finiz
Singidunum University International Scientific Conference
Međunarodna naučna konferencija Univerziteta Singidunum

PAPERS FROM THE THEMATIC AREAS OF THE CONFERENCE
Marketing and Management
Original paper

FOOD DELIVERY APPS: A DIFFUSION OF INNOVATION ANALYSIS

Garima Malik[1]*,
Dharmendra Singh[2],
Swati Bhatnagar[3]

[1]Amity Business School,
Uttar Pradesh, India

[2]Modern College of Business
and Science,
Muscat, Oman

[3]New Delhi Institute of Management,
New Delhi, India

Abstract:

This paper aims to study the theory of Diffusion of Innovation in food ordering apps. In other words, to see how the innovation of Food Ordering Apps (FDAs) was diffused in the market amongst the various categories of customers. A structured survey form is used, using convenient sampling techniques. Two surveys were conducted with a gap of six months to understand if there was any change in perception in the consumer regarding the FDA. Significant findings were outlined under each demographic factor like gender, age, monthly income, marital status, and work status.

Keywords:

diffusion of innovation, food joints, food deliver apps, restaurants.

1. INTRODUCTION

Online food delivery applications have been on the rise for a few years. Their popularity is not only limited to young people but to everyone with access to the internet and a communication device, whether a smartphone, a tablet, or a PC. It is both convenient to be used by everyone as well as it saves much time. It has also created jobs for the society/market and supported small food joints and ventures. It has also brought a change in lifestyle and society in general (Ray et al., 2019). People usually select a specific restaurant they want food from, choose from all the available dishes, and place it in the cart. Then they can pay for those dishes via several processes, either by debit/credit card, wallets, UPI id, or even cash on delivery. The food delivery apps charge a nominal amount for the delivery depending on the distance of the customer's house from the restaurant. After placing the order and after the valet collects the order, the customer can also track the valet by the live tracking feature in the app itself via GPS.

Some food delivery apps operating in India are Swiggy, Zomato, Uber Eats, Food Panda, etc.The restaurants they provide their services to are KFC, Pizza Hut, WOW Momo, etc., and other restaurants. Diffusion of Innovation is an old tradition followed in the study of communication technology (Atkin et al., 2015). It broadly classifies the consumers in the market into five parts. They are the Laggards, Late majority, Early majority, Early adopters, and the Innovators. This theory states that the diffusion of a new idea or an innovation moves through a proper communication channel over a specific period by the members of the society (Sundstrom et al., 2016). In this paper, we have classified the consumer market into these five parts and tried to find out why the consumers adopted the food delivery apps in the first place and how long it took to diffuse itself into the Indian market.

Correspondence:
Garima Malik

e-mail:
gkmalik@amity.edu

DOI: 10.15308/finiz-2022-104-110

2. LITERATURE REVIEW

Application developers usually target Generation Z, the youngest generation, as it constitutes most of the consumers across all the other generations. They also are very tech savvy and have the technical know-how (Mehra et al., 2020; Freestone et al., 2004). On top of that, India is a young country with the average age of 27. Because disposable income has also increased, there is a demand for such new innovative apps. Hence the food ordering apps have seen growth on the Indian market (Business Insider et al., 2020). In research conducted by Aditya Tribhuvan, 2020, it was found that Swiggy was the most preferred food app and that cash on delivery was the most preferred form of payment as it was considered the safest and most secure way of payment by the respondents. It revealed that people trusted the packaging system, food hygiene, and service quality, which were the factors making people use the food ordering apps. With time, the food industry has to keep up with the customers' tastes, fashion, and ease of access. Technology helps with communication spreading worldwide, and market penetration of the internet which is on the rise has helped the food industry a lot. The increase in the number of smartphones sold has also helped the cause by providing real-time connectivity of mobile apps, thus making food delivery applications popular amongst the public (Mensah, 2019). Particularly in Korea, the competitive dynamics of food delivery services have grown by quite a margin. With the entry of the food delivery services into the market, the total market size was estimated to be 1.7 trillion won and extended to 2 trillion won in 2015 (Lee et al., 2017). During 2019, there was a growth in revenue of 56 percent, reaching 556 million Euros in Italy. It has now become one of the most significant segments in the food industry. In major Italian cities, there was a hike in people using the food delivery apps in 2019 to about 93 percent compared to 2017, which was only 74 percent (Troise et al., 2020). In the Philippines, food is treated as culture. The food delivery apps have also been popularized after their entry into the market in 2010. There was an increase in the number of users of the food delivery apps among people living in the Philippines. A 2018 survey showed that they spend 38.1 percent of their annual income on average, which is further divided into 31 percent spent on eating outside/ordering online and 69 percent of food consumed at home (Flores et al., 2020).

