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ONLINE FOOD DELIVERY INDUSTRY IN INDIA: A CASE OF CUSTOMER SATISFACTION DYNAMICS

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ABSTRACT. With the advent of digital technology in food market, online platforms have been used to deliver meals from a variety of restaurants through a mobile app. The pace with which this industry is flourishing. It becomes imperative to have real knowledge about the factors which are contributing to the popularity of these apps and enhancing customer satisfaction. The present research reports the results of an empirical study covering 300 respondents across India,based on exploratory,confirmatory factor analysis and Structural Equation Modelling (SEM) to identity satisfaction determinants among food aggregators Viz. single online portal users. Present study envisages three dimensions which are given importance by the customers andsuggests that food aggregator industry should primarily focus on product quality and pricing as core attributes of their service offerings followed by consumer convenience by leveraging the technology to ensure their sustainability in the era of stiff competition in this fast-changing food aggregators market rather than competing on the basis of delivery staff competence as the results give least importance to staff competence (significant at 10% level of significance).

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1. INTRODUCTION

Disposition of technology in food, called Foodtech, is not a new notion to be explored. Beginning from technology adoption in food processing or manufacturing industry, now it refers to its application in food ordering and delivery market. The pace (double-digit CAGR) with which India's online food delivery market is growing, food supply market in India is projected to reach $8 billion market by the year 2022 (Google-BCG report, 2020). The change in the lifestyle of urban Indian characterised by longer working hours, longer travelling time, rising number of working women and working couples are the key drivers for increased demand for convenient supply of food at doorstep. The acceptance of online food delivery services tremendously can also be attributed to the numerous paybacks associated with it, such as hassle free and quick delivery of the food at the doorstep of the customer, access to variety of food options, various options for making payments, lucrative price offers. The industry targets at college going students, working class as their key audience. With the increased base of people using smart phones because of fall in prices due to intense competition in smart phone market, rise in level of literateness and easy and cheap access to the Internet, the app-based food delivery market has substantial benefits to be reaped in coming future. SWIGGY and ZOMATO have emerged as the biggest players in online food ordering and delivery marketplace in India. Some of the other major players operating in the Indian market are, Faaso's Food Services Private Limited, Food vista India Private Limited, Food Panda and UberEATS, etc. As this Industry has huge growth potential, many companies may venture in, but survival is possible only if you are fit to provide customer satisfaction. The industry being driven by many delivery models and the level of competition being triggered by entry of foreign players as well, it becomes imperative to emphasise on customer retention through the finest customer experience by improving the quality of product but at competitive price, usage of efficient and effective technology for the ease and convenience of customer and also make the customer experience the greatest in terms of rich service delivered by delivery staff which is trained enough to handle the queries and desires.

2. Review of literature

No doubt, the business of delivering food through digital apps has become intensely competitive with flooding of number of domestic as well as foreign players in the industry and the importance of customer satisfaction with the services rendered by these apps cannot be underestimated. There were very little knowledge existed about the drivers of customer behaviour towards these apps. A brief account of already existing literature in this section provides insight into the determinants of customer satisfaction in this market. Bagla and Khan (2017) found food variety and pricing offers in form of cashbacks are considered to be the major factors that drive consumers online purchase intention [1]. Kapoor and Vij (2018) on examining the mobile app attributes of food aggregators found that four types of design [2]: (1) visual, (2)informational, (3) collaborational and (4) navigational motivate the customer to use mobile app to place order and make payments for a food aggregator. The study concludes that mobile app should be visually attractive, should provide exhaustive information, should collaborate with other e commerce players and also be navigating from one page to another to facilitate conversion. Chetan et.al. (2018) applied Partial Least Squares (PLS) analysis with Smart PLS software and suggested that the convenience, availability of information and anxiety with the technology are to be the significant factors affecting customer satisfaction. Suhartant et. al. (2019) assessed how the quality of food through digital apps directly affected loyalty of the customer toward digital food delivery service significantly whereas service quality remained insignificant [4]. The study further explored the mediating role of customer satisfaction on the linkage between both the factors viz. quality of food and e-service quality. Sam and Joy(2020) found drop in traditional method to purchase food like contacting restaurants directly or walking in the restaurant [3]. Rather research found majority of respondents preferring food delivery mobile apps to order food. Verma (2020) realized advancements (visual presentation of products on the apps and the ease of use are the core attributes) in mobile technologies has revolutionised food deliveries online [5] . The above discussion will lead to the need of more literature contribution in Indian online food industry in special reference to customer satisfaction dynamics.

