

## THE RELATIONSHIP BETWEEN PURCHASE FREQUENCY AND CONSUMER ENGAGEMENT IN ONLINE FOOD SERVICES

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### ABSTRACT

The explosive and rapid growth of online food services over the past several years has had a deep impact on the behaviors displayed by consumers while making purchasing decisions, thereby making consumer engagement a key driver that decides the overall success of businesses in this segment. With the intent of thoroughly analyzing the complex relationship that exists between purchase frequency displayed by consumers and their engagement levels within the context of online food services, this in-depth study relies upon data that has been meticulously gathered from high-frequency users of online food delivery services. Drawing inferences from data that has been meticulously gathered from high-frequency users of online food delivery services, the study analyzes the degree to which purchase frequency can impact different dimensions of consumer engagement, including those involving brand loyalty, social media engagement, and writing reviews. The results of the research indicate that a direct relationship exists between higher purchase frequency and higher levels of consumer engagement, as it is observed that frequent purchasers tend to interact more actively with service providers, write informative reviews, and participate in brand-related discussions. Further, the study indicates that adopting personalized marketing strategies and loyalty programs can contribute significantly to increasing the levels of consumer engagement, thereby encouraging customers to make repeat purchases. Finally, this study provides significant findings that can be used to help online food service platforms optimize their customer retention plans while also enhancing the overall user experience for their customers.

**Keywords:** Purchase Frequency, Consumer Engagement, Online Food Services, Brand Loyalty, Customer Retention, Digital Marketing, Consumer Behavior, Online Reviews, Social Media Interaction, E-commerce, Food Delivery Platforms, Customer Experience.

### I. INTRODUCTION

**Background:** Food service online has increased tremendously because of the use of digital technology, shifting consumer demands, and the need for convenience. Uber Eats, DoorDash, Zomato, and Grab Food are some of the websites that have revolutionized ordering food by individuals through mobile applications and websites. The COVID-19 pandemic also accelerated the shift to online food services, and they have become a crucial component of today's lifestyles.

Consumer interaction is the foundation for online food business success, resulting in repeat business, word-of-mouth promotion, and online reviews. Interaction includes campaign response, brand loyalty, response to promotion, and feedback. Organizations leverage data-based approaches to enhance interaction, providing rewards, discounts, and targeted promotion to stimulate repeat business.

Purchase frequency has a significant impact on consumer engagement. Regular customers interact heavily with brands and form emotional bonds, and infrequent users are less engaged, with a transactional orientation. Understanding it can assist online food service companies in streamlining marketing, improving customer satisfaction, and building loyalty. There have been few studies that have investigated consumer participation in online food businesses and purchase frequency. This study aims to address the gap by examining the influence of purchase behavior on participation and providing recommendations to firms on how to enhance customer retention and brand loyalty.

**Problem Statement:**

In the competitive world of online food ordering services, companies are trying to boost customer retention and frequency of purchase. One of the major drivers of consumer behavior is consumer engagement, which encompasses interactions with app features, enrollment in loyalty programs, and sensitivity to personalized offers.

Nonetheless, whether consumer engagement does indeed affect purchasing frequency and, in turn, the extent to which variables such as personalization, convenience, service quality, and loyalty initiatives are contributing determinants of it remains unclear. Ascertaining this connection can help online food service platforms enhance effective marketing methods, enhance consumer experience, as well as promote the greatest conceivable customer lifetime value.

This research hopes to examine consumer interaction and the frequency of buying, explore how personalization, service quality, and loyalty initiatives play a role, and shed light on statistical evidence for driving customer retention and business expansion through the online food service sector.

**Objectives:**

- To Analyze the impact of purchase frequency on consumer engagement in online food services.
- To Analyze the effects of regular purchases on client retention and loyalty.
- To Determine which important engagement metrics are impacted by different purchase frequencies.
- To Analyze how regular orders affect reviews and consumer happiness.
- To Examine the differences in engagement between repeat and one-time clients.
- To Analyze the impact of tailored suggestions on recurring purchases.
- To Examine patterns in customer behaviour depending on the frequency of seasonal purchases.
- To Examine how order frequency is impacted by delivery speed and service quality.
- To Examine the connection between social media interactions and the frequency of purchases.
- To Examine how rewards and discounts affect consumers' propensity to make repeat purchases.

**Scenario:**

Zomato, a popular online food delivery platform, can leverage purchase frequency data to understand customer behavior in Gujarat.

