A STUDY ON CONSUMERS PERCEPTIONS FOR E-GROCERY IN INDIA

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Abstract

In this research we would look upon the various popular E-grocery apps in India and what arethe gaps in their offerings which is leading towards altering perceptions in consumers minds. The research shows different perceptions and demands of consumers related to e-grocery shopping and based on gender the classification of satisfaction levels are tested. Later well- structured suggestions are given to reduce the gaps in e-grocery retailing. Hence this researchis a concrete source to define possible gaps existing in e-grocery channels in India and what are the most critical factors to focus on overcoming these gaps.

Introduction

The fourth-generation industry is moving at a rapid speed toward technology. As we progress toward blurring the lines between the physical, digital, and biological worlds, Artificial intelligence (AI), robotics, the Internet of Things (IoT), 3D printing, genetic engineering, quantum computing, and other technologies are being combined. Similarly, consumers are moving closer to having their demands met. With so many things happing around the e-tailers are also stretching their limits to serve best in the competitive market. So, as e-retailers, the big ones especially (Bigbasket, Grofers etc) needs to catch up with the pace because the online grocery war in India has recently heated up, fuelled by increased demand during the shutdown time, increased omni-channel presence by offline stores, and the introduction of major players such as JioMart and FlipKart.

e-Grocery (currently 0.3 percent of total grocery market) is expected to grow 8-10 times overthe next 4-5 years, reaching USD 25-30 billion in sales, thanks to enablers such as rising internet penetration, increasing digital awareness, and embracing delivery convenience, according to multiple estimates. It's no surprise that companies are vying for a significant share of the digital world's largest customer sector.

To meet these new demands, grocery retailers must incorporate versatility in their processes. As a result, we will see the future of grocery retail adopting to meet these new demands. In aworld where customers have more options, consumer demands will continue to change, and the grocery industry must be prepared to react.

What exactly does an omnichannel solution involve? At the very least, we'll see more automation, both in remote fulfilment centres and hybrid facilities where customers can shop in person while still having their online orders selected and packed.

Aim-

The aim of this research paper is to look upon various factors that are affecting consumer buying behaviour of online groceries and how to resolve them.

Objective

The research is based on the fact that many customers want a seamless shopping experience, so most e-retailers are implementing omnichannel strategies to sell groceries. However, there are various communication gaps that may weaken the bonds of brand loyalty and must be bridged.

The objectives of the study is to find the possible gaps due to which the relationship between brand and consumers are fluctuating.

Problems-

1. Is the concept of click-and-buy for groceries appealing to the majority of customers?

3. Is it true that a good e-grocery building would attract more customers to the brand, resulting in increased loyalty and, as a result, increased profits?

4. Will people return to conventional grocery shopping after the pandemic (even if gaps exist or not)?

Hypothesis 1

H0- There is no significant relation between consumer retention in apps and gaps in e-grocery

H1- There is a significant difference in consumer's purchase intention during and post pandemic

Hypothesis 2

H0- There is no significant difference between male and female respondents with respect to perception of consumer satisfaction towards online grocery stores.

H1- There is a significant difference between male and female respondents with respect to perception of consumer satisfaction towards online grocery stores.

Hypothesis 3

H0- There is no association between gender and interest to buy grocery items through online in future.

H1- There is an association between gender and interest to buy grocery items through online in future.

Literature Review

According to the study, Kolesar and Galbraith claims that e-retail entails three main activities
(1) a product search activity that offers comprehensive information on the goods under review, also known as a product-evaluation or information-gathering (IG) facility; (2) an online purchasing feature that reduces transaction costs and encourages customer interaction;and (3) a product delivery capability that facilitates the final product's distribution to customers. The Engel–Kollat–Blackwell (EKB) model proposes five key stages in the decision-making process: (1) problem identification; (2) search; (3) alternative assessment purchase; (4) choice; and (5) outcomes. In different ways, online users seem to be very diverse. Rohm and Swaminathan, for example, identify four stereotypes of e-grocery shoppers: (1) convenience shoppers; (2) variety seekers; (3) balanced buyers; and (4) store- oriented shoppers are the four types of shoppers.

It has been reported that the smartphone age has provided retailers with numerous opportunities to increase online sales. In order to promote online customer orders, businessesmust overcome a number of obstacles, including on-time and effective transportation delivery, reliable inventory control, and efficient warehouses. E-fulfilment (online order fulfilment) is a key factor that influences online customer behaviour especially brand loyalty.In order to build effective e-retailing strategies that enhance supply chain management, companies must first understand which features of E-fulfilment service provision influence customer behaviour (SCM) . SCM is focused on three key pillars: (1) managing the flow from raw materials to finished products delivered to consumers; (2) being strategically oriented toward cooperation among multiple agents responsible for managing this flow; and
(3) being consumer-oriented.

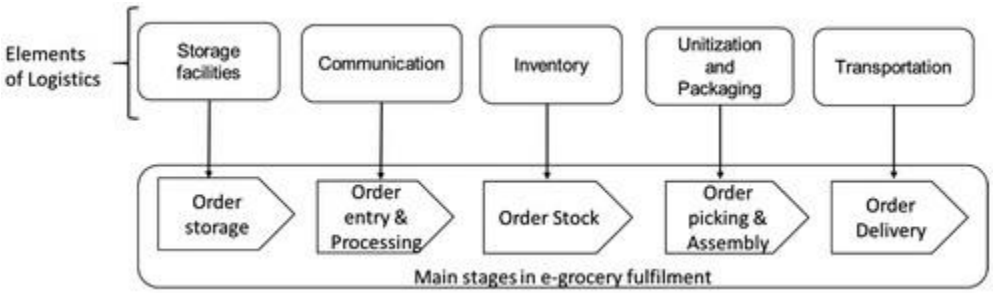
Three e-fulfilment issues have been identified using a meta-synthesis approach: (1) inventory

management; (2) last-mile delivery; and (3) returns management. In terms of the first question, Jing and Lewis found that stock-outs in e-groceries do not reduce the likelihood of a purchase in the short run because there are enough new consumers who are more tolerant of this situation than frequent consumers. The e-last-mile grocery's distribution plan has an effect on the e-service grocery's efficiency. Finally, the amount of returns is determined by the return policies, as shown by Bower and Maxham, who found that free returns increase thevolume of goods returned, while fee-based returns decrease it .

Retailers are innovating with a variety of delivery choices, such as buy-online-pickup-in- store, autonomous delivery solutions, lockers, and free delivery on minimum purchase levels, as LMD is becoming a vital tool for market differentiation. Consumers need more simplicity and versatility from LMD.

Pan et al. discovered that same-day and on-demand delivery services for e-groceries are gaining momentum, and that a high rate of failed deliveries significantly increases logistic costs, especially for perishable food. It has also been showed in research that delivery feesare not the most important factor. A fifteen-minute gap in grocery store travel time had a greater effect on whether people preferred to buy online or in stores than a delivery fee.

According to the sources, fulfilment management is increasingly focusing on the integrationof fulfilment channel inventory and services. It's difficult to devise effective omnichannel strategies based on retailer characteristics.



Managing the fundamental elements of logistics or supply chain (such as storage facilities, inventory, transportation, communication, unitisation and packaging), isrecognised as a key success factor and core competitive strategy in almost every business industry (Hubner et al., 2016; Rushton, Croucher, & Barker, 2014Rushton, A., Croucher, P., & Barker, P. (2014). *The handbook of logistics and distribution management: Understanding the supply chain* (5th ed.). London: Kogan Page. [Google Scholar]). E-grocery management requires

contextualising the logistics from an e-grocery viewpoint: transportation of supplies (such as chilled, ambient, frozen and fresh-produce groceries) geographically, packing them into units and taking them from the stores to the customers' homes. Information flows from the point of the customers' order through the elements of logistics, to the delivery of the groceries as shown in Figure 3.

These logistics elements are critical in e-grocery retailing because as observed by previous scholars (Colla & Lapoule, 2012; De Marco, Cagliano, Margano, & Perfetti, 2014; Reiner, Teller, & Kotzab, 2013; Turban et al., 2015) excellence in transportation, distribution and inventory management holds the key to profit and success in e-retail. Moreover, literature (Anu et al., 2012; Hubner et al., 2016; Wanget al., 2016) indicates that the management of logistical operations that relate to the online food retail business is more complicated than in any other retail sector. This isbecause, for example, the "physical" nature of food (the relatively short period of freshness), the trade-off between cost and service, the high expectations of on-time delivery and the need to maximise order-accuracy pose challenges in the overall management process and organisation. An overarching theme emerging throughout the grocery literature reviewed is the inconclusiveness of the extent of challenges envisaged. The theoretical and practical analysis of these challenges and consequent remedies are of prime interest to this research.

