

Impact of the COVID-19 Pandemic on the Grocery Shopping Behavior of Individuals



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Abstract Understanding the mobility patterns of human beings is important during the pandemic to assess the spread of ineffectual diseases. The present study attempted to explore the grocery shopping behavior of consumers before and during the COVID-19 pandemic conditions. To achieve this objective, a Google Forms-based online survey has been conducted (viz., the survey form has been circulated through electronic and social media) to understand consumer behavior and their daily mobility. The data is analyzed based on the socioeconomic characteristics and their impact on the frequency of shopping, shopping duration, mode of shopping, distance traveled for shopping, etc. From the analysis, it was inferred that the majority of individuals are restricting their shopping trips to nearby grocery shops and making shorter trips. The results of this study provide some insights into grocery shopping behavior, and it might be extended to other shopping-related activities.

Keywords Grocery shopping · Pandemic · COVID-19 · Consumer behavior · Chi-square test · Online survey

1 Introduction

The pandemic situation due to Corona Virus Disease (COVID-19) has begun in India in March 2020. However, many countries such as China, Italy, Spain, and the United States of America (USA) have experienced and been impacted severely by this outbreak of COVID-19, while the World Health Organization has initiated different pandemic plans and the entire globe has started rethinking the condition of COVID-19 by considering different preventive measures including the lockdown of the severely

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affected regions, travel bans, restrictions on recreational trips, imposing work-from-home, etc. Further, many others include shopping malls, schools, and public events that are shut down during this pandemic. In India, the countrywide lockdown started in March 2020, and subsequently, the lockdown has been lifted based on the number of cases. In India, essential services-based shopping trips (viz., particularly grocery and vegetables/fruits-related trips) are allowed during the lockdown period with strict enforcement of social distancing and limited operational hours. Research studies have explored the effectiveness of travel restrictions in controlling the spread of the outbreak of COVID-19 [1, 2], whereas many countries have imposed a travel ban which is one of the important measures to prevent the widespread infectious flu virus like COVID-19. It is essential to understand human travel patterns during the restricted travel bans and fulfilling the daily needs of human beings [3]. Researchers have also explored the impact of travel bans on the mobility patterns of people in China during different stages of COVID-19, and the results concluded that travel bans have a significant impact on the control of spreading diseases and such travel patterns may be useful for the healthcare professionals to understand the possible way of the spread of flu-based infectious diseases during a pandemic [4].

Viral diseases have a significant impact on the travel pattern due to the risk perception of the public [5]. To control the spread of the virus, it has been suggested to implement social distancing norms, and this social distancing leads to an increase in waiting time at shopping places in the form of long queues at the entrance, inside the shopping places, and also at the cash counters. These specific conditions might influence the consumer's psychological behavior and it may change their shopping trip behavior significantly. Though this kind of pandemic condition might be there for the short term and also it can't be denied in the future, it is necessary to understand consumer behavior and its impact on changes in travel behavior which gives an idea about the different strategies to face the future pandemic conditions. In this context, the objective of the proposed study is to estimate the impact of COVID-19 on shopping behavior and its related travel attitudes during the pandemic condition. The remainder section of the study is as follows. The literature review about the pandemic conditions and related travel behavior is given in Sect. 2, and the data collection and survey questionnaire are discussed in Sect. 3. Detailed descriptive analysis is provided in Sect. 4. Section 5 provides the potential conclusions from the study observations.

2 Literature Review

In general, travel is derived from demand, and it exhibits various activity-travel patterns and different travel behaviors [6]. Several research studies have explored the various factors that influence travel behavior including land-use characteristics, availability of transport modes, fear, and flu-type infectious diseases. Studies have shown that demographic variables, urban density, transit infrastructure, and land use factors have a significant impact on travel decisions [7]. Researchers have explored that

the increasing lifestyle and socio-demographic variables have significantly impacted individual accessibility within the geographic location in an urban environment [8]. Further, Kim et al. explored the impact of fear on travel behavior during the Middle East Respiratory Syndrome (MERS), and study results concluded that traveler fear has significantly influenced travel behavior during flu diseases [9]. The outbreak of diseases is one of the pandemic conditions, and there are other kinds of pandemic conditions such as cyclones and war that have a different level of impact on travel behavior.

