all variables kept in the confirmatory factor analysis (CFA) model. Confirmatory factor analysis (CFA) is a factor study that looks for a clear relationship between the latent variables underlying the evidence and the structural hypothesis (Field and Golubitsky, 2009). Field and Golubitsky (2009) defines formalised paraphrases as Field and Golubitsky (2009) defines formalised paraphrases as The CFA is a theory-based methodology that establishes the relationship between measured and unknown variables (Suhr, 2006). CFA is a method for testing or refuting hypotheses. The proposed model is used to calculate population covariance based on observed covariance. The model is used to estimate latent construction covariations and interconnections. Table 5 showing the model fit of and population covariance. The CFA is an excellent method for testing abstract logic (Reise et al., 2000; Floyd and Widaman, 1995).

Table 5 Model fit

<i>Fit index</i>	<i>Recommended value</i>	<i>Value</i>
Chi-square/df	□3.0	1.19
GFI	>0.80	1.20
AGFI	>0.80	0.901
RMSEA	<0.07	0.001
CFI	>0.80	2.91
RMR	<0.01	0.000

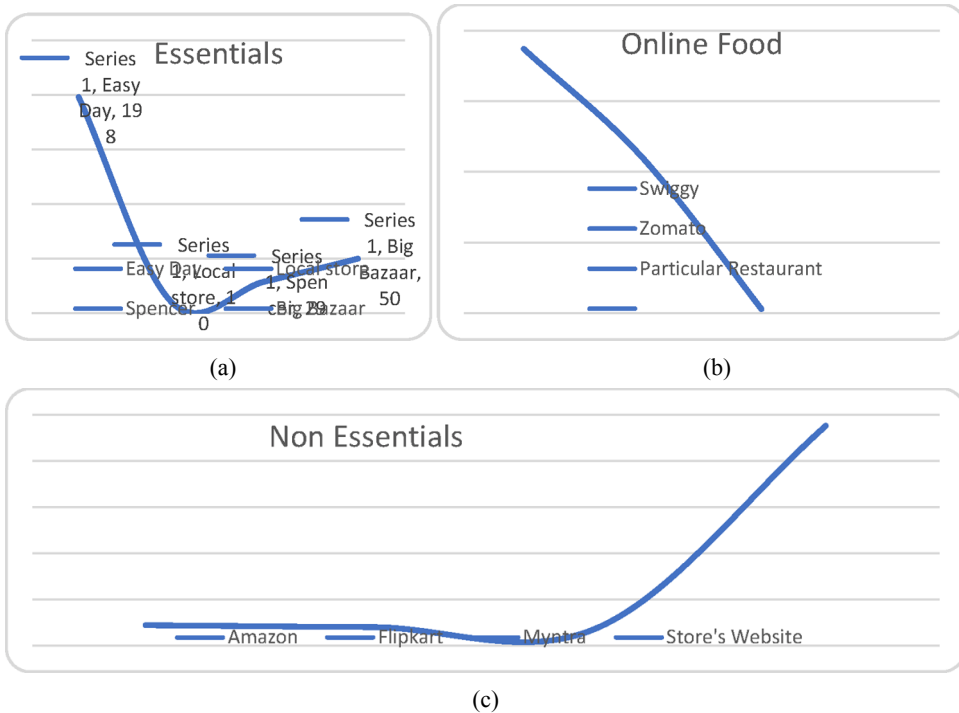
4.5 *Consumer's preference*

The survey has shown the following:

- the customers tend to visit Easy Day more as compared to local store, Big Bazaar or Spencer's while buying groceries online
- the customers tend to purchase more of grocery and food items as compared to non-essentials

- the customers tend to make food orders from swiggy more as compared to Zomato and other restaurants
- the customers tend to purchase non essentials from the specific stores website as compared to Amazon or Flipkart.

Figure 1 (a), (b), (c) Consumers preferences (see online version for colours)



4.6 ANOVA

4.6.1 Demographics and shopping patterns

The findings indicate that males’ shopping habits vary significantly from those of females. The mean value demonstrates that males and females have distinct shopping habits. There is no discernible relationship between shopping habits and customer age group. The mean value indicates that customers aged 20–30 had an effect on shopping habits during the COVID-19 era. There is a noticeable contrast between customers’ shopping habits and their occupations. The purchasing habits of working consumers is influenced.