A customer who chooses to be loyal to a particular brand is an asset to the brand. These customers passionately follow the brand, spread positive word of mouth for the brand, and work as influencers. A loyal brand lover customer can only be found if the brand provides pure customer satisfaction, maintains a solid and organic bond, and values the customers (Nawaz et al., 2020). Past researchers have considered brand love a multidimensional construct that integrates both consequences and causes of brand love, including constructs such as brand trust, identification, and commitment (Albert et al., 2013).

3. RESEARCH METHODOLOGY

Due to the cost and time limitations, a convenience sampling technique was used to gather the data. For the current study, the sample consisted of respondents of various age groups scattered across India. Data was gathered from the respondents by using closed-ended and open-ended questionnaires. The questionnaire was based on scaled questions. It was divided into two parts, in which section A included 18 questions related to their reaction to the introduction of new innovative technology on the market and their attitude and opinions toward food apps.

Section B included questions about the demographic factors of the respondents. The respondents were asked to select options from a range of 5-point Likert scale with "strongly disagree" on one end and "strongly agree" on the other end. The Cross-tabulation method was used to analyze the data. This was true for survey one and survey two. Both surveys consisting of the same questionnaire were given to the same people with a gap of six months. The Chi-Square test was also done to check whether we had enough evidence to conclude if the sample population for surveys 1 & 2 was big enough be applied to the entire population or not. Trend analysis was also done to check the variations in the perception of the consumers over the past six months. Another small survey was conducted to analyze brand love for the various FDAs. To analyze the data cross-tabulation, descriptive analysis was used.

4. DATA ANALYSIS

Primary survey analysis was conducted based on 203 responses in the study. The gender proportion of males and females surveyed was 72% and 26%, respectively, and 2% did not prefer to mention their gender. Most of the interviewees in the survey were aged above 50 (40.3%), and 52.2% were employed. Most of the respondents were married (61%) and most of them (56%) fall into above INR. ₹40,000 income group. The main objective of conducting this research was to see if there was any relationship between consumer demographic factors and the five categories of consumers in the theory of Diffusion of Innovation. For analyzing this objective, the cross-tabulation was carried out between the demographic factors and question no. 3. Here, we can see that majority of the people, that is, 48% of people, described themselves as trying the food ordering apps somewhere in the middle, that is, as being amongst the Early Majorities, followed by 22% of Early Adopters, 14% of Late Majorities, 12% of Laggards and at last 4% of Innovators. Most of the Innovators (5 respondents) belonged to the age group 21-30.

It can be observed here that most consumers in the first half of the categories, Innovators and Early Adopters, belonged to the age group of 21 to 30. In other words, 31 out of 72 (43%) people in the age group 21-30 belonged to the first half of the categories. 42 out of 82 (51%) people above 50 categorized themselves as the Early Majority. Most people in the last Late Majority and Laggards groups fell under the age group above 50. That is, 33 out of 82 in the age group above 50 (40%) belonged to the last two categories. So, to understand whether this data coincided with the actual population, i.e., if there was enough evidence this sample could provide that would prove correct for the entire population? For that, we had to do a Chi-square test. Moreover, we assumed no difference in the target population, i.e., between laggards, late majority, early majority, early adopters, and innovators. Refer to table 1.

Table 1. Categories of Customers

Observed	Laggards	Late Majority	Early Majority	Early Adopters	Innovators	Total
15-20	1	3	0	4	16	**24**
21-30	1	3	0	8	17	**29**
31-40	4	35	2	14	42	**97**
41-50	1	26	5	8	5	**45**
Above 50	0	5	0	1	2	**8**
Total	**7**	**72**	**7**	**35**	**82**	**203**

The above table reveled that the X^2 (Chi-Square) Value = 7.53471 (After Excel calculations), which is way greater than 0.05. So, we cannot conclude with the above sample is representative for the attitude and opinion of the entire population; the evidence is not enough.

