CONSUMERS' PERCEPTION TOWARDS ORDERING FOOD ONLINE FOR DELIVERY DURING PRE-COVID 19 AND COVID 19 ERA: AN ANALYSIS

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Abstract

Purpose of the Study: Application of ordering food online for delivery is not only very familiar to all of us but also very popular. But the outbreak of the pandemic COVID 19 has led to many changes in the entire economy including the day-to-day activities of human life. During COVID 19 pandemic, people were not allowed to step out of their homes except in case of emergencies, leaving no scope for visiting restaurants and compelling them to place order for foods online in extreme emergency. This study aims to investigate whether there is any significant difference in the customers' perception towards ordering food online in India during the pre-COVID period and during the COVID 19 era in our country just after the announcement of Unlock 1 from 08.06.2020 onwards.

Study design/methodology/approach: The study has been conducted through primary survey taking 101 respondents. Non-parametric tests such as the Pearson Chi-Square test, Wilcoxon signed-rank test and Mann-Whitney U test have been conducted using SPSS software.

Findings: Test results revealed a significant difference in the frequency of order, customers' satisfaction regarding the quality of food and a significant association between customers' satisfaction regarding safety measures adopted by the delivery boys and frequency of order after Unlock 1.

Keywords: *Unlock 1, COVID 19, Non-Parametric Tests, Wilcoxon Signed Rank Test, Mann-Whitney U Test.*

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Introduction: The demand for online food ordering systems is showing an increasing trend in the Indian market. The only requirement for online food ordering and delivery is a Smartphone having the applications installed. Placed orders are delivery-based at the location of the customer. There are various mobile applications for ordering food online like Zomato, Swiggy, Uber eats, Food panda etc. and once the customers sign in to any of the apps, they can get access to countless varieties of dishes from different nearby restaurants. Customers have the option to pay either as cash on delivery or through online payments using a net banking facility. As a result , there is an increase in the demand for online food ordering, and many restaurants are witnessing a boost up in their business. This system is becoming popular day by day because of its hassle-free ordering system which requires no traveling. Only with a click, customer's favorite food will reach the doorstep within a few minutes. Towards the end of February and mid-March, 2020 a widespread virus named COVID 19 changed the whole scenario. Such increasing demand for online food reduced to the minimum as all the restaurants were closed due to the announcement of lockdown throughout the world. It was a major challenge before the food industry, delivery agencies and delivery persons, all of whom were the most affected. Such a pandemic resulted in job loss for many people across the globe. The persons who relied on online food services faced much trouble during this situation. This study intends to examine whether there is any change in the customers' perception regarding ordering food through online delivery applications mainly in terms of quality of food, safety measures adopted, their willingness to order keeping in mind the present pandemic situation etc. This study is conducted to make an analysis between the pre-COVID 19 era and during the COVID 19 era i.e. after the announcement of Unlock 1. For the study, a well-structured questionnaire was framed for the primary

survey and responses from 101 respondents were collected. Various graphical representations as well as statistical tests were conducted for the study. Statistical test results of this study will further throw light on the matter whether customers' perception regarding ordering food online through app changed after the outbreak of COVID 19.

Literature Review: Following are some of the literatures studied regarding Consumers' perception of online delivery applications:

Prasetyo et al (2021) applied Structural Equation Modelling (SEM) for analyzing the factors which affect customer satisfaction towards online food delivery services. Results indicated that hedonic motivation (HM) was found to have the highest effect on customer satisfaction, followed by price (P), information quality (IQ), and promotion (PRO).

Chotigo and Kadono (2021) tried to examine and compared the crucial factors encouraging Thai customers to use food delivery apps before and during the COVID-19 pandemic. The results indicated that satisfaction was influenced by social influence, trust, convenience, and application quality in both the before- and during-the- COVID -19-pandemic period. The price value was also a significant predictor of satisfaction before the pandemic but not during the pandemic. It was also observed that customers with a high level of satisfaction using a food delivery app were more likely to keep using it.

