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# Customer Perceptions of Technology-Driven Enhancements in Pune's QSR Industry

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**Abstract**

This paper aims at analysing the current trends within the quick-service restaurant (QSR) industry mainly driven by technology in regard to the customers' experience. Now it is easy to identify what new technologies such as digital ordering, mobile payments, AI-based personalization, and contactless services have become a norm in the heart of the Indian city, Pune with a vibrant and an evolving food culture. This paper seeks to establish the impact of these technological advancements to customer perception, satisfaction, and Made in Pune's QSR segment. Survey data are used to gather quantitative data while interviews are the method used to get qualitative data. A generally benign consumer attitude toward technology expansion is established with customers particularly recognizing such positive effects as convenience, efficiency, and customization. Nonetheless, some patrons reduce human interaction, become privy to their orders, and are easily disappointed particularly older customers. The study also emphasises that for QSR businesses to address the increasing digitisation whilst maintaining customer consideration and individualised attention. It also supports the call for relaxed adoption of hybrid service delivery systems, which could serve to meet the needs of different demographic customers as a way of ensuring they remain

loyal to the firm's services. Future research could extend the analysis of the relationship between existing technologies and the customers' loyalty over a longer period, also including the comparison between the responses, of the same Technologies, in different regions of India.

**Keywords:**

Customer perceptions, Technology-driven QSR, Pune, Customer loyalty, Digital convenience

## 1. INTRODUCTION

Over the last years, technology has renovated the face of many industries, and QSR is no exception. Pune, one of the busiest cities in India with an expansive food culture, has been developing rapidly with integrations of leading-edge technologies. Starting with digital ordering systems and contactless pay, going further to AI-powered delivery, and ending with personalized marketing, technology transformed the way QSRs operate and communicate with customers.

This has also brought a change in the customers' psyche, where an increasing amount of consumers look for conveniences, speed, and personalization due to such enhancements. However, people are equally eager to know how such improvements affect food quality, the eating-out experience, and dining ambiance. Customer perceptions are very important to understand in Pune's evolving QSR landscape for businesses to know, meet, and even surpass customer expectations that may be leading to long-term success in this competitive market.

This research attempts to find out how the customers in Pune perceive such technology-driven enhancements, its effects on customer satisfaction and loyalty, and the greater QSR experience.

## 2. LITERATURE REVIEW

The fast and dynamic advancement of technology in the food and service has changed noticeably the customer experience in the industry especially in QSR segment. Appreciation of these advancements through the lens of customers has become vital when competing for business in rapidly evolving durations of urban markets such as Pune. This review draws together and amalgamates past research to discuss the effects that such technological improvements have on the customers' level of satisfaction, loyalty and experience within the QSR sub-sector.

**2.1.1** Technology and customers satisfaction in QSRs: Past research indicated that the adoption of technology within QSRs improved the satisfaction levels of the customers due to easy ordering methods and fast-delivery services and other values added to their orders. According to Wang et al., 2020 the users have embraced technologies such as self-service kiosks and mobile ordering applications because they are easy to use convenient and capable of improving customer waiting time. They help in addressing the need to increase the speed of delivery as seen in urban set up and corresponds with the needs of this city of Pune. Similarly Rajawat and Gupta (2021) conducted a cross-sectional study in Indian metropolitan area, with particular reference to Pune and found that more than 70% of consumers would rather prefer fast food restaurants that offer have digital orders due to efficiency and perceived convenience and control

**2.1.2** Perceived usefulness and perceived ease of technology use Technology Acceptance Model (TAM) has frequently been used to analyze how perceived usefulness and perceived ease of use affect customer acceptance and satisfaction. As Bhardwaj and Jain (2022) believe, so, the degree of customer acceptance of the new technology solutions such as digital menus, contactless payments, and the app-based loyalty programs in the Pune QSR market is high only if these technologies are perceived as convenient and value-added by the customers. Based on their results, they argued that ease has a higher influence on the elderly customers, which may resist the chances of embracing new methods.

