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A Study on Cloud Kitchens As An Emerging Food And Beverage Industry

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ABSTRACT

Purpose: *The purpose of the study is to determine customer perception towards various factors influencing ordering food from cloud kitchens through Online Food Delivery apps. The research also aims at understanding the competition, sustainability and profitability of cloud kitchens in the food and beverage industry through Porter's Five Force Model.*

Methodology:*The research data is collected through primary and secondary source with primary data collected through observation and survey for studying customer perception and building Porter's five force model dn secondary data used for statistical estimates of the industry. Frequency analysis is used to determine demographic of population ordering through cloud kitchens and one sample t-test to analyse customer perception.*

Findings: *The findings of the suggest the cloud kitchen industry to be a lucrative segment considering the current business scenario and conveys favourable perception of customers with respect to various factors influencing ordering food from cloud kitchens through Online Food Delivery apps.*

Keywords: *Cloudkitchens, Online food ordering, Porter's Five Force Model*

INTRODUCTION

A change in the lifestyle has led to businesses focusing on convenience of their customers and offering the same within budget. Entrepreneurs are seeking ways on enhancing customer satisfaction which can be implemented without any financial stress or without overcharging the customers for the service thereby burning a hole in customer pockets, consequences of which may be contradictory to the expected results. A wide discretion of the business maven need to be deployed for strategic foundation and growth of business which can ensure business survival while thriving on customer retention.

The food and beverage industry promises a propitious future considering the time constraints within the busy schedule of customers and also with more disposable income in their hand the urge of exploring new tastes and ordering meals. However, setting up an industry or a restaurant equipped with state-of-art technology is a huge

investment. In addition to the setup costs, the costs of operating business and maintaining quality may also deplete the financial resources. The industry being primarily a service industry in nature needs to focus on its people, process and physical evidence apart from the 4Ps of the marketing mix. The incremental cost in developing and maintaining the overall business proves to be overwhelming for entrepreneurs looking for a start-up. Cloud kitchens allow to serve customers while saving on the colossal amount of investment expended on the brick-and mortar setup of businesses. Considering the lockdown in the COVID-19 pandemic, restaurants are forced to operate as cloud kitchens whereby their kitchen is working to its fullest capacity solely on orders received for take-away delivery. The returns on the dining space is nil considering the current operational system.

CLOUD KITCHENS

Cloud kitchens are a segment of food and beverage industry that do not have a dine-in facility. It delivers food and service to its customers through Online Food Delivery apps. Online Food Delivery apps are the supporting facility for the cloud kitchens as it assists the business with its promotional efforts, resultantly allowing cloud kitchens to save on the extensive promotional budget and also expanding outreach by deploying the delivery staff of Online Food Aggregators. Food aggregators are like a third party and act as a mediator between customers and the restaurant industry.

Statistics

The cloud kitchen market industry is valued at $700 million at the global level in 2018 and is estimated to grow at CAGR of 17.25% from 2017 to 2030 (Goldstein Market Intelligence, 2020).According to a survey conducted by RedSeer Consulting estimates the cloud kitchen industry in India to grow by 35% in the year 2020 with the food delivery market to reach $2.5 to 3.5 billion by the end of 2021 in the country (Baliay&Bhushan, 2020) .

Table 1.1: List of Cloud Kitchens in India

Sr. No	Cloud Kitchem Brand	Year of Establishment	Presence in no. of cities	Speciality
1	Fassos	2011	16	North Indian, Rolls and Wraps
2	Behrouz Biryani	2016	16	Biryani
3	Oven Story	2016	14	Pizzas
4	Sweet Truth	2017	16	Desserts
5	Firangi Bake	2017	14	Italian
6	Mandarin Oak	2017	3	Chinese
7	The Good Bowl	2018	16	Rice, Pasta and Noodles
8	Lunch Box	2018	16	North Indian and Chinese
9	Navarasam	2019	1	South Indian

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RESEARCH OBJECTIVES

- To study the existing business environment for Cloud kitchen in food and beverage industry through Porter's Five Force Model.
- To determine customer perception towards cloud kitchen.
- To study future prospects of cloud kitchen in the food and beverage industry.

