

Understanding the Effect of Various Factors on Impulse Buying Behaviour in Grocery Shopping on E-Commerce Platforms during the COVID-19 Pandemic Situation in Indian Context

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Abstract

In this study impulse buying behaviour for grocery shopping in various e-commerce platform during the COVID-19 Pandemic is examined across Indian states. COVID-19 pandemic has caused people to buy grocery items more than their need because of lockdown and fear of the virus. Data is collected for more than 300 respondents. Based on the statistical analysis with the current responses it is found out that scarcity and limited supply of grocery have strong relation with impulse buying behaviour in during COVID-19 pandemic. Peer buying is also an important factor which leads to impulse buying. Adding to these the various social media promotions, offers and discounts, well-categorized products all these are contributing factor to impulse buying. Many a time it is seen that people make unplanned purchases to make the cart eligible for free delivery and end up being spent more. This study also confirms this particular behaviour, i.e., making the cart eligible for free delivery has a strong impact on impulse buying. From this study marketers and brand managers will get an idea that how they can formulate winning strategies to keep their market share intact, if not better in such pandemic afterwards. The findings of the study will help to understand the fluctuations in grocery buying behaviour of the Indian consumers.

Keywords: Impulse Buying Behaviour, Online Grocery Shopping, COVID-19 Pandemic, E-Commerce

Introduction

India is now an emerging economy and impulse buying is an important factor in the context of major social and economic changes that India has seen from the last couple of years. There is high consumerism in India even after the economic slowdown of 2012-13. In Nielsen (2014), consumer confidence survey, Indian consumers were able to achieve the first rank with scoring 126, higher than the average of global average 98. This speaks that Indian consumers are always ready to spend, even a large section of the Indian population is now affected by westernize culture so buying behaviour of Indian citizens has changed a lot.

In recent years, India has seen rapid development in wireless technology and mobile device is now a necessity for an individual. This is the main reason why e-commerce platforms are flourishing in such a huge rate. According to a report published in December 2017, individuals have done shopping from mobile worth of 156 billion dollar where the value was only 42 million dollars in 2013 (Gutierrez, 2016). This data also demonstrated that mobile commerce was responsible for 23% of electronic commerce sales 2017 Q3. In China also the scenario is quite similar i.e., shopping from mobile devices is a major contributor to e-commerce sale that is 708.8% of overall e-commerce sale. In 2017, mobile shopping accounted for 676.7 billion dollars compared to mere 1.4 billion dollars in 2001. It is the utmost importance to the managers to

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know the purchase behaviour of consumers in various mobile applications and e-commerce platforms.

In India high penetration of smartphones, technologically advanced 4G network and increasing buying power of consumers are reason why Indian e-commerce is expected clocked at \$200 billion by 2026 compared to \$38.5 billion in 2017 (India Brand Equity Foundation, 2021). Paytm mall, Flipkart, Amazon are the major players here. Other than that, Myntra, Nykaa are also famous for clothing and beauty products. India has witnessed 8% year on year increase in smartphone shipment to reach 15.25 crore in 2019. Within 12 years, internet penetration has grown from a mere single digit to a double digit and the jump was sky high i.e., near about 1200%. (2017- 4% to 2019- 52.08%). As per (Keelery, 2020) in 2020 India has 696.77 million internet users, and it is expected to grow to 974.86 million by 2025.

Another major contributing factor to impulse buying is “Flash sale”. It is commonly known as online platform sales which gives customers the facility of buying goods in low prices or discounted price for a particular time being. It is defined as “special offer or limited period offer that ranges from 24-36 hours on certain products to encourage customers to buy products”. (Diska Vannisa, 2020) Flash sale acts as a trump card for e-commerce to drive sales. Research supports that free delivery and discounts have a synergistic effect on e-commerce conversion rates (Di Fatta, 2018).

When the whole world becomes stand still because of COVID-19 pandemic, India set one of the strictest lockdowns. Even though a huge economic downturn, Indian e-commerce witnessed a 17% increment in their volume in the beginning of the post lockdown phase. 133 percent increase in sales were observed in sectors like electronics, apparels, medicine and pharma and FMCG. Swiggy, Zomato, Jiomart all these companies tied up with local grocery deliveries to meet the demand. From food delivery partner to meeting grocery demand this was a huge shift for these companies. In the coming future, scope of e-commerce is huge since lockdown has changed the buying behaviour of the consumer (Agrawal, 2020).

People all over the world were aware of the COVID-19 virus in the very beginning of 2020. The daily number of new COVID positive cases started to rose from the middle of march and to protect the people from the deadly virus as well as to curb the virus spreading. The

whole country was disrupted because of the lockdowns and other measures taken to tackle COVID-19 Pandemic. Consumers were seen to do panic buying because of prolonged lockdown and uncertainty about the future due to pandemic (Andy J. Yap, 2020).

