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Consumer Preferences and Purchasing Pattern towards Fruits and Vegetables Purchased Through E-Commerce Sector

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Abstract: ***The present study "Consumer perception towards fruits and vegetables purchased through e-commerce sector" was aimed to identify the consumer preferences, purchasing pattern, faced by consumers during the purchase of fruits and vegetables through online. E-Commerce business of selling fruits and vegetables through internet has been recently introduced in some metropolitan cities. Online retail outlets of fruits and vegetables like ninjakart, bigbasket, Freshmigo, jiomart etc.., which have been expanding. A representative sample of 80 consumers from Bengaluru and Tirupati cities were selected purposively for the present study. The data collected was analysed using both quantitative and qualitative research techniques. Mainly the data collected was tabulated and analysed using appropriate statistical tools such as percentage analysis, likert scale analysis. Online shopping stores need to provide more variety and quality of products in order to attract more customers. New methods should be adopted by the companies to fulfil the requirements of the customers. It is required to provide a wide variety of products to satisfy the needs and wants of customers because consumers were not convinced with the range of product available with online stores. The staff in the fruits and vegetables division should be given appropriate training on handling perishables and presenting them without damp to customers all the time.***

Keywords: Consumer preference, consumer purchasing pattern, E-commerce.

I. INTRODUCTION

India has been growing drastically in terms of internet use, from 2010 and the percentage of users has gone up from 7.5 per cent to 50 per cent. Now-a-days the onset of lockdown and a push towards digitization proved to be a blessing to e-commerce as consumers resorted to online shopping. It became a backbone for supplying essentials to the more than 1.3 billion people of India. The growth of e-commerce in India will help the country to become a major force in the e-commerce business with an estimated growth potential that will be of $100 billion by the year 2024.

E-commerce (Electronic Commerce) is the activity of online buying and selling of commodities over the internet. It draws on technologies such as mobile commerce, electronic funds transfer, supply chain management, internet marketing, online transaction processing *etc.* It provides direct interaction between the consumers and the products (or) services that can shape up fruitful relationships. Today, the volume of trade digital payments using e-commerce has also been expanding. There has been an increase in e-commerce business due to good access to internet in both rural and urban areas.

Online fruits and vegetables shopping has become more popular now-a-days with the growing internet connectivity and raising popularity of electronic shopping. About 30 per cent of fruits and vegetables production is being wasted which is more than their consumption. As, one can see a clear need waiting to be served through technology-based intervention. Entrepreneurs have identified the opportunity of opening online fruit and vegetable stores. In this hustle and bustle of modern lifestyle with long working hours and heavy traffic people associate shopping at fruit and vegetable market as tiresome and stressful. People are willing to spend their time and energy on purchasing of fresh fruits and vegetables through e-commerce which can increase their healthy consumption and reduced the wastage at retailer's level. Most of the existing e-retailers offer their services in metros and major urban centers targeting the urban population having a wide consumer base *viz.*, working couples, nuclear families, students fending for themselves, new mothers, senior citizens and large families.

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E-commerce websites and services in Bengaluru and Tirupati cities are on rise now-a-days as people's demand and preferences for online purchasing of fruits and vegetables keeps on increasing. Their main goal is to provide the consumers with digital support and services that highlight their product and specialties to the users. The e-commerce website development in both the cities offers consumers multiple product options, trust, transparency and they have the best and the finest strategies to deliver the products.

Online marketing outlet for selling of fresh fruits and vegetables has helped the business to establish a wider market in smart cities like Tirupati and Bengaluru. Fruit and vegetable e-commerce in this smart city e-commerce has years of experience in incorporating smart and simple elements in the website. Their services focus on user interface (UI) and user experience (UX) which are very crucial to a website as they contribute to the presence, overall look and appearance of the website. The e-commerce designers play a key role in converting and integrating websites on the various trends and competitions making them strong and successful in the online market. Their procurement model includes a convenient mix of warehousing and just-in-time (JIT) deliveries from a host of suppliers including FMCG companies.

As, the consumer find a wide collection of goods, great pricing and convenience with exceptional levels of customer services *i.e.*, preferred delivery times, same day deliveries and also attract consumers to purchase a large variety of products by providing a sales promotion or discount code, making it more cost effective. Timely delivery of fresh and desired produce is done by efficient and reliable suppliers within the allotted time. They are also open to take product feedback from their consumers.

Some of the established e-commerce sectors like bigbasket.com, villageagro.com, freshmigo.com, ninjakart.com, jiomart.com, reliancefresh.com etc. in Bengaluru and Tirupati cities are offering wide collection of goods. Hence, there is a need to study the consumer behavior and their preferences towards online purchasing of fruits and vegetables.

The expansion of the usage of the internet by individuals has became the main contributors to the development of online shopping of fruits and vegetables. The main aim of this study is to focus on the consumer behaviour towards online purchasing of fruits and vegetables and to find out analytical framework in order to help the e-fruits and e-vegetables sellers to understand the choice and preference of the consumers, their purchasing pattern of fruits and vegetables, constraints and expectations of the consumers purchasing fruits and vegetables through e-commerce sector.

II. REVIEW OF LITERATURE

Kanchan *et al.* (2015) analyzed percentage analysis and chi-square test in consumer purchasing pattern. The results of the study shows that both the genders are likely to purchase fruits and vegetables online but as compared to females, males do more online shopping. People in the age group between 30-45 years are more interested in doing online shopping as compared to other age groups. People having higher income are more engaged in purchasing goods over internet. Technology familiarity of the respondents is found to be positively related with past online purchase frequency and people having high knowledge of technology are more likely to shop online. In this study it was concluded that online shopping is gaining popularity among people of young generation. Higher income groups and educated people are purchasing more via e-retailing websites. People have hesitations in doing online shopping due to security concerns. At the same time people are resistant to change because of technological complexity in making online purchase.

Khadar (2020) analysed the data regarding the consumer purchasing pattern through online using tools *viz.*, percentage analysis, likert scale analysis and chi square test. In this study, the results revealed that majority of the consumers were males within an age group of 21 years. Majority (47.4%) of the consumers reported in using the internet for 3 to 4 hours per day with Sunday (78.9 %) being the most active day when they used the internet. Flipkart (72.4%) and Amazon (65.8%) were highly rated as the topmost used sites for shopping followed by Myntra (25%). In this study it was also mentioned about Ad. Channel for advertisement that includes mobile SMS, TV advertisement, newspaper ad, social media (Facebook, Instagram). This study finds that nearly 80% are ready to wait for discounts and festival sales before deciding to make a purchase online. 42% of consumers prefer Wallet payments, the current study highlights the usage of Cash on Delivery (63.2%) as the major mode of preferred payment followed by Wallet payments (13.2%).

