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Forecasting the future of cloud kitchen in the Indian restaurant industry and their impact on consumer decision making

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Abstract

Like many parts of the world, the restaurant industry in India is experiencing a significant transformation with the rise of cloud kitchens. These virtual restaurants, which operate primarily for food delivery rather than dine-in experiences, have gained traction due to several factors. The convenience of online platforms and the growing demand for quick, hassle-free food options have fueled the success of cloud kitchens across the country. Utilizing secondary data sources, the study delves into the evolving role of cloud kitchens, which are increasingly shaping the culinary landscape through innovative business models and technological integration. As consumers increasingly prioritize convenience and digital engagement, cloud kitchens have emerged as a pivotal solution, leveraging online platforms for streamlined operations and enhanced customer experiences. The findings underscore the transformative effects of cloud kitchens, which optimize efficiency and expand market reach by eliminating traditional dining constraints. By capitalizing on delivery platform technologies and social media integration, cloud kitchens cater to shifting consumer behaviors and preferences, driving significant changes in how food is prepared, ordered, and delivered. In conclusion, this research illuminates the pivotal role of cloud kitchens in the future of the Indian restaurant industry, emphasizing their potential to reshape consumer dining habits and redefine operational norms through continuous innovation and technological advancement.

Keywords: Cloud kitchen, online delivery platforms, consumer-decision making, online competition

Introduction

The Indian restaurant industry is undergoing a significant shift due to the emergence of cloud kitchens, a concept that emphasizes food delivery over traditional dine-in settings. This change is propelled by technological advancements, changing consumer tastes, and the impact of the COVID-19 pandemic, which has hastened the adoption of digital food ordering and delivery platforms. A cloud kitchen is a commercial facility designed solely for preparing food orders for delivery or takeout, also known as a virtual kitchen or shared kitchen. Unlike traditional restaurants, cloud kitchens do not have dine-in customers. Instead, they focus on fulfilling online orders through food delivery platforms like Zomato and Swiggy.

This emerging business model- (projected to become a \$2 billion industry in India by 2024, according to RedSeer Management Consulting) offers restaurateurs opportunities to expand their businesses or launch new digital brands. Leveraging online platforms, cloud kitchens offer efficient solutions for the food industry by eliminating the requirement for physical dining locations. This shift reflects a broader trend towards convenience and efficiency in customer service, both technically and socially. The rapid development of the cloud kitchen raises questions related to their long-term viability, their influence on the traditional dining establishment, and factors impacting the customer's decision to avoid or embrace these virtual dining options. During the pandemic, cloud kitchens have faced challenges despite their potential cost-saving advantages like reduced rent and fewer staff requirements. Initially, there was uncertainty at local government levels regarding their essential business status, supply chain disruptions, and consumer confusion about disease transmission. This led to significant drops in order volumes for cloud kitchen brands. Although online food ordering has rebounded somewhat, consumer priorities have shifted towards safety and hygiene over discounts. Major aggregators like Zomato and Swiggy have emphasized the importance of strict safety measures for restaurant partners, reflecting this evolving consumer behavior.

Cloud kitchens come in various types, each with its unique operational model and advantages. The Hub and Spoke Model is characterized by a central kitchen that prepares semi-cooked dishes, which are then shipped to smaller outlets for final cooking before delivery. This approach enables cost savings through centralized production and standardization of processes. Commissary Kitchens are shared spaces owned by third parties where multiple restaurants operate. Similar to shared working spaces for businesses, these kitchens provide shared facilities like kitchen and fridge space, reducing overhead costs for individual restaurants. The Outsourced Model involves outsourcing all operations, including food preparation and customer-facing activities, except for the final touches by the chef. However, this model is not widely popular due to potential quality control issues. Lastly, Independent Kitchens are standalone facilities without physical stores, delivering products either independently or through food aggregators, offering flexibility and control over operations. Each of these models caters to different needs and preferences within the cloud kitchen industry, reflecting the diverse strategies businesses adopt in response to market demands and operational requirements. Cloud kitchens, a burgeoning trend in the restaurant industry, have significantly influenced consumer decision-making. From offering convenience and variety to prioritizing health and safety concerns, these digital-centric platforms have reshaped how consumers choose and experience food, marking a pivotal shift in dining preferences and behaviors.