Customers who shop online are different from those who shop in stores; online shoppers experience lower costs, faster delivery, and the ability to quickly turn to another website

offering similar goods and services. In ecommerce, the location of the store is irrelevant since the buyer has access to several different retailers in a virtual market a location.

Lack of time is the most popular explanation for shopping online. Other factors include a lack of transportation, the difficulty of carrying heavy or bulky objects, and a fear of shopping in person.

Due to various research reading, it has been found that Time is a major issue in online grocery shopping, and online grocery retailers can gain a competitive advantage by effectively managing their time, and one of the primary reasons for consumers to engage in online grocery shopping is the perceived time-saving factor of online supermarket purchases (Weber & Badenhorst-Weiss, 2016). The main benefit of shopping for groceries online is that it saves time and effort. When shopping for food online or in a traditional store, a customer's tastes are vastly different (Vasic et al., 2019). In the retail sector, as far as grocery trade is concerned, customers still give preference to price and testing, while packaging taste and appearance do not play a major role and even most customers are aware of the brands available in the markets, but do not display willingness to switch their brand (Kothari et al., 2016). In India, four factors influence consumer attitudes toward online grocery shopping: perceived cost, perceived convenience, perceived danger, and perceived enjoyment (Baheti &Kaushal, 2015).Modern retail is preferred more for

branded and less for perishable categories. Interestingly, the lower middle class share of modern grocery retail's revenues is largest, and this share is projected to grow as prices fall and store density increases (Narayan et al., 2015).

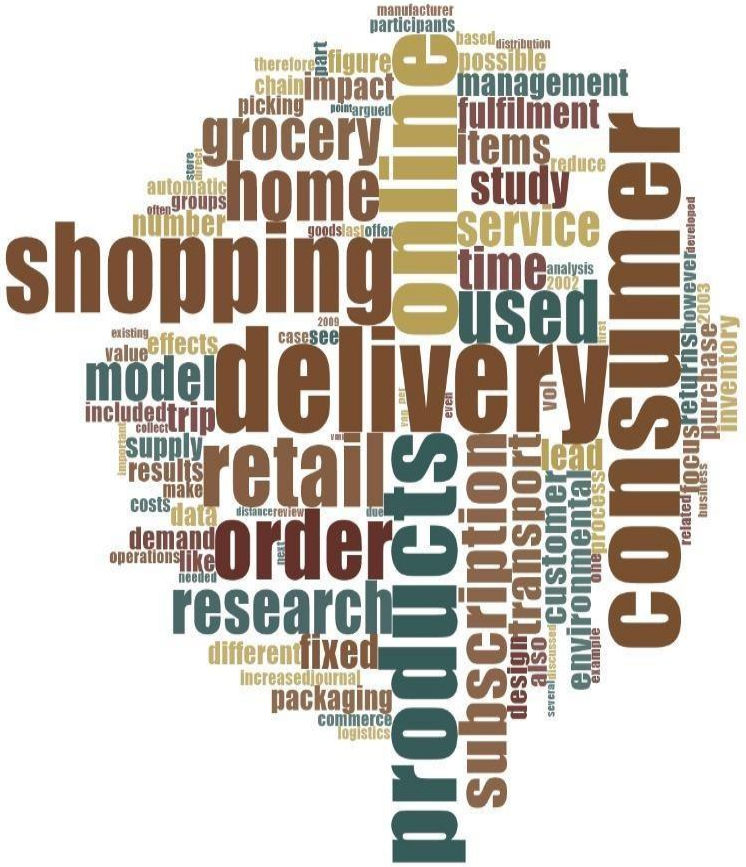
Consumers buy items from online shopping websites because of things like promotions and discounts, product quality, free home delivery, website user friendliness, and cash payment options. Customers want the website's user-friendliness to improve in order for them to choose online grocery shopping over traditional methods of shopping (Sathiyaraj et al., 2015). While online grocery shopping provides convenience, ease, privacy, and time savings, some housewives and working women prefer to purchase groceries from physical stores for a variety of reasons, including trust, negotiating capacity, and credit. The convenience and self-satisfaction of physically checking products before making a purchase. The majority of females opted for the internet since it saves time and makes ordering easier (Rao, 2018)

Almost every major retailer was attempting to rethink their distribution model, attempting to find new ways to attract customers and improve customer loyalty . Omnichannel fulfilment has progressed from being a differentiating factor to being a necessary factor with COVID-
19. If a retailer, whether new or conventional, does not consider Omnichannel fulfilment and creative ways to meet his customers, he will be unable to compete in the future. Online grocery shopping has been steadily growing in popularity due to its convenience and ease of use, especially thanks to popular technology aids such as on-demand delivery and smart home and voice features, which allow you to order products simply by saying what you need and have them delivered to your door within hours.

However, for many customers, ordering groceries online was merely a convenience rather than a necessity—until COVID-19 took the world by storm.

Research Gaps

Many factors related to e-grocery shopping behaviour have been addressed, such as time consumption, convenience, and customer user experience, but it has been discovered that there has not been enough research on the necessity aspect of shopping online, and whether or not new customers would avoid or minimise their shopping on e-grocery channels after thepandemic.



Questionnaire

Q-Name_____ Q-Age

1. Under 182. 18-28

3. 29-40

4. 41-52

5. 53 and aboveQ-Status

1. Employee

2. Unemployed

3. Student

4. Other

Q-Annual Income

1. Under 5 Lacs

2. 5-18 Lacs 3. 19- 28 Lacs4. 29-38 Lacs

5. 39 Lacs and above

6. Not workingQ-Gender
1. Female
2. Male
3. Prefer not to say

Q-How often do you buy products online?

1. Extremely often
2. very often
3. Somewhat often
4. Not so often
5. Not at all often

Q-Which of these do you primarily purchase online? (Select all that apply)

1. Groceries
2. Health care
3. Personal care
4. kitchen appliances
5. Clothes and apparel
6. Gadgets and electronics
7. Pet care
8. Travel planning
9. None of the above

Q-How comfortable are you buying groceries online from a company you know

1. Extremely comfortable
2. Very comfortable
3. Somewhat comfortable
4. Not so comfortable
5. Not at all comfortable

Q-From which platform do you usually buy grocery items?

1. Supermarket
2. Local Vendors

3. Online
4. Ration shops

Q-What motivated you the most to buy groceries online?

1. Friends or relatives
2. Pandemic
3. Didn't have time to purchase from physical store or vendor
4. Deals and offers
5. Never purchased yet

Q-The key reason of buying grocery offline

1. Food is fresh
2. Ease of bargain
3. It's cheaper
4. It's convenient and reliable
5. Never bought yet

Q-What are the various online apps you are aware of who sells grocery?

1. Bigbasket
2. Amazon fresh
3. Dmart
4. Dunzo
5. Easyday
6. Flipkart grocery store
7. Godrej's natural basket
8. Grofers
9. Jiomart
10. Spencers retail
11. Swiggy
12. Zomato

Q-Rate how often do you purchase online groceries in a month?Rarely___Mostly

Q-Mark which feature about online grocery shopping websites/apps is appealing to you?

1. Ease of navigation
2. Product reviews
3. Ease to order
4. Saves time
5. Offers and discounts
6. Easy return
7. Secure and easy payment options
8. Product quality
9. Variety of products
10. Delivery
11. Never bought yet
12. ease of website navigation

Q-What problems did you face while searching or purchasing online groceries?

1. Product Quality
2. Customer care service
3. Payment problems
4. Poor packaging
5. Refund and account issues
6. Delivery problems
7. Out of stock
8. Information was not proper
9. Incomplete order when delivered
10. The brand I wanted was not there
11. Never bought yet

Q- If you have switched from one app to other, then select the previous app

1. Big Basket
2. Grofers
3. Amazon fresh
4. Dmart

5. Easyday
6. Flipkart grocery store
7. Godrej's natural basket
8. Jiomart
9. Spencers retail
10. Swiggy
11. Zomato
12. Other

Q- Current app that you are using

1. Big Basket
2. Grofers
3. Amazon fresh
4. Dmart
5. Easyday
6. Flipkart grocery store
7. Godrej's natural basket
8. Jiomart
9. Spencers retail
10. Swiggy
11. Zomato
12. Other

Q-Were you satisfied buying grocery online in pandemic?