REVIEW OF LITERATURE

H. M. Moyeenudin, R. Anandan, ShaikJaveedParvez and Bindu, G. in the research papertitled***"A Research on Cloud Kitchen Prerequisites and Branding Strategies"*** makes an effort to develop an understanding the unique requirements and demand and the plausible marketing strategy for cloud kitchens to build way ahead. The findings of the study suggest a significant positive correlation between being on Online Apps and the cloud kitchen business suggesting that being on Online Food Delivery apps and can give the necessary fillip to the business by providing a means of promoting and branding the business. Online Reviews and web advertisements play a critical role in bringing more orders for cloud kitchen business.

AbhishekDakhole and Dattarty Mane in the research paper titled ***"A Research paper on assessment of Porter's Five Competitive Forces in Indian IT Sector"*** studies how relevant and useful can Porter's Five Force model be in developing a competitive marketing strategy and studying the forces in the dynamic business environment of IT industry in India. The paper applies the model to Indian IT sector and claims the model to be useful to predict profitability through careful study of business environment. The paper states that the model proves to be an effective tool in gauging the competitive position for a business and deploying its strengths and eliminating weaknesses.

RESEARCH METHODOLOGY

The research has used primary and secondary data for study. The secondary data has been used to study the future projections of the cloud kitchen in the food and beverage industry. For development of Porter's five Force model for the industry primary data collection was undertaken through observation and survey facilitated by secondary data.

For the purpose of studying demographic of the target population and customer perception towards various aspects of ordering from cloud kitchen, questionnaire has been designed systematically to conduct survey within regions of Mumbai, Thane and Pune. 279 respondents filled the survey out of which 250 responses were found appropriate for further data analysis.

Frequency analysis has been used to study the demographics of the target population and one sample t-test has been used for interpreting customer perception.

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SCOPE OF STUDY

The scope of thestudy islimited to Mumbai, Thane and Pune city. The research studies customer perception towards cloud kitchen food delivery through Online Food Delivery apps. The restaurant focuses on the cloud kitchen businesses established as cloud kitchen and not on restaurants functioning as same during the lockdown. However, the study does focus on operation of cloud kitchen mainly rather than type of restaurant.

LIMITATIONS OF STUDY

The research area has been limited to cities of Mumbai, Thane and Pune as these cities are the most affected by Corona pandemic. The study focuses on only the cloud kitchen business and on its business operations assisted by promotion and delivery through Online Food Delivery apps.

DATA ANALYSIS

Table 1.2: City Categorization of Sample

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Mumbai	121	48.4	48.4	48.4
	Thane	50	20.0	20.0	68.4
	Pune	79	31.6	31.6	100.0
	Total	250	100.0	100.0	

Findings and Interpretation

It can be observed from the above table (Table 1.2) that out of the 250 respondents, 121 respondents belong to Mumbai, 50 respondents belong to Thane and 79 respondents belong to Pune. Thus, out of the total 100%, 48.4% respondents are from Mumbai, 20% are from Thane and 31,6% are from Pune.

