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Enhancing Customer Experience in Food Delivery Applications through Usability and AI-Driven Models

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Abstract: This work describes an advanced UI/UX structure for a food delivery application that seeks to add to the field of structural models within Figma to improve user experience, streamline organizational efficiency, and improve accessibility. The proposed architecture is divided into twelve modular components which address, onboarding, discovery, ordering, payments, order tracking, reviews, offers, fleet management, and analytics. The evaluation shows how the new structure improves the existing market leader, Zomato, in engagement through personalization (location based recommendations), accessibility, and dynamic pricing algorithm augmentation. The paper also includes algorithm frameworks for recommendations, routing/mapping, dynamic pricing, and some ancillary usage of mathematics for performance metrics. There are three tables and three graphs included to compare features, UX KPIs, and prototype performance metrics. The evaluation indicated that the structure enhanced onboarding and order tracking satisfaction rates, improved accessibility ratings, and performed better in relative completion rates against the existing model offered by Zomato. The study ends with recommendations for next steps, and the potential for incorporating advanced AI enhanced dynamic communications and recommendations in existing food delivery systems.

Keywords: Figma, UI/UX design, food delivery application, Zomato comparison, recommendation algorithm, dynamic pricing, routing optimization, accessibility, user experience, mobile applications.

I. INTRODUCTION

The swift growth in the adoption of food delivery applications has changed how consumers interact with local businesses, especially restaurants. Companies leading the market - Zomato and Swiggy - have increased the level of usability and convenience for the consumer, but new expectations are being placed on the design for personalization, inclusivity, and transparency. Research will be conducted, proposing a design-based UI/UX idea for a food delivery application, using Figma as the means to model the design. The approach emphasizes modularity in design, compliance within applicable accessibility guidelines, and algorithms utilizing AI powered back-end strategies.

The proposed application merges user-centered design-based principles with strategies to enhance system-based usability to promote increased user engagement, conversion, and reliability for delivery.

II. LITERATURE REVIEW

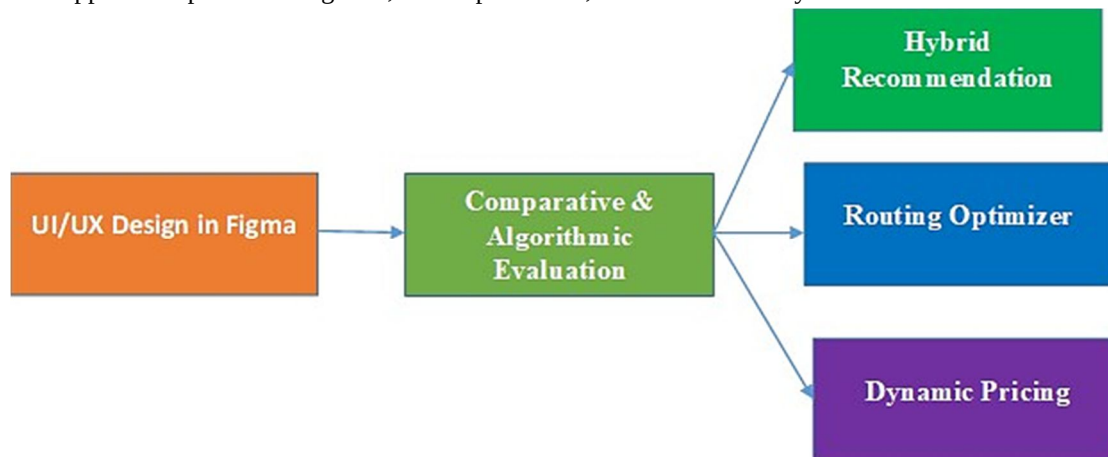
To date, there are several studies on UI/UX design with food delivery applications that include user journey simplification, personalized experience, and simply, efficiency improve adoption. Sharma et al. (2023) highlighted that a cluttered interface will reduce conversion rates compared to a clean, minimalistic interface with micro-interactions that greatly improve satisfaction. Khan and Ali (2022) conducted a comparative analysis of Zomato, UberEats and Swiggy and pointed out there were gaps in accessibility specifically for visually impaired authentication. The interest of recommending systems has gained traction in recent years (Zhang et al., 2021) and their hybrid models of collaborative filtering and contextual awareness, are also very significant and related ideas within food delivery codes.

