

# Technological Disruption Caused by E-Commerce in the Grocery Industry

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**Abstract:** The ‘Kirana store’ model has for decades been the primary source of grocery and food resources for Indian consumers. With the extreme growth in e-commerce across sectors in India, this essential Indian business pillar is being disrupted as well. The objective of this paper is to analyse and deduct from a survey of Indian consumers the primary means of shopping for grocery within Indian communities and the relative extent of the online shopping consumer base with respect to grocery items. The paper will utilize primary research, and use convenience sampling with a structured questionnaire to analyse the extent of disruption of brick-and-mortar FMCG shops by e-commerce initiatives. The paper will address ground-level disruptions of the grocery store infrastructure while comparing the consumer approach to online and offline grocery shopping, therefore addressing a less-analysed research gap.

**Keywords:** E-commerce, grocery, India, Kirana, technological disruption.

## 1. Introduction and Literature Review

### A. Introduction

The era of e-commerce started in India around 1995-96 and it slowly gained momentum due to the availability of cheap internet and smartphones which were earlier non-existent in India (Sardana, NA). E-commerce “means dealing in goods and services through the electronic media and internet” (Mitra, 2013). It is “concerned with conducting business transactions electronically using information and communication technologies” (Kurnia, 2008). It provides the business organizations with a wide array of opportunities to not only excel, but also to sustain in the marketplace (Mitra, 2013). Organizations that are involved in conducting businesses via e-commerce are expected to think innovatively by surpassing their imagination of success (Sardana, NA), thereby, leading to superior organizational performance (Kurnia, 2008). E-commerce has made a major impact in changing the face of many industries such as tourism, clothing, electronic devices, etc. (Chanana and Goele, 2012), and since it changes the way a business is conducted, it can be considered as a Disruptive Technology.

### B. Literature Review

#### 1) Disruptive Technologies

A Disruptive Technology is an innovation that changes the way a business operates (Smith, 2020). Business organisations

can either be early adopters/innovators of a technology or late adopters depending on their risk-taking ability. Whereas, the ones who do not adopt such disruptive technologies usually lose their market shares to the competitors (Smith, 2020). This often leads to the disruption of well-established businesses (Florida Tech, 2019). A well-known example of such disruptive technology includes personal computers which replaced typewriters on a large scale (Christensen, 1997). In the long-term, these technologies prove to be more convenient and attractive (Florida Tech, 2019). E-commerce being knowledge-intensive and technology-oriented, has been touted as a disruptive innovation as it significantly changes the working of traditional businesses (Lee, 2001). There is no standard model for e-commerce-oriented businesses and, therefore, the model is usually tailor-made according to the financial capabilities of the companies (Lee, 2001).

When we talk about e-commerce and grocery industry together, the industry is growing at triple digits with many new players emerging in the market. People are becoming more aware about how purchasing online can make their life easier. They can avail the benefits of getting products delivered directly at their doorstep, discounted products, easy return policies, large varieties of products, etc. But the growth of the e-grocery sector is affecting the offline retailers adversely (Chong, 2018). This is mainly happening in the cities where these big players operate, for example cities like Pune, Delhi, Kolkata, etc. Therefore, the paper will discuss about the impact the online grocery industry has caused to the offline retailers.

#### 2) Business Models of a Kirana store

A retail (in this case a kirana store) business model is concerned with the activities that are required to transfer the goods or services from the retailer to the consumer. It includes the product or service which the retailer offers and the pricing policies used by him, the way in which he wants to communicate with his customers and the location and size of the retail outlet.

The models of a retail business (kirana store) can be classified in terms of the ownership:

##### 1. Independent Retailer:

An independent retailer is the one who is solely responsible for conducting all the activities related to his business. All necessary decisions such as staffing, procuring of goods,

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marketing, etc are taken by an individual owner. For example, a person owning a garment shop and manging it alone is considered to be an independent retailer (Mckinney, 2019).

## 2. Chain Store:

A chain store is a type of retail store which has more than one outlet which supplies the same type of products, owned and controlled jointly by one proprietor. There is no restriction on the number of outlets of a store. It can either exist in the same town or across the globe. For example, an independent retailer can open many outlets of his business in order to expand his/her business (Mckinney, 2019).

## 3. Franchise:

Franchise is a type of retail model where an organisation owns a licence which gives them full authority over the proprietary knowledge, trademarks and business processes which allows them to sell a product or service under the business's name. Usually if the franchisor wants to sell the franchise, the franchisee pays them an initial start-up and annual licensing fees. For example, KFC, McDonalds, etc. (Hayes, 2019).

## 4. Leased Department:

A leased department is usually a department or speciality store which is rented to an outside party who in return pays a fixed percentage of their sales as rent. The owner of the leased department is fully responsible for conducting all the affairs of the business. There are some restrictions levied on the leased department so as to maintain overall coordination and consistency (Agarwal, 2018).