1. Yes
2. No
3. Maybe

Q-How often would you buy online groceries after pandemic

1. Always
2. Usually
3. Sometimes
4. Rarely

5. Never

Q-Which mode of grocery buying would you prefer in future?

1. Online grocery buying
2. Retail grocery buying
3. Hybrid/ Both online and retail

Research Methodology

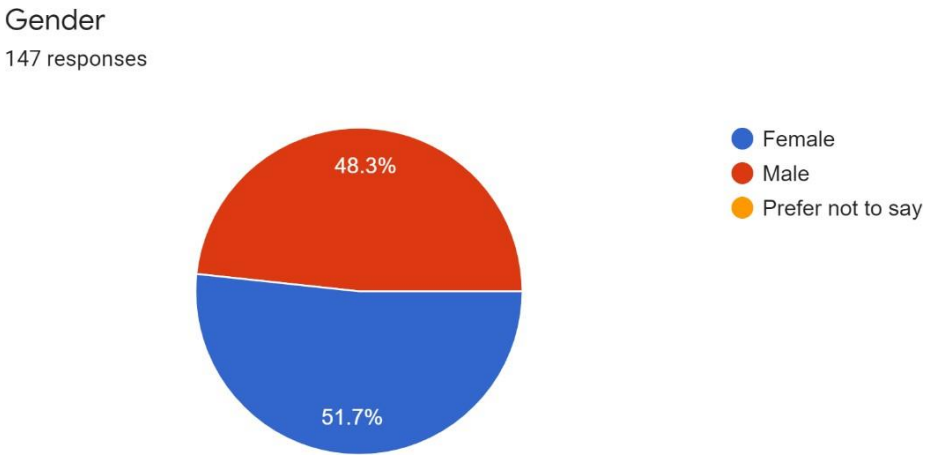
The study employs a Descriptive quantitative approach. The data used in this study came from both primary and secondary sources. Original information would be acquired from a sample size of 150 respondents chosen PAN India as primary data. research was not conducted at a particular city because it was difficult to get 150 responses in lockdown in a stipulated time. And also I wanted to study the people's reaction at random cities. The Social networking tools such as WhatsApp, LinkedIn, and Instagram are used to distribute survey questionnaires . Some respondents who are dissatisfied with e-grocery shopping and do not prefer hybrid shopping, i.e., omnichannel over offline/online grocery shopping, will be contacted directly.

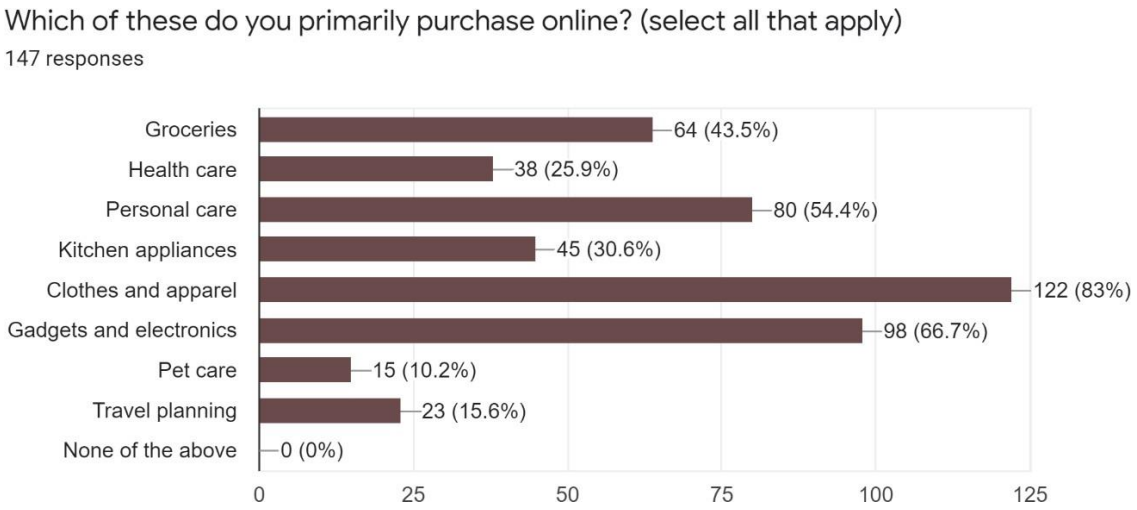
Research Design

The recorded data will be analysed using SPSS, TABLEAU and Charts in this descriptive study. The statistical Tests employed in this study are Paired T test , Factor analysis, Mean and Standard Deviation and Chi-square test to test the hypothesis. These tests would be doneusing SPSS. Visualisation of Data percentage wise would be done using Charts and TABLEAU.

Data Analysis

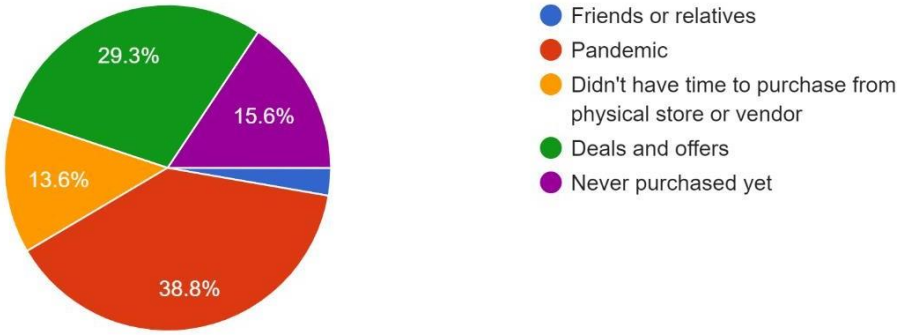
Data in a visualised manner:





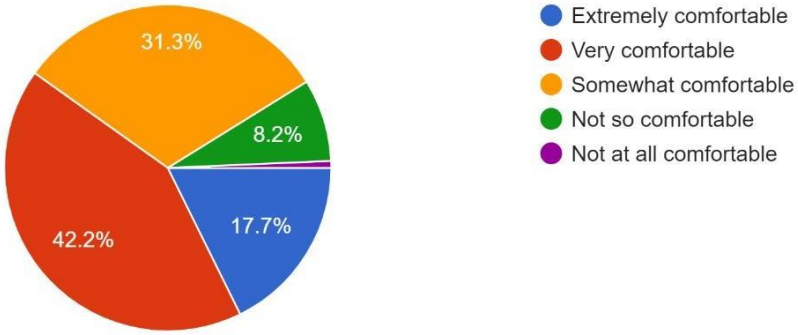
What motivated you the most to buy groceries online?

147 responses



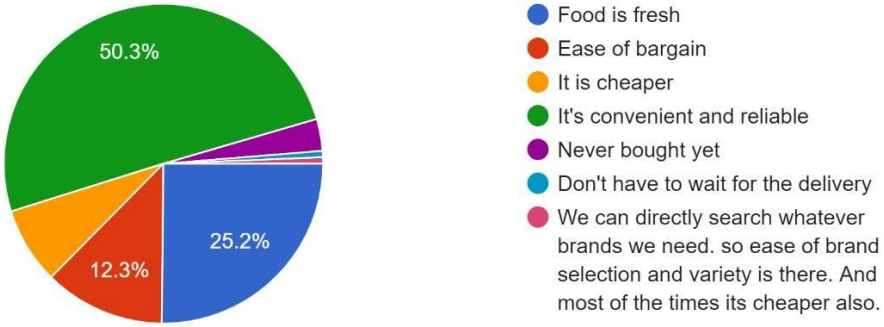
How comfortable are you buying groceries online from a company you know?

147 responses



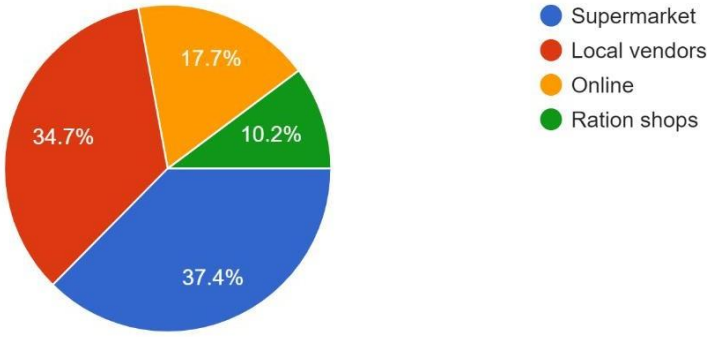
The key reason of buying grocery offline?

