Consumer Perception towards Online Grocery Shopping during COVID-19 Outbreak in India: An Empirical Approach

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Abstract

COVID – 19 has affected more than 211 countries and territories globally. Governments across the world are taking rigorous precautionary measures and issuing advisories to ensure people do not come out of their houses and the chain of corona virus is broken. The majority of people are following the guidelines stated by their respective government officials and staying at home. But, other that acquiring healthcare services; purchasing groceries and other food items is the only important task which forces people to leave their houses. This deliberately enhances the risk of people getting infected with corona virus. This pandemic situation has shifted the way of shopping grocery for many consumers. People across the whole world are escalating towards online grocery shopping platforms for even milk, eggs and bread. In urban areas people are mostly aware about online grocery services, but for many semi rural and rural areas of country this is still a new concept. Several online grocery shopping websites with assistance of local authorities had managed to supply contactless and doorstep deliveries maintaining all necessary safety measures. However, with sudden increase in demand, these online grocery suppliers have faced many challenges including supply chain pressure and maintaining availability and training of employees under such conditions. There may be several factors that decide the consumer perceptions towards shifting from traditional grocery purchase to online one. This study reveals the consumer behavior and perception of online grocery shopping and impact of demographics on it. It also try to analyze the significant influence of predicted factors on customer satisfaction level towards online grocery shopping. Online data collected from 166 respondents through questionnaire is analyzed using IBM SPSS Statistics 23.

Keywords – Consumer perception, COVID-19, demographic profile, online grocery, retail businesses

Introduction

Food and grocery is the basic daily need for any household. Online

grocery business is at emerging stage in India. This kind of model has gained popularity in tier one cities like Delhi and Mumbai, but still it is a long way to go. As of now people in India are not much familiar with this kind of model. People in the country prefer buying items like groceries, fruits and vegetables by physical comparison of price and quality. In this type of culture prevailing in the country, it is very difficult to make this kind of model popular in Indian markets. While other e-commerce businesses are gaining much popularity in the Indian markets, e-commerce grocery industry is in its introductory phase. So, this COVID-19 pandemic situation presented a great opportunity for any firm to enter the online grocery space.

Issues of living alone and away from family are tough task for anyone to manage. Under the lockdown period, everyone is home quarantine and isolated from the society. Other than that, one has to take care of everyday domestic hassles. Tiring online office shifts leave feel anybody so exhausted that the prospect of cooking seems like torture. In this COVID-19 scenario, it is difficult for even young professionals to shop from traditional grocery. With the current flourishing online grocery portals on the digital medium in India, one might wonder upon the shift of consumers from traditional shopping to these online ventures. Online grocery stores such as D-mart, Ondoor, Bigbasket, Naturesbasket, Grofers have operated at limited point of delivery providing convenience to consumers intend to shop grocery online during COVID-19 outbreak.

Review of Literature

A descriptive study was done by Sinha J. and Kim J. (2012) with regard to identification of factors that influence consumers' to go for online grocery shopping. With the help of this study it has been found that "convenience, time and money savings are some of the major factors responsible for shifting of traditional shoppers towards online grocery stores."

"Online grocery shopping benefits both consumers and retailers. Consumers benefit through convenience of time, place and products whereas for retailers it is an advantage to get connected with customers 24x7. Online grocery shopping reduces the mental and physical effort of shopping", said Morganosky and Cude (2000).

From the research of Eduard Fransi etal.(2007), it has been found that online grocery shopping saves time that consumers spend during multiple stores. Mohammad Zaini et al. (2011) and Jiang, L. et al. (2013) highlighted the advantages of online grocery shopping which benefit consumers. They enumerated that offers & discounts, variety of items, convenience, time and shopping not limited to business hours are the advantages of online grocery shopping. Online grocery shopping has made shopping easy as orders could be placed and customized at consumers' convenience.

Morganosky, M A.& Cude, B J.(2000) and Raijas, A. (2002) suggested that online shopping is skewed more towards women. Research by Merz, R. (2013); Richmond, A. (1996); Sorensen, H.(2009) found that consumers shop online as to effectively manage time and experience convenience.

