A STUDY ON THE GROCERY BUYING BEHAVIOUR AMONG THE PEOPLE OF HYDERABAD

A project submitted to St. Francis College for Women as part of the curriculum for theBachelor of Science

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CERTIFICATE

This is to certify that this bonafide project work titled **"A STUDY ON THE GROCERY BUYING BEHAVIOUR AMONG THE PEOPLE OF HYDERABAD"**, has been carried out by

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towards a partial fulfilment of requirements for the award of the Degree of Bachelor of Science from St. Francis College for Women, Begumpet in the academic year 2021-2022.

Internal Examiner External Examiner

Head of the Department Controller of Examination

DECLARATION

The current study **"A STUDY ON THE GROCERY BUYING BEHAVIOUR AMONG THE PEOPLE OF HYDERABAD"** has been carried out under supervision of, **Dr.Ch. Yugandhar,** Head of the Department, Department of Statistics, St. Francis College for Women.

We hereby declare that the present study that has been carried out by,

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During February-April, 2021-2022 is original and no part of it has been carried out prior to this date.

Date:

Signature of Candidates:

ACKNOWLEDGEMENT

This project has been an enriching learning experience. We, therefore take this opportunity to thank all those who have helped us through the course of this study.

First of all, we thank our project guide. Dr. Ch. Yugandhar, for his continuous assistance, constructive suggestions, encouragement and independence to explore the area of our study right from the inception of the ideas to the completion of the project.

We would like to thank our friends and family for their constant support and feedback. We also thank all the respondents who participated in the consumer survey.

- ANANYA PANDEY

BIYYALA SHIRISHA

PAMPATI SREYA

INDEX

LISTS OF TABLES

LISTS OF DIAGRAMS

CHAPTER – I

STUDY INTRODUCTION

ABSTRACT

The Indian online grocery retail industry has emerged to be one of the most successful markets specifically in the last 2 years owing to the pandemic.

What started as a mild cold-causing virus from the markets of Wuhan, soon turned into a global pandemic and severely affected densely populated countries like India. COVID-19 has substantially affected every sector of the economy, from stock to super markets.
Containment and safety measures included quarantines and lockdowns with strict adherence. This situation drew attention to the online grocery industry as it limited consumer-exposure to the virus by eliminating the need to gather in shops and supermarkets. Specifically powered by urban consumers, online retailers achieved significant growth. This study is aligned with such situations, it highlights the changes in the grocery buying behaviour of consumers, following the outbreak of the COVID-19 pandemic and a progressive shift towards online grocery shopping as a viable alternative to the conventional brick and mortar retailing.
The study involves 200 adult respondents describing their offline (organised and unorganised retail sector) and online buying preferences and to what degree their attitude has changed towards online grocery shopping over the years.
The study also discusses the future of online grocery shopping and consumer's potential shift to it on a broader scale.
A strong correlation between online shopping and the pandemic was obtained as a majority chose online grocery shopping to be their most used mode of purchase during the pandemic. The respondents claimed that factors like convenience, good discounts, efficient delivery and value for money are the most important features of online shopping and their driving influence to online grocery shopping. The study also presents a snapshot of improvements that could further bolster the online grocery purchase market and suggestions are also discussed.
This study aims to bridge the gap between the Indian online retail industry before and after the onset of the COVID-19 pandemic and provides a forum for future study in this field.

INTRODUCTION

In the current day and age where consumers can buy almost anything online, E-Retail has emerged to be one of the strongest pillars of the e-commerce industry.

E-retailing or simply E-tailing is defined as selling of retail goods over the internet. This branch of e-commerce includes both Business to-Consumer (B2C) and Business-to-Business (B2B) transactions. For our study, we focus on the B2C front of the E-retail vertical.

It is a rapidly expanding market and could potentially out-grow conventional or brick and mortar retailing, owing to the dynamic change in lifestyle of consumers all over the world. An important subset of E-tailing, the Online Grocery Shopping (OGS) industry has been a game-changer in terms of E-commerce. It provides consumers with a wide array of products to virtually choose from and hassle-free delivery of selected items in a short span of time. This feature is the driving force for the success and demand of online grocery shopping. It is an efficient, viable, time-saving and over all a consumer convenient alternative to the traditional brick and mortar retail stores that require in-person interaction, inspection and payment.

Additionally, the online grocery shopping business model is independent of time and location constraints and can cater to geographically wider audiences at a significantly lower cost (Brynjolfsson et.al, 2007; Brown & Goolsbee, 2002; Chevalier & Goolsbee, 2003) due to their optimal supply chain management systems, spread over a large geographical area. According to a study conducted by Euromonitor, the global food and grocery ecommerce market is expected to hit a whopping amount of $6.5 trillion by 2023.

India is the fifth largest grocery market in the world with one of the fastest growing online grocery markets, owing to the country's ongoing digital revolution with an exponential increase in 'netizens' since the launch of 4G services. The Internet has now become a crucial part of a netizen's life for a plethora of reasons.

Grocery shopping plays a vital role in the functioning of any household. Regardless of the socio-economic, and political conditions, people shall always require groceries and the convenience of shopping in the comfort of one's home and the variety of products available to choose from has brought forth an increased reliance on the online medium. Furthermore, the Indian consumer's perception of online shopping has undergone a drastic change, and only for good reasons with change in the supporting ecosystem and E-Retail players upgrading their stature in areas such as logistics and payment infrastructure. The study aims to evaluate the most preferred app for groceries and provide an insight into the day-to-day shopping landscape of Hyderabad and make inferences for the country alike.

Due to the COVID-19 pandemic, Indians began to heavily rely on shopping for groceries online as it eliminated consumer's risk of getting infected by the virus through exposure in crowded confined spaces. Added benefits like heavy discounts, efficient delivery, availability of products strengthened the reliance of Indian consumers in online grocers like BigBasket, Blinkit, and other leading online grocery retailers. This pandemic has substantially changed the grocery market of the country and E-retail in India is no longer in its preliminary or nascent stage.

This study emphasises on this change and attempts to identify possible shift in consumer behaviour. It also discusses different dimensions of online grocery shopping. It weighs the influence of factors like discounts, advertising, scheduled orders on a regular consumer and their response to it.

Consumer buying behaviour is a collection of decision-processes and subsequent behaviours, planned and unplanned, and determined by internal and external factors (Sharma & Sonwalkar, 2013)

The Coronavirus outbreak has undoubtedly affected consumer's decision making especially in terms of retail. Hence, consumer behaviour is most commonly based on the consumer's perception of risk and overall attitude towards the situation. Though consumers have previously been segmented into different categories like the panicked, the prudent, the concerned and the rational consumer, the pandemic is an exceptional example of the fluidity and dynamism of consumer behaviour as panic-stricken consumers hoarded groceries in the onset of lockdowns and later continued their grocery purchase from online platforms despite delayed scheduled/unscheduled deliveries.

Hence, the study aims to capture this change in consumer habits of various income strata and to what degree it has been changed by the pandemic. It also attempts to predict the potential attitude of consumers towards online shopping in the post-pandemic era.

Major Online Grocery Retailers

BIG BASKET

One of the most popular and successful start-ups of India, Bigbasket was founded in 2011 and became one of India's largest online supermarkets within a few years of establishment. Though the founders of Bigbasket began their start-up journey around the time of the market crash in 2000, they were able to establish themselves as one of the leading online grocery stores in India. BigBasket has its headquarters in Bengaluru, India.

Ascent Capital provided the company with $10 million in its first round of funding. By 2014, the company had expanded rapidly in three major cities, with over 5,000 orders confirmed every day. Abraaj Capital provided $150 million in Series D funding to the company in March 2016. In the same year, the company got 1 million orders in a single month, surpassing its aim of 10 million customers. By June 2017, the company had raised over $290 million from eight rounds of funding and eleven investors. Paytm and Alibaba were the company's most profitable investors in the Series E funding, having raised $280 million in the same year.

The Tata Group bought 64.3 percent of shares in BigBasket for roughly 9,500 crores (US$1.3 billion) in February 2021. Big Basket currently handles and delivers almost 20,000 orders every day, employing around 2000 team members and staff. It has adopted a hyper-local strategy, partnering with around 1800 local grocery stores across India to ensure that supplies are delivered quickly and efficiently to customers. This was done to ensure quick delivery of ordered goods.

BigBasket has a hybrid business model that combines an Inventory-led model in which a company purchases products from suppliers like farmers, mills and P&G, HUL. Its procurement centers are spread across the country, based on its operations. These companies avail a higher discount on the cost price since they purchase the goods in bulk. However, most of BigBasket's profits are generated from its private labels, Fresho, Royal Organic, Happy Chef Gourmet, that were built by the company by purchasing unbranded products or adding its label to less competitive market products.

For perishable goods, the Company works on a “just-in-time model.” BigBasket maintains ten days’ worth of inventory, as compared to the industry average of a month. A lower amount of stock allows the Company to save money and contain losses from perishable items.

This model is then combined with a hyper-local delivery strategy which is responsible for the three most critical features owing to the venture’s success. They are same-day delivery, high fill rate, and on-time delivery.

These factors play a key role in customer proposition and hence BigBasket has tied up with more than 1800 neighbourhood grocery stores across India to deliver goods within 4 hours, including perishables. This resulted in a substantial decrease in wastage and aiding in decreasing inventory prices.

BigBasket also offers lucrative discounts, bundling techniques, on-time delivery, and convenience that help them retain customers and maximize sales. In addition, the grocer also has a subscription program called BB Star for Rs. 600 that offers its takers several additional features for free like free 4-hour delivery and slot priority.

The company also boasts of world-class technology and owns a proprietary software that was strong enough to withstand the COVID load and which involved meeting customer expectations during the pandemic and prioritizing essential orders.

Valuation: $2 billion (2022)

Leading investors: Tata Group (64%), CDC Group and Trifecta Capital

No. of users: 9 million monthly active users

GROFERS

Blinkit (formerly Grofers) is an instant delivery service based in India. It is headquartered in Gurgaon and was founded in December 2013 by two IIT Graduates. Currently, the company operates in over 28 cities in India as Blinkit.

Grofers began as a B2B delivery service that served as a link between large retailers and small businesses with the help of their logistics and transportation service. The founders later noticed there was a big disconnect between local retail businesses and end customers. Local retail businesses were frequently too busy to attend to end customers' home delivery needs, or they did not have the product the consumer required. Grofers was founded as a B2C online marketplace to address such issues that would benefit both retailers and customers.

In the year 2014, Grofers was able to secure its first round of finance, which was $500,000. In the year 2015, the company raised $10 million in its Series A fundraising round from Tiger Global Management. Grofers was able to raise $35 million in its Series B round of funding in the same year. Following then, the company continued to receive financing from a variety of sources in the years following its founding. SoftBank provided Grofers with its largest round of funding to date, a total of $61.5 million.

Grofers has transformed its business model over the years with main components being the local stores, users and delivery partners. The company started out as a hyper-local delivery service where its main motive was to serve as a link between local businesses and an online customer base. In 2017, the company decided to switch to an inventory-based model in order to compete with the challenges of the online grocery shopping market.

Grofers now has its own warehouse and inventories for the procurement and storage responsibilities, which also allows them to deliver products to users at a more consistent rate. The products are still procured by local businesses and from various brands directly. The company also has its private label brands, and features regional brands that have reasonable prices for its new customer base.

Valuation: $1 billion (2022)

Leading investors: SoftBank Vision Fund (45%), Zomato (30%) and Tiger Global

No. of users: 75,000 to 200,000 daily customers

AMAZON FRESH

An extension of the largest company in the world, Amazon. This company brought together two of its grocery stores called Fresh and Pantry under one platform called Amazon Fresh in November 2021, India. This is primarily a grocery platform that can be used to buy fruits and vegetables, frozen and chilled products like dairy and meats, dry grocery items, beauty, baby, personal care, and pet products.

It provides free scheduled 2-hour delivery slots starting 6 AM to midnight on all orders above ₹200. Amazon Fresh now operates in more than 300 cities across India with a wide variety of products, convenient delivery options, and discounts.

This extension is anticipated to revolutionize grocery shopping on a global scale.

Amazon Fresh just like any other Amazon store, aims to have a customer-centric approach and uses state-of-the-art technology for the same. The company uses Machine learning to improve a consumer's grocery shopping experience. Machine learning models are developed to design thoughtful approaches that seek to enhance a consumer's grocery shopping experience.

Amazon Fresh also uses forecasting models that help estimate future demand and prioritize products with lower shelf life. The company also focuses on product selection as a plethora of vendors set up shops on Amazon.

In this way, Amazon Fresh is leveraging scientific innovation to meet increased consumer demand and aims to anticipate its customer's needs so as to make grocery shopping simple and convenient.

SWIGGY INSTAMART

A cloud-grocery store initiative with a $700 million investment by the food delivery app-Swiggy, Instamart was launched in 2020 and came to operations in Hyderabad in 2021. The grocer currently offers services of delivering everyday grocery items in over 18 cities including- Mumbai, Hyderabad, Chennai, Pune, Gurgaon, Bangalore & Delhi-NCR area. Orders placed on Swiggy Instamart are usually delivered within 45 minutes, from 7 am to 1 am. This quick delivery element of Instamart makes the e-store one of the fastest growing and most popular grocery retail apps in the country. The promise of this high-convenience model is backed by 'dark stores and a hub-and-spoke configuration of micro-fulfilment pods that are located every 5-6km in cities; this proximity aids delivery partners to deliver groceries in the shortest possible time.

Instamart offers an impressive 'dark store' delivery method. Dark stores are local fulfilment branches that are widely spread throughout cities. These could be warehouses

or even small local retailers that stock FMCG and fresh goods. Dark stores are also defined as storage spaces wherein the walk-in shopping option isn't available. These stores can only deliver items to the customers when they place an order through the app. These dark stores have often been said to be the future of retail-grocery shopping post COVID-19.
Instamart aims to fulfil the unmet grocery needs of its urban customer, including fresh fruits and vegetables, daily bread and eggs, cooking essentials, beverages, instant food and munchies, personal and baby care, home, and cleaning products, at even the odd times of the day.

Additionally, Instamart implements the 3i framework- Intent, Indulgence, Inspiration in its app structure with attractive, vibrant UI designs and provides an overall good experience to its consumers. The e-grocer also offers several promo codes and discounts, especially to its new users that can be used to avail heavy discounts on their purchase. Currently, the average basket value on Instamart is Rs. 400-450.

Valuation: $1 billion

Leading Investors: Invesco and Qatar Investment Authority

No. of users: more than two million transacting users and an average of one million orders handled weekly

JIO MART

Launched in 2020 by Reliance Industries Limited, a Fortune 500 company and the largest Indian private sector corporation, JioMart is an e-commerce initiative with an aim to integrate physical and digital retail stores and empower local brick and mortar retailers by providing them with a digital platform.

The app was soft-launched in December 2019 and fully launched in May 2020 in more than 200 cities across India. Within a few days of launch, it has surpassed 1 million downloads. The platform provides free 1–2-day delivery with no minimum charge and a wide variety of products with good discounts.

JioMart also proved to be a major enabler of shopping from home during the pandemic

The app works on the basis of the O2O(online-to-offline) model where the customers place an order online and the product is delivered from local brick and mortar stores. The venture also has a commercial partnership agreement with Whatsapp to ensure seamless transactions and further accelerate digital commerce as an alternative means of ordering goods.

Additionally, the app has extended its label to lifestyle, fashion, electronics, and home essentials as well.

OBJECTIVES OF THE STUDY

i. To understand the history of grocery purchase among Indians.
ii. To evaluate the offline buying preferences of shoppers in the organised & unorganised sector.
iii. To evaluate the online buying preferences of shoppers and study its different dimensions.
iv. To highlight the influence of demographic factors on consumer preference based on attributes like product quality, packaging, promotion, discounts and time that heavily influence consumer behaviour.
v. To identify the most preferred platform for online grocery shopping.
vi. To study the change in the online grocery purchase prior and during the COVID-19 pandemic.

Scope of the study

The scope of the study is the E-retail online grocery shopping market in the country, specifically Hyderabad post 2019. All of the statistical data used and mentioned is of the years succeeding this time period. A snapshot of the Indian online grocery shopping market is provided in the study along with a thorough analysis of consumer behaviour specifically towards grocery purchase.

Limitations of the study

1. The study limits its focus on the online grocery shopping market of the e-retail sector.

2. The analysis of the study is limited to the location of the city of Hyderabad. However, basic inferences can be obtained and applied for a larger set of the country.

3. The study only focuses on the opinions and accounts of urban consumers and does not include the accounts of rural consumers due to their remote setting and unavailability of resources.

Chapterisation

Chapter I - This chapter includes launching the subject line of the study, stating its objectives, scope, methodology adopted, and limitations of the study undertaken.

Chapter II - This chapter discusses the history of grocery purchase, online grocery shopping and its leading grocers in India followed by its conceptual framework.

Chapter III highlights the methodology used by the undertaken study.

Chapter IV - The chapter is categorised into two- Part A and Part B. The former analyses the collected data using descriptive statistics, while the latter tests the significance of the data using Chi-square testing.

Chapter V describes the statistical inference of the study.

Chapter VI contains the project report.

Chapter VII draws conclusion to the study.

CHAPTER – II

REVIEW OF LITERATURE

Overview

“Consumer Commerce is the future. Bricks and mortar will remain an important channel although we know channel agnostic and customer centric is key and the competition will be much broader than today’s retail.” — Paul Martin, Chair Global Retail Steering Group, KPMG.

The demographic variables such as age, sex, marital status, family size, occupation, income/purchasing capacity, and educational levels are the most important factors and have a substantial impact on the prospects of retail business. Shopping frequency has been employed to understand the store choice of behaviour of retail customers in many studies (Jin and Kim, 2003; Pan and Zinkhan, 2006; Huddleston et al., 2009; Jayasankara Prasad and Aryasri, 2011). Shopping frequency is the degree of store-switching opportunities for the shopper to take advantage of the promotional activities of different store formats (East et al. 1997).

Dr. Bikrant Kesari and Mr. Sunil Atulkar (2014): After studying various papers, it has been observed that due to the changing demographics, urbanisation, and awareness due to electronic media especially internet the customers have multiple options to choose from modern retail outlets.
Today it has been found that all age group customers prefer to visit organised retail stores because of various customer facilities provided to them. Families with less annual income prefer shopping with nearby unorganised retail stores where customers with higher qualifications were found to be more attracted towards organized retail outlets. It is investigated that modern retail developments and growth of modern formats are taking place in India and challenges & opportunities are available to the retailers to succeed in Indian retail market and retailers need to innovate in designing the value proposition, deciding the format to deliver to the customer and also strive to serve the consumer better, faster and at less cost.

History of Grocery Purchase in India

Retail is the largest private industry in the world and significantly contributes to a country's economy. India’s grocery retail market is vastly unorganised and complex, comprising an estimated 12 million retail outlets, and over a million wholesalers and distributors of large FMCG companies delivering goods of daily use to end consumers.

Ms Surabhi Koul and Dr. Hari Govind Mishra (2000) analysed from the study, the Indian retail market is strongly driven by the unorganised (Traditional store) retail stores and aimed to deal with the importance of customer expectations for store attributes in an unorganised retail scenario. The traditional markets are transforming themselves in new formats such as departmental stores, hypermarkets, supermarkets and specialty stores — Kearney (2006)

Earlier, a significant portion of grocery shopping was done at "mom-and-pop" (i.e., family-run) small grocery stores, street vendors and street hawkers, from whom the

consumers have been shopping for food and grocery consumption based on their demographic profile which is termed as unorganised sector accounting for around 97% in India.