Some studies found that Information and Communication Technologies (ICTs) influence travel patterns, and they concluded that change in technology makes a change in travel patterns over spatial and temporal [10]. Further, from past studies, it was observed that tourist consumer behavior largely affects travel behavior and they have proven that ICT has a significant role in tourist behavior which has an impact on the economy of a particular area [11, 12]. Researchers have identified that frequent Internet users will travel more frequently as compared to the non-Internet users due to various activities (viz., product search) on the Internet and which further changes their travel patterns [13]. Some research studies have identified that the travel time ratio is a predominant factor in the change in travel patterns of urban commuters which further impacts the activities of social changes [14]. In travel activities, shopping is a complex travel activity, and it has a significant impact on travel behavior [15, 16]. Grocery shopping has varied travel behavior related to mode choice and destination patterns for weekdays and weekends also. Online-based grocery shopping potentially changes user travel behavior, and many studies have focused on the quantification of this online shopping over store-based shopping [17]. Researchers have further focused on the individual choice between online versus store-based shopping, and the results concluded that choice-making is a complex task in particular grocery-based items [18]. Studies also focused on various factors such as the number of goods, time of the day shopping, weekend/weekday shopping, delivery cost, and impact of promotions and found that these situation-based factors in a particular quantity of goods have a positive impact on online grocery shopping choice [19]. Another research study explored the choice of travel mode for making grocery shopping trips, and the study results concluded that the household size and location of the grocery shop significantly influence the mode choice [20].

In general, during restricted movements, people plan to make fewer out-of-home activities and also give importance to comfort when making those activities. Further, these restricted movements have a negative impact on planning activities [21]. Also due to restricted travel, the active travel modes will be stimulated for short trips, and there will be a change in travel patterns and mode choice for making these patterns [22]. With the travel restrictions as well as the social distance norms, there is a significant drop in demand for travel which results in more activities that have been carried work from home and there are fewer trips for shopping as well as leisure [23]. However, people may use online-based shopping for their daily needs in major cities which results in some freight activity; still, it can be observed as the reduction in the number of trips due to restricted movements. Also, studies have proven that flu-based infectious diseases might change commuter travel mode choices [24]. It is also

important to understand the mode choice of commuters during the pandemic of the outbreak of infectious diseases. Researchers have studied the impact of social changes on travel behavior by using household travel survey data, and the results concluded that temporal and spatial characteristics significantly change travel behavior [25]. Researchers have also studied the pandemic situation of terror threats, and the results concluded that the pandemic of terror threats is significantly influenced by fear and risk perception of the public, particularly women, and the same resulted in the usage of personalized vehicles [26]. Another research study explored the pandemic impact of terror and ineffectual disease on travel behavior, and results revealed that travelers are much more fearful of ineffectual diseases while they travel in public transportation [27]. Other research studies explored that fear has a significant impact on travel behavior analysis [28]. Further, researchers have explored consumer behavior during pandemic conditions of Severe Acute Respiratory Syndrome (SARS), and the results concluded that pandemic conditions severely impacted the travel patterns of people's daily needs [29].

Based on the above studies, it can be inferred that a significant contribution was done by the researchers in understanding the impact of risk perception and pandemic conditions on travel behavior. Also, there is a good number of works related to shopping trips, and their associated activities during pandemic conditions are identified. But with the self-experience during the COVID-19 pandemic conditions, the authors felt that it is necessary to study grocery shop-based trips during pandemic conditions and the risk perception of the users during such trips. In this direction, the proposed study aims to identify the behavior of people for making daily essential-based trips and the impact of socioeconomic characteristics on their shopping patterns during pandemic conditions.

