



# *IMPACT OF ONLINE FOOD ORDERING APPLICATIONS ON RESTURANT BUSINESS*

RESEARCH PROJECT 2

BY-AMANDEEP SINGH CHATRATH J005SHREYANS  
GURJAR J017SHOURYA JOSHI J045MEDHA JAIN J047

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## Abstract

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According to a recent Global WebIndex report, consumers now spend more than six hours a day online. So it's no surprise that the National Restaurant Association says the availability of technology options is an important factor when choosing a restaurant for nearly one-third of all adults and more than 40% of millennials. These are just some of the reasons why being digitally accessible is critical for reaching these potential customers. To millennials, even if a restaurant is right around the corner, it's virtually invisible if it's not easy to access online.

With the advent of online food ordering aggregators like Zomato, Swiggy, FoodPanda, Scootsy and Tiny Owl, even a slightest doubt is solved by analyzing options online, along with the obvious increase in home delivery. This change has affected restaurant business in ways much more than just the increase in orders. The shift has brought about tremendous insights and have proved to be useful for both customers and restaurant business owners. In this age of technology, being able to cater online and having state of art technology in this space has become the hygiene factor to survive.

To understand the extent of the impact of these aggregators on restaurants' business, our research is designed in a way to provide insights for the same.

# 1. Introduction

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Online food ordering is growing in popularity among both consumers and restaurants, because it can benefit all concerned. Consumers are embracing online ordering because of its ease, speed, and precision, while restaurants see the potential for increased revenue and fewer errors and they are responding too obvious consumer demand. Restaurants offer online ordering through Independent Food Ordering (IFO) (e.g. dominos, faasos) or Aggregate Food Ordering (AFO), (e.g. Zomato, Swiggy, Foodpanda). Online ordering has been associated with increased revenue, improved capacity management, improved productivity, and improved transactional marketing and customer relationship management, but some operators have expressed concerns about increased costs, an overloaded kitchen, reduced service quality, and possible commoditization.

Our research project focuses on impact of online ordering apps on restaurants in India. The literature review is a synopsis of the same.

# 2. Literature Review

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Online food ordering is a process of requesting food from a local restaurant or food cooperative through a web page or application. Much like ordering consumer goods online, many of these allow customers to keep accounts with them in order to make frequent ordering convenient. A customer will search for the restaurant, usually filtered via type of cuisine and locality, select from the available options, and choose delivery or pick-up. Payment modes include credit card payment, mobile wallets or cash, with the restaurant returning a percentage to the aggregator.

Independent food ordering (IFO) and aggregate food ordering (AFO) are two main providers of online food ordering services. The IFO sector came to life first and is dominated by major pizza chains i.e. Domino's and Pizza Hut, who engage in strong competition between them. The sector has also seen steadily increasing online sales mix, as opposed to local sales. The AFO sector, on the other hand, is dominated by three major players: Zomato, Swiggy and Foodpanda. AFOs have seen increasing revenues over the past few years, in a similar trend to IFOs. (The interaction of different players in the online food ordering industry, 2014)

Due to the mobile applications, the marketing of restaurants has increased in ways such as mobile ordering, customer loyalty, geo-locating, data gathering, customer engagement, etc.

People love to order food online because it is more convenient and saves time. Almost 22% of the people order more while ordering online. (Online Food Ordering System That Actually Works, 2017). One of the main matters that comes to mind when talking about applications in a restaurant space is the customer loyalty. Most of the leading chains and restaurants have set a precedence with engaging and innovative customer loyalty programs. A huge opportunity which makes the case for restaurant mobile applications is the concept of geo-locating customers. With the right permissions associated with your application, you'll have the ability to entice your customers to get them into your restaurant based on their current location.

Research shows that 97% of customers read push notifications sent from applications installed on their devices. That's a astounding number considering contenders like email marketing have an average rate of just more than 20%. Having own application installed on a customer's smartphone is a direct invitation to engage with them, be it through the push notifications or in-application messaging. If this functionality to share and cross endorse the content is present, then the conversation can easily spill over onto social media to further increase engagement.

Due to introduction of these mobile applications, restaurants can handle much more orders. Kareems claims it manages six more orders an hour when placed through a mobile application. Also, another survey shows that customers spend more through an ordering application than in person because of having more time to make a decision and wanting to score more reward points. One of the most vital point is that Integrated loyalty programs ensure customers keep returning to them. (Gazdecki, 2016). Orders placed via smartphone make up more than 10% of all quick-service restaurant sales by 2020, according to Business Insider Intelligence. At that point, mobile ordering is expected to be a striking \$38 billion industry.

While restaurant mobile ordering programs are still in their early years, fast-food chains are investing big already. Brands that rely heavily on delivery, such as pizza-chains are especially attuned to the importance of digital. At least half of Domino's sales are only through digital channels, while Pizza Hut clocks in at 46%. It is reflected that convenience is one of the most important factors for a customer in deciding where to order their pizza, so much that Pizza Hut even adopted the motto "easy beats better." Digital makes ordering easier, removing steps from

the process and giving customers the chance to track exactly where their pizza is in the process of being prepared and delivered. (Taylor, 2016)

The changing urban lifestyle of the average Indian is dramatic enough to be favorable for the food on the go and quick home delivery models to grow at higher rates. The ever increasing population crowded metro-cities and much longer travel times are drivers for the convenient, ready-to eat and cheaper options of having food delivered at your doorstep. Companies that are aware of this huge potential for growth may venture straight in, but only the fittest will survive. Businesses who keep their value proposition and their brand active in consumer's minds, will take the biggest share of the Indian online food service pie. (Online Food Service in India: An Analysis).

Over the past one year, there has been an exponential progression in the number of food start-ups. This area is garnering so much of investors' interest that the market size of food in India is expected to reach Rs. 42 lakh crore by 2020, reports Boston Consultancy Group. Presently, the Indian food market is around Rs. 23 trillion. (Singh, 2015)

The Indian food and grocery market is the world's 6<sup>th</sup> largest, with retail contributing 70% of the sales. It is projected to grow at the rate of 104%, touching US\$ 482 billion by 2020. The Indian food processing industry accounts for 32% of the country's total food market, 14% of manufacturing GDP, 13% of India's exports and 6% of total industrial investment. Indian food service industry is expected to reach US\$ 78 billion by 2018. (Ansari & Jain, 2016)

A recent study commissioned by GrubHub, an online and mobile food ordering company, found that the restaurants using the online ordering service were able to raise their takeout revenue by an average of 30%. In fact, one in five just doubled their takeout revenue. Between the changing consumer behavior and the comparative ease of implementing online orders through platforms like GrubHub, Zomato, Swiggy, being digitally accessible is now important than ever for any restaurants' success.

This research shows 75% of phone orders take more than a minute, and 30% take longer than three minutes. Adding up, every 100 takeout orders received each week on the application GrubHub saved the restaurant's remarkable 2.5 hours of workers' time. With customers easily being able to enter their own information, online ordering also improves accuracy. Showing the

biggest benefit to moving to online ordering were smaller ticket restaurants who typically see a 50% increase in takeout revenue after joining the application.

### 3. Problem Statement

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To study the impact of online ordering applications on restaurant business.