Sankar and S (2020) tried to examine the factors influencing customer perception in online food delivery . They found that among the factors that may affect consumers' perception of online food delivery, the safety service factor majorly influences the customer perception at the time of COVID-19 pandemic.

Beliya et al., (2019) conducted their research to analyze the satisfaction of consumers by using online food services. Data were collected through a well-structured questionnaire and they were distributed among 60 respondents. Results revealed that people between the age group 18-36 used online food delivery apps more frequently than any other age group and also

revealed that attractive discounts and offers are the main motivating factors for ordering food online.

Gawande et al., (2019) tried to judge people's perception of Online Food Ordering Apps in Amravati City on the primary level. Since it is a new platform, people aged above 40 years were not much familiar with such a system. However, students opted for such services mainly because they feel the ease of Placing Orders and time efficiency.

Anib et al., (2019) aimed to study the influential factors regarding the consumers' perception and buying decision of Swiggy and to study the level of consumer satisfaction of Swiggy. The test results showed that there is a significant relationship between usage and satisfaction of services of Swiggy. They also found that between usage and preference over other food ordering apps, there is no association between age and frequent usage of Swiggy app, and there exists no association between gender and convenience of Swiggy app.

Jacob et al., (2019) in their paper focused to analyze the consumers' perception towards online food ordering services. For this study both quantitative and qualitative approaches have been taken into consideration. Results disclosed that younger generations prefer online food delivery systems much more as compared to elder people. The study revealed ease and convenience to be the most influencing factor for online food ordering along with faster delivery and more restaurants option, attractive discounts and special offers.

Rathore and Chaudhary (2018) in their research article attempted to understand which factors influence the consumer to order food online and also to know the consumer's preferences regarding online food ordering services providers. The study highlighted the fact that the younger generation preferred online food ordering services mostly. The study also revealed that the most influential factor for online food ordering is the price of the products, discounts and special offers and also convenience and on-time delivery.

Das (2018) in an article discussed the perception of consumers' towards online food ordering and delivery services in Pune. The results concluded

that the majority of the consumers preferred Zomato for ordering food online as compared to other service providers. On-time delivery and attractive discount offers are the main reasons behind such a priority.

Sethu and Saini (2016) tried to investigate the students' perception, behavior and satisfaction of online food ordering and to provide an understanding to online food sellers based on the results of the research. The study revealed that online food ordering services are the most preferable service and are at their peak and the youngsters are better acquainted with the information available on these websites.

Objective of the study: The objectives of this research study are to examine the following:

1. Whether the consumers' perception towards online food delivery applications in terms of mode of payment has changed after the announcement of Unlock 1 due to the outbreak of COVID 19 as compared to the pre- COVID era.
2. Whether the consumers' perception towards online food delivery applications in terms of frequency of ordering changed after the announcement of Unlock 1 due to the outbreak of COVID 19 as compared to the pre- COVID era.
3. Whether the consumers' satisfaction towards online food delivery applications in terms of quality of food has changed after the announcement of Unlock 1 due to the outbreak of COVID 19 as compared to the pre- COVID era.
4. Whether the consumers' perception towards online food delivery applications in terms of safety measures taken by the delivery agency has changed after the announcement of Unlock 1 due to the outbreak of COVID 19 as compared to the pre- COVID era.
5. Whether the perception towards online food delivery applications differs among male and female consumers.
6. Whether the consumers' perception towards online food delivery applications differs among married and unmarried individuals.

Hypothesis development: Based on the above-mentioned research objectives, the following research hypothesis is being framed:

H_{01}: There is no significant difference in the frequency of order in the pre and during the COVID 19 era.

H_{02}: There is no significant difference in the customers' satisfaction regarding the quality of food in the pre and during the COVID 19 era.

H_{03}: There is no significant association between satisfaction level regarding the safety measures by the delivery boys and the frequency of ordering food during the COVID 19 era.

H_{04}: There is no significant difference in the frequency of order after Unlock 1 between male and female consumers.

H_{05}: There is no significant difference in the frequency of order after Unlock 1 between married and unmarried individuals.