**Hypotheses:**

$H_0$ : Consumer engagement is not significantly related to purchase frequency.

$H_1$ : Consumer engagement is significantly positively related to purchase frequency.

## II. LITERATURE REVIEW

**1. "Online food delivery research:**

Authors: Shroff, A., Shah, B.J., & Gajjar, H.

Year: 2022

Summary: This paper systematically reviews existing research on online food delivery, identifying potential future research themes and highlighting publication trends in the field.

**2. "Impact of digital marketing on consumer buying behavior (with special reference to online food services in Central India)"**

Authors: Makwana, K., & Malhotra, S.

Year: 2019

Summary: This paper studies the influence of digital marketing on consumer buying behaviors in the online food service sector in Central India, highlighting factors affecting consumer perceptions and satisfaction.

**3. "Understanding customer engagement in the online food delivery sector: The role of service quality, trust, and satisfaction"**

Authors: Kim, J., & Park, S.

Year: 2021

Summary: This study examines how service quality, trust, and customer satisfaction influence engagement in the online food delivery sector, highlighting the importance of these factors in fostering repeat purchases.

**4. "The impact of mobile app usability on customer engagement and purchase frequency in online food delivery services"**

Authors: Chen, L., &amp; Li, H.

Year: 2020

Summary: This research explores the relationship between mobile app usability and customer engagement, demonstrating that user-friendly interfaces lead to increased purchase frequency in online food delivery services.

**5. "Social media influence on consumer engagement and purchase behavior in the online food delivery industry"**

Authors: Singh, R., &amp; Srivastava, S.

Year: 2022

Summary: This paper investigates the role of social media in shaping consumer engagement and purchase behaviors, finding that active social media presence enhances customer loyalty and purchase frequency.

**6. "The role of customer reviews in online food delivery services: Effects on engagement and repeat purchase intentions"**

Authors: Wang, Y., &amp; Zhang, X.

Year: 2021

Summary: This study analyzes how customer reviews impact consumer engagement and repeat purchase intentions, highlighting that positive reviews significantly boost customer trust and loyalty.

**7. "The Effect of Food Photography on Online Engagement"**

Author: Labrecque, L.L., vor dem Esche, J., Mathwick, C., Novak, T.P., &amp; Ratner, R.K.

Year: 2013

Summary: Showed how high quality food photography can heavily increase online consumer engagement.

**8. "Consumer Behavior in the Digital Food Marketplace"**

Author: Verhoef, P.C., Kannan, P.K., &amp; Inman, J.J.

Year: 2015

Summary: Explored the dynamics of consumer behavior in the digital food marketplace, including factors affecting purchase frequency.

**9. "The Impact of Delivery Speed on Customer Loyalty in Online Food Ordering"**

Author: Agatz, N.A.H., Fleischmann, M., Geleijnse, G., &amp; Sternbeck, M.G.

Year: 2011

Summary: Investigated how delivery speed influences customer loyalty in the online food ordering industry.

**10. "Service Quality and Customer Satisfaction in Online Food Delivery"**

Author: Parasuraman, A., Zeithaml, V.A., &amp; Malhotra, A.

Year: 2005

Summary: Examined the dimensions of service quality and their impact on customer satisfaction in online service contexts.

### **III. RESEARCH METHODOLOGY**

**Study Design:**

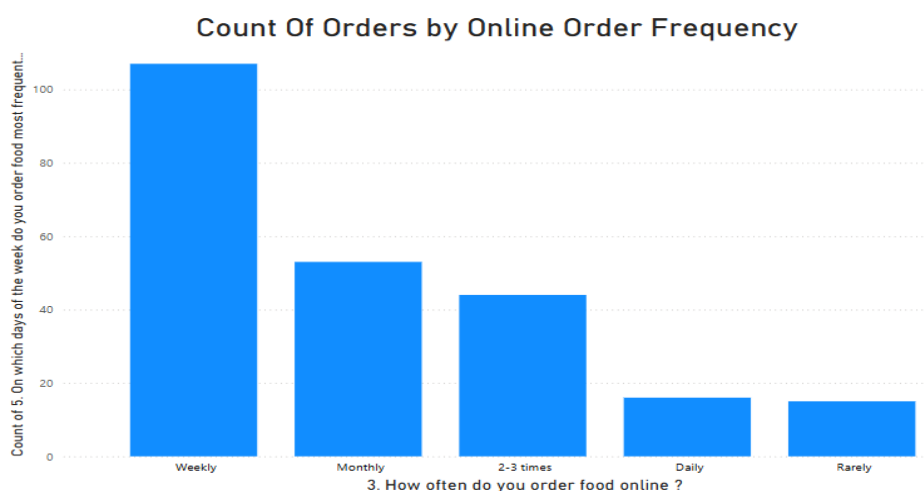
The study is guided by a quantitative research design aimed at the analysis of consumer behavior for online food ordering in relation to the effect of discounts, order placement time, and demographic variables including age and cuisine. A designed survey was used in collecting primary data, providing a systematic way of addressing the research problem.