Neha (2018) concluded that the consumer's perception on online shopping varies from individual to individual and the perception is limited to a certain extent with the availability of the proper connectivity and the exposure to the online shopping. The perception of the consumer also has similarities and difference based on their personal characteristics. The study revealed that mostly the youngsters are attached to the online shopping and hence, the elder people don't use online shopping much as compared to the younger ones. The study highlights the fact that the youngsters between the age of 20-25 are mostly poised to use the online shopping. It is also found that the majority of the people who shop online, buys books online as it is cheaper compared to the market price with various discounts and offers.

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Pooja and Arora (2019) analysed percentage analysis and factor analysis. In this study it was indicated the position of the factors according to the perception of the consumers *i.e.*, product information, online payment, convenience and variety, consumer attitude, flexibility, price consciousness and challenges of the consumers. In the study it was also mentioned about the specific features of online shopping like easy access with multiple devices, single click to navigate multiple sites, comparison can be made in real time, flexible Payment methods cash back offer, feedback about the product. The study concluded that there are many factors which consumers keep in mind while purchasing in online. So, owners of websites should keep in mind these factors to make their shopping websites more popular, and make their customer more satisfied resultant of which sales and profitability can be improved.
Shanthi and Desti (2015) studied about the type of products purchased online, most products bought online, websites used to buy products and factors influencing consumers to buy online. The factors that are included in this study are product information, online payment, convenience, consumer attitude, easy accessibility, flexibility, decision to purchase online. Mean and standard deviation was analyzed for decision to purchase online with particulars delivery time, reputation of the company, Guarantees and warrantees, privacy of the information, nice description of goods, security and prices. The results revealed that the price of the products have the most influencing factor on the purchase of products online followed by security of the products.

III. METHODOLOGY

Purposive-cum random sampling technique was employed for the selection of sample in the present study. Bengaluru and Tirupati cities were purposively selected for the study in order to know the purchasing pattern of consumers, factors influencing consumers online purchase decision, constraints and expectations in purchasing of fruits and vegetables through e-commerce. Consumers were selected randomly irrespective of characteristics. The sampling was done in different localities of bengaluru city namely electronic city, indira nagar, sahakar nagar and judicial layout to have fair representation of different socio-economic strata. Data were collected from various age groups, income groups and gender groups. A total number of 40 customers were interviewed, 10 respondents from each area were taken. Among the existing 50 municipal wards in tirupati city top 4 areas i.e., vidhya nagar colony, balaji nagar colony, staff quarters, prakasam nagar colony covering the tirupati city have been selected based on population. A total number of 40 customers were interviewed, 10 consumers from each area were taken.

Table 1 Selected areas in Tirupati and Bengaluru

S. No.	Selected areas in Tirupati	No. of consumers	Selected areas in Bengaluru	No. of consumers
1	Vidya Nagar	10	Electronic city	10
2	Balaji Colony	10	Indira Nagar	10
3	Staff Quarters	10	Sahakar Nagar	10
4	Prakasam Nagar	10	Judicial layout	10
	TOTAL	40		40

Primary data regarding demographic segmentation like age, educational status, occupation, annual income, family size and family type, consumers purchasing pattern, factors influencing consumers online purchase decision, constraints and expectations in purchasing of fruits and vegetables through e-commerce were collected by personally interviewing the respondents using a structured schedule. The respondents were contacted individually and the objectives of the study were clearly explained to them to ensure their cooperation and accuracy in their responses.

IV. RESULTS AND DISCUSSIONS

A. *Consumer Preferences Towards Purchase of Fruits And Vegetables Through E-Commerce Sector*

1) *Consumers Experience over Internet Usage:* Information regarding consumers experience over internet usage for purchasing of fruits and vegetables are shown in the table 2.

Table 2 Consumers experience over internet usage (n=80)

S. No.	Consumers Experience	Frequency	Percentage	Cumulative percent
1.	Less than one year	10	12.50	12.50
2.	1 to 5 years	2	2.50	15.00
3.	More than 5 years	68	85.00	100
4.	No experience	0	0	100
	Total	80	100	

It was observed that out of 80 sample consumers, highest per cent *i.e.,* 85.00 per cent have more than 5 years experience in using internet followed by 12.50 per cent with less than one year experience, 2.50 per cent with experience of 1-5 years. As more the years of experience towards internet usage more will be the consumers preference to buy the fresh produce through online Rasheed (2017).

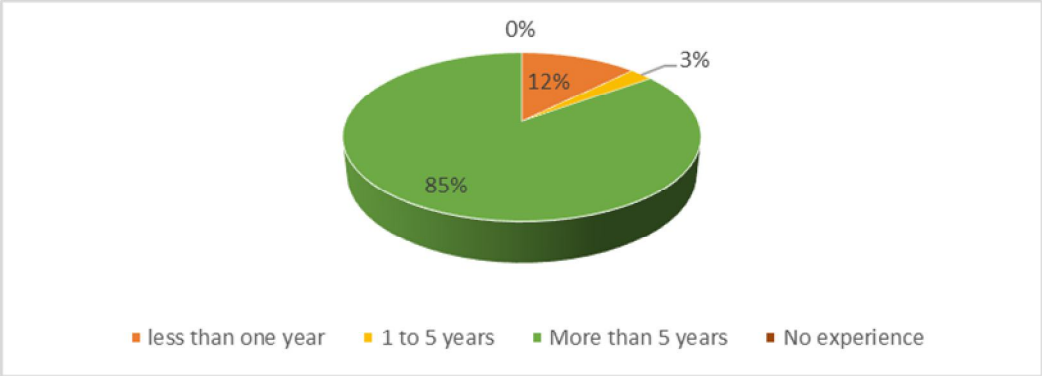


Fig.1 Consumers percentage based on internet usage

2) *Consumers Verification at Retail Stores before Buying Online:* The information of consumers verification at retail stores before buying of fruits and vegetables through online are shown in the table 3. Out of 80 sample consumers, 68.75 per cent consumers verify at retail stores before buying online fruits and vegetables and 31.25 per cent of the consumers doesn't verify at retail stores before buying through online. Thus, majority of the consumers verify at retail stores before buying online inorder to check and compare the prices and quality so that they can opt with the best one. The findings are similar with Khadar (2020).