3 Data Collection

The survey instrument is designed in such a way that it is suitable for online administration by keeping the pandemic COVID-19 in view, and a random sampling technique was adopted for the administration. The survey questionnaire was administered to a wide group of people using various electronic and social media like E-mails, Facebook, WhatsApp, and LinkedIn. The survey has been conducted during April 10–30, 2020, and approximately 840 samples were used for the analysis after removing incomplete samples. The primary purpose of the survey is to obtain information on individual grocery shopping behavior during and before the lockdown conditions due to the pandemic, COVID-19.

3.1 Design of Survey Instrument

The survey instrument contains four-folded questions which include socio-demographic characteristics, grocery trip-related information before lockdown, grocery trip-related information during the lockdown, and the anticipated user behavior post lockdown conditions. The socio-demographic characteristics include gender, age, income, and vehicle ownership. Grocery trip-related information before and during lockdown contains the mode of shopping (online or offline), distance traveled for shopping, shopping duration, frequency of shopping, the amount spent on shopping, type of payment at shopping destinations (cash or card or payment apps), etc. The same information collected from the individuals before lockdown as well as during lockdown will be useful for observing the behavior of individuals before and during the lockdown. Further, the survey instrument contains the anticipated behavior of the individuals after the lockdown. This section contains questions related to changes in travel patterns, perception of public transportation, etc.

3.2 Data Collection

The present study included 840 samples from the participants out of 860 samples collected after performing data mining, and all individuals in the sample data are aged between 24 and 54 years. Survey questionnaires are circulated online, and data is received in the form of Excel sheets. Among these participants, nearly 40% are workers, 24% are students, and the remaining are non-workers. Further, it has been observed from the data that more than 60% of individuals have a monthly income range of less than Rs. 50,000, but, at the same time, nearly 18% of the individuals belong to the high-income group, which are having a monthly income range of more than Rs. 1,00,000. Of the total respondents, it has been observed that more than 70% have a minimum education level of Graduation, and nearly 90% of individuals have at least one car at home. Table 1 shows the descriptive statistics of the sample collected, and it also shows the mean and standard deviation values of the collected data.

4 Data Analysis

The basic methodology adopted for this study is to understand the individual behavior before and during COVID-19 for making their grocery shopping trips. In this process, the study analyzed the socioeconomic characteristics of the individuals and their impact on the frequency of shopping, mode of shopping, the amount spent on shopping, and distance traveled for shopping before and during COVID-19. Figure 1 depicts the distribution of age groups among respondents, and Table 2 depicts the

Table 1 Descriptive statistics of the data collected from the survey

Factor	Description (code)	Number of responses	Percentage (%)	Mean	Standard deviation
Gender	Male (1)	636	77	1.77	0.42
	Female (0)	191	23		
Age	<20 years (1)	101	12.21	37.43	13.39
	20–30 years (2)	339	40.99		
	31–40 years (3)	209	25.27		
	41–50 years (4)	105	12.7		
	>50 years (5)	73	8.83		
Occupation	Student (1)	195	23.6	2.12	0.76
	Non-worker (2)	335	40.5		
	Worker (3)	297	35.9		
Monthly income	<Rs. 10,000 (1)	141	17.04	2.18	1.11
	<Rs. 10,001–20,000 (1)	162	19.6		
	Rs. 21,000–50,000 (2)	216	26.12		
	Rs. 51,000–100,000 (3)	162	19.59		
	>Rs. 100,000 (4)	146	17.65		
Education	Matriculation (10th)	116	14.03	3.27	1.02
	10 +2/Diploma	103	12.45		
	Graduation	255	30.83		
	Post-graduation and above	353	42.68		
Vehicle ownership	0	114	13.78	1.39	0.91
	1	394	47.64		
	2	220	26.6		
	>2	99	11.97		

distribution of income ranges among respondents. From Fig. 1, it has been observed that the majority share of respondents belongs to the age group of 20–30 years. From Table 2, it can be observed that nearly 17% of the individual's monthly income is less than Rs. 10,000, and nearly 18% of the individuals are earning more than Rs. 1,00,000 per month, which clearly shows the variation between the economic levels of the individuals.