Graph 1.1:City Categorization of Sample

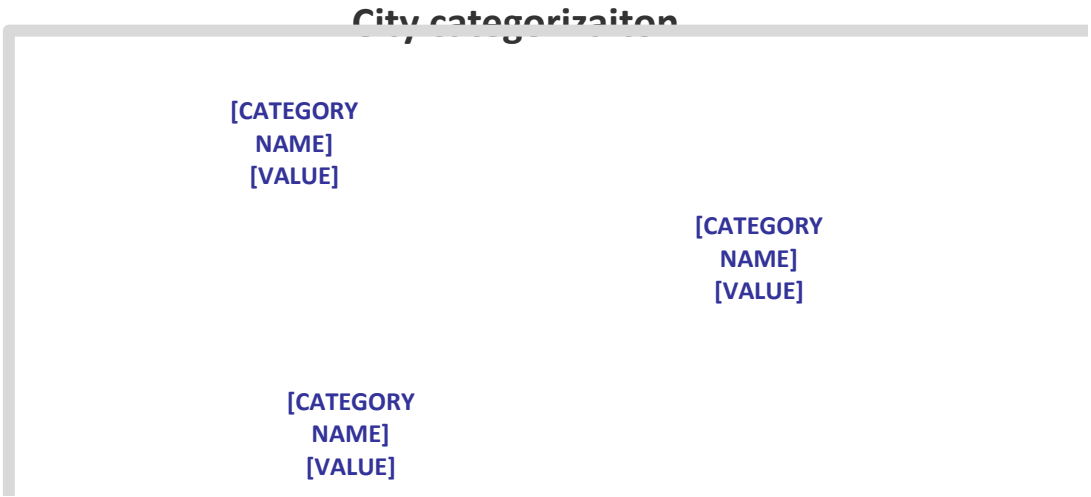

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Table 1.3: Gender Categorization of Sample

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	146	58.4	58.4	58.4
	Female	104	41.6	41.6	100.0
	Total	250	100.0	100.0	

Findings and Interpretation

It can be observed from the above table (Table 1.3) that out of the 250 respondents, 146 respondents are male and 104 respondents are female. Thus, out of the total 100%, 58.4% respondents are male and 41.6% respondents are female.

Graph 1.2:Gender Categorization of Sample

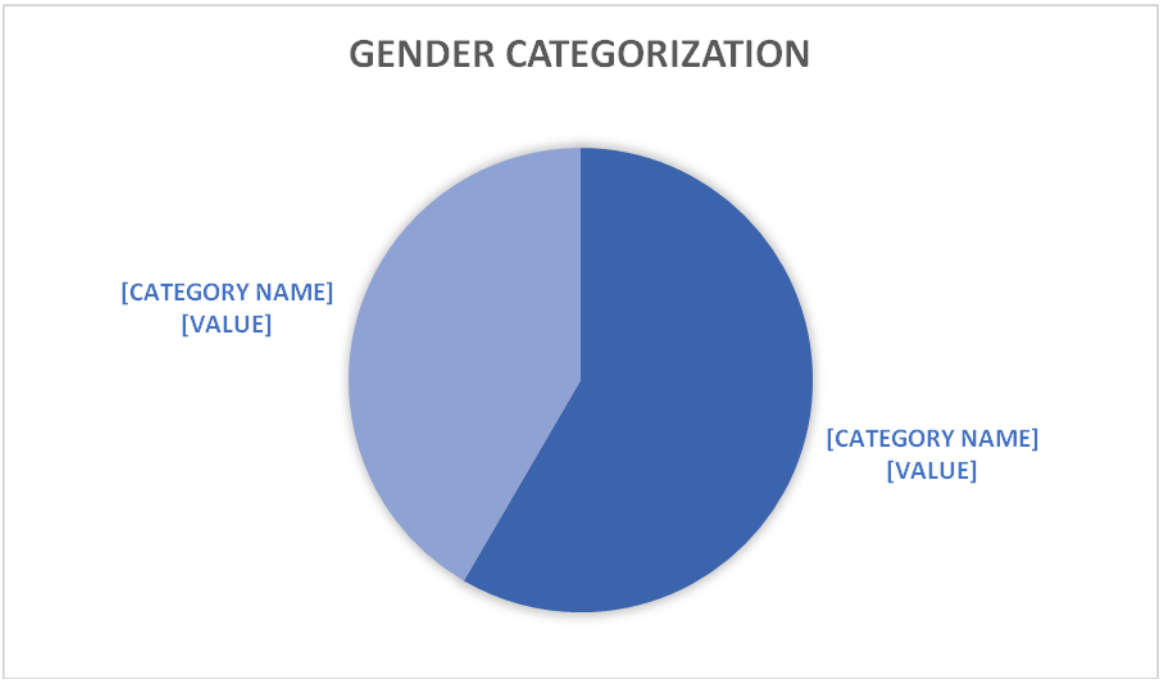

Table 1.4: Age Categorization of Sample

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20-30	82	32.8	32.8	32.8
	30-40	145	58.0	58.0	90.8
	40-50	18	7.2	7.2	98.0
	50-60	5	2.0	2.0	100.0
	Total	250	100.0	100.0	