Research Methodology:

Sample: For this study, a primary survey has been conducted through a well-structured questionnaire including nominal, categorical or ordinal and Likert scaled variables to analyze the differences if any in the consumers' perception regarding ordering food through online delivery applications in the pre and during the COVID 19 era.

Data have been collected after the announcement of Unlock 1 i.e. after 8th June 2020 till 31st August, 2020 from 101 respondents.

For this study, non-parametric or distribution-free tests have been considered as appropriate, since the data obtained through the well-structured questionnaire are mainly nominal and ordinal scaled data. Hence it is not possible to have any idea about the parameters and the distribution is generally assumed to be non-normal.

So to analyze the data, Non- parametric Pearson Chi-square Test, Wilcoxon Signed Rank Test and Mann-Whitney U Test have been conducted using SPSS software as well as portrayed through graphical representations using Excel.

Pearson Chi-square Test: The Chi-square statistic is a non-parametric test, also known as a distribution-free Test designed to analyze group differences

when the dependent variable and independent variable are both categorical (nominal or ordinal) and can be either nominal or ordinal. The chi-square test for independence also called Pearson's chi-square test or the chi-square test of association is used to discover if there is a relationship between two categorical variables.

Wilcoxon Signed-Rank Test: The **Wilcoxon signed-rank test** also called the Wilcoxon signed-rank sum test is a <u>non-parametric</u> test to compare two related sample data. It can be used as an alternative to the <u>paired Student's *t*-test</u> when the distribution of the difference between two samples' means cannot be assumed to be distributed. The Null Hypothesis is set as follows:

H$_0$: The median difference is zero or, There is no significant difference between the data before and after, against the Alternative Hypothesis,

H$_1$: The median difference is not equal to zero or, There is a significant difference between the data before and after.

Mann- Whitney U Test: The Mann-Whitney U test is also a non-parametric test used to compare differences between two independent groups when the dependent variable is either ordinal or continuous, but not normally distributed and the independent variable must be nominal. This test leads us to the conclusion of whether the two populations differ, if there are differences in medians between groups.

Results & Findings of the study:

Figure-1 below shows that out of total 101 respondents, 53% represent male respondents whereas 47% represent female respondents. Again, in terms of marital status, only 17% of respondents were married and 83% were unmarried **(Fig 2)**.
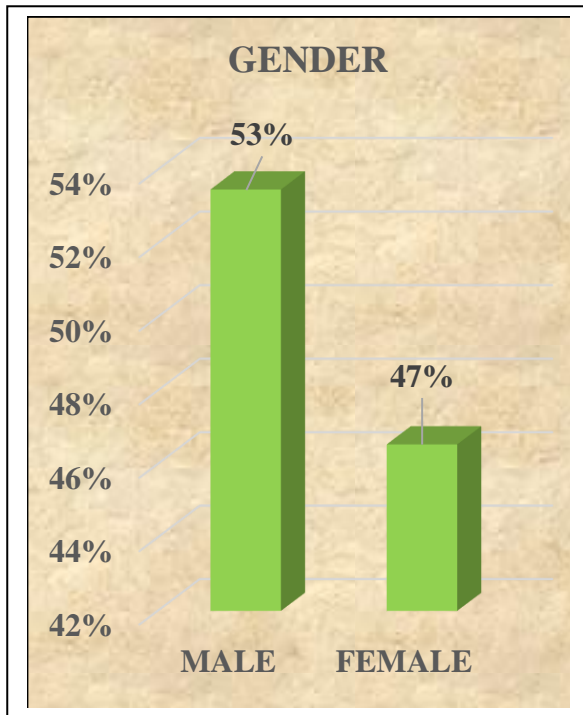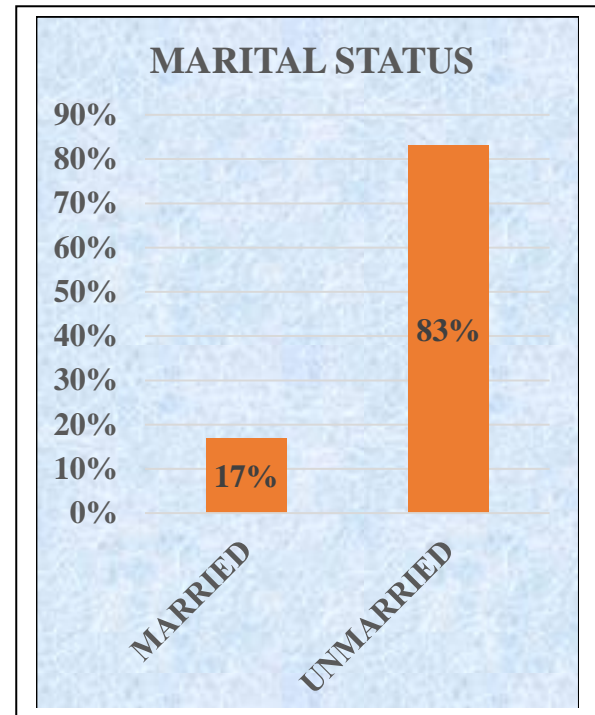
Fig 1