Further, nearly 53% of individuals are working from home due to COVID-19. Among these people, nearly 18% of the individuals belonging to the high-income group (earning more than Rs. 1,00,00 per month) are working from home and at the

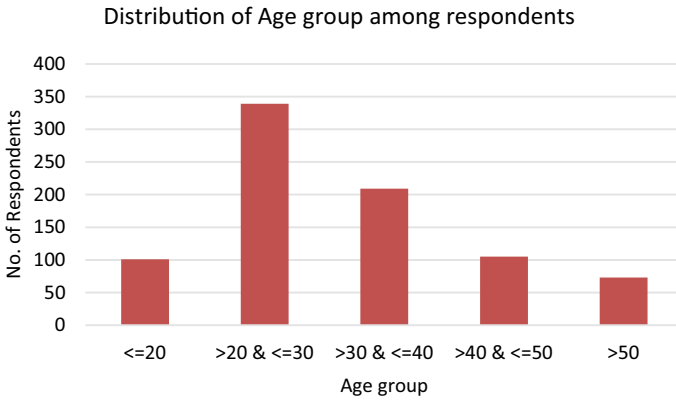


Fig. 1 Distribution of age group among respondents

Table 2 Distribution of income ranges among respondents

Income level	No. of respondents	% no. of respondents
<10,000	141	17
10,001–20,000	162	19.6
20,001–50,000	216	26.1
50,001–100,000	162	19.6
>100,000	146	17.7

same time, a mere 30% of the individuals from the low-income group (earning less than Rs. 10,000 per month) are working from home. These statistics clearly show that people working on a daily wage basis or in small-scale industries don't have the luxury of working from home. The majority of the individuals who are working in managerial or executive positions are getting a choice of working from home.

4.1 Mode Choice Behavior of Individuals

Regarding the mode choice behavior of individuals, a considerable difference was observed between the participants before the pandemic and during the pandemic. Nearly 10% of individuals are making trips using PT, Ride-hail, and auto-rickshaw before pandemic conditions, but during the pandemic the share of these modes is nil. Further, a considerable increase in the mode share was observed for private modes like cars and two-wheelers. Walking trips increased from 19 to 31% which shows that people are inclined to make shorter trips or maintenance trips during the pandemic time. Table 3 shows the percentage share of the mode choice of individuals before and during pandemic conditions.

Table 3 Percent share of the mode choice of individuals before and during pandemic conditions

Mode choice	The percentage share of individuals	
	Before pandemic	During pandemic
Public transit	4.7	0
Ride hail (Ola/Uber)	0.6	0
Auto-rickshaw	3.1	0
Car	6.9	8
Two-wheeler	65.8	60.7
Walk	18.9	31.3

4.2 The Shopping Behavior of Individuals

Regarding shopping destinations, it was observed that due to the COVID-19 pandemic, individuals constrain themselves to nearby grocery shops for purchasing essential goods. Individual shopping trips to nearby grocery shops are increased by 14% and supermarkets are reduced by 10%. Regarding the frequency of shopping for essential goods, nearly 50% of the individuals reported that they used to do shopping at least twice a week before the pandemic, whereas during the pandemic it was reduced to 20%. These statistics clearly show that individuals are very cautious about the pandemic. Also, interestingly it was observed that a pandemic does not have any impact on money spent on essential goods. On average, individuals are spending the same amount on their shopping before and during the pandemic. Moreover, it was observed that individuals preferred more for making short-distance shopping trips during the pandemic situation. Nearly 60% of individuals made shopping trips of a distance less than 2 km before the pandemic, whereas it increased to 80% during the pandemic. It clearly shows the people's apathy toward making long-distance trips during pandemic conditions.

4.2.1 Impact of Socioeconomic Characteristics on the Frequency of Shopping

To further understand the shopping behavior of individuals due to COVID-19, it is necessary to analyze the impact of socioeconomic characteristics on the frequency of shopping-related activities. Table 4 shows the average frequency of shopping before and during the pandemic. From the table, it was observed that nearly 50% of the individuals used to make shopping trips at least twice a week before the pandemic and it was reduced to 23% during pandemic conditions which clearly shows an individual tendency to be cautious about the pandemic, COVID-19.