This has put undue strain on already-stressed supply networks, as well as impacted consumers financially (Crabbe, 2020). In the marketing research domain, the kind of purchasing pattern is widely recognised; a large quantity of article has previously been produced to determine the antecedents of impulsive buying behaviour. Substantial research papers have shown that hedonic (emotional) and utilitarian (practical) cues are the primary drivers of a conscious (planned) or subconscious (impulsive) buying behaviours (Andreas Leverin, 2006). Quite a few additional researchers have found motivation, recognised perceptions and attitude antecedents to consumer behaviour. The majority of prior academic research has focused on buying decisions greatly influenced by calmness, joy, and various positive sentiments. (Cassie Mogilner, 2011) and (Foroughi, 2013) considered these to be the impactful drivers of impulse buying behaviour. But researchers have also put a light negative effect of the emotions and attitudes upon buying decisions. (Boutsouki, 2019) argued that insights and expectations related to financial ups and downs is behind the negative hedonic state and eventually it drives the purchase decisions. To stay relevant and ahead of the competition, companies must know the importance of behavioural patterns of consumers and the factors related to those (Ján Dvorský, 2020); (Cepel, 2019).

Literature Review

According to (Umair Akram, 2018), there exists a strong relationship between quality of the websites and impulse buying in e-commerce. Prior to this, researchers have used sales promotion as moderating variable for impulse buying. (Umair Akram, 2018), also successfully established that various exogenous factors such as website quality, the positive effect of emotions, “urge to buy” have strong influence on online impulse buying. (Laura Aragoncillo, 2018) argued that social connections also play a pivotal role in case of impulse buying behaviour for clothing and apparel purchase. (Ceyda Aysuna Turkeyilma, 2015) talked about how website quality is a major contributing factor to trigger impulse buying in customers. (Nishtha Bhushan, 2019) has demonstrated

how culture and personality affects the impulse buying behaviour of Indian customers. According to the study performed by (Dewi, Nurrohmah, Sahadi, Sensuse & Noprison, 2017), The significance of impulse purchasing may be observed in massive sales it produces. It can range from 40% to 80% of all purchases based on product categories. They found that hedonic online browsing had a high likelihood of resulting in an actual purchase, which actually forced customers to buy impulsively.

A number of Indian states amended their precautionary standards, predicting that the degree of severity will continue to rise as the deadly COVID-19 epidemic spreads farther throughout the country. According to (Crabbe, 2020) 24-hour “electronic and print media coverage”, which frequently includes distressing news about COVID-19 mortalities, exacerbates the emotional state of fear and anxiety, and in turn consumers were forced to take an endurance approach. That is why Fear Appeal is incorporated in this research. In this study, I have tried to evaluate how Indian consumers purchase decisions and the logic behind impulse buying behaviour using the theory “Fear Appeal”.

(Rizwan Raheem Ahmed, 2020) also pointed out various other factors for impulse buying such as full lockdown, peers buying, unavailability and “limited supply of essential items”, “panic buying” and “US stimulus checks”. Their findings confirmed that “Fear appeal” and “Social media fake news” these two are positively related to impact buying as mediating factors. In the current study some of the factors are addressed to assess the buying behaviour of Indian customers in online grocery shopping.

Hypothesis Formulation

Impulse Buying Behaviour

The term impulse buying first introduced in Dupont studies (1948-1965) which says unplanned purchase as compared to the actual purchase maintaining the prepared shopping lists. According to (Stern, The Significance of Impulse Buying Today, 1962) impulse buying can be classified into 4 different types which are “Pure”, “Reminder”, “Planned” and “Suggestive” impulse buying. Most of the studies are based on these classifications. Today a majority of the population in India falls under the impulse buying category. Suppose watching videos of particular

cuisine in various video platforms aimlessly and then purchasing the ingredients from an online store will be pure impulse buying, in reminder impulse buying users feel the impulse to buy a product (which is left in a small amount) after seeing videos or images or notifications from the app from which they did their last purchases. Planned impulse buying suggests that when people make their shortlists based on monthly grocery needs and may be after seeing some cooking videos but make their purchase when good offers and promotions are available and lastly suggestive impulse buying tells that when someone makes the purchase based on someone’s recommendation or suggestion.

(Suryaningsih, 2020) showed impulsive buying is soft of an investment which is done based on a certain motive and without any cognitive thought process. In impulse buying the choice to buy anything is not based on complex cognitive processes. Impulsive purchases can be triggered by external cues and stimuli. As (Prince Clement Addo, 2020) rightly pointed out exterior cues are not the only reason, but in presence of interior stimuli such as “personal emotions”, are responsible. Further, Hepa supported this with the idea that impulse purchase may help people cope with poor self-esteem, depressive moods, and negative thinking. As a result of this shocking and alarming pandemic, impulsive purchasing has grown dramatically in the India and other countries (Allysha Tiffany Wiranata, 2020); (Kim, 2020).