3. Research methodology

Descriptive research based on primary data has been collected through a questionnaire administered over 300 respondents across India selected through convenience sampling has been carried out at Lovely Professional University one of the largest private sector universities in India, whose respondents comprised a mixture of local and international students and their friends and relatives. The questionnaires were administered over undergraduate and post graduate students of the Mittal School of business with experience in ordering food through mobile apps were requested to participate in the research project. The results have been drawn using excel, SPSS 25.0 and Smart PLS 3.2.8. software. The study employed both exploratory and confirmatory factor analysis supported by SEM. A structured questionnaire divided into parts; first part dealing with the demographic details of the respondent like age, gender, education and the second part dealing with questions based on the construct on five point Likert scale ranging from 'l=very dissatisfied' to '5=very satisfied' was used to evaluate consumer experience of ordering and getting the delivery of food through mobile apps. Table 1 displays demographic profile of the respondents and their App preferences. There is no gender bias in responses as equal no of both the genders participated in the study. Around 94% respondents used mobile apps for food deliveries. Also it can be concluded from table 2 that 51% respondents prefer Zomato app and 43% preferred Swiggy app.

4. Results and analysis

The present study follows two-phase data analysis by splitting the sample into two sub samples. Training sub sample comprises 33% of respondents and testing subsample comprises 67% of total number of respondents. On training subsample exploratory factor analysis was conducted to develop the model and testing sub sample was subjected to confirmatory factor analysis and a path analysis to validate the model and to prioritize the factors ascertained on basis of their contribution in the overall satisfaction of consumer.

4.1. **Tests for Adequacy of Sample and Interrelationship among variables.**

The Kaiser-Meyer-Olkin(KMO) measures the adequacy of sample, which can vary from 0 to 1. If the value is close to 1, it will be considered better and 0.6 is

TABLE 1. Respondents' Demographic Features And Their Consumption Behavioural Outlines

A Demographic Features	**Number(n)**	**Percent(%)**
Gender		
Male	149	49.5
Female	151	50.5
Age		
15-24 years	243	81.3
25-34 years	49	16.1
34-44years	4	1.3
45 and above	4	1.3
Occupation		
Student	237	79
Self employed	18	6
Employee	30	10
Professional	15	5
B. Consumption behavioural Outlines		
Which food delivery app do you prefer most of the times ?		
Swiggy	129	43
Zomato	151	50.5
Food panda	7	2.3
Faasos	3	1
Others	9	3
How often do you order food online a month?		
1-3 times	198	66.2
4-7 times	158	19.4
8-12 times	22	7
More than 12 times	22	7.4

the minimum suggested value. On the other hand the Bartlett's Test of Sphericity tests the null hypothesis that the correlation matrix has an identity matrix that viz. the variables are not correlated significantly against the alternate hypothesis that the variables are significantly correlated. Both the tests provide for the minimum standard that should be met before proceeding for Factor Analysis. Table 3 shows that the KMO is 0.883 which is an indicator of sample adequacy. Bartlett's Test of Sphericity rejects the null hypothesis at 5% level of significance as the p value is less than 0.05. Both the tests support the application of factor analysis.

