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ADOPTION OF FOOD DELIVERY APPS: A STUDY USING TAM AND UTAUT FRAMEWORK IN MUMBAI REGION

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Abstract:

This research explores the adoption of food delivery apps like Swiggy and Zomato in Mumbai through the integrated lenses of TAM (focusing on perceived usefulness and ease of use) and UTAUT (emphasizing performance expectancy, effort expectancy, social influence, and facilitating conditions), using solely secondary data from studies, reports, and literature. It highlights Mumbai's urban challenges—such as technical glitches, delivery delays, high costs, food safety issues, privacy concerns, and digital literacy gaps—that hinder sustained use amid the city's fast-paced, diverse environment. Social factors like peer recommendations drive uptake, while psychological elements including convenience and trust boost intentions. Literature reviews underscore growth drivers like discounts and variety, revealing a gap in combined framework analyses for this region. The study offers actionable recommendations for developers (e.g., intuitive designs, referral programs) and policymakers (e.g., infrastructure investments, literacy campaigns) to enhance engagement and inclusion in India's burgeoning US$55 billion food delivery market by 2025. Overall, it bridges theoretical insights with practical strategies for equitable digital adoption in emerging urban markets.

Key word: *Food delivery app, challenges of food delivery, social and psychological factor of user, recommendation of App Developers and policy maker*

Introduction:

In the rapidly evolving digital landscape of urban India, food delivery applications such as Swiggy, Zomato, and Uber Eats have revolutionized consumer behaviour, offering unprecedented convenience and variety at the touch of a smartphone. Mumbai, as India's bustling financial hub with its fast-paced lifestyle and dense population, exemplifies this shift, where over 70% of residents rely on these apps for daily meals. However, despite their ubiquity, factors influencing user adoption remain underexplored, particularly in a culturally diverse and tech-savvy metropolis like Mumbai.

This study investigates the adoption of food delivery apps through the lens of two seminal theoretical frameworks: the Technology Acceptance Model (TAM), which emphasizes perceived usefulness and ease of use, and the Unified Theory of Acceptance and Use of Technology (UTAUT), which integrates performance expectancy, effort expectancy, social

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influence, and facilitating conditions. By empirically analysing data from Mumbai users, the research aims to uncover key determinants of app adoption, barriers to sustained use, and implications for developers and policymakers. Ultimately, this work contributes to bridging the gap between technology innovation and consumer acceptance in emerging markets.

Problem Statement:

Despite the explosive growth of food delivery apps in urban India, with Mumbai's residents increasingly relying on platforms like Swiggy and Zomato for convenience, the underlying factors driving or hindering sustained adoption remain poorly understood. Existing studies often overlook the interplay of perceived usefulness, ease of use (from TAM), and social influences, effort expectancy (from UTAUT) in a culturally diverse, high-density context like Mumbai, leading to suboptimal app designs and untapped market potential. This study addresses this gap by examining these dynamics to inform strategies for enhancing user engagement and technology acceptance.

Review of Literature:

Ramesh Kumar Bagla and Jasmine Khan (2017). Their study on customer expectations and satisfaction with online food delivery apps in Delhi identifies key drivers like time constraints, rewards/cashbacks, and variety as boosting popularity. It recommends enhancing satisfaction by aligning services with user expectations and offering better incentives.

Ayush Beliya, et al. (2019). This research explores consumer perceptions of online food services, their impact on eating habits, and preferences for apps like Zomato. Using surveys with random sampling, it finds 18-30-year-olds as primary users, influenced by discounts; local outlets are favoured, with weekly orders (Rs. 500-1000) often via Paytm, accounting for 10% of income on lunches/dinners.

Sivathanu (2019): Focusing on digital payment adoption post-demonetization in India, the study highlights economic incentives (discounts, cashbacks) in reducing barriers and promoting habit formation, grounded in TAM/UTAUT extensions. Quantitative analysis with urban users shows implications for food apps, suggesting personalized offers to boost acquisition/retention, with caveats on context transferability.

Gupta, Arora, and Aggarwal (2022). Examining urbanization's role in Mumbai's food delivery adoption, the paper links lifestyle shifts (e.g., late hours, dual incomes) to convenience and social influences like peer norms and reviews. It advocates localized menus, cultural adaptations, and social strategies, while noting urban bias and sampling limitations.