Table 3 Consumers verification at retail stores before buying online (n=80)

S. No.	Consumers verification	Frequency	Percentage	Cumulative Per cent
1.	Yes	55	68.75	68.75
2.	No	25	31.25	100
	Total	80	100	

3) *Consumers Purchasing Decision Through Internet:* Information regarding consumers purchase through internet during last year of fruits and vegetables are shown in the table 4.

Table 4 Consumers purchasing decision through internet (n=80)

S. No.	Consumers Purchase	Frequency	Percentage	Cumulative Per cent
1.	Frequently	33	41.25	31.25
2.	Occasionally	25	31.30	72.50
3.	Very Often	22	27.50	100
	Total	80	100	

From the table 4 it was inferred that 41.25 per cent of the sample consumers were buying fruits and vegetables frequently 31.3 per cent of the sample consumers were buying occasionally and 27.50 per cent of the sample consumers were buying very often. Thus, it was observed that most of the consumers buy online fruits and vegetables frequently as online purchase makes their life easy which delivers fresh products at their door steps without going out. Similar findings were reported by Pooja and Arora (2019).

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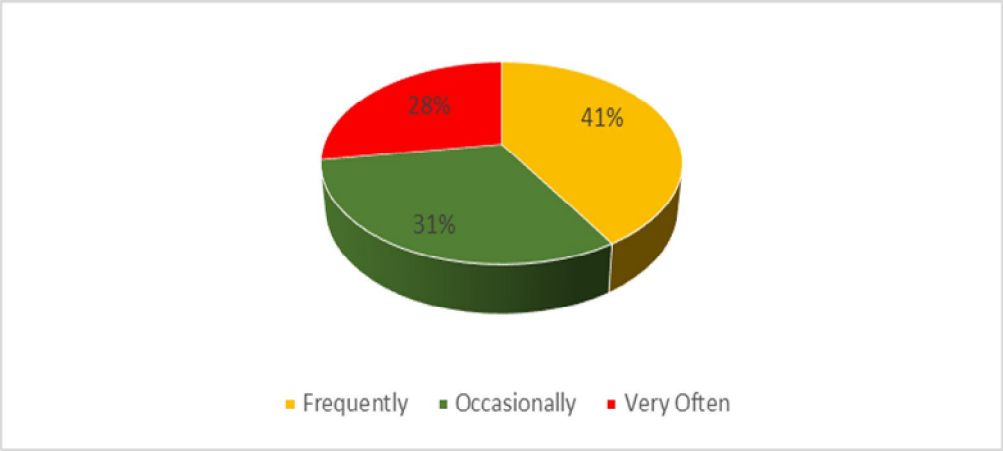


Fig.2 Consumers purchase through internet

4) *Consumers Facing the Problem of Seasonality:* The information whether consumers were facing the problem of seasonality is shown in the table 5.

Table 5 Consumers facing the problem of seasonality (n=80)

S. No.	Problem of Seasonality	Frequency	Percentage	Cumulative Per cent
1.	Yes	44	55.00	55.00
2.	No	36	45.00	100
	Total	80	100	

It was observed that 55.00 per cent of the consumers face the problem of seasonality and 45.00 per cent of the consumers doesn't face the problem of seasonality.
The majority of the consumers face the problem of seasonality while purchasing fruits and vegetables online as the perishability and quality of the fruits and vegetables change from season to season.

5) *Consumers Facing the Problem of Storage:* The information whether consumers facing the problem of storage while purchasing fruits and vegetables are shown in the table 6.

Table 6 Consumers facing the problem of storage (n=80)

S.No.	problem of storage	Frequency	Percentage	Cumulative percent
1.	Yes	33	41.3	41.25
2.	No	47	58.75	100
	Total	80	100	

It was observed that 58.75 per cent of the consumers doesn't face any problem of storage while purchasing fruits and vegetables whereas 41.3 per cent of the consumers face the problem of storage while purchasing fruits and vegetables. The majority of the consumers doesn't face the problem of storage as they purchase the fresh produce frequently and in limited quantity.

6) *If Yes, What Kind of Storage Problem is faced by The Consumers:* The details regarding the kinds of storage problems, if faced, by the consumers while purchasing fruits and vegetables are shown in the table 7.

Table 7 Storage problems faced by the consumers (n=33)

S.No.	Kinds of storage problem	Frequency	Percentage	Cumulative percent
1.	Cheap quality of the product	4	12.12	12.12
2.	Damaged product	17	51.52	63.64
3.	Non delivery	4	12.12	75.76
4.	Delay in delivery	6	18.18	93.94
5.	Others	2	6.06	100.00
	Total	33	100	

It was observed that 51.52 per cent of the consumers face the problem of damaged product due to online purchase of fruits and vegetables whereas 18.18 per cent of the consumers face the problem of delay in delivery, 12.12 per cent of the consumers face the problem of cheap quality of the product and non-delivery and 6.06 per cent of the consumers face other kind of problems.

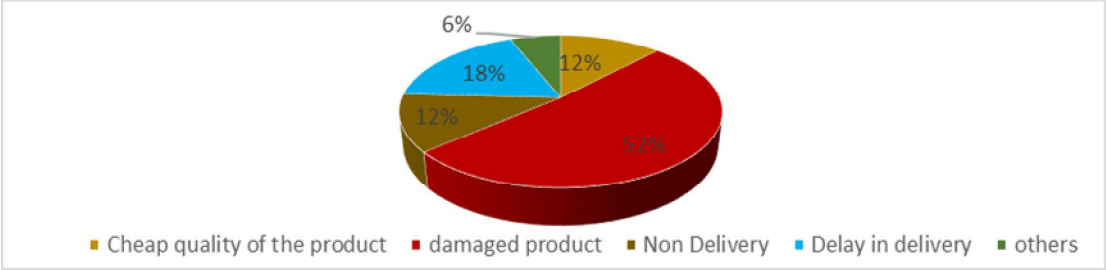


Fig. 3 Storage problem faced by the consumers

The majority of the consumers face the problem of storage like delivery of damaged products while purchasing fruits and vegetables because some of the e-commerce sectors sell some damaged products due to prolonged storage. Some of the consumers also face the problem of late delivery which will detoriate the quality of the fresh produce.