147 responses



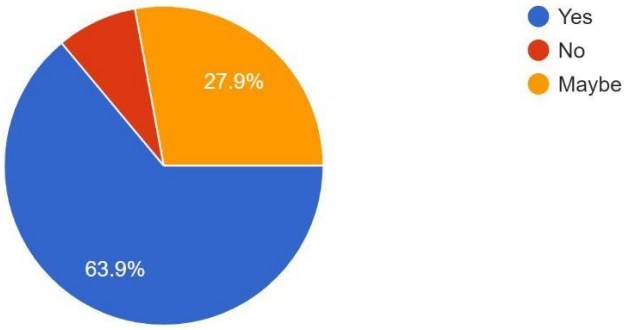
From which platform do you usually buy grocery items ?

147 responses



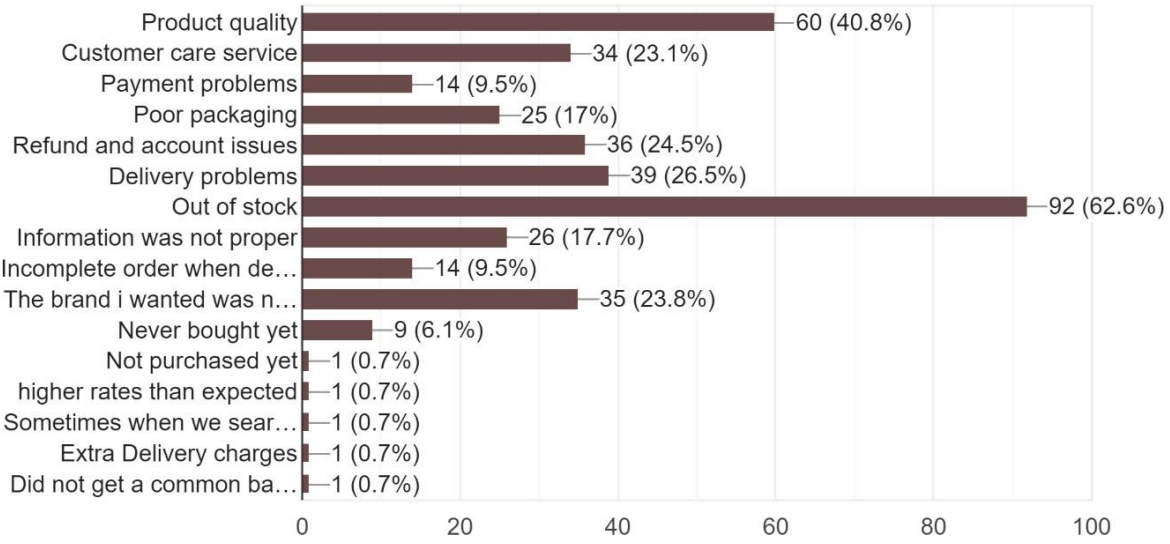
Were you satisfied buying online in pandemic?

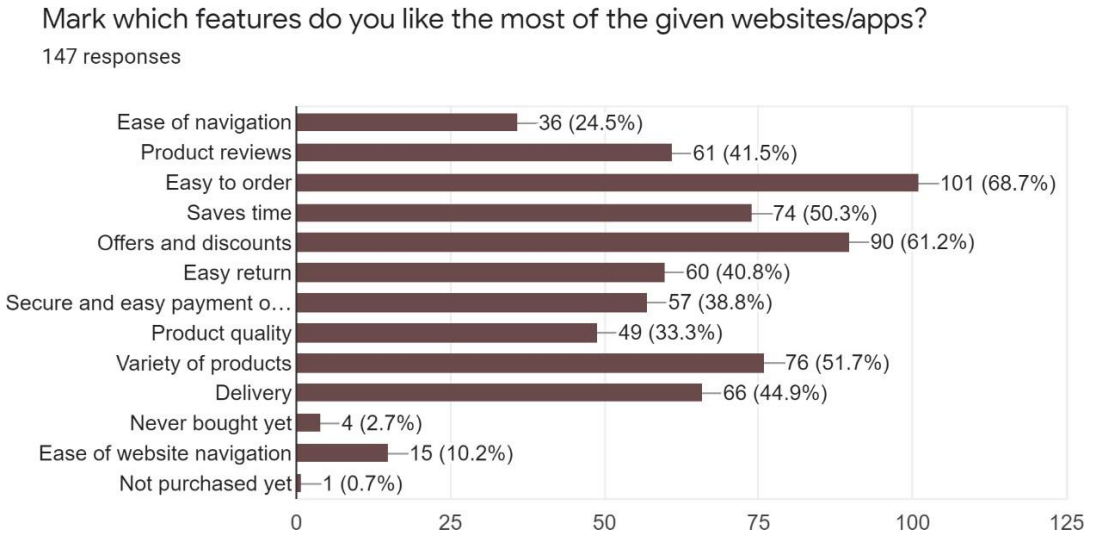
147 responses



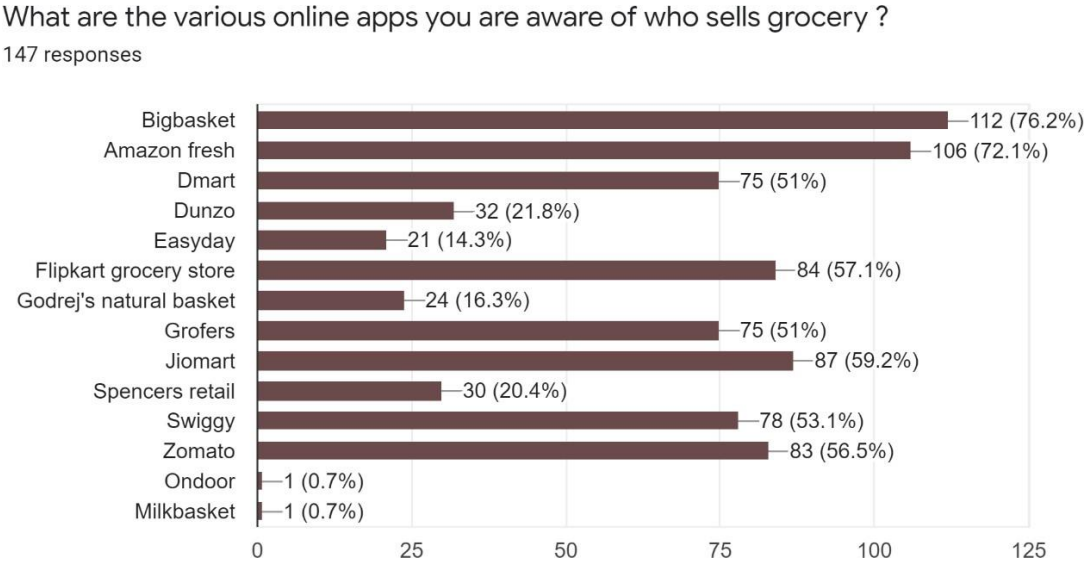
What issues did you face while searching or purchasing online groceries?

147 responses



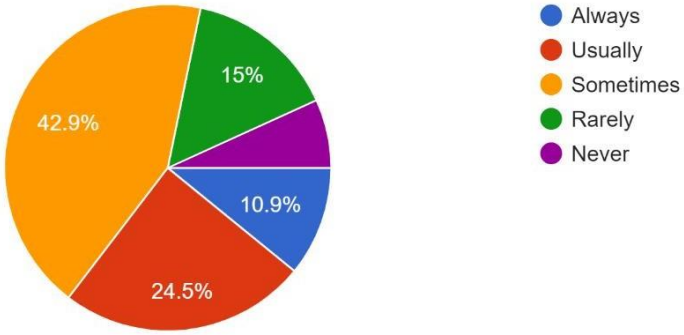

Mark which features do you like the most of the given websites/apps?
147 responses
Ease of navigation
Product reviews
Easy to order
Saves time
Offers and discounts
Easy return
Secure and easy payment o…
Product quality
Variety of products
Delivery
Never bought yet
Ease of website navigation
Not purchased yet
36 (24.5%)
61 (41.5%)
101 (68.7%)
74 (50.3%)
90 (61.2%)
60 (40.8%)
57 (38.8%)
49 (33.3%)
76 (51.7%)
66 (44.9%)
4 (2.7%)
15 (10.2%)
1 (0.7%)
0
25
50
75
100
125


