JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

AN EMPIRICAL STUDY OF RELATIONSHIP BETWEEN ONLINE FOOD SERVICE APPLICATIONS AND CUSTOMER SATISFACTION

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Abstract

An online food delivery service has become widely deployed, especially in developing countries during and after the new normal of the COVID-19 epidemic. The primary objective of this research is to determine what factors are associated with consumer satisfaction in the context of online food delivery (OFD). Customer happiness can be affected by five independent variables: information quality, customer service, food quality, payment methods, and traceability. Nonetheless, these five criteria significantly affected customers' happiness with online food delivery services. Customer service is the most important component, followed by information quality, food quality, payment methods, and finally traceability. Several suggestions for how the Online Food Delivery industry might better serve its customers have been derived from this study.

Keywords: Online food delivery (OFD), customer satisfaction, information quality, customer service, food quality, payment, traceability

1.1 Introduction

Time is a precious commodity in the modern, rapidly evolving society. Fast food is a convenient way to satisfy a momentary hunger for a snack or an unusual dinner, as it is both tasty and quick to prepare. As the number of online food delivery services has increased dramatically over the past decade, the concept of saving time has been accelerated.

More and more businesses, including fast food chains and individual fast food restaurants, are forming partnerships with online delivery services like Zomato and Swiggy. Apps that facilitate on-demand delivery have so enhanced the time-saving concept of obtaining quick food on the run.

The exponential expansion of online food delivery services in India can be directly attributed to the proliferation of smartphones, digital advertising, and e-commerce. The Internet and Mobile Association of India (IMAI) estimates that by 2027, India's e-commerce market will be valued at US$ 200 Bn, growing at a CAGR (compound annual growth rate) of 20.09%. It's no surprise that the IBEF's forecast of 829 million smartphone users by the end of 2021 has contributed to this rise. In turn, this will increase the availability and attractiveness of Internet services and goods to more than 60% of the Indian population. Since digital integration occurred on a global scale earlier, the global environment has been ahead of the Indian landscape in this respect.

According to (Srivastava, 2014), the fast food industry in India is booming for a variety of reasons. These include a growing middle class, a larger youth population, more women in the workforce, and more hectic lifestyles. The fast food industry has expanded rapidly in recent years, thanks in part to large investments, as reported by (Massimilani and Sundaram, 2012).

Fast food's rise to prominence can be attributed to the many people's desire for both convenience and value. According to a summary (Chitnis, 2019), fast food in India is booming, with sales increasing by 40% annually. It is projected that by 2023 there will be 500 McDonald's restaurants and 700 Pizza Hut. Fast food ranks 10th in India in terms of spending per person. The fast food market in India is booming, but there are concerns about customer loyalty and retention due to the plethora of options available. Since customer satisfaction towards fast food adds to numerous factors for a favourable corporate outlook, this study has practical consequences.

1.2 Literature Review

Fast food consumption and its effects on the economy and businesses have been researched extensively. According to (Tiwari and Verma, 2008), fast food accounts for a sizable portion of revenue in industrialized countries, and similar development may be seen in several developing world regions as people's eating patterns evolve rapidly. Because of its low price, high efficiency, and extensive advertising, it is widely favoured.

Pizzas, burgers, chicken, and other common fast food items are just a few examples. (Kara et al., 1995) looked at how demographics affect fast food consumption in Canada and found that the younger generation is more concerned with cost and options, while the older generation is more concerned with quality, flavour, and consistency. People in their mid-30s to mid-40s value efficiency and cleanliness. There has been a lot of research done on the effects of fast food and how customers react to it. As indicated in the introduction, people's eating habits are shifting along with the rest of the agile world and agile workplaces.

According to a research group (Wang et al., 2020), Socio-demographic factors were found to be a major predictor of using online grocery stores. A total of 954 people were analyzed for their cities, sexes, household sizes, ages, incomes, occupations, and marital statuses, as well as for their opinions on the taste, value, safety, quality, ease of purchase, and overall satisfaction with the product.

Fast food eaters in Dhaka, Bangladesh, were surveyed by Islam and Ullah (2010), who found that brand reputation was the most important factor, followed by the convenience of location, consistency in flavour, price, variety, quantity, discount, cleanliness, salesmanship, fat and cholesterol content, and ability to serve

oneself. It would be beneficial for businesses marketing to young people if they had a deeper grasp of the purchasing habits of this demographic. If these customers were segmented, it would be easier for marketers to create distinct tactics for each subset. The intersection of Fast Food with the technology landscape is an intriguing topic for the study of the product has a substantial impact on the economy and consumer behaviour.