TABLE 2. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.872
Bartlett's Test of Sphericity	Approx. Chi-Square	543.855
	Df	55
	Sig.	0

TABLE 3. Total Variance Explained

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.324	48.404	48.404	5.324	48.404	48.404	3.139	28.54	28.54
2	1.293	11.756	60.16	1.293	11.756	60.16	2.523	22.935	51.475
3	1.08	9.819	69.979	1.08	9.819	69.979	2.035	18.505	69.979
4	0.767	6.971	76.951						
5	0.517	4.698	81.648						
6	0.485	4.411	86.059						
7	0.389	3.532	89.591						
8	0.349	3.172	92.763						
9	0.316	2.874	95.637						
10	0.292	2.653	98.29						
11	0.188	1.71	100						
Extraction Method: Principal Component Analysis.									

4.2. **Outcomes of the Exploratory Factor Analysis.** Exploratory Factor Analysis was carried out by applying Principal component factor analysis with VARIMAX orthogonal rotation. The correlation matrix supported the application of VARIMAX orthogonal rotation as all the correlation coefficients as 70% coefficients were above 0.3 threshold. Nunnally and Bernstein (1994) suggested orthogonal rotation for being simple to execute. Table 2 produced three factors with eigenvalues above 1. The screen plot also recommended retention of 3 significant factors.

Table 4 reports the variables loadings to three extracted factors. The three factors acknowledged by exploratory factor analysis can be labelled as follows: Factor I accounts for 48.404 per cent of total explained variance, suggests that it should be labelled as "Consumer convenience through technological leverage" as it tries to explain convenience to consumers due to ease of access with digital apps to place order and get quick delivery. It incorporates the variables relating to easy to use and simple interface, shorter delivery time, tracking services,

TABLE 4. Outcomes of Exploratory and Confirmatory Factor analyses

Factor and item description	**Exploratory factor analysis (100)**		**Confirmatory factor analysis (n=200)**				**Composite reliability**
	Factor	α	**Factor**	**P value**	**Decision**	α	
Factor 1 "Consumer convenience through technology advancement"		0.839				0.863	0.905
TA1:Easy to use and simple interface	0.871		0.891 (48.42)	0	significant		
TA 2: Shorter Delivery Time	0.832		0.77 (17.97)	0	significant		
TA 3 Tracking services	0.685		0.838 (25.36)	0	significant		
Ta4:App notifies every update in ordering and delivering till the order is received	0.704		0.868 (33.05)	0	significant		
Factor 2		0.812				0.857	0.917
SC1:Contact person helps me out with grievance redressal mechanism	0.853		0.822 (21.38)	0	significant		
SC2: Customer Care Training	0.741		0.915 (66.51)	0	significant		
SC3: Quality of Customer Service	0.52		0.907 (82)	0	significant		
Factor 3		0.771		0		.832 .	0.888
PP1: Pricing and offers	0.832		0.777 (17.67)	0	significant		
PP2: Hygiene of food	0.71		0.86 (36.46)	0	significant		
PP3: Tasty and appetizing	0.702		0.859 (32.43)	0	significant		
PP4: Good Variety of meals	0.629		0.762 (17.42)	0	significant		
Overall		**0.897**					

and updates on ordering and delivering till the order is received. Factor 2 labelled as "staff attitude and competence" accounts for 11.756 per cent of total explained variance and is characterized by the variables pertaining to "Contact person helps me out with grievance redressal mechanism", "Customer care executives of food delivery app you use are courteous and well trained", "Quality of customer service provided by contact person is good", "contact person ensures quick and efficient grievance redressal" and Factor 3 "Product quality and Pricing" accounts for 9.819 per cent of total explained variance and includes variables that are meticulously knotted to the product dimensions like "Hygiene of food", "Tasty and appetizing", "Pricing and offers", "good variety of meals".To measure reliability of scale in terms of the internal consistency of items, Cronbach's coefficient alpha was calculated. Cronbach's alpha calculated for the overall measurement scale is reported in Table 4 and is .897. However

TABLE 5. Path structural Coefficients (Customer satisfaction as endogenous variable

Particulars	**Path coefficient**	**t-Statistics**	**P-value**	**Result**
Technology-> customer satisfaction	0.213	2.02	0.043	Significant**
Staff competence-> customer satisfaction	0.193	1.854	0.064	Significant ***
Product-> customer satisfaction	0.487	5.282	0	Significant*
*Significant at 1% level **Significant at 5% level ***Significant at 10% level				

at factor level, the reliability for subscales is .839, .812 and .771 for Factor 1, 2 and 3 respectively. The results display scale reliability above 0.70 thresholds.