### 4. Research Objectives

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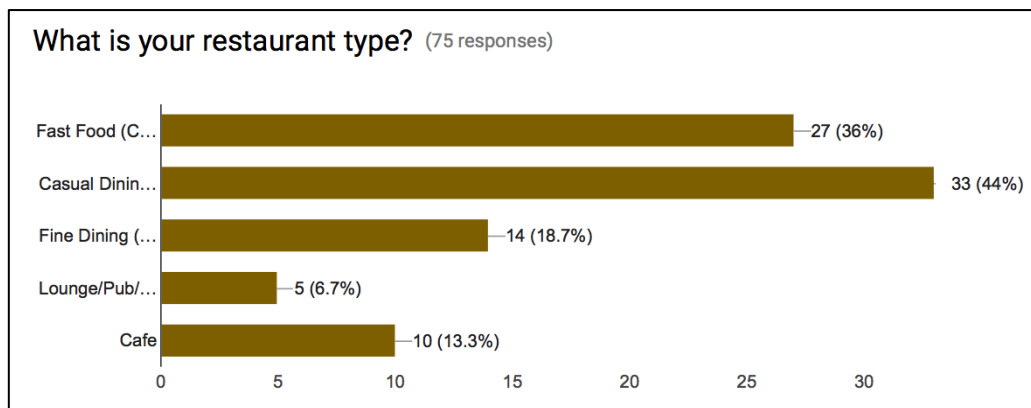
1. To identify the impact of online ordering applications on restaurant's business growth in Mumbai.
2. To determine the factors most affected by online applications which leads to restaurant's business growth.
3. To explore how the ratings and reviews of a restaurant impact their business growth.

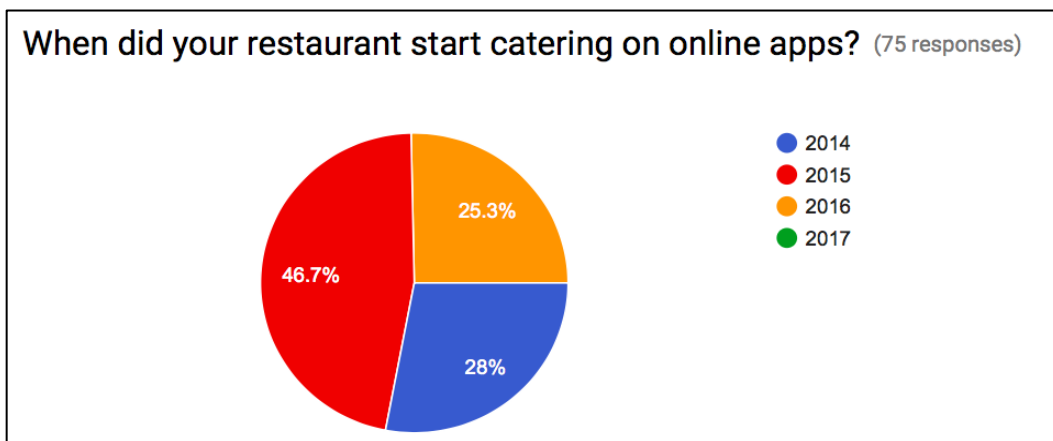
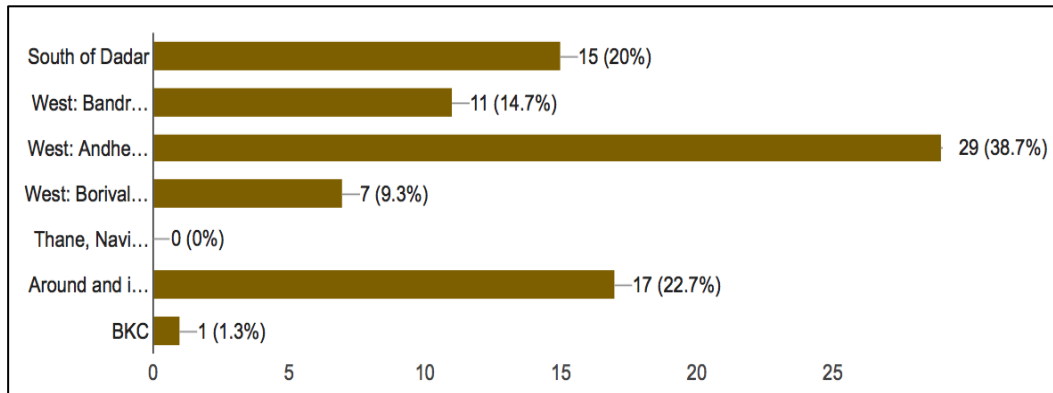
### 5. Research Methodology

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#### 5.1 Sources of Data

The data for accomplishing this research was collected from primary sources. The primary data was collected by the means of questionnaires with respondents as the restaurant personnel knowing about the operations of the business. The restaurant type differed from fast food, casual dining, fine dining, lounge, pub, bar to a normal café who are currently catering online ordering services through some aggregator. These restaurants were mixed in the terms of being expensive and were located all over Mumbai. The information given by them was directly recorded, and was analyzed to fit the research objective.





## 5.2 Sampling Procedures

Quantitative Analysis has been used for our Research Project as the generated data is transformed into useable statistics. It quantifies attitudes, opinions, behaviors, and other defined variables – and results are generalized from the selected sample population. Measurable data is used to formulate facts and understand patterns in research. The data collection methods includes paper surveys, face-to-face conversations, and systematic observations.

## 5.3 Sample Design

A Sample Design is a definite plan for obtaining a sample from a given population. It refers to the technique to the procedure adopted in selecting items for the sampling designs are as below:

1. **Sample Size:** The restaurants that are sample to achieve reliable result for the study are 75.
2. **Universe:** Restaurants in Mumbai
3. **Sampling Method:** Probability sampling method

## 5.4 Data Collection Method

The data was gathered in form of questionnaire where the respondents were the restaurant personnel knowing about the operations of the business. The questionnaire was filled after going to each of these restaurant and having one to one discussions with the concerned person. Thereafter, the data of 75 restaurants was obtained.

## 5.5 Statistical Tests

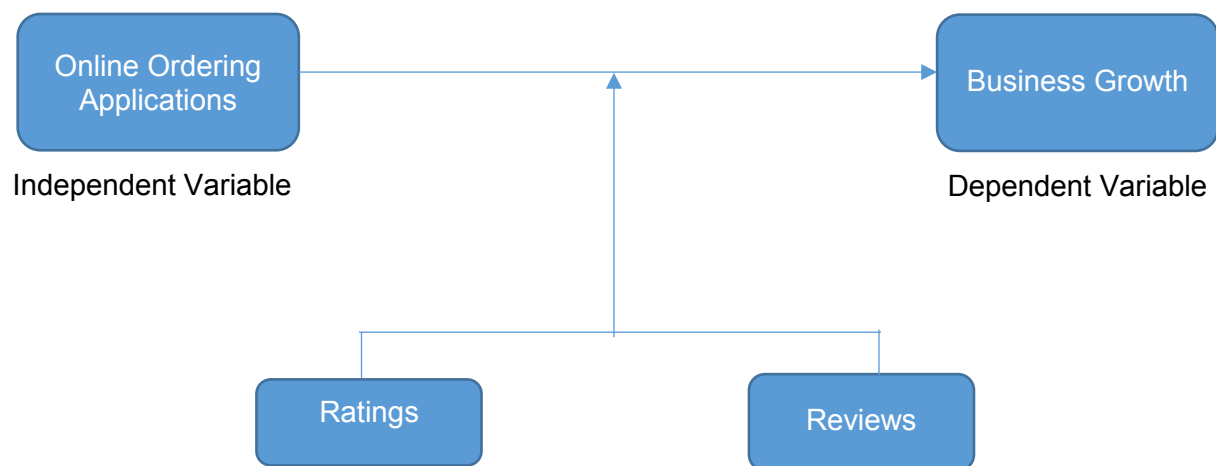
**Descriptive Analysis:** Descriptive analysis is the foremost analysis that is performed to describe relevant aspects and detailed information for each variable.