Objectives of the Study

1. To study the demographic profile of consumer shopping online grocery during COVID-19 pandemic. (Frequency Test)

2. To find the factors influencing consumer perception towards online grocery shopping during COVID-19 pandemic. (Factor Analysis)

3. To study the individual contribution of these factors in predicting customer satisfaction towards online grocery shopping. (Multiple Regression Analysis)

Research Methodology

Since the study requires analysis of data, descriptive analysis technique has been used to analyze and interpret data. The convenient sampling technique is best suited and has been used to collect data from the sample size of 166 respondents. Primary data through questionnaire is collected to analyze the consumer attitude towards online grocery shopping. Factor analysis is used to identify the various factors that may influence the consumer perception. After that Multiple Regression Analysis has been done to check the significant impact of these factors on online grocery shoppers. Frequency test has been done to identify the demographics of online grocery consumers.. This statistical data analysis is done using IBM SPSS Statistics 23.
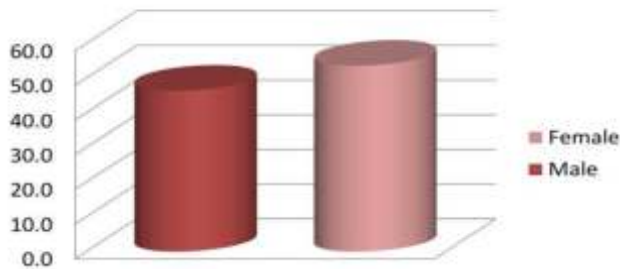
Data Analysis Frequency Test

1 Gender

Table 1: Gender

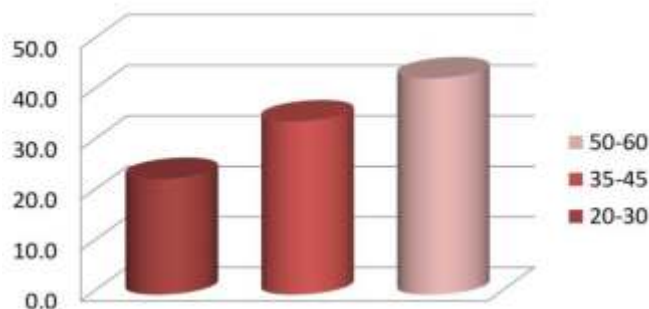|	Frequency	%	Valid %	Cummulative %
Male	77	46.4	46.4	46.4
Female	89	53.6	53.6	100.0
Total	166	100	100	

Gender

From the data collected, it is observed that there are more female online grocery shoppers (53.6%) than that of male (46.4).

2 Age

Table 2: Age

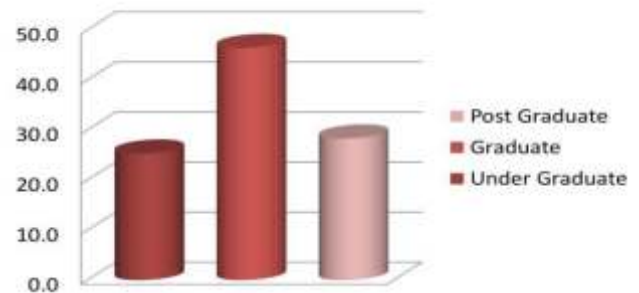|	Frequency	%	Valid %	Cummulative %
20-30 years	38	22.9	22.9	22.9
35-45 years	57	34.3	34.3	57.2
50-60 years	71	42.8	42.8	100.0
Total	166	100	100	

Age

Out of the mentioned categories, there are less young shoppers of the age 20-30 years (22.9%) than those of 35-45 years (34.3%) and 50-60 years (42.8%). During the lockdown period old age people were more concerned about their health, thus they prefer to buy groceries online rather than traditional shops.

3. Education

Table 3: - Education

|	Frequency	%	Valid %	Cummulati
Under Graduate	42	25.3	25.3	25.3
Graduate	77	46.4	46.4	71.7
Post Graduate	47	28.3	28.3	100.0
Total	166	100	100	

Education

From the overall survey, it is found that graduate (46.4%) and post graduate (28.3%) respondents are more inclined towards online grocery shopping during COVID-19 situation.