Rate How often do you purchase online groceries in a month? (1 rarely - 10 mostly)
147 responses
40
30
20
10
0
33 (22.4%)
10 (6.8%)
13 (8.8%)
17 (11.6%)
15 (10.2%)
11 (7.5%)
16 (10.9%)
14 (9.5%)
9 (6.1%)
9 (6.1%)
1
2
3
4
5
6
7
8
9
10


What are the various online apps you are aware of who sells grocery ?
147 responses
Bigbasket
Amazon fresh
Dmart
Dunzo
Easyday
Flipkart grocery store
Godrej's natural basket
Grofers
Jiomart
Spencers retail
Swiggy
Zomato
Ondoor
Milkbasket
112 (76.2%)
106 (72.1%)
75 (51%)
32 (21.8%)
21 (14.3%)
84 (57.1%)
24 (16.3%)
75 (51%)
87 (59.2%)
30 (20.4%)
78 (53.1%)
83 (56.5%)
1 (0.7%)
1 (0.7%)
0
25
50
75
100
125

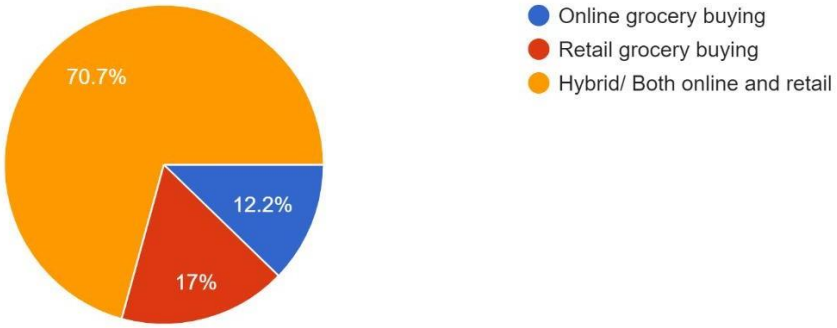
How often would you buy online groceries after pandemic?

147 responses

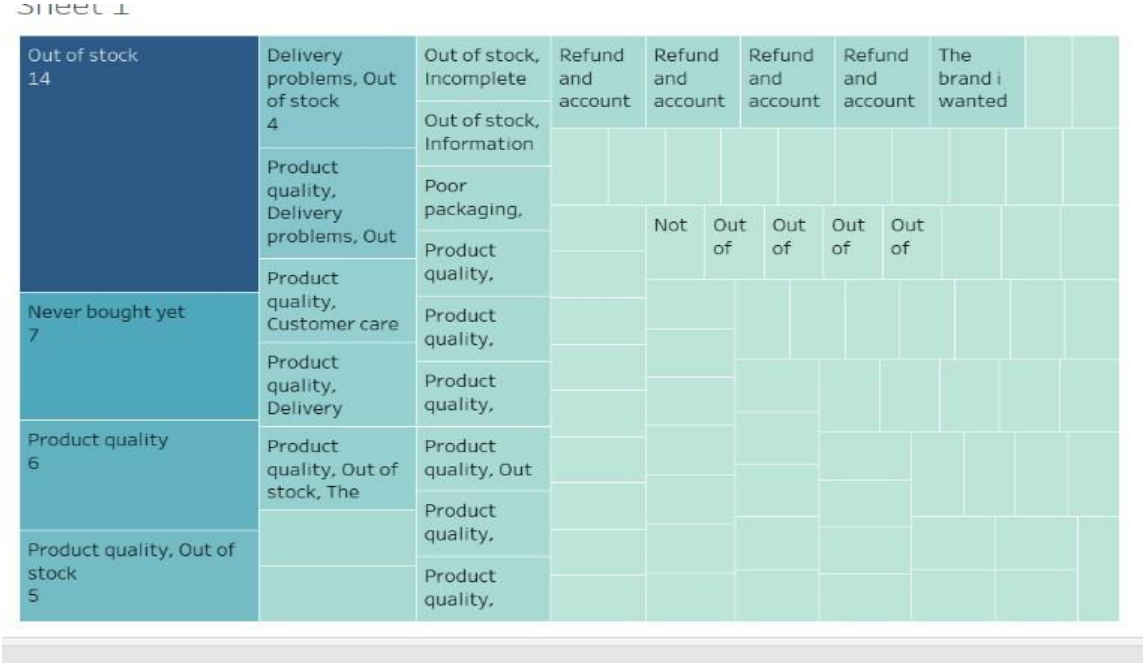


Which mode of Grocery buying would you prefer in future?

147 responses

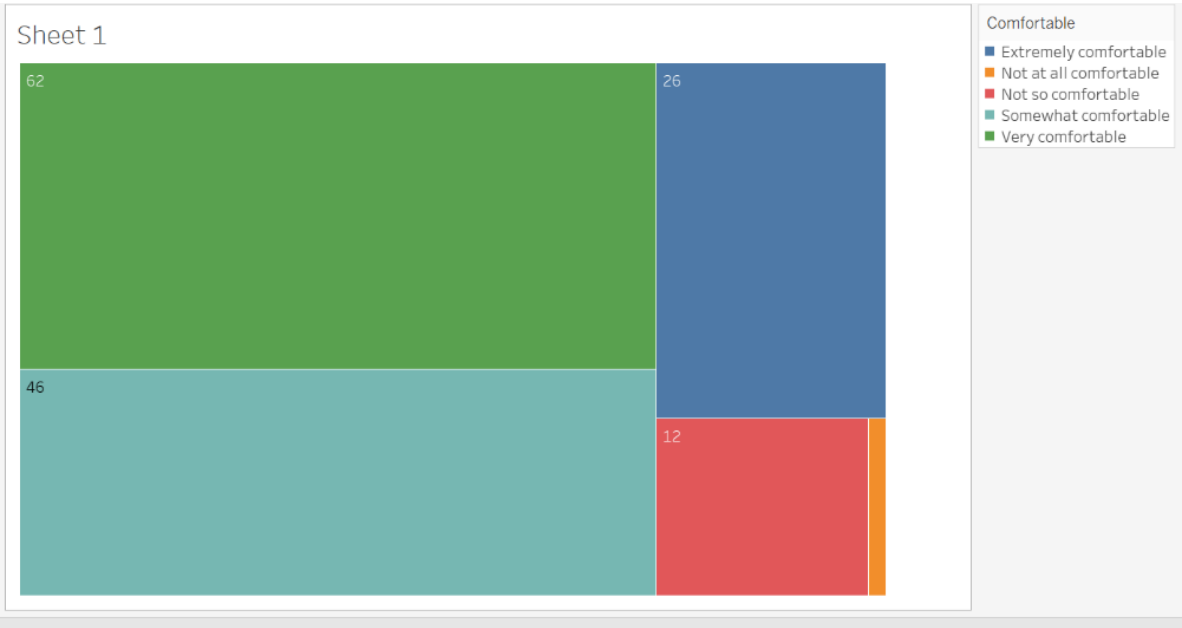


Data Interpretation and visualisation using Tableau:



62.6% Respondents faced the issues of out of stock in buying groceries online.

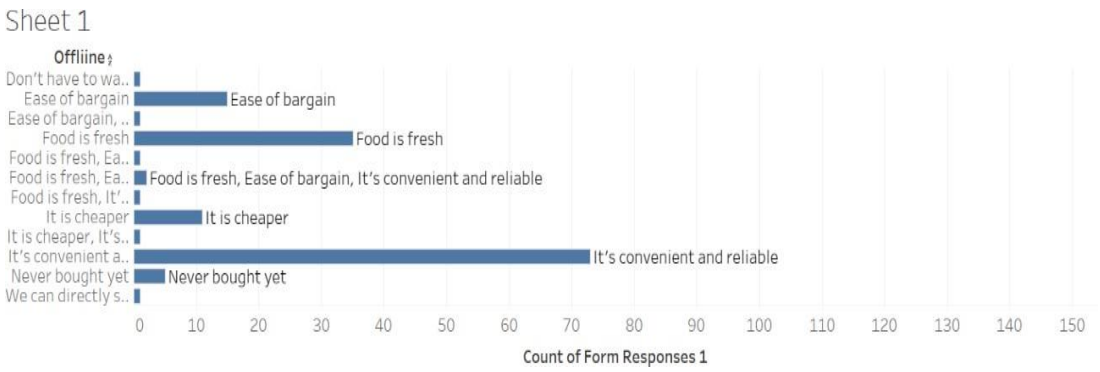
Then the rest faced the issues of product quality> delivery problems> lack of information> Refund and account issues >the availability of their preferred brand .