7) *Reasons for Online Shopping of Fruits and Vegetables:* The details regarding the reasons for online shopping of fruits and vegetables is collected and presented in the table 8. It was observed that, the majority of the consumers 25.40 per cent felt that 'online shopping is easier' followed by consumers 'work and online shopping allows to deliver goods at a suitable time' 19.05 per cent, 'super market is too far' 18.25 per cent, difficult to visit local market 15.08 per cent, 'local shopping centres does not meet my needs'14.29 per cent, 'online shopping allows to shop in a bulk' 7.94 per cent. Therefore, the main reason for purchasing online fruits and vegetables was majority of the consumers felt that online shopping is easier which helps them to purchase a variety of products with reasonable prices that can be delivered to their door step without much effort Pratiksinh (2014).

Table 8 Reasons for online shopping of fruits and vegetables (n=80)

S. No.	Particulars	Frequency (Responses)	Percentage	Percent of cases (Consumers)	Cumulative Percent
1.	Super market is too far	23	18.25	28.75	18.25
2.	Online shopping is easier	32	25.40	40.00	43.65
3.	Online shopping allows to shop in a bulk	10	7.94	12.50	51.59

4.	Difficult to visit local market	19	15.08	23.75	66.67
5.	Local shopping centres does not meet my needs	18	14.29	22.50	80.95
6.	Consumers work and online shopping allows to deliver goods at a suitable time	24	19.05	30.00	100.00
	Total	126	100	157.5	

Note: Multiple responses were given by individual consumers



Fig. 4 Reasons for online shopping of fruits and vegetables

8) Consumers Timing Preferences to Buy Online Fruits and Vegetables: The details regarding the consumers timing preferences to order fruits and vegetables online is collected and presented in the table 9.

Table 9 Consumers timing preference (n = 80)

S. No.	Delivery Timings	Frequency (Responses)	Percen tage	Percent of Consumers	Cumulative Percent
1.	9.00 am -10.00 am	52	46.85	65.00	46.85
2.	11.00 am - 1.00pm	19	17.12	23.75	63.96
3.	3.00 pm - 5.00 pm	9	8.11	11.25	72.07
4.	5.00 pm -7.00 pm	17	15.32	21.25	87.39
5.	7.00 pm – 9.00pm	10	9.01	12.50	96.40
6.	9.00 pm –11.00pm	4	3.60	5.00	100.00
	Total	111	100.00	138.75	

Note: Multiple responses were given by individual consumers

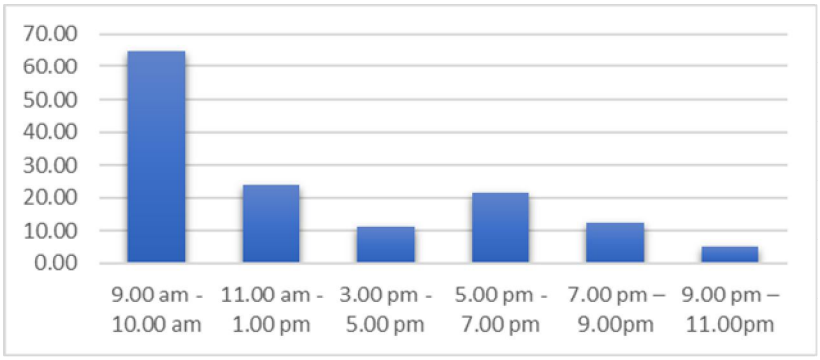


Fig.5 Consumers timing preference

It was observed that the majority of the consumers *i.e.*, 46.85 per cent of the consumers choose 9:00am - 10:00am delivery time whereas 17.12 per cent of the consumers choose 11:00am- 1:00pm, 15.32 per cent of the consumers choose 5:00pm-7:00pm, 9.01 per cent of the consumers choose 7:00pm- 9:00pm, 8.11 per cent of the consumers choose 3:00pm- 5:00pm and 3.60 per cent of the consumers choose 9:00pm- 11:00pm to buy online fruits and vegetables. Therefore, the majority of the consumers prefer delivery timing from 9:00am to 10:00am because the consumers perceive that e-commerce sectors get the products from the farmers during early hours in the morning and thus it would be an apt time for the online purchase.

B. Consumers Purchasing Pattern towards Fruits and Vegetables in E-Commerce Sector

To analyse the consumers purchasing pattern, details like age, education, occupation, family size, family income were collected and cross tabulated with the quantity of purchase to bring out the association between the variables. Similarly, information regarding purchase decisions, frequency of purchase, purchase point and price of product were collected to analyze the consumers purchasing pattern.

1) Consumers Frequency of Using E-Commerce for Purchasing Fruits and Vegetables: For the study, based on the frequency of using e-commerce for purchasing of fruits and vegetables sample consumers were categorized into 1-2 times in a year, once in a month, once in a week, use whenever consumers get the chance. The results were collected and presented in the table 10

Table 10 Consumers frequency of using e-commerce (n = 80)

S. No.	Consumers frequency	Frequency	Percentage	Cumulative Percent
1.	1-2 times in a year	14	17.5	17.5
2.	Once in a month	16	20	37.5
3.	Once in a week	13	16.25	53.75
4.	Use whenever they get the chance	37	46.25	100
	Total	80	100	

From the table 10 it was inferred that 46.25 per cent of sample consumers were purchasing fruits and vegetables whenever they get a chance, 20.00 per cent of sample consumers were purchasing once in a month, 17.25 per cent of sample consumers were purchasing 1-2 times in a year and 16.25 per cent of the sample consumers were purchasing once in a week.

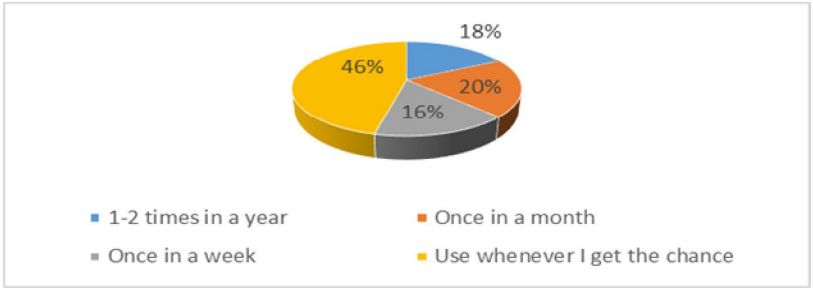


Fig.6 Consumers frequency to use e-commerce

It was observed that most of the consumers were purchasing fruits and vegetables whenever they get a chance in e-commerce sector because e-commerce is easy to use, easy to order and the products get delivered within no time.