The fact that technology has disrupted every industry in the modern world is proof of its significance, and it is no surprise that businesses today are looking to technology for a competitive edge. In this light, (Jiang et al., 2013) draw the following conclusion: if the service can give access convenience, i.e., the ability to purchase online at any time and from any location, the consumer's perception of online shopping will increase.

(Shah et al., 2020) studied the consumer eating habits were examined in Indonesia, and solely via mobile applications. They concluded that the quality of the reviews, the ease of use of the navigation systems, and the taste of the food all have a role in influencing customers' tendency to purchase using these services. From this study, it has been learnt that mobile apps have a significant impact on consumers' decisions about where to eat. How these trends in mobile payments and data democratization affect the Indian fast food industry is an open question.

According to research (Wen et al., 2020) it concluded that after the COVID-19 era, online meal ordering has become the norm in China. (Zhang, 2020) In light of the worldwide pandemic, it is recommended that visitors from the United States opt for takeout or delivery rather than eating in restaurants. That's the conclusion that can be drawn. Fast food consumption patterns can be categorized with the growing reliance of industrialized economies on online delivery services as a means of combating the global pandemic.

One of the most important metrics for determining a service's quality is customer satisfaction. There have been several studies that have looked at customer satisfaction as a precursor to customer loyalty (Sunaryo et al., 2019) or even behavioural intentions (Canny, 2014). Regardless, research shows that customer satisfaction plays a key role in influencing both loyalty and future actions. A confirmatory analysis conducted by (Sunaryo et al., 2019) in the Malaysian fast-food business found a discrepancy between the importance of food quality and service quality in predicting customer satisfaction. The study's findings are significant because they show how factors like "Environment" are no longer relevant when evaluating customer satisfaction in brick-and-mortar establishments due to speedy service and limited physical space. Now that the idea has been brought to light by the aforementioned study, with the effects of the physical environment supplied by B&M stores being rendered irrelevant.

Instruments to assess Customer Satisfaction are a hot topic in the corporate world now that their significance has been highlighted. Fast food sectors in a variety of regions have employed the Customer Satisfaction Survey (CSS) Scale created by (Nicholls et al, 1998). The scale was initially developed by (Gilbert et al., 2004) and later used by (Phau and Ferguson, 2013) to improve the fast food business in Australia.

2.1 Research methodology

The study employs descriptive research in the form of a survey to assess the link between service quality parameters and customer satisfaction concerning food delivery services in the Delhi NCR area. In this method, responses were collected from 250 people and data was used from 220 completed surveys (88% response rate). In this study, a questionnaire in form of Google form is employed to employ the quantitative approach. Respondents were contacted through email or a link to encourage them to take part in the survey. As a result, participants finish the survey in a reasonable amount of time, and researchers can design a questionnaire that is both aesthetically pleasing and easy to complete (Szwarc, 2005). The level of customer satisfaction with their online food purchases is analyzed using the Likert scale. The target respondents for the study are people using food online app to order online food and survey was conducted through random sampling method. A semi-structured questionnaire was prepared constitutes of two sections: one about details of respondents, another section contains questions on research variables. The respondents were requested to give their opinion on 5-point Likert scale (where 5-strongly agree and 1-strongly disagree). Regression analysis is used to determine which equation best fits observations of dependent and independent variables (service quality). The hypothesis of this study can be better understand if regression method is used to analyze the data. The survey has been analysed from people who have used OFD services to determine how satisfied they were with those services. One can learn the aspects that matter most to customers, the extent to which service quality is influential, and the variables that affect consumer satisfaction from this data.

2.2 Research Hypothesis Development

Updated information about menus, discounts and offers, accuracy, comprehensiveness, the presentation should be attractive, design and app should be informative (Preetha,2019) are all characteristics of high-quality information. According to research conducted by Mat Nayan and Hassan (2020), the quality of information is a key factor in convincing customers to use food delivery apps regularly. Furthermore, a study by (Chotigo and Kadono, 2021) notes that the most effective strategies for gaining client trust involve providing high-quality food information and meal delivery services as part of a positive app experience.

H1: Information quality of online food service providers influence customer satisfaction.