**Data Collection:****Sampling Techniques:**

- **Population:** The study targeted individuals who frequently order food online, covering various age groups and demographic segments.
- **Sampling Unit:** Individual consumers engaging in online food ordering platforms.
- **Sample Size:** A total of [insert number] respondents participated in the study, ensuring a diverse and representative dataset.

- **Sampling Method:** A non-probability convenience sampling approach was used, allowing the collection of data from individuals actively engaged in online food ordering services.

#### Data Analysis:



#### Weekly Orders Prevail:

Most customers place orders for food online on a weekly basis, as demonstrated by the tallest bar. This implies that shopping for food online is a routine behavior by a large percentage of users.

#### Moderate Monthly and 2-3 Times a Month Orders:

There is a palpable size of users who order food online every month or 2-3 times a month, which suggests a semi-regular ordering behavior.

#### Less Frequent for Daily & Sporadic Orders:

Daily ordering of food has a comparatively small number, which means that hardly any customers order food online on a daily basis.

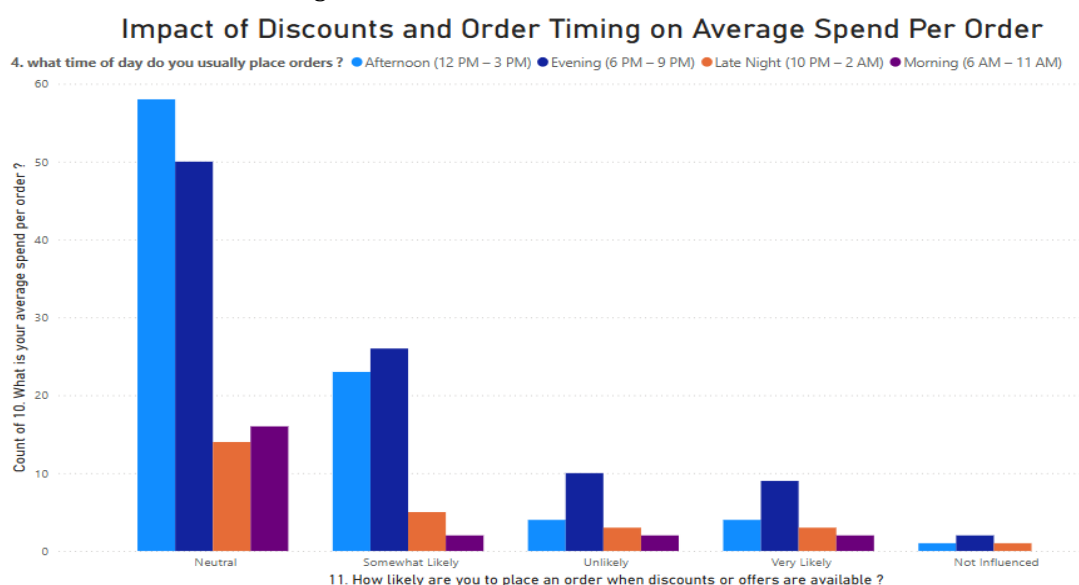
Likewise, the people who order food online infrequently account for a minority of the data, which means that online ordering of food is increasingly popular but not widespread.

#### Insights:

Online ordering of food is a widespread phenomenon, with weekly ordering being the most frequent.

Frequent customers (weekly and monthly) should be the target of marketing efforts, with occasional users also being targeted through promotions to get them to order more frequently.

Knowledge of order frequency can assist food delivery companies in maximizing their discount, loyalty program, and recommendation strategies.



### Neutral Attitude Prevails Throughout Time Slots:

Most users are neutral towards promotions when making the decision to order.

Most of these neutral users order during the evening (6 PM – 9 PM, dark blue) and afternoon (12 PM – 3 PM, light blue).

### Somewhat Likely Segment Exhibits Moderate Spend:

Users who are somewhat likely to be swayed by promotions also account for a large share of order volume.