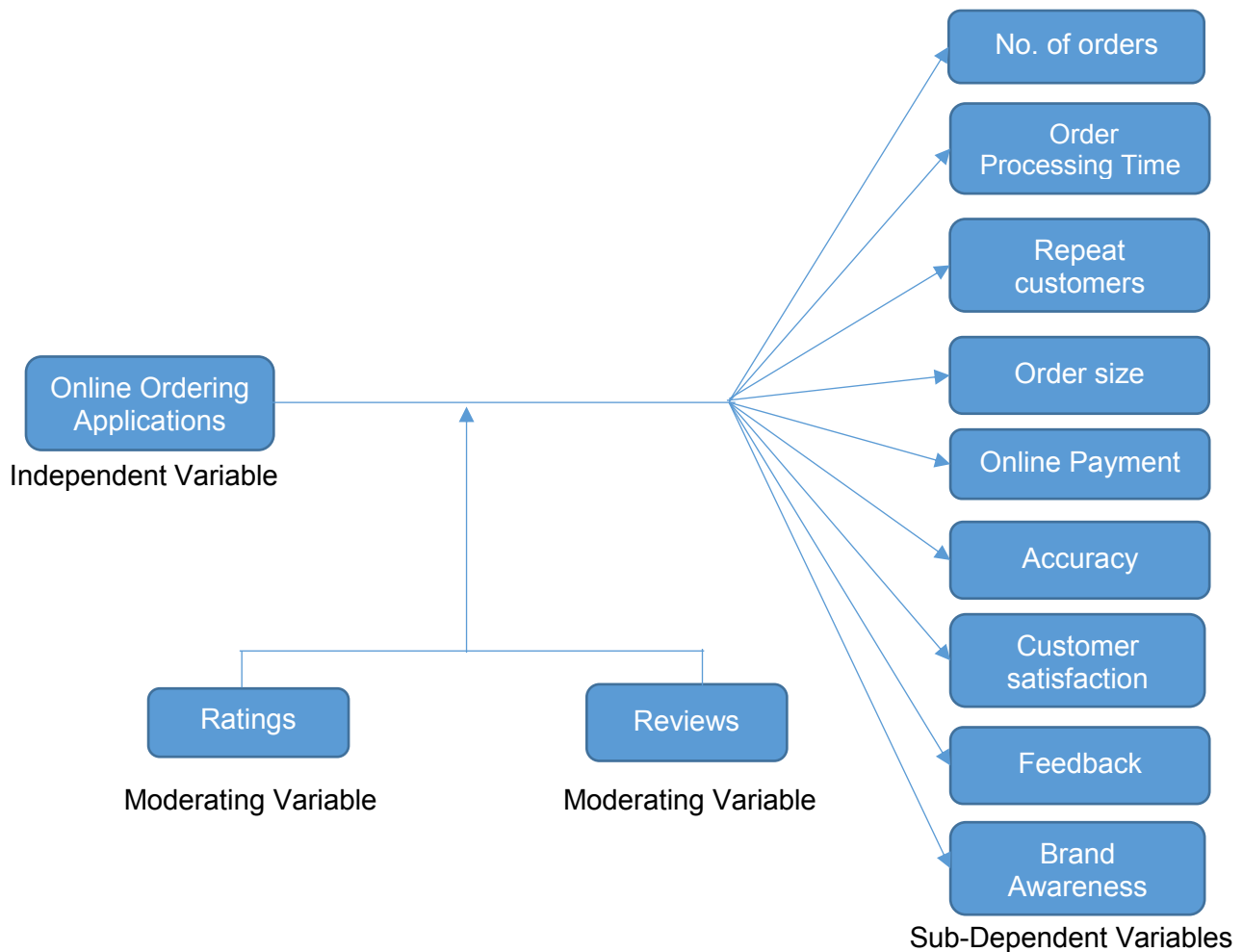
**Quantitative Analysis:** In the quantitative analysis, first Reliability test was done in which Cronbach's Alpha value was taken into consideration. Then we performed One-Tailed T test to find out the means of the respondents with a specific value as hypotheses. Thereafter, we did factor analysis in which we found out most relevant variables which were important for business growth in the online ordering space. Lastly, we performed the partial correlation for each relation along with the moderating variables to know the effect of these variables on the relationship.

**Tool for conducting the Analysis:**

The tool used for conducting the tests was Statistical Package for the Social Sciences (SPSS).

## 6. Theoretical Framework





## 6.1 Variables

### Dependent Variable: Business Growth

Earlier FoodTech was referred as food processing and manufacturing technology, but today FoodTech is defined as online food ordering and delivery service market. The concept of ordering food online is gaining popularity due to convenience in terms of sending food at the doorstep of the customer, attractive discounts, reward points & cash back offers which are being offered by the aggregators. Most importantly, restaurants are being benefitted by these applications due to increased number of orders, repeat customers, ticket size, accuracy, customer satisfaction and brand awareness. Due to the boom in internet market and attractive cashless payment options and offers, more number of online payment options are also working in favor of the restaurants. The overall efficiency of the business is improved significantly due to automated processes. Thus, getting the extent of the effect in various business areas due to these

applications is our aim of conducting this study making “Business Growth” as our dependent variable.

### **Sub- Dependent Variables:**

- 1. No. of Orders:** Online ordering systems let customers take their time in deciding how to enhance their orders, pushing the sales scope even farther. This is not true in telephone ordering situations, where customers sometimes decline offers only because they have not had enough time to consider those offers and/or want to end the call. A restaurant can maximize its business potential through increased exposure to hungry customers.
- 2. Order Processing Time/Improved efficiency:** On average, it takes two minutes to process a phone order and just 45 seconds to process a standard online order. By reducing the time needed to process an order, the restaurants are able to spend less time taking orders and much more time making them. By making the ordering process fully automated, it increases the cost effectiveness and productivity of the food business with a less manpower along with the increased order taking capability.
- 3. Repeat Customers:** According to a Mckinsey research, online delivery platforms which personalize the ordering experience by storing relevant customer data becomes extremely convenient for a customer. Once customers sign up, 80% never or rarely leave them for another platform, creating a strong winner takes all dynamic, in which the reward goes to the one who can sign up most customers in the shortest amount of time. This helps the restaurants to gain profits as the customer often clicks on “Repeat last order” while being hungry during the similar setting and time. Moreover, online ordering apps are fully packed with features that help restaurants to engage with customers like Loyalty Programs. These features build brand loyalty with customers and rewards them to keep them coming back to spend more and more. A repeat customer spends 67 % more than a new one, and these applications helps restaurants create those loyal repeat customers.
- 4. Order Size:** With online ordering systems, messages intended to entice customers like “Try new items”, “Add to the order”, and/or “Take advantage of special deals”, “Today’s special” are right on the web page in the form of images, text or a combination of the two. In many occasions, the end result is a larger tab which essentially means large order size. With no line behind them and no waiter waiting for them to take the order, the pressure to make speedy orders is gone, and

customers get more inclined to get that extra item. They often spend more time browsing a menu online which helps a lot. Upselling is built into the online ordering experience because of how the menu is structured.

**5. Online Payment:** Internet is now crowded with the companies offering food delivery services online day in & out. With enormous demand for food and constantly growing customer base in the country, the growth associated with this market is expected to be highly lucrative. Ordering food online is extremely convenient because of the features being provided by the companies in terms of options of alternate payment methods. Cafes are also preferring the online mode as operational cost incurred in sustaining the infrastructure, call center and other expenses is reduced when a restaurant takes up online orders.

**6. Accuracy:** With customers entering their own info, online ordering also improves accuracy. Miscommunications and misunderstandings between employees and the customers are very common, especially at establishments with language barriers. These leads to food preparation errors. Online ordering allows the order to be electronically transmitted directly to the chef, eliminating all food preparation inaccuracies that stem from miscommunications as well as the time-consuming, costly process of re-making each dish as directed and delivering the replacement to the customer. Some customers are very particular about the preparation of the dish they want, the temperature level, removal of certain ingredients etc. which sometimes is not reflected.

With online ordering and with printouts of online orders in hand, restaurants need not undertake responsibility if a customer claims that food was not prepared as requested.

**7. Customer Satisfaction:** By improving and streamlining the ordering process, online ordering improves your whole restaurant. And in the process, it makes all the customers much more satisfied. Who wouldn't be satisfied to have their delivery orders arrive more reliably? Online ordering makes things run more smoothly, and more simply for the customers. And this gets repaid with record levels of customer satisfaction.