Later on, India paved the way for the expansion of organised sector in grocery retailing, bringing a wide range of commodity offers along with service orientation, and promoting certain physical aspects of the retail shop format such as ambience, superior services, and so on. Various retail businesses, such as hypermarkets, supermarkets, malls, and discount stores, have emerged to provide consumers with a delightful experience rather than merely entering a store, picking up what you need, and leaving.
Popkowski et al (2001), observed that the changing retail structure has provided the consumers with more options in terms of formats and services such as less travel time, large variety of products and quality products etc.

Emergence of E-Grocery

"Digital retailing is playing an increasingly pivotal role in the way consumers shop, having changed their expectations and preferences considerably" (KPMG International, 2012). Silva et al. (2017) defines e-commerce platforms as the set of technologies designed to help online businesses to manage their marketing, sales, and operations. Wei's et al. (2018) study sought to examine the purchase intention of fruits among online shoppers. The authors argue that the past few years have seen the emergence of online purchase platforms for fruits, a trend that has significantly advanced e-commerce development and improved the quality of human life.

Shopping for groceries online is arguably a discontinuous innovation (Hansen,2005), requiring a significant change in behaviour. The idea behind online grocery platform, BigBasket, was conceived in the 90s by its founders. It was in 1999 when Hari Menon, the current CEO of Big Basket, along with his four friends started an online retail website known as Fabmart. However, this failed to attract the right amount of customers and had to be discontinued. In December 2011, the five friends finally decided to launch India's first e-grocery platform BigBasket.

According to IGD, the International Grocery Research Organization, it was revealed that Asia's grocery segment has continually and rapidly been developing. In 2019, the pace of the grocery segment is expected to change the future of online shopping, said Nick Miles, Head of the Asia-Pacific Region at IGD. India's online grocery market is estimated to grow at a compounded annual growth rate of 62 per cent between 2016-2022, according to a report of IBEF in 2015.

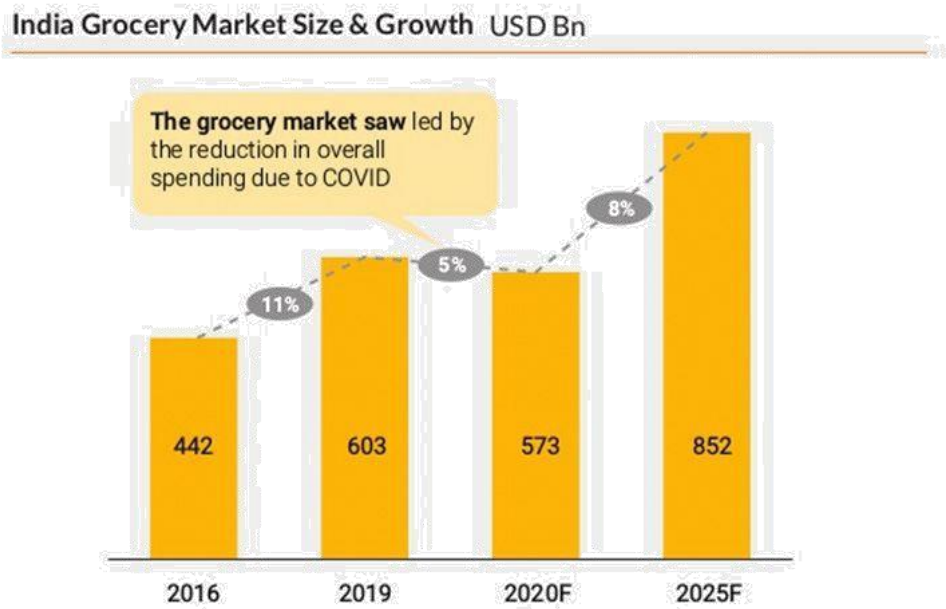
Online grocery shopping in India

As the e-grocery market grew extensively in the last few years, deep-pocketed e-commerce players like Amazon and Flipkart, top tier startups including food-delivery giant Swiggy and hyperlocal service Dunzo, as well as JioMart, jumped on the opportunity and engaged in the booming sector.

"The acquisition of BigBasket is one of the smartest moves from the Tata group in a long time. It is one of the most attractive online businesses in the grocery space with strong sales and growth potential," says Harminder Sahni, founder and managing director, Wazir Advisors, a management consulting firm. According to data firm Statista, BigBasket had a market share of over 35%, the highest, in the Indian online grocery space as of 2019. Presently, BigBasket is the clear market leader in e-grocery, followed by Grofers. Over the years, Flipkart and Amazon have experimented with different models in groceries, but they have been far less successful in this category than in others like apparel, electronics and books.

According to RedSeer Consulting, e-groceries could account for 3% of India's grocery market by 2025 – amounting to $24 billion in market value. A RedSeer report from late last year pegged India's grocery market size at $790 billion by 2024. A new report puts this figure at more than $850 billion in 2025 – tracing a compound annual growth rate (CAGR) of 8% in the build-up.

Estimates by consulting firm McKinsey & Co. suggest that the share of traditional retail will decline from 85% now to 65-70% over the next four to five years, while other channels, including e-commerce and modern trade retailers, could corner 30% share.



Grocery Spend				
Per Capita (USD)	334	446	419	600
As % of GDP	19.1%	19.9%	21.0%	23.0%
As % of retail	67.4%	66.5%	73.4%	65.3%

Impact of COVID-19 on grocery shopping

While the globe has been revolving from the special effects of the Coronavirus (COVID19) pandemic, at the same time customer behaviour is being enforced to change and consumers are progressively moving towards online shopping. (Anupam Sharma 2020).

The COVID-19 pandemic has come as a wake-up call to embrace advanced technologies and CEOs are keen to digitise sales and customer experiences in both the B2B and B2C context. Contactless payments, tech-enabled customer service, virtual consultations, curbside pickups, etc. are some of the other best practices that are being adopted in the retail space. With the safety concerns encircling coronavirus and a large section of the citizens working from home, the dependence of consumers on the online platform has increased significantly. This, in turn, has provided several growth avenues to the market.

According to a study conducted by Accenture, some behavioural changes in customers' preferences would persist even after the outbreak is over. Online shopping is one of these practices (Accenture 2020). Another study found that the tendencies followed by different consumers throughout the pandemic will significantly transform the retail business even after the epidemic is done (Forbes 2020).

Conclusion

Several studies (e.g., POPAI, 2011) suggest that consumers are changing their shopping behaviours and discovered that convenience is one of the main orientations towards online grocery shopping (e.g., Ramus & Nielsen, 2005; Chen & Chang, 2003) and price one of the main factors taken into consideration, both on- and off-line (e.g., POPAI, 2011; Santos, 2009).

However, it was also shown that online grocery shopping is complementary to traditional grocery shopping, being preferred for non-perishable products, evidencing the still existence of some drawbacks on the adoption of this retail channel for grocery shopping (Hand, Riley, Harris, Singh & Rettie, 2009; Robinson, Riley, Reetie & Rolls-Willson, 2007).

Coexisting with offline shopping, online grocery shopping is viewed in the same light, not much as a pleasure but regarded as an enhanced activity (Robinson, 2007; Verhoef & Langerak, 2001).

Conceptual framework

The literature review enabled an understanding of the key characteristics of both offline and online grocery shopping, establishing a framework of the most important aspects impacting the consumer's online decision-making process.

There have been many studies on factors influencing the decision of the consumers to opt for online shopping. We aim at studying a shift in the behavioural patterns of the consumers towards online grocery shopping since lockdown and whether such patterns are likely to continue even after the end of the pandemic.

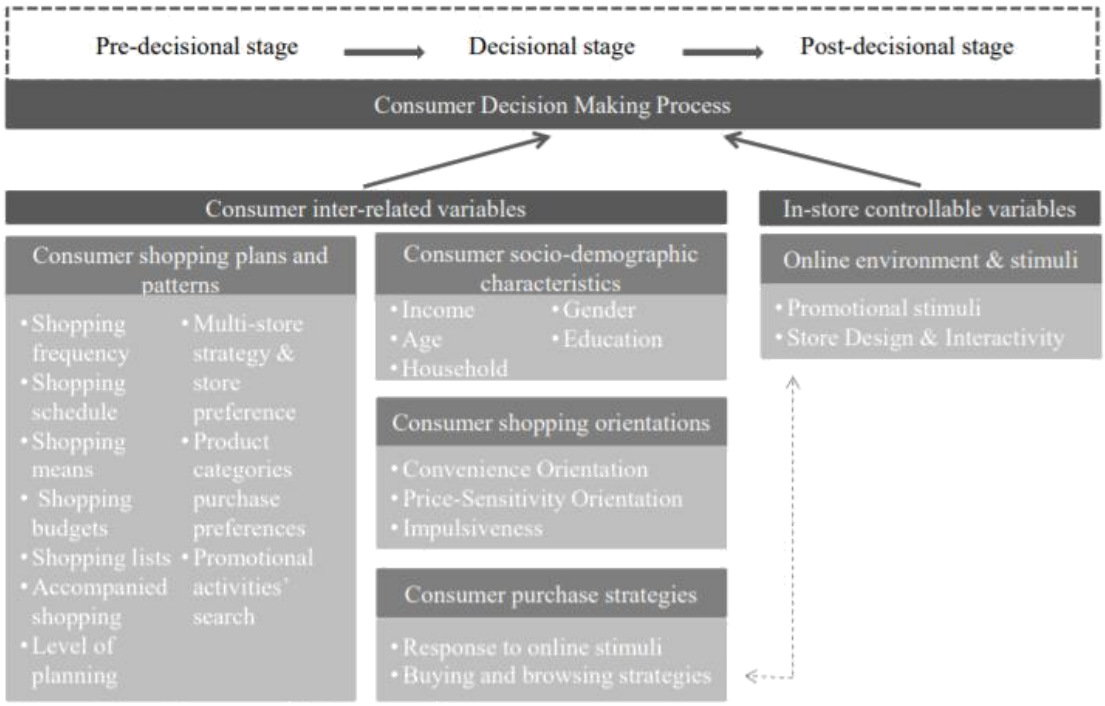


Figure 2.1. – Conceptual Framework.

The final framework combined elements of the Technology Acceptance Model (TAM), consumer behaviour and decision-making frameworks, brick-and-mortar marketing categories (product, price, discount, and promotion) and e-commerce literature.

CHAPTER - III

METHODOLOGY

Research Methodology

This study is descriptive in nature. The data used in this study is primary data, collected through a survey conducted to analyse the grocery buying behaviour of the respondents. Simple Random Sampling technique was used to collect the data. The survey was conducted on randomly selected 200 respondents from the Hyderabad region.

A systematic questionnaire was designed consisting of various questions related to demographics segmentation, frequency of purchase and key drives that are responsible for the choice of retail outlets and mode of grocery shopping. Feedback of the respondents were analysed and discussed for further study. The study has used tests of significance (Chi-square testing) and Frequency distribution for data analysis which further aids the study to examine the grocery retail market.

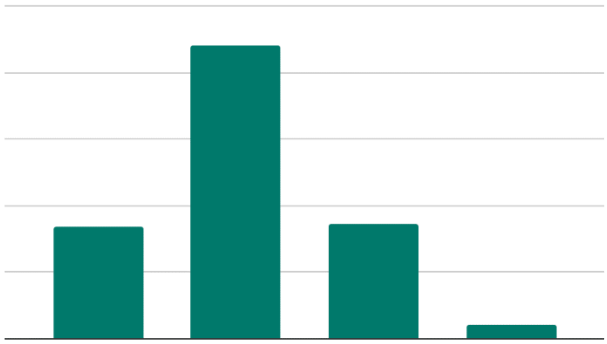
Methodology

Both primary and secondary research has been carried out for this project.

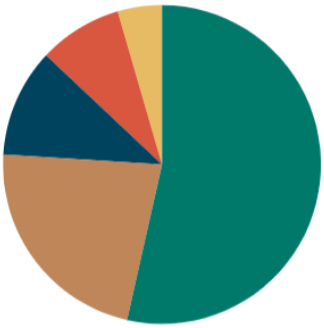
- **Sample design:** Random samples of 200 respondents were chosen for the research through the questionnaires developed to find out the activities in which present day people are more interested and are involved.
- **Tools and Technique of Analysis:** The analysis done for the data obtained by the technique of random sampling is primarily descriptive in nature.
- **Source of data:**
    1. Primary Data: The data, which has been collected for the first time and is original, is primary data. In this project the primary data is in the form of structured questionnaire.
    2. Secondary Data: The secondary information is mostly taken from websites, books, journals, and magazines.

DIAGRAMATIC REPRESENTATAION:

Bar Diagram: A bar graph is a chart that uses bars to show comparisons between categories of data. The bars can be either horizontal or vertical. Bar graphs with vertical bars are sometimes called vertical bar graphs.



Pie chart: A pie chart is a circular chart divided into sectors; each sector shows the relative size of each value.



DATA TYPE

Data:

The data used in the study is primary data. The primary data for the research project was acquired by questionnaires and the secondary source of information was through magazines, publications and internet. The primary data was further studied using chi-square test of independence between the attributes in the questionnaires.

Mode of data collection:

Data is collected through the questionnaire method.

Questionnaire:

The questionnaire was formed with care ensuring that it is clear, brief and with non-ambiguous and with non-offending statements.

Population:

The population examined for study targets the people of various demographics who purchase products from different categories (online and offline).

Sample:

Sample of 200 residents of Hyderabad, belonging to different demographics was taken.

Data tabulation:

The questionnaire was serially numbered, and data was coded and tabulated using SPSS Statistics 28th version.

STATISTICAL TECHNIQUES USED FOR DATA ANALYSIS

Frequency distribution:

The most important part of organizing and summarizing statistical data is by constructing a frequency distribution table. In this method, classification is done according to quantitative magnitude.

Chi-square test for independence of attributes:

The chi-square test is used to test the independence of attributes. With the help of this test, it is possible to assess the significance of difference between the observed and expected frequencies.

Test statistic:

$$\chi^2 = \Sigma\Sigma \frac{(O-E)^2}{E}$$

P-level:

The p-level represents the probability of error that is involved in accepting our observed result as valid, that is as representative of the population. The p-level of 0.05 is customarily treated as border line accepted at a level.

Decision rule:

If $p < 0.05$, then p is significant, and we reject H_0 i.e., the attributes are independent at 5% level of significance.

Coefficient of contingency:

When H_0 is rejected the amount of association between two attributes is given by Coefficient of contingency.

$$C = \sqrt{\frac{\chi^2}{\chi^2 + N}}$$ Where N=total frequency, χ^2=calculated.

CHAPTER - IV

DATA ANALYSIS

CHAPTER – IV.1

FREQUENCY TABLES, PIE CHARTS AND BAR CHARTS

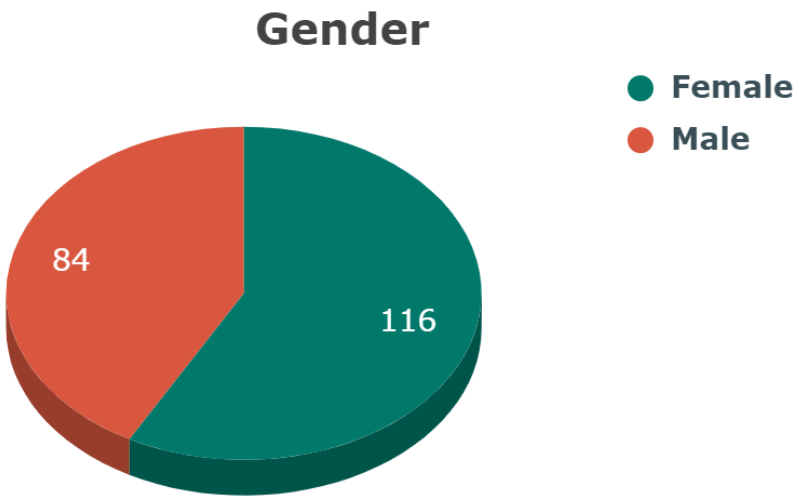
Q1. Gender

1. Female 2. Male

Table 4.1

Gender	Frequency	Percent
Female	116	58
Male	84	42
Total	200	100

Figure 4.1



Conclusion:

- 58% **(116)** of the respondents are females.
- 42% **(84)** of the respondents are males.

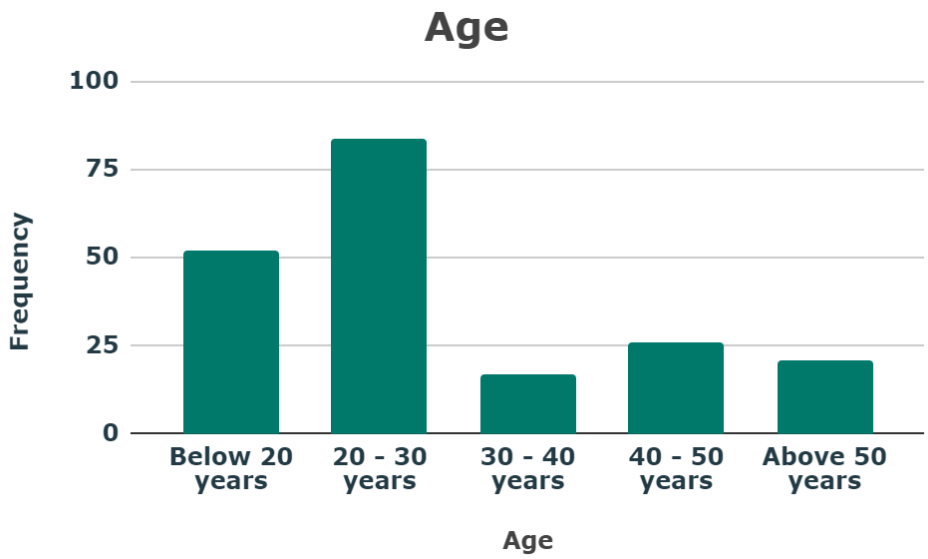
Q2. Age

1. Below 20 years
2. 20-30 years
3. 30-40 years
4. 40-50 years
5. Above 50 years

Table 4.2

Age	Frequency	Percent
Below 20 years	52	26
20 - 30 years	84	42
30 - 40 years	17	8.5
40 - 50 years	26	13
Above 50 years	21	10.5
Total	200	100

Figure 4.2



Conclusion:

- 26% **(52)** respondents are below 20 years of age.
- 42% **(84)** respondents are of the age group 20 - 30.
- 8.5% **(17)** respondents are of the age group 30 - 40.
- 13% **(26)** respondents are of the age group 40 - 50.
- 10.5% **(21)** respondents are above the age of 50 years.