4.6.2 Measures websites during COVID-19

The findings indicate that there is a major gap in the protection patterns used by retailers and males vs. females. The mean value indicates that males are more concerned about the protection measures implemented than females. There is a major disparity between protection programs and customer age groups. The mean value indicates that customers

aged 30–40 are more concerned about safety measures during the COVID-19 era. There is a major disparity between protection initiatives and user occupation. Working customers were more worried with safety precautions.

Table 6 ANOVA demographics and shopping patterns

	<i>Type</i>	<i>Number</i>	<i>Mean</i>	<i>F</i>	<i>Sig</i>	<i>Result</i>
Gender	Male	161	3.987	1.712	0.007	No sig
	Female	139	3.467			
Age group	20–30	120	2.991	3.821	0.052	No sig
	30–40	78	3.456			
	40–50	102	3.212			
Occupation	Student	100	2.958	2.621	0.036	Sig
	Employed	73	3.006			
	Others	87	2.926			
	Government employee	40	2.830			

Table 7 Safety measures websites during COVID-19

	<i>Type</i>	<i>Number</i>	<i>Mean</i>	<i>F</i>	<i>Sig</i>	<i>Result</i>
Gender	Male	61	3.987	2.987	0.001	Sig
	Female	94	3.467			
Age group	20–30	120	2.991	2.543	0.006	Sig
	30–40	78	3.456			
	40–50	102	3.212			
Occupation	Student	100	2.958	2.769	0.029	Sig
	Employed	73	3.006			
	Others	87	2.926			
	Government employee	40	2.830			

4.6.3 *E-payments*

The findings indicate that there is no statistically significant relationship between the use of e-payment platforms and the gender of the users. The mean value indicates that males prefer to purchase less from e payment options than females. There is a noticeable gap between purchasing from e-payment platforms and the age range of the customers. During the COVID-19 era, customers aged 30–40 tended to shop more from e payments, according to the mean value. There is no discernible distinction between e-payment shopping and customer occupation. Working customers have used the e-payment option more than other age groups.

4.6.4 *Sustainable lifestyle*

According to the results, there is a significant difference between having a sustainable lifestyle and the customer's gender. Females have a more sustainable lifestyle than males,

according to the mean value. There is a significant distinction between living a healthy lifestyle and reaching a certain age. According to the mean value, customers between the ages of 20 and 30 live a more healthy lifestyle. There is a significant distinction between leading a balanced lifestyle and being a consumer. Consumers in the Others category, which includes those who are not students or workers, tend to live a healthier lifestyle.

Table 8 E-payments

	Type	Number	Mean	F	Sig	Result
Gender	Male	61	3.213	3.765	0.076	No sig
	Female	94	3.543			
Age group	20-30	120	2.503	3.309	0.049	Sig
	30-40	78	3.987			
	40-50	102	3.111			
Occupation	Student	100	2.958	3.987	0.129	No Sig
	Employed	73	3.006			
	Others	87	2.926			
	Government employee	40	2.830			

Table 9 Sustainable lifestyle

	Type	Number	Mean	F	Sig	Result
Gender	Male	61	2.905	2.621	0.019	Sig
	Female	94	3.250			
Age group	20–30	120	2.9123	2.826	0.026	Sig
	30–40	78	2.8432			
	40–50	102	2.9056			
Occupation	Student	100	2.850	5.191	0.000	Sig
	Employed	73	2.868			
	Others	87	2.933			
	Government employee	40	2.779			

4.6.5 Sustainable food consumption

The results in Table 10 show that there is no significant difference between sustainable food consumption and gender of the consumers. The mean value shows that the males tend to consumer more sustainable food as compared to females. There is a significant difference between sustainable food consumption and age group of the consumers. The mean value shows that customers in the age group of 40–50 tend to have more sustainable food consumption. There is significant difference between sustainable food consumption and the occupation of the consumers. The consumers who were government employees tend to have a more sustainable food consumption pattern.