**8. Feedback:** As the customers increasingly remain occupied at work, the placing of online orders has increased steadily which has created a new channel for restaurants to gather more customer database. It helps in bringing extra business to restaurants with accurate business insights. Integrating a mobile application has the ability to collect more reviews the instant someone

happily leaves with a prompt and convenient one-touch star ratings. More reviews help the restaurants to understand the customer's choices and to effectively work on the modifications. Because of various pop-ins and timers after the transaction, customers increasingly review the restaurant on the online profiles or share their experience on social media.

**9. Brand Awareness/Market Reach:** The online aggregators that connect customers with the online ordering systems of multiple local restaurants makes it easier to attract customers who may not otherwise have known about the establishment and its offering. Just as adding new menu items and undertaking diverse marketing initiatives play a key role in a restaurant's growth, online ordering systems encompass a major catalyst for remaining. The ever expanding E-commerce market offers new opportunities in this space. Internet allows a small and independent restaurant to be found easily by new customers with various choices. This creates more awareness about the business in the market and ultimately brings in more sales.

### **Moderating Variables:**

- 1. Ratings:** As per a research of Harvard business school, a restaurant's average rating has a huge impact on revenue, a one-star increase leads to a 5% - 9% increase in revenue for independent restaurants. However, a decrease in rating also significantly affects the growth of the business. The online ordering applications have options for customers to look at restaurants that exceed a definite average rating (say 3 stars), which essentially is very harmful for restaurants falling under that bar due to several reasons.
- 2. Reviews:** As the reviews are given by individual patrons who might feel a certain way because of various personal/non-personal reasons or because of some situational factors occurring at that point of time, the reviews definitely might not show the exact picture. However, one bad review of a well-known blogger can get in the eye of a new customers and can stain that first impression forever. Thus, this needs to be understood and taken that even though online ordering applications are a boom to the new-age food ordering, a restaurant needs to be up-top with its services round the clock to successfully satisfy the customers.

## 7. Hypothesis

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### *Hypothesis 1:*

$H_0$ : Providing services via online apps leads to an increase in number of orders less than 20%.

$H_1$ : Providing services via online apps leads to at least 20% increase in number of orders

|                                   |                   |                      |
|-----------------------------------|-------------------|----------------------|
| $\mu$ = increase in no. of orders | $H_0: \mu < 20\%$ | $H_1: \mu \geq 20\%$ |
|-----------------------------------|-------------------|----------------------|

### *Hypothesis 2:*

$H_0$ : Providing services via online ordering apps leads to decrease in order processing time by less than 1 min.

$H_1$ : Providing services via online ordering apps leads to decrease in order processing time by at least 1 min.

|                                       |                            |                               |
|---------------------------------------|----------------------------|-------------------------------|
| $\mu$ = Dec. in Order Processing Time | $H_0: \mu < 1 \text{ min}$ | $H_1: \mu \geq 1 \text{ min}$ |
|---------------------------------------|----------------------------|-------------------------------|

### *Hypothesis 3:*

$H_0$ : Providing services via online ordering apps leads to increase in number of repeat customers by less than 15%.

$H_1$ : Providing services via online ordering apps leads to increase in number of repeat customers by at least 15%.

|                                         |                   |                      |
|-----------------------------------------|-------------------|----------------------|
| $\mu$ = Inc. in no. of repeat customers | $H_0: \mu < 15\%$ | $H_1: \mu \geq 15\%$ |
|-----------------------------------------|-------------------|----------------------|

### *Hypothesis 4:*

$H_0$ : Providing services via online ordering apps leads to increase in orders size by less than 1 dish.

$H_1$ : Providing services via online ordering apps leads to increase in orders size by more than 1 dish.

|                                |                             |                                |
|--------------------------------|-----------------------------|--------------------------------|
| $\mu$ = Increase in order size | $H_0: \mu < 1 \text{ dish}$ | $H_1: \mu \geq 1 \text{ dish}$ |
|--------------------------------|-----------------------------|--------------------------------|

### *Hypothesis 5:*

$H_0$ : Providing number of payment options on online ordering apps leads to increase in the business by less than 15%.

$H_1$ : Providing number of payment options on online ordering apps leads to increase in the business by more than 15%.

|                                                      |                   |                      |
|------------------------------------------------------|-------------------|----------------------|
| $\mu$ = Inc. in business due to many payment options | $H_0: \mu < 15\%$ | $H_1: \mu \geq 15\%$ |
|------------------------------------------------------|-------------------|----------------------|

#### **Hypothesis 6:**

$H_0$ : Providing services via online apps leads to increase in accuracy of orders by less than 15%.

$H_1$ : Providing services via online apps leads to increase in accuracy of orders by more than 15%.

|                              |                   |                      |
|------------------------------|-------------------|----------------------|
| $\mu$ = Increase in accuracy | $H_0: \mu < 15\%$ | $H_1: \mu \geq 15\%$ |
|------------------------------|-------------------|----------------------|

#### **Hypothesis 7:**

$H_0$ : Providing services via online ordering apps does not lead to increase in customer satisfaction.

$H_1$ : Providing services via online ordering apps leads to increase in customer satisfaction.

|                                           |                |                  |
|-------------------------------------------|----------------|------------------|
| $\mu$ = Increase in customer satisfaction | $H_0: \mu = 0$ | $H_1: \mu = +ve$ |
|-------------------------------------------|----------------|------------------|

#### **Hypothesis 8:**

$H_0$ : Providing services via online apps leads to increase in number of feedbacks by less than 15%.

$H_1$ : Providing services via online apps leads to increase in number of feedbacks by more than 15%.

|                                         |                   |                      |
|-----------------------------------------|-------------------|----------------------|
| $\mu$ = Increase in number of feedbacks | $H_0: \mu < 15\%$ | $H_1: \mu \geq 15\%$ |
|-----------------------------------------|-------------------|----------------------|

#### **Hypothesis 9:**

$H_0$ : Providing services via online apps leads to increase in brand awareness by less than 15%.

$H_1$ : Providing services via online apps leads to increase in brand awareness by more than 15%.

|                                     |                   |                      |
|-------------------------------------|-------------------|----------------------|
| $\mu$ = Increase in brand awareness | $H_0: \mu < 15\%$ | $H_1: \mu \geq 15\%$ |
|-------------------------------------|-------------------|----------------------|

#### **Hypothesis 10:**

$H_0$ : There is not a positive relationship between a restaurant's business on online ordering apps and the ratings received on those apps.

$H_1$ : There is a positive relationship between a restaurant's business on online ordering apps and the ratings received on those apps.

|                                                    |                     |                  |
|----------------------------------------------------|---------------------|------------------|
| $\mu$ = Relationship b/w Business Growth & Ratings | $H_0: \mu \neq +ve$ | $H_1: \mu = +ve$ |
|----------------------------------------------------|---------------------|------------------|

#### **Hypothesis 11:**

$H_0$ : There is not a positive relationship between a restaurant's business on online ordering apps and the good reviews received on those apps.