People are satisfied for observable reasons, as East, Wright, and Vanhuele (2013) show. Customer happiness with the product is an experience and an attitude. Companies, they argue, should prioritize customer pleasure over other metrics like stock price or market cap. According to Szwarc (2005), satisfied customers evaluate a company's offerings based on their own experiences as opposed to what they have heard about the company or its offerings in the past.

H2: Customer service of online food service providers influence customer satisfaction.

While most consumers agree (as demonstrated by Bodea & Ferguson, 2012) that they deserve to pay a reasonable price, the extent to which they feel that they paid that amount might vary widely. Although the benefits of owning the goods outweigh the price they paid, their research suggests that customers are less likely to be satisfied if they believe the company is making abnormal profits at their expense.

H3: Payment of online food service providers influence customer satisfaction.

In addition to affecting OFD service performance, consumer happiness, and behavioural intentions, food cleanliness and quality maintenance play a role in the OFD service process (Koay et al. 2022; Ghosh 2020). In addition, some studies have highlighted the importance of food variety, flavour, freshness, and delivery traceability in sustaining the high quality of OFD services and encouraging frequent consumer adoption (Cheng et al. 2021; Saad 2020). However, Koay et al. (2022) find only a weak correlation between traceability and satisfied customers. There has been extensive research into the correlation between service quality and customer happiness and loyalty.

H4: The food quality of online food service providers influences customer satisfaction.

Investing in a real-time tracking system can help food chains deliver meals faster. It can help organizations that encounter poor on-time delivery performance and enhance their delivery efficiency. Additionally, it helps save you support time and money as your team won't have to individually handle order-status-related questions and concerns.

H5: The traceability of online food service providers influence customer satisfaction.

3.1 Results and Discussion

Table 1 provides in-depth demographic data. Whereas female representation is quite low, at just 27.3%, men make up the vast majority (72.7%). The median age of respondents is 29, and the largest percentage (76.4%) are between the ages of 18 and 35. The greatest income bracket among respondents was those making between $250,000 and $300,000 per year (45.5% of the total). More than half (54.5%) of respondents said their preferred OFD solution is an online delivery app like Swiggy or Zomato. The study concludes that the high frequency with which individuals in major cities like Delhi NCR use OFD services is a positive indicator that this sector has significant potential and will soon reap numerous successes. In particular, weekly OFD usage was reported by 53.2% of respondents.

Table1; Details of the respondents (N=220):

Characteristics		Frequency	Percent
Gender	Male	160	72.7
	Female	60	27.3
Age	Below 18 years	3	1.4
	18-35 years	168	76.4
	36-54 years	31	14.1
	55 years or above	18	8.2
Annual Income	Up to 2,50,000	100	45.5
	2,50,001-5,00,000	75	34.1
	5,00,001-10,00,000	27	12.3
	Above Rs. 10,00,000	18	8.2

Frequency of ordering	Weekly	117	53.2
	Monthly	65	29.5
	Once in three months	26	11.8
	Once in six months	12	5.5
Preferred Online Food Ordering platforms	Aggregators (Zomato/ Swiggy etc.)	120	54.5
	Restaurants/Food Service Providers (Pizza Hut/Dominos/McDonalds etc.)	100	45.5

(Source: Primary Survey)

Table 2: Correlation among variables

The below table explained about the correlation between all the influential factors. The correlation between customer satisfaction and customer service is highest 0.586 followed by food quality 0.455 and information quality 0.443. All the correlation values are positive.

	Customer satisfaction	Information quality	Customer service	Payment	Food quality	Traceability
Customer satisfaction	1	.443**	.586**	.410**	.455**	.384**
Information quality	.443**	1	.474**	.329**	.492	.401**
Customer service	.586**	.474**	1	.360**	.428**	.369**
Payment	.410**	.329**	.360**	1	.505**	.308**
Food quality	.455**	.492**	.428**	.505**	1	.379**
Traceability	.384**	.401**	.369**	.308**	.379**	1

*** indicates correlation significant at 0.01 level*.

Table 2 the Correlation of customer satisfaction (criterion variable) is positive and significant with all the service quality factors as p value for relationship is less than 0.05.

3.2 Influence of service quality factors on customer satisfaction for online food service providers:

Information quality, consumer service, Payment, Food quality, and Traceability were all examined as potential predictors of consumer satisfaction using multiple regression analysis. Prior to performing the regression test, it is verified that the multicollinearity assumption was not violated.