Regarding the impact of the age of the individual on their shopping activities, the data clearly shows that individuals having age more than 50 years considerably reduced their shopping frequency. Comparing the individuals performing shopping activities every day, during the pandemic their frequency reduced to 1% whereas

Table 4 Percent distribution of the trips as per their shopping frequency

Shopping frequency	Percent distribution of trips	
	Before pandemic	During pandemic
Daily	8.5	0.7
Thrice a week	15	4.8
Twice a week	23.6	17.9
Once a week	31.7	47.4
Once in two weeks	11.5	29.1
Once a month	9.8	0

it is 10% before the pandemic. Analyzing the impact of individual income on their frequency of shopping, an interesting observation is that middle-income class people (income level ranges Rs. 20,000–Rs. 50,000) are making more frequent trips even before the pandemic and during the pandemic, which infers that their income level might not allow them to buy groceries and vegetables for longer durations. Another interesting observation is that people with an education level of at least graduation are making more frequent shopping trips during the pandemic when compared with the before-pandemic statistics, perhaps due to their awareness of the pandemic among other members of the family.

4.2.2 Impact of Socioeconomic Characteristics on the Shopping Attitude of Individuals Before and During Lockdown

From the above section, it is evident that the socioeconomic characteristics of the individuals are influencing the frequency of shopping before and during the lockdown. For the statistical understanding of the association between socioeconomic characteristics and shopping attitudes of individuals before and during the lockdown, the Chi-square test was administered. From the test results, it was observed that education level, household income, occupation level, number of workers in the household, and vehicle ownership are significant in making more frequent shopping before lockdown which is shown in Table 5. Interestingly, household income is the only variable observed to have a significant contribution in making more shopping trips during the lockdown, perhaps due to the COVID-19 pandemic lockdown making people panic, and restrictions imposed by the local authorities discouraging people to go out frequently for shopping. Table 6 describes the household income level that has a significant impact on individual shopping behavior irrespective of the pandemic lockdown.

Table 5 Association of socioeconomic characteristics and frequency of shopping before lockdown

S. No	Respondent profile variable	Chi-square (p-value)	Result
1	Education level	0	Significant
2	Household income	0	Significant
3	Gender	0.462	Not significant
4	Age	0.99	Not significant
5	Occupation	0.022	Significant
6	Household size	0.168	Not significant
7	Number of workers in the HH	0	Significant
8	Vehicle ownership	0	Significant

Table 6 Association of socioeconomic characteristics and frequency of shopping during lockdown

S. No	Respondent profile variable	Chi-square (p-value)	Result
1	Education level	0.813	Not significant
2	Household income	0.011	Significant
3	Gender	0.19	Not significant
4	Age	0.148	Not significant
5	Occupation	0.128	Not significant
6	Household size	0.846	Not significant
7	Number of workers in the HH	0.789	Not significant
8	Vehicle ownership	0.486	Not significant

4.2.3 Variation in Other Shopping-Related Characteristics Before and During Pandemic Conditions

Table 5 provides the details of the mode of shopping before and during pandemic conditions. It depicts that during pandemic conditions, individuals prefer to do shopping nearby grocery shops which makes them more comfortable. As the study was conducted during the lockdown, the statistics did not show any values related to shopping in malls and fewer values online as online platforms are operated in a limited way (Table 7).

The Fig. 2 shows the percent variation in the amount spent by individuals before and during pandemic conditions. More percentage of people are spending about Rs. 200–500 on groceries during the pandemic and the percentage is higher when compared with the pandemic conditions. Table 6 provides data about the shopping behavior of individuals in terms of their travel distance before and during the pandemic. Interestingly, it was observed that no individual is making a shopping trip of distance more than three kilometers during pandemic conditions, whereas it was nearly 25% before the pandemic. And also people making shorter trips (less than 5 km) increased from 17 to 25% during pandemic conditions (Table 8).