Cross Tabs 1.2. Categories of consumers and their perception of convenience

	1 (very little convenient)	2	3	4	5 (highly convenient)	Total
Laggards	3	1	6	10	4	**24**
Late Majority	0	0	7	13	9	**29**
Early Majority	2	0	8	49	38	**97**
Early Adopters	0	0	2	10	33	**45**
Innovator	0	0	1	1	6	**8**
Total	**5**	**1**	**24**	**83**	**90**	**203**

As presented in the above table 1.2 the highest number of respondents, i.e., 90 respondents, agreed that the introduction of food ordering apps had made eating food at home highly convenient for them. 6 out of 8 (75%) Innovators rated convenience as 5, meaning it was highly convenient for them. The majority of Early Adopters, that is 33 out of 45 (73%), have rated 5, followed by 49 out of 97 (51%) of the early majority, 13 out of 29 (45%), Late Majority, and ten out of 24 (42%). Laggards gave a rate of 4 to convenience due to the introduction of food ordering apps.

Cross Tabs 1.3. Categories of consumers and their perception of the safety of payment

	1 (Not at all safe)	2	3	4	5 (Very much safe)	Total
Laggards	4	7	8	3	2	**24**
Late Majority	3	3	9	10	4	**29**
Early Majority	0	7	27	43	20	**97**
Early Adopters	0	1	6	23	15	**45**
Innovator	0	0	1	4	3	**8**
Total	**7**	**18**	**51**	**83**	**44**	**203**

As shown in the above table 1.3, the majority of four categories, that is, 4 out of 8 Innovators, 23 out of 45 Early Adopters, 43 out of 97 Early Majorities, and 10 out of 29 Late Majorities rated 4, which means the majority of the respondents did feel safe while paying for their food online; however, 8 out of 24 rated three, followed by 7 out of 24 rating it 2.

Cross Tabs 1.4. Categories of consumers and their perception of the hygiene of the order

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Laggards	1	3	11	8	1	**24**
Late Majority	0	6	16	7	0	**29**
Early Majority	1	11	41	38	6	**97**
Early Adopters	0	6	15	22	2	**45**
Innovators	0	0	3	4	1	**8**
Total	**2**	**26**	**86**	**79**	**10**	**203**

As mentioned in the table 1.4, the majority of Laggards and Late Majorities and Early Majority, i.e., 46% of Laggards and 55% of Late Majorities, and 42% of Early Majorities, gave a neutral opinion about the hygiene and safety of the food that they ordered. 49% of Early Adopters and 50% of Innovators agreed with the statement. Overall, 42% gave neutral responses, followed by 39% agreeing with the statement. However, 0.9% strongly disagreed.

After thoroughly analyzing both the surveys (with the 6 months period difference), we analyzed the perception change in both surveys using Trend Analysis.

Cross Tabs 1.5. Categories of consumers and their perception of convenience

	1 (very little convenient)	2	3	4	5 (highly convenient)	Total
Laggards	5	3	6	9	9	**32**
Late Majority	8	6	12	13	23	**62**
Early Majority	1	4	10	16	23	**54**
Early Adopters	2	2	4	11	16	**35**
Innovator	1	1	3	8	7	**20**
Total	**17**	**16**	**35**	**57**	**78**	**203**

Table 1.5 presented the category of innovators, 18 out of 35 rated it between 4 and 5. In early adopters, 27 out of 35 gave a positive rating. In the early majority, a majority of 39 out of 54 rated between 4 and 5. In the late majority, a majority of 36 out of 62 rated between 4 and 5, and 18 out of 32 laggards gave a positive rating as well. In all the categories, the majority rated between 4 and 5, making it a total of 135 out of 200 having a positive perception of the convenience provided by the food apps.