Table 3: Multi-collinearity Tests

Independent Variables	Tolerance	VIF	Durbin-Watson
Information quality	.962	1.040	1.844
Customer service	.727	1.375	
Payment	.711	1.407	
Food quality	.646	1.547	
Traceability	.791	1.264	

Source: Primary Survey

Note: VIF = variance inflation factor

When the inflation factor of a variable is greater than 5, there will be significant multicollinearity in the data. If the VIF is less than one, the variables are not associated, and if it is greater than five, the correlations are strong. Through the use of the variance inflation factor (VIF) and the tolerance value, it was determined if there was a significant degree of correlation between any two independent variables (predictors). There are no multicollinearity issues, as shown by the VIF and Tolerance values in table 3 being below the threshold value. The Durbin-Watson test (DW = 1.844) further demonstrates that the residuals are not auto correlated between the 1.5 and 2.5 critical values.

Table 4 ANOVA

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	47.187	5	9.437	52.752	.000
	Residual	38.285	214	.179		
	Total	85.472	219			

(Source: Primary Survey)

The regression model is statistically significant in predicting the dependent variable (customer satisfaction), as shown by the F-test value =52.752 at the p less than 0.05 (p=0.000) level of significance in ANOVA table 4.

Table 5: Coefficients of Multiple Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.091	.204		5.353	.000
	Information quality	0.202	.026	0.352	7.812	0.000
	Customer service	0.245	.037	0.364	6.557	0.000
	Payment	0.123	.042	0.159	2.931	0.004
	Food quality	0.101	.044	0.132	2.316	0.021
	Traceability	0.089	.030	0.155	3.010	0.003
Dependent Variable: Customer satisfaction						

(Source: Primary Survey)

Table 5 displays the coefficients of a multiple regression model that explains the effect of several aspects of online food service providers' service quality on customers' happiness. Coefficients not normalized One unit change in the DV (Dependent variavle) will result in a one unit change in the B value of the DV; a positive sign indicates an increase in the DV, while a negative sign indicates a drop.

The standardized coefficient (β) values inferred the impact of the independent variable on the dependent variable. β =0.352, p= 0.000, since p value less than 0.05, hypothesis H1 was supported.

Customer satisfaction is positively and significantly affected by customer service provided by online food delivery providers. The β value for this path is =0.364 with p = 0.000, which is less than 0.05. Thus, hypothesis H2 is accepted.

Similarly, payment terms (β=0.159, p=0.004), food quality (β=0.132, p=0.021) and traceability (β=0.155, p=0.003) services of online food delivery providers significantly influenced customer satisfaction. The p value for all these paths is less than 0.05 with t-value above 1.96, confirmed the acceptance of hypotheses H3, H4 and H5.

Based on standardized regression coefficients the influence of customer service on customer satisfaction is highest amongst other service quality factors.

Table 6: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.743	0.552	0.542	0.42297

Table 6 shows that there is a modest level of association, represented by a R value of 0.743. R2 = 0.552 indicates that 55% of the variation in customers' levels of satisfaction can be attributed to the independent factors.

Companies in the consumer sector can boost customer happiness and loyalty by improving information quality, customer service, food quality, payment, and traceability.

There are not many reports about OFD offerings in Delhi NCR at the moment. This research helps to fill a gap in the literature on customer satisfaction in online food delivery specifically and e-commerce generally. It can also help OFD services gain new clients and hold on to their current ones by revealing opportunities for improvement.

4. Conclusion

There has been a significant growth in the demand for online food services and a correspondingly higher level of competition in the market recently. To take advantage of the possibilities presented by these shifts, there is an immense in-depth familiarity with markets and consumers. Improving customer happiness is the right and long-term approach for a thriving firm. The study's findings suggest a more strategic and comprehensive approach for businesses. It gives them a new angle from which to think about the variables that affect their customers' satisfaction.

5. Limitation and future research suggestions

There is a lack of consistency across the variables and a lack of objectivity and completeness in the results because the model used in this study does not fully list the aspects impacting customer satisfaction. Second, the sample size is quite small and the respondents are primarily firm employees living in metropolitan areas, therefore the results cannot be extrapolated to the larger population. Moreover, this study relied entirely on an online survey, thus different methods of data gathering may be developed in subsequent studies. The outcomes of a combined qualitative and quantitative study will be more robust and accurate representations of the research issue.

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