## 5. Consumer Cooperatives:

Consumer Cooperative is a type of retail store where a group of consumers come together and start their own retail operation by investing money, receive stock certificates and elect members to run the day-to-day business. The profits are shared on the basis of investments made or the certificates held by them. The main reason to set up a consumer cooperative is that the consumers are not satisfied by the products supplied by the local retailers. For example, Kendriya Bhandara (Agarwal, 2018).

### 3) Ecommerce business models

#### a) Business - to - Business

Business to business transactions takes place between two individual businesses. Generally, a large enterprise supplies goods to a smaller enterprise who at last sells it to the final consumer. For example, a company manufactures wheat which is further supplied to a grocer who then sells it to the consumer or the wheat can be supplied to a baking company who uses it to manufacture bread and then sell further. Just as the traditional B2B model, e-commerce business model also comprises of a procurement staff who compares different suppliers in order get the best deal. Procuring the goods online helps to reduce the front end costs (Behl & Manocha, 2012).

##### Advantages:

1. It helps the business to understand the market in a much better way and increasing its customer base due to wider coverage.
2. The communication is convenient and a lot faster.
3. The cost for selling and marketing is quite low which

can further help to increase profits or reduce the selling price of the product.

##### Disadvantages:

1. E-commerce is not suitable for every industry. For example products which are manufactured in heavy industries like iron and steel.
2. Big players in the B2B e-commerce market can suppress the smaller players and can even eliminate them.

#### b) Business - to - Consumer

In a Business to Consumer model the transaction which takes place directly between the business and the consumer. For example, amazon sells its products to the final consumer using e-commerce. The B2C model is not widely accepted because they are prone to security threats because the customers gives their bank and other personal details and the consumer might doubt how secured their private information is. Therefore, the organisation should make sure they provide their customers with a very strong security mechanism so as to build trust among them (Behl & Manocha, 2012).

##### Advantages:

1. The consumers can access large variety of goods at discounted rates from the comfort of their home.
2. They get the benefit of getting their products delivered to their doorstep.
3. The business organisation gets the opportunity to access a large number of potential customers and can even operate globally.
4. It is easy for the business organisation to showcase their products to such a huge audience without much hassle.

##### Disadvantages:

1. The business organisation faces competition from a large number of other organisations operating online.
2. Any technological problem can affect the functioning of the organisation.
3. Issues related to the government such as internet shutdown leads to a downfall in the sales of the organisation.
4. The organisation might not always provide good after sales services which is a major disadvantage for the customer as they could not contact anyone personally/physically.

#### c) Consumer - to - Consumer

In the consumer to consumer e-commerce business model, the transaction takes place from consumer to consumer. Example of such a model is OLX.in where a consumer can sell his old products to another consumer. The only requirement is that both the buyer and seller should be registered with that e-commerce site. The seller might also pay a fee to the intermediate organization over which the transaction takes place so as to increase the visibility of their products (Behl & Manocha, 2012).

##### Advantages:

1. The seller gets the benefit of showcasing their product to a large number of buyers.
2. Negotiations can be easily done via text messages or

phone calls. The final deal can take place personally.

Disadvantages:

1. The buyer and seller might come to a final deal but there is no guarantee of payment from the buyer's side.
2. The products does not go under a quality check as the e-commerce website acts as an intermediary only. Therefore, the buyer can get defected goods and no one can be held liable for that.

#### d) Consumer - to - Business

In a consumer to business model, the transaction takes place between the consumer and business organisation. The consumer creates value and the business organisation consumes that value to complete a business process or to gain competitive advantage. For example, a blogger writes blogs for different organisations. Basically the organisation outsources bloggers (Behl & Manocha, 2012).

### C. Research Gap

#### 1) Research Gap

A lot of research has been conducted in the area of e-commerce and similarly in the field of the grocery industry all around the world. However, not many studies have been conducted with respect to the Indian market, showing how trading over the internet is causing a disruption in the normal functioning of traditional grocery (kirana) stores.

This study will aim to address the gap by addressing the following research questions:

#### 2) Research Question

The following article attempts to answer the following questions:

1. How are the Kirana stores being affected by technological disruption in the grocery industry?
2. How can the Kirana stores deal with the affect that technological disruption has caused to them?
3. What is the future of online grocery industry?
4. What strategies should the kirana stores adopt to fight competition from online retailing?

#### 3) Research Objectives

1. To understand technological advancements in e-commerce and its impact on traditional kirana stores.
2. To understand strategies adopted by traditional kirana stores.
3. To provide suggestions to improve effectiveness of traditional kirana stores.

#### 4) Significance of the Study

1. This study will be significant to the offline retailers i.e., kirana stores in formulating strategies to cope up with the ever increasing trend of e-commerce.
2. This study will also encourage kirana stores to adopt the platform of e-commerce in order to expand their businesses and market share.