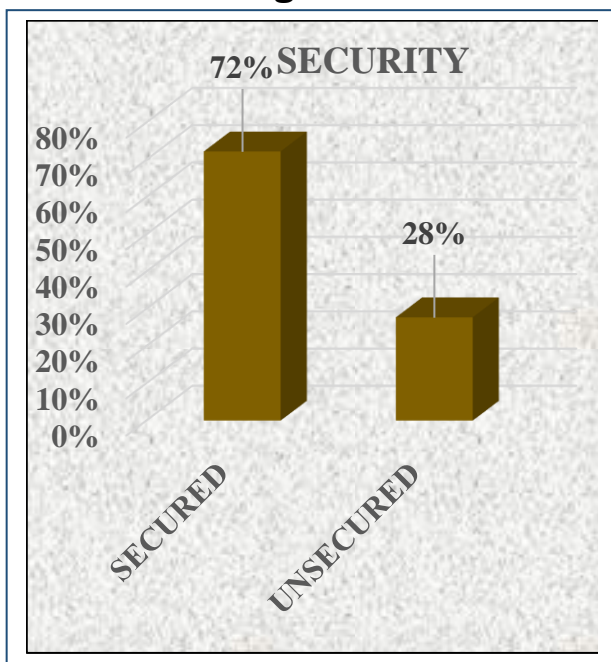

Source: *Author's compilation from primary survey*

Fig 2

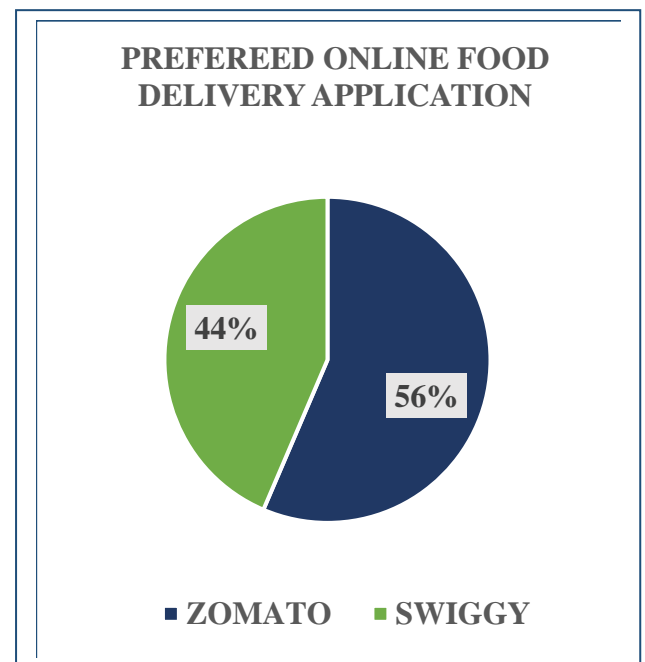
Source: *Author's compilation from primary survey*

When the respondents were asked whether they feel secured as regards ordering food in electronic mode, the fact is that as high as 72% felt electronic mode of ordering and getting delivery is much more secured while 28% did not feel secured about such food delivery system. Such insecurity may arise due to a lack of knowledge about such applications or due to the increasing number of cybercrime in the present scenario.