Table 7 Percent distribution of mode of shopping before and during pandemic conditions

Mode of shopping	Percent distribution of mode of shopping	
	Before pandemic	During pandemic
Nearby grocery shops	52.96	66.26
Nearby supermarkets	37.12	27.45
Shopping malls	4.23	0
Online	5.68	6.29
Total	100	100

Percent variation of amount spent by the individuals before and during Pandemic

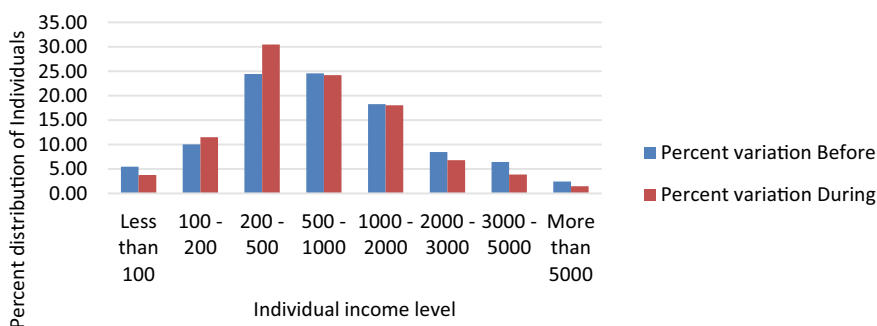


Fig. 2 Percent variation in the amount spent by the individuals

Table 8 Percent distribution of individuals as per their distance traveled for shopping

Distance traveled for shopping (km)	Percent distribution of individuals	
	Before pandemic	During pandemic
Less than 0.5	17.41	25.03
0.5–1.0	25.15	32.53
1.0–2.0	21.52	22.01
2.0–3.0	11.12	10.64
3.0–5.0	10.28	0
5.0–10	11.49	0
More than 10	3.02	0

5 Summary, Conclusions, and Future Scope

The study aims at understanding the shopping behavior of individuals and the impact of COVID-19 on their shopping behavior. In this process, an online survey instrument was designed and circulated to different individuals who are having different socioeconomic characteristics for the near representation of the population. A total of 840 samples are used for the data analysis out of 860 samples received from the survey after data mining. Data related to socioeconomic characteristics, shopping behavioral characteristics of the individuals before and during pandemic conditions, and anticipated behavior of the individuals after the pandemic is collected from the survey.

Data analysis started with the descriptive analysis of socioeconomic characteristics. From this analysis, it was observed that nearly 40% of the individuals are in the age group of 20–30 years and more than 17% of the individuals are having an income level of more than Rs. 1,00,000. As a next step, the mode choice and shopping behavior of individuals are analyzed in the next section. COVID-19 has a clear negative impact on shopping frequency, and a drastic reduction in the percentage share of daily grocery trips was observed. Moreover, it was observed that low- and medium-income people are making high-frequency shopping trips compared with high-income people during pandemic conditions. And individuals prefer to use their vehicles for making shopping-related trips during pandemic conditions. Further, a rise in the percentage of shopping trips to nearby grocery shops during pandemic conditions was also observed when compared with the pandemic conditions. From the data, it was also inferred that individuals making shorter trips for shopping and the pandemic do not have any impact on the amount spent on grocery shopping.

As the present study concentrates on descriptive analysis of socioeconomic characteristics and their impact on shopping behavior, there is a huge scope for further detailed analysis for understanding the behavior. At present, all kinds of businesses are in operational mode; now the study can be extended to analyze individual shopping behavior after the pandemic conditions. This kind of analysis is going to provide a clear picture of individual shopping behavior before, during, and after pandemic conditions. The study can extend to analyzing the behavior of individuals during shopping for other goods in addition to grocery shopping.