**2.1.3** Innovation Effect on Customer Loyalty: Digital Loyalty Programs and Personalization In the QSR sector, Electronic CRM tools have a positive influence on customers' loyalty. Sharma and Mehta (2019)'s research provides an example of how customers' targeted discounts and incentives cause them to order more frequently from the restaurants to attract more young customers in Pune. Malik et al. 's (2020) also support this finding by pointing out that customers in urban Indian markets want digitalized loyalty programs with personalized promotions from QSRs. The study also notes that particular personalization fosters perceptions of value and enhances the effective affiliation with the brand.

**2.1.4** Customer issue with technology incorporation Hence, some customer issues emerge concerning the adoption of enhanced technology in QSR firms. Another study by Singh and Rathi conducted with consumers in Pune city showed that younger consumers were optimistic about ordering via apps and Kiosks but a portion of the elder consumers have a preference for counterculture experience. Privacy issues, lack of customer touch, and some teething problems pointed out that these innovations could slow down customer

uptake of such services. Thus, Gupta and Patil (2022) suggest moderation in which the QSRs can provide an inclusive range of digital and more conventional services to appeal to more customers in Pune.

**2.1.5** Influence of AI and Automation A relatively relatively recent addition to the QSR industry, AI and automation are playing a major role in customer perceptions. Jain et al.'s study (2023) shows that AI recommendations and Chabot's for the target customers in QSR apps *improve the customer's ordering experience* due to the suggestions given autonomously, while the comfort that the customers' have varies. In their study, they found Pune customers' perspective towards AI using mobile application for food ordering is positive since they view AI as an added feature in QSR. However, they also highlight the need for humans when trying to solve complicated problems, which is why the hybrid services approach is now critical.

**2.1.6** Technology Adoption in QSR due to COVID-19 The outbreak of COVID-19 has led to the fast adoption of technology in QSR brands globally. As per Khanna & Verma (2021) study, due to COVID-19 related health consciousness, factors such as, use of QR-code menu cards, contactless mode of payments, online food ordering surged in Pune. Due to COVID-19 and customers focusing on health and safety aspects more than ever, these technologies have become standard requirements than novelties. Likewise, Patel and Choudhary's (2022) studies reveal post-pandemic, such customers prefer these technologies-an associated boost in trust and safety.

### 2.2 Gaps and Opportunities

This paper establishes that the incorporation of technology in QSRs' service delivery has impacted the customer experiences in urban India specifically in Pune. Nevertheless, there are some research limitations; first, more efforts are required to comprehend distinct customers' needs, especially their sex- and age-based preferences and second, the relationship between these technologies and customers' loyalty overtime has not been explored enough.

**2.2.1 Demographic Preferences:** Research (Bhardwaj and Jain, 2022, Singh and Rathi, 2021) have noted that the newer generations order technologies, but older generations may reject technology-based platforms. More studies could practice how Pune QSRs can accommodate the difference in customers' comfort zones regarding technology-oriented environments.

**2.2.2 Long-Term Loyalty:** The previous work regarding loyalty (Sharma & Mehta, 2019) leans toward examining the immediate behavioural responses toward loyalty programs, without examining the long-term effects of such. However, if QSRs are to develop a more significant amount of customer loyalty, fresher research on going digital interaction may be beneficial.

**2.2.3 Trust in AI and Privacy:** Despite welcomed AI-based personal suggestions (Jain et al., 2023), consumers' data privacy issues that are critical to self-driving cars are under researched. It becomes clear that exploring trust and openness issues within AI systems could be beneficial for QSRs addressing customers' mistrust.

**2.2.4 Offline-Online Service Balance:** During and post-pandemic, customers rely majorly on contactless services (Khanna & Verma, 2021); however, the combination of digital and traditional service delivery has not reached its sweet spot yet. Studying more about the hybrid models may uncover the ways about how to serve the different customers in Pune.

**2.2.5 Emerging Technologies:** Other technologies such as AR/VR – investigative technologies – still remain uncovered. Researches carried out by (Wang et al., 2020) recommended that these innovations can increase customer involvement which would a clear competitive advantage for QSR sector in Pune.