Once more, evening and afternoon orders prevail, showing these time periods are the most in-demand.

### Unlikely and Very Likely Segments Have Fewer Orders:

There aren't many users who are either very likely or unlikely to order on the basis of discounts.

Evening orders continue to have a strong presence in these segments.

### Morning and Late-Night Orders Are Lower Overall:

Morning (purple) and late-night (orange) orders are much lower in all

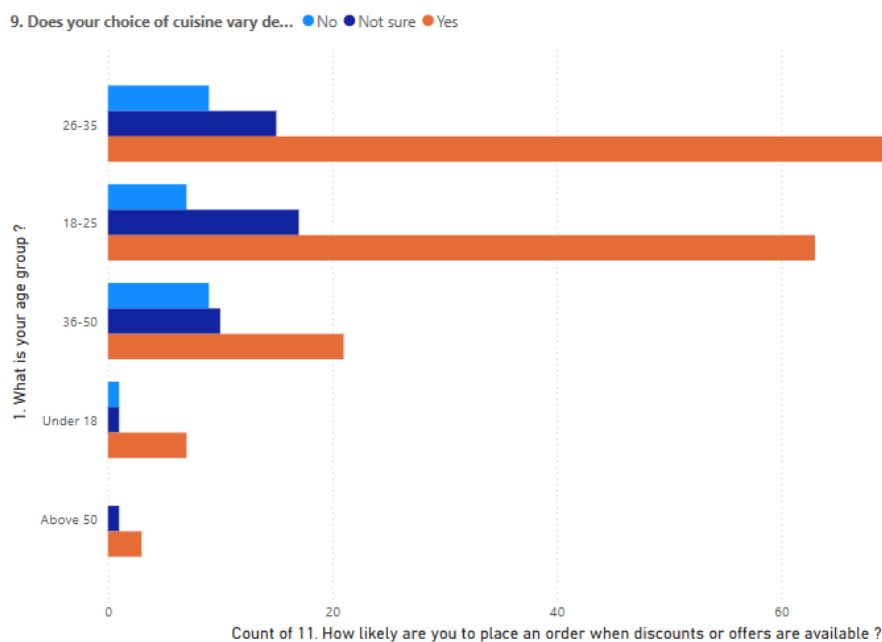
### Insights:

Evening and afternoon are the busiest order times, so restaurants and food delivery companies need to concentrate discounts and promotions during these times to get the most sales.

The majority of customers are indifferent to discounts, so price strategies cannot be discount-led but instead should be based on quality, convenience, and availability.

The minority of "very likely" discount hunters might be approached with flash sales or special limited-time offers to boost conversion rates.

### Impact of Age and Cuisine Preference on Ordering Behavior with Discounts



### Most People Admit That Their Cuisine Choice Is Different:

Most respondents in all age groups (particularly 18-25 and 26-35) responded with "Yes" (orange bar) to whether their cuisine choice differs according to the time of day.

This indicates that food choices differ according to meal timing, mood, or availability.

Young Adults (18-25 and 26-35) Are the Most Responsive

The 18-25 and 26-35 age ranges have the highest response count under all categories.

These two ranges are most prone to be impacted by promotions as well as differences in cuisine liking, so are a primary target for promotion.

### Older Groups Less Likely to Switch Cuisine Choice:

The 36-50 and Above 50 age groups have fewer changes in cuisine choice by time of day.

They are also less susceptible to discounts than the younger groups.

### Under 18 Group Has the Fewest Responses:

This age group demonstrates the lowest participation, as is typical since they may rely on guardians or parents to make food ordering decisions.