Reviewer 1 Comments:

Sl.No.	Comment	Response
1	The introduction part of the paper seems to be slightly long and it talks about many general details. It may be slightly revised	Revised the introduction section by making it concise

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Sl.No.	Comment	Response
2	Page 6, it is mentioned that “.....but at the same time, nearly 18 percent of the individuals belong to the high-income group, which are having a monthly income range of more than Rs. 1,00,000.” And in page 8, it is mentioned that “....of the individuals belonging to the high-income group (earning more than Rs. 2,00,00 per month)....” The author may clearly define the income range of the ‘High-income category’	For maintaining consistency, the income range of the High-Income category was modified to Rs. 1,00,000 and the same was changed in the text and table
1	Page 7, it is mentioned that “From Table 2, it can be observed that nearly 17 percent of the individual’s monthly income is less than Rs. 10,000 and nearly 18 percent of the individuals are earning more than Rs. 1,00,00 per month”. Please check whether there is a typing error (Rs. 1,00,00 instead of Rs. 1,000,00 in the second place)	The typo error was rectified
2	Page7, page 8, Table 1 and Table 2 gives two different income ranges. If there is any specific reason, please mention	It was a typo error and the same was rectified
3	Page 11, it is mentioned that “.....Another interesting observation is that people with an education level of at least graduation are making more frequent shopping trips during the pandemic when compared with the before pandemic statistics. This result clearly shows the irresponsible behavior of educated people towards others.” The last sentence may be omitted/revised. We cannot make a general conclusion like this, out of the above observation	Modified in the text as per the suggestions
4	Page 12, Table 5: Usually, the p-values are mentioned as “<0.05” or “>0.05” in technical papers. The actual values are not written	The authors’ opined that indicating the exact p-values will be useful to decide on significant or not significant and it is not necessary to mention <0.05 or >0.05
5	Page 12, Table 6: same observation as above	The explanation provided in question 4 is applicable here too
6	Page 2, it is stated that “In this context, the objective of the proposed study is to estimate the impact of COVID-19 on shopping behaviour and its related travel attitudes during the pandemic condition”. However, calculation of such estimates are missing in the paper	The authors’ intention of giving that statement is the impact of COVID-19 on shopping behaviour with their Mode choice, socioeconomic characteristics, frequency of shopping, etc. The same was analysed in the article

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Sl.No.	Comment	Response
7	This paper presents an exploratory study, however, it would be better, if the authors could develop some mathematical models to estimate the influence of various socio-demographics on the grocery shopping behaviour, by which, it is possible to quantify the impact of explanatory variables	The Authors' intention in conducting this study is to understand the shopping behaviour of individuals during and before the pandemic. Further, the authors attempted to develop various models to understand the shopping behaviour of individuals but the model results are not significant due to crucial behavioural data

Reviewer 2 Comments:

Sl.No.	Comment	Response
1	In the last paragraph of the literature review, the authors stated that the previous researchers had contributed significantly to understanding the impact of risk perception and pandemic conditions on travel behavior. Also, there is a good number of works related to shopping trips and their associated activities during pandemic conditions. So, why this study?	The necessity of the study is also provided in the subsequent section of the literature review. Further, the study concentrated only on grocery shopping trips, which were not much explored
2	What are the identified gaps? What makes this study relevant?	Due to COVID-19, a complete lockdown was announced in India and many struggled to get their daily groceries. As these lockdown conditions are new to the existing generation, the existing study substantially contributes to the grocery shopping behaviour of Individuals
3	The authors said that they had circulated google forms for collecting data to a wide range of people. How can authors make sure the reliability of collected data?	As the study was conducted during the Pandemic, traditional methods of data collection had become superfluous to adapt to the restrictions and quarantine protocols implemented by the local governments around the world. Still, for the reliability of data, the Authors verified the responses by comparing their behavioural responses with socioeconomic characteristics
4	The sample size seems small since it does not require any field data collection	Though the study does not require field data collection, in the fear of the pandemic authors' put their best effort to get the sample
5	Whether it represents the grocery shopping behavior of a particular city?	No, the study represents the general grocery shopping behaviour of people from India during COVID-19

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Sl.No.	Comment	Response
6	Does this study significantly contribute to leading any incremental advance in the field?	The study attempted to explain the grocery shopping behaviour of the people during the COVID-19 pandemic and it is an exploratory study
7	The transferability and generalization of the findings are questionable	The study findings are suitable for any developing countries
8	Section 5 looks like a summary of the study. Better to change the section heading to summary and conclusions. Otherwise, the authors should concentrate only on the main conclusions from the study in this section	Modified accordingly to "Summary, Conclusions and Future scope"

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