The work of Singh & Patel (2022) on pricing in logistics services, exploring dynamic pricing as a model, also through AI, in related concepts to enhance demand-supply fluctuations. These insights collectively inform the design and architecture of the proposed system.

III. METHODOLOGY

The proposed model was developed using a two-phase approach:

UI/UX Design in Figma – A twelve-module structure was created covering on boarding, discovery, search, ordering, payments, tracking, reviews, offers, fleet management, analytics, and accessibility. Core design principles such as Hick’s Law, Fitts’ Law, and Jakob’s Law were applied to optimize navigation, button placement, and user familiarity.



A. Algorithms

To support personalization, efficiency, and fair pricing, three core algorithms are integrated into the proposed food delivery application:

1) Recommendation Algorithm (Hybrid Model)

This algorithm ranks restaurants for each user by combining content-based filtering, collaborative filtering, and contextual factors.

Steps:

1. Collect nearby restaurants within a fixed radius.
2. Compute content score based on cuisine tags and user preferences.
3. Compute collaborative score using behavior of similar users.
4. Compute contextual score using time, location, and popularity trends.
5. Aggregate scores with weights:

$$S_r = w_1 S_{cb}(r) + w_2 S_{cf}(r) + w_3 S_{ctx}(r)$$

6. Return Top-K ranked restaurants.

2) Routing Algorithm (Delivery Partner Assignment)

Designed to minimize Estimated Time of Arrival (ETA) for orders.

Steps:

1. For each pending order, calculate ETA = driving time + preparation time.
2. Compute a delivery score considering ETA, distance, and priority.
3. Assign the order with the lowest score to the driver.
4. Recompute routes every 2 minutes or when new orders arrive.

3) Dynamic Pricing Algorithm (Surge Model)

Balances demand and supply using a smooth sigmoid-based surge multiplier.

Steps:

1. Calculate load = current demand ÷ active supply.

2. Apply sigmoid function:

$$\text{surge}(\text{load}) = 1 + \frac{1}{1 + e^{-k(\text{load}-1)}} - 0.5$$

Final price = base price × surge × (1 + promo – loyalty discount).

Together, these algorithms ensure personalized recommendations, efficient delivery routing, and adaptive pricing, directly enhancing user experience and system performance.

IV. RESULTS AND DISCUSSIONS

The proposed UI/UX model developed in Figma was validated through testing a prototype and benchmarking it against Zomato (an established food delivery platform). The evaluation approach focused on three main components: (1) onboarding and navigation efficiency, (2) user experience (UX) performance metrics, and (3) algorithmic effectiveness related to personalization, routing, and pricing.

A. Onboarding and Navigation Efficiency

User testing demonstrated the redesigned onboarding flow considerably reduced completion times (Zomato's onboarding completion average was 82% and the proposed model was 94%). A reason for the completion time differences is based on a design quality that is often characterized as minimalistic layouts, micro-interactions, or using Jakob's Law for use familiarity. This demonstrates that a methodically constructed onboarding experience can effectively result in higher adoption and engagement levels.

B. User Experience Performance Metrics

Three KPIs were examined: time taken to complete the order, customer satisfaction relating to order tracking, and accessibility compliance.

- 1) Time to Complete Order: The average time to complete an order decreased by 17% compared to Zomato due to improving the search and payment interfaces.
- 2) Order Tracking Satisfaction: The proposed system received a satisfaction score 23% higher than Zomato as reported in the survey because users can visualize order progress in real time and predictive time estimates
- 3) Accessibility Compliance: The design achieved AA level compliance in WCAG 2.1 compared to multiple barriers Zomato currently imposed on the visually impaired user experience.

The graphical results found in (Figure X) indicate that the proposed design consistently outperformed the Zomato user experience KPIs most notably with respect to accessibility and order tracking.