2) Relationship between Demographic Segmentation and Consumers Frequency in using E-commerce

a) Age and Consumers Frequency

Information with regard to consumers age and the frequency in using e-commerce to purchase fruits and vegetables were collected and cross tabulated as presented in the table 11.

It can be observed from the table that 5.00 per cent of the sampled consumers belonging to the age group of below 20 years were purchasing fruits and vegetables in e-commerce sector. Out of 5.00 per cent, 1.25 per cent of the consumers were purchasing fruits and vegetables 1-2 times in a year, 1.25 per cent of the consumers were purchasing fruits and vegetables once in a month, 1.25 per cent of the consumers were purchasing fruits and vegetables once in a week and 1.25 per cent of the consumers purchasing fruits and vegetables whenever they get a chance from e-commerce sector.

Out of 86.25 per cent of the sampled consumers belonging to the age group of 21-40 years, 42.50 per cent of the consumers were purchasing fruits and vegetables whenever they get a chance from e-commerce sector, 16.25 per cent of the consumers were purchasing once in a month, 13.75 per cent of the consumers were purchasing 1-2 times in a year and also 13.75 per cent of the consumers were purchasing fruits and vegetables once in a week from e-commerce sector.

Table 11 Age of the consumers and consumers frequency in using e-commerce to purchase fruits and vegetables

S.No.	Age	Consumers frequency				Total	Chi square (χ^2 value)
		1-2 times in a year	Once in a month	Once in a week	Use whenever consumers get the chance		
1.	Below 20	1 (1.25)	1 (1.25)	1 (1.25)	1 (1.25)	4 (5.00)	3.09
2.	21-40	11 (13.75)	13 (16.25)	11 (13.75)	34 (42.50)	69 (86.25)	
3.	41-60	1 (1.25)	1 (1.25)	1 (1.25)	1 (1.25)	4 (5.00)	
4.	Above 60	1 (1.25)	1 (1.25)	0 (0.00)	1 (1.25)	3 (3.75)	
5.	Total	14 (17.50)	16 (20.00)	13 (16.25)	37 (46.25)	80 (100.00)	
	p-Value 0.96 (> 0.05)						

Note: Figures in parenthesis indicate percentage to the total number of sampled consumers.

Among 5.00 per cent of the sampled consumers belonging to 41-60 years of age group, 1.25 per cent of the consumers were purchasing fruits and vegetables 1-2 times in a year from e-commerce sector, 1.25 per cent were purchasing once in a month, 1.25 per cent were purchasing once in a week and 1.25 per cent were purchasing fruits and vegetables whenever they get a chance from e-commerce sector.

Among 3.75 per cent of the consumers belonging to the age category above 60 years, 1.25 per cent, 1.25 per cent, 0.00 per cent, 1.25 per cent of the consumers were purchasing fruits and vegetables 1-2 times in a year, once in a month, once in a week, whenever they get a chance, respectively from e-commerce sector.

The calculated Pearson Chi-square test significance is 3.09 which is greater than the significance value (α=0.05). Hence, we accept null-hypothesis. Hence, there is no significant association between the age and consumer frequency. (Khadar (2020)).

b) Education Level and Consumers Frequency

Details regarding the education level of consumers frequency while purchasing fruits and vegetables in e-commerce sector are cross tabulated against the frequency of purchase and results are presented in the table 12. in detail.

It is clear from the table that, 10.00 per cent of the consumers have studied SSC. Out of 10.00 per cent, 2.50 per cent of the consumers were purchasing fruits and vegetables 1-2 times in a year from e-commerce sector, 2.50 per cent of the consumers were purchasing once in a month, 2.50 per cent were purchasing once in a week and 2.50 per cent of the consumers were purchasing fruits and vegetables whenever they get a chance from e-commerce sector

Out of 1.25 per cent of the total sampled consumers have studied intermediate, 0.00 per cent of the consumers were purchasing fruits and vegetables 1-2 times in a year from e-commerce sector, 0.00 per cent of the consumers were purchasing fruits and vegetables once in a month, 0.00 per cent of the consumers were purchasing fruits and vegetables once in a week and 1.25 per cent of the consumers were purchasing fruits and vegetables whenever they get a chance from e-commerce sector.

Among 56.25 per cent of the sampled consumers have studied graduation. 32.50 per cent of the consumers were purchasing fruits and vegetables whenever they get a chance from e-commerce sector, 10.00 per cent were purchasing 1-2 times in a year, 7.50 per cent were purchasing once in a week and 6.25 per cent of the consumers were purchasing fruits and vegetables once in a month from e-commerce sector.

Table 12 Education Level of the consumers

S.No.	Education Level	Consumers frequency				Total	Chi square (χ^2 value)
		1-2 times in a year	Once in a month	Once in a week	Use whenever consumers get the chance		
1.	SSC	2 (2.50)	2 (2.50)	2 (2.50)	2 (2.50)	8 (10.00)	10.32
2.	Intermediate	0 (0.00)	0 (0.00)	0 (0.00)	1 (1.25)	1 (1.25)	
3.	Graduation	8 (10.00)	5 (6.25)	6 (7.50)	26 (32.50)	45 (56.25)	
4.	Post-graduation &above	4 (5.00)	9 (11.25)	5 (6.25)	8 (10.00)	26 (32.50)	
	Total	14 (17.50)	16 (20.00)	13 (16.25)	37 (46.25)	80 (100.00)	
	p-Value 0.33 (> 0.05)						

Note: Figures in parenthesis indicate percentage to the total number of sampled consumers.

Among 32.50 per cent of the sampled consumers have studied post-graduation, 11.25 per cent of the consumers were purchasing fruits and vegetables once in a month from e-commerce sector, 10.00 per cent were purchasing fruits and vegetables whenever they get a chance from e-commerce sector, 6.25 per cent were purchasing once in a week and 5.00 per cent of the consumers were purchasing fruits and vegetables 1-2 times in a year from e-commerce sector.