Figure 1. Comparison of the perception of convenience (From Cross Tabs 1.2 & Cross Tabs 1.5)

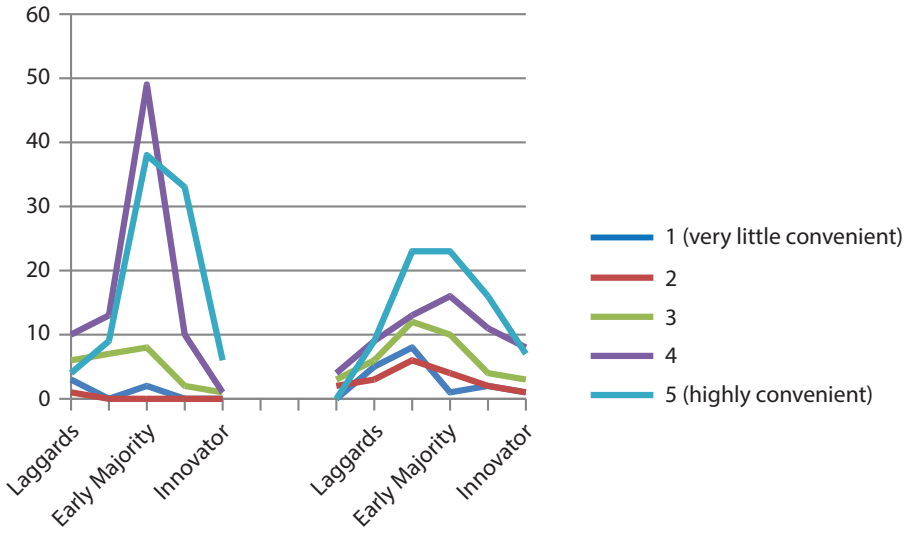

Figure 1 presented the trend analysis; we can easily see a change in the consumers' perception. Even though at the initial part of the pandemic, people seemed to have chosen the online food delivery application as convenient, with passing time the same sample population believed it to be not very convenient or convenience decreased for them.

5. RESULT AND DISCUSSION

It has been observed in the analysis of the first survey that the highest percentage of consumers of food ordering apps fell under the category of Early Majority (48%), of which the highest number of respondents belonged to the age category above 50. Followed by Early Adopters (22%), of which the majority belonged to the age group of 21-30; followed by Late Majority (14%), of which maximum respondents belonged to the age group above 50; followed by Laggards (12%) of which majority were above 50 years of age; followed by Innovators (4%) of which majority belonged to the age group of 21-30. The highest number of respondents were observed to be Early majorities, and the lowest number were the Innovators. Most consumers in all the categories positively responded to their perception of convenience when it came to food ordering apps. On a scale of 1 to 5, most respondents of all the categories rated the safety of online payment via the food ordering apps between 3 to 5; in other words, they responded positively. When it came to the perception of the hygiene of their food order, unlike the previous research questions, this question had the majority of the respondents rank between Disagree to Agree on a 5-point Likert scale; that is, 86 respondents showed a neutral response, 79 agreeing and 26 disagreeing out of 203 respondents. In the perception of value for money, most respondents ranked between Disagree to Agree in a 5-point Likert scale, with 85 showing a neutral response, followed by 70 agreeing and 35 disagreeing.

Their perception of brand love was also taken into account and then further analyzed with the demographic factors by cross-tabulation to check the relation between them. Where the chosen FDAs mostly got a rating between 3-5 rating points, there were certain things that the respondents wanted to change or improve in their preferred FDA. The suggestions are as follows:

1. More valid discounts,
2. 24/7 service,
3. Lower priced subscription model,
4. Cover wider variety of restaurants,
5. Reduced delivery charge,
6. Better customer support.

According to our research, the COVID-19 pandemic did not significantly impact the sector in terms of consumer behavior. Safety, while it was essential, was of no concern during the inception of the pandemic, but there were significant changes in the perception of the consumers over the course of time, mainly due to a sudden surge

in the number of cases due to the second wave of the coronavirus pandemic. It was observed that the Early Majority significantly contributed to spreading innovation on the market. In the food category, it might be worth noting that the faster the marketeers reach the Early Majority, the greater chance it would have to take off. In other words, in the food sector, marketeers must segment, identify, and reach the Early Majority rather than leaving it to the natural diffusion of innovation. While it might have been hypothesized that younger people would be the ones who would be adopting it quickly, it is to be noted that the older people have taken on this sector perhaps due to convenience for the family and to save them from the burden of cooking continuously. The sector is still open to competition because this has become widely prevalent. The online food delivery market in India is expected to expand at compound annual growth rates of ~30.55% (based on revenue) and ~10.19% (based on the number of users) during the 2020-2024 period to generate a revenue of INR ~1,334.99 Bn and develop a user base of ~300.57 Mn by 2024 (Business Wire, 2020 study). The network effects of more delivery boys, alongside the creation of algorithms for route optimization technologies, have resulted in quicker and value-for-money-based delivery. This has created a flywheel effect for many food delivery players, which continue to play a price war game as they operate on fragile margins in a highly competitive environment. On the consumer end, the "Amplification" of everything remains a sustainable growing market trend, and the food delivery business is riding upon this phenomenon. It is so overriding that contrary to our expectations of safety being a deterrence in the COVID era, convenience triumphed, and the consumers remained undeterred.