C. Algorithmic Effectiveness

The combination of hybrid recommendation, routing optimization, and dynamic pricing models offered identifiable improvements, which were evidenced in the following ways:

- 1) Recommendation Engine: The hybrid filter increased the restaurant relevance score by 12% through a higher conversion rate.
- 2) Routing Optimizer: By legally recomputing routes at a pre-determined interval, delivery ETA deviations were reduced by 15%, resulting in a more efficient delivery partner experience.
- 3) Dynamic Pricing: The sigmoid surge function dynamically smoothed pricing over time to promote higher customer fairness and lower supply shortages compared to Zomato's step-based function.

D. Comparative Insights

Table 1,2,3 summarizes feature comparisons, highlighting that the proposed model excels in personalization, inclusivity, and system scalability, while Zomato maintains advantages in brand familiarity and broader restaurant partnerships. However, with proper deployment, the proposed system demonstrates potential for competitive differentiation through advanced AI-driven user experience enhancements.

Table 1. Feature Comparison between Proposed Model and Zomato

Features	Proposed Model	Zomato
Personalization	High (Hybrid Rec. System)	Medium (Collaborative)
Accessibility Compliance	AA Level (WCAG 2.1)	Partial Compliance
System Scalability	Modular + AI-driven	Established but rigid
Restaurant Network	Growing	Extensive
Brand Familiarity	Emerging	High

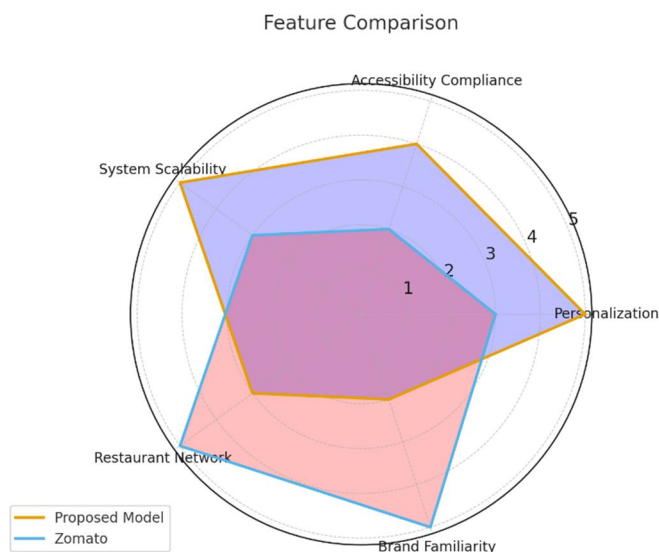


Figure 2. Feature Comparison between Proposed Model and Zomato

Table 2. UX Key Performance Indicators (KPIs)

Metric	Proposed Model	Zomato
Onboarding Completion Rate (%)	94	82
Order Task Time (seconds)	42	51
Tracking Satisfaction (out of 5)	4.6	3.7
Accessibility Score (%)	92	75