## 2. Research Methodology

### A. Methods used to identify Consumer Buying Behavior

Analyzing the factors that affects the consumer buying behavior:

1. All the factors that affect consumer online buying behaviour were studied in detail. These factors include age, income, gender, lifestyle and brand awareness. Studying these factors helped in understanding the general factors that drives customers to buy online.
2. After the general analysis, forces that drives a consumer to buy from a Kirana store were determined so that a comparison could be made between what are the forces that drives a consumer to buy online and offline.
3. Finally, consumers' expectations from the online market were studied.

Preparing Questionnaire for the Consumers:

All the factors that were studied were not enough to come to any conclusion. Therefore, a questionnaire was prepared to understand what the actual behaviour of the customer is. The questionnaire covered questions which aimed to understand the relevance of various factors such as discounts, variety of products available, physical examination, credit facility, speed of delivery, etc. in influencing the buying behaviour of the customer. The questionnaire should be simple and direct so that the consumers can easily relate to all the questions.

### B. Design Study

#### 1) Sample Design

The project was divided into the following phases for the study:

- Phase I: Study all the factors and theories related to consumer behaviour.
- Phase II: Questionnaire
- Phase III: Analyse Data
- Phase IV: Prepare Report

#### 2) Details of the Survey Conducted

Table 1  
Details of the Survey Conducted

Nature of research	Quantitative
Type of research	Research design is descriptive and is based on a cross-sectional design
Sample size	105*
Target population	College students and their families
Sampling	Convenience sampling
Type of questionnaire	Structured
No. of questions involved	22
Type of questions	Close as well as open ended

\*Sample Size: The survey was sent to 200 people which comprised college students living in different parts of India and their family members. Out of the total population, 57 did not respond to the questionnaire. The response rate is 71% which is considered a good response rate for research. The questionnaire was filled by the remaining 143 people out of which 38 did not use online medium for shopping groceries or did not have

online grocery facility available in their area. Therefore, they were excluded from the sample size and the analysis was made according to the remaining 105 responses.

C. Collection of Data

Primary Data:

- Primary data was collected with the help of a questionnaire.

Secondary Data:

- Articles from research papers
- Case studies
- Secondary data was studied in detail through articles published in journals of high repute. These journals and articles were from J Stor, Scopus, Ebsco host, Google Scholar

3. Data Interpretation and Analysis

The survey conducted for the study helped to find out what factors affect the consumer’s behavior in the online and offline market and what are their expectations. Questions related to the COVID-19 were also included which showed consumer behavior during an emergency.

Sample Size:

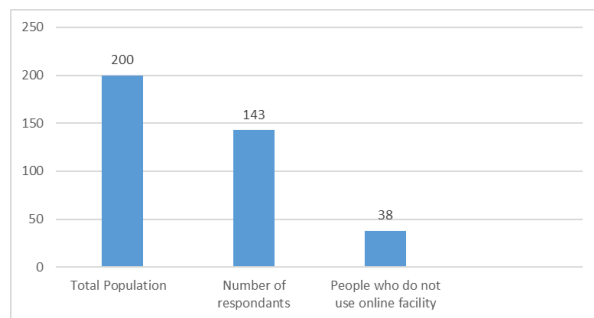


Fig. 1. Sample Size

Data Interpretation and Analysis:

The following chart shows the total number of consumers that were approached to complete the survey (200), consumers who actually responded (143) and the ones who did not use online platform to shop groceries or online facility was not available in their area (38). A special question was included in the questionnaire which asked the consumers whether they buy goods online. The ones that answered ‘NO’ were excluded as their answers would be irrelevant. This concluded that out of total 143 respondents, 73% shopped groceries online.

Q1. What is your monthly income/income of your family?

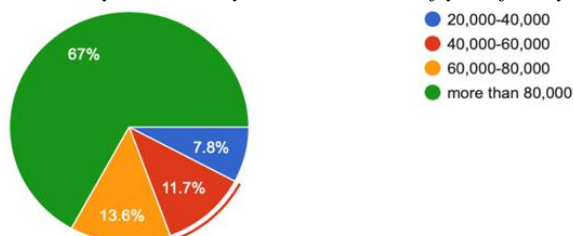


Fig. 2. Monthly Income of Consumers who filled the Survey

Data Interpretation and Analysis:

Most of the consumers belonged to the higher income group i.e., with a monthly income of ₹80,000 or more which were followed by ₹60,000-80,000, ₹40,000-60,000 and ₹20,000-40,000 category.

Q.2. What is your age?