Fear Due to Complete Lockdown

COVID-19 has disturbed people all around the world, from China to USA, with worried individuals panic buying; and indulging in impulsive shopping as a result of partial or full lockdowns (Prince Clement Addo J. F., 2020). The situation in India was not so different. As a result of stress, residents throughout the world have been instructed to follow necessary measures against COVID-19 spreading as part of partial or total lockdown (Min Zhang, 2019). The World Health Organization announced the COVID-19 as a pandemic, prompting many nations, notably India, to initiate lockdowns in March (Hebbar, 2020). According (Prince Clement Addo J. F., 2020) to in terms of infectivity, COVID-19 is more lethal than the flu, and the fatality rate is 20 to 30 times higher. As a result, not only has the Indian government enforced a lockdown, but citizens have also isolated themselves.

Because of the absence of employees and managers who are typically extensively involved in stocking critical products, impulsive buying behaviours have emerged. The WHO has also advised staying in isolation, and some nations, including the United States, Canada, China, France, Italy, Spain and numerous European countries, have implemented partial or total lockdowns (Sung-Wan Kim, 2020) (Crabbe, 2020). Therefore, the following hypothesis is proposed depending on the information

H1: Fear due to complete lockdown has a positive and substantial influence on impulse buying behaviour.

Buying Behaviour of Peers

Buying habits in different communities have a major impact on each other. Human purchasing behaviour is defined as the result of absorbing knowledge, attitudes, and activities from different people through “peer-to-peer social interaction” (Marijke De Veirman, 2017). As businesses strive to meet such issues, those try to shift customer attitudes and behaviour (Kim, 2020). These issues are influenced by two factors: 1) the company’s reaction to the situation, 2) varying consumer behaviours and attitudes that will influence other people (Bergel, 2019). All over the world peer-buying trend is observed because of the corona virus (Suryaningsih, 2020). People were prone to impulse purchases as a result of both negative and positive experience of peers and monitoring purchases of their neighbours and relatives (Prince Clement Addo F. J., 2020). According to (Sung-Wan Kim, 2020), Consumers are inclined to peer expectations regarding purchasing decisions and gain product appropriateness by observing people’s purchasing behaviour. Likewise, during COVID-19 pandemic, consumers kept a track of online and offline buying patterns of their friends and neighbours. Therefore, the following hypothesis is proposed depending on the information:

H2: Buying behaviour of peers has a positive and substantial influence on impulse buying behaviour.

Unavailability of Grocery Items

As (Crabbe, 2020) and (Suryaningsih, 2020) mentioned, everybody got the realization of stocking up essential items after seeing a lot of queues in the counter line which

were 3 to 4 times than normal. As per (Crabbe, 2020) and (Sung-Wan Kim, 2020), since the media coverage of COVID-19 has grabbed the attention of the entire globe, starting from supermarkets to mom-and-pop stores, which have abundant of assortments every necessary item, there was stock out because of panic buying of these items such as bread, milk, eggs, rice and other grocery items. Similar thing happened in the online platform. Most of the products were unavailable because of such a sharp spike in demand. These horrible experiences are shown in news and social media, which enticed people to purchase impulsively and keep a stock up of grocery items through online store. This behaviour continued till July in India. Therefore, the following hypothesis is proposed depending on the information:

H3: The unavailability of grocery items in online platform has a positive and substantial influence on impulse buying behaviour.

Limited Supply of Grocery Items

The virus of COVID-19 epidemic spread rapidly, resulting in unanticipated panic purchasing and a surge in impulsive purchases. The need for basic products has grown by several times and businesses are not able to keep up with the rapid spike in demand. Ultimately, there is a disturbance in the supply chain, as well as shortages of critical items in super stores, causing even more fear in the consumer market (Sung-Wan Kim, 2020), (Rajan, 2020). (Kim, 2020) and (Prince Clement Addo J. F., 2020) mentioned, the emergence of this pandemic has triggered demand as well as supply shocks throughout the world. (Crabbe, 2020) (Guitton, 2020) argued that, a misunderstanding about the state of food and grocery items and various other vital products of supply chain caused to reach to the “breaking point” because of anxiety. As a result of panic buying, demand for daily necessary items grew even more, disrupting the whole process of supply chain and logistics for essential items (Joe Ruiz, 2020). Therefore, customers’ anxiety is increased in this dire situation, and they impulse purchases are the only way out (Kim, 2020). Therefore, the following hypothesis is proposed depending on the information:

H4: The limited supply of grocery items in online platform has a positive and substantial influence on impulse buying behaviour.