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Findings and Interpretation

It can be observed from the above table (Table 1.4) that out of the 250 respondents, 82 respondents belong to the age group of 20-30 years, 145 respondents belong to the age group of 30-40 years, 18 respondents belong to age group of 40-50 years and 5 respondents belong to the age group of 50-60 years. Thus, out of the total 100%, 32.8% respondents belong to the age group of 20-30 years, 58% belong to the age group of 30-40 years, 7.2% belong to the age group of 40-50 years and 2% belong to the age-group of 50-60 years.

Graph 1.3:Age Categorization of Sample

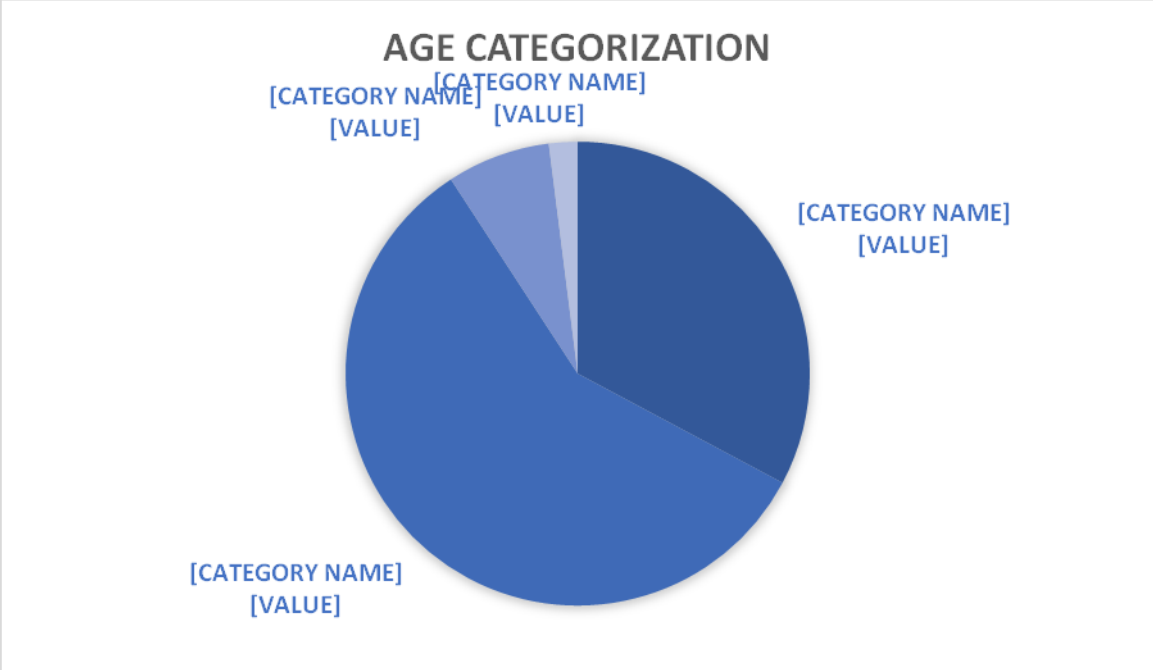


Table 1.5: Occupation Categorization of Sample

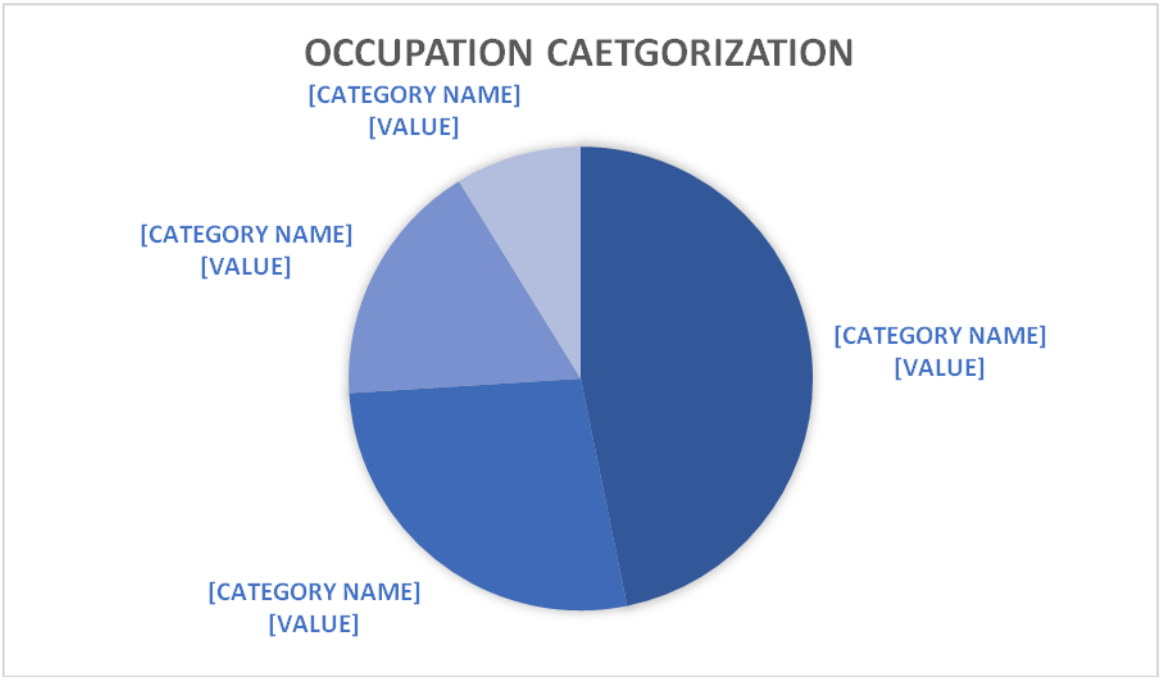
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Employed	117	46.8	46.8	46.8
	Self-employed	68	27.2	27.2	74.0
	Student	43	17.2	17.2	91,2
	Home-maker	22	8.8	8.8	100.0
	Unemployed	0	0	0	100.0
	Retired	0	0	0	100.0
	Total	250	100.0	100.0	

Findings and Interpretation

It can be observed from the above table (Table 1.5) that out of the 250 respondents 117 respondents belong to employed category, 68 respondents belong to self-employed category, 43 respondents are students and 22

respondents are home-makers. Thus, out of the total 100%, 46.8% belong to employed category, 27.2% belong to self-employed category, 17.2% belong to student category and 8.8% belong to home-maker category.

Graph 1.4:Occupation Categorization of Sample



One Sample t-test

Objective:

To identify positive (favourable) or negative (unfavourable) perception towards various factors influencing ordering food from cloud kitchens

H0: There is **no significant difference** in the average perception towards all the factors which ordering food from cloud kitchens.**(μ = 3)**

H1: There is a **significant difference** between the average perceptions towards all the factors which influence ordering food from cloud kitchens. **(μ ≠ 3)**

As the data is primary, the confidence level is assumed at 95% and so the significance level α is at 5% or 0.05.

As hypothesis is non directional (two-sided), so the level of significance is divided by 2, thus 5/2= 2.5% or 0.025.