4. Employment

Table 4: - Employment

	Frequency	%	Valid %	Cummulati
Self Employed	42	25.3	25.3	25.3
Service	45	27.1	27.1	52.4
Student	21	12.7	12.7	65.1
Home Maker	34	20.5	20.5	85.5
Others	24	14.5	14.5	100.0
Total	166	100	100	
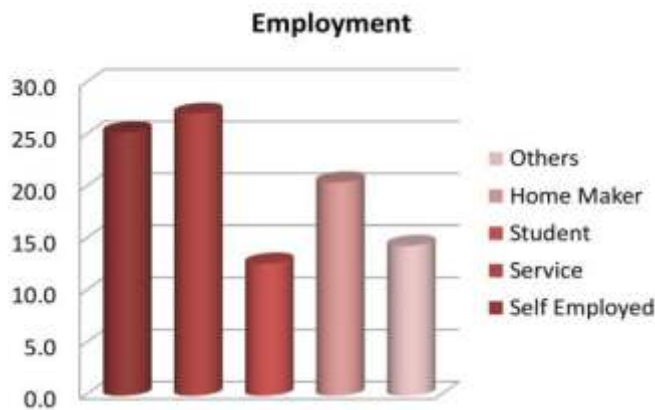
Employment

The employment table shows mix results for different respondents. Self employed (25.3%) and service sector employees (27.1%) capture about half of the respondent profile. Remaining includes home maker (20.5%), others (14.5%) and student (12.7%).

Instrument Reliability

Internal reliability of an instrument scale can been measured using Cronbach's Alpha Coefficient. Alpha value for the collected data came as 0.806. This indicates that the collected data is reliable.

Table 5: - Cronbach's Alpha Coefficient

Reliability Statistics	
Cronbach's Alpha	No. of Item
0.806	16

Table5 shows reliability check for overall and individual dimensions. This also denotes that the statements in the questionnaire are a reliable instrument for relevant data collection.

KMO and Bartlett's Test

KMO (Kaiser-Meyer-Olkin) test is a sample adequacy test that measures how suited/ adequate the data is for factor analysis. While Bartlett's test of Sphericity compares the correlation matrix with identity matrix. It also checks for redundancy/duplicacy between variables that can be summarized with factors. (*Significance at 1% level, $p<0.01$).

Table 6: - KMO and Bartlett's Test

KMO and Bartlett's Test		
KMO Measure of Sampling Adequacy		0.801
Bartlett's Test of Sphericity	Approx. Chi-square	1012.361
	df	166
	Sig	0
Source : Primary Data		

Table 6 shows SPSS result of KMO and Bartlett's test indicating 0.801 and Sig 0.000 ($p<0.01$). It means the sample under survey is accurate.

Factor Analysis

Under factor analysis method, the rotated component matrix identifies and groups the different variables under identified components on the basis of their respective calculated communalities. A communality is a measure to which an item correlates with all other items. Higher communalities are always better.

Table 7: - Rotated Component Matrix and Total Variance Explained

Sr. No.	Variables	Components					
		1	2	3	4	5	6
1	During lockdown it is convenient to purchase online grocery than going outside.	0.767					
2	More variety of products are available at online grocery shops.	0.624					
3	It reduces the human contact and maintains social distancing and isolation.	0.531					
4	Attractive website increases your buying interest from a particular retailer.		0.798				
5	Website easily provides information about product you want to buy.		0.731				

6	It is easy to search products on online grocery websites.		0.678				
7	The shopping ambience is important to you.		0.563				
8	Online grocery shopping saves travelling time.			0.645			
9	Online grocery retailer operates as per customers' schedule.			0.528			
10	Online payment transactions must be secure.				0.746		
11	Misuse of personal information should not be there.				0.639		
12	Different modes of payments are available during online grocery purchase.				0.547		
13	Online grocery retailer willingly handles returns and exchanges.					0.719	
14	It is tedious process to return the damaged/defective/expired product.					0.644	
15	Sales executives provide prompt service to you as and when required.						0.636
16	Trained employees/executives can properly answer the questions.						0.572
Source: Primary Data							
Extraction Method: Principal Component Analysis							
Rotation Method: Varimax Rotation							

