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Consumers' perception of online food delivery services during COVID-19

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Abstract--COVID-19 is the most virulent virus in recent years. It is an illness that affects the whole international community. It has also raised concerns about an impending financial catastrophe and economic depression. Community distance maintenance, self-quarantine, and travel restrictions reduced worker supply across all financial sectors, resulting in the loss of numerous jobs. Universities, hospitals, and colleges were closed, reducing the demand for commodities and consumer goods. On the other hand, the need for medical equipment has risen dramatically. However, due to the lockdown, there are several online deliveries of food and other items taking place in the household. This research highlights consumers' perception of online food delivery services amid the COVID-19 lockdown. A survey technique was employed to acquire a better understanding of the research, in which a questionnaire was issued to people of diverse ages, genders, and income levels. To offer a clearer interpretation of this study, a T-Test analysis was done, and an overall conclusion was reached based on the important findings from this research concerning how participants evaluated OFDS during COVID-19.

Keywords--online food delivery services, COVID-19, consumers' perceptions.

Introduction

The World Health Organization (WHO) proclaimed coronavirus disease a pandemic on March 11, 2020, because of the significant risk of death and human-to-human transmission. As a result, India issued stay at home orders, and food service facilities were forced to cease or be curtailed. The government orders have affected the restaurant industry, resulting in unemployment and lower sales compared to other businesses.

The entertainment, hospitality, and restaurant industries are the most affected in India as a result of the shutdown. The majority of restaurant and café proprietors predicted a drop in revenue in 2020. During this period, delivery services emerged as a viable option for mitigating the loss in sales. As a result, whereas less than half of the restaurants and cafés offered delivery prior to the lockdown, the majority of them planned to do so during the confinement.

By delivering food and beverages to clients' doorsteps, online food delivery (OFD) services have acquired prominence in recent years, aiding restaurants in their survival. OFD services link clients with partner restaurants across websites or mobile apps for online food ordering and delivery. Even though the OFD market had grown considerably prior to the pandemic, the COVID-19 outbreak has resulted in an increase in the number of clients using OFD services.

Online food delivery has become a vital business as a result of the introduction of consumer-friendly applications and tech-enabled driver networks, as well as changing expectations of customers. Lockdowns and isolation measures gave the sector a tremendous boost early on in the epidemic, with delivery serving as a lifeline for the struggling restaurant industry.

Statement of the problem

In an ever-changing technological era, online food delivery has become a crucial aspect of people's lives. Customers may now order food whenever they desire with only a few clicks, thanks to the evolution of the dine-out system. The restaurant sector is being revolutionized by this method. The key motivator for business owners to engage in online delivery services is consumer preferences. With the changing demographics of India's population, more industry in other cities for education and jobs, and the hectic schedules of both husband and wife in the household, the need for online food ordering is constantly increasing. The goal of this study is to assess consumers' perceptions of online food delivery services during Covid-19.

Scope of the study

The research is conducted to learn how customers view online food delivery services amid the current epidemic. Consumer perceptions might change depending on the situation. Here the research is conducted to have a better grasp of the 'Online Food Delivery Service Market' and also to learn about customer perceptions of the services provided by Kerala's food delivery business, as well as the factors that influence those perceptions. As a result of these findings, service

providers may be able to focus on these characteristics in order to close the gaps in consumers' attitudes.

Objectives

1. To identify customers' satisfaction with regard to online food delivery services
2. To determine the factors that hinder customers from using online food delivery services.
3. Changes in consumer buying behavior before and during covid19.

Research Methodology

Research type used is descriptive research with samples gathered from the primary source. Both primary and secondary data have been used in this research work. Primary data was obtained through questionnaires, while secondary data was gathered from websites and publications.

Limitations of the study

The study of the problem is restricted to Ernakulam city. It includes clients who utilize the online food ordering system. The study is particularly significant for learning about customers' perceptions of online food ordering, and it is examined using randomly selected 100 sample sizes due to time constraints. Because the study was conducted in different locations of Ernakulam with a limited sample size of 100 respondents, the findings may not be relevant to other parts of the country due to social and cultural variations.

Literature review

Alagarsamy, Subburaj & Mehroliya, Sangeeta & Solai Kutty, Vijay. (2021). *International IJC*. 45. 10.1111/ijcs.12630. Their research analyzes the characteristics of customers who purchased meals through Online Food Delivery Services (OFDS) and those who didn't during the COVID19 epidemic in India. Binary logistic regression was used to investigate the substantial distinctions between the two groups.