Objectives

- To examine how cloud kitchens influence what and how consumers choose to eat.
- To understand the changes cloud kitchens bring to the restaurant industry in India.
- To evaluate the strategies and effects of cloud kitchens on customer satisfaction and loyalty.

Literature review

- Choudhary (2019) [3] stated that cloud kitchens are becoming increasingly popular due to several key factors, especially among the younger generation. These include intense competition in the food industry, evolving customer tastes, lower operational expenses, improved food quality, higher disposable incomes, and shifting customer lifestyle choices.
- Dr. Ona Ladiwal's 2019 study found that the sole method to order food is via an online marketplace. Cloud kitchens present opportunities for individuals, including women, who have a passion for cooking, offering personal growth and development avenues.
- Sarangdhar *et al.*, 2021 stated that Indian restaurant owners are considering establishing cloud kitchens instead of conventional restaurants due to the rise in internet accessibility, improvements in logistics infrastructure, and lower initial investment requirements.
- Ms. Kinjal Madhukant Gosai's 2020 study, customers prioritize food flavor the most, followed by food quality, ease of ordering through online food delivery apps from cloud kitchens, service experience, and cost-effectiveness.
- Ety Susilowati (2021) concluded that with consumers increasingly valuing convenience, there is significant

growth and expansion in delivery platform technology. The cloud kitchen model integrates networking, social media, and online meal delivery technology advancements within the business framework.

Impact of cloud kitchens on restaurants

- **Market Disruption:** Cloud kitchens have disrupted the traditional restaurant market by offering a digital-first approach to food delivery, challenging brick-and-mortar establishments.
- **Increased Competition:** The rise of cloud kitchens has intensified competition in the food industry, with new players entering the market and vying for customer attention.
- **Cost Efficiency:** Cloud kitchens often operate with lower overhead costs than traditional restaurants, allowing them to offer competitive pricing and discounts.
- **Shift in Consumer Behavior:** The convenience of online ordering and delivery offered by cloud kitchens has led to a shift in consumer behavior, with more people opting for delivery rather than dining out.
- **Focus on Technology:** Cloud kitchens heavily rely on technology for order management, delivery tracking, and customer engagement, showcasing a tech-savvy approach to food service.
- **Adaptation by Traditional Restaurants:** Many traditional restaurants have adapted to the trend by incorporating online ordering and delivery options, blurring the lines between cloud kitchens and traditional dining experiences.
- **Diversification of Offerings:** Cloud kitchens often offer diverse cuisines and specialty dishes, catering to niche markets and expanding consumer choices.
- **Collaboration with Aggregators:** Cloud kitchens frequently collaborate with food aggregators like Zomato and Swiggy, leveraging their platforms for wider reach and marketing opportunities.
- **Impact on Foot Traffic:** Traditional restaurants may experience a decline in foot traffic as more consumers prefer the convenience of ordering from cloud kitchens.
- **Innovation in Packaging and Delivery:** Cloud kitchens innovate in packaging and delivery methods, ensuring food quality and freshness during transit, which sets new standards for the industry.

Impact of cloud kitchens on consumer decision-making

1. **Convenience:** Cloud kitchens offer convenience through easy online ordering and delivery options, influencing consumers to choose them over traditional dine-in options.
2. **Variety and Customization:** Consumers can access a wide variety of cuisines and dishes from cloud kitchens, often with customizable options, enhancing their decision-making based on their preferences.
3. **Cost-Effectiveness:** Cloud kitchens often provide competitive pricing and deals, attracting price-conscious consumers and influencing their decision to order from these platforms.
4. **Health and Safety:** Especially during the COVID-19 pandemic, cloud kitchens' emphasis on hygiene, safety measures, and contactless delivery has influenced consumer decisions, prioritizing health concerns.
5. **Digital Experience:** The seamless digital experience