62% of respondents were very comfortable in buying groceries online.46% were somewhat comfortable

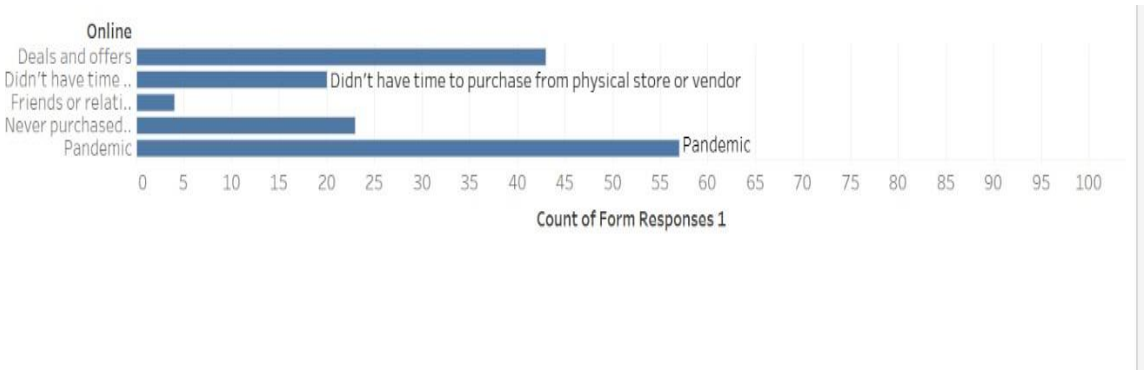
26% were extremely comfortable

12% were not so comfortable



73% of respondents preferred offline shopping because it's convenient and reliable34% of respondents preferred offline shopping because the food is fresh

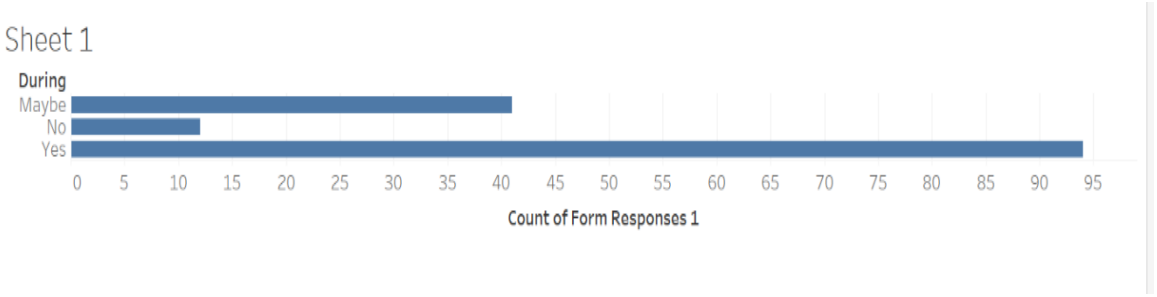
15% of respondents preferred offline shopping because of ease of bargain11% of respondents preferred offline shopping because it's cheaper



56.5% of respondents went online shopping because of pandemic 44% of respondents went online shopping because of deals and offers

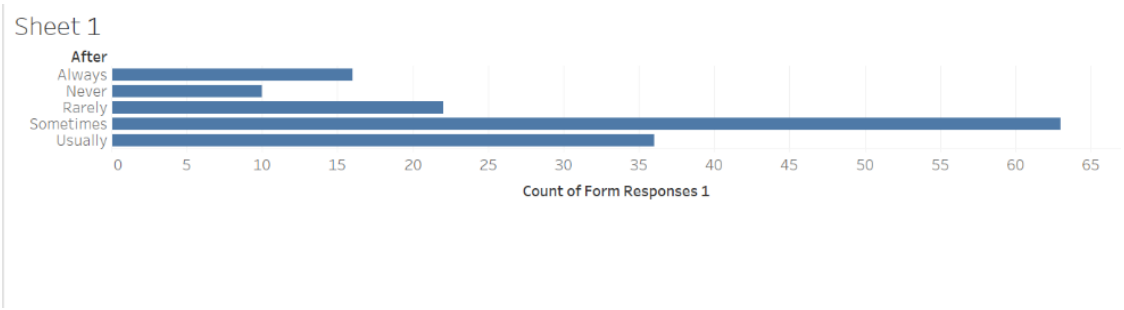
20% of respondents went online shopping because they didn't have time to purchase store orvendor

Only 4% of respondents went online shopping because of recommendation from friends orrelatives



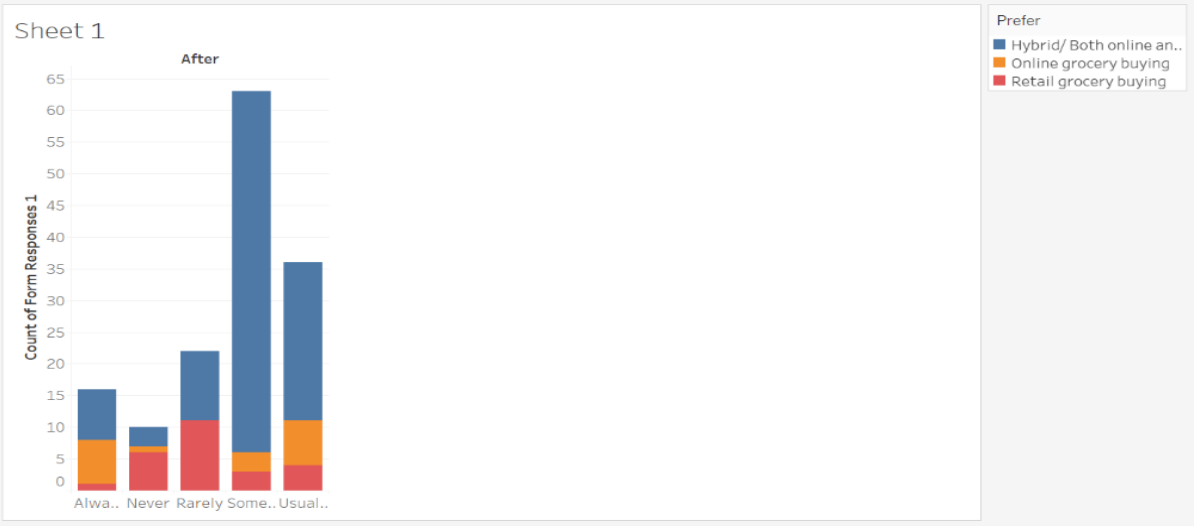
94% of respondents were satisfied by purchasing groceries online in pandemic

42.5% of respondents were nearly satisfied by purchasing groceries online in pandemic and only 12% were not satisfied by purchasing groceries online in pandemic



62% of respondents will continue to e-groceries after pandemic sometimes 36% of respondents will continue to e-groceries after pandemic usually 22% of respondents will continue to e-groceries after

pandemic rarely 16% of respondents will continue to e-groceries after pandemic always 10% of respondents will continue to e-groceries after pandemic rarely



Among 62% of respondents who will continue to e-groceries after pandemic sometimes majority have opted for Hybrid model as preference

Among 36% of respondents who will continue to e-groceries after pandemic usually also majority of them have opted for Hybrid model as preference

And same goes with the rest.

Hypothesis Testing using SPSS:

Paired T test:

H0- There is no significant difference in consumer's purchase intention during and postpandemic

H1- There is significant difference in consumer's purchase intention during and postpandemic

T-Test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	During	1.64	147	.891	.073
	After	2.82	147	1.038	.086

Paired Samples Correlations

		N	Correlation	Significance One-Sided p	Significance Two-Sided p
Pair 1	During & After	147	.419	<.001	<.001

Paired Samples Test

		Paired Differences					t	df	Significance	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			One-Sided p	Two-Sided p
Pair 1	During - After	-1.184	1.047	.086	-1.354	-1.013	-13.707	146	<.001	<.001

- Paired sample correlation the significance is more than 0.05 which shows there is notstatistical difference between them.
- Similarly the below table, the significance is again 0.01 which also shows that there is no statistical difference between the 2 variables.