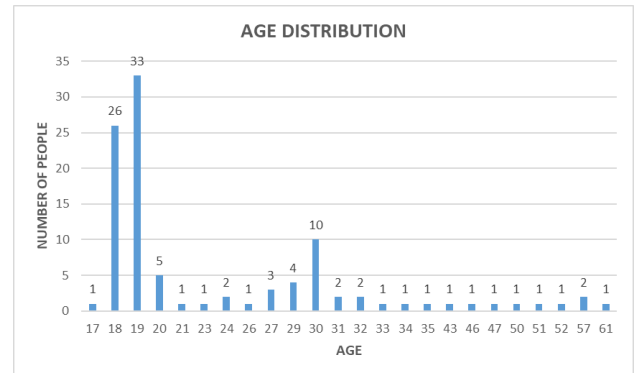


Fig. 3. Age Distribution of the Sample

Data Interpretation and Analysis:

The following chart shows the age distribution on the consumers who filled the survey. It was found that 63% of the consumers were 20 and below who were mainly college students.

Q.3. Which are the common sites you buy groceries from?

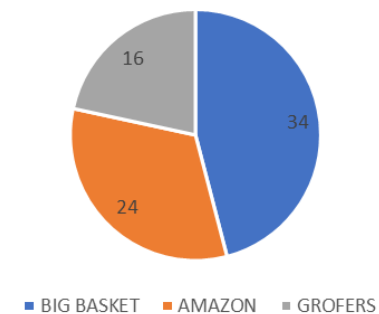


Fig. 4. Common Online Grocery Retailers

Data Interpretation and Analysis:

The consumers were asked different online stores which they use to buy groceries and it was found that Big Basket is the most used website followed by Amazon and Grofers.

Q.4. Online grocery stores such as Big Basket offers grocery as well as fruits and vegetables. Would you prefer buying perishable products online without physical examination?

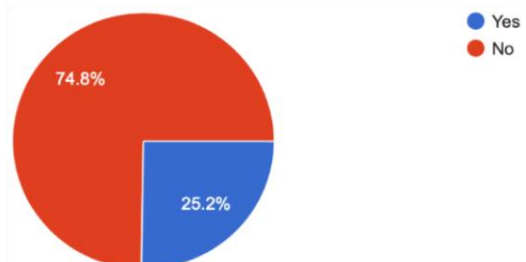


Fig. 5. Preference of Consumer in Buying Perishable Products Online

**Data Interpretation and Analysis:**

74.8% of the consumers prefer to buy perishable products from the offline market as they believe that physical examination is necessary before buying due to quality reasons.

The following questions were asked on a 5-point scale

**SCALE A:**

- 1 – Extremely Unimportant
- 2 – Unimportant
- 3 – Neutral
- 4 – Important
- 5 – Extremely Important

Q.5. How important are the promotional offers such as discounts, various coupons, etc. given by the e-grocery stores?

Table 2  
Percentage Effect of Promotional offers on Consumer Behaviour

Category	Number of Participants	Percentage
Extremely Unimportant	6	5.70%
Unimportant	5	4.80%
Neutral	30	28.60%
Important	29	27.60%
Extremely Important	35	33.30%

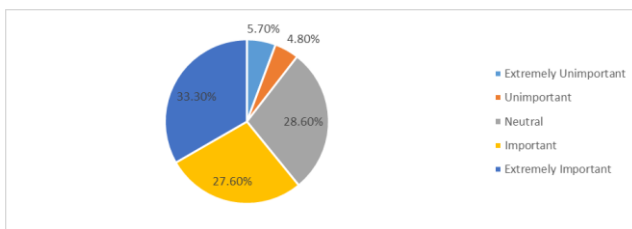


Fig. 6. Graph Showing Percentage Effect of Promotional offers on Consumer Behaviour

**Data Interpretation and Analysis:**

It can be concluded that a significant number of consumers (60.9%) are attracted towards the discounts and various promotional offers that are provided by the online stores. A rational consumer would always like to get the products for a cheaper rate which would reduce their overall spending. This is thus, one of the main factors which induces a customer to shop products online.

Q.6. How important are the variety of products and brands available online when compared to a kirana store?

Table 3  
Percentage Effect of Product Variety of Consumer Behaviour

Category	Number of Participants	Percentage
Extremely Unimportant	1	1%
Unimportant	5	4.80%
Neutral	22	21%
Important	30	28.60%
Extremely Important	47	44.80%

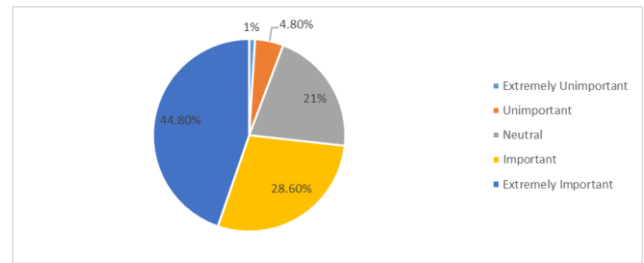


Fig. 7. Graph Showing Percentage Effect of Product Variety of Consumer Behaviour

**Data Interpretation and Analysis:**

On analyzing the data, it is found that most of the consumers (77) prefer choosing a product from a large variety. It is generally observed that the consumers prefer buying only those goods online which they have already used or is manufactured by a known brand as they are familiar with the quality of the product. Thus, if a consumer does not find a product, for example spices which manufactured by a trusted brand like MDH, they would be least interested to buy it online.