Fig 3

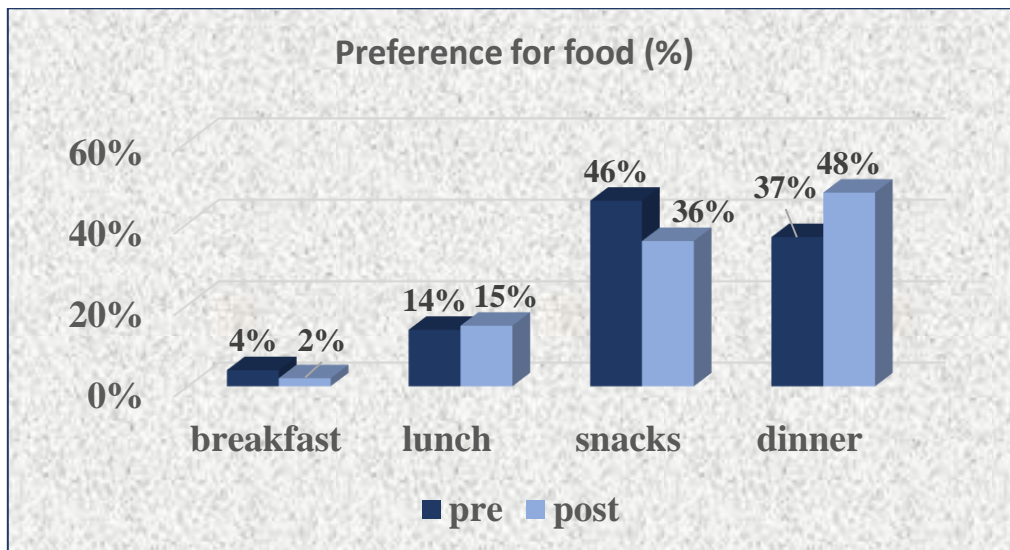**Source:** *Author's compilation from primary survey*

Fig 4

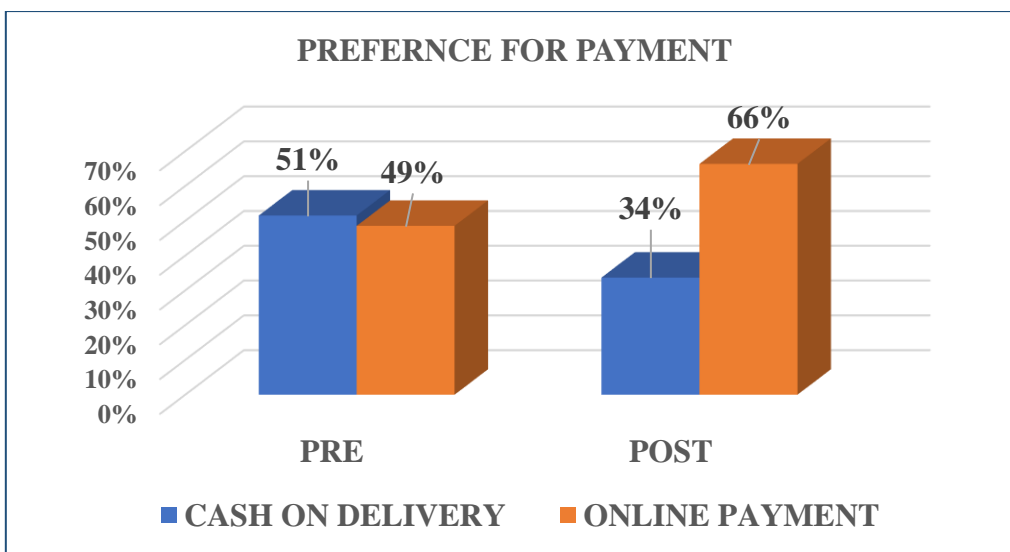**Source:** *Author's compilation from primary survey*

Fig- 4 provides the evidence that out of the total responses so collected, 56% of the respondents preferred Zomato as the most frequently used application for ordering food online while 44% preferred Swiggy as their most-used application. Such high preference for Zomato may be due to quality of food, service facility, special discounts offers and even timely delivery of food with proper safety precautions.