This rejects the Alternate hypothesis i.e., There is a significant difference in consumer's purchase intention during and post pandemic and accepts the Null hypothesis which states that There is no significant difference in consumer's purchase intention during and post pandemic

Also,

- There is a positive correlation which means if treatment 1 increases the second willalso increase.
- Also there is strong relation between the variables as the correlation is more than 0.5(0.419)
- The mean shows negative value which means that the purchase intension after pandemic has increased 10 times than during pandemic.

Paired Samples Effect Sizes

			Standardizer[a]	Point Estimate	95% Confidence Interval Lower	Upper
Pair 1	During - After	Cohen's d	1.047	-1.131	-1.337	-.922
		Hedges' correction	1.050	-1.128	-1.333	-.920

a. The denominator used in estimating the effect sizes.
Cohen's d uses the sample standard deviation of the mean difference.
Hedges' correction uses the sample standard deviation of the mean difference, plus a correction factor.

Factor Analysis

Correlation Matrix

		Age	Status	Income	Gender	Buy	Online	Platform	Motivated	Rate	Switch	Current	During	After	Preference
Correlation	Age	1.000	-.695	-.328	.512	-.024	-.078	.029	.063	-.096	.054	.154	.097	-.282	-.317
	Status	-.695	1.000	.561	-.272	.014	-.033	.120	.004	.180	.076	-.105	-.069	.187	.258
	Income	-.328	.561	1.000	-.171	.200	.025	.142	.001	-.202	.051	-.212	-.043	.177	.167
	Gender	.512	-.272	-.171	1.000	-.272	-.087	-.110	.172	.152	-.143	.068	.015	-.166	-.113
	Buy	-.024	.014	.200	-.272	1.000	.539	-.117	.388	-.528	.085	.202	.536	.633	.168
	Online	-.078	-.033	.025	-.087	.539	1.000	-.206	.146	-.425	.139	.021	.532	.601	.188
	Platform	.029	.120	.142	-.110	-.117	-.206	1.000	-.175	.158	-.111	.085	-.106	-.197	.018
	Motivated	.063	.004	.001	.172	.388	.146	-.175	1.000	-.071	-.249	.006	.351	.319	-.018
	Rate	-.096	.180	-.202	.152	-.528	-.425	.158	-.071	1.000	.030	-.221	-.328	-.355	.172
	Switch	.054	.076	.051	-.143	.085	.139	-.111	-.249	.030	1.000	.338	.160	.010	-.053
	Current	.154	-.105	-.212	.068	.202	.021	.085	.006	-.221	.338	1.000	.168	-.054	-.219
															.231
															.148
															1.000

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.518
Bartlett's Test of Sphericity	Approx. Chi-Square	144.319
	df	91
	Sig.	<.001

- KMO is more than 0.5 which is good enough to proceed further
- Barllett's Test will check the Null Hypothesis
- Significance value is less than 0.5 which means there is sufficient correlation

- The rule of communality is that the extraction value should be more than 0.5. So inmy case all the values are above 0.5

Communalities

	Initial	Extraction
Age	1.000	.750
Status	1.000	.752
Income	1.000	.598
Gender	1.000	.581
Buy	1.000	.774
Online	1.000	.658
Platform	1.000	.654
Motivated	1.000	.619
Rate	1.000	.802
Switch	1.000	.745
Current	1.000	.684
During	1.000	.755
After	1.000	.727
Preference	1.000	.622

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.390	24.216	24.216	3.390	24.216	24.216	3.246	23.185	23.185
2	2.571	18.364	42.580	2.571	18.364	42.580	2.494	17.814	40.999
3	1.541	11.005	53.586	1.541	11.005	53.586	1.473	10.524	51.523
4	1.162	8.303	61.889	1.162	8.303	61.889	1.372	9.803	61.326
5	1.057	7.547	69.436	1.057	7.547	69.436	1.135	8.110	69.436
6	.980	6.999	76.435						
7	.873	6.235	82.670						
8	.614	4.389	87.059						
9	.605	4.324	91.383						
10	.383	2.734	94.117						
11	.333	2.378	96.495						
12	.201	1.435	97.930						
13	.165	1.181	99.111						
14	.125	.889	100.000						

Extraction Method: Principal Component Analysis.

- There are 14 factors of 14 statements and 1st factor is most important which holds avariance of 24.216% which is the highest.
- We will retain those communalities values which have greater Eigenvalues more than 1. So we will retain 5 communalities i.e., components 1,2,3,4 and 5. The last valuei.e., 69.436% which means data is extracted at a good amount.

Rotated Component Matrix[a]

	Component				
	1	2	3	4	5
Buy	.840				
During	.819				
After	.785				
Online	.733				
Motivated	.529				
Age		-.814			
Status		.760			
Gender		-.684			
Income		.672			
Switch			.854		
Current			.597		
Rate	-.527			.713	
Preference				.703	
Platform					.774

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 7 iterations.

Component Matrix[a]

	Component				
	1	2	3	4	5
Buy	.845				
After	.837				
Online	.755				
During	.717				
Rate	-.576				
Status		-.818			
Age		.810			
Income		-.587			
Gender					
Switch			.719		
Current			.618		
Motivated			-.537		
Preference					
Platform					.614

Extraction Method: Principal Component Analysis.
a. 5 components extracted.

Component Transformation Matrix

Component	1	2	3	4	5
1	.948	.289	.033	-.055	-.116
2	.241	-.897	.105	-.349	-.074
3	-.093	.208	.881	-.372	.186
4	.028	-.188	.456	.738	-.459
5	.184	-.184	.067	.438	.858

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Mean and Standard Deviation

H0- There is no significant difference between male and female respondents with respect to perception of consumer satisfaction towards online grocery stores.

H1- There is a significant difference between male and female respondents with respect to perception of consumer satisfaction towards online grocery stores.

Sr. No.	Particulars	Gender	Mean	Std. Deviation	t value	p value
1.	Information	Male	1.62	0.690	1.936	0.054
		Female	1.41	0.654		
2.	Out of stock	Male	2.05	0.796	0.183	0.855
		Female	2.07	0.783		
3.	Brand availability	Male	2.01	0.764	0.569	1.758
		Female	2.04	0.762		
4.	Offers and discounts	Male	2.20	0.718	1.325	0.860
		Female	2.09	0.749		
5.	Delivery	Male	2.88	0.793	1.728	0.313
		Female	2.07	0.788		
6.	Ease of navigation	Male	1.95	0.781	1.011	0.316
		Female	2.17	0.749		
7.	Ease to order	Male	1.86	0.756	2.608	0.235
		Female	2.10	0.689		
8.	Variety of product	Male	2.34	0.695	2.167	0.064
		Female	2.12	0.724		
9.	Secure and easy payment options	Male	2.15	0.796	0.550	0.112
		Female	2.13	0.615		
10.	Product quality	Male	2.20	0.602	1.541	0.088
		Female	2.15	0.788		

The above table 4. it is inferred that all the factors of consumer satisfaction are having the pgreater than 0.05, so **null hypothesis is accepted and alternative hypothesis is rejected at5%**

level of significance. Hence it is concluded that there is no significant difference between male and female respondents with respect to perception of consumer satisfaction towardsonline grocery stores.

Chi square test

H0- There is no association between gender and interest to buy grocery items through online in future.

H1- There is an association between gender and interest to buy grocery items through online in future.

Gender	Parameters			Total	Value	P value
	Yes	No	Maybe			
Male	45	53	47	144	3.926	0.140
Female	10	22	24	56		
Total	55	74	71	200		

From the above table, it is inferred that p value is 0.140, which is greater than 0.05, **the null hypothesis is accepted and alternative hypothesis is rejected at 5% level of significance.** Hence it is concluded that there is no association between gender and interest to buy grocerythrough online in future.