Q.7. Buying grocery from an online store does not let you physically examine the product. How important is physical examination as a factor which influence your buying decision?

Table 4  
Percentage Effect of Physical Examination on Consumer Behaviour

Category	Number of Participants	Percentage
Extremely Unimportant	2	1.90%
Unimportant	10	9.50%
Neutral	27	25.70%
Important	34	32.40%
Extremely Important	32	30.50%

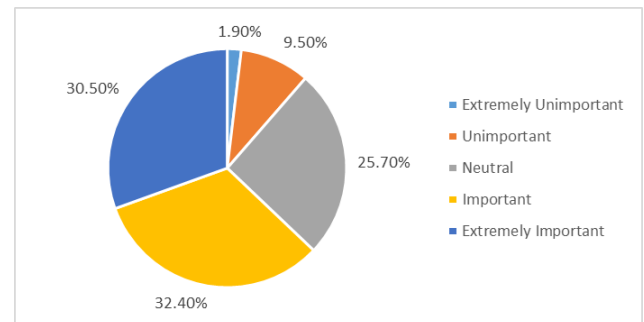


Fig. 8. Graph Showing Percentage Effect of Physical Examination on Consumer Behaviour

**Data Interpretation and Analysis:**

It is clear from the data that consumers prefer physical examination of products before buying as it helps them to get an idea of the quality. There are two conclusions that can be drawn:

1. Consumer prefer physically examining the perishable goods for example vegetables as the quality could not be determined online.
2. Consumer are open to buy branded products online as they have a surety about the quality of the product.

**Q.8. Traditional kirana stores provide credit facility to its customers whereas online stores do not. How important is the credit facility for you?**

Table 5  
Effect of Credit Facility on Consumer Behaviour

Category	Number of Participants	Percentage
Extremely important	32	30.50%
Unimportant	24	22.90%
Neutral	21	20%
Important	14	13.30%
Extremely Important	14	13.30%

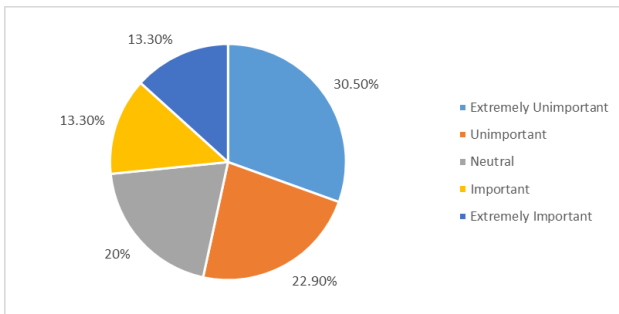


Fig. 9. Graph Showing Percentage Effect of Credit Facility on Consumer Behaviour

*Data Interpretation and Analysis:*

When it comes to the FMCG products, most consumers not really require credit facility as the products do not cost a fortune and the price can be easily paid on spot. Consumers who feel that credit facility is important are mostly the ones who buy all the goods from one store and prefers paying the entire due amount at the end of the month.

*Q.9. When purchasing online, how important is the speed of delivery?*

Table 6  
Percentage Effect of Delivery Speed on Consumer Behaviour

Category	Number of Participants	Percentage
Extremely Unimportant	0	0%
Unimportant	0	0%
Neutral	4	3.80%
Important	28	26.70%
Extremely Important	73	69.50%

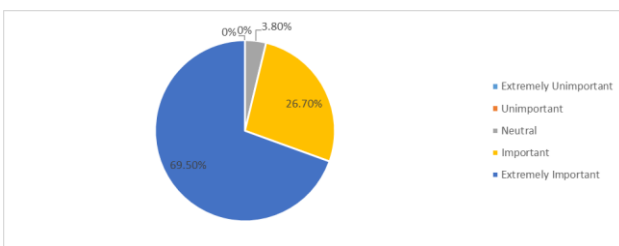


Fig. 10. Graph Showing Percentage Effect of Delivery Speed on Consumer Behaviour

*Data Interpretation and Analysis:*

The speed of delivery is very important for almost all the consumers. People buy products online because of the convenience. Especially when it comes to Kirana store, they are very approachable and a consumer would only buy if the goods

are delivered within a short period.