Unavailability of Delivery Slot

Indians are trapped inside their houses due to the coronavirus outbreak and are searching for grocery items to be delivered to their home via “contactless delivery”. However, when consumers chose applications like BigBasket, Grofers, Amazon and Flipkart, they were becoming increasingly frustrated as delivery slots become scarce (Dash, 2020). The coronavirus (COVID-19) epidemic has put a lot of pressure on grocery items delivery services like BigBasket, Amazon, Grofers, Flipkart, and others websites (Tech Desk, 2020). All over the social media people posted discourteous remarks about these e-commerce websites. An IT professional from Hyderabad mentioned, “I keep waiting for the slot to be available and order within seconds. If you don’t do this, the slot is gone,” (Dash, 2020). BigBasket, Grofers, and other delivery apps have also been bombarded with complaints on Twitter about delayed refund, late deliveries and insufficient slots. Honey Mehta, an employee of Salesforce Inc, tweeted, “@Grofers why are you taking orders when you can’t deliver. Are you guys idiot? We are waiting for our order to get delivered today and we have nothing but you have rescheduled it w/o intimation.” (INDO ASIAN NEWS SERVICE, 2020). When twitter was piled up with disgracing tweets about these online services, BigBasket CEO Hari Menon used Twitter to explain why it’s so tough to get slots on the app. He also mentioned that, they prepare for demand of the next quarter ahead of time, including building up storehouses, purchasing shelves, pick up machines and forklift, boxes, employing staffs, and procuring delivery vehicles. But as the demand for BigBasket grew, one important concern arose: its workers went back to their hometowns just before nationwide lockdown was implemented. “That was something we didn’t anticipate, and which meant we couldn’t pick orders and deliver them in sufficient numbers to satisfy the 3-6-fold increase in demand,” Menon twitted (Dash, 2020). All of these incidents led people to opt for panic buying whenever slots were available. Various state governments announced that essentials including as food, vegetables, milk, medications, and other items will be delivered to the doorsteps of residents in hotspots. In Noida and its environs, the news prompted panic shopping and hoarding of food (IANS, 2020). Therefore, the following hypothesis is proposed depending on the information:

H5: The unavailability of delivery slots for grocery items in online platform has a positive and substantial influence on impulse buying behaviour.

Application and Website Experience

Effective website and application design, spanning from serviceability, accessibility, simplicity of navigation from or within pages and page interfaces themselves, is critical to stay ahead of competitions in electronic commerce. (Klopping, 2004) discovered that some atmospheric variables linked to all customers’ satisfaction. Special discounts and offers/coupons, product details, images, product pricing, total cost of products, service/toll free numbers for customer support, choices to remove previously added goods, and confirmation of orders through e-mail are all variables to consider. As (Jeffrey F. Rayport, 2003) 7C, or seven design components, were found in effective websites. These are: a) Context: layout and design. b) Content: text, images, sounds, and videos that are on the website. c) Community: how the site allows communication between users. d) Customization: Site capability to deliver itself to various users or allow users to personalize the site. e) Communication: how sites allow communication of sites with users; user with the site; or two-way communication. f) Connection: the level of connection of the site with other sites. g) Commerce: The ability of sites to allow commercial transactions. All these important factors decide the overall buying experience of a customer. Specially during this COVID-19 pandemic in-app suggestions, or “people bought these items frequently” sections helped customers to buy more items than their decided shopping list. BigBasket, Grofers, Amazon pantry, Flipkart all were adept in putting advertisements for customers in various social media platforms which further drew the interest of customers to make some unplanned purchase. Therefore, the following hypothesis is proposed depending on the information:

H6: Application and website design for grocery items in online platform has a positive and substantial influence on impulse buying behaviour.

Waiving off Delivery Charges

Customers love to have free shipping from the e-commerce websites. According to the report, free shipping is an

essential element for four out of five customers when purchasing online (Charlton, 2014). Free shipping is defined as “Free shipping is an increasingly-popular option for online shopping, where customers do not have to pay an additional shipping charge.” (Bigcommerce, n.d.) Free shipping attracts customers to buy the products by putting all types of costs into the final price tag of each item. (Stitchlabs, 2015) has showed “that retailers who always offer free shipping can directly increase revenue by 10 percent.” Sometimes it is found that success rate is poor because of hefty shipping charges and ultimately customers leave the website just by adding items in the cart. BigBasket, Grofers, Amazon, Flipkart all these websites have set the shipping charges till a threshold cart value after that customer can avail free shipping. In case of Amazon pantry customers have to purchase more than ₹200 to make a successful order. Though in this case ₹59 will be levied as delivery charge for non-prime members and ₹30 will be charged for prime members. If the order value exceeds ₹799, then only customers will get free delivery. More or less similar price caps of cart

value are there for other e-commerce websites as well to get free delivery. Because of the low-ticket nature of goods, owners of Betterware (UK based homeware company) always struggled to get the average order value above £24. To promote greater average expenditure, they utilised tiered shipping costs with free over £35 - the final effect was a 20% rise in AOV with no impact on transaction numbers. (Charlton, 2014). This actually means that to forego the delivery fee customers not only crossed the threshold cart value, but spent more than that. If customers struggle to reach the threshold cart value to become eligible for free delivery, they may end up buying impulsively and make the cart value way above the threshold limit. More often than not, the urge to waive off the delivery charge and be eligible for free delivery make customers to buy impulsively. Therefore, the following hypothesis is proposed based on the information:

H7: Waiving off the delivery charges by making the cart value crossing the threshold limit has a positive and substantial impact on impulse buying behaviour.