Fig 5

Source: *Author's compilation from primary survey*

Fig 6

Source: *Author's compilation from primary survey*

Fig 5 below depicts the preference for food as responded by the respondents both during the pre- COVID era and after the announcement of Unlock 1 just after the lockdown period due to the outbreak of COVID -19 all over the world. Out of 101 respondents, only 4% preferred ordering through online mode in the pre- COVID period and it even reduced to 2% during the COVID era. 14% preferred to order lunch in the pre-COVID period, and it slightly rose to 15 % after starting of unlocking 1.Most demanded food items were for snacks and dinner. Data revealed that 46% of the respondents preferred to order snacks in the pre-COVID era whereas 36% of the respondents preferred snacks during unlocking 1. The scenario is just the opposite in the case of preference for food for online delivery. 37% preferred dinner items before COVID 19 while 48% preferred dinner food items during unlocking 1. It is also clear that majority of people preferred to order dinner food items for online delivery while the majority of the respondents preferred to order snacks items through the online mood in the pre - COVID 19 era.

Fig 6 below states that there has been a drastic change in the mode of payment after the outbreak of this pandemic. During the pre-COVID 19 era, 51% of the respondents opted for cash on delivery as the preferred mode of payment while ordering food online and the rest 49% preferred online payment system. However, the scenario is opposite after the announcement of Unlock 1 i.e.   66% of the respondents opted for an online payment mechanism, and only 34% preferred cash on delivery. This is mainly due to the increasing awareness among people regarding cashless facilities to avoid getting affected by such deadly virus.

H_{01}:There is no significant difference in the frequency of order in the pre and the during COVID 19 era.

H_{11}:There is a significant difference in the frequency of order in the pre-COVID era and during the COVID 19 era.

Results of Wilcoxon signed-rank test showing significant p-value (0.000) in **Table 1** below presents   that there is a significant difference in the frequency of order in the pre and during the COVID 19 era. So, we reject the null hypothesis at 1 % level of significance. Data revealed that the

frequency of ordering food through online applications reduced after unlock 1 as compared to the pre -COVID era.

Table: 1 Results of Wilcoxon signed rank Test

	PRE –POST
Z	-4.769(a)
Asymp. Sig. (2-tailed)	0.000*

Source: *Author's compilation using SPSS*

H_{02}:There is no significant difference in the customers' satisfaction regarding the quality of food in the pre and during the COVID 19 era.

H_{12}:There is a significant difference in the customers' satisfaction regarding the quality of food in the pre and during the COVID 19 era.

Table- 2: Results of Wilcoxon signed-rank Test

	PRE –POST
Z	-3.143(a)
Asymp. Sig. (2-tailed)	0.002*

Source: *Author's compilation using SPSS*

Significant p-value (0.002) as shown in **Table 2** above clearly rejects the null hypothesis and accepts the alternative hypothesis at a 1% level of significance which states that there is a significant difference in the customers' satisfaction regarding the quality of food in the pre and during the COVID 19 era. It is being observed that customers were more satisfied regarding the quality of the food delivered during the pre-COVID scenario as compared to during the COVID era scenario.

H_{03}: There is no significant association between satisfaction level regarding the safety measures by the delivery boys and the frequency of ordering food during the COVID 19 era.

H_{13}: There isa significant association between satisfaction level regarding the safety measures by the delivery boys and the frequency of ordering food during the COVID 19 era.