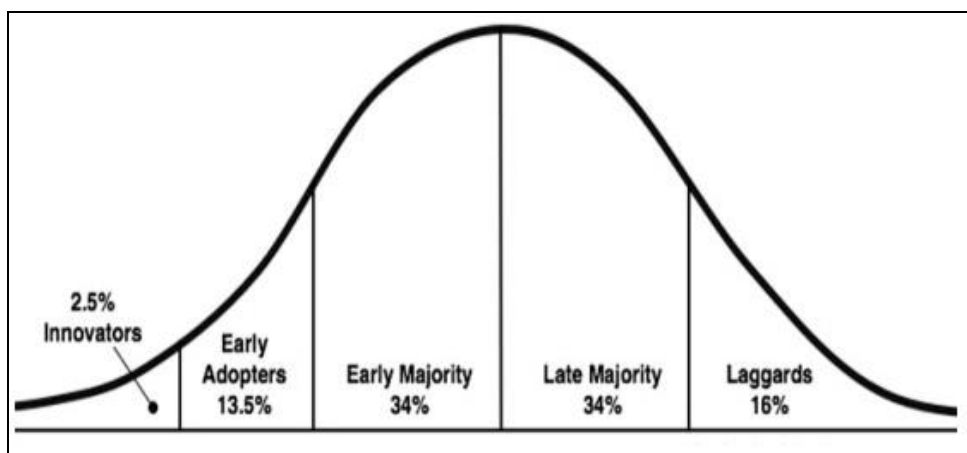
provided by cloud kitchen platforms, including user-friendly interfaces and efficient delivery tracking, contributes to positive consumer experiences and decision-making.

- 6. **Reviews and Ratings:** Consumers heavily rely on reviews and ratings on platforms like Zomato and Swiggy, impacting their decisions to order from specific cloud kitchens based on others' experiences.
- 7. **Brand Loyalty:** Positive experiences with cloud kitchen brands, including timely delivery, quality food, and excellent customer service, foster brand loyalty and repeat purchases.
- 8. **Environmental Consciousness:** Some consumers prioritize environmentally friendly practices, such as sustainable packaging and reduced food wastage,

influencing their choice of cloud kitchens that align with these values.

Factors that derive the growth of cloud kitchens in India

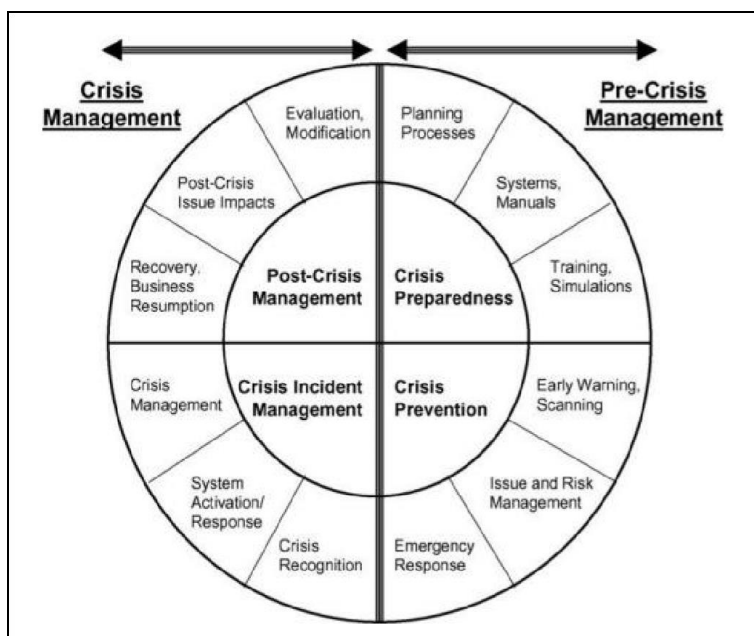
Various interrelated factors, including the pandemic, evolving customer demands, and advancements in technology drive the expansion of cloud kitchens in India. These elements interact in complex ways, fueling the growth and transformation of cloud kitchen models nationwide. According to Böhm, Spierenburg, and Lang (2020), multiple models and theories provide valuable insights into the fundamental growth mechanisms. A key factor in the rise of cloud kitchens in India is the robust technological infrastructure.