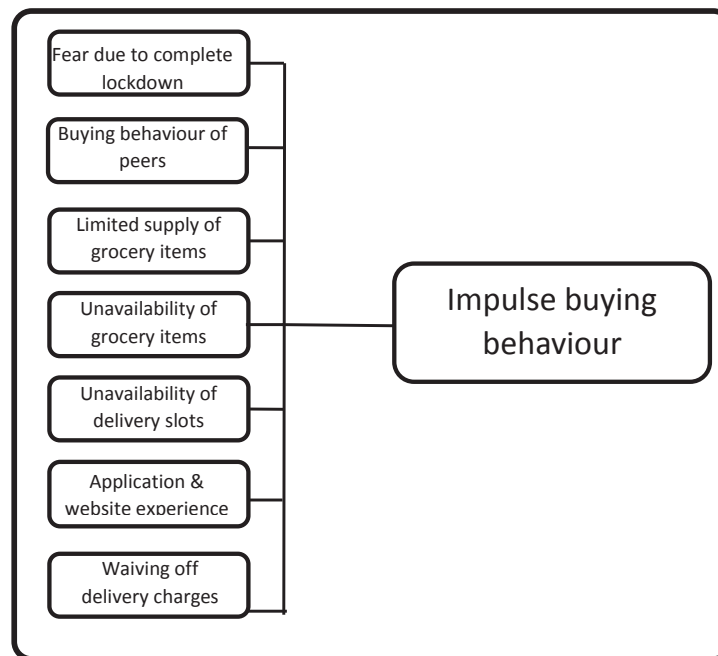


Fig. 1: Conceptual Model

Methodology

Quantitative methods are used in this study and cross-sectional data is used for analysis; Modified questions are developed after reviewing earlier studies. The modified questions related to impulse buying behaviour have been extracted from previous study (Rizwan Raheem

Ahmed, 2020). The questions for the COVID-19 factors were formulated from previous research papers (Prince Clement Addo F. J., 2020), (Pei Liu, 2019).

Along with these few other variables which directly affects the impulse buying behaviour such as fear due complete lockdown, unavailability of grocery items,

buying behaviour of peers, limited supply of grocery items, website and application experience, unavailability of delivery slots and waving off delivery charge were incorporated based on various reports and studies (Crabbe, 2020); (Rajan, 2020); (Bergel, 2019); (Min Zhang, 2019).

Sampling Method and Data Collection

For this research samples are chosen from the population of Indian customers, who belong to tier-1 and tier-2 cities of India, such as Kolkata, Mumbai, Delhi, Indore, Hyderabad, Chennai etc. Since various metropolitan cities of India is considered while collecting data, it can be concluded that sample is true representation of Indian citizens. Purposive sampling technique is used while selecting a sample since population is not known for this study. Data is collected from 12th April 2021 to 27th June 2021. Online Google form is floated and asked the sample to give their insights. 327 responses were received initially but 15 responses were scrapped off since they prefer only offline mode of purchase. 312 responses were those who use either online or both online and offline modes for grocery shopping and their responses are chosen as valid responses for this study.

Data Analysis

Quantitative research was conducted through prepared questionnaires for each construct and floating the google form to get responses. Based on responses received from the audience, the analysis has been done in Excel and SPSS for understanding the results. Linear regression model is used to check the impact of the overall effect of considered variables on impulse buying behaviour. Exploratory factor analysis is used to check the suitability of the mentioned constructs and questions. Descriptive statistics is also checked in this study to know the necessary attribute of the constructs for example mean, median, standard deviation, skewness and kurtosis. To perform the regression analysis data should be normal and standard deviation and skewness will be used to determine normality (Rizwan Raheem Ahmed S. H., 2019). As a part of exploratory factor analysis, Kaiser-Meyer-Olkin (KMO) and Bartlett's tests are performed to check the suitability of the response and sampling adequacy. Reliability test and retention of variables are done on the basis of total variance explained. Further as a part of confirmatory factor analysis, the rotated component

matrix is formulated with the factor loadings. Based on the factor weight of various constructs, composite reliability and average variance extracted are calculated to check the reliability and validity of the incorporated variables.