α : 0.05 (non-directional : 0.05/ 2= 0.025)

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Table 1.6: One sample t-test

Parameter (variable)	Hypothesis	P-value	Dec (α/2 – 0.025)
Taste of Food	H0(Taste) μ = 3 H1(Taste) μ ≠ 3	0.000	p< α= 0.025, Reject H0
Quality of food	H0(Quality) μ = 3 H1(Quality) μ ≠ 3	0.000	p< α= 0.025, Reject H0
Service Experience	H0(Service) μ = 3 H1(Service) μ ≠ 3	0.000	p< α= 0.025, Reject H0
Cost saving	H0(Cost) μ = 3 H1(Cost) μ ≠ 3	0.002	p< α= 0.025, Reject H0
Convenience	H0(Convenience) μ = 3 H1(Convenience) μ ≠ 3	0.000	p< α= 0.025, Reject H0

From the above table (Table 1.6) it is evident that for all the factors, that is, taste of food, quality of food, service experience, cost-saving and convenience, the p-value lower than α/2, and thus provide evidence to reject null hypothesis indicating a significant difference in the perception towards this factors at 5% level of significance.

To further identify positive or negative perception with respect to the above factors the one sample statistics table will be referred to.

Table 1.7: One-Sample Statistics

Factors under study	N	Mean	Rank	Positive or negative perception	Interpretation
Taste of Food	250	4.6120	1	Positive	Customers strongly agree that food ordered from cloud kitchens taste good
Quality of food	250	4.4400	2	Positive	Customers strongly agree that food delivered from cloud kitchens is of good quality
Service Experience	250	4.2449	4	Positive	Customers strongly agree that that they have experienced a good service when ordered from cloud kitchen
Cost saving	250	4.0000	5	Positive	Customers strongly agree that food ordered from cloud kitchens helps saving money
Convenience	250	4.2917	3	Positive	Customers strongly agree that food ordered from cloud kitchens is convenient

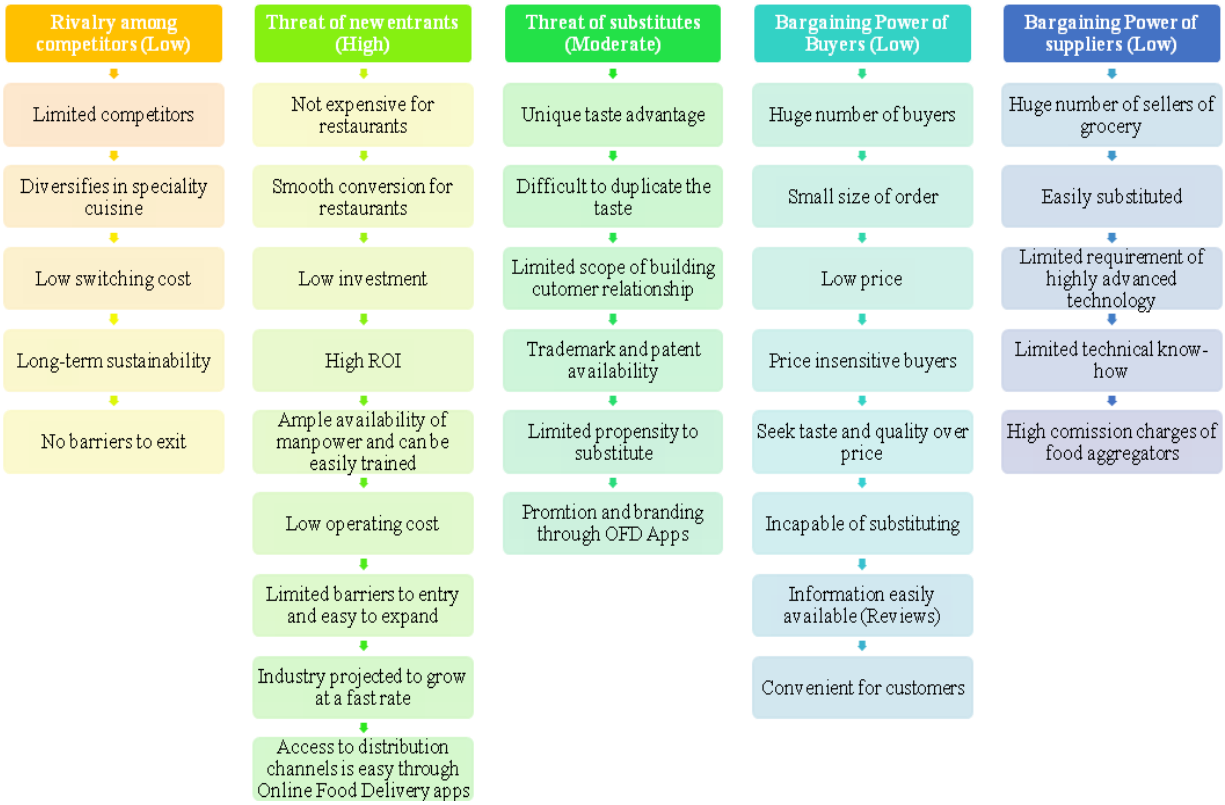
It can be observed from the above table (Table 1.7) that, people have a positive perception towards all the factors. Considering customer perception in sequence of ranking, customers have most favorable perception