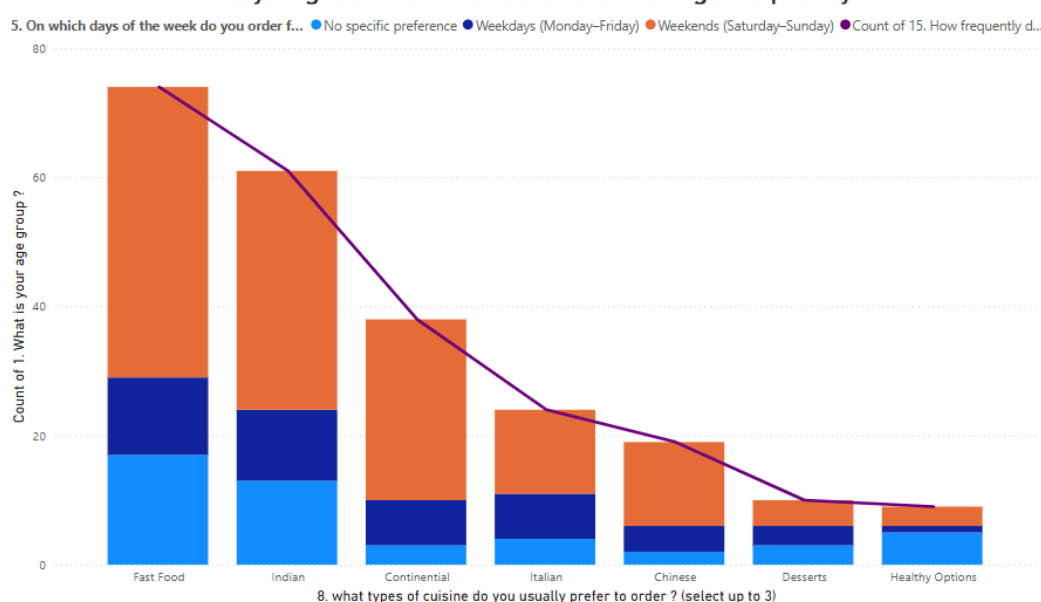
### Insights:

Young adults (18-35) are the most active in terms of food ordering patterns. This age group should be targeted by time-based offers and customized suggestions.

Older consumers (36+) tend to have more predictable ordering habits. Their emphasis could be on quality, consistency, and certain cuisines and not necessarily discounts.

Because cuisine preference differs for the majority, restaurants and food delivery services can offer various cuisines at various times of the day (e.g., breakfast specials, lunch combos, late-night specials).

### Analyzing Cuisine Choices and Ordering Frequency



### Most Liked Cuisines:

The most ordered cuisine is Fast Food, followed by Indian.

Moderately liked are Continental, Italian, and Chinese.

Desserts and Healthy Options are the least liked.

### Ordering Patterns According to Days of the Week:

The pie chart classifies ordering frequency in terms of three segments:

No particular preference (light blue)

Weekdays (dark blue)

Weekends (orange)

Huge numbers of orders, particularly for Fast Food and Indian cuisine, are being placed on weekends.

### Age Group Breakup:

The Y-axis is the number of respondents across various age groups who have a preference for certain cuisines.

The line graph (purple) is the frequency of users ordering food, with a downward trend as cuisine preference shifts towards healthier food.

### Insights:

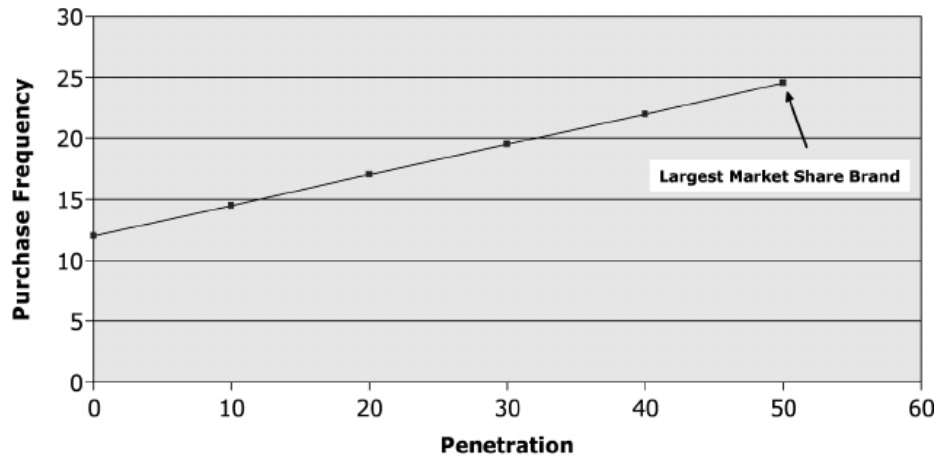
Indian food and fast food are the most popular items ordered online, especially during weekends.

Buyers are not very likely to order healthy foods, with desserts and healthy meals being the least ordered.

Weekends see an increase in ordering activity, especially from younger buyers.