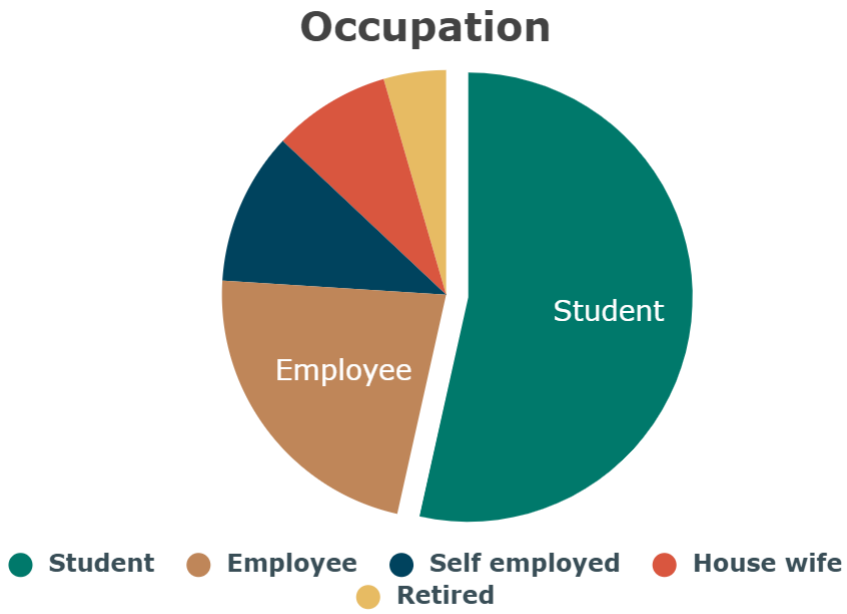
Q3. Occupation

1. Student
2. Employee
3. House wife
4. Self employed
5. Retired

Table 4.3

Occupation	Frequency	Percent
Student	107	53.5
Employee	45	22.5
Self employed	22	11
House wife	17	8.5
Retired	9	4.5
Total	200	100

Figure 4.3



Conclusion:

- 53.5% **(107)** respondents are students.
- 22.5% **(45)** respondents are employees.
- 11% **(22)** respondents are self-employed.
- 8.5% **(17)** respondents are housewives.
- 4.5% **(9)** respondents are retired.

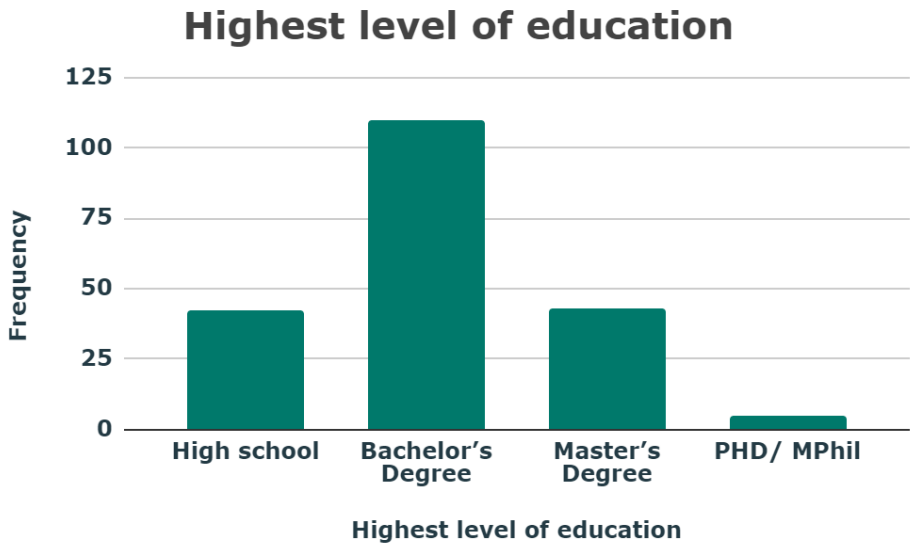
Q4. Highest level of education

1. High school
2. Bachelor's Degree
3. Master's Degree
4. PHD/ MPhil

Table 4.4

Highest level of education	Frequency	Percent
High school	42	21
Bachelor's Degree	110	55
Master's Degree	43	21.5
PHD/ MPhil	5	2.5
Total	200	100

Figure 4.4



Conclusion:

- 21% **(42)** respondents hold a High school.
- 55% **(110)** respondents hold a Bachelor's degree.
- 21.5% **(43)** respondents hold a Master's degree.
- 2.5% **(5)** respondents hold a PHD/ M.Phil.

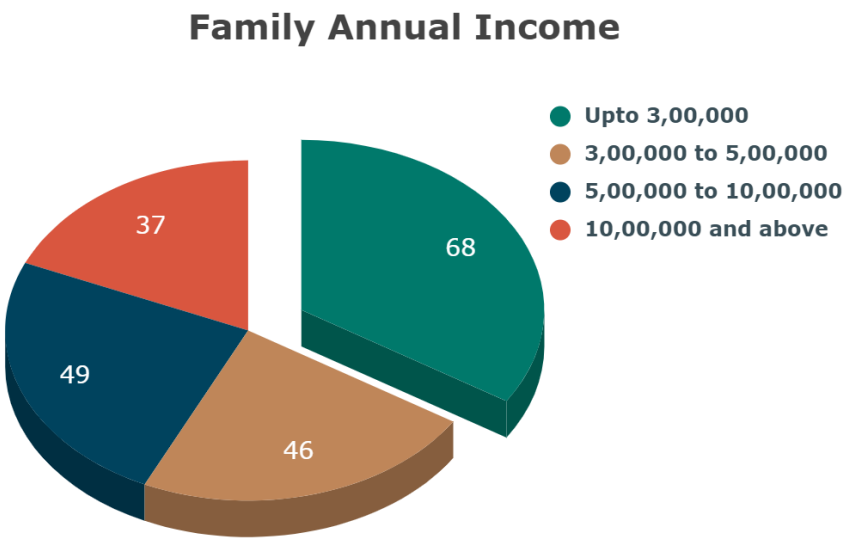
Q5. Family annual income

1. Upto 3,00,000
2. 3,00,000 to 5,00,000
3. 5,00,000 to 10,00,000
4. 10,00,000 and above

Table 4.5

Family annual income	Frequency	Percent
Upto 3,00,000	68	34
3,00,000 to 5,00,000	46	23
5,00,000 to 10,00,000	49	24.5
10,00,000 and above	37	18.5
Total	200	100

Figure 4.5



Conclusion:

- 34% **(68)** respondents have an annual family income upto Rs. 3,00,000.
- 23% **(46)** respondents have an annual family income in the range of Rs. 3,00,000 to Rs. 5,00,000.
- 24.5% **(49)** respondents have an annual family income in the range of Rs. 5,00,000 to Rs. 10,00,000.
- 18.5% **(37)** respondents have an annual family income above Rs. 10,00,000.

Q6. What is your most preferred mode of offline grocery shopping?

1. Supermarkets 2. Local Stores & Vendors

Table 4.6

Most preferred Mode	Frequency	Percent
Supermarkets	118	59
Local Stores & Vendors	82	41
Total	200	100

Figure 4.6

Conclusion:

- 59% **(118)** of the respondents prefer supermarkets.
- 41% **(82)** of the respondents prefer local Stores & vendors.

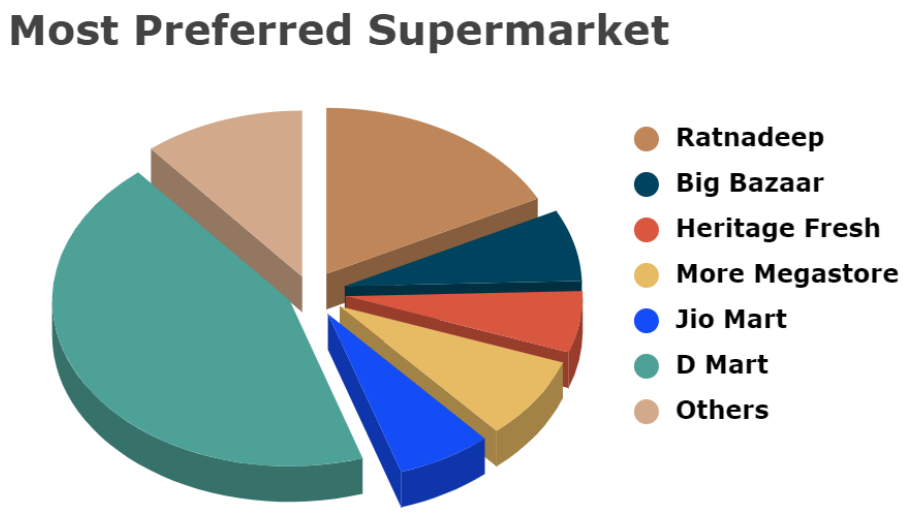
Q7. What is your most preferred supermarket?

1. Ratnadeep
2. Big Bazaar
3. Heritage Fresh
4. More Megastore
5. Jio Mart
6. D Mart
7. Other

Table 4.7

Most Preferred Supermarket	Frequency	Percent
Ratnadeep	35	17.5
Big Bazaar	14	7
Heritage Fresh	12	6
More Megastore	16	8
Jio Mart	13	6.5
D Mart	88	44
Others	22	11
Total	200	100

Figure 4.7



Conclusion:

- 44% **(88)** of the respondents prefer D Mart.
- 17.5% **(35)** of the respondents prefer Ratnadeep.
- 11% **(22)** of the respondents prefer Other supermarkets.
- 8% **(16)** of the respondents prefer More Megastore.
- 7% **(14)** of the respondents prefer Big Bazaar.
- 6.5% **(13)** of the respondents prefer Jio Mart.
- 6% **(12)** of the respondents prefer Heritage Fresh.

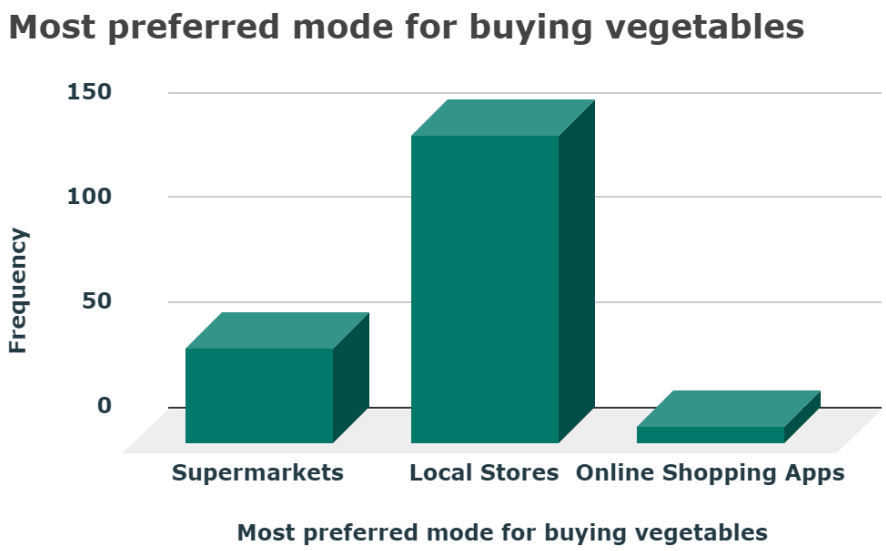
Q8. What is your most preferred mode for buying vegetables?

1. Supermarkets
2. Local Stores
3. Online Shopping Apps

Table 4.8

Most Preferred Mode	Frequency	Percent
Supermarkets	45	22.5
Local Stores	147	73.5
Online Shopping Apps	8	4
Total	200	100

Figure 4.8



Conclusion:

- 73.5% **(147)** of the respondents prefer Local Stores for buying vegetables.
- 22.5% **(45)** of the respondents prefer Supermarkets for buying vegetables.
- 4% **(8)** of the respondents prefer Online Shopping Apps for buying vegetables.

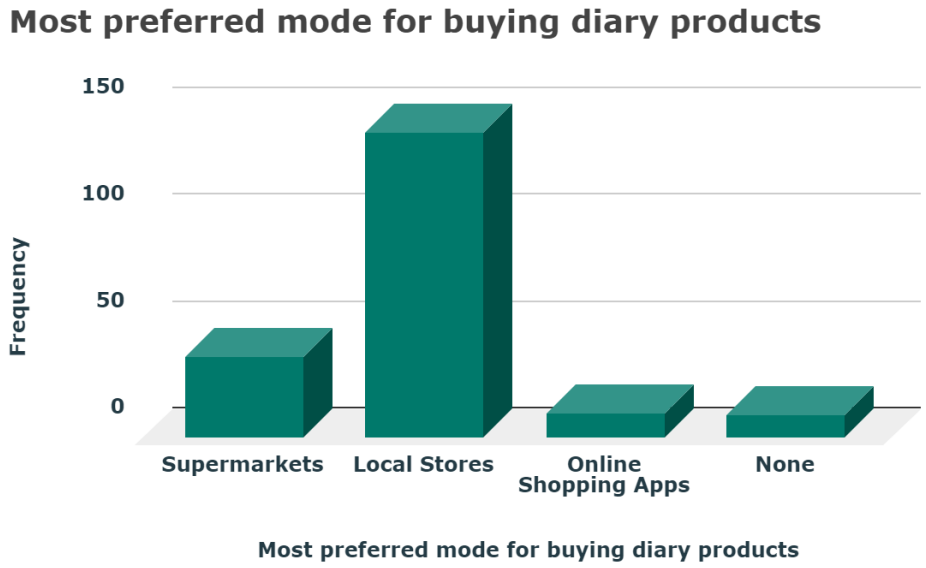
Q9. What is your most preferred mode for buying dairy products?

1. Supermarkets
2. Local Stores
3. Online Shopping Apps
4. None

Table 4.9

Most Preferred Mode	Frequency	Percent
Supermarkets	37	18.5
Local Stores	142	71
Online Shopping Apps	11	5.5
None	10	5
Total	200	100

Figure 4.9



Conclusion:

- 71% **(142)** of the respondents prefer Local Stores to buy dairy products.
- 18.5% **(37)** of the respondents prefer Supermarkets to buy dairy products.
- 5.5% **(11)** of the respondents prefer Online Shopping Apps to buy dairy products.
- 5% **(10)** of the respondents prefer None to buy dairy products.

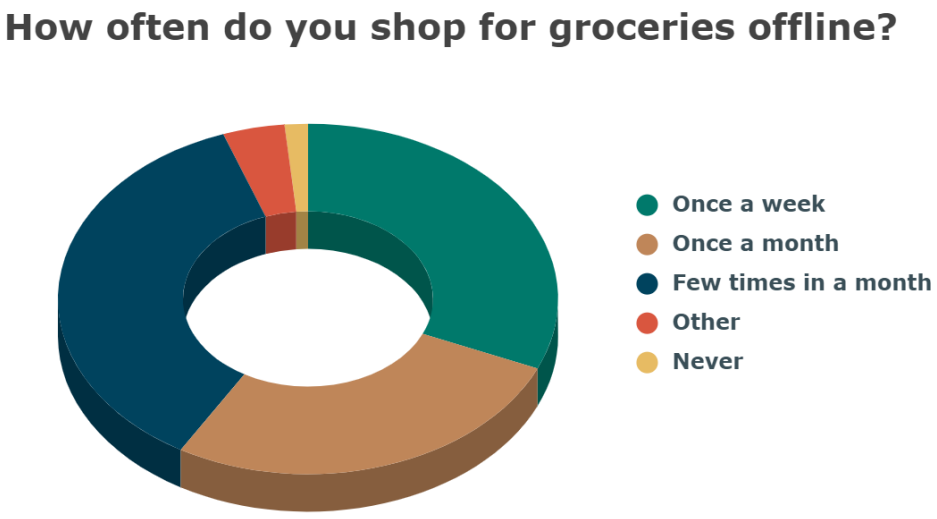
Q10. How often do you shop for groceries offline?

1. Once a week
2. Once a month
3. Few times in a month
4. Other
5. Never

Table 4.10

Frequency of shopping	Frequency	Percent
Once a week	63	31.5
Once a month	54	27
Few times in a month	72	36
Other	8	4
Never	3	1.5
Total	200	100

Figure 4.10



Conclusion:

- 36% **(72)** of the respondents shop for groceries offline few times in a month.
- 31.5% **(63)** of the respondents shop for groceries offline Once a week.
- 27% **(54)** of the respondents shop for groceries offline Once a month.
- 4% **(8)** of the respondents shop for groceries offline Other time.
- 1.5% **(3)** of the respondents Never shop for groceries offline.

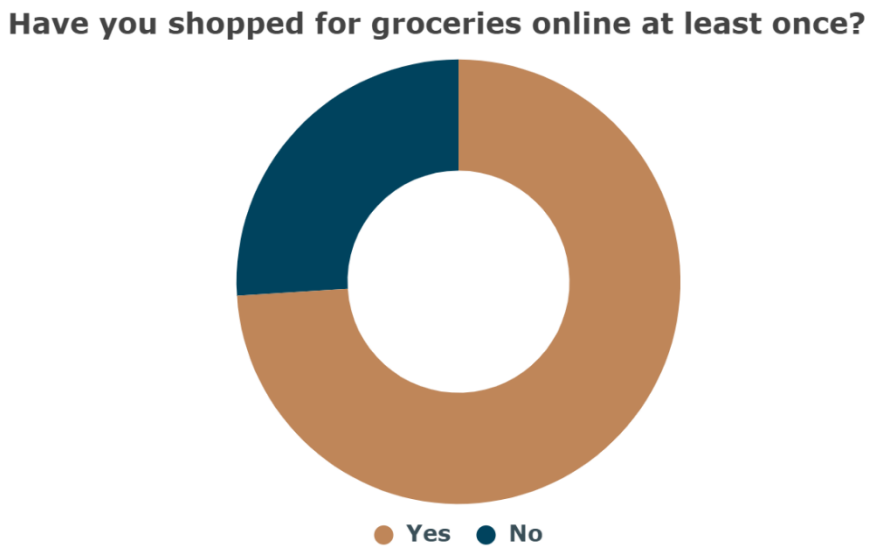
Q11. Have you shopped for groceries online at least once?

1. Yes 2. No

Table 4.11

Shopped online at least once	Frequency	Percent
Yes	148	74
No	52	26
Total	200	100

Figure 4.11



Conclusion:

- 74% **(148)** of the respondents have shopped for groceries online at least once.
- 26% **(52)** of the respondents have not shopped for groceries online at least once.

Q12. If yes, why do you prefer shopping online? (Select all that apply)

1. It is convenient
2. Good discounts
3. It is safe
4. Hassle-free payments (cashless)
5. Quick & Efficient delivery
6. Wide variety of products
7. Others
8. Not Applicable

Table 4.12

	Not Selected		Selected	
	Frequency	Percent	Frequency	Percent
It is convenient	97	48.5	103	51.5
Good discounts	119	59.5	81	40.5
It is safe	173	86.5	27	13.5
Hassle-free payments (cashless)	142	71	58	29
Quick & Efficient delivery	117	58.5	83	41.5
Wide variety of products	129	64.5	71	35.5
Others	198	99	2	1
Not Applicable	155	77.5	45	22.5

Conclusion:

- 51.5% **(103)** of the respondents prefer shopping online as it is convenient.
- 40.5% **(81)** of the respondents prefer shopping online for good discounts.
- 13.5% **(27)** of the respondents prefer shopping online as it is safe.
- 29% **(58)** of the respondents prefer shopping online for hassle-free payments.
- 41.5% **(83)** of the respondents prefer shopping online for quick & efficient delivery.
- 35.5% **(71)** of the respondents prefer shopping online for a wide variety of products.
- 1% **(2)** of the respondents prefer shopping online for other reasons.
- 22.5% **(45)** of the respondents selected not applicable for shopping online.