towards taste of food followed by quality of food, convenience of ordering from cloud kitchens through Online Food Delivery apps, service experience and cost-saving.

PORTER'S FIVE FORCE MODEL

Porter's five forces of model was developed by Michael E. Porter and is used by various industries to estimate the attractiveness, competition, profitability and sustainability in an industry. The model extrapolates the existence of various levels of profitability within same industry as well as among different industry. The model is studied with an intention to understand the various factors in the business environment of the cloud kitchen which influence the sustainability and profitability of business. The Five forces in Porters' model are rivalry among existing competitors, threat of new entrants, threat of substitutes, bargaining power of buyers and bargaining power of suppliers.

Figure: 1.1 Porter's Five Force variable



1) Rivalry among competitors

The competitors are limited in the market currently as the concept is relatively new. However, it promises a profitable future and is attracting new setups. The current market scenario has competitors specializing in different cuisines and each competitor has their own customer base. The taste and other aspects of food may be

difficult to imitate however, not impossible. Though the switching cost for a customer are low, once a customer patronizes a taste, he/she is likely to remain loyal to the business. The barriers to exit are limited and in case no break-even is realized over a period of time and staying is business no longer seems profitable then business can make a quick exit by closing down.

2) Threat of new entrants

Considering the current scenario of lockdown and an imperative social distancing where restaurants are witnessing 90% decrease in the footfall count as per the research undertaken by CRISIL (Biswas, 2020) takeaway delivery proves to be an important source of revenue for restaurants. The investment and operating cost of business is low in case of cloud kitchen and thus attracts entrepreneurs looking to embark their business in food and beverage industry. The industry allow easy connectivity to customer through network and promotion by Online Food Delivery apps. The barriers to entry is low and with the industry expected to grow at fast pace it facilitates quick and easy expansion of business.

3) Threat of new substitutes

The industry loses customer touch as it operates business through food aggregators and thus may prove to be difficult to build customer relationship which is an essential strategy for building long-term customer relationship. However, more than service food plays a critical role in cloud kitchen and when customer like the taste they are like to make a repeat order and are less likely to substitute with other brand or replace the taste. Cloud kitchen can register as a franchise and also use trademark and patent protection for its product and processes.