Results and Discussions

Findings -

- Many of the respondents were very comfortable in buying groceries from companies they knew about. Where 75% were aware about Big Basket; 72% about Amazon freshfollowed by Jiomart, Flipkart store, Zomato, Swiggy, Dmart, Grofers.
- But only a few were aware of Dunzo, Easyday, Godrej's natural basket and Spencer'sretail
- On the contrary the least awareness was recorded by Ondoor and Milkbasket.
- 69% respondents intend to buy groceries online for the ease to order, 61% for offers and discounts, 52% for variety of products, 50% for time saving and 45% tends to shop online for home delivery.
- Very few of the respondents purchase groceries online very often in a month
- It is found out that even Many people have started shopping groceries online during pandemic and many of them are willing to continue their purchase of groceries online.
- Many are willing to opt for omnichannel grocery shopping, hence which would solve a few problems faced by customers like, delivery issues, payment issues, fresh food testing, Availability of brands, Ease of buying.
- The research also results to state that there is no difference in satisfaction levels between genders also there is no difference in intention of buying groceries onlinebetween Male and Female.
- 63% faced issues mostly of out of stock, followed by 40 % faced issues with productquality and 23% were unsatisfied with customer service. Few of them faced issues with delivery, payment etc problems.
- Customers mainly shop online grocery due to the freshness and the quality. They have the perception that they would get the quality product especially in case of Fruits and Vegetables (F&V) which sometimes is not the case when shopping offline and they require fresh also.
- Another reason which has been highlighted is that most of the customers in different parts of India shop online grocery because of the offers and discounts which are available online as they are very much price competitive.
- Another two reason which has come in the findings of the survey done are, few customers shop online because of the seamless return policy which is there so that if customers facing any issues with quality or other things related to the products ordered, they can return it seamlessly. Followed by wide range of products which areavailable for the customers to order and along with that wide range of slots available for the customers to order and get their orders delivered.

Suggestions

The ideal ways to reduce the issues faced by customers are:

- Order tracking and notice of delivery slot. Instacart has lifted the bar on communication by providing driver-to-customer updates and committing to precise delivery windows to limit the amount of time customers must wait for orders at home.
- A larger selection is available. The distinctions between general merchants and grocers are blurring as the barriers between digital and physical shopping experiences erode. Many clients want the simplicity of getting everything they need, whenever they need it, in one order from a single platform.
- Price parity between online and in-store purchases. Many supermarkets have been able to charge a premium for things purchased through online baskets, but we may see a shift toward a more open pricing strategy. While many retailers have employed price-matching rules on the internet, the judgement is still out on whether the reciprocal will work. Walmart does not currently match in-store prices, whereas Target does.
- Low per-order prices and appealing subscription models are available. Customers can take advantage of numerous incentives, such as percentage-off promo codes and free delivery on the first order, during sign-up, thanks to the increased competition in the industry. These promotions may evolve into regular cheap fees in order to retain customers.

On a concrete basis,

Those who can deliver a fantastic and consistent customer experience the fastest will win in e-grocery. Customers will get the spirit of discovery, curiosity, and inspiration they expect from any grocer, whether in a physical or virtual setting. The incumbent will be whoever develops and offers the best customer experience first. Some people think this means
providing the most frictionless click-and-collect like Tata CLiq experience, while others think it means providing the quickest delivery.

Picking and last-mile delivery, the two cornerstones of e-commerce fulfilment, add considerable operating costs to an already low-margin company, so we expect large grocersto resort to automation and robotics. Technology developments may help level the playing field, but to justify the large upfront expenditure, you'll need scale and demand density.

Automation of picking is already well underway. Last-mile delivery will be automated as well. Only once laws are in place will the advent of driverless vehicles and drone delivery become a reality. These technologies are further hampered by the requirement that the recipient be present at the time of delivery.

- Using a data-driven information basis, e-grocers must create an aspirational vision for their customer proposition. Determine the main elements and differentiators of the e- grocery offering, and ground them in a customer promise that e-retailers are willing to fulfil (such as fee structures, pricing models, and assortment choices). Use tools like conjoint analysis and ethnographic research to your advantage.
- Build a solid demand-forecasting model for your present and prospective markets, e- retailers. Forecast market demand in your trade regions and your prospective marketshare. Demand modelling and the best balance of click-and-collect vs delivery services should be based on geospatial data.
- Determine the best fulfilment model, which will almost certainly be bimodal. Investigate the many picking technologies on the market and select one or more thatbest fit your customer proposal and demand economics. Carry out the same assessments when deciding on delivery times and modes of transportation.
- Creating a tech stack and getting IT systems ready. Creating an IT strategy that underpins each piece of the consumer proposition, as well as deciding which vendorsto engage with (most grocers won't have this expertise). It's critical to have a flexible technological stack that supports an agile operating strategy.
- To incorporate digital at the core, change the structure and operating model. Establisha reporting structure for the e-commerce team (for example, employing omnichannel or distinct merchants and having dedicated or pooled labour in stores), as well as decision rights and working methods. Human-capital and talent strategies and plans will be required.

Now to create awareness of brands among customers,

- Examine advertising expenditures more closely in order to integrate new advertising platforms and maximise efficacy from awareness to purchase.
- Examine product formats and packaging to help with both digital and in-storeoptimization (e.g., packaging looks great in picture).

- In a world of dynamic pricing and real-time promotions, fine-tune your pricing,promotional, and trade investment strategy to avoid cross-channel conflicts andmaximise value capture.
- Examine your supply chain to see what physical, procedural, and IT modifications arenecessary to achieve omnichannel fulfilment success.
- In a world of dynamic pricing and real-time promotions, fine-tune your pricing,promotional, and trade investment strategy to avoid cross-channel conflicts andmaximise value capture.
- Examine your supply chain to see what physical, procedural, and IT modifications arenecessary to achieve omnichannel fulfilment success.
- Seek out new partnerships to help bring capabilities to more rapidly innovate in commerce, engagement, and offerings
- Seek out new collaborations to aid in the development of capabilities that will allow you to innovate more quickly in the areas of commerce, engagement, and services.

Conclusions

✓ **Keep it fresh:** With people shopping less frequently, it's more crucial than ever for items to remain as fresh as possible when they're purchased. E-grocers must work more closely with their supply chain partners, consider irregular deliveries and lower shipment sizes, and use analytics to guarantee that the consumer spends the least amount of time with the product before taking it home. This should help to extend theshelf life of food at home as much as possible. Actively direct customers to foods that will last the longest (compared to specific item expectations) past the day of purchase,whether in-store or online. This includes recommending fresh foods to eat right now as well as those that will still be good in "week number two." The technology is available. If projections are precise enough, labels or signage may say things like "sixdays of freshness strawberries" or "ten days of freshness bananas."

✓ **Avoid stockouts:** This is self-evident, yet it is more vital than ever before. Too frequent stockouts may force a consumer to move their business elsewhere if they are only going to shop in one store for the next two weeks. Retailers and manufacturers alike are focusing on keeping essential commodities in stock by lowering stock- keeping units. Stockouts, however, are unavoidable, even if they are simply the result of the season's turnover. Finding strategies to steer both traditional and contemporary consumers toward suitable replacements, even if that means a frozen or preserved option in some circumstances, is crucial.

✓ Find more ways to engage contemporary customers with the "brand" or "image" of fresh by developing a fresh image. Retailers can do so by highlighting new attribute marketing as a major aspect

of their own brand. Customers may learn to believe that every fresh food purchased in your store must have those traits if done correctly and backed by trusted and transparent supply chain management. Consumers may also begiven the option of creating digital profiles reflecting their unique interests, such as sustainability, local sourcing, and so on. Customers can then use phone apps to assistthem find things in stores that have those attributes, and filters and recommendations can be used to do the same when shopping online. The technology is already in place.

✓ Retailers are particularly good at advertising fresh food goods that are in season and atthe height of freshness to customers shopping in-store by placing them on endcaps and other locations. It's more challenging to engage internet buyers in the same way.

For one reason, customers frequently click "purchase again" without thinking about additions. Modern consumers' openness to try new items, as well as their faith in in- store assigned shoppers and interest in subscription boxes, may present an opportunityto offer buy suggestions based on the grocer's judgement of what is at the pinnacle of quality on any given day. Online orders for certain clients could be supplemented with a variety of fresh food selected by the shop, similar to a virtual farm share box.

✓ **Continue forward:** As more individuals regain confidence in buying, the industry's first reaction may be to develop special offers to entice customers back into stores. Rather, continue forward. The priority should be to continue to improve the ability to connect with customers in virtual environments. Whatever new models you use, keep investing in omnichannel access to better serve today's customers. Manufacturers can contribute to the enablement of these models by modifying supply chains and exploring direct-to-consumer models as another approach to meet the desire for low- stress, safe access. Consumers today are likely to drag the industry there eventually. It is preferable to take the lead.

Limitations

- The data collected was limited due to limitations of time. Also the data is taken at PAN India with limited no. of respondents.
- The data is also biased with age groups as majority of the age groups ranged from 18-30.
- The data is restricted to consumers only and is not inclusive of any retailer.
- Though the study has laid many gaps but the primary data source is still smaller.
- Couldn’t provide the best outcomes for e-grocery retailing as from the primary sources no definite gaps are available

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