*Q.10. How important is the price of the product as a factor which influence your buying decision?*

Table 7  
Percentage Effect of Price on Consumer Behaviour

Category	Number of Participants	Percentage
Extremely Unimportant	5	4.80%
Unimportant	2	1.90%
Neutral	19	18.10%
Important	40	38.10%
Extremely Important	39	37.10%

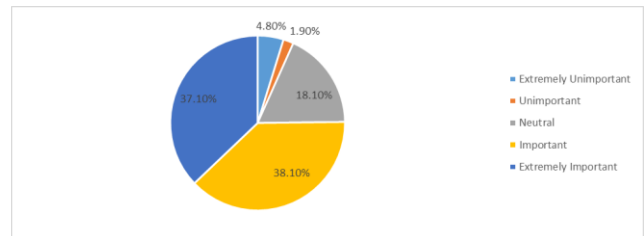


Fig. 11. Graph Showing Percentage Effect of Price on Consumer Behaviour

*Data Interpretation and Analysis:*

Price is the most important determinant of the demand for a good. Price and demand have an inverse relation. A rational consumer would buy more quantity of a product if it is available at a low cost. The same can be concluded on analyzing the data which shows that price plays an important role in influencing the buying decision of 75% of the consumers who were a part of the survey.

*Q.11. How important is the service provided by an online store such as easy return policy as a factor which affects your buying decision?*

Table 8  
Percentage Effect of Customer Services on Consumer Behaviour

Category	Number of Participants	Percentage
Extremely Unimportant	0	0%
Unimportant	6	5.70%
Neutral	19	18.10%
Important	22	21%
Extremely Important	58	55.20%

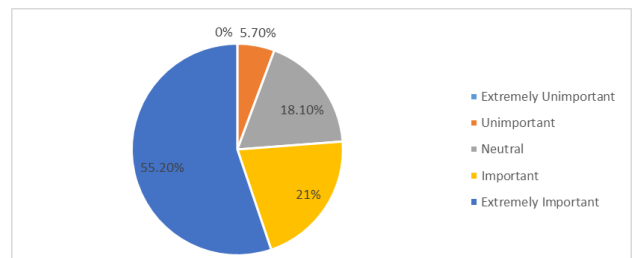


Fig. 12. Graph Showing Percentage Effect of Customer Services on Consumer Behaviour

*Data Interpretation and Analysis:*

Good quality service always attracts buyers and the same can be concluded from the analysis of the survey according to which 76.2% of the sample would prefer buying online if they are provided good customer services.

**SCALE B:**

- 1 – Extremely Inconvenient
- 2 – Inconvenient
- 3 – Neutral
- 4 – Convenient
- 5 – Extremely convenient

*Q.12. When compared to a Kirana store, how convenient is it to find the right product and also the relevant information related to it on an online store?*

Table 9

Perception of Consumer on Usability of Online Stores

CATEGORY	NUMBER OF PARTICIPANTS	PERCENTAGE
Extremely Inconvenient	3	2.90%
Inconvenient	4	3.80%
Neutral	22	21%
Convenient	34	32.40%
Extremely convenient	42	40%

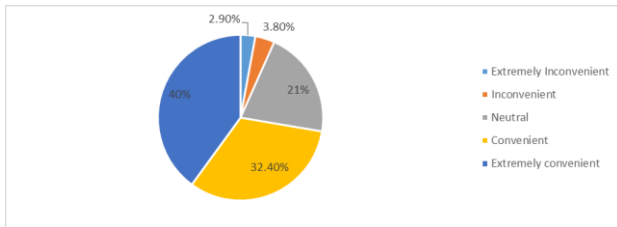


Fig. 13. Graph Showing Percentage of Perception of Consumer on Usability of Online Stores

**Data Interpretation and Analysis:**

Online stores enable the customer to browse through a large variety of goods very conveniently, know its uses in the description and also go through the reviews.

The survey also concludes that most of the consumers (72.40%) find it easy to find the right product and also the relevant information related to.

*Q.13. A traditional kirana store provides sales assistance if needed by the customer. How convenient is it to get any sort of assistance when buying from an online store?*

Table 10

Perception of Consumer of Availability of Online Sales Assistance

CATEGORY	NUMBER OF PARTICIPANTS	PERCENTAGE
Extremely Inconvenient	4	3.80%
Inconvenient	23	21.90%
Neutral	38	36.20%
Convenient	23	21.90%
Extremely convenient	17	16.20%

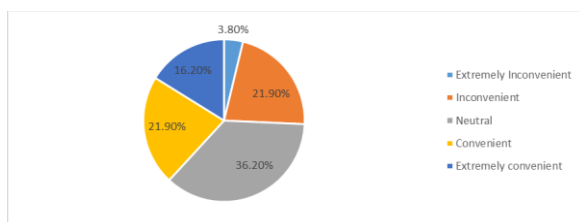


Fig. 14. Graph showing Perception of Consumer of Availability of Online Sales Assistance

**Data Interpretation and Analysis:**

The sales services provided by online retail platforms depends on the store from where the product is being purchased. Therefore, there are mixed views of the consumers who filled the survey which concludes that 25.7% of consumers find it inconvenient, 36.20% of the consumer have neutral views and the remaining 38.1% of consumers find it convenient to get any sort of assistance when buying from an online store.