Q13. What do you think primarily prevents people from shopping online? (Select all that apply)

1. Lack of awareness
2. Risk of online fraud
3. Risk of identity theft
4. Uncomfortable with technology
5. Quality issues
6. Others

Table 4.13

	Not Selected		Selected	
	Frequency	Percent	Frequency	Percent
Lack of awareness	94	47	106	53
Risk of online fraud	99	49.5	101	50.5
Risk of identity theft	152	76	48	24
Uncomfortable with technology	103	51.5	97	48.5
Quality Issues	188	94	12	6
Others	189	94.5	11	5.5

Conclusion:

- 53% **(106)** of the respondents assume that lack of awareness prevents people from shopping online.
- 50.5% **(101)** of the respondents assume that risk of online fraud prevents people from shopping online.
- 24% **(48)** of the respondents assume that risk of identity theft prevents people from shopping online.
- 48.5% **(97)** of the respondents assume that discomfort with technology prevents people from shopping online.
- 6% **(12)** of the respondents assume that quality issues prevent people from shopping online.
- 5.5% **(11)** of the respondents assume other reasons that prevent people from shopping online.

Q14. When did you start online grocery shopping?

1. Before 2016
2. 2016-17
3. 2017-18
4. 2018-19
5. During the pandemic
6. Not Applicable

Table 4.14

Timeline	Frequency	Percent
Before 2016	10	5
2016-17	15	7.5
2017-18	20	10
2018-19	29	14.5
During the pandemic	74	37
Not Applicable	52	26
Total	200	100

Figure 4.14

Conclusion:

- 37% **(74)** of the respondents began online grocery shopping During the Pandemic.
- 26% **(52)** of the respondents do not shop for groceries online.
- 14.5% **(29)** of the respondents began online grocery shopping During 2018-19.
- 10% **(20)** of the respondents began online grocery shopping During 2017-18.
- 7.5% **(15)** of the respondents began online grocery shopping During 2016-17.

- 5% **(10)** of the respondents began online grocery shopping Before 2016.

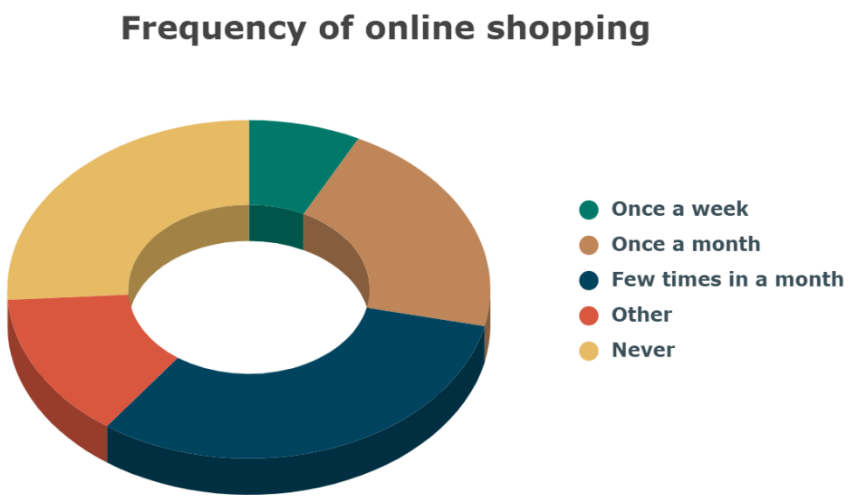
Q15. How often do you shop for groceries online?

1. Once a week
2. Once a month
3. Few times in a month
4. Other
5. Never

Table 4.15

Frequency of shopping	Frequency	Percent
Once a week	15	7.5
Once a month	42	21
Few times in a month	63	31.5
Other	28	14
Never	52	26
Total	200	100

Figure 4.15



Conclusion:

- 31.5% **(63)** of the respondents shop for groceries online Few times in a month.
- 26% **(52)** of the respondents ever shop for groceries online.
- 21% **(42)** of the respondents shop for groceries online Once a month.
- 14% **(28)** of the respondents shop for groceries online Other time.
- 7.5% **(15)** of the respondents shop for groceries online Once a week.

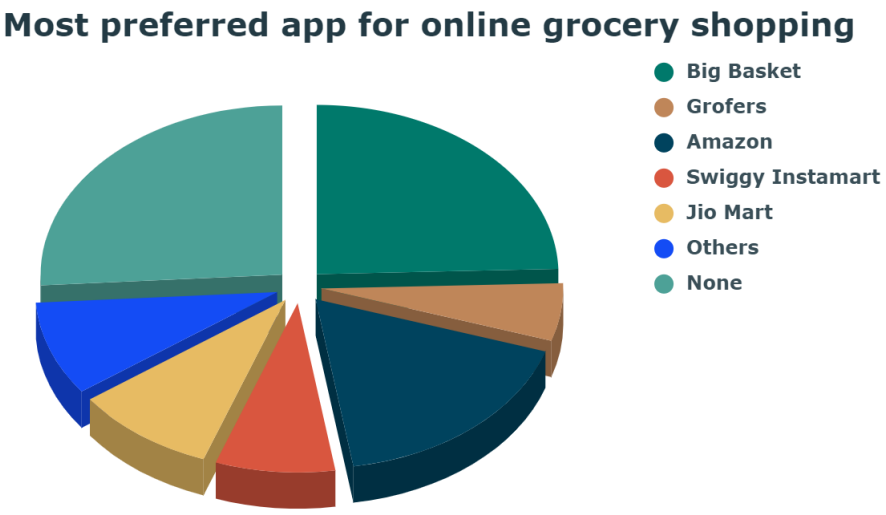
Q16.What is your most preferred app for online grocery shopping?

1. Big Basket
2. Grofers
3. Amazon
4. Swiggy Instamart
5. Jio Mart
6. Others
7. None

Table 4.16

What is your most preferred app for online grocery shopping?	Frequency	Percent
Big Basket	49	24.5
Grofers	11	5.5
Amazon	35	17.5
Swiggy Instamart	16	8
Jio Mart	19	9.5
Others	18	9
None	52	26
Total	200	100

Figure 4.16



Conclusion:

- 24.5% **(49)** respondents prefer Big Basket.
- 5.5% **(11)** respondents prefer Grofers.
- 17.5% **(35)** respondents prefer Amazon.
- 8% **(16)** respondents prefer Swiggy Instamart.
- 9.5% **(19)** respondents prefer Jio Mart.

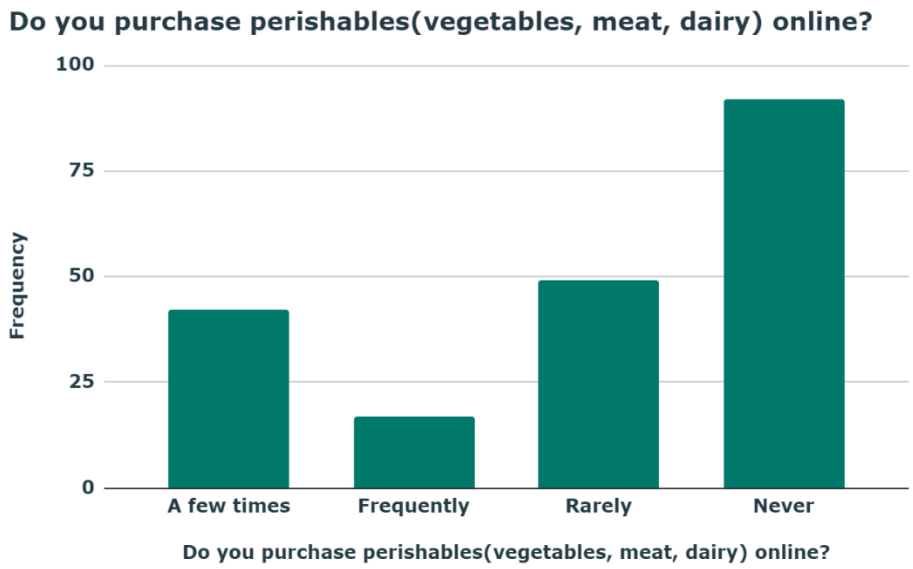
Q17. Do you purchase perishables (vegetables, meat, dairy) online?

1. A few times 2. Frequently 3. Rarely 4. Never

Table 4.17

Do you purchase perishables (vegetables, meat, dairy) online?	Frequency	Percent
A few times	42	21
Frequently	17	8.5
Rarely	49	24.5
Never	92	46
Total	200	100

Figure 4.17



Conclusion:

- 21% **(42)** of the respondents purchase perishables online a few times.
- 8.5% **(17)** of the respondents purchase perishables online frequently.
- 24.5% **(49)** of the respondents purchase perishables online rarely.
- 46% **(92)** of the respondents never purchase perishables online.

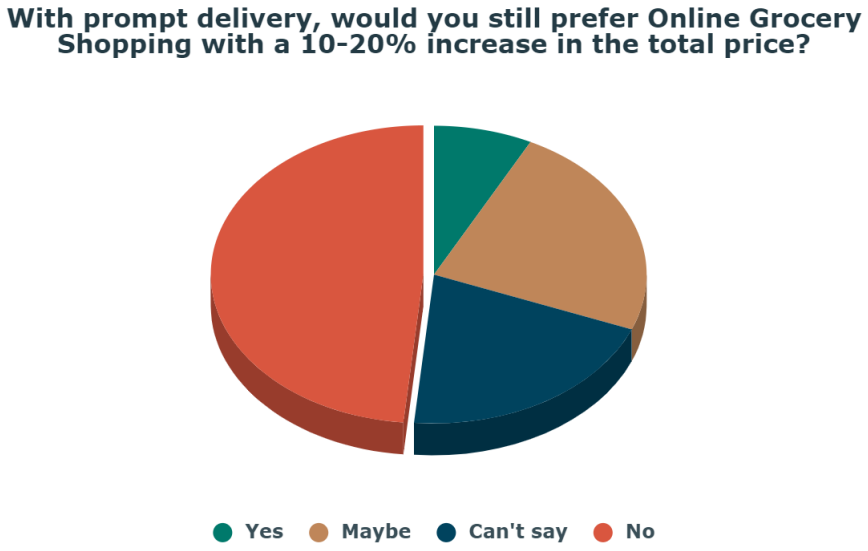
Q18. With prompt delivery, would you still prefer Online Grocery Shopping with a 10-20% increase in the total price?

1. Yes 2. Maybe 3. Can't say 4. No

Table 4.18

With prompt delivery, would you still prefer Online Grocery Shopping with a 10-20% increase in the total price?	Frequency	Percent
Yes	15	7.5
Maybe	47	23.5
Can't say	41	20.5
No	97	48.5
Total	200	100

Figure 4.18



Conclusion:

- 7.5% **(15)** of the respondents prefer Online Grocery Shopping even with a 10-20% increase in the total price with prompt delivery.
- 23.5% **(47)** of the respondents may prefer Online Grocery Shopping with a 10-20% increase in the total price with prompt delivery.
- 20.5% **(41)** of the respondents can't say if they'd prefer Online Grocery Shopping with a 10-20% increase in the total price with prompt delivery.
- 48.5% **(97)** of the respondents don't prefer Online Grocery Shopping with a 10-20% increase in the total price with prompt delivery.

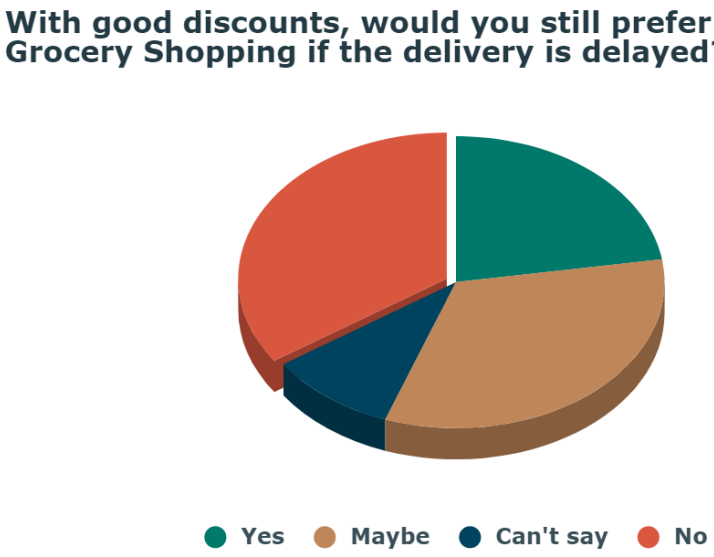
Q19. With good discounts, would you still prefer Online Grocery Shopping if the delivery is delayed?

1. Yes 2. Maybe 3. Can't say 4. No

Table 4.19

With good discounts, would you still prefer Online Grocery Shopping if the delivery is delayed?	Frequency	Percent
Yes	45	22.5
Maybe	66	33
Can't say	20	10
No	69	34.5
Total	200	100

Figure 4.19



Conclusion:

- 22.5% (**45**) of the respondents prefer Online Grocery Shopping with good discounts even if there is a delay in delivery.
- 33% (**66**) of the respondents may prefer Online Grocery Shopping with good discounts if there is a delay in delivery.
- 10% (**20**) of the respondents can't say if they'd prefer Online Grocery Shopping with good discounts if there is a delay in delivery.
- 34.5% (**69**) of the respondents don't prefer Online Grocery Shopping with good discounts if there is a delay in delivery.

Q20. Have you ever encountered challenges while shopping online (like transaction failures and unavailability of products post ordering)?

1. Yes 2. No

Table 4.20

Have you ever encountered challenges while shopping online (like transaction failures and unavailability of products post ordering)?	Frequency	Percent
Yes	124	62
No	76	38
Total	200	100

Figure 4.20

Conclusion:

- 62% (**124**) of the respondents encountered challenges while shopping online.
- 38% (**76**) of the respondents didn't encounter any challenges while shopping online.

Q21. If yes, what are the problems you have faced while shopping online? (Select all that apply)

1. Unavailability of products post ordering
2. Lack of customer support
3. Transaction issues
4. Refund issues
5. Return issues
6. None
7. Others

Table 4.21

	Not Selected		Selected	
	Frequency	Percent	Frequency	Percent
Unavailability of products post ordering	112	56	88	44
Lack of customer support	164	82	36	18
Transaction issues	142	71	58	29
Refund issues	156	78	44	22
Return issues	154	77	46	23
None	130	65	70	35
Others	196	98	4	2

Conclusion:

- 44% **(88)** of the respondents had problems with unavailability of products while shopping online.
- 18% **(36)** of the respondents had problems due to lack of customer support while shopping online.
- 29% **(58)** of the respondents had problems with transaction issues while shopping online.
- 22% **(44)** of the respondents had problems with refund issues while shopping online.
- 23% **(46)** of the respondents had problems with return issues while shopping online.
- 35% **(70)** of the respondents had no issues while shopping online.
- 2% **(4)** of the respondents had other issues while shopping online.

Q22. Rank the following modes of payment you use while shopping for groceries online from most to least (5-1) frequently.

Mode of payment	Rank (5-most,1-least used)
Credit/Debit Cards	
UPI	
Net Banking	
Digital Wallets	
Cash on Delivery	

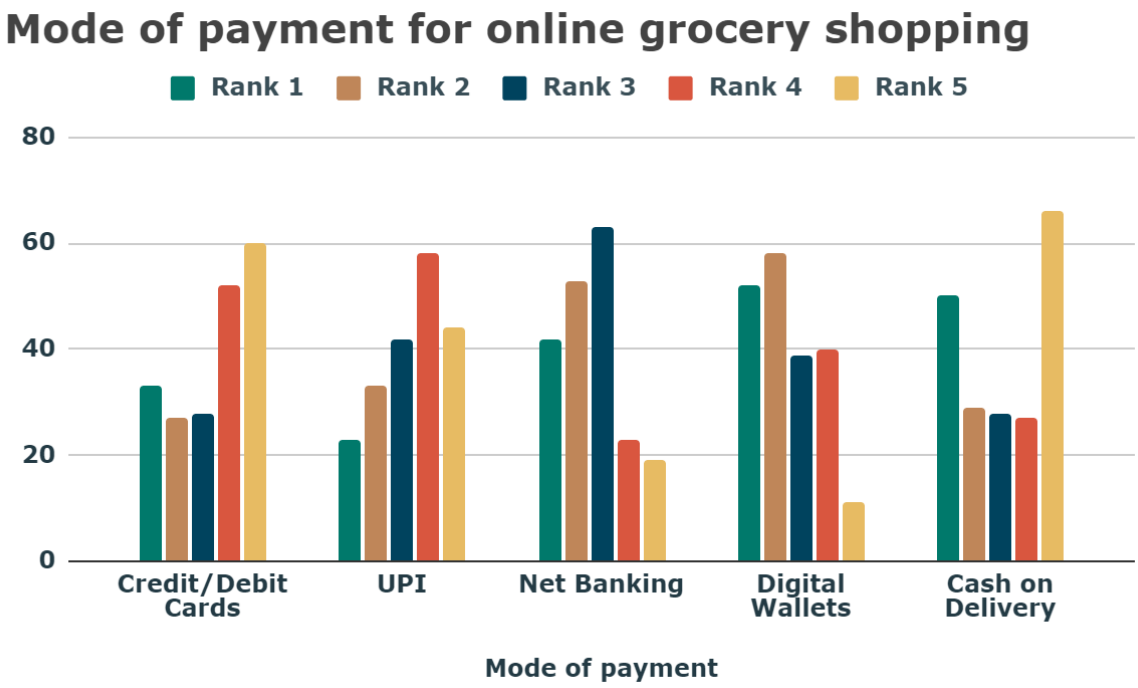
Table 4.22.1

Mode of payment	Rank					Total
	1	2	3	4	5	
Credit/Debit Cards	33	27	28	52	60	200
UPI	23	33	42	58	44	200
Net Banking	42	53	63	23	19	200
Digital Wallets	52	58	39	40	11	200
Cash on Delivery	50	29	28	27	66	200

Table 4.22.2

Mode of payment		Total
Credit/Debit Cards	(33*1) + (27*2) + (28*3) + (52*4) + (60*5)	679
UPI	(23*1) + (33*2) + (42*3) + (58*4) + (44*5)	667
Net Banking	(42*1) + (53*2) + (63*3) + (23*4) + (19*5)	524
Digital Wallets	(52*1) + (58*2) + (39*3) + (40*4) + (11*5)	500
Cash on Delivery	(50*1) + (29*2) + (28*3) + (27*4) + (66*5)	630

Figure 4.22



Conclusion:

The total highest score indicates the first preference ranking. The results show the following rank ordering:

1. Credit/Debit Cards
2. UPI
3. Cash on Delivery
4. Net Banking
5. Digital Wallets

Q23. Rank your most preferred mode of grocery shopping (3-most used, 1-least used) Pre-Pandemic.