Table 10 Sustainable food consumption

	<i>Type</i>	<i>Number</i>	<i>Mean</i>	<i>F</i>	<i>Sig</i>	<i>Result</i>
Gender	Male	61	3.106	1.271	0.282	No Sig
	Female	94	2.923			
Age group	20–30	120	2.850	5.693	0.018	Sig
	30–40	78	2.868			
	40–50	102	3.257			
Occupation	Student	100	3.204	5.601	0.001	Sig
	Employed	73	2.912			
	Others	87	3.113			
	Government employee	40	3.402			

4.6.6 Sustainable buying habits

Table 11 show that there is no significant difference between having sustainable buying habits and gender of the consumers. The mean value shows that the females tend to have more sustainable buying habits as compared to males. There is no significant difference between having sustainable buying habits and age group of the consumers. The mean value shows that customers in the age group of 40–50 tend to have more sustainable buying habits. There is significant difference between having sustainable buying habits and the occupation of the consumers. The consumers who were employed tend to have more sustainable buying patterns.

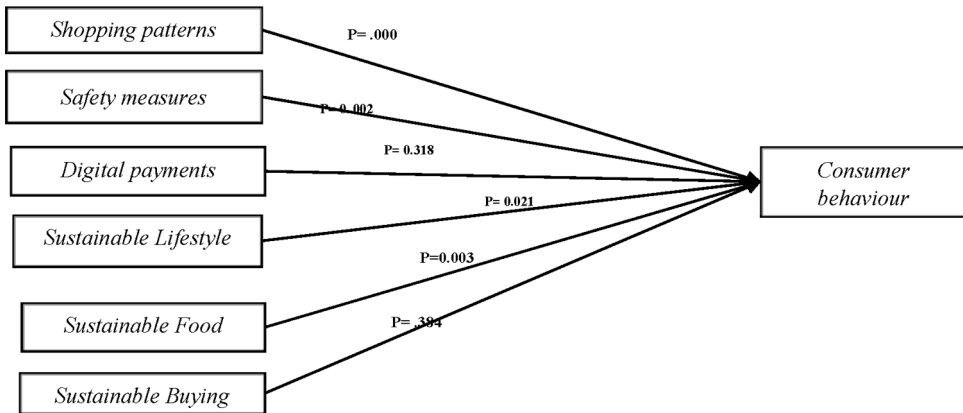
Table 11 Sustainable buying habits

	<i>Type</i>	<i>Number</i>	<i>Mean</i>	<i>F</i>	<i>Sig</i>	<i>Result</i>
Gender	Male	61	2.3088	1.595	0.208	No Sig
	Female	94	2.3705			
Age group	20–30	120	1.9000	0.101	0.959	No Sig
	30–40	78	1.8400			
	40–50	102	1.9201			
Occupation	Student	100	2.2528	1.271	0.282	No Sig.
	Employed	73	2.3594			
	Others	87	2.3320			
	Government employee	40	2.3265			

4.7 Hypothesis testing by regression

Regression tests the relationship between variables. Regression is tested using weights, p -values and t -values for regressions (Hair et al., 2016). The regression results will be shown in Table 8, and Figure 2, the reversal calculated as exogenous variables sustainable food, sustainable payment, sustainable lifestyle, digital payment and shopping habits. Such exogenous variables lead to the output of an endogenous variable user.

Figure 4 Proposed model



The findings in Table 12 show that most of the hypotheses, suggested in this study, are supported. **H01** shows a direct impact of Shopping Patterns on consumer behaviour ($\beta = 0.512, p = 0.000$). The β value = 512 indicates that sustainable food consumption affects the dependent variable consumer performance by about 512%. Therefore, a 1% increase in sustainable food consumption will result in a 512% improvement in consumer performance. The p -value ($p = 0.000$) reveals the positive and direct relationship between sustainable food consumption and consumer behaviour during the COVID-19 period.