The calculated Pearson Chi-square test significance is 10.32 which is greater than the significance value (α=0.05). Hence, we accept null-hypothesis. Hence, there is no significant association between the education and consumer frequency. (Khadar (2020)).

c) Occupation and Consumers Frequency

The information regarding consumers occupation and frequency in using e-commerce while purchasing fruits and vegetables are cross tabulated and results are shown in the table 13.

Table 13 Occupation and Consumers frequency

S.No.	Occupation	Consumers frequency				Total	Chi square (χ^2 value)
		1-2 times in a year	Once in a month	Once in a week	Use whenever consumers get the chance		
1.	Business	1 (1.25)	0 (0.00)	2 (2.50)	1 (1.25)	4 (5.00)	11.32
2.	Student	0 (0.00)	0 (0.00)	0 (0.00)	2 (2.50)	2 (2.50)	
3.	Govt. sector employee	4 (5.00)	9 (11.25)	8 (10.00)	15 (18.75)	36 (45.00)	
4.	Private sector employee	9 (11.25)	7 (8.75)	3 (3.75)	19 (23.75)	38 (47.50)	
	Total	14 (17.50)	16 (20.00)	13 (16.25)	37 (46.25)	80 (100.00)	
	p-Value 0.25 (> 0.05)						

Note: Figures in parenthesis indicate percentage to the total number of sampled consumers.

It can be observed from the table that, among 5.00 per cent of the consumers are doing business, 2.50 per cent of the consumers were purchasing fruits and vegetables once in a week from e-commerce sector, 1.25 per cent of the consumers were purchasing fruits and vegetables whenever they get a chance, 1.25 per cent of the consumers were purchasing fruits and vegetables 1-2 times in a year and 0.00 per cent of the consumers were purchasing fruits and vegetables once in a month from e-commerce sector.

Out of 2.50 per cent of the total sampled consumers belonging to the student category, negligible per cent were purchasing fruits and vegetables 1-2 times in a year, once in a month, once in a week, respectively from e-commerce sector and 2.50 per cent of the consumers were purchasing fruits and vegetables whenever they get a chance from e-commerce sector.

Among 45.00 per cent of the consumers belonging to the category of government sector, 18.75 per cent of the consumers were purchasing fruits and vegetables whenever they get a chance from e-commerce sector, 11.25 per cent of the consumers were purchasing fruits and vegetables once in a month, 10.00 per cent of the consumers were purchasing fruits and vegetables once in a week and 5.00 per cent of the consumers were purchasing fruits and vegetables 1-2 times in a year from e-commerce sector.

Among 47.50 per cent of the consumers belonging to the category of private sector, 23.75 per cent of the consumers were purchasing fruits and vegetables whenever they get a chance, 11.25 per cent of the consumers were purchasing fruits and vegetables 1-2 times in a year, 8.75 per cent of the consumers were purchasing fruits and vegetables once in a month and 3.75 per cent of the consumers were purchasing fruits and vegetables once in a week from e-commerce sector.

The calculated Pearson Chi-square test significance is 11.32 which is greater than the significance value (α=0.05). Hence, we accept null-hypothesis. Hence, there is no significant association between the occupation and consumer frequency. (Khadar (2020)).

d) Size of the family and Consumers Frequency

The information regarding family size of the consumers was cross tabulated against the quantity of purchase and results are shown in the table 14.

It can be observed from the table that, among 6.25 per cent of the consumers belonging to the family size of 2 members, 6.25 per cent were purchasing fruits and vegetables whenever they get a chance, negligible per cent of the consumers were purchasing fruits and vegetables 1-2 times in a year, negligible per cent of the consumers were purchasing fruits and vegetables once in a month and negligible per cent of the consumers were purchasing fruits and vegetables once in a week from e-commerce sector.

Out of 12.50 per cent of the total sampled consumers belonging to the family size of 3 members, 5.00 per cent were purchasing fruits and vegetables whenever they get a chance from e-commerce sector, 3.75 per cent were purchasing fruits and vegetables once in a month, 2.50 per cent were purchasing fruits and vegetables once in a week and 1.25 per cent of the consumers were purchasing fruits and vegetables 1-2 times in a year from e-commerce sector.

Table 14 Size of the family and Consumers frequency

S.No.	Size of the family	Consumers' frequency				Total	Chi square (χ^2 value)
		1-2 times in a year	Once in a month	Once in a week	Use whenever I get the chance		
1.	2 members	0 (0.00)	0 (0.00)	0 (0.00)	5 (6.25)	5 (6.25)	10.61
2.	3 members	1 (1.25)	3 (3.75)	2 (2.50)	4 (5.00)	10 (12.50)	
3.	4 members	10 (12.50)	10 (12.50)	9 (11.25)	16 (20.00)	45 (56.25)	
4.	Above 5 members	3 (3.75)	3 (3.75)	2 (2.50)	12 (15.00)	20 (25.00)	
	Total	14 (17.50)	16 (20.00)	13 (16.25)	37 (46.25)	80 (100.00)	
	p-Value 0.30 (> 0.05)						

Note: Figures in parenthesis indicate percentage to the total number of sampled consumers.

Among 56.25 per cent of the consumers belonging to the family size of 4 members, 20.00 per cent of the consumers were purchasing fruits and vegetables whenever they get a chance from e-commerce sector, 12.50 per cent of the consumers were purchasing fruits and vegetables 1-2 times in a year, 12.50 per cent of the consumers were purchasing fruits and vegetables once in a month and 11.25 per cent of the consumers were purchasing fruits and vegetables once in a week respectively from e-commerce sector.

Among 25.00 per cent of the consumers belonging to the family size of above 5 members, 15.00 per cent of the consumers were purchasing fruits and vegetables whenever they get a chance, 3.75 per cent of the consumers were purchasing fruits and vegetables 1-2 times in a year, 3.75 per cent of the consumers were purchasing fruits and vegetables once in a month and 2.50 per cent of the consumers were purchasing fruits and vegetables once in a week from e-commerce sector.

The calculated Pearson Chi-square test significance is 10.61 which is greater than the significance value (α=0.05). Hence, we accept null-hypothesis. Hence, there is no significant association between the family size and consumer frequency Kanchan *et al.* (2015).