$H_1$ : There is a positive relationship between a restaurant's business on online ordering apps and the good reviews received on those apps.

|                                          |                     |                  |
|------------------------------------------|---------------------|------------------|
| $\mu$ = Relationship b/w Business Growth | $H_0: \mu \neq +ve$ | $H_1: \mu = +ve$ |
|------------------------------------------|---------------------|------------------|

## 8. Analysis and Results

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The questionnaire contained 7 segmentation questions and 24 questions about the variables (19 for dependent-independent relationship, 4 for moderating variables and one overall on the business growth)

1. Around 96% respondents used Zomato, 92% used Swiggy, 56% used Foodpanda, 13.3% used TinyOwl and 9.3% also used some other aggregators like Scootsy. Thus, Zomato is the leading and the most popular aggregator of all based on the study.
2. 28% of the respondents started delivering online since 2014, 46% in 2015 and around 25% respondents did the same in 2016.
3. The restaurants were from all over Mumbai with 20% from South Mumbai, 15% around Bandra to Dadar area, 39% from Andheri to Khar area, 10% from Borivali to Jogeshwari area, 23% from east side around Ghatkopar and Powai area and also some from BKC area.
4. They were mixed in terms of being costly with cost of two without alcohol less than 500 for 18%, 500-1000 for 55%, 1000-1500 for 17% and 1500-2000 for 9%.
5. Around 44% were casual dining restaurants, 36% were having Fast Food setting, 19% were fine dining, 14% were cafes and 7% were lounge/pub/bar.

All the variable questions were in a percentage scale with each question having different level of minimum and maximum depending upon our secondary research and hypothesis formed. For eg,

1. What percentage of orders increased through online ordering apps? (Approximately)
  - Less than 10%
  - 10 – 20%
  - 20 – 30%
  - 30 – 40%
  - More than 40%

With our alternate hypothesis being that orders increase at least by 20% after joining the online applications. To standardize the data, all the entries were converted to the likert scale of 1 – 5

with different options attached to each question. Hence, for this example, greater than 20% will mean greater than 2 and so on.

## 8.1 Cronbach Alpha test/Reliability Test

Cronbach's alpha is the most common measure of internal consistency ("reliability"). It is most commonly used when you have multiple Likert questions in a survey/questionnaire that form a scale and you wish to determine if the scale is reliable.

Total Questions considered for reliability test were 19 which were as follows:

- |                          |                              |                        |
|--------------------------|------------------------------|------------------------|
| 1. Number of Orders (2)  | 5. Online Payment            | 9. Brand Awareness (2) |
| 2. Order Processing Time | 6. Accuracy                  | 10. Ratings (2)        |
| 3. Repeat Customers (2)  | 7. Customer Satisfaction (2) | 11. Reviews (2)        |
| 4. Order Size            | 8. Feedback (2)              | 12. Business Growth    |

| Case Processing Summary   |                       |         |       | Reliability Statistics |                                                    |  |               |
|---------------------------|-----------------------|---------|-------|------------------------|----------------------------------------------------|--|---------------|
|                           |                       | N       | %     | Scale<br>of Item       | Cronbach's Alpha<br>Based on<br>Standardized Items |  | N of<br>Items |
| Cases                     | Valid                 | 75      | 100.0 |                        | Cronbach's<br>Alpha                                |  | 19            |
|                           | Excluded <sup>a</sup> | 0       | .0    |                        |                                                    |  |               |
|                           | Total                 | 75      | 100.0 |                        |                                                    |  |               |
| Q2_Number_of_orders2      |                       | 58.1733 |       | 77.524                 | .665                                               |  | .865          |
| Q3_Order_Processing_Time  |                       | 58.0267 |       | 81.621                 | .245                                               |  | .875          |
| Q5_Repeat_Customers       |                       | 57.7333 |       | 75.225                 | .569                                               |  | .867          |
| Q6_Repeat_Customers       |                       | 58.2267 |       | 76.529                 | .662                                               |  | .865          |
| Q8_Order_Size             |                       | 59.0533 |       | 80.105                 | .397                                               |  | .873          |
| Q9_Online_Payment         |                       | 58.9733 |       | 78.864                 | .552                                               |  | .869          |
| Q11_Accuracy              |                       | 57.3733 |       | 77.778                 | .238                                               |  | .861          |
| Q12_Customer_Satisfaction |                       | 56.4133 |       | 79.651                 | .542                                               |  | .869          |
| Q13_Customer_Satisfaction |                       | 56.3600 |       | 78.558                 | .637                                               |  | .867          |
| Q15_Feedback              |                       | 57.8400 |       | 76.109                 | .564                                               |  | .867          |
| Q17_Feedback              |                       | 57.9867 |       | 76.230                 | .526                                               |  | .869          |
| Q18_Brand_Awareness       |                       | 57.7333 |       | 73.577                 | .640                                               |  | .864          |
| Q19_Brand_Awareness       |                       | 57.4800 |       | 72.253                 | .663                                               |  | .863          |
| Q20_Ratings               |                       | 56.3600 |       | 80.423                 | .491                                               |  | .871          |
| Q21_Ratings               |                       | 56.4667 |       | 78.387                 | .566                                               |  | .868          |
| Q22_Reviews               |                       | 56.3333 |       | 79.793                 | .488                                               |  | .871          |
| Q23_Reviews               |                       | 56.3067 |       | 79.215                 | .583                                               |  | .868          |
| Q24_Main                  |                       | 56.2933 |       | 84.859                 | .104                                               |  | .871          |

As we can see that the Chronbach's alpha value is 0.876 indicating high internal consistency. Another table suggests the Chronbach's alpha value if an item is deleted. It is used to check if the value will improve on deleting certain items. As we can see, the highest value on deleting an item is 0.875 is is still lesser. Thus, the final value is 0.876.

## 8.2 One Tail Testing

One sample t-tests can be used to determine if the mean of a sample is different from a particular value. This test is used when there is a directional hypothesis. As the study is to understand the extent of increase of business growth due to online ordering applications, all our independent – dependent variable relationship hypothesis is directional.

A one-tailed test, also known as a directional hypothesis, is a test of significance to determine if there is a relationship between the variables in one direction.

In our research, the critical area of a distribution is one-sided, hence it is either greater than or less than a certain value which is varying for different hypothesis. In this test, when the sample that is being tested falls into the one-sided critical area, the alternative hypothesis will be accepted instead of the null hypothesis.

Let us have a look at each of our hypothesis as percentages and what will that mean while we are doing the one tailed test, i.e., what will be the critical T-value for each hypothesis.

| Sr. No. | Qs. No. | Variable                          | Hypothesis                                                    | Standardization                                                         | T-Value |
|---------|---------|-----------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------------|---------|
| 1       | Q1.     | Increase in number of Orders (1)  | $H_0: \mu < 20\%$<br>$H_1: \mu \geq 20\%$                     | Less than 10% - 1; 10-20% -2; 20-30% -3; 30-40% - 4 ; More than 40% - 5 | 2       |
| 2       | Q2.     | Increase in number of Orders (2)  | $H_0: \mu < 20\%$<br>$H_1: \mu \geq 20\%$                     | Less than 10% - 1; 10-20% -2; 20-30% -3; 30-40% - 4 ; More than 40% - 5 | 2       |
| 3       | Q3,Q4   | Decrease in Order Processing Time | $H_0: \mu < 1 \text{ min}$<br>$H_1: \mu \geq 1 \text{ min}$   | 0 min – 1; 1 min – 2; 2 min – 3; 3 min – 4; 4 min - 5                   | 2       |
| 4       | Q5,Q6   | Increase in Repeat Customers      | $H_0: \mu < 15\%$<br>$H_1: \mu \geq 15\%$                     | Less than 10% - 1; 10-15% -2; 15-20% -3; 20-25% - 4 ; More than 25% - 5 | 2       |
| 5       | Q7,Q8   | Increase in Order Size            | $H_0: \mu < 1 \text{ dish}$<br>$H_1: \mu \geq 1 \text{ dish}$ | No increase – 1; Increase by 1 - 2; Increase by 2 – 3...so on           | 1       |
| 6       | Q9      | Increase in Online Payment        | $H_0: \mu < 15\%$<br>$H_1: \mu \geq 15\%$                     | Less than 5% - 1; 5-10% -2; 10-15% -3; 15-20% - 4 ; More than 20% - 5   | 3       |