Table 12 Summary of hypothesis testing

S. No.	Independent variable	Dependent variable	Coefficient	sig	Result
1	Shopping patterns	Consumer behaviour	0.512	0.000	Significance
2	Safety measures		0.349	0.002	Significance
3	Digital payments		0.041	0.318	No significance
4	Sustainable lifestyle		0.765	0.021	Significance
5	Sustainable food consumptions		0.479	0.003	Significance
6	Sustainable buying habits		0.078	0.384	No Significance

Second hypothesis, the impact of safety measures on consumer behaviour ($\beta = 0.349, p = 0.003$). The β value = 0.765 indicates that a sustainable lifestyle affects the dependent variable consumer performance by about 349%. Therefore, a 1% increase in sustainable lifestyle will result in a 349% improvement in consumer performance. The p -value ($p = 0.003$) reveals the positive and direct relationship between sustainable life style and consumer performance during the COVID-19 period.

The third hypothesis, the impact of Digital Payments on consumer behaviour, was not supported ($\beta = 0.041, p = 0.381$). The β -value 0.041 indicates that sustainable buying does not influence consumer behaviour. The p -value ($p = 0.381$) also indicates there is nodirect impact of sustainable buying and consumer performance during the COVID-19 period.

Fourth hypothesis, the impact of sustainable lifestyle on consumer behaviour ($\beta = 0.0.765$, $p = 0.021$). The β value = 0.765 indicates that a sustainable lifestyle affects the dependent variable consumer performance by about 765%. Therefore, a 1% increase in sustainable lifestyle will result in a 765% improvement in consumer performance. The p -value ($p = 0.021$) reveals the positive and direct relationship between sustainable lifestyle and consumer behaviour during the COVID-19 period.

Fifth hypothesis shows a direct impact of sustainable food consumption on consumer behaviour ($\beta = 0.479$, $p = 0.003$). The β value = 1.273 indicates that sustainable food consumption affects the dependent variable consumer performance by about 479%. Therefore, a 1% increase in sustainable food consumption will result in a 479% improvement in consumer performance. The p -value ($p = 0.003$) reveals the positive and direct relationship between sustainable food consumption and consumer behaviour during the COVID-19 period.

The sixth hypothesis, the impact of sustainable buying on consumer behaviour, was not supported ($\beta = 0.078$, $p = 0.384$). β -value 0.384 indicates that sustainable buying does not influence the dependent variable consumer performance. The p -value ($p = 0.384$) also indicates there is no direct impact of sustainable buying and consumer behaviour during the COVID-19 period.

5 Conclusion

This study is the first one to be done on the Indian markets and the impact of COVID-19 on the behaviour of the consumers thus as can be seen from the results, The consumers have tend to purchase essentials and non-essentials from various retail stores which follow guidelines issues by the local government and WHO. The consumers in the age group of 20–40 have preferred to use e payments options while making payments reason can be the aged people have lack of knowledge about how to operate e payments apps. Concerning the adverse consequences of the COVID-19 pandemic, manufacturing, automotive, banking, aviation and hospitality are mostly responsible for the Indians economy. This has affected rapidly growing digital fees, which are closely connected with the sectors mentioned above. Today, digital payments have a negative effect on shuttles, travel restrictions and raising consumer choice (restaurant, films and videos, etc.). For airlines, passengers, hospitalities, schools, athletics, non – essential e-commerce and restaurants and other sectors, digital payment volume declines have been seen. In fact, because of illegal digital payments at boundaries, be they B2B or C2B, the movement of goods has declined significantly. International sales were also affected and reduced. There are, however, also a number of areas where digital payments are growing by through awareness during the lockout. These include internet food shops, hospitals web, OTT (telecommunications and media), EdTech, online gaming, reloads and payments on services and bills. The government, which has pledged financial support for the poor through direct transfers into banking accounts, has also increased digital payment volumes.

6 Implications and limitations

Since this study is the first study to be done on the behaviour of the consumers during the pandemic this will help the academicians as well managers in developing strategies for the rest of the time period till the lockdown is prevalent. The survey was filled by 300 consumers thus it cannot represent the behaviour of all the consumers in India towards retail stores but it can give insights into what consumers are preferring currently. The studies should be conducted sector wise as well as city or state wise to check the impact of COVID-19 on behaviour of the consumers.

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