3) Consumers Attraction towards e-commerce Feature: Information regarding consumers attraction towards e-commerce feature are furnished in the table 4.21.

Table 15 Consumers attraction towards e-commerce feature (n=80)

Sl. No	Particulars	Frequency (Responses)	Percentage	Cumulative Per cent	Per cent of consumers
	Wider choice	55	24.34	24.34	68.75
1.	Ease to use	60	26.55	50.88	75.00
2.	Flexibility	57	25.22	76.11	71.25
3.	Fast processing	46	20.35	96.46	57.50
4.	Others	8	3.54	100.00	10.00
	Total	226	100.00		282.50

Note: Multiple responses were given by individual consumers

Majority of the consumers 26.55 per cent felt that easy to use e-commerce for purchasing of fruits and vegetables followed by flexibility 25.22 per cent. Also, 24.34 per cent of the consumers mentioned that having wider choice feature also attracts consumers, 20.35 per cent of the consumers felt that fast processing also attracts fruits and vegetables and 3.54 per cent of the consumers may attract to other features. Thus, it was analysed that ease to use is the main feature that attracts majority of the consumers for purchasing fruits and vegetables in e-commerce sector because in e-commerce there are wide variety of products which helps them to choose easily.

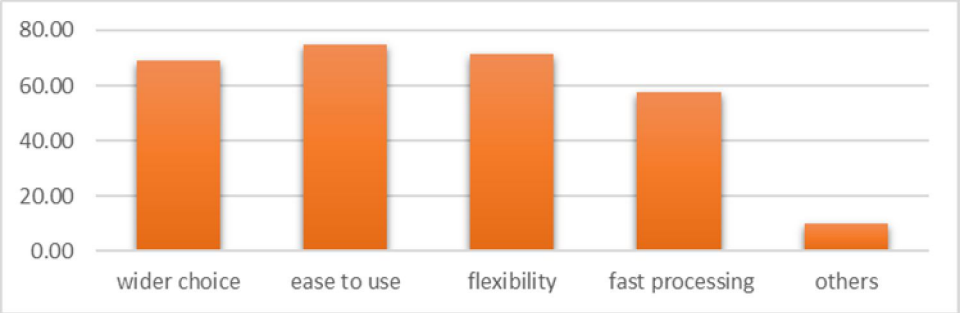


Fig.7 Consumers attraction towards e-commerce feature

4) *Consumers Preference Towards e- commerce Sector:* Information regarding consumers preference towards e-commerce sector are furnished in table 16. Table 16. reveals that, among all the preferences, majority of the consumers about 48.41 per cent were showing preference towards reliance mart. About 38.89 per cent of the consumers showing preference towards big basket, 7.49 per cent of the consumers showing preference towards ninja cart, 3.97 per cent of the consumers were showing preference towards other e-commerce sectors for purchasing fruits and vegetables and 0.79 per cent of the consumers showing preference towards freshmigo. Majority of the consumers show preference towards reliance mart because in reliance mart there are discount codes, offers, wide variety of collection of fruits and vegetables at reasonable cost Shanti and Desti (2015).

Table 16 Consumers preference towards e- commerce sector

S. No.	Particulars	Frequency (Responses)	Percentage	Cumulative Percent	Per cent of Consumers
1.	Big basket	49	38.89	38.89	61.25
2.	Ninja cart	10	7.94	46.83	12.50
3.	reliance mart	61	48.41	95.24	76.25
4.	Freshmigo	1	0.79	96.03	1.25
5.	Others	5	3.97	100.00	6.25
	Total	126	100.00		157.50

Note: Multiple responses were given by individual consumers

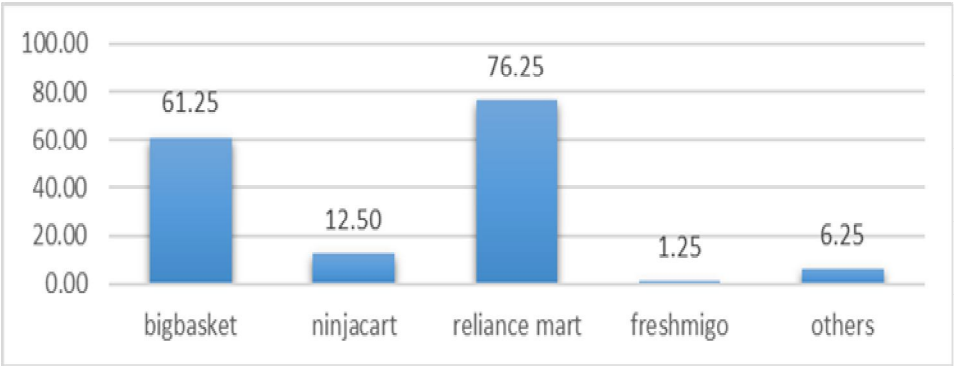


Fig. 7 Consumers preference towards e- commerce sector

5) *Consumers Reasons for Purchasing Fruits and Vegetables in Preferred e-commerce Sector:* Consumers reasons for purchasing fruits and vegetables in preferred e-commerce sector is collected and presented in the table 17.

Table 17 Consumers reasons for purchasing fruits and vegetables in preferred e-commerce sector

S. No.	Particulars	Frequency (Responses)	Percentage	Percent of Consumers	Cumulative Percent
1.	Discount	57	23.36	71.25	23.36
2.	Available always	59	24.18	73.75	47.54
3.	Service	53	21.72	66.25	69.26
4.	Proximity (nearness)	41	16.80	51.25	86.07
5.	Ambiance	31	12.70	38.75	98.77
6.	Others	3	1.23	3.75	100.00
	Total	244	100.00	305.00	