|    |          |                                       |                                           |                                                                         |     |
|----|----------|---------------------------------------|-------------------------------------------|-------------------------------------------------------------------------|-----|
| 7  | Q10, Q11 | Increase_Accuracy (Decrease in error) | $H_0: \mu < 15\%$<br>$H_1: \mu \geq 15\%$ | No increase – 1; 5% - 1; 10% - 2; 15% - 3; 20% -4; More than 20% - 5    | 3   |
| 8  | Q12      | Inc_Customer Satisfaction (1)         | $H_0: \mu = 0$<br>$H_1: \mu \geq +ve$     | Got values directly on Likert scale                                     | 2.5 |
| 9  | Q13      | Inc_Customer Satisfaction (2)         | $H_0: \mu = 0$<br>$H_1: \mu \geq +ve$     | Got values directly on Likert scale                                     | 2.5 |
| 10 | Q14, Q15 | Increase in Feedback (1)              | $H_0: \mu < 20\%$<br>$H_1: \mu \geq 20\%$ | Less than 5% - 1; 5-10% -2; 10-15% -3; 15-20% - 4 ; More than 20% - 5   | 3   |
| 11 | Q16, Q17 | Increase in Feedback (2)              | $H_0: \mu < 20\%$<br>$H_1: \mu \geq 20\%$ | Less than 5% - 1; 5-10% -2; 10-15% -3; 15-20% - 4 ; More than 20% - 5   | 3   |
| 12 | Q18      | Increase in Brand Awareness(1)        | $H_0: \mu < 15\%$<br>$H_1: \mu \geq 15\%$ | Less than 10% - 1; 10-15% -2; 15-20% -3; 20-25% - 4 ; More than 25% - 5 | 2   |
| 13 | Q19      | Increase in Brand Awareness(2)        | $H_0: \mu < 15\%$<br>$H_1: \mu \geq 15\%$ | Less than 10% - 1; 10-15% -2; 15-20% -3; 20-25% - 4 ; More than 25% - 5 | 2   |

## T – Test 1

For the questions of **Number of Orders**, **Order Processing time**, **Repeat Customers** and **Brand Awareness**, the critical T-value is 2, i.e., if we run the T-test for these following questions and the mean comes out to be greater than 2, then we can reject the null hypothesis and accept the alternate hypothesis.

Below are the test results:

| One-Sample Statistics    |    |        |                |                 |
|--------------------------|----|--------|----------------|-----------------|
|                          | N  | Mean   | Std. Deviation | Std. Error Mean |
| Q1_Number_of_orders      | 75 | 2.4800 | .68497         | .07909          |
| Q2_Number_of_orders2     | 75 | 2.4533 | .72211         | .08338          |
| Q3_Order_Processing_Time | 75 | 2.6000 | .91533         | .10569          |
| Q6_Repeat_Customers      | 75 | 2.4000 | .80539         | .09300          |
| Q18_Brand_Awareness      | 75 | 2.8933 | 1.07267        | .12386          |
| Q19_Brand_Awareness2     | 75 | 3.1467 | 1.14719        | .13247          |

The mean depression scores are higher than the population 'normal' depression score of 2.0.

| One-Sample Test          |                |    |                 |                 |                                           |        |
|--------------------------|----------------|----|-----------------|-----------------|-------------------------------------------|--------|
|                          | Test Value = 2 |    |                 |                 |                                           |        |
|                          | t              | df | Sig. (2-tailed) | Mean Difference | 95% Confidence Interval of the Difference |        |
|                          |                |    |                 |                 | Lower                                     | Upper  |
| Q1_Number_of_orders      | 6.069          | 74 | .000            | .48000          | .3224                                     | .6376  |
| Q2_Number_of_orders2     | 5.437          | 74 | .000            | .45333          | .2872                                     | .6195  |
| Q3_Order_Processing_Time | 5.677          | 74 | .000            | .60000          | .3894                                     | .8106  |
| Q6_Repeat_Customers      | 4.301          | 74 | .000            | .40000          | .2147                                     | .5853  |
| Q18_Brand_Awareness      | 7.212          | 74 | .000            | .89333          | .6465                                     | 1.1401 |
| Q19_Brand_Awareness2     | 8.656          | 74 | .000            | 1.14667         | .8827                                     | 1.4106 |

- **The test statistic** of the one-sample t test, denoted t is given in the first column. Note that t is calculated by dividing the mean difference by the standard error mean (from the One-Sample Statistics box).
- **The degrees of freedom** for the test,  $df = 75 - 1 = 74$ .
- **The significance p** indicates the probability of obtaining the observed t-value if the null hypothesis is correct which is .000, which is less than 0.05, and hence **we can reject the null hypothesis**.
- **Mean Difference** is the difference between the "observed" sample mean (from the One Sample Statistics box) and the "expected" mean (2). The positive t value in this example indicates that the mean of the sample is greater than the critical value (2)
- According to our calculation and analysis, below are the percentages level for each of the alternate hypothesis values:

|                                   |             |                    |
|-----------------------------------|-------------|--------------------|
| Increase in number of Orders      | 2.45 – 2.48 | Greater than 20%   |
| Decrease in Order Processing Time | 2.6         | Greater than 1 min |
| Increase in Repeat Customers      | 2.4         | Greater than 15%   |
| Increase in Brand Awareness       | 2.8 – 3.1   | Greater than 15%   |

## T – Test 2

For the questions of **Customer Satisfaction**, the critical T-value is 2.5, i.e., we just want to know that there is a positive relationship and that customer satisfaction increases with online options. If we run the T-test for these following questions and the mean comes out to be greater than 2.5, then we can reject the null hypothesis and accept the alternate hypothesis.

Below are the test results:

| One-Sample Statistics     |    |        |                |                 |
|---------------------------|----|--------|----------------|-----------------|
|                           | N  | Mean   | Std. Deviation | Std. Error Mean |
| Q12_Customer_Satisfaction | 75 | 4.2133 | .66360         | .07663          |
| Q13_Customer_Satisfaction | 75 | 4.2667 | .66441         | .07672          |

The mean depression scores are higher than the population 'normal' depression score of 2.5.

| One-Sample Test           |                  |    |                 |                 |                                           |        |
|---------------------------|------------------|----|-----------------|-----------------|-------------------------------------------|--------|
|                           | Test Value = 2.5 |    |                 |                 |                                           |        |
|                           | t                | df | Sig. (2-tailed) | Mean Difference | 95% Confidence Interval of the Difference |        |
|                           |                  |    |                 |                 | Lower                                     | Upper  |
| Q12_Customer_Satisfaction | 41.936           | 74 | .000            | 1.71333         | 3.0607                                    | 3.3660 |
| Q13_Customer_Satisfaction | 42.579           | 74 | .000            | 1.76677         | 3.1138                                    | 3.4195 |

- **The significance p** for both is .000, which is less than 0.05, and hence **we can reject the null hypothesis**. Also the mean difference between the "observed" sample mean (from the One Sample Statistics box) and the "expected" mean is positive indicating that the mean of the sample is larger than the critical value.
- The difference in the mean is astoundingly very much which shows that the increase in the satisfaction level is very high due to these applications.
- According to the calculation and analysis, below is the result:

|                                   |       |                       |
|-----------------------------------|-------|-----------------------|
| Increase in Customer Satisfaction | ~ 4.2 | Positive Relationship |
|-----------------------------------|-------|-----------------------|

### T – Test 3

For the questions of **Online Payment, Accuracy and Feedback** the critical T-value is 3, i.e., if we run the T-test for these following questions and the mean comes out to be greater than 3, then we can reject the null hypothesis and accept the alternate hypothesis.