*Q.14. How convenient is it to return products bought online when compared to a traditional kirana store?*

Table 11

Views of Consumers on Return Policies of online stores

CATEGORY	NUMBER OF PARTICIPANTS	PERCENTAGE
Extremely Inconvenient	4	3.80%
Inconvenient	23	21.90%
Neutral	26	24.80%
Convenient	26	24.80%
Extremely convenient	26	24.80%

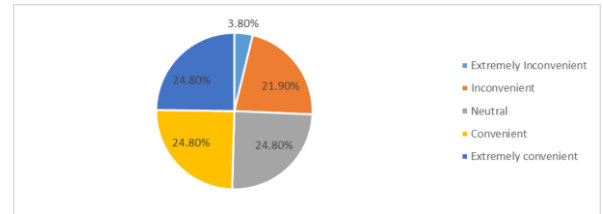


Fig. 15. Graph Showing Percentage Views of Consumers on Return Policies of online stores

**Data Interpretation and Analysis:**

This question is again dependent on the online platform from where the products are being purchased. On analyzing the survey, it can be concluded that 49.60% of consumers find it easy to return products bought online, 24.80% of consumers were neutral and the remaining 25.70% of consumers found it inconvenient.

*Q.15. How convenient are the payment modes available when purchasing online compared to a traditional kirana store?*

Table 12

Consumers Perception on Payment Modes Available Online

CATEGORY	NUMBER OF PARTICIPANTS	PERCENTAGE
Extremely Inconvenient	1	1%
Inconvenient	2	1.90%
Neutral	26	24.80%
Convenient	39	37.10%
Extremely convenient	37	35.20%

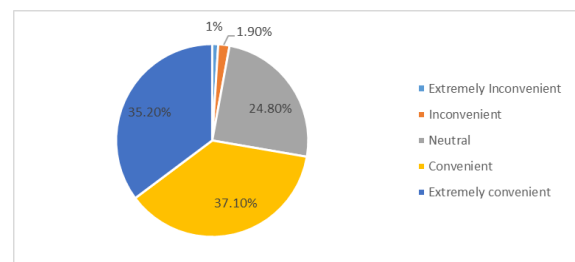


Fig. 16. Graph Showing Percentage of Consumers Perception on Payment Modes Available Online

**Data Interpretation and Analysis:**

It can be clearly concluded from the survey that most of the consumers (72.30%) find the payment modes very convenient. Especially when it comes to cashless transactions, there is no problem of change. Some of the payment modes available online are net banking, mobile wallets, cash on delivery, debit/credit cards, etc.

**SCALE C:**

- 1 – Extremely Uncertain
- 2 – Uncertain
- 2 – Neutral
- 3 – Certain
- 4 – Extremely Certain

*Q.16. Compared to a kirana store, how much uncertainty (getting the wrong product, sub-standard products, etc.) is involved when purchasing groceries from an online store?*

Table 13

Consumers Perception on Uncertainty Involved when Purchasing Online		
CATEGORY	NUMBER OF PARTICIPANTS	PERCENTAGE
Extremely Uncertain	5	4.80%
Uncertain	17	16.20%
Neutral	38	36.20%
Certain	34	32.40%
Extremely Certain	11	10.50%

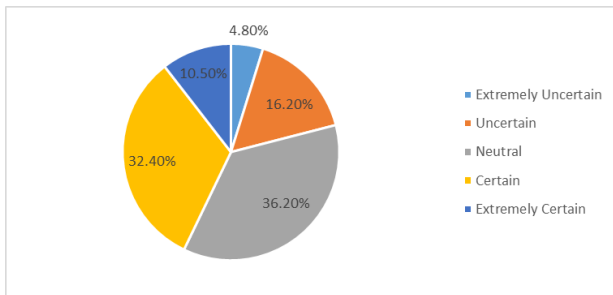


Fig. 17. Graph Showing Percentage of Consumers Perception on Uncertainty Involved when Purchasing Online

**Data Interpretation and Analysis:**

Buying products online has one major issue which is the quality of product that is delivered. It might happen that the consumer receives a sub-standard product when compared to what is shown on the online store.

On analyzing the survey, it can be concluded that most of the consumers (42.90%) believe that a high level of uncertainty is involved when purchasing good online.