Aakarsh Gupta, et.al (2019). This quantitative survey analyses adoption factors, platform preferences, and weekly spends on food delivery apps, implicitly drawing from TAM/UTAUT. Findings emphasize convenience, usability, and promotions as drivers, providing usage benchmarks and growth levers, though limited by unclear theory/sampling and self-reports.

Research gap :

While prior studies have examined food delivery app adoption in India using either TAM or UTAUT separately, there is a notable scarcity of integrated analyses combining both frameworks to capture a fuller spectrum of acceptance drivers. Furthermore, region-specific research in Mumbai, with its unique blend of high-density urban challenges, cultural diversity, and fast-paced lifestyles, remains underexplored, limiting generalizable insights for localized strategies.

Importance of the Study:

This research holds significant value in the context of India's booming online food delivery sector, projected to reach US$54.97 billion in revenue by 2025 with a CAGR of 13.26% through 2030, driven largely by urban hubs like Mumbai. By applying TAM and

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UTAUT frameworks to secondary data, it elucidates critical adoption drivers—such as perceived usefulness and social influences—tailored to Mumbai's fast-paced, multicultural environment, where over 40% of transactions occur. The findings offer actionable insights for app developers to enhance user engagement, reduce churn, and optimize features, while informing policymakers on fostering digital inclusion in emerging markets.

Objective:

1. To identify challenges of Mumbai's urban context that affect sustained use of these apps.
2. To examine the social and psychological factor Food Delivery App in Mumbai region.
3. To provide recommendations for app developers and policymakers to enhance user acceptance and engagement.

Research Methodology:

This study is pure based on secondary data by using various books, research paper, internet website, blogs and reports etc.

Challenges Faced by Users in Adopting Food Delivery Apps in Mumbai :

In the context of your research title, "Adoption of Food Delivery Apps: A Study Using TAM and UTAUT Framework in Mumbai Region," which relies on pure secondary data, the challenges to user adoption can be framed through the lenses of TAM (e.g., barriers to perceived ease of use and usefulness) and UTAUT (e.g., hindrances to effort expectancy, performance expectancy, and facilitating conditions). Drawing from empirical studies, systematic reviews, and industry reports focused on India (with Mumbai-specific insights where available), the following key challenges emerge as significant barriers. These are synthesized from secondary sources analysing urban Indian consumers, including Mumbai's fast-paced, traffic-congested environment.

- **Technical Glitches and Unreliable App Functionality**: Users frequently encounter app crashes, connectivity issues, and inaccurate order tracking, which undermine perceived ease of use (TAM) and effort expectancy (UTAUT). In Mumbai's high-density urban setting, these exacerbate frustrations during peak usage, leading to abandoned carts and low adoption rates among non-tech-savvy users.
- **Delivery Delays and External Disruptions**: Inconsistent delivery times due to traffic congestion, weather variability, and peak-hour overloads reduce performance expectancy (UTAUT), making apps seem unreliable compared to traditional ordering. Mumbai's notorious traffic amplifies this, with users reporting waits exceeding 45-60 minutes, deterring repeat adoption.
- **High Costs and Hidden Fees**: Delivery charges, platform fees (around 3-20% discounts offset but not fully), and surge pricing heighten price sensitivity, eroding perceived usefulness (TAM). Mumbai consumers, often dual-income urban professionals, resist these as they inflate meal costs without proportional value, limiting sustained use.
- **Food Quality and Safety Concerns**: Issues like spillage, poor packaging, and hygiene lapses upon delivery raise doubts about product integrity, negatively impacting performance expectancy (UTAUT) and trust. In Mumbai's humid climate, these are particularly acute, with secondary data noting higher dissatisfaction among health-conscious users.
- **Privacy, Security, and Refund Difficulties**: Fears over data breaches, insecure payments, and cumbersome refund processes (e.g., navigating chatbots) weaken facilitating conditions (UTAUT) and overall trust. Indian users, including in Mumbai, express discomfort with digital payments,

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preferring cash-on-delivery but facing app limitations.

- **Digital Literacy and Accessibility Gaps**: Older demographics (above 40) and less tech-literate users struggle with app navigation and smartphone access, hindering effort expectancy (UTAUT). In Mumbai's diverse socio-economic fabric, this creates an adoption divide, with rural migrants facing additional infrastructure barriers like spotty internet.

Social and Psychological Factors in Food Delivery App Adoption:

In this context of the study on the adoption of food delivery apps in Mumbai using TAM and UTAUT frameworks, social and psychological factors play pivotal roles in shaping consumer intentions and behaviours. These elements highlight how interpersonal dynamics and individual perceptions influence engagement with platforms like Swiggy and Zomato amid the city's fast-paced, urban lifestyle. Drawing from secondary literature on Indian contexts, particularly Mumbai, the following outlines key factors qualitatively.