Rotation Sum of Squared Loadings			
Component	Total	% of Var.	Cumm %
Factor 1	2.958	13.419	13.419
Factor 2	2.67	12.532	25.951
Factor 3	2.475	11.635	37.586
Factor 4	2.222	9.977	47.563
Factor 5	1.856	8.548	56.111
Factor 6	1.552	7.936	64.047
Extraction Method: Principal Component Analysis			

Table 7 shows RSS loadings under principal component analysis method. The principal component analysis, rotated component matrix and total variance table indicates that total six components were extracted out from all sixteen statements based upon their factor loadings. These factors are named as Convenience Factor, Website Design, Time Savings, Security of Transactions, Return Policy and Customer Care.

Multiple Regression Analysis

For performing a multiple regression analysis, the 06 factors that have been identified earlier are considered as independent variable (predictors). Multiple regression analysis shows the impact of these 06 identified factors or independent variables on customer satisfaction (predicted) towards online grocery shopping during COVID-19 pandemic situation.

Hypothesis Formulation

H0: - There is no significant individual contribution of Convenience Factor, Website Design, Time Savings, Security of Transactions, Return Policy and Customer Care on customer satisfaction towards online grocery shoppingduring COVID-19 pandemic.

Table 8: - SPSS Output of Multiple Regression Analysis (Model Summary)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.687[a]	0.472	0.451	0.4265

a. Predictors : (Constant), Convenience factor, website design, time saving, security of transactions, return policy Customer Care

Table 8 shows the model summary for SPSS output of multiple regression analysis.This table provides R and R^2 values. R can be considered to be one measure of the quality of the prediction of the dependent variable; in this case, customer satisfaction towards online grocery shopping. A value of 0.687 in this example indicates a good level of prediction.The R^2 value (means coefficient of determination) indicates,the percentage of variation obtained in dependent variable is due to the identified independent variables. In this case, R square denotes 47.2% variation.

Table 9: - SPSS Output (ANOVA Table)

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig
1	Regression	4.386	6	0.731	34.259	0.001[b]
	Residual	3.542	166	0.021		
	Total	7.928	172			

a. Dependent Variable : Customer satisfaction towards online grocery shopping
b. Predictors (Constant), convenience factor, website design, time saving security of transaction, return policy, customer care

Table 9 shows, ANOVA output for multiple regression analysis. This table shows how well the regression equation fits the collected data.This table indicates that the model predicts the dependent variable significantly well. This indicates the statistical significance of the regression model that was run. For the F value of 34.259, significance value shows 0.001 which is less than 0.05, thus the overall regression model is statistically significant and predicts the outcome variable well.

Table 10: - Multiple Regression Coefficient Table (SPSS Output)

Coefficients^a

Model	Unstandardized Coeffcients		Standardized Coeffcients	t	Sig
	B	Std. Error	Beta		
1 (Constant)	16.513	6.325	-	-	-
Convenience factor	0.273	0.043	0.432	2.568	0.031
Website design	0.299	0.051	0.512	3.541	0.028
Time Saving	0.316	0.062	0.211	6.854	0.012
Security of	0.514	0.073	0.395	4.864	0.019
Transactions	-		-	-	-
Return policy	0.218	0.037	0.482	1.421	0.054
Customer care	0.431	0.042	0.301	2.986	0.024

a. Dependent Variable : Customer satisfaction towards online grocery shopping

Thus, the equation for multiple regression analysis will be:

$$Y=16.513+(0.273)*X_1+(0.299)*X_2+(0.316)*X_3+(0.514)*X_4+(0.218)*X_5+(0.431)*X_6$$

Where, Y=Customer satisfaction towards online grocery shop

X_1=Convenience Factor,

X_2=Website Design,

X_3=Time Saving,

X_4=Security of Transactions,

X_5=Return Policy,

X_6=Customer Care

Table 10 shows multiple regression coefficient table. The t value and the significance value from the coefficients table shows that convenience factor $p(0.031)<0.05$, website design $p(0.028)<0.05$, time saving $p(0.012)<0.05$, security of transactions $p(0.019)<0.05$ and customer care $p(0.024)<0.05$ are significant variables in determining the customer satisfaction level towards online grocery shopping. While only one factor i.e. return policy $p(0.054)>0.05$ is insignificant. From the table it is clearly shown that our null hypothesis is rejected for and in case of variables identified. In other words we can interpret that, there is a significant individual contribution of Convenience Factor, Website Design, Time Savings, Security of Transactions and Customer Care in the model, return policy no more adds a substantial contribution on customer satisfaction level towards online grocery shopping during COVID-19 pandemic.