*Q.17. How certain are you that your private information such as address, bank details is safe with the online stores?*

Table 14

Consumers View on Safety of Private Information Online		
CATEGORY	NUMBER OF PARTICIPANTS	PERCENTAGE
Extremely Uncertain	6	5.70%
Uncertain	13	12.40%
Neutral	42	40.00%
Certain	23	21.90%
Extremely Certain	21	20.00%

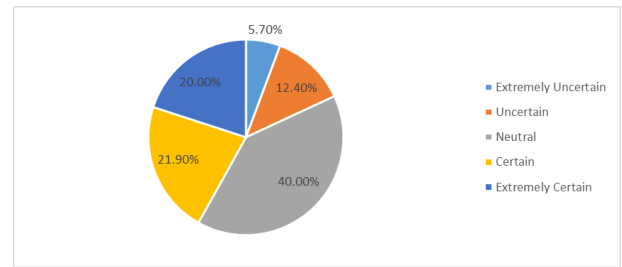


Fig. 18. Graph Showing Percentage of Consumers View on Safety of Private Information Online

**Data Interpretation and Analysis:**

According to the survey, majority of the consumers (40%) are neutral towards the security when purchasing online. This might be because they have personally not experienced their private information being misused. It also depends on the online store from where the products are being purchased as most of consumers prefer shopping from trusted sources such as Amazon, BigBasket, Grofers, etc.

*The following chart shows the average answers of all the consumers for the questions that were asked on a 5-point scale for importance, convenience and certainty (A, B, C)*

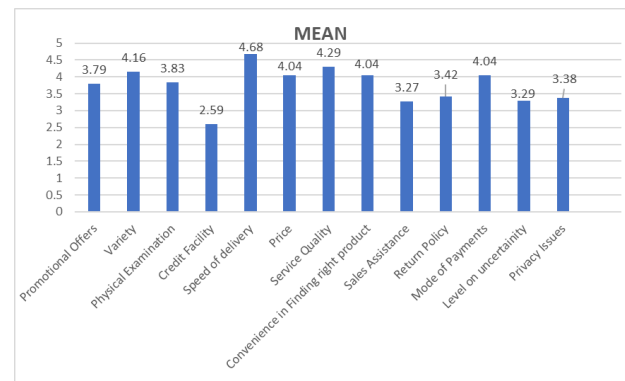


Fig. 19. Graph Showing Mean of the Factors Affecting Consumer Behaviour

**Data Interpretation and Analysis:**

- From the analysis we found that the following mattered the most to the consumers:
  1. Speed of delivery
  2. Variety of products
  3. Additional services
  4. Product information available
  5. Payment modes
  6. Price
- Apart from these the following were also important:
  1. Promotional offers
  2. Easy return policy
  3. Privacy
- However, non-availability of credit facility does not discourage buyers to buy online.



- On the other hand, Kirana stores have advantage because of:
  1. Sales assistance
  2. No/less uncertainty is involved
  3. Physical examination of products
- Consumers have a mix opinion when it comes to buying groceries online or offline in case of an emergency, in this case it was the COVID-19 Pandemic.
- Reasons for buying online:
  1. Consumers prefer not to go out as it is very risky.
  2. Convenient as there are long ques in the offline market.
- Reason for buying offline:
  1. No online service available during the pandemic.
  2. Trust with the local retailer.
  3. Consumers do not want to deal with the issue of returns during the Pandemic.

#### 4. Results and Discussions

##### A. Key Findings

From the analysis we can conclude that the factors which have a great influence on the consumer behavior are speed of delivery, variety of products, additional services, product information available, payment modes and the price. Non-availability of credit facility does not have a great influence in the buying behavior of the consumer. The Kirana stores have advantage because they provide facilities such as sales assistance, no/less uncertainty is involved and physical examination of products. The consumers had a mix opinion on buying groceries online during an emergency situation like the COVID-19 Pandemic.

##### B. Unique Contributions of the Study

The study on the disruption caused by the e-grocery industry on the traditional Kirana stores has a unique contribution as very few studies have been conducted in this area especially when it comes to the India. Therefore, this study helps to understand the behavior of the consumer when purchasing online, what are their expectations, what are the forces that drives a consumer to buy from a kirana store and how their behavior changes at the time of an emergency.

##### C. Limitations

Due to the COVID-19 Pandemic, the study was limited to a small sample size. The initial idea to conduct the survey included interviewing retailers and consumers personally to know their opinion regarding the topic but due to lockdown and social distancing it was not possible. Also, convenience sampling method was used which makes it less credible.

##### D. Scope for Further Research

The study can include other factors such as consumer's purchase intention in order to find out the impact of these factors on purchase intention.

Instead of convenience sampling method, random sampling method could be used.

Personal interviews of the retailers and consumers can be conducted.

#### 5. Conclusion

The results of the survey conducted were mostly in line with what previous research and popular opinion may be parallel to, except for a few outstanding results that lay in the outliers. With respect to traditional versus online shopping for groceries, the preference was well-distributed and skewed in different directions for each age group, with preferences being mixed for both. Services such as fast delivery were prized in the e-commerce model, whilst easy access was an advantage in Kirana stores. Overall, the survey provided conclusive results that can be used to build upon a cloud based and physical/offline model, as the results of primary research conducted was conclusive in terms of prized services, disadvantages of both modules, and other factors that differentiate online from offline purchasing of groceries.

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