Note: Multiple responses were given by individual consumers

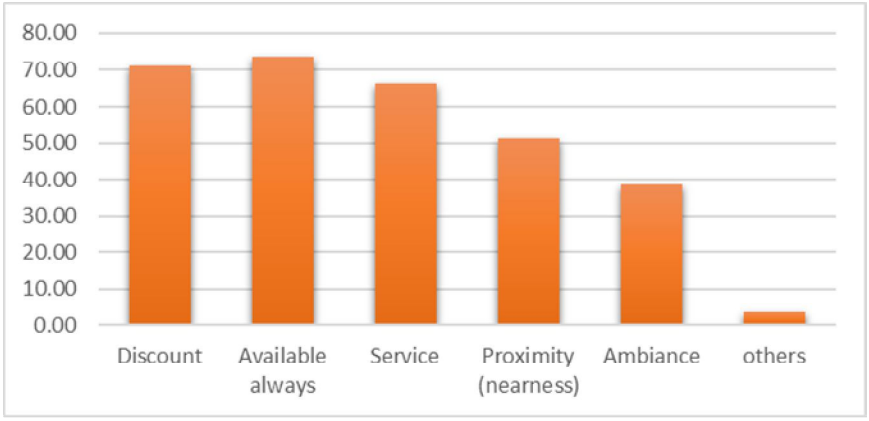


Fig .8 Consumers reasons for purchasing fruits and vegetables in preferred e-commerce sector

It was observed that the majority 73.75 per cent consumers (24.18% responses) gave reason that their preferred e-commerce sector is 'available always' to buy fruits and vegetables, 71.25 per cent consumers (23.36% responses) gave 'discount' as reason to buy fruits and vegetables in their preferred e-commerce sector, 66.25 per cent of the consumers (21.72% responses) gave 'service' as reason to buy fruits and vegetables in their preferred e-commerce sector, 51.25 per cent of the consumers (16.80% responses) gave 'proximity (nearness)' as reason to buy fruits and vegetables in preferred e-commerce sector, 38.75 per cent of the consumers (12.70% responses) gave 'ambiance' as reason to buy fruits and vegetables in their preferred e-commerce sector and 3.75 per cent of the consumers (1.23% responses) gave 'other reasons' to buy fruits and vegetables in their preferred e-commerce sector Neha (2018).

V. SUGGESTIONS

1) Online shopping stores need to provide more variety and quality of products in order to attract more customers. New methods should be adopted by the companies to fulfil the requirements of the customers.
2) It is required to provide a wide variety of products to satisfy the needs and wants of customers because consumers were not convinced with the range of product available with online stores.
3) Certain age group people think that there is insufficient information with online shopping websites. Therefore, maximum information should be provided to the consumers.
4) Moreover, the study also revealed that bulk of the customers frequently bought fruits and vegetables of that particular season. The case firm can give special price discounts and offers for seasonal perishables and increase the sales of perishables thereby.

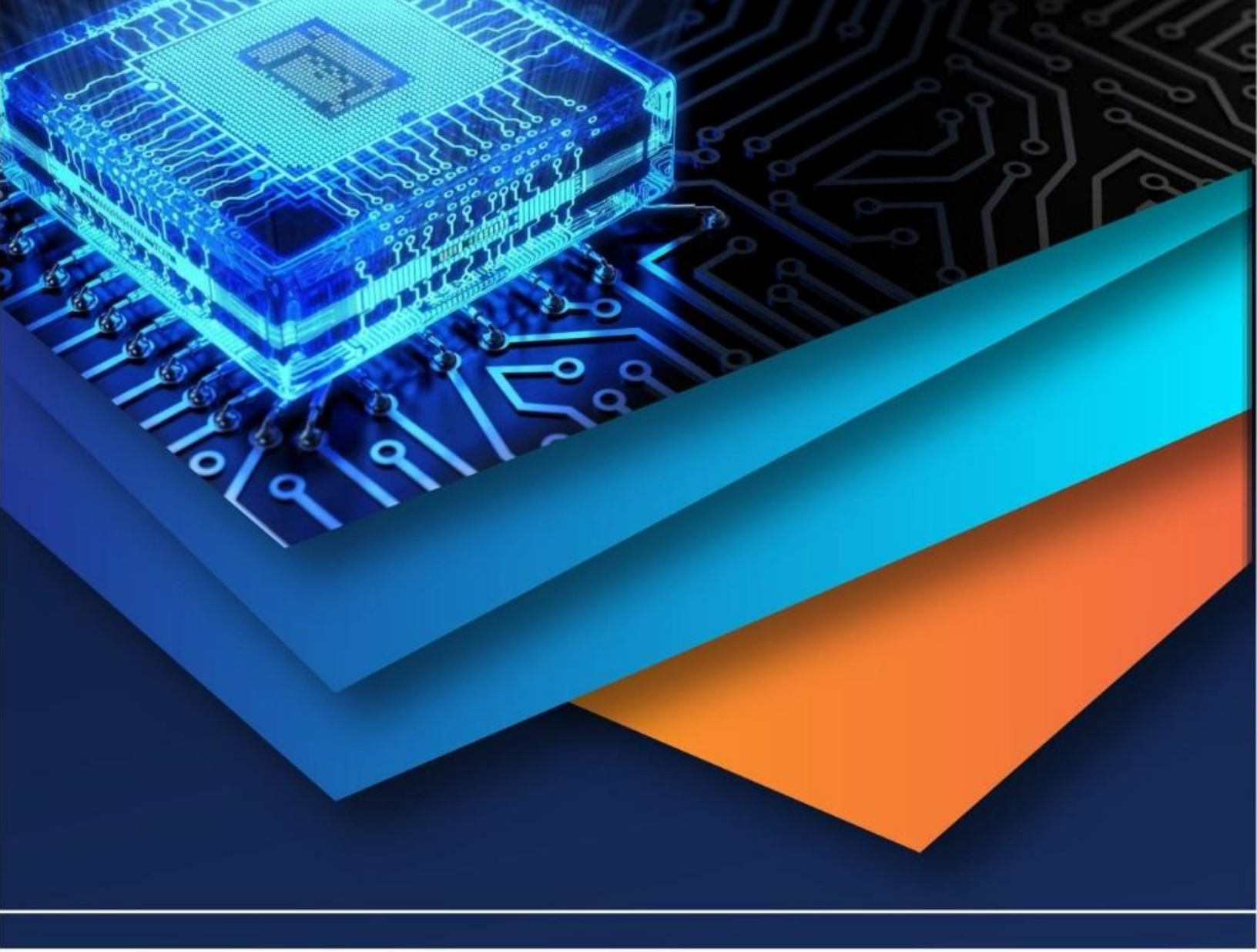
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5) Most of the customers expected quality and freshness of fruits and vegetables. To maintain the freshness of the produce the case firm shall maintain the inventory with proper planning. The front-end staff in the fruits and vegetables division should be given appropriate training on handling perishables and presenting them without damp to customers all the time.

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