Results of Pearson Chi-Square statistic revealed that there is a significant association between the satisfaction level of the customers regarding the

safety measures by the delivery boys and the frequency of ordering food during the COVID 19 era at 5% level i.e. with 95% confidence level as represented in **Table 3**. The frequency of ordering food has decreased much during unlock 1, this is because people have become more cautious about the safety measures adopted by the delivery agency and also the restaurants, and they ordered food only after being convinced about their safety precautions.

Table: 3 Results of Pearson Chi-Square

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	25.711(a)	12	0.012**
Likelihood Ratio	27.395	12	0.007
Linear-by-Linear Association	11.113	1	0.001
N of Valid Cases	101		

Source: *Author's compilation using SPSS*

H$_{04}$: There is no significant difference in the frequency of order during Unlock 1 between male and female consumers.

H$_{14}$: There is a significant difference in the frequency of order during Unlock 1 between male and female consumers.

Test results as shown in **Table 4** below being insignificant, the null hypothesis of not having significant difference in the frequency of order during Unlock 1 between male and female individuals gets accepted at a 5% level. It means that irrespective of gender, people ordered food online since all working individuals had to work from home and had to play the dual role of homemakers as well as working individuals.

Table: 4 Results of Mann- Whitney U Test

	ORDER POST COVID
Mann-Whitney U	1189.000
Wilcoxon W	2317.000
Z	-.582
Asymp. Sig. (2-tailed)	0.560

Source: *Author's compilation using SPSS*

H05: There is no significant difference in the frequency of order during Unlock 1 between married and unmarried individuals.

H05: There is a significant difference in the frequency of order during Unlock 1 between married and unmarried individuals.

The insignificant test results of the Mann-Whitney U Test in **Table 5** clearly state that there is no significant difference in the frequency of ordering food online between married and unmarried individuals, during the period of Unlock 1. So the null hypothesis is accepted. This implies that irrespective of the marital status, people ordered food online mainly during Unlock 1 period. This may be to reduce their increased stress due to the present pandemic situation or to spend some quality time with family, friends etc.

Table: 5 Results of Mann- Whitney U Test

	ORDER POST COVID
Mann-Whitney U	696.500
Wilcoxon W	4266.500
Z	-.170
Asymp. Sig. (2-tailed)	0.865

Source: Author's compilation using SPSS

[significant at 1% level], [** significant at 5% level]*

Conclusions & discussions: The emergence of various food delivery applications helped people in bringing their desired food at their doorsteps without much hassle within a few minutes. But the sudden outbreak of the pandemic COVID 19 changed the whole scenario overnight. The situation forced people to stop such online food ordering and even visiting any restaurants. One of the badly affected industries was the food industry. People had to get acquainted with cooking their desired food at their homes. Work from home also added an extra burden to this. So after the announcement of Unlock 1 from 8th June, 2020 onwards, people again started ordering food online along with visiting restaurants at their convenience. This study primarily intends to examine whether there is any difference in the customer's preference in opting for Online Food delivery applications before the outbreak of COVID 19 and during Unlock 1 period. Data revealed that out of 101 respondents 56% preferred Zomato as

compared to Swiggy. After starting of unlocking 1 most frequently ordered item was for dinner, and majority of respondents preferred online cashless payment system as compared to Cash on delivery. During the pre-COVID 19 era, snacks items were mostly ordered and cash on delivery was the preferred medium for payment.

Test results of the Wilcoxon signed-rank test revealed that both frequencies of ordering food online as well as customers' satisfaction regarding the quality of food has deteriorated during the COVID 19 era and it is evident from the significant p-value at 1% level. Pearson Chi-Square test results indicate that there is a significant association between satisfaction level regarding the safety measures by the delivery boys and the frequency of ordering food during the COVID 19 era. An insignificant p-value of the Mann-Whitney U test statistic highlighted that there is no significant difference in the frequency of order between the males and the females after initiation of Unlock 1 . The picture is also same in the cases between married and unmarried individuals. So, it may be concluded that the outbreak of the COVID 19 pandemic has seriously affected the food industry and more specifically the online food delivery system.

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