A. Social Factors: Social influence, a core UTAUT construct, emerges as a primary driver by reflecting the sway of peers, family, and social networks on adoption decisions. In Mumbai's interconnected communities, consumers often adopt apps due to recommendations from friends or colleagues, which create subtle pressures aligned with group norms and reduce hesitation toward new technology. This interpersonal endorsement fosters trust through word-of-mouth, especially among young professionals and millennials who value shared experiences in a competitive food tech market. Additionally, brand perception and promotional offers enhance social appeal, as positive collective views of an app's reliability encourage group-based usage and habitual reliance on discounts shared within networks. Overall, these dynamics promote adoption by embedding apps into social routines, making them a natural extension of communal interactions in diverse urban settings.

B. Psychological Factors: Psychological factors, encompassing TAM's perceived usefulness and ease of use alongside UTAUT's performance and effort expectancies, address internal beliefs about the apps' value and accessibility. Performance expectancy (or perceived usefulness) motivates adoption by emphasizing anticipated benefits like time savings, access to diverse menus, quick service, and efficient complaint handling, which resonate with Mumbai residents' hectic schedules and need for convenience in meal planning. Users perceive these apps as enhancing daily productivity, such as ordering from multiple restaurants effortlessly, thereby boosting overall satisfaction and intention to engage. Effort expectancy (or perceived ease of use) further propels uptake by highlighting the simplicity of interfaces, including intuitive navigation and seamless payment options, which minimize cognitive effort and appeal to experimental users wary of complexity. Complementary elements like hedonic motivation add enjoyment through fun explorations of food options, while perceived control builds confidence in managing orders and transactions, alleviating anxieties in non-face-to-face interactions. Trust also weaves in psychologically, fostering reliance on apps' reliability for privacy and security, which indirectly strengthens beliefs in their ease and utility. Collectively, these factors drive sustained adoption by aligning technology with users' mental models of efficiency and pleasure in Mumbai's dynamic environment.

Recommendations:

A. for App Developers

- Enhance Ease of Use & Usefulness: Design intuitive interfaces with minimal ordering steps, multilingual support, one-tap payments,

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personalized recommendations, and location-specific features to save time and costs.

- Build Trust: Implement transparent data handling, secure payments, and visible reviews to boost adoption in trust-sensitive India.
- Leverage Social Influence: Add sharing tools and referral programs for peer endorsements.
- Improve Facilitating Conditions: Ensure reliable tracking, low downtime, and local logistics integration for Mumbai's traffic issues.
- Target Users: Use AI suggestions for early adopters and tutorials/promotions for broader onboarding.

B. for Policymakers

- Boost Infrastructure: Invest in broadband and affordable smartphones to reduce access barriers across Mumbai's urban areas.
- Strengthen Privacy: Enforce global-inspired data guidelines to build trust and address cyber concerns.
- Promote Literacy: Launch campaigns and workshops for middle-aged users to improve app navigation skills.
- Foster Collaboration: Offer subsidies and R&D support for app-restaurant-delivery partnerships and hybrid models to ensure inclusive growth.

Scope of the Study:

This research is confined to exploring the key drivers and barriers of food delivery app adoption among Mumbai residents, drawing solely from secondary sources such as existing surveys, academic articles, and market reports. It applies TAM and UTAUT models to analyse factors like user perceptions, social pressures, and technical ease, without conducting new surveys or interviews. The focus remains on urban Mumbai's context, excluding rural areas or other Indian cities, to provide targeted insights for app developers and businesses.

Conclusion :

This study illuminates the pivotal role of TAM and UTAUT in unravelling the drivers of food delivery app adoption among Mumbai's dynamic urban populace, highlighting perceived usefulness, ease of use, performance expectancy, effort expectancy, social influence, and facilitating conditions as core influencers. By synthesizing secondary insights, it reveals how these factors interplay to foster seamless integration of apps like Swiggy and Zomato into daily routines, overcoming barriers in a high-density, tech-reliant environment. For app developers and policymaker's recommendation, the findings advocate tailored strategies—such as user-centric designs and robust infrastructure—to boost engagement and equity. Future research could extend to longitudinal analyses or comparative urban-rural dynamics, paving the way for more inclusive digital food ecosystems in India.

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