Perumal, Ilangovan & Parthasarathy, Assoc. Prof. Dr. Rajamohan & Preethy, Ayyappan & Jayabalan, Neeta & Nair, Sudhashini & Selladurai, Sugumaran. (2021). *Science International*. 33. 429-435. Their study looked at how satisfied online meal delivery service consumers were with the service during the COVID-19 epidemic in Malaysia, and they created a thorough model that included the task-technology fit model and contingency frameworks. According to their findings, there is a positive link between the quality of information and online food delivery services, with better information boosting the quality of online food delivery services.

Pillai, Rajani & Menezes, Cynthia & Pangriya, Ruchita. (2021). 23. 327-338. They attempted to investigate the shift in customer choices and mindsets toward online food delivery during the COVID-19 epidemic. A questionnaire was created for this

purpose, as well as a consumer survey. There were a total of 130 samples collected. SPSS and Process Macro were used to analyze the data. According to their study, customers' perceptions of the risks and rewards associated with OFD services have a significant impact on their desire to order food online and their mindset toward these services. According to their findings, customer attitude considerably and provisionally influences the association between return and contingency factors and consumer buying behavior.

Data analysis and interpretations

TABLE 1.1 AGE OF RESPONDENTS

AGE	Frequency	Percent
less than 25	55	55%
26-30	15	15%
31-35	6	6%
36-40	9	9%
above 40	15	15%
Total	100	100

Source: primary

Table 1.1 shows that 55% of respondents are less than age of 25, 15% are between the ages of 26 and 30, 6% are between the ages of 31 and 35, 9% are between the ages of 36 and 40, and 15% are over the age of 40.

TABLE 1.2

GENDER	Frequency	Percent
Male	40	40%
Female	60	60%
Total	100	100%

Source: primary

According to the above table 1.2, 60% of respondents are male and 40% are female.

TABLE 1.3: OCCUPATION

OCCUPATION	Frequency	Percent
student	43	43%
self-employed	6	6%
professional	23	23%
employee	22	22%
homemaker	6	6%
Total	100	100%

Source: primary

According to table 1.3, students (43%) are the most likely to use the delivery app, followed by professionals (23%), employees (22%), self-employed (6%), and homemakers (6%).

TABLE 1.4: EASY AND CONVENIENT TO USE

	Frequency	Percent
yes	94	94%
no	6	6%
Total	100	100%

Source: primary

According to the above table 1.4, 94 % find the delivery app easy and convenient to use, while 6 % do not.

TABLE 1.5: On-time delivery during COVID

	Frequency	Percent
yes	76	76%
no	24	24%
Total	100	100%

Source: primary

According to table 1.5, 76 % are satisfied with on-time service delivery, while 24 % are not.

TABLE 1.6: Offers or discounts

	Frequency	Percent
yes	51	51%
no	49	49%
Total	100	100%

Source: primary

According to table 1.6, 51 % of customers are satisfied with the offers and discounts they receive, while 49 % are dissatisfied.

TABLE 1.7: Cost of food affordable

	Frequency	Percent
yes	72	72%
no	28	28%
Total	100	100%

Source: primary

According to table 1.7, 72 % of respondents find the cost of food to be affordable, while 28 % do not.

TABLE 1.8: contactless delivery

	Frequency	Percent
yes	67	67%
no	33	33%
Total	100	100%

Source: primary

In the contactless delivery function, 67 % of consumers are tempted to buy food online instead of going out to eat during a pandemic, as shown in table 1.8.

TABLE 1.9: Method of payment

	Frequency	Percent
cash on delivery	10	10%
credit card	6	6%
debit card	17	17%
net banking	6	6%
pay via UPI	60	60%
others	1	1%
Total	100	100%

Source: primary

According to table 1.9, 60 % of people prefer to pay via UPI over other payment options. Debit cards are preferred by 17%, cash on delivery by 10%, credit cards and net banking by 6%, and other payments by 1%.

TABLE 1.10: Issues faced while using OFDS during covid

	Frequency	Percent
yes	21	21%
no	79	79%
Total	100	100%

Source: primary

According to table 1.10, 79 %of respondents had no problems using online food delivery service payment service during the covid19, whereas 21% had faced issues during payment.

TABLE 1.11: satisfaction with the COVID protocols followed by online food delivery apps

	Frequency	Percent
yes	81	81%
no	19	19%
Total	100	100%

Source: primary

According to table 1.11, 81 %people are satisfied with the covid protocols followed by the food delivery apps, while 19 % are not..

Hypothesis

Table 1.12 shows the significant difference of opinion about use of delivery app to avoid face to face interaction on the basis of age group.

TABLE 1.12 Avoid Face to face interactions

Age	Mean	Std. Deviation	T value	P value
less than 25	3.4545	1.15178	1.114	.354
26-30	3.3333	1.17514		
31-35	4.1667	.75277		
36-40	3.8889	.78174		
above 40	3.3333	.72375		

Source: primary

Null hypothesis: There is no significant difference in the use of a delivery app to avoid face-to-face interaction based on age group.