Demographic Details

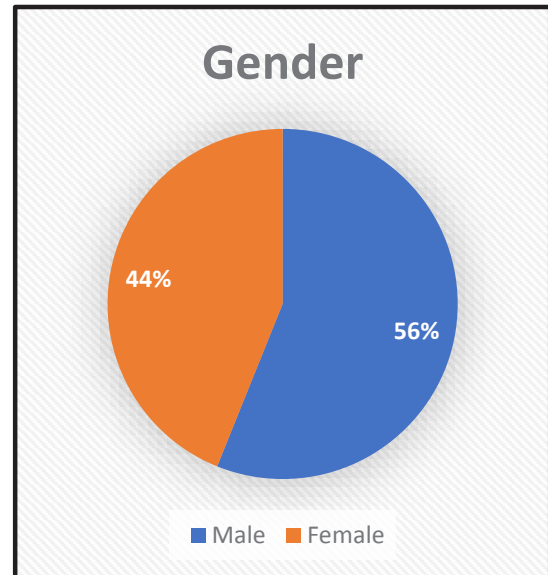


Fig. 2: Gender Distribution

As part of demographics analysis, 175 (56%) were male respondents, and 137 (44%) responses were collected from females.

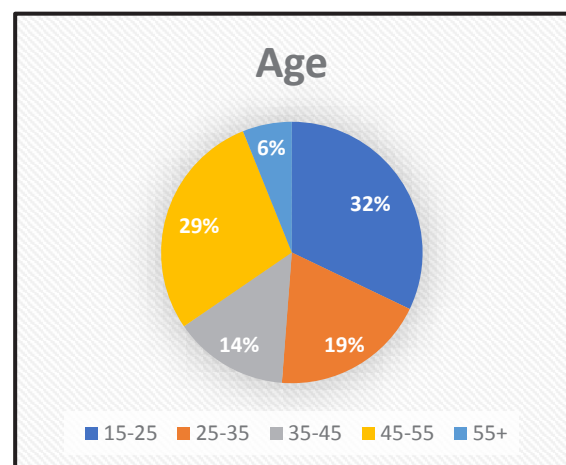


Fig. 3: Age Distribution

Response data consists of 100 (32%) respondents who fall under the age bracket of (15-25) years, 59 (19%) respondents are in the age bracket of (25-35). Although little less, 44 (14%), respondents are there in

the age bracket of (35-45) years, last but not the least 90 respondents (29%) belong to the age bracket of (45-55) years. Lastly, 19 (6%) responses are from the respondents who are more than 55 years.

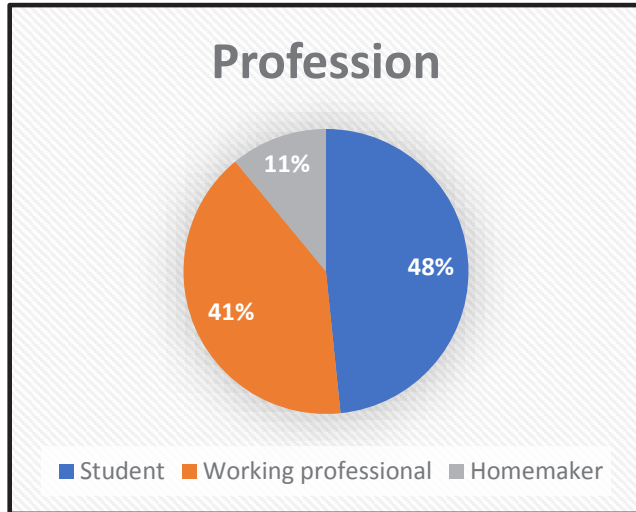


Fig. 4: Profession of Respondents

The distribution of the profession is also checked, it is as follows: 150 (48%) responses are received from students. 128 (41%) people are working professionals. 34 (11%) female respondents were homemakers.

Descriptive Statistics

In this study, descriptive statistics is used to check the important attributes of variables. All the responses for the items under a single variable are averaged and then descriptive statistics is checked in SPSS.

As per the Likert scale, “Strongly Disagree = 1, Disagree = 2, Neutral = 3, Agree = 4, Strongly Agree = 5.”

Constructs have been given abbreviations like:

IBB: Impulse buying behaviour

FCL: Fear due to complete lockdown

BBP: Buying behaviour of peers

UNG: Unavailability of grocery items

LSG: Limited supply of grocery items

USL: Unavailability of delivery slot

WPE: Website and application experience

WDC: Waiving of delivery charge

From below table, it is evident that all the variables are in ± 1.5 standard deviation and skewness is also under ± 1 . With this it can be concluded that the data is normal. Along with this, the kurtosis for the collected responses is within the ± 3 range, which further substantiate the

Table 1: Descriptive Statistics Analysis

Descriptive Statistics									
	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness		Kurtosis	
						Statistic	Std. Error	Statistic	Std. Error
IBB	312	1.00	5.00	3.3771	.94463	-.583	.138	-.387	.275
FCL	312	1.00	5.00	3.4530	.94881	-.655	.138	-.049	.275
BBP	312	1.00	5.00	3.4199	.92173	-.571	.138	-.156	.275
UNG	312	1.00	5.00	3.4338	.91075	-.599	.138	.027	.275
LSG	312	1.00	5.00	3.4754	.87812	-.565	.138	-.286	.275
USL	312	1.00	5.00	3.4188	.91580	-.477	.138	-.144	.275
WDC	312	1.00	5.00	3.4989	.88616	-.565	.138	-.167	.275
WPE	312	1.20	5.00	3.4500	.87982	-.608	.138	-.408	.275
Valid N (listwise)	312								

Source: SPSS, Primary Research.