	Pre-Pandemic (3-most, 1- least used)
Online Grocery Shopping	
Super Markets	
Local stores & Street vendors	

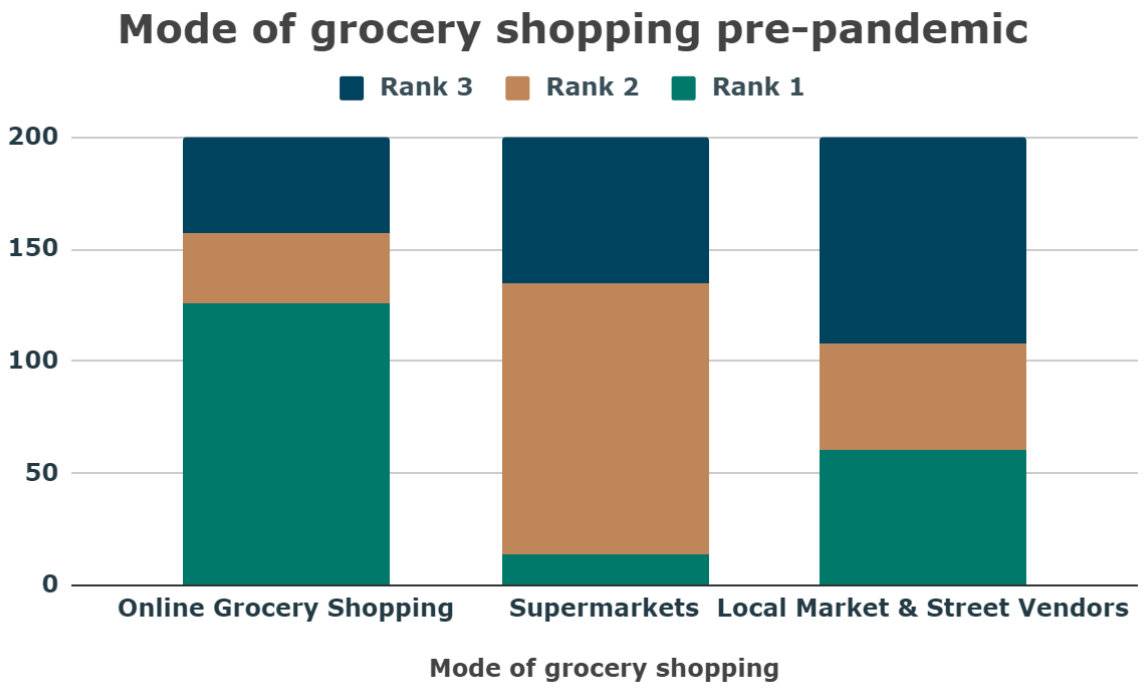
Table 4.23.1

Mode of grocery shopping	Rank			Total
	1	2	3	
Online Grocery Shopping	126	31	43	200
Supermarkets	14	121	65	200
Local Market & Street Vendors	60	48	92	200

Table 4.23.2

Mode of grocery shopping		Total
Online Grocery Shopping	(126*1) + (31*2) + (43*3)	317
Supermarkets	(14*1) + (121*2) + (65*3)	451
Local Market & Street Vendors	(60*1) + (48*2) + (92*3)	432

Figure 4.23



Conclusion:

The total highest score indicates the first preference ranking. The results show the following rank ordering:

1. Supermarkets
2. Local stores & Street vendors
3. Online Grocery Shopping

Q24. Rank your most preferred mode of grocery shopping (3-most used, 1-least used) during the pandemic.

	During the Pandemic (3-most, 1- least used)
Online Grocery Shopping	
Super Markets	
Local stores & Street vendors	

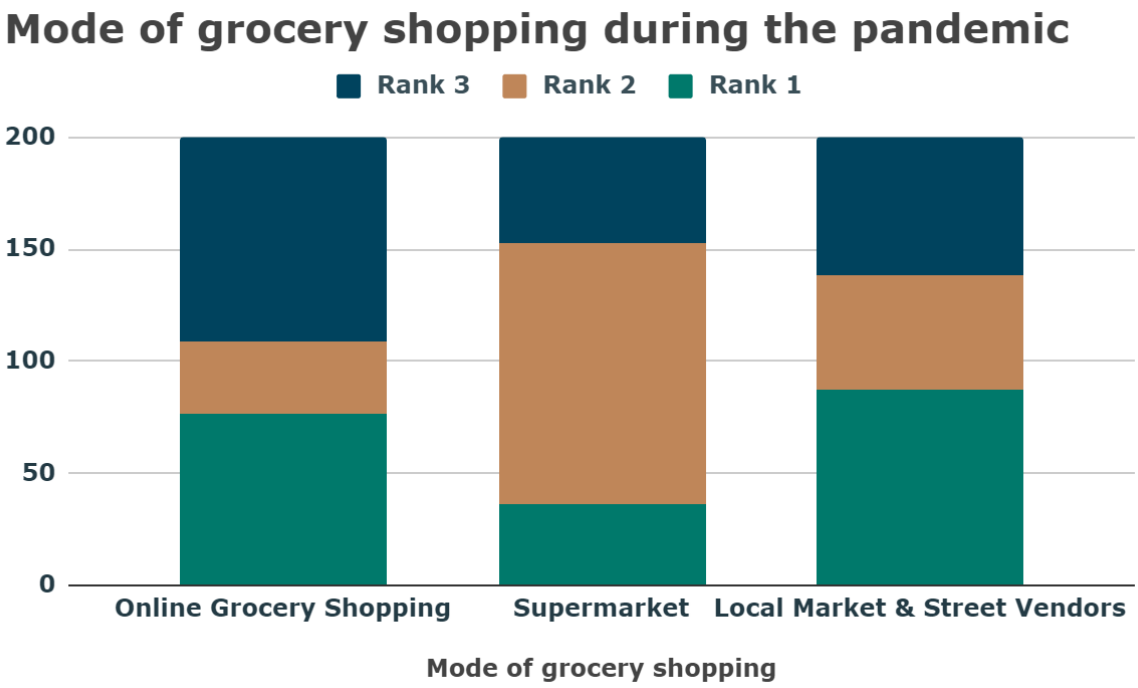
Table 4.24.1

Mode of grocery shopping	Rank			Total
	1	2	3	
Online Grocery Shopping	77	32	91	200
Supermarket	36	117	47	200
Local Market & Street Vendors	87	51	62	200

Table 4.24.2

Mode of grocery shopping		Total
Online Grocery Shopping	(77*1) + (32*2) + (91*3)	414
Supermarkets	(36*1) + (117*2) + (47*3)	411
Local Market & Street Vendors	(87*1) + (51*2) + (62*3)	375

Figure 4.24



Conclusion:

The total highest score indicates the first preference ranking. The results show the following rank ordering:

1. Online Grocery Shopping
2. Supermarkets
3. Local stores & Street vendors

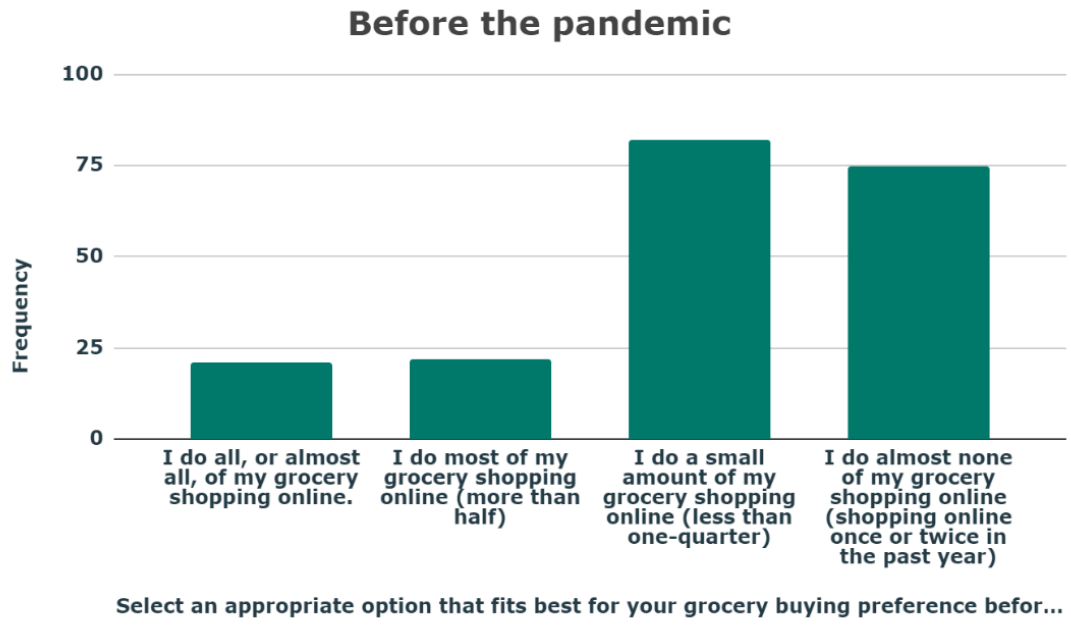
Q25. Select an appropriate option that fits best for your grocery buying preference before the pandemic.

1. I do all, or almost all, of my grocery shopping online.
2. I do most of my grocery shopping online (more than half).
3. I do a small amount of my grocery shopping online.
4. I do almost none of my grocery shopping online (e.g., shopping online once or twice in the past year).

Table 4.25

Select an appropriate option that fits best for your grocery buying preference before the pandemic.	Frequency	Percent
I do all, or almost all, of my grocery shopping online.	21	10.5
I do most of my grocery shopping online (more than half)	22	11
I do a small amount of my grocery shopping online (less than one-quarter)	82	41
I do almost none of my grocery shopping online (shopping online once or twice in the past year)	75	37.5
Total	200	100

Figure 4.25



Conclusion:

- 10.5% (**21**) of the respondents do almost all of their grocery shopping online before the pandemic.
- 11% (**22**) of the respondents do most of their grocery shopping online before the pandemic.
- 41% (**82**) of the respondents do a small amount of their grocery shopping online before the pandemic.
- 37.5% (**75**) of the respondents do none of their grocery shopping online before the pandemic.

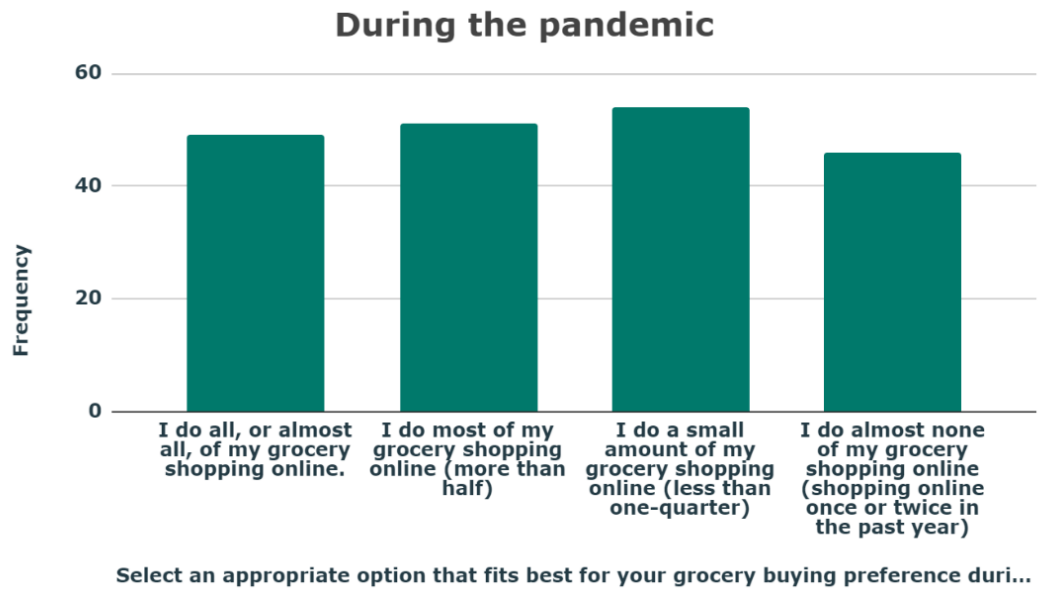
Q26. Select an appropriate option that fits best for your grocery buying preference during the pandemic.

1. I do all, or almost all, of my grocery shopping online.
2. I do most of my grocery shopping online (more than half).
3. I do a small amount of my grocery shopping online.
4. I do almost none of my grocery shopping online (e.g., shopping online once or twice in the past year).

Table 4.26

Select an appropriate option that fits best for your grocery buying preference during the pandemic.	Frequency	Percent
I do all, or almost all, of my grocery shopping online.	49	24.5
I do most of my grocery shopping online (more than half)	51	25.5
I do a small amount of my grocery shopping online (less than one-quarter)	54	27
I do almost none of my grocery shopping online (shopping online once or twice in the past year)	46	23
Total	200	100

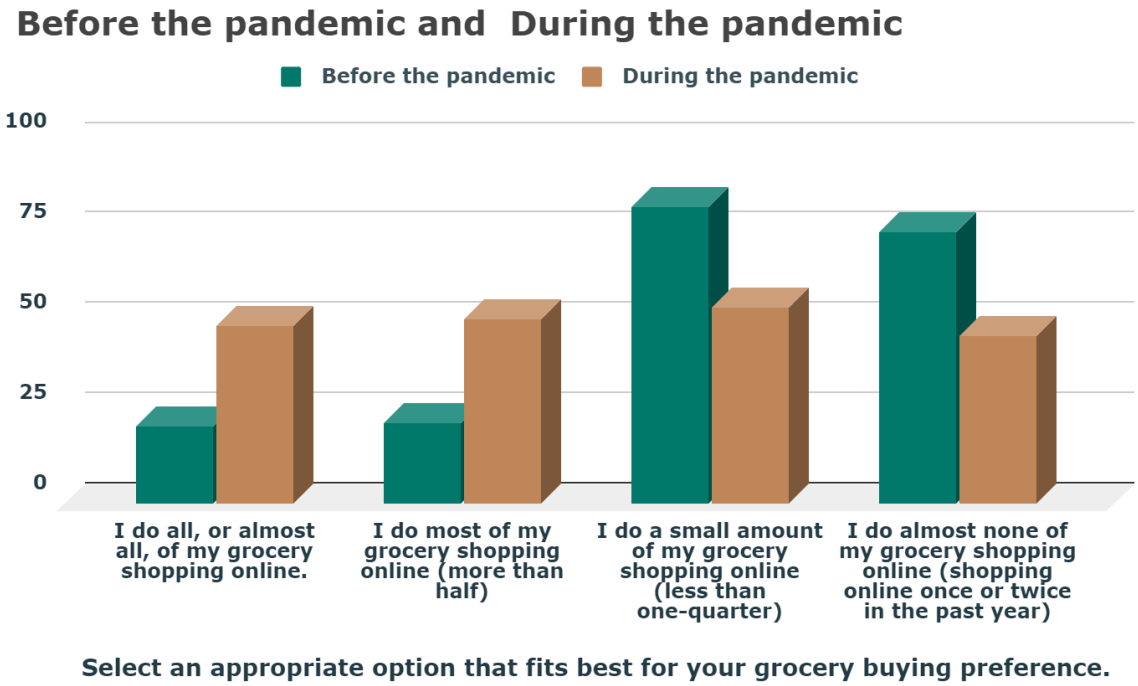
Figure 4.26



Conclusion:

- 24.5% (**49**) of the respondents do almost all of their grocery shopping online during the pandemic.
- 25.5% (**51**) of the respondents do most of their grocery shopping online during the pandemic.
- 27% (**54**) of the respondents do a small amount of their grocery shopping online during the pandemic.
- 23% (**46**) of the respondents do none of their grocery shopping online during the pandemic.

Comparing changes in online grocery purchase prior and during the COVID-19 pandemic



From Figure 4.25 and Figure 4.26

Q27. Read the following statements and select an appropriate option accordingly.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Online grocery shopping offers superior quality, well packaged and fresh products when compared to offline.					
2. I shop for groceries online because it is more convenient than safe.					
3. I prefer online grocery stores as they are well-advertised and give heavy discounts.					
4. Supermarkets are safer than local stores as proper COVID protocols are maintained.					
5. Shopping at supermarkets take less time compared to local stores.					
6. I prefer shopping for perishables (vegetables meat & dairy) in person.					
7. I prefer supermarkets over local stores because of better discounts.					

Table 4.27

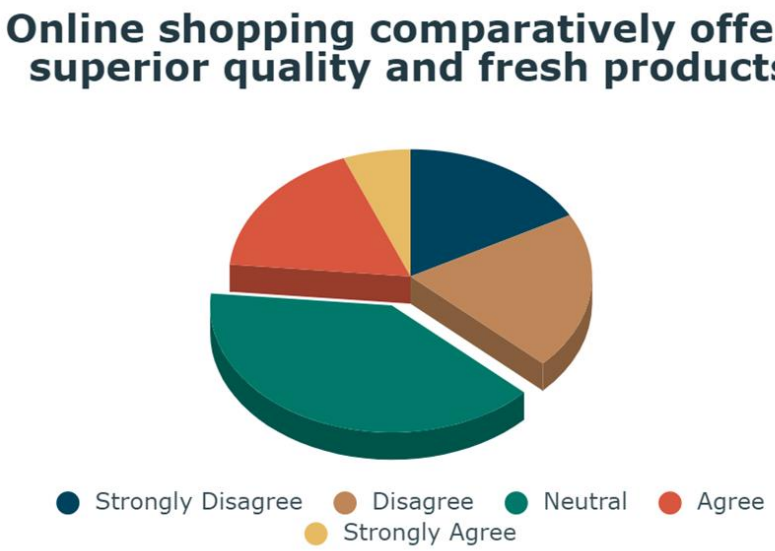
Descriptive Statistics										
	Sum	Mean		Std. Deviation	Variance	Skewness		Kurtosis		N
	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error	Statistic
Online shopping comparatively offers superior quality and fresh products.	551	2.76	0.079	1.114	1.241	0.013	0.172	-0.609	0.342	200
I shop groceries online because it is more convenient than safe	594	2.97	0.079	1.111	1.235	-0.14	0.172	-0.887	0.342	200
I prefer online grocery stores as they are well-advertised and give heavy discounts.	614	3.07	0.082	1.154	1.332	-0.217	0.172	-0.766	0.342	200
Supermarkets are safer than local stores	627	3.13	0.085	1.206	1.454	0.015	0.172	-1.002	0.342	200
Shopping at supermarkets takes less time compared to local stores.	571	2.85	0.091	1.289	1.662	0.203	0.172	-1.031	0.342	200
I prefer shopping for perishables (vegetables ,meat & dairy) in person	763	3.81	0.086	1.212	1.468	-0.838	0.172	-0.226	0.342	200
I prefer supermarkets over local stores because of better discounts	646	3.23	0.079	1.12	1.253	-0.248	0.172	-0.582	0.342	200

Q27_1. Online shopping comparatively offers superior quality and fresh products.

Table 4.27.1

	Frequency	Percent	Cumulative Percent
Strongly Disagree	34	17	17
Disagree	40	20	37
Neutral	79	39.5	76.5
Agree	35	17.5	94
Strongly Agree	12	6	100
Total	200	100	

Figure 4.27.1



Conclusion:

Out of 200 responses, 17%(**34**) strongly disagree, 20%(**40**) disagree, 39.5%(**79**) neutral, 17.5%(**35**) agree and 6%(**12**) strongly agree.