Because the p value is More than 0.05, the null hypothesis must be accepted at a 5% level with the opinion about using a delivery app to avoid face-to-face interaction based on age group. Opinion about this is analyzed on the basis of mean score, age group less than 25 is 3.45,26-30 is 3.33, 31-35 is 4.16,36-40 is 3.88, above 40 is 3.33.

TABLE 1.13: Comparison with one or more delivery apps before purchasing

Age	Mean	Std. Deviation	T value	P value
less than 25	1.8909	.95593	1.956	.108
26-30	1.4667	.74322		
31-35	1.6667	.81650		
36-40	2.4444	.72648		
above 40	2.0667	.88372		

Source: primary

Null hypothesis: there is no significant difference between Comparison with one or more delivery apps before purchasing from app with regard to age group. Since the p value is 0.108, that is greater than 0.05 null hypothesis has to be accepted at 5% level with the opinion Comparison with one or more delivery apps before purchasing from app on the basis of age group.

TABLE 1.14: after covid19 plan to continue using OFDS.

	Mean	Std. Deviation	T value	P value
less than 25	3.4909	1.13648	.810	.522
26-30	3.8667	.74322		
31-35	3.6667	1.50555		
36-40	3.5556	.88192		
above 40	3.2000	.77460		
Total	3.5200	1.03942		

Source: primary

Null hypothesis: there is no significant difference between use of app after covid19 with regard to age group.

Since the p value is 0.522, that is greater than 0.05, null hypothesis has to be accepted at 5% level with the opinion therefore there is no significant difference between use of app after covid19 with regard to age group.

TABLE 1.15: avoid face-to-face interactions

	Mean	Std. Deviation	T value	P value
student	3.3953	1.11568	1.095	0.364
self employed	3.0000	1.09545		
professional	3.4783	1.03877		
employee	3.8636	.94089		
homemaker	3.5000	1.04881		
Total	3.5000	1.05887		

Source: primary

Null hypothesis: there is no significant difference between the use of delivery app to avoid face to face interaction with regard to occupation.

The significance of variance i.e. p value is 0.364, that is more than 0.05 so the null hypothesis is accepted therefore there is no significant difference between the use of delivery app to avoid face to face interaction with regard to occupation.

TABLE 1. 16: Comparison with one or more delivery apps before purchasing

	Mean	Std. Deviation	T value	P value
student	1.7442	.92821	1.904	.116
self employed	2.3333	.81650		
professional	1.7826	.95139		
employee	1.9545	.84387		
homemaker	2.6667	.51640		
Total	1.8900	.90893		

Source: primary

Null hypothesis: there is no significant difference between Comparison with one or more delivery apps before purchasing with regard to occupation. The significance of variance i.e. p value is 0.116, that is more than 0.05 therefore the null hypothesis is accepted therefore there is no significant difference between Comparison with one or more delivery apps before purchasing with regard to occupation.

TABLE 1.17: after covid19 plan to continue using OFDS.

	Mean	Std. Deviation	T value	P value
student	3.4884	1.09918	.940	.444
self employed	3.1667	.40825		
professional	3.3478	1.02730		
employee	3.8636	1.03719		
homemaker	3.5000	1.04881		
Total	3.5200	1.03942		

Source: primary

Null hypothesis: there is no significant difference between use of app after covid19 with regard to occupation.

The significance of variance i.e. p value is 0.444, that is more than 0.05 the null hypothesis has to be accepted at 5 % level therefore there is no significant difference between use of app after covid19 with regard to occupation.

TABLE 1.18

	Gender	N	Std. Deviation	Mean	T test	P value
avoid face-to-face interactions	male	40	1.19802	3.2750	1.669	.100
	female	60	.93564	3.6500		

Source: primary

Null hypothesis: there is no significant difference between the use of delivery app to avoid face to face interaction with regard to gender. The significance of variance i.e. p value is more than 0.05 so the null hypothesis is accepted therefore there is no significant difference between the use of delivery app to avoid face to face interaction with regard to gender.

TABLE 1.19

	Gender	N	Mean	Std. Deviation	t-test for Equality of Means	P value
Comparison with one or more delivery apps before purchasing	male	40	1.8000	.91147	-.807	0.422
	female	60	1.9500	.90993		

Source: primary

Null hypothesis: there is no significant difference between Comparison with one or more delivery apps before purchasing from app with regard to gender.

The significance of variance i.e. p value is more than 0.05 so the null hypothesis is accepted therefore there is no significant difference between Comparison with one or more delivery apps before purchasing from app with regard to gender.