Reliability Test

“Reliability refers to how consistently a method measure something. If the same result can be consistently achieved by using the same methods under the same circumstances, the measurement is considered reliable” (Middleton, 2020).

In this analysis Cronbach alpha is used for measuring reliability. “Cronbach’s alpha is one way of measuring the strength of that consistency. Cronbach’s alpha is computed by correlating the score for each scale item with the total score for each observation (usually individual survey respondents or test takers), and then comparing that to the variance for all individual item scores” (Goforth, 2015).

$$\alpha = \left(\frac{k}{k-1} \right) \left(1 - \frac{\sum_{i=1}^k \sigma_{y_i}^2}{\sigma_x^2} \right)$$

...where: k refers to the number of scale items
 $\sigma_{y_i}^2$ refers to the variance associated with item i
 σ_x^2 refers to the variance associated with the observed total scores

Source: (Goforth, 2015).

Fig 5: Cronbach’s Alpha Calculation

Cronbach's alpha	Internal consistency
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

Source: (Goforth, 2015).

Fig 6: Cronbach’s Alpha Range

This table shows the various range of values for Cronbach’s alpha and the significance of each range.

Validity Test

“Validity refers to how accurately a method measures what it is intended to measure. If research has high validity, that means it produces results that correspond to real properties, characteristics, and variations in the physical or social world” (Middleton, 2020).

The rotated component matrix from SPSS output gives the factor loadings of all the variables (factors) and items.

“Composite Reliabilities” (CR) and “Average Variance Extracted” (AVE) is calculated based on the factor loadings. From Table 2 it is evident that all the factors are in good range in terms of Cronbach’s Alpha and crossed the threshold value 0.6 for composite reliability. So, all the items are significant. Also, from Table 2 it is seen that the AVE values are more than 0.65 and the minimum threshold value is 0.5. So, all the values are in the acceptable range. When the square root of AVE values is taken and compared with Pearson’s coefficients of each pair of constructs, all the AVE values are greater than those coefficients. So, discriminant validity is also satisfied.

Table 2: Reliability and Validity Test

<i>Variables</i>	<i>Items</i>	<i>Factor Loadings</i>	<i>Average Variance Extracted (AVE)</i>	<i>Composite Reliabilities (CR)</i>	<i>Cronbach's Alpha (CA)</i>
Impulse buying behaviour	IBB 1	0.861	0.738	0.894	0.836
	IBB 2	0.854			
	IBB 3	0.862			
Fear due to complete lockdown	FCL 1	0.879	0.745	0.898	0.843
	FCL 2	0.864			
	FCL 3	0.846			
Buying behaviour of peers	BBP 1	0.862	0.736	0.893	0.839
	BBP 2	0.883			
	BBP 3	0.828			
Unavailability of grocery items	UNG 1	0.879	0.737	0.893	0.832
	UNG 2	0.879			
	UNG 3	0.815			
Limited supply of grocery items	LSG 1	0.865	0.710	0.880	0.819
	LSG 2	0.867			
	LSG 3	0.794			
Unavailability of delivery slot	USL 1	0.879	0.738	0.894	0.828
	USL 2	0.868			
	USL 3	0.829			
Waiving of delivery charge	WDC 1	0.886	0.752	0.901	0.843
	WDC 2	0.871			
	WDC 3	0.845			
Website and application experience	WPE 1	0.799	0.661	0.907	0.877
	WPE 2	0.823			
	WPE 3	0.823			
	WPE 4	0.825			
	WPE 5	0.795			

Source: SPSS, MS-Excel, Own research.

Exploratory Factor Analysis

In any multivariate statistical analysis when a large number of variables are incorporated, exploratory factor analysis is used for revealing the fundamental structure of those variables. It is considered as the most crucial method in assessing and validating constructs and each of the items. Unimportant constructs as well as items are removed with the help of EFA method.

As (William Emory, 1991) rightly pointed out that, EFA is capable of condensing a vast range of data. The EFA

aids in the validation and retention of factors and items. The results obtained from “principal component rotated matrix” bolster validity of items and factors extracted. In this study, two new constructs, unavailability of delivery slot and waiving of delivery charge, are used and each of these has 3 items. The values obtained after the analysis shows that all the factor loadings are in the range of 0.8-0.9. Since the factor loadings of each item are more than 0.6, it can be concluded that all items and variables are significant so these two can be retained in the study (Ahmed, 2020), (Kaiser, 1974).

“Kaiser-Meyer-Olkin (KMO) and Bartlett’s Test” Results

The result obtained after performing Kaiser Meyer Olkin (KMO) test showed that KMO value is 0.737, KMO values which are in the range of 0.70 to 0.79 are taken as good and values in the range of 0.80 to 0.89 are termed as (Kaiser, 1974).