6. CONCLUSION

The food ordering apps market in India is going to grow at the rate of 30.55% based on revenue and 10.19% based on the number of users between 2020 and 2024 (Wood, 2020). The COVID-19 pandemic did not initially affect the sector in terms of consumer behavior. However, with time, significant changes in consumers' perception have been observed, primarily due to the sudden surge in cases in the second wave of the coronavirus in India. Brand love has also been studied to tell how a consumer perceives a brand and how he reacts to its elements or changes in the elements. It is observed that the Early Majority has a significant contribution to spreading innovation on the market. In the food category, it might be worth noting that the faster the marketeers reach the Early Majority, the greater chance they would have to take off. In other words, in the food sector, marketeers must segment, identify, and reach the Early Majority rather than leaving it to the natural diffusion of innovation. While it might have been hypothesized that younger people would be the ones who would be adopting it quickly, it is to be noted that the older people have taken on this sector perhaps due to convenience for the family and to save them from the burden of cooking continuously. The sector is still open to competition because this has become widely prevalent.

7. LITERATURE

Albert, N. and Merunka, D. (2013), The role of brand love in consumer-brand relationships, Journal of Consumer Marketing, 30(3),258-266.

Atkin, D. J., Hunt, D. S., & Lin, C. A. (2015). Diffusion theory in the new media environment: Toward an integrated technology adoption model. Mass Communication and Society, 18(5), 623-650.

Business insider. 2020. Online Food Delivery Services Market Size Worth $6.4 Billion By 2025: Grand View Research, Inc. | Markets Insider. [online] markets.businessinsider.com.

Flores, J. K. U., & Castaño, M. C. N. (2020). Factors Influencing Consumer Purchase Behavior on Food Delivery Apps. International Journal of Business and Economy, 2(4), 25-42.

Freestone, O., and V. W. Mitchell. (2004). Generation Y Attitudes Towards E-ethics and Internet Related Misbehaviours. Journal of Business Ethics 54 (2): 21–28. doi:10.1007/s10551-004-1571-0.

Lee, E. Y., Lee, S. B., &Jeon, Y. J. J. (2017). Factors influencing the behavioral intention to use food delivery apps. Social Behaviour and Personality: an international journal, 45(9), 1461-1473.

Mensah, I. K. (2019). Factors Influencing International Students Behavioral Intention to Order Online Food Delivery Services. International Journal of Strategic Information Technology and Applications (IJSITA), 10(1), 23-39.

Mehra, A., Paul, J., & Kaurav, R. P. S. (2020). Determinants of mobile apps adoption among young adults: theoretical extension and analysis. Journal of Marketing Communications, 27(5), 481-509.

Nawaz, S., Jiang, Y., Alam, F., & Nawaz, M. Z. (2020). Role of Brand Love and Consumers' Demographics in Building Consumer–Brand Relationship. SAGE Open, 10(4), 2158244020983005.

Ray, A., Dhir, A., Bala, P. K., &Kaur, P. (2019). Why do people use food delivery apps (FDA)? A uses and gratification theory perspective. Journal of Retailing and Consumer Services, 51, 221-230.

Sundstrom, B. (2016). Mothers "Google It Up:" Extending communication channel behavior in diffusion of innovations theory. Health communication, 31(1), 91-101.

Troise, C., O'Driscoll, A., Tani, M., &Prisco, A. (2020). Online food delivery services and behavioural intention–a test of an integrated TAM and TPB framework, British Food Journal, 123(2), 664-683.

Tribhuvan, A. (2020). A study on consumers perception on food apps. International Journal of Advance Research and Innovative Ideas in Education, 6(4), 208-243.

Wood. (2020). Outlook on the Online Food Delivery Market in India to 2024 - Increased Number of Dual Income Families Presents Opportunities – Research and Markets.com, Business wire.