Below are the test results:

| One-Sample Statistics |    |        |                |                 |
|-----------------------|----|--------|----------------|-----------------|
|                       | N  | Mean   | Std. Deviation | Std. Error Mean |
| Q9_Online_Payment     | 75 | 1.6533 | .72584         | .08381          |
| Q11_Accuracy          | 75 | 3.2533 | 1.52540        | .17614          |
| Q15_Feedback          | 75 | 2.7867 | .96273         | .11117          |
| Q17_Feedback          | 75 | 2.6400 | 1.00861        | .11646          |

As we can see, the mean depression score of accuracy is higher than the population 'normal' depression score of 3.0 but the mean depression score of online payment and feedback is less than the hypothesised value of 3.

| One-Sample Test   |                |    |                 |                 |                                           |         |
|-------------------|----------------|----|-----------------|-----------------|-------------------------------------------|---------|
|                   | Test Value = 3 |    |                 |                 |                                           |         |
|                   | t              | df | Sig. (2-tailed) | Mean Difference | 95% Confidence Interval of the Difference |         |
|                   |                |    |                 |                 | Lower                                     | Upper   |
| Q9_Online_Payment | -16.068        | 74 | .155            | -1.34667        | -1.5137                                   | -1.1797 |
| Q11_Accuracy      | 5.438          | 74 | .000            | .25333          | .0976                                     | .6043   |
| Q15_Feedback      | -1.919         | 74 | .059            | -.21333         | -.4348                                    | .0082   |
| Q17_Feedback      | -3.091         | 74 | .003            | -.36000         | -.5921                                    | -.1279  |

- The significance p for online payment is .155, which is more than 0.05, and hence **we cannot reject the null hypothesis**. Also the mean difference between the "observed" sample mean (from the One Sample Statistics box) and the "expected" mean of online payment as well as Feedback is negative. It indicates that the mean of the sample is smaller than the critical value.
- However, in case of accuracy, the p value is less than 0.05 and even the mean difference is positive, thus **we can reject the null hypothesis**.

- According to the calculation and analysis, below are the percentages level:

|                                                           |             |                                                    |
|-----------------------------------------------------------|-------------|----------------------------------------------------|
| Increase in business due to more number of online payment | 1.65        | Less than 15% (Increased in the bracket of 5-10%)  |
| Increase in Accuracy                                      | 3.2         | Greater than 15%                                   |
| Increase in number of Feedback                            | 2.64 – 2.78 | Less than 15% (Increased in the bracket of 10-15%) |

## T – Test 4

For the questions of **Order Size**, the critical T-value is 1, i.e., if we run the T-test for these following questions and the mean comes out to be greater than 1, then we can reject the null hypothesis and accept the alternate hypothesis.

| One-Sample Statistics |    |        |                |                 |
|-----------------------|----|--------|----------------|-----------------|
|                       | N  | Mean   | Std. Deviation | Std. Error Mean |
| Q8_Order_Size         | 75 | 1.5733 | .80829         | .09333          |

The mean depression scores are higher than the population 'normal' depression score of 2.5.

| One-Sample Test |                |    |                 |                 |                                           |       |
|-----------------|----------------|----|-----------------|-----------------|-------------------------------------------|-------|
|                 | Test Value = 1 |    |                 |                 |                                           |       |
|                 | t              | df | Sig. (2-tailed) | Mean Difference | 95% Confidence Interval of the Difference |       |
|                 |                |    |                 |                 | Lower                                     | Upper |
| Q8_Order_Size   | 6.143          | 74 | .000            | .57333          | .3874                                     | .7593 |

- The significance p is .000, and hence **we can reject the null hypothesis**. Also the mean difference between the "observed" sample mean and the "expected" mean is positive indicating that the mean of the sample is larger than the critical value.
- According to the calculation and analysis, below is the result:

|                        |      |                                 |
|------------------------|------|---------------------------------|
| Increase in Order Size | 1.57 | Increase is greater than 1 dish |
|------------------------|------|---------------------------------|

### 8.3 Partial Correlation Testing

Partial correlation is a measure of the strength and direction of a linear relationship between two continuous variables while controlling for the effect of one or more continuous variables (also known as 'moderating' or 'control' variables). Although partial correlation will not make the distinction between independent and dependent variables, the two variables are frequently considered in such a manner (i.e., you have one continuous dependent variable and another continuous independent variable, as well as one or more continuous control variables or moderator variables).

Even though the likert scale is ordinal and there is debate around whether to treat it as categorical or continuous, many researchers say that because it belongs to the interval scale category, it should be treated as continuous, hence we are applying this test.

Our variables will be

1. Use of online ordering App - Independent
2. Sub Dependent variables of Business growth – Dependent
3. Reviews and Ratings – Control variables/Moderator variables

| Descriptive Statistics    |        |                |    |
|---------------------------|--------|----------------|----|
|                           | Mean   | Std. Deviation | N  |
| Q24_Business Growth       | 4.3333 | .64375         | 75 |
| Q1_Number_of_orders       | 2.4800 | .68497         | 75 |
| Q3_Order_Processing_Time  | 2.6000 | .91533         | 75 |
| Q5_Repeat_Customers       | 2.8933 | 1.03419        | 75 |
| Q8_Order_Size             | 1.5733 | .80829         | 75 |
| Q9_Online_Payment         | 1.6533 | .72584         | 75 |
| Q11_Accuracy              | 3.2533 | 1.52540        | 75 |
| Q13_Customer_Satisfaction | 4.2667 | .66441         | 75 |
| Q15_Feedback              | 2.7867 | .96273         | 75 |
| Q19_Brand_Awareness       | 3.1467 | 1.14719        | 75 |
| Q20_Ratings               | 4.2667 | .64375         | 75 |
| Q21_Ratings               | 4.1600 | .75409         | 75 |
| Q22_Reviews               | 4.2933 | .71231         | 75 |
| Q23_Reviews               | 4.3200 | .66088         | 75 |

| Variables             | Correlations            | Q24_BusinessGrowth<br>(Without the control variables) | Q24_BusinessGrowth<br>(With control variables)<br>Q20_Ratings &<br>Q21_Ratings &<br>Q22_Reviews &<br>Q23_Reviews |
|-----------------------|-------------------------|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| BusinessGrowth        | Correlation             | 1.000                                                 | 1.000                                                                                                            |
|                       | Significance (2-tailed) | .                                                     | .                                                                                                                |
|                       | df                      | 0                                                     | 0                                                                                                                |
| Number_of_orders      | Correlation             | .061                                                  | -.019                                                                                                            |
|                       | Significance (2-tailed) | .001                                                  | .076                                                                                                             |
|                       | df                      | 73                                                    | 69                                                                                                               |
| Order_Processing_Time | Correlation             | .023                                                  | .074                                                                                                             |
|                       | Significance (2-tailed) | .045                                                  | .041                                                                                                             |
|                       | df                      | 73                                                    | 69                                                                                                               |
| Repeat_Customers      | Correlation             | .014                                                  | -.093                                                                                                            |
|                       | Significance (2-tailed) | .008                                                  | .042                                                                                                             |
|                       | df                      | 73                                                    | 69                                                                                                               |
| Order_Size            | Correlation             | .199                                                  | .166                                                                                                             |
|                       | Significance (2-tailed) | .087                                                  | .066                                                                                                             |
|                       | df                      | 73                                                    | 69                                                                                                               |
| Online_Payment        | Correlation             | -.039                                                 | -.057                                                                                                            |
|                       | Significance (2-tailed) | .043                                                  | .037                                                                                                             |
|                       | df                      | 73                                                    | 69                                                                                                               |
| Accuracy              | Correlation             | .023                                                  | .015                                                                                                             |
|                       | Significance (2-tailed) | .045                                                  | .001                                                                                                             |
|                       | df                      | 73                                                    | 69                                                                                                               |
| Customer_Satisfaction | Correlation             | .232                                                  | .043                                                                                                             |
|                       | Significance (2-tailed) | .045                                                  | .022                                                                                                             |
|                       | df                      | 73                                                    | 69                                                                                                               |
| Feedback              | Correlation             | -.145                                                 | -.307                                                                                                            |
|                       | Significance (2-tailed) | .013                                                  | .009                                                                                                             |
|                       | df                      | 73                                                    | 69                                                                                                               |
| Brand_Awareness       | Correlation             | .098                                                  | -.038                                                                                                            |
|                       | Significance (2-tailed) | .005                                                  | .051                                                                                                             |
|                       | df                      | 73                                                    | 69                                                                                                               |

As we can see, that the correlation Number of orders, Repeat Customers and brand awareness with Business Growth is positive and it reverses itself when the control variables are introduced.