Table 3: KMO and Bartlett’s Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.737
Bartlett's Test of Sphericity	Approx. Chi-Square	3592.959
	df	325
	Sig.	.000

Also, the Bartlett’s test of sphericity shows that p value is less than 0.05 which mean at 5% level of significance, the correlation which exists between the items and the constructs is significant (Kaiser, 1974).

Total Variance Explained

From the “Total Variance Explained” it is found out that 8 significant components are there to show variance dispersion. The “cumulative %” variance shows a value of 74.268%. This value is in the acceptable range since the minimum value suggested is 50%. The result also shows that all the 8 components have Eigenvector greater than 1. So, based on the cumulative % variance and Eigenvalues it can be said that gathered responses are reliable.

Confirmatory Factor Analysis

The confirmatory factor analysis (CFA) is used to examine the measurement model. This method is used to check the “fitness of data” in the formulated model (Rizwan Raheem

Ahmed S. H., 2019). This study used Impulse buying behaviour (IBB) as dependent variable and Fear due to complete lockdown (FCL), Buying behaviour of peers (BBP), Unavailability of grocery items (UNG), Limited supply of grocery items (LSG), Unavailability of delivery slot (USL), Website and application experience (WPE), Waiving of delivery charge (WDC) as independent variables. The proposed hypothesized model has 8 factors and 26 items are considered for this. From the results of Table 2 it is seen that the factor weights between the constructs and items are in the range of 0.80 to 0.90, which has substantiated that the hypothesized model is suitable. The convergent validity of constructs is also supported with the help of average variance extracted and for all the variables the value is more than the minimum threshold value of 0.5.

Regression Analysis

To evaluate the hypothesized relationships, all the data were standardized and then regression analysis is done. To conclude the relation between independent variables such as FCL, BBP,

UNG, LSG, USL, WDC, WPE and IBB from Indian context regression coefficients will be used. The results of Table 4 support that proposed hypotheses hold true. All the hypothesis from H1 to H6 are retained, as t-statistics are greater than 2 and $p < 0.05$ for all hypotheses. That is why, it is safe to conclude that FCL, BBP, UNG, LSG, USL, WDC, WPE have a positive and substantial influence on the impulse buying behaviour of Indian people. Further it can be concluded based on the regression coefficient that fear due to complete lockdown (0.739) and unavailability of grocery items (0.679) have impacted the most. Next is impact because of limited supply of grocery items (0.587). Buying behaviour of peers has the lowest impact on impulse buying behaviour (0.372).

Table 4: Regression Analysis Results

Hypotheses	Variables	Regression Coefficient	Standard Error	T-Statistic	P	Conclusion
H1	Fear due to complete lockdown	.739	.083	8.90	.000	Established
H2	Buying behaviour of peers	.372	.059	6.30	.000	Established
H3	Unavailability of grocery items in Shelves	.679	.078	8.70	.000	Established
H4	Limited supply of grocery items Goods	.587	.054	7.93	.000	Established
H5	Unavailability of delivery slot	.565	.081	6.97	.000	Established
H6	Waiving of delivery charge	.513	.063	8.14	.000	Established
H7	Website and application experience	.478	.065	7.35	.000	Established

Conclusion

In this research various impacting variables are considered for impulse buying behaviour during COVID-19 pandemic of Indian citizens. The results have demonstrated that fear due to complete lockdown (FCL) and unavailability of grocery items (UNG) are the major reasons for impulse buying behaviour of Indian customers. Next, buying behaviour of peers (BBP), limited supply of grocery items (LSG), unavailability of delivery slot (USL), website and application experience (WPE), waiving of delivery charge (WDC) all these variables also possess a positive impact on impulse buying behaviour of Indian citizens. Many practical implications can be derived from the results established in the study. First of government agencies and other institutions must formulate a set of strategies so that customers do not go through a similar kind of problem as an unprecedented situation like COVID-19 pandemic. Next managers of the companies must take necessary and prudent decisions so that they can meet the demand of people at large during such grave situation. They must take and formulate some novel ideas so that they can gain a competitive advantage over their competitions to gain the maximum market share in a situation similar to COVID-19 pandemic.

The variables considered in this paper are not exhaustive and comprehensive. Further research can incorporate other variables to check how impulse buying behaviour will be impacted in the presence of those variables. Due to lockdown, it was not possible to gain the responses from a large number of people. Future research can work with a greater number of respondents to see a big picture of the impacts. Previously no study was done in Indian context. Future research may think work on a diverse set of people from different states of India. Due to time constraints this research lacks the specificity of data. Moreover, data received from various states were not affected similarly by the deadly virus. So, it cannot be generalized for every state of India. Future researches can work on responses with a larger scale to check and confirm the various items affecting impulse buying behaviour of Indian consumers.

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