TABLE 1.20

	Gender	N	Mean	Std. Deviation	t-test for Equality of Means	Sig. (2-tailed)
after covid19 plan to continue using OFDS.	male	40	3.3500	1.02657	-1.341	.183
	female	60	3.6333	1.04097		

Source: primary

Null hypothesis: there is no significant difference between use of app after covid19 with regard to gender.

The significance of variance i.e. p value is more than 0.05 so the null hypothesis is accepted therefore there is no significant difference between use of app after covid19 with regard to gender.

TABLE 1.21

	Mean	Std. Deviation	T value	P value
Use of online delivery app before covid '19	3.12	1.23	3.399	0.001
Use of online delivery app during covid '19	3.49	1.30		

Source: primary

The above table 1.21 shows us the use of online delivery app before covid 19 mean as 3.12 with standard deviation of 1.23 and use of online delivery app

during covid 19 mean value of 3.49 and standard deviation 1.30 The table also gives a t value of 3.399, where the p value is 0.01 which is highly significant hence it clearly shows that there is increase in use of online delivery app during covid19 pandemic period.

H0: use of online delivery app is not effective before the time of covid19, p value is less than 0.01 therefore the null hypothesis is rejected

H1: use of online delivery app is effective during covid19

Hence hereby our null hypothesis is rejected(Ho) and accept our alternative hypothesis(H1)

TABLE 1. 22

	Mean Rank	P value
Quality	2.00	0.01
Quantity	2.90	
Price	3.40	
Safe Packaging	3.08	
Delivery Time	3.62	

Source: primary

Since value p is less than 0.01 the null hypothesis is rejected at 5 percentage value of significance. Hence concluded that there is significant difference among mean ranks towards customer's satisfaction with regard to online food delivery services. based on mean rank delivery time (3.62) is most effective followed by price (3.40), safe packaging (3.08), quality (2.00) and quantity (2.90)

Findings

- 55 % of respondents are under the age of 25. Mostly youngsters use the app more in number.
- 43% of the Students use the online food delivery app followed by professionals (23%), employees (22%), self-employed (6%) and homemaker (6%).
- 70% of the people use zomato app and 66% use swiggy for online food delivery
- 94% of the users it easy and convenient to use the apps
- 76% of respondents are satisfied with on-time delivery of service and 24% are not.
- The most hindering factors from ordering food online is health concern 35%, delivery time 34%, hygiene concern 30%, bad past experience 21%, afraid of payment online 16%, site slow 13%, unawareness 11%, poor customer service 9% before covid19
- The most hindering factor from ordering food online is health concern 54%, hygiene concerns 37%, delivery time 26%, bad past experience 15%, site slow 12%, afraid of payment online 9%, unawareness 7%, poor customer service 7% during covid19
- 81% of people are satisfied with the covid protocols followed by online food delivery apps

- 76% of the people find that the apps provide on time delivery services
- factors that influence the decision to order has shown based on mean rank delivery time (3.62) is most effective followed by price (3.40), safe packaging (3.08), quality (2.00) and quantity (2.90)
- 72% of the people find the cost of food affordable on online delivery apps and 28% does not.
- 60% of the people prefer UPI Payment, 17% debit card, 10% prefer cash on delivery, 6% credit card, and 6% net banking.

Suggestions

- Remote areas should have more access to online food delivery services.
- Respondents also suggested that the food must be charged the same price as that in the restaurants.
- More rewards and points should be introduced in the online food delivery apps as and when orders are placed.
- Reducing order processing time allows the OFDS to focus less on order processing and more on order creation.
- Improvement in food quality has a significant impact on consumer loyalty and repurchases.
- Because there has been a spike in online food ordering during the pandemic, an adequate number of delivery executives must be available, and they must ensure that time-bound delivery is met.
- More vegetarian restaurants including catering services must be included in the online delivery apps.
- Customers should be able to see actual photographs or videos of the dishes in online food applications so that they can get a sense of how the food looks and how much quantity there is.

Conclusion

To summarize this research on customers' perceptions of online food delivery services during COVID-19, it was found that the majority of people use online food delivery apps because they are the most efficient way to save money and time as well as convenient and safe to use during this pandemic. Zomato is the most popular food app among respondents, and UPI is the safest and most secure payment method. Individuals of all ages and income levels use online food delivery apps and they are satisfied with the quality and hygiene of the services provided as well as their packaging system. The study also discovered that offers and a range of food apps impact people's decisions, and that they are chosen since they are the fastest and safest method to purchase meals during the epidemic. The overall conclusion of this study is that in today's world, all clients use food apps because of their time-saving factor. It improves understanding of people's preferences, cost, food and beverage selection, time management effectiveness, available offers and discounts, and door-to-door delivery without compromising quality.

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