From Table 4.27,

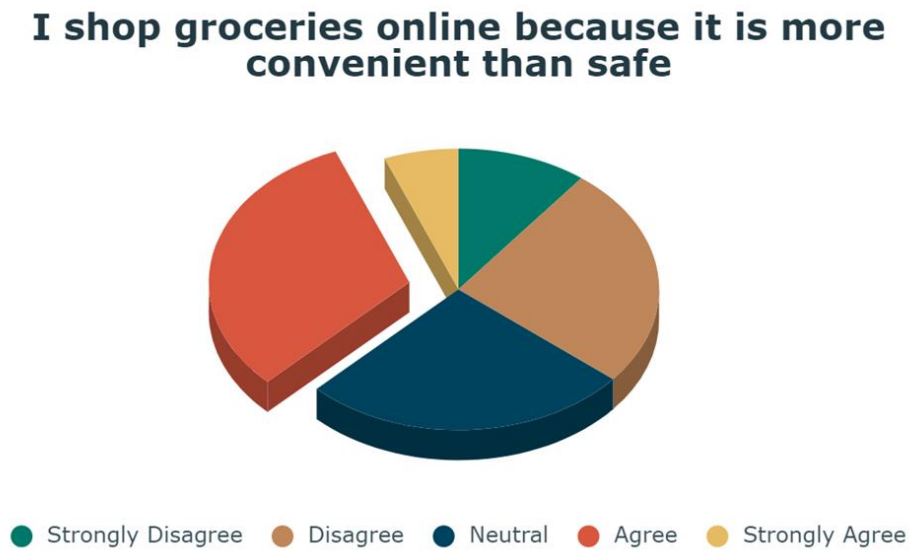
The mean (2.76) and standard deviation (1.114) indicate that the respondents had a neutral attitude towards online shopping in terms of superior quality and freshness.

Q27_2. I shop groceries online because it is more convenient than safe.

Table 4.27.2

	Frequency	Percent	Cumulative Percent
Strongly Disagree	21	10.5	10.5
Disagree	51	25.5	36
Neutral	53	26.5	62.5
Agree	63	31.5	94
Strongly Agree	12	6	100
Total	200	100	

Figure 4.27.2



Conclusion:

Out of 200 responses, 17%(**34**) strongly disagree, 20%(**40**) disagree, 39.5%(**79**) neutral, 17.5%(**35**) agree and 6%(**12**) strongly agree.

From Table 4.27,

The mean (2.97) and standard deviation (1.111) indicate that the respondents had a neutral opinion that online grocery shopping is comparatively more convenient than safe.

Q27_3. I prefer online grocery stores as they are well-advertised and give heavy discounts.

Table 4.27.3

	Frequency	Percent	Cumulative Percent
Strongly Disagree	23	11.5	11.5
Disagree	38	19	30.5
Neutral	60	30	60.5
Agree	60	30	90.5
Strongly Agree	19	9.5	100
Total	200	100	

Figure 4.27.3

Conclusion:

Out of 200 responses, 11.5% (**23**) strongly disagree, 19% (**38**) disagree, 30% (**60**) neutral, 30% (**60**) agree and 9.5% (**19**) strongly agree.

From Table 4.27,

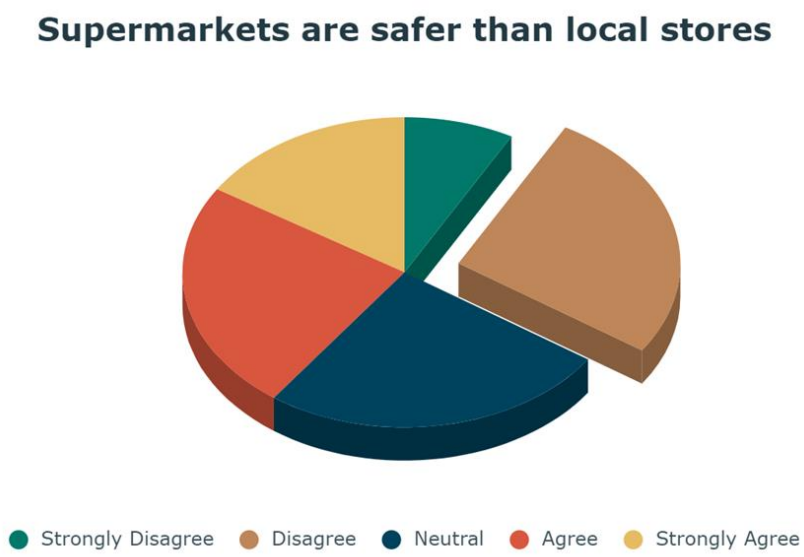
The mean (3.07) and standard deviation (1.154) show that the respondents slightly agree that advertisements and discounts are the driving factors for preferring online grocery stores.

Q27_4. Supermarkets are safer than local stores.

Table 4.27.4

	Frequency	Percent	Cumulative Percent
Strongly Disagree	16	8	8
Disagree	53	26.5	34.5
Neutral	51	25.5	60
Agree	48	24	84
Strongly Agree	32	16	100
Total	200	100	

Figure 4.27.4



Conclusion:

Out of 200 responses, 8% (**16**) strongly disagree, 26.5% (**53**) disagree, 25.5%(**51**) neutral, 24% (**48**) agree and 16% (**32**) strongly agree.

From Table 4.27,

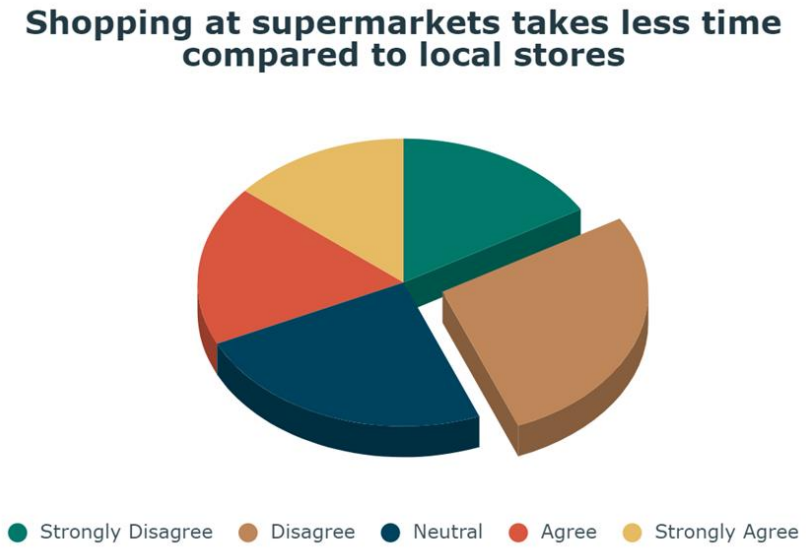
The mean (3.14) and standard deviation (1.206) show that the respondents agree that supermarkets are slightly safer than local stores.

Q27_5. Shopping at supermarkets takes less time compared to local stores.

Table 4.27.5

	Frequency	Percent	Cumulative Percent
Strongly Disagree	33	16.5	16.5
Disagree	55	27.5	44
Neutral	48	24	68
Agree	36	18	86
Strongly Agree	28	14	100
Total	200	100	

Figure 4.27.5



Conclusion:

Out of 200 responses, 16.5% (**33**) strongly disagree, 27.5% (**55**) disagree, 24% (**48**) neutral, 18% (**36**) agree and 14% (**28**) strongly agree.

From Table 4.27,

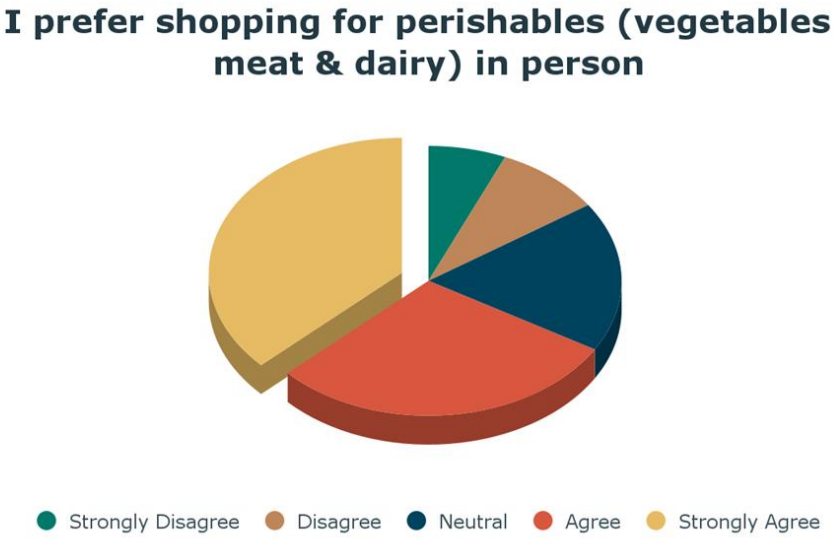
The mean (2.86) and standard deviation (1.289) indicate that the respondents had a neutral attitude towards the belief that shopping at supermarkets takes less time than local stores.

Q27_6. I prefer shopping for perishables (vegetables, meat & dairy) in person.

Table 4.27.6

	Frequency	Percent	Cumulative Percent
Strongly Disagree	13	6.5	6.5
Disagree	18	9	15.5
Neutral	36	18	33.5
Agree	59	29.5	63
Strongly Agree	74	37	100
Total	200	100	

Figure 4.27.6



Conclusion:

Out of 200 responses, 6.5% (**13**) strongly disagree, 9% (**18**) disagree, 18% (**36**) neutral, 29.5% (**59**) agree and 37% (**74**) strongly agree.

From Table 4.27,

The mean (3.82) and standard deviation (1.212) indicate that the respondents strongly agreed to shop for perishables in person.

Q27_7. I prefer supermarkets over local stores because of better discounts.

Table 4.27.7

	Frequency	Percent	Cumulative Percent
Strongly Disagree	16	8	8
Disagree	33	16.5	24.5
Neutral	66	33	57.5
Agree	59	29.5	87
Strongly Agree	26	13	100
Total	200	100	

Figure 4.27.7

Conclusion:

Out of 200 responses, 8% (**16**) strongly disagree, 16.5% (**33**) disagree, 33% (**66**) neutral, 29.5% (**59**) agree and 13% (**26**) strongly agree.

From Table 4.27,

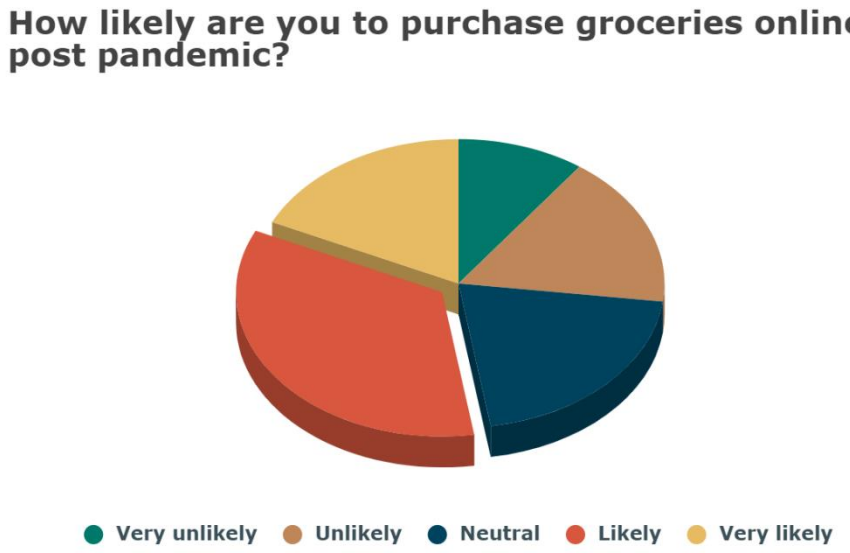
The mean (3.23), as well as the standard deviation (1.12), suggest that respondents agree that they prefer supermarkets to local stores owing to its high discounts.

Q28. How likely are you to purchase groceries online post-pandemic?

Table 4.28

	Frequency	Percent
Very unlikely	20	10
Unlikely	34	17
Neutral	41	20.5
Likely	69	34.5
Very likely	36	18
Total	200	100

Figure 4.28



Conclusion:

- 18% **(36)** of the respondents are very likely to purchase groceries online post-pandemic.
- 34.5% **(69)** of the respondents are likely to purchase groceries online post-pandemic.
- 20.5% **(41)** of the respondents are neither likely nor unlikely to purchase groceries online post-pandemic.
- 17% **(34)** of the respondents are unlikely to purchase groceries online post-pandemic.
- 10% **(20)** of the respondents are very unlikely to purchase groceries online post-pandemic.

CHAPTER – IV.2

CHI-SQUARE TESTS

1. Age * What is your most preferred mode of offline grocery shopping?

Null Hypothesis (H_0): There is no association between the age of consumer and their most preferred mode of offline grocery shopping.

Alternative Hypothesis (H_1): There is an association between the age of consumer and their most preferred mode of offline grocery shopping.

Age * What is your most preferred mode of offline grocery shopping?					
			What is your most preferred mode of offline grocery shopping?		
			Supermarkets	Local Stores & Vendors	Total
Age	Below 20 years	Count	33	19	52
		Expected Count	30.7	21.3	52
	20 - 30 years	Count	48	36	84
		Expected Count	49.6	34.4	84
	30 - 40 years	Count	9	8	17
		Expected Count	10	7	17
	40 - 50 years	Count	16	10	26
		Expected Count	15.3	10.7	26
	Above 50 years	Count	12	9	21
		Expected Count	12.4	8.6	21
Total		Count	118	82	200
		Expected Count	118	82	200

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	.905[a]	4	0.924
Likelihood Ratio	0.907	4	0.924
Linear-by-Linear Association	0.128	1	0.721
N of Valid Cases	200		

CONCLUSION :

From the above table, we observe that the value of $p > 0.05$ i.e.,$(0.924 > 0.05)$.

Therefore, we accept the Null Hypothesis and conclude that there is no association between the age of a consumer and their most preferred mode of offline grocery shopping.

2. How often do you shop for groceries offline? * Gender

Null Hypothesis (H_0): There is no association between how often people shop for groceries offline and their gender.

Alternative Hypothesis (H_1): There is an association difference between how often people shop for groceries offline and their gender.

How often do you shop for groceries offline? * Gender					
			Gender		Total
			Female	Male	
How often do you shop for groceries offline?	Once a week	Count	31	32	63
		Expected Count	36.5	26.5	63
	Once a month	Count	35	19	54
		Expected Count	31.3	22.7	54
	Few times in a month	Count	44	28	72
		Expected Count	41.8	30.2	72
	Other	Count	4	4	8
		Expected Count	4.6	3.4	8
	Never	Count	2	1	3
		Expected Count	1.7	1.3	3
Total		Count	116	84	200
		Expected Count	116	84	200

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	3.618[a]	4	0.46
Likelihood Ratio	3.612	4	0.461
Linear-by-Linear Association	1.15	1	0.284
N of Valid Cases	200		

CONCLUSION :

From the above table, we observe that the value of $p > 0.05$ i.e.,$(0.460 > 0.05)$. Therefore, we accept the Null Hypothesis and conclude that there is no association between people's gender and how often they shop for groceries offline.

3. Age * What is your most preferred app for online grocery shopping?

Null Hypothesis (H_0): There is no association between people's age and their most preferred app for online grocery shopping.

Alternative Hypothesis (H_1): There is an association between people's age and their most preferred app for online grocery shopping.

Age * What is your most preferred app for online grocery shopping?										
			What is your most preferred app for online grocery shopping?							
			Big Basket	Grofers	Amazon	Swiggy Instamart	Jio Mart	Others	None	Total
Age	Below 20 years	Count	10	0	9	2	8	5	18	52
		Expected Count	12.7	2.9	9.1	4.2	4.9	4.7	13.5	52
	20 - 30 years	Count	25	4	17	6	4	12	16	84
		Expected Count	20.6	4.6	14.7	6.7	8	7.6	21.8	84
	30 - 40 years	Count	3	4	2	4	0	0	4	17
		Expected Count	4.2	0.9	3	1.4	1.6	1.5	4.4	17
	40 - 50 years	Count	8	3	5	2	1	1	6	26
		Expected Count	6.4	1.4	4.6	2.1	2.5	2.3	6.8	26
	Above 50 years	Count	3	0	2	2	6	0	8	21
		Expected Count	5.1	1.2	3.7	1.7	2	1.9	5.5	21
Total		Count	49	11	35	16	19	18	52	200
		Expected Count	49	11	35	16	19	18	52	200

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	52.501[a]	24	0.001
Likelihood Ratio	52.663	24	0.001
Linear-by-Linear Association	0.106	1	0.744
N of Valid Cases	200		

CONCLUSION :

From the above table, we observe that the value of $p < 0.05$ i.e.,$(0.001 < 0.05)$. Thus, we reject the Null Hypothesis. As a result, we accept Alternate Hypothesis and conclude that there is an association difference between people's age and their most preferred app for online grocery shopping.

$$C = \sqrt{\frac{\chi^2}{\chi^2 + N}} = 45.6\%$$

Hence, there is 45.6% weak association.

4. Family annual income * How often do you shop for groceries online?

Null Hypothesis (H_0): There is no association between a consumer's family income and how often they shop for groceries online.

Alternative Hypothesis (H_1): There is an association difference between a consumer's family income and how often they shop for groceries online.

Family annual income * How often do you shop for groceries online?								
			How often do you shop for groceries online?					
			Once a week	Once a month	Few times in a month	Other	Never	Total
Family annual income	Upto 3,00,000	Count	1	18	18	7	24	68
		Expected Count	4.4	13.6	20.7	8.8	20.4	68
	3,00,000 to 5,00,000	Count	4	5	17	6	14	46
		Expected Count	3	9.2	14	6	13.8	46
	5,00,000 to 10,00,000	Count	4	10	12	7	16	49
		Expected Count	3.2	9.8	14.9	6.4	14.7	49
	10,00,000 and above	Count	4	7	14	6	6	37
		Expected Count	2.4	7.4	11.3	4.8	11.1	37
Total		Count	13	40	61	26	60	200
		Expected Count	13	40	61	26	60	200

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	13.681[a]	12	0.322
Likelihood Ratio	15.344	12	0.223
Linear-by-Linear Association	2.199	1	0.138
N of Valid Cases	200		

CONCLUSION :

From the above table, we observe that the value of $p > 0.05$ i.e.,($0.322 > 0.05$). Therefore, we accept the Null Hypothesis and conclude that there is no association between the consumer's family income and how often they shop for groceries online.

5. Highest level of education * _UNCOMFORTABLE WITH TECHNOLOGY.

Null Hypothesis (H_0): There is no association between a consumer's highest level of education and their discomfort with technology.
Alternative Hypothesis (H_1): There is an association difference between a consumer's highest level of education and their discomfort with technology.

Highest level of education * _UNCOMFORTABLE WITH TECHNOLOGY					
			_UNCOMFORTABLE WITH TECHNOLOGY		Total
			Selected	Not Selected	
Highest level of education	High school	Count	24	18	42
		Expected Count	20.4	21.6	42
	Bachelor's Degree	Count	49	61	110
		Expected Count	53.4	56.7	110
	Master's Degree	Count	21	22	43
		Expected Count	20.9	22.1	43
	PHD/ MPhil	Count	3	2	5
		Expected Count	2.4	2.6	5
Total		Count	97	103	200
		Expected Count	97	103	200

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	2.211[a]	3	0.53
Likelihood Ratio	2.216	3	0.529
Linear-by-Linear Association	0.208	1	0.648
N of Valid Cases	200		

CONCLUSION :
From the above table, we observe that the value of $p > 0.05$ i.e.,$(0.530 > 0.05)$. Therefore, we accept the Null Hypothesis and conclude that there is no association between a consumer's highest level of education and discomfort with technology.

6. When did you start online grocery shopping? * Have you ever encountered challenges while shopping online (like transaction failures and unavailability of products post ordering)?