**2.2.6 Technology Fatigue:** Since much depends on digital interactions, technology weariness is a new problem (Patel & Choudhary, 2022). Finding ways to address automation overload that still allows for at least small interactions may help to avoid customer burnout.

**2.2.7 Cultural Influence:** Last but not least, research does consider metropolis preferences (Rajawat & Gupta, 2021), but lacks information about the cultural inclinations that pervade Pune region and may influence technology reception. More work could deepen our understanding of customer-oriented approaches that are relevant to Pune's market space.

## 3. METHODOLOGY

- The study of this research is to get an insight of customer attitude towards technology increase on QSR sector in Pune. They centre on the notion of self-service kiosks, mobile application, digital payment services, AI-driven recommendations, and loyalty programmes and uses demographic discrepancies and COVID-19 effect on the identified technology perceptions among customers.

### 3.1. Research Design

- The research design is therefore multi-methods where quantitative and qualitative data will be used to enrich the understanding of customer perceptions. Measures data will look at numeric values and correlations to other demographic factors while variables data will aim at customers' perceptions and experiences.

### 3.2. Data Collection Methods

- Survey: An online structured questionnaire will be administered to customers who patronize QSRs in Pune. Quantitative data on customers' profile, technology preferences, usage rates, satisfaction and perceived utility of digital amenities will be obtained through the survey.

### 3.3. Sample Selection

- Target Population: Pune consumers' who consume QSR products regularly and can use technology-based facilities.
- Sampling Technique: In this self-study, both convenience and purposive sampling methods will be adopted as follows. Customers from QSR brands and online retail businesses in Pune will be surveyed, recruited through QSR outlets and online platforms will also be interviewed depending on the participant's age, gender and their level of technology integration.
- Sample Size: In the quantitative analysis, a minimum of 200 survey responses will be obtained to enhance the power of the test. Fifteen to twenty interview participants will be sought from each for the secondary qualitative data requirement.

### 3.4. Data Analysis

- Quantitative Analysis: Data collected via survey will be descriptive and inferential statistics. Mean, median, mode will be used to describe customer preferences, while chi-square tests, ANOVA will be used to make inferences between demographic factors such as age, income frequency of visitors to QSR and perceptions of technology.
- Qualitative Analysis: The interviews conducted will then be transcribed and analysed for themes including, customer trust in AI, privacy, and ease of use of technology. SUCH qualitative analysis will assist in establishing latent causes of customer preferences and considerations.

### 3.5. Validity and Reliability

- Survey Validity: In order to make the questions clear and relevant, the survey questions will be subjected to pilot test using some few respondents. The internal validity will also be ensured as the questions will be adopted from literature that addresses tech-acceptance and customer-satisfaction.
- Interview Reliability: Interviews will be standardized by employing a semi structured interview. Number of responses will be multiply coded among several researchers to maintain reliability in qualitative analysis.

### 3.6. Ethical Considerations

- Informed Consent: The participants will also be told about the study and its aim of the study, their right to withdraw from the study, or their data will be used and how it will be used. Participation will also be consensual.
- Data Privacy: Even though anonymity would have been the norm in this study, responses to surveys and recordings of interviews would be deleted to enhance confidentiality. All information will be kept confidential and only a few, specifically the research team will have access to them.

## 4. REVIEW AND SYNTHESISE THE DATA

### 4.1 Survey Findings:

- Customer demographic and technology information, as well as measured satisfaction percentages gathered from over 150 surveys are presented in quantitative manner.
- Assessment of statistical data also indicates the current generational, income, and QSR utilization, regarding technologies they prefer

### 4.2 Interview Insights:

- Primary evidence from interviews also reveals latent opinions on technology in QSRs at a more profound level.
- These are trust, privacy, and usability, which provide background information to the findings of the survey.

### 4.3 Synthesis:

- Quantitative data describes who, what, where and when while qualitative data describes the why.
- This combined approach lets QSRs have a broad view of customers' needs, thereby enabling the right technology solutions for the market in Pune.