Conclusion

The study primarily focused on the factors affecting consumers' attitude and their preference towards online grocery shopping during COVID-19 pandemic situation.Factor analysis provided us the components which are more associated towards our study topic. There may be multiple factors responsible for customer satisfaction, their attitude and buying preference towards online grocery purchase but as per the current COVID-19 pandemic conditions, study revealed convenience, interactive website design, time saving factor, security of transactions, return policy and customer support are the major reasons for purchase from online grocery retailers. Frequency test shows the interest and percentage of respondents' demographic profile. Under current situation gender wise females prefer more online grocery purchase than males. Due to age perspective, government restrictions and higher chances of getting infected with COVID-19 virus, old age people preferred online grocery purchase than young ones. Graduate and post graduate people are more aware about online grocery retailers. Education is also an important factor in selecting the type of grocery retailers.Occupation does not much affects the purchase decision for online grocery. It averagely remains equal for respondents with service, self employed persons or business and home makers. Regression analysis revealed

that convenience factor, website design, time saving, transactional security and customer care individually affects the customer satisfaction level at online grocery shopping. While there is no positive impact of return policy on consumers shopping for groceries online.

References

- Andrew, J. & Vanitha, S. (2004). "A typology of online shoppers based on shopping motivations." Journal of Business Research. Vol. 57(2), pp748-757.

- Fransi, E.C. &Viadiu, F.M. (2007), "A study of e-retailing management: analyzing the expectations and perceptions of Spanish consumers." International Journal of Consumer Studies. Vol. 31(6), pp 613-622.

- Gurvinder, S. and Zhaobin, C. (2005). "Web-Based Shopping: Consumers' Attitudestowards Online Shopping In New Zealand."Journal of Electronic Commerce Research. Vol.6 (1), pp 85-90.

- Hand, C., Riley, F., Harris, P., Singh, J. & Rettie, R. (2009). "Online grocery shopping: the influence of situational factors." European Journal of Marketing. Vol.43(9/10), pp 1205-1219.

- Jiang, L., Yang, Z. & Jun, M. (2013). "Measuring consumer perceptions of online shopping convenience." Journal of Service Management. Vol.24(2), pp 191-214.

- Merz, R. (2013). "Male shoppers shop online to avoid embarrassment." Available at http://www.scoop.it/t/digital-consumer-behavior/p/39957 72165/2013/01/31/male-shoppers-shop-online-to-avoid embarrassment.

- Mohd. Zaini, Z., Ramli, N., Ghani, F. A., Samsudin, A., Hamid, M., Jusoff, K., Nagali, N., Rahmat, N., Khalid, K. & Musa, M. (2011). "Online grocery shopping: The affect of time availability on Malaysian consumer preferences." World Applied Sciences Journal, Vol.12, pp 60-67.

- Montgomery, A. L., Srinivasan, K. & Liechty, J. C. (2004). "Modeling online browsing and path analysis using clickstream data." Marketing Science Journal. Vol. 23(4), pp 579-595.

- Morganosky, M.A. and Cude, B.J. (2000)."Consumer response to online grocery shopping." International Journal of Retail & Distribution Management. Vol. 28(1), pp. 17-26.

- Raijas, A. (2002). "The consumer benefits and problems in the electronic grocery store." Journal of Retailing and Consumer Services.Vol. 9(2), pp 107-113.

- Richmond, A. (1996). "Enticing online shoppers to buy-a human behavior study." Computer Networks and ISDN Systems. Vol. 28(7),pp 1469-1480.

- Sinha, J. &Kim, J. (2007)."Influences of online store perception, shoppingenjoyment, and shopping involvement onconsumer patronage behavior towards anonline retailer." Journal of Retailing andConsumer Services. Vol. 14, pp. 95-107.