Null Hypothesis (H_0): There is no association between when a consumer began online grocery shopping and them encountering issues while shopping online.

Alternative Hypothesis (H_1): There is an association between when a consumer began online grocery shopping and them encountering issues while shopping online.

When did you start online grocery shopping ? * Have you ever encountered challenges while shopping online (like transaction failures and unavailability of products post ordering) ?					
			Have you ever encountered challenges while shopping online (like transaction failures and unavailability of products post ordering)?		
			Yes	No	Total
When did you start online grocery shopping?	Before 2016	Count	9	1	10
		Expected Count	6.2	3.8	10
	2016-17	Count	13	2	15
		Expected Count	9.3	5.7	15
	2017-18	Count	16	4	20
		Expected Count	12.4	7.6	20
	2018-19	Count	20	9	29
		Expected Count	18	11	29
	During the pandemic	Count	51	23	74
		Expected Count	45.9	28.1	74
	Not Applicable	Count	15	37	52
		Expected Count	32.2	19.8	52
Total		Count	124	76	200
		Expected Count	124	76	200

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	36.313[a]	5	0
Likelihood Ratio	37.201	5	0
Linear-by-Linear Association	24.855	1	0
N of Valid Cases	200		

CONCLUSION :

From the above table, we observe that the value of $p < 0.05$ i.e.,($0.000 < 0.05$). Thus, we reject the Null Hypothesis and conclude that there is an association between when a consumer began online grocery shopping and them encountering issues while shopping online.

$$C = \sqrt{\frac{\chi^2}{\chi^2 + N}} = 39.2\%$$

Hence, there is 39.2% weak association.

7. What is your most preferred mode of offline grocery shopping? * Shopping at supermarkets takes less time compared to local stores.

Null Hypothesis (H_0): There is no association between a consumer's most preferred mode of offline grocery shopping and the claim that shopping at supermarkets takes less time compared to local stores.

Alternative Hypothesis (H_1): There is an association between a consumer's most preferred mode of offline grocery shopping and the claim that shopping at supermarkets takes less time compared to local stores.

What is your most preferred mode of offline grocery shopping? * Shopping at supermarkets takes less time compared to local stores.

			Shopping at supermarkets takes less time compared to local stores.					
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
What is your most preferred mode of offline grocery shopping?	Supermarkets	Count	18	34	28	20	18	118
		Expected Count	19.5	32.5	28.3	21.2	16.5	118
	Local Stores & Vendors	Count	15	21	20	16	10	82
		Expected Count	13.5	22.6	19.7	14.8	11.5	82
Total		Count	33	55	48	36	28	200
		Expected Count	33	55	48	36	28	200

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	.960[a]	4	0.916
Likelihood Ratio	0.962	4	0.915
Linear-by-Linear Association	0.12	1	0.729
N of Valid Cases	200		

CONCLUSION :

From the above table, we observe that the value of $p > 0.05$ i.e.,($0.916 > 0.05$).
Therefore, we accept the Null Hypothesis and conclude that there is no association between a consumer's most preferred mode of offline grocery shopping and the claim that shopping at supermarkets takes less time compared to local stores.

8. Family annual income * With prompt delivery, would you still prefer Online Grocery Shopping with a 10-20% increase in the total price?

Null Hypothesis (H_0): There is no association between the family income of people and their preference if they'd still choose online grocery shopping with a 10-20% increase in the total price.

Alternative Hypothesis (H_1): There is an association between the family income of people and their preference if they would still choose online grocery shopping with a 10-20% increase in the total price.

Family annual income * With prompt delivery, would you still prefer Online Grocery Shopping with a 10-20% increase in the total price?							
			With prompt delivery, would you still prefer Online Grocery Shopping with a 10-20% increase in the total price?				
			Yes	Maybe	Can't say	No	Total
Family annual income	Upto 3,00,000	Count	8	19	15	26	68
		Expected Count	5.1	16	13.9	33	68
	3,00,000 to 5,00,000	Count	1	8	12	25	46
		Expected Count	3.5	10.8	9.4	22.3	46
	5,00,000 to 10,00,000	Count	3	10	11	25	49
		Expected Count	3.7	11.5	10	23.8	49
	10,00,000 and above	Count	3	10	3	21	37
		Expected Count	2.8	8.7	7.6	17.9	37
Total		Count	15	47	41	97	200
		Expected Count	15	47	41	97	200

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	14.357[a]	12	0.278
Likelihood Ratio	15.868	12	0.197
Linear-by-Linear Association	0.482	1	0.488
N of Valid Cases	200		

CONCLUSION :

From the above table, we observe that the value of $p > 0.05$ i.e.,($0.278 > 0.05$). Therefore, we accept the Null Hypothesis and conclude that there is no association between the family income of people and their preference if they would still choose online grocery shopping with a 10-20% increase in the total price.

9. Occupation * Select an appropriate option that fits best for your grocery buying preference before the pandemic.

Null Hypothesis (H_0): There is no association between a consumer's occupation and the amount of grocery they bought online before the onset of the COVID-19 pandemic.

Alternative Hypothesis (H_1): There is an association difference between a consumer's occupation and the amount of grocery they bought online before the onset of the COVID-19 pandemic.

Occupation * Select an appropriate option that fits best for your grocery buying preference before the pandemic.							
			Select an appropriate option that fits best for your grocery buying preference before the pandemic.				
			I do all, or almost all, of my grocery shopping online.	I do most of my grocery shopping online (more than half)	I do a small amount of my grocery shopping online (less than one-quarter)	I do almost none of my grocery shopping online (shopping online once or twice in the past year)	Total
Occupation	Student	Count	13	12	48	34	107
		Expected Count	11.2	11.8	43.9	40.1	107
	Employee	Count	6	3	18	18	45
		Expected Count	4.7	5	18.5	16.9	45
	Self employed	Count	1	3	9	9	22
		Expected Count	2.3	2.4	9	8.3	22
	House wife	Count	1	4	5	7	17
		Expected Count	1.8	1.9	7	6.4	17
	Retired	Count	0	0	2	7	9
		Expected Count	0.9	1	3.7	3.4	9
Total		Count	21	22	82	75	200
		Expected Count	21	22	82	75	200

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	13.746[a]	12	0.317
Likelihood Ratio	14.744	12	0.256
Linear-by-Linear Association	4.188	1	0.041
N of Valid Cases	200		

CONCLUSION :

From the above table, we observe that the value of $p > 0.05$ i.e., ($0.317 > 0.05$). Therefore, we accept the Null Hypothesis and conclude that there is no association a consumer's occupation and the amount of grocery they bought online before the onset of the COVID-19 pandemic

10. Occupation * Select an appropriate option that fits best for your grocery buying preference during the pandemic.

Null Hypothesis (H_0): There is no association between a consumer's occupation and the amount of grocery they purchase online during the pandemic.

Alternative Hypothesis (H_1): There is an association between a consumer's occupation and the amount of grocery they purchase online during the pandemic.

Occupation * Select an appropriate option that fits best for your grocery buying preference during the pandemic.

			Select an appropriate option that fits best for your grocery buying preference during the pandemic.				
			I do all, or almost all, of my grocery shopping online.	I do most of my grocery shopping online (more than half)	I do a small amount of my grocery shopping online (less than one-quarter)	I do almost none of my grocery shopping online (shopping online once or twice in the past year)	Total
Occupation	Student	Count	25	31	28	23	107
		Expected Count	26.2	27.3	28.9	24.6	107
	Employee	Count	9	12	15	9	45
		Expected Count	11	11.5	12.2	10.4	45
	Self employed	Count	7	4	5	6	22
		Expected Count	5.4	5.6	5.9	5.1	22
	House wife	Count	8	3	2	4	17
		Expected Count	4.2	4.3	4.6	3.9	17
	Retired	Count	0	1	4	4	9
		Expected Count	2.2	2.3	2.4	2.1	9
Total		Count	49	51	54	46	200
		Expected Count	49	51	54	46	200

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	14.357[a]	12	0.278
Likelihood Ratio	15.868	12	0.197
Linear-by-Linear Association	0.482	1	0.488
N of Valid Cases	200		

CONCLUSION :

From the above table, we observe that the value of $p > 0.05$ i.e., ($0.278 > 0.05$). Therefore, we accept the Null Hypothesis and conclude that there is no association between a consumer's occupation and the amount of grocery they purchase online during the pandemic.

11. Family annual income * How likely are you to purchase groceries online post-pandemic?

Null Hypothesis (H_0): There is no association between the annual family income of people and the likelihood of purchasing groceries online post-pandemic.

Alternative Hypothesis (H_1): There is an association between the annual family income of people and the likelihood of purchasing groceries online post-pandemic.

Family annual income * How likely are you to purchase groceries online post pandemic?								
			How likely are you to purchase groceries online post pandemic?					
			Very unlikely	Unlikely	Neutral	Likely	Very likely	Total
Family annual income	Upto 3,00,000	Count	7	14	13	19	15	68
		Expected Count	6.8	11.6	13.9	23.5	12.2	68
	3,00,000 to 5,00,000	Count	6	6	11	19	4	46
		Expected Count	4.6	7.8	9.4	15.9	8.3	46
	5,00,000 to 10,00,000	Count	6	7	11	18	7	49
		Expected Count	4.9	8.3	10	16.9	8.8	49
	10,00,000 and above	Count	1	7	6	13	10	37
		Expected Count	3.7	6.3	7.6	12.8	6.7	37
Total		Count	20	34	41	69	36	200
		Expected Count	20	34	41	69	36	200

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	11.053[a]	12	0.524
Likelihood Ratio	12.146	12	0.434
Linear-by-Linear Association	1.217	1	0.27
N of Valid Cases	200		

CONCLUSION :

From the above table, we observe that the value of $p > 0.05$ i.e., $(0.524 > 0.05)$. Therefore, we accept the Null Hypothesis and conclude that there is no association between the annual family income of people and the likelihood of purchasing groceries online post-pandemic.

12. How likely are you to purchase groceries online post pandemic? * Online shopping comparatively offers superior quality and fresh products.

Null Hypothesis (H_0): There is no association between the likelihood of purchasing groceries online post-pandemic and the assertion that online shopping comparatively offers superior quality and fresh products.

Alternative Hypothesis (H_1): There is an association difference between the likelihood of purchasing groceries online post-pandemic and the assertion that online shopping comparatively offers superior quality and fresh products.

How likely are you to purchase groceries online post pandemic? * Online shopping comparatively offers superior quality and fresh products.

			Online shopping comparatively offers superior quality and fresh products.					
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
How likely are you to purchase groceries online post pandemic?	Very unlikely	Count	9	2	5	3	1	20
		Expected Count	3.4	4	7.9	3.5	1.2	20
	Unlikely	Count	6	12	13	2	1	34
		Expected Count	5.8	6.8	13.4	6	2	34
	Neutral	Count	8	9	12	9	3	41
		Expected Count	7	8.2	16.2	7.2	2.5	41
	Likely	Count	4	8	38	15	4	69
		Expected Count	11.7	13.8	27.3	12.1	4.1	69
	Very likely	Count	7	9	11	6	3	36
		Expected Count	6.1	7.2	14.2	6.3	2.2	36
Total		Count	34	40	79	35	12	200
		Expected Count	34	40	79	35	12	200

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	34.571[a]	16	0.005
Likelihood Ratio	34.083	16	0.005
Linear-by-Linear Association	6.993	1	0.008
N of Valid Cases	200		

CONCLUSION:

From the above table, we observe that the value of $p < 0.05$ i.e., $(0.005 < 0.05)$. Thus, we reject the Null Hypothesis. As a result, we accept Alternate Hypothesis and conclude that there is an association between the likelihood of purchasing groceries online post-pandemic and the assertion that online shopping comparatively offers superior quality and fresh products.

$$C = \sqrt{\frac{\chi^2}{\chi^2 + N}} = 38.4\%$$

Hence, there is 38.4% weak association.

13. Age * _QUALITY ISSUES

Null Hypothesis (H_0): There is no association between the age of people and the quality issues of online products.

Alternative Hypothesis (H_1): There is an association difference between the age of people and the quality issues of online products.

Age * _QUALITY ISSUES					
			_QUALITY ISSUES		
			Selected	Not Selected	Total
Age	Below 20 years	Count	0	52	52
		Expected Count	3.1	48.9	52
	20 - 30 years	Count	4	80	84
		Expected Count	5	79	84
	30 - 40 years	Count	4	13	17
		Expected Count	1	16	17
	40 - 50 years	Count	1	25	26
		Expected Count	1.6	24.4	26
	Above 50 years	Count	3	18	21
		Expected Count	1.3	19.7	21

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	15.580[a]	4	0.004
Likelihood Ratio	14.372	4	0.006
Linear-by-Linear Association	5.562	1	0.018
N of Valid Cases	200		

CONCLUSION:

From the above table, we observe that the value of $p < 0.05$ i.e.,$(0.004 < 0.05)$. Thus, we reject the Null Hypothesis. As a result, we accept Alternate Hypothesis and conclude that there is an association between the age of people and the quality issues of online products.

$$C = \sqrt{\frac{\chi^2}{\chi^2 + N}} = 26.9\%$$

Hence, there is 26.9% weak association.

14. How likely are you to purchase groceries online post-pandemic? * I shop groceries online because it is more convenient than safe.

Null Hypothesis (H_0): There is no association between the likelihood of purchasing groceries online post-pandemic and the assertion that online shopping is comparatively more convenient than safe.

Alternative Hypothesis (H_1): There is an association difference between the likelihood of purchasing groceries online post-pandemic and the assertion that online shopping is comparatively more convenient than safe.

How likely are you to purchase groceries online post pandemic? * I shop groceries online because it is more convenient than safe.

			I shop groceries online because it is more convenient than safe.					
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
How likely are you to purchase groceries online post pandemic?	Very unlikely	Count	7	7	2	4	0	20
		Expected Count	2.1	5.1	5.3	6.3	1.2	20
	Unlikely	Count	3	12	12	5	2	34
		Expected Count	3.6	8.7	9	10.7	2	34
	Neutral	Count	2	14	15	10	0	41
		Expected Count	4.3	10.5	10.9	12.9	2.5	41
	Likely	Count	3	11	18	31	6	69
		Expected Count	7.2	17.6	18.3	21.7	4.1	69
	Very likely	Count	6	7	6	13	4	36
		Expected Count	3.8	9.2	9.5	11.3	2.2	36
Total		Count	21	51	53	63	12	200
		Expected Count	21	51	53	63	12	200

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	43.465[a]	16	0
Likelihood Ratio	44.305	16	0
Linear-by-Linear Association	14.956	1	0
N of Valid Cases	200		

CONCLUSION:

From the above table, we observe that the value of $p < 0.05$ i.e., $(0 < 0.05)$. Thus, we reject the Null Hypothesis. As a result, we accept Alternate Hypothesis and conclude that there is an association between the likelihood of purchasing groceries online post-pandemic and the assertion that online shopping is comparatively more convenient than safe.

$$C = \sqrt{\frac{\chi^2}{\chi^2 + N}} = 42.2\%$$

Hence, there is 42.2% weak association.

15. How likely are you to purchase groceries online post-pandemic? * I prefer online grocery stores as they are well-advertised and give heavy discounts.

Null Hypothesis (H_0): There is no association between the likelihood of purchasing groceries online post-pandemic and the assertion that online grocery stores are well-advertised and give heavy discounts.

Alternative Hypothesis (H_1): There is an association difference between the likelihood of purchasing groceries online post-pandemic and the assertion that grocery stores are well-advertised and give heavy discounts.

How likely are you to purchase groceries online post pandemic? * I prefer online grocery stores as they are well-advertised and give heavy discounts.								
			I prefer online grocery stores as they are well-advertised and give heavy discounts.					
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
How likely are you to purchase groceries online post pandemic?	Very unlikely	Count	8	6	5	1	0	20
		Expected Count	2.3	3.8	6	6	1.9	20
	Unlikely	Count	4	11	12	5	2	34
		Expected Count	3.9	6.5	10.2	10.2	3.2	34
	Neutral	Count	5	9	9	14	4	41
		Expected Count	4.7	7.8	12.3	12.3	3.9	41
	Likely	Count	3	10	19	29	8	69
		Expected Count	7.9	13.1	20.7	20.7	6.6	69
	Very likely	Count	3	2	15	11	5	36
		Expected Count	4.1	6.8	10.8	10.8	3.4	36
Total		Count	23	38	60	60	19	200
		Expected Count	23	38	60	60	19	200

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	43.290[a]	16	0
Likelihood Ratio	43.605	16	0
Linear-by-Linear Association	25.807	1	0
N of Valid Cases	200		

CONCLUSION:

From the above table, we observe that the value of $p < 0.05$ i.e., $(0 < 0.05)$. Thus, we reject the Null Hypothesis. As a result, we accept Alternate Hypothesis and conclude that there is an association between the likelihood of purchasing groceries online post-pandemic and the assertion that online stores are well-advertised and give heavy discounts.

$$C = \sqrt{\frac{\chi^2}{\chi^2 + N}} = 42.2\%$$

Hence, there is 42.2% weak association.

CHAPTER V
STATISTICAL INFERENCE

- 58% **(116)** of the respondents are females; 42% **(84)** of the respondents are males.
- 26% **(52)** respondents are below 20 years of age; 42% **(84)** respondents are of the age group 20 – 30; 8.5% **(17)** respondents are of the age group 30 – 40; 13% **(26)** respondents are of the age group 40 – 50; 10.5% **(21)** respondents are above the age of 50 years.
- 53.5% **(107)** respondents are students; 22.5% **(45)** respondents are employees; 11% **(22)** respondents are self-employed; 8.5% **(17)** respondents are housewives; 4.5% **(9)** respondents are retired.
- 21% **(42)** respondents hold a High school; 55% **(110)** respondents hold a Bachelor's degree; 21.5% **(43)** respondents hold a Master's degree; 2.5% **(5)** respondents hold a PHD/ M.Phil.
- 34% **(68)** respondents have an annual family income upto Rs. 3,00,000; 23% **(46)** respondents have an annual family income in the range of Rs. 3,00,000 to Rs. 5,00,000; 24.5% **(49)** respondents have an annual family income in the range of Rs. 5,00,000 to Rs. 10,00,000; 18.5% **(37)** respondents have an annual family income above Rs. 10,00,000.
- 59% **(118)** of the respondents prefer supermarkets; 41% **(82)** of the respondents prefer local Stores & vendors.
- 44% **(88)** of the respondents prefer D Mart; 17.5% **(35)** of the respondents prefer Ratnadeep; 11% **(22)** of the respondents prefer Other supermarkets; 8% **(16)** of the respondents prefer More Megastore; 7% **(14)** of the respondents prefer Big Bazaar; 6.5% **(13)** of the respondents prefer Jio Mart; 6% **(12)** of the respondents prefer Heritage Fresh.
- 73.5% **(147)** of the respondents prefer Local Stores for buying vegetables; 22.5% **(45)** of the respondents prefer Supermarkets for buying vegetables; 4% **(8)** of the respondents prefer Online Shopping Apps for buying vegetables.
- 71% **(142)** of the respondents prefer Local Stores to buy dairy products; 18.5% **(37)** of the respondents prefer Supermarkets to buy dairy products; 5.5% **(11)** of the respondents prefer Online Shopping Apps to buy dairy products; 5% **(10)** of the respondents prefer None to buy dairy products.
- 36% **(72)** of the respondents shop for groceries offline few times in a month; 31.5% **(63)** of the respondents shop for groceries offline Once a week; 27% **(54)** of the respondents shop for groceries offline Once a month; 4% **(8)** of the respondents shop for groceries offline Other time; 1.5% **(3)** of the respondents Never shop for groceries offline.