Source: Diffusion of Innovation Theory (Khan *et al.*, 2020)

The Diffusion of Innovation Theory posits that the adoption of new technology follows a predictable pattern influenced by factors such as compatibility, complexity, and relative advantage. In the context of cloud kitchens, the advancement of online ordering platforms and mobile technology can revolutionize interactions between service providers and consumers. As Khan *et al.* (2020) suggest, the accessibility and convenience provided by digital platforms

have facilitated the rapid adoption of the cloud kitchen model, enabling consumers to order food easily. The pandemic has acted as a significant catalyst for the evolution of cloud kitchens in India, as social distancing measures and lockdowns have substantially impacted the restaurant industry and accelerated the shift towards takeaway and delivery services.



Source: Crisis Management Theory (Khan *et al.*, 2020)

This phenomenon aligns with the Crisis Management Theory, which asserts that organizations must adapt to external threats and disruptions to survive. In response to the pandemic, many restaurants transitioned to cloud kitchens to sustain their revenue while adhering to public health guidelines (Khan *et al.*, 2020). The flexibility and scalability of cloud kitchens proved invaluable during this challenging period, allowing restaurants to continue operations and meet evolving consumer demands.

Additionally, the shift in consumer demand has been crucial in driving the growth of cloud kitchens. The Theory of Consumer Behaviour emphasizes the importance of understanding consumer attitudes, motivations, and preferences in shaping market dynamics. In recent years, urbanization, changing lifestyles, and demographic trends have increased the demand for time-saving convenience. Cloud kitchens offer an efficient and convenient alternative to traditional dining experiences.

Attributes & statistics

Report Attribute	Key Statistics
Base Year	2023
Forecast Years	2024-2032
Historical Years	2018-2023
Market Size in 2023	US\$ 969.5 Million
Market Forecast in 2032	US\$ 2,948 Million
Market Growth Rate 2024-2032	13.2%

Source: Report- IMARC Services Private Limited 2024

According to the report, The India cloud kitchen market was valued at US\$ 969.5 million in 2023 and is projected by IMARC Group to grow to US\$ 2,948 million by 2032, with a compound annual growth rate (CAGR) of 13.2% from 2024 to 2032. This growth is driven by increasing demand for online food delivery and convenience, the rapid expansion of online food delivery platforms and digital ordering systems, and changing consumer preferences favoring convenient and contactless dining experiences.

technological advancements enhancing operational efficiency and customer satisfaction.

Market analysis of Indian cloud kitchens

- **Market Growth and Size:** Stable growth is driven by increasing consumer demand for convenient food delivery and cost-efficient operations.
- **Rapid Expansion of Online Food Delivery Platforms:** Online platforms are reshaping the culinary landscape, promoting cloud kitchens, and pushing traditional restaurants to embrace digital services.
- **Industry Applications:** High demand across restaurants, virtual brands, and food chains due to scalability and cost-effectiveness.
- **Geographical Trends:** Urban centers are primary adopters, addressing space constraints and emphasizing convenience.
- **Competitive Landscape:** Intense competition; key players focus on expanding virtual brands, optimizing delivery logistics, and using data analytics for customer experience improvement.
- **Challenges and Opportunities:** Challenges include competition and food safety; opportunities lie in partnerships with delivery aggregators, menu innovation, and niche market targeting.
- **Future Outlook:** Promising growth fueled by urbanization, changing consumer preferences, and

Conclusion

The rapid shift towards digitalization and the increasing popularity of online food delivery services have accelerated the expansion of cloud kitchens. The widespread adoption of smartphones and internet connectivity has made online food ordering commonplace. This digital transition has heightened the demand for efficient, user-friendly, and dependable food delivery platforms. Cloud kitchens have seamlessly integrated into this digital environment by leveraging technology, such as dedicated mobile apps and websites, to streamline ordering processes and enhance customer experiences. This paper has highlighted that this evolution has improved order accuracy and logistics and expanded the customer base for cloud kitchens. Moreover, digital marketing and data analytics enable cloud kitchens to effectively engage customers, customize menus, and optimize offerings based on consumer preferences and trends. The interplay between digital transformation and cloud kitchens has fostered a mutually beneficial relationship, with online food delivery platforms driving the growth of cloud kitchens and vice versa. This synergy is reshaping the dynamic and evolving landscape of the food industry in India.

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