This means that reviews and ratings have a huge effect on the relationship and can reverse the relationship. From this analysis, following results can be seen:

1. There will be increase in the **number of orders** due to online ordering applications which will in turn increase the restaurant business growth only if the rating and reviews are high. However, if the reviews/ratings are bad, then the number of order can get reduced.
2. There will be increase in **the repeat customers** due to online ordering applications only if the rating and reviews are high. However, if the reviews/ratings are bad, then the repeat customers will be reduced.
3. There will be increase in the **customer satisfaction** due to online ordering applications only if the rating and reviews are high. However, if the reviews/ratings are bad, then there will be a negative impact on the customer satisfaction level.
4. There will be increase in **the number of feedbacks** due to online ordering applications only if the rating and reviews are high. However, if the reviews/ratings are bad, then there will be a decrease in number of feedbacks.
5. There will be increase in the **brand awareness** due to online ordering applications only if the rating and reviews are high. However, if the reviews/ratings are bad, then there will be a decrease in number of feedbacks.

Thus the ratings and reviews act as moderators for these variables. However, for Order processing Time, Order Size, Online Payment and Accuracy with Business Growth, the correlation did not change much when the control variables are introduced. This means that reviews and ratings have a little or no effect on their relationship. From this analysis, following results can be seen:

6. There ratings/reviews on the online ordering application will have little or no effect on the decrease in **order processing time** due to those applications, i.e., even if the ratings/reviews are bad, then also a restaurant can improve their processing time by these applications.
7. Any ratings/reviews on the online ordering application will have little or no effect on the increase in **order size** due to those applications.
8. Any ratings/reviews on the online ordering application will have little or no effect on the increase in restaurant business due to **several payment options**.

9. Any ratings/reviews on the online ordering application will have little or no effect on the increase in **accuracy** due to the aggregators.

## 8.4 Factor Analysis

The Factor Analysis is an explorative analysis which is much like the cluster analysis grouping similar cases, just that the factor analysis groups similar variables into dimensions. This process is also called identifying the latent variables. Factor analysis tries to identify underlying variables, that explains the pattern of correlations within a set of observed variables. It can also be used to simplify the data, for example to reduce the number of variables in predictive regression models. The goal of this analysis is to try to identify factors which underlie the variables.

The KMO measures the sampling adequacy (which basically determines if the responses given with the sample are adequate or not). Bartlett's test is just another indication of the strength of the relationship among variables. Its value needs to be more than 0.5 for a satisfactory factor analysis to proceed, 0.7 - 0.8 is considered as acceptable and values above 0.9 are superb. We lie in the acceptable range with the value 0.828.

| KMO and Bartlett's Test                          |                    |         |
|--------------------------------------------------|--------------------|---------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. |                    | .828    |
| Bartlett's Test of Sphericity                    | Approx. Chi-Square | 511.319 |
|                                                  | df                 | 91      |
|                                                  | Sig.               | .000    |

Communality (which is opposite of uniqueness) is the proportion of variance of the variable which is accounted for by all of the factors taken together. It indicates the amount of variance in each variable that is accounted for by the extracted factors.

In our study, we want to find out the most important variables that gets improved because of online ordering applications and in turn increases the business growth of a restaurant, which is why only the communalities tables is relevant to us.

Small values (red) indicate variables that do not fit well with the factor solution, and should possibly be dropped from the analysis. Thus, 69.5% of the variance associated with Number of orders is common, or shared; or this is the proportion of variance explained by the underlying factors.

| Communalities         |         |            |
|-----------------------|---------|------------|
| Variables             | Initial | Extraction |
| Number_of_orders      | 1.000   | .695       |
| Order_Processing_Time | 1.000   | .693       |
| Repeat_Customers      | 1.000   | .770       |
| Order_Size            | 1.000   | .520       |
| Online_Payment        | 1.000   | .629       |
| Accuracy              | 1.000   | .676       |
| Customer_Satisfaction | 1.000   | .738       |
| Feedback              | 1.000   | .405       |
| Brand_Awareness       | 1.000   | .648       |

We can see that the ranking of importance of the variables are as follows, i.e. because of online ordering applications, these variables were benefitted in the following order:

1. Repeat Customers
2. Customer Satisfaction
3. Number of Orders
4. Order Processing time
5. Accuracy
6. Brand Awareness
7. Online Payment
8. Order Size
9. Feedback

## 9. Summary and Conclusion

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We were successfully able to complete the research project in the specified time. After doing the analysis in SPSS software, we were able to see the positive and negative effect the aggregators are having on restaurant's business. All our alternate hypothesis was accepted except the Feedback and online payment options where the impact was less than the hypothesis value. Based on the analysis, following results have come out in the light:

|   |                                                                   |                                                    |
|---|-------------------------------------------------------------------|----------------------------------------------------|
| 1 | Increase in number of Orders                                      | Greater than 20%                                   |
| 2 | Decrease in Order Processing Time                                 | Greater than 1 min                                 |
| 3 | Increase in Repeat Customers                                      | Greater than 15%                                   |
| 4 | Increase in Brand Awareness                                       | Greater than 15%                                   |
| 5 | Increase in Customer Satisfaction                                 | Positive Relationship                              |
| 6 | Increase in business due to more number of online payment options | Less than 15% (Increased in the bracket of 5-10%)  |
| 7 | Increase in Accuracy                                              | Greater than 15%                                   |
| 8 | Increase in number of Feedback                                    | Less than 15% (Increased in the bracket of 10-15%) |
| 9 | Increase in Order Size                                            | Increase is greater than 1 dish                    |

Also, the reviews and ratings hardly affect the Order processing Time, Order Size, Online Payment and Accuracy. But they act as a very strong moderator in case of Number of orders, Repeat Customers, customer satisfaction, number of feedbacks and brand awareness of the restaurant and they can very well make or break the business.

Apart from this, the increase in the order size and number of feedbacks are least benefitted because of these aggregators and increase in the customer satisfaction and repeat customers are most positively affected by these online ordering applications. Thus, there is immense potential of growth for any restaurant by these aggregators due to various reason aforementioned. To fully capitalize on all those benefits, a restaurant should to maintain the basic necessities of ensuring a good rating.

There were also some conclusions that we were able to make out with the segmentation variables:

1. The geographical location plays a key role in the online ordering at times. If the location is at a commercial place like BKC, then the online orders are significantly on a rise during the day time. The repeat customers are also on a rise. It also so happens that the option of “Order last ordered item” helps a lot as these customers are at the same location feeling hungry in the same setting.
2. Also, the type of restaurant also changes certain key areas. If the setting is of fast food, then the online orders are much higher than a fine dining or casual dining restaurants. From the study, it has been clear that the restaurant with cost of two below 1000 Rs. have benefitted the most due to these services.
3. Also, a very interesting insight that has come out in our research is that even if the restaurants are not been able to do much business on the online app for whatever reasons, the brand awareness and the understanding of customer has been a constant positive for all the restaurants irrespective of the location, setting, cost, etc. Which means that due to these aggregators, more and more customers are getting aware which the restaurants do understand.
4. Also, even if a restaurant is so expensive that online business amounts to less than 5% of the business, still the ratings and reviews on these aggregators are considered a very important hygiene factor by all the restaurants as they have the power to make or break the business.

## 10. Limitations

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1. Because of the uneven Geographical coverage, it is not sure whether the findings will apply to every part of Mumbai.
2. The time frame given was enough to get the data from 75 restaurants, which might not be enough to realize the full scope of the research.

## 11. References

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