**Relationship between Purchase Frequency and Penetration**



Source: Allsopp & Jarvis (2003)

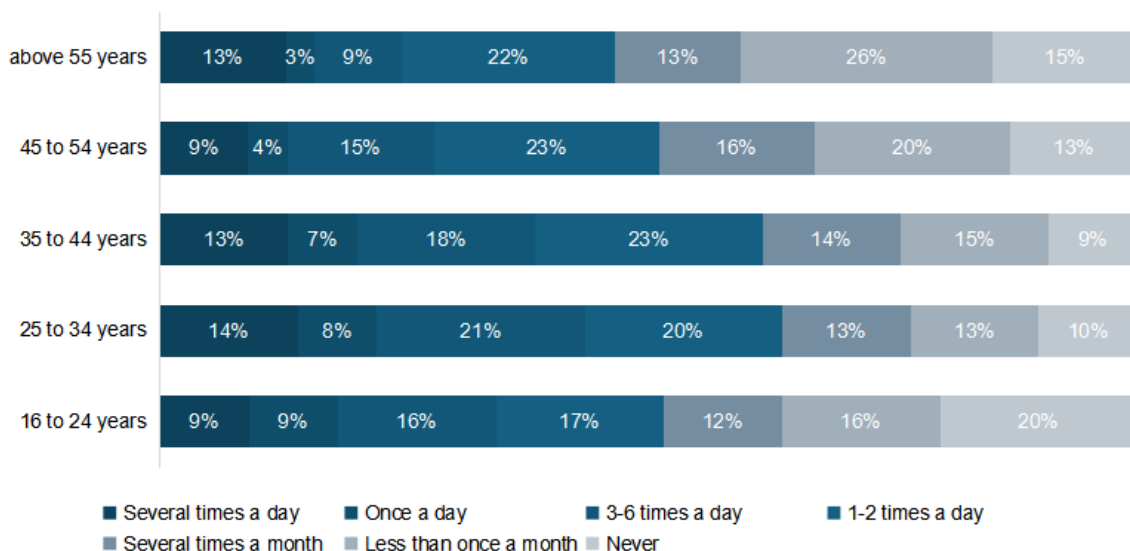
**Positive Correlation:** The graph displays an upward trend, suggesting that as market penetration—the proportion of customers who buy a good or service—increases, so does purchase frequency.

**Brand with the Largest Market Share:** The brand with the largest market share is indicated by the marked point. This implies that consumers are more likely to purchase from the brand that is most extensively used.

**Gradual Increase:** The line shows a consistent rising trend, indicating that recurring business is typically higher for businesses with a broader consumer base.

**Market Dynamics:** This trend is consistent with marketing theories, which hold that more widely recognized companies tend to have higher levels of customer engagement and retention, which results in more frequent purchases.

**Frequency of ordering from food delivery apps in India, by age**



**Young Consumers (16–34 years old):** A considerable percentage of them place multiple orders per day or every day, indicating a higher frequency of food delivery consumption.

Customers in the middle age range (35–54) have moderate ordering habits and prefer weekly or monthly orders over daily ones.

Food delivery apps are less popular among older consumers (those over 55), who are more likely to order infrequently or never.

#### IV. CONCLUSION

This study offers important insights into the correlation between purchase frequency and consumer participation in online food services. The results affirm that frequent purchasers are more active with online food platforms, actively engaging in brand interactions, social media conversations, and review postings. Also, frequency of purchase is positively related to brand loyalty and customer retention because frequent users are likely to have increased levels of trust and preference towards platforms that provide personalized experiences and reward loyalty.

The research underscores the importance of customized marketing efforts, loyalty programs, and high-quality service in driving customer involvement. The research also indicates the importance of social media platforms and online postings in shaping repeat business. It implies that food service providers operating online should be concerned with delivering a high quality of user experience, reliability in services, and data-driven evidence to drive satisfaction and loyalty in customers.

Future studies may examine the extended effect of engagement strategies on the customer lifetime value and analyze the potential of the latest technologies like artificial intelligence and machine learning in further personalizing consumer interactions. In total, this research enhances the existing research on digital consumers and offers tangible suggestions for food service websites to improve their retention and engagement techniques.

#### V. RECOMMENDATION

- 1. Enhance Personalization:** Online food services should invest in algorithms that offer personalized recommendations based on user preferences and past orders.
- 2. Improve Service Quality:** Ensuring timely deliveries, high food quality, and responsive customer support can foster positive consumer experiences.
- 3. Leverage Loyalty Programs:** Offering rewards for frequent purchases or engagement can incentivize consumers to place more orders.
- 4. Focus on Convenience:** Platforms should continue to streamline their user interface to make ordering food as easy and quick as possible.

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