4) Bargaining power of buyers

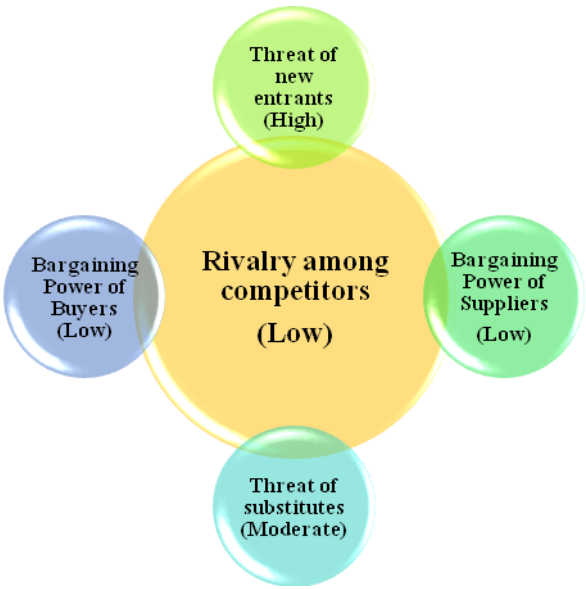
There are large number of customers and the order value is low. Thus, in general the bargaining power of buyers is lower. The price sensitivity of customers in case of meals is low and thus, all the customer relish food from street items and also occasionally at a five-star hotels. The customers are taste and quality sensitive rather than price sensitive. However, discounts attract customers and thus Cloud kitchens partnering with Online Food Delivery apps helps in customer retention. Ordering through cloud kitchen is convenient for customers. As per the survey conducted by RedSeer Management Consulting 21% of respondents are more likely to order food online while 9% of the customers are likely to visit restaurants during the lockdown (Biswas, 2020). Customers are well-informed when they can read reviews of other customers online which in turn facilitates making a wise choice.

5) Bargaining power of suppliers

The suppliers of grocery and raw materials required for kitchen are large in number and the prices of the raw materials is low thus for the business switching cost are low. A shift to a better supplier providing cost-effective and quality materials is easy. The familiarity with the infrastructure in the kitchen also helps in operations.

Cloud kitchens just cater to takeaway orders received through Online Food platforms are thus are heavily dependent on these food aggregators for business. The cloud kitchen may in such time be exploited by heavy commission charged by the Online Food Delivery platforms.

Figure 1.2: Porter's five force level



FINDINGS

Most of the respondents are from Mumbai city and the survey results convey that male population order more from cloud kitchens. Most of the respondents ordering from belong to the age group of 30-40 years followed by 20-30 years. Most of the customers ordering online from cloud kitchens belong to employed category followed by self-employed category.

Considering customer perception in sequence of ranking, customers have most favorable perception towards taste of food followed by quality of food, convenience of ordering from cloud kitchens through Online Food Delivery apps, service experience and cost-saving.

According to Porter's Five Force Model, The rivalry among competitors is low in the industry with limited competitors focusing on diverse cuisines. The threat of new entrants is high as low investment and operating cost along with easy entry and exit. The threat of substitutes is moderate with as scope of differentiation to build a brand image is high. The bargaining power of buyers is low with large number of customers and small size and low price of order. Even the bargaining power of suppliers is low with large number of suppliers in market and limited technical know-how required in the industry.

CONCLUSION

The cloud kitchen are an attractive concept for online food ordering for individuals who are employed or self-employed and own more disposable income. Customers belonging to the age group of 20-40 years are a lucrative segment for cloud kitchens.

Taste is an important factor influencing ordering from cloud kitchens followed by quality of food and convenience offered by ordering from cloud kitchens through Online Food Delivery apps.

The holistic view of the cloud kitchen in the food and beverage industry seems thriving considering Porter's Five Force Model with the rivalry among competitors being low, threat of new entrants being high, threat of substitutes being moderate and bargaining power of buyers and suppliers being low.

RECOMMENDATIONS

In the current economic slowdown and uncertainty, cloud kitchen can have a build a strong, stable and sustainable foothold in the food and beverage industry. The customers can be assured of safe and hygienic practices on part of business and gain market share of restaurants. The business scenario provides opportunity to restaurants to restructure their business and build a profitable model in times of turmoil.

FUTURE SCOPE OF STUDY

The study applies Porter's Five Force Model for researching business environment of cloud kitchen. Researchers in future can apply other business models to study the cloud kitchen industry. Researches in future can focus on the revolution initiated by Online Food Delivery apps in food and beverage industry. The impact of the current pandemic on the online food delivery industry can also be of interest to future researchers.

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