4.3. **Results of the Confirmatory Factor Analysis and Path Analysis.** Table 4 reports the results of both exploratory and confirmatory factor analysis. Factor loadings and reliability results are comparable to each other. On inspecting t-statistics, it is found that all variables are significant as they reported calculated values above the critical value of 2.58 at the 1% significance level. The results for composite reliability measures with values .905, .917 and .888 for Factor1, Factor 2 and Factor3.

Next, the study employs Smart PLS software to conduct path analysis with the help of SEM. Table 5 demonstrates that all the factors are contributing significantly to customer satisfaction in usage of apps for food deliveries. The t-statistics for all the factors are significant. Factor 3 relating to product quality, variety and pricing is significant at 1% level of significance. Factor 1 dealing with technological leverage also impacts customer satisfaction significantly at 5% level of significance. However, Factor 2 dealing with staff competence in ensuring quality customer care is significant at 10% significance level. To conclude, the factors of Technology leverage,staff competence and product dimensions are found to be three significant predictors of customer satisfaction in food delivery industry, with Product Quality and Pricing appear to be the most vital factor and Staff competence to be of the least importance.

4.4. **Fitness of the model.** To evaluate the fitness of estimated model, the software helped in calculating the standardized Root Mean Square Residual (SRMR)

which is an index of the mean of the standardized residuals arising from the actual and the hypothesized covariance matrices. The estimated model is fit as the SRMR value is < 0.08, lower the value of SRMR better the model fits. The study discovered model to be fit as it has SRMR of 0.059.

5. Conclusion and implications

Present research tried to measure customer satisfaction in the app-based food delivery market by exploring the factors that lead to satisfaction in this industry and their relative importance. The study identified Product quality and pricing as the crucial satisfaction driver in the online food delivery market. The results of exploratory factor analysis by employing SPSS Statistics 25 version software and Confirmatory factor analysis and SEM by Smart PLS software for the sampled set of respondents recommend that in food supply market through digital apps, three factors affect the satisfaction level of customers Viz. Product variety, quality and pricing, consumer convenience through technological leverage and staff competence in providing quality customer care services, arranged in order of their importance as evidenced by the results. The outcomes of the study are not shocking as for the growth of food delivery market, the core factor is quality of food with greater variety and affordable pricing. Introduction of digital apps in this market is to enable users to get the delivery without much hassle and delay. Therefore, customer convenience and ease to use these apps and remain updated about products through technological leverage should also gain the major attention of marketers in the food delivery industry. However, as compared to the core factor of Product quality and pricing, the role of technological leverage in determining users' satisfaction is less important in such a highly quality and pricing offers pushed industry driven by demand from middle income group people in India. Further, study evidences the product hygiene and taste to be more important than pricing as lessening of price can be a strategy to penetrate the market in short run.Present finding can have significant policy implications for marketers for survival in this industry which is currently facing the predicaments of price wars. As the consumers are quality and hygiene conscious, the companies in this industry need to adopt a pricing strategy which is value driven because customers are ready to pay extra if there is value addition. The third

important dimension is related to delivery staff attitude and competence in solving customers' problems, and availability of hot-line service. Regardless of this, the importance of this dimension should not be under-evaluated, to the extent that it should be comparable among network providers. So far as customer service through delivery staff competence in handling grievances dimension is concerned, it comes out to be the least vital factor for its contribution in customer satisfaction. Irrespective of its lesser significance in study, this aspect cannot be ignored and in any case it should not be less than competitors in the market. Further research is needed with wider representation across other age groups and sample size.

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