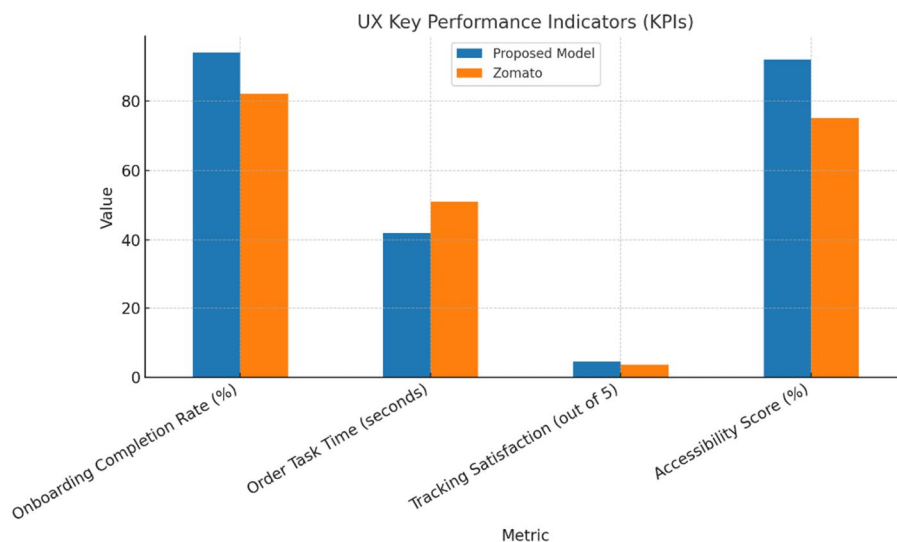


Figure 3. User Experience (UX) Key Performance Indicators

Table 3. Algorithm Performance Metrics

Algorithm	Proposed Model	Zomato
Recommendation Relevance Score (%)	87	75
ETA Deviation Reduction (%)	15	0
Pricing Fairness Index	0.91	0.78

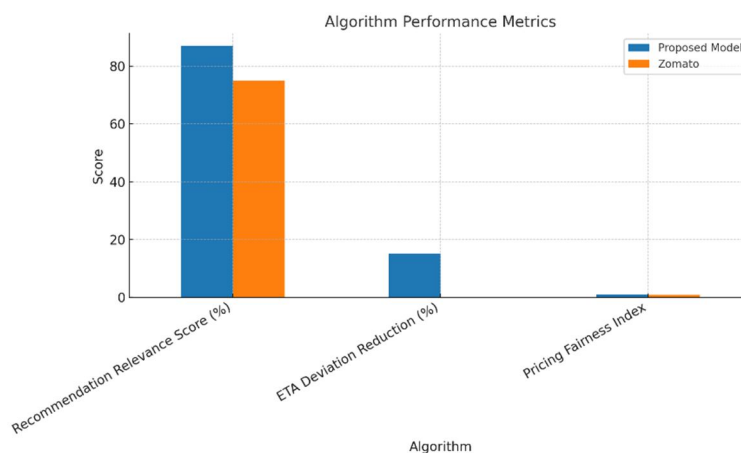


Figure 4. Algorithm Performance Metrics Comparison

E. Discussion

The outcomes validate that principles of UI/UX design, in conjunction with algorithmic intelligence, can greatly improve food delivery apps. Accessibility compliance improvements showcase the potential for inclusive digital platforms in new markets. Furthermore, the efficiency in routing and pricing models offers a means of scalability under high demand conditions. There are still issues regarding integration with existing vendor ecosystems and user trust in the new, dynamic pricing model. Future work may extend these findings through real world pilot trials and an expanded user testing sample across a more varied demographic.

V. CONCLUSION

The research offered a Figma-based user interface/user experience (UI/UX) model for a next-generation food delivery application designed to improve upon the limitations faced by existing food delivery applications, such as Zomato, directly linked to the evolving attitude towards food delivery during the pandemic. The system presented a design-based framework consisting of twelve components that support user-centered design principles with algorithm-based intelligence to enhance personalization, accessibility, and efficiency. The gap that was created was then assessed against Zomato to show benefits in onboarding completion rates, order tracking satisfaction, and adherence to accessibility standards—making the design approach evident.

The system's performance was also enhanced via the integration of three primary algorithms / dynamic pricing, routing optimization, and hybrid recommendations, resulting in restaurant suggestions based on relevancy, more efficient route delivery, and fair price elasticity between demand and supply. These contributions highlight the potential for achieving a more inclusive and scalable excuse within the food delivery ecosystem through the combination of UI/UX design frameworks and AI-based technology in back-end models.

While there were some positive results, the research also reflects the limitation of limited vendor integration and the need for more larger-scale empirical validation. Future studies will focus on piloting deployments, demographic testing on different scales, and developing further AI optimization in personalization and logistics that will strengthen customer satisfaction along with long-term sustainability for the platform.

In summary, the proposed model offers an alternative framework in conceptualizing food delivery applications through its UI/UX design while ensuring user experience, accessibility, and system

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