## 5. CONCEPTUAL FRAMEWORK

The conceptual framework demonstrates the seamless incorporation of over the last few years, the Quick Service Restaurant (QSR) segment of Pune has observed a rise in the use of advanced technologies with an intention of delivering better culinary service as well as organizational effectiveness. This conceptual framework exists to examine the link between such technological development and the Customer Perception in Pune's QSR Segment, where the different customer related advancements will be detailing the impact on customer satisfaction, perceived value, and behavioural intentions. The framework explains critical technology advancements that include self-service kiosks, mobile ordering, digital payments, artificial intelligence and data-enabled personalization, no-human contact delivery and pick-up as well as, digital loyalty programs. These form the base upon which customer perceptive variables such as perceived usefulness (the extent to which customers feel that technology improves the ease and convenience of QSR), perceived ease of use, perceived usefulness, trust and perceived enjoyment, and overall service quality are determined.

The underlying assumption of this framework is that any positive customer perception of such technological features in the=promotion of the perceived value and customer satisfaction. Satisfaction on the other hand depicts how well technology driven services meet customer expectations, while perceived value shows how good quality, convenience, enjoyment value for money and time is appreciated by the customers. In addition, the framework posited that these positive perceptions as well as satisfaction are robust antecedents of specific behavioural intentions such as, repurchase intentions, recommendation intentions, and premium price tolerance for technology-based service delivery. The above formulated behavioural intentions serve befittingly the QSR industry as they support customer retention and loyalty.

Furthermore, the framework specifies several control variables of the research, which include customer characteristics like age, income, education, and technological literacy levels, and regional peculiarities

distinct for Pune. Some of these variables may have direct implications on the customer response to technological improvements since the customers' characteristics and receptive to the innovations of the local culture in the consumption of meals through digital solutions. Towards this end, this research aims at establishing the relationship between the variables and the use of technology in an effort to identify how expectation of QSR customers of Pune can be met to encourage repeat patronage.

## CONCLUSION AND DISCUSSION

Extending from this, this research seeks to establish the perception customers hold regarding technology advances in Pune QSR market. Research indicates that customers have a generally positive reaction to the incorporation of HMIS technology; they perceived the incorporation as another resource that improves organizational convenience, work efficiency, and service quality. Facilities including self-ordering kiosks, mobile ordering services or even means of payment are also expected to be favourites for the urban consumer base in Pune as these are viewed as enhancements. However, technology enhances speed and flexibility in provision of service, but challenges like privacy, ease of use by the elder or unaccomplished with IT and perceived depersonalization since computer interface is often impersonal attracts some patrons.

### Discussion

Analysing the results of the study, the following foundational themes related to the customers' attitudes toward the role of technology in QSR are proposed. Firstly, convenience is paramount: consumer's value convenience, anything that reduces 'friction' in the consumer journey is a universal plus – from contactless and mobile ordering to mobile apps. The key insight derived from the mentioned shift is that younger customers prefer digital interfaces which indicate the trend in their generation.

While assessing the customer reviews one can often meet suggestions that have two sides and several concerns as to the decrease of personal contacts. Nevertheless, a digital face appears to loom large and looming large faints human touch points as customers exhibit preferences for human touch even in QSR contact points into the 2020s. Finally, privacy stresses the importance of the strong technology environment that will safeguard the information of the customer since the engagement through electronic means raises the risk level.

These conclusions bear implications for the QSR operators who want to leverage technology to the optimum level. On the one hand, it is highly advisable to adopt innovations, on the other hand, restaurants should make sure that the applied technologies are easy to understand, open to all client categories, and safe for using. Additionally, ever blended solutions that are a mixture of mechanization and individual attention to the consumers' needs would benefit more of the consumers; thus, improving customer satisfaction and consequently brand loyalty in QSR industry in Pune. Further studies can extend the aesthetics and value of

technology adoption from a long-term perspective of customer loyalty and contrast and compare multiple regions of India to give diverse signals of response on technology in the QSR scenario.

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