- 74% **(148)** of the respondents have shopped for groceries online at least once; 26% **(52)** of the respondents have not shopped for groceries online at least once.

- 51.5% **(103)** of the respondents prefer shopping online as it is convenient; 40.5% **(81)** of the respondents prefer shopping online for good discounts; 13.5% **(27)** of the respondents prefer shopping online as it is safe; 29% **(58)** of the respondents prefer shopping online for hassle-free payments; 41.5% **(83)** of the respondents prefer shopping online for quick & efficient delivery; 35.5% **(71)** of the respondents prefer shopping online for a wide variety of products; 1% **(2)** of the respondents prefer shopping online for other reasons; 22.5% **(45)** of the respondents selected not applicable for shopping online.

- 53% **(106)** of the respondents assume that lack of awareness prevents people from shopping online; 50.5% **(101)** of the respondents assume that risk of online fraud prevents people from shopping online; 24% **(48)** of the respondents assume that risk of identity theft prevents people from shopping online; 48.5% **(97)** of the respondents assume that discomfort with technology prevents people from shopping online; 6% **(12)** of the respondents assume that quality issues prevent people from shopping online; 5.5% **(11)** of the respondents assume other reasons that prevent people from shopping online.

- 37% **(74)** of the respondents began online grocery shopping During the Pandemic; 26% **(52)** of the respondents do not shop for groceries online; 14.5% **(29)** of the respondents began online grocery shopping During 2018-19; 10% **(20)** of the respondents began online grocery shopping During 2017-18; 7.5% **(15)** of the respondents began online grocery shopping During 2016-17; 5% **(10)** of the respondents began online grocery shopping Before 2016.

- 31.5% **(63)** of the respondents shop for groceries online Few times in a month; 26% **(52)** of the respondents ever shop for groceries online; 21% **(42)** of the respondents shop for groceries online Once a month; 14% **(28)** of the respondents shop for groceries online Other time; 7.5% **(15)** of the respondents shop for groceries online Once a week.

- 24.5% **(49)** respondents prefer Big Basket; 5.5% **(11)** respondents prefer Grofers; 17.5% **(35)** respondents prefer Amazon; 8% **(16)** respondents prefer Swiggy Instamart; 9.5% **(19)** respondents prefer Jio Mart.

- 21% **(42)** of the respondents purchase perishables online a few times; 8.5% **(17)** of the respondents purchase perishables online frequently; 24.5% **(49)** of the respondents purchase perishables online rarely; 46% **(92)** of the respondents never purchase perishables online.

- 7.5% **(15)** of the respondents prefer Online Grocery Shopping even with a 10-20% increase in the total price with prompt delivery; 23.5% **(47)** of the respondents may prefer Online Grocery Shopping with a 10-20% increase in the total price with prompt delivery; 20.5% **(41)** of the respondents can't say if they'd prefer Online Grocery Shopping with a 10-20% increase in the total price with prompt delivery; 48.5% **(97)**

of the respondents don't prefer Online Grocery Shopping with a 10-20% increase in the total price with prompt delivery.

- 22.5% (**45**) of the respondents prefer Online Grocery Shopping with good discounts even if there is a delay in delivery; 33% (**66**) of the respondents may prefer Online Grocery Shopping with good discounts if there is a delay in delivery; 10% (**20**) of the respondents can't say if they'd prefer Online Grocery Shopping with good discounts if there is a delay in delivery; 34.5% (**69**) of the respondents don't prefer Online Grocery Shopping with good discounts if there is a delay in delivery.

- 62% (**124**) of the respondents encountered challenges while shopping online; 38% (**76**) of the respondents didn't encounter any challenges while shopping online.

- 44% **(88)** of the respondents had problems with unavailability of products while shopping online; 18% **(36)** of the respondents had problems due to lack of customer support while shopping online; 29% **(58)** of the respondents had problems with transaction issues while shopping online; 22% **(44)** of the respondents had problems with refund issues while shopping online; 23% **(46)** of the respondents had problems with return issues while shopping online; 35% **(70)** of the respondents had no issues while shopping online; 2% **(4)** of the respondents had other issues while shopping online.

- The total highest score indicates the first preference ranking. The results show the following rank ordering: (1) Credit/Debit Cards (2) UPI (3) Cash on Delivery (5) Net Banking (5) Digital Wallets

- The total highest score indicates the first preference ranking. The results show the following rank ordering: (1) Supermarkets (2) Local stores & Street vendors (3) Online Grocery Shopping

- The total highest score indicates the first preference ranking. The results show the following rank ordering: (1) Online Grocery Shopping (2) Supermarkets (3)Local stores & Street vendors

- 10.5% (**21**) of the respondents did almost all of their grocery shopping online before the pandemic; 11% (**22**) of the respondents did most of their grocery shopping online before the pandemic; 41% (**82**) of the respondents did a small amount of their grocery shopping online before the pandemic; 37.5% (**75**) of the respondents did almost none of their grocery shopping online before the pandemic.

- 24.5% (**49**) of the respondents do almost all of their grocery shopping online during the pandemic; 25.5% (**51**) of the respondents do most of their grocery shopping online during the pandemic; 27% (**54**) of the respondents do a small amount of their grocery shopping online during the pandemic; 23% (**46**) of the respondents do almost none of their grocery shopping online during the pandemic.

- Out of 200 responses, 17% (**34**) strongly disagree, 20% (**40**) disagree, 39.5% (**79**) neutral, 17.5% (**35**) agree, and 6% (**12**) strongly agree that online shopping comparatively offers superior quality and fresh products.

- Out of 200 responses, 10.5% (**21**) strongly disagree, 25.5% (**51**) disagree, 26.5% (**53**) neutral, 31.5% (**63**) agree, and 6% (**12**) strongly agree that shopping groceries is online is more convenient than safe.

- Out of 200 responses, 11.5% (**23**) strongly disagree, 19% (**38**) disagree, 30% (**60**) neutral, 30% (**60**) agree and 9.5% (**19**) strongly agree that online grocery stores are well advertised and give heavy discounts.

- Out of 200 responses, 8% (**16**) strongly disagree, 26.5% (**53**) disagree, 25.5%(**51**) neutral, 24% (**48**) agree, and 16% (**32**) strongly agree that supermarkets are safer than local stores.

- Out of 200 responses, 16.5% (**33**) strongly disagree, 27.5% (**55**) disagree, 24% (**48**) neutral, 18% (**36**) agree, and 14% (**28**) strongly agree that shopping at supermarkets takes less time compared to local stores and vendors.

- Out of 200 responses, 6.5% (**13**) strongly disagree, 9% (**18**) disagree, 18% (**36**) neutral, 29.5% (**59**) agree, and 37% (**74**) strongly agree that shopping for perishables in person is preferable.

- Out of 200 responses, 8% (**16**) strongly disagree, 16.5% (**33**) disagree, 33% (**66**) neutral, 29.5% (**59**) agree, and 13% (**26**) strongly agree that supermarkets are more preferred than local stores and vendors because of better discounts.

- 18% **(36)** of the respondents are very likely to purchase groceries online post-pandemic.

- 34.5% **(69)** of the respondents are likely to purchase groceries online post-pandemic.

CHI-SQUARE RESULTS

- There is no association between the age of a customer and their most preferred mode of offline grocery shopping.

- There is no association between people's gender and how often they shop for groceries offline.

- There is 45.6% association between people's age and their most preferred app for online grocery shopping.

- There is no association between the consumer's family income and how often they shop for groceries online.

- There is no association between a consumer’s highest level of education and discomfort with technology.

- There is 39.2% association between when a consumer began online grocery shopping and them encountering issues while shopping online.

- There is no association between a consumer’s most preferred mode of offline grocery shopping and the claim that shopping at supermarkets takes less time compared to local stores.

- There is no association between the family income of people and their preference if they would still choose online grocery shopping with a 10-20% increase in the total price.

- There is no association between a consumer’s occupation and the amount of groceries they bought online before the onset of the COVID-19 pandemic.

- There is no association between a consumer's occupation and the amount of grocery they purchase online during the pandemic.

- There is no association between the annual family income of people and the likelihood of purchasing groceries online post-pandemic.

- There is 38.4% association between the likelihood of purchasing groceries online post-pandemic and the assertion that online shopping comparatively offers superior quality and fresh products.

- There is 26.9% association between the age of people and the quality issues of online products.

- There is 42.2% association between the likelihood of purchasing groceries online post-pandemic and the assertion that online shopping is comparatively more convenient than safe.

- There is 42.2% association between the likelihood of purchasing groceries online post-pandemic and the assertion that online stores are well-advertised and give heavy discounts.

CHAPTER VI
PROJECT REPORT

- From the responses obtained, it can be concluded that a majority of 44% of the respondents prefer D Mart among other supermarkets.

- Based on the responses, it can be concluded that people prefer shopping for groceries online due to three key factors: convenience, good discounts, and quick & efficient delivery.

- From the responses obtained, it can be concluded that lack of awareness, risk of online fraud, and discomfort with technology are the major reasons that prevent people from shopping online.

- Major chunk of the respondents (24.5%) prefer BigBasket for their online grocery shopping. Followed by 17.5% respondents prefer Amazon whereas very few respondents prefer Grofers and Swiggy Instamart for their online grocery shopping currently.

- A majority of the respondents(46%) never purchase perishables online.

- Unavailability of the products and transaction issues are the primary problems faced by most of the respondents when they shop online.

- Most of the respondents use Credit/Debit cards and UPI transfers for their bill payments while shopping online.

- A majority of the respondents preferred supermarkets before the pandemic but now prefer online grocery shopping.

- Only a small amount of the respondents(10.5%) did almost all of their grocery shopping online before the pandemic whereas now half of the respondents(50%) do almost all or most of their grocery shopping online.

- From the responses obtained, it can be concluded that more than half of the respondents(52.5%) prefer shopping for groceries online post-pandemic with 20.5% respondents having a neutral stance.

- There is no association between the family's annual income and how often they shop for groceries online, or whether they would still shop for groceries online with a 10-20% increase in the overall price.

- There is a weak association between the likelihood of the respondents purchasing groceries online post-pandemic and the assertion that online shopping comparatively offers superior quality and fresh products, is comparatively more convenient than safe and is well advertised, and give heavy discounts.

CHAPTER VII
CONCLUSION

This research was undertaken to study the grocery buying behaviour and their attitude towards online grocery shopping in Hyderabad. A sample of 200 respondents was collected and they were asked for their demographic traits, awareness of online grocery shopping and usage behaviour of online grocery shopping.

Following are the main findings drawn from the study:

- Majority of the respondents prefer the organised sector for grocery shopping with DMart being the most preferred supermarket.
- More than 3/4th of the sample prefers shopping for perishables in person.
- Convenience, Quick delivery, and good discounts are the primary driving factors that makes people shop for groceries online.
- BigBasket is the most preferred app to shop for groceries online. Followed by Amazon and Grofers
- A major chunk of the respondents began online grocery shopping during the onset of the COVID-19 pandemic.
- The respondents in a majority stated that convenience is a bigger influence than safety for online grocery shopping.
- After the onset of COVID-19, grocery apps have been the most preferred mode of grocery shopping.
- Credit/Debit cards are the most preferred payment mode and Net banking is the least preferred.
- On the whole, respondents had a positive outlook on online grocery shopping and a majority claimed to continue shopping online post pandemic.

With E-commerce in India being one of the most dynamically growing industry owing to internet penetration, and consumer's lifestyle changes, online grocery shopping has emerged to be one of the strongest subsets of the retail sector. The study shows that consumers are satisfied with their online grocery shopping experience. However, there are still many consumers who experience apprehension about electronic payments and sharing their personal information. Other factors that can be improved include product quality, transaction process, and customer support.

The study was undertaken to highlight consumer behaviour towards online grocery shopping in Hyderabad. However, generalising from the responses of a sample size of 200 and drawing strong inferences for the entire country is not advisable as India is a culturally rich and socio-politically diverse country. Given the absence of literature on this subject, this study aims to provide an overall background and snapshot of the online grocery market and its effect on consumers, and provides a platform for further research in this area.

RECOMMENDATIONS

Since the study implies that a majority of the respondents are willing to continue online grocery shopping in the future, following are the ways to improve online grocery buying experience for consumers:

a. Guided discovery and product recommendations:

Customers do not prefer wanting to spend hours searching for the perfect products. Many times, they only have a vague idea of what it is that they actually want. Hence, it is important to create a user-oriented experience and personalisation through recommendations is a great way to encourage customers to fill their shopping carts. The customers are very likely to use these initial navigation and recommendations while shopping online.

b. Responsive and simple web design:

Online grocers must invest in a responsive, dynamic and simple web design. The website and app must have a uniform and great look and must appear the same on every device. A responsive design can overall improve the fluidity of the application and eliminate buffering and slow loads.

c. Eliminate check out distractions:

Checkout should be clean and simple. These apps can design guided steps which could increase quick check outs.

d. Do not force Sign-up:

Sign-ups can distract customers from checking out with their products. Forced sign ups also discourage people from the older age demographic to shop for groceries online. The application should link a customer's profile with their phone number while installing the app, they should also include a 'Continue as Guest' option so that consumers do not spend time filling out all their personal information.

e. Live chat and customer support:

All grocery shopping apps must improve on this front as a majority of 62% of the respondents of the undertaken study have encountered challenges and problems while shopping for groceries online. These issues can highly discourage consumers from ordering online. Hence, customer service and support are crucial for customer retention and good customer support in the form of live chats with executives and calls can improve customer experience.

f. Strong marketing:

53% of the respondents of our study reasoned that lack of awareness of these online grocery apps is one of the major reasons that prevent consumers from shopping for groceries online. Heavy marketing on television, newspapers and word of mouth can boost app users. Apps must aim to spread awareness about online grocery shopping and explain to potential customers how it is absolutely safe and fairly easy to use since 51% of our respondents claim that convenience is their most sought for feature while shopping online.

More and better discounts can also increase app users since a majority of our respondents claim good discounts are one of the main reasons people shop for groceries online.

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ANNEXURE - Questionnaire

1. Gender

1. Female 2. Male

2. Age

1. Below 20 years 2. 20-30 years 3. 30-40 years
4. 40-50 years 5. Above 50 years

3. Occupation

1. Student 2. Employee 3. Self employed
4. House wife 5. Retired

4. Highest level of education

1. High school 2. Bachelor's Degree
3. Master's Degree 4. PHD/ MPhil

5. Family annual income

1. Upto 3,00,000
2. 3,00,000 to 5,00,000
3. 5,00,000 to 10,00,000
4. 10,00,000 and above

6. What is your most preferred mode of offline grocery shopping?

1. Supermarkets
2. Local Stores & Vendors

7. What is your most preferred supermarket?

1. Ratnadeep
2. Big Bazaar
3. Heritage Fresh
4. More Megastore
5. Jio Mart
6. D Mart
7. Others

8. What is your most preferred mode for buying vegetables?

1. Supermarkets
2. Local Stores
3. Online Shopping Apps

9. What is your most preferred mode for buying dairy products?

1. Supermarkets
2. Local Stores
3. Online Shopping Apps
4. None

10.How often do you shop for groceries offline?

1. Once a week
2. Once a month
3. Few times in a month
4. Other
5. Never

11. Have you shopped for groceries online at least once?

1. Yes
2. No

12. If yes, why do you prefer shopping online? (Select all that apply)

1. It is convenient
2. Good discounts
3. It is safe
4. Hassle-free payments (cashless)
5. Quick & Efficient delivery
6. Wide variety of products
7. Others
8. Not Applicable

13. What do you think primarily prevents people from shopping online? (Select all that apply)

1. Lack of awareness
2. Risk of online fraud
3. Risk of identity theft
4. Uncomfortable with technology
5. Quality Issues
6. Others

14. When did you start online grocery shopping?

1. Before 2016
2. 2016-17
3. 2017-18
4. 2018-19
5. During the pandemic
6. Not Applicable

15. How often do you shop for groceries online?

1. Once a week
2. Once a month
3. Few times in a month
4. Other
5. Never

16. What is your most preferred app for online grocery shopping?

1. Big Basket
2. Grofers
3. Amazon
4. Swiggy Instamart
5. Jio Mart
6. Others
7. None

17. Do you purchase perishables (vegetables, meat, dairy) online?

1. A few times 2. Frequently 3. Rarely 4. Never

18. With prompt delivery, would you still prefer Online Grocery Shopping with a 10-20% increase in the total price?

1. Yes 2. Maybe 3. Can't say 4. No

19. With good discounts, would you still prefer Online Grocery Shopping if the delivery is delayed?

1. Yes 2. Maybe 3. Can't say 4. No

20. Have you ever encountered challenges while shopping online? (Like transaction failures and unavailability of products post ordering)

1. Yes
2. No

21. If yes, what are the problems you have faced while shopping online? (Select all that apply)

1. Unavailability of products post ordering
2. Lack of customer support
3. Transaction issues
4. Refund issues
5. Return issues
6. Others
7. None

22. Rank the following modes of payment you use while shopping for groceries online from most to least (5-1) frequently.

Mode of payment	**Rank (5-most,1-least used)**
1. Credit/Debit Cards	
2. UPI	

3. Net Banking	
4. Digital Wallets	
5. Cash on Delivery	

23. Rank your most preferred mode of grocery shopping (3-most used, 1- least used) Pre-Pandemic.

	Pre-Pandemic (3-most, 1- least used)
1. Online Grocery Shopping	
2. Supermarkets	
3. Local stores & Street vendors	

24. Rank your most preferred mode of grocery shopping (3-most used, 1- least used) during the pandemic.

	During the Pandemic (3-most, 1- least used)
1. Online Grocery Shopping	
2. Supermarkets	
3. Local stores & Street vendors	

25. Select an appropriate option that fits best for your grocery buying preference before the pandemic.

1. I do all, or almost all, of my grocery shopping online.
2. I do most of my grocery shopping online (more than half)
3. I do a small amount of my grocery shopping online.
4. I do almost none of my grocery shopping online (e.g., shopping online once or twice in the past year)

26. Select an appropriate option that fits best for your grocery buying preference during the pandemic.

1. I do all, or almost all, of my grocery shopping online.
2. I do most of my grocery shopping online (more than half)
3. I do a small amount of my grocery shopping online.
4. I do almost none of my grocery shopping online (e.g., shopping online once or twice in the past year)

27. Read the following statements and select an appropriate option accordingly.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Online grocery shopping offers superior quality, well packaged and fresh products when compared to offline.					
2. I shop for groceries online because it is more convenient than safe.					
3. I prefer online grocery stores as they are well-advertised and give heavy discounts.					
4. Supermarkets are safer than local stores as proper COVID protocols are maintained.					
5. Shopping at supermarkets takes less time compared to local stores.					
6. I prefer shopping for perishables (vegetables meat & dairy) in person.					
7. I prefer supermarkets over local stores because of better discounts.					

28. How likely are you to purchase groceries online post pandemic?

1. Very likely
2. Likely
3. Neutral
4. Unlikely
5. Very unlikely