
# Reducing Cart Abandonment:

## A UX-Focused Approach to

## E-commerce Conversion in Food Apps

Information and Communication Technology
Bachelors' Thesis

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## Abstract:

Cart abandonment is a significant issue in the e-commerce sector, especially for food delivery apps, which are particularly susceptible due to the impulsive and urgent nature of user behavior. This thesis explores how User Experience (UX) Design can tackle this problem by pinpointing and alleviating UX-related friction points that contribute to cart abandonment. Through secondary research and initial usability testing, the study identifies major challenges such as complicated checkout processes, absence of trust signals, cognitive overload, and lack of personalization. Based on these findings, the research suggests practical UX design strategies, including streamlined checkout flows, improved personalization, features that build trust, and performance enhancements. By adopting these strategies, food delivery apps can increase conversion rates, enhance customer satisfaction, and lower cart abandonment rates. The results aim to offer a guide for developers and designers to create user-focused food delivery applications that enable smooth transactions and foster long-term customer loyalty.

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# List of Abbreviations

| | |
|---|---|
| A/B Testing | Comparative testing method used to analyze user preferences |
| AI | Artificial Intelligence |
| CTA | Call-To-Action |
| ER | Error Rate |
| HFP | High-Fidelity Prototype |
| KPI | Key Performance Indicator |
| LFP | Low-Fidelity Prototype |
| ML | Machine Learning |
| SSL | Secure Sockets Layer |
| TCT | Task Completion Time |
| UCD | User-Centered Design |
| UI | User Interface |
| UX | User Experience |
| WCAG | Web Content Accessibility Guidelines |

# 1. Introduction

## 1.1 Background and Motivation

In recent years, the food delivery industry has seen impressive growth, largely thanks to the rise of mobile applications and the convenience they provide. These apps have changed how consumers engage with restaurants and grocery services, allowing for quick access to menus, easy ordering, and fast delivery options. By 2025, the global online food delivery market is projected to exceed $150 billion, with a significant portion coming from mobile-based platforms. However, one ongoing issue that food delivery apps encounter is the high rate of cart abandonment. This situation, where users add items to their cart but do not finalize the purchase, continues to hinder the revenue potential of e-commerce platforms.

Research from the **Baymard Institute** shows that the average cart abandonment rate on e-commerce platforms is still quite high, sitting at around **69.8% [1].** This issue is even more pronounced in the food delivery sector, where consumer behavior tends to be impulsive and time-sensitive. Users often leave their carts due to frustrations like complicated checkout processes, unexpected costs, or technical issues. These problems are particularly significant in food apps, where decisions are made quickly, and users anticipate a smooth experience from placing their order to completing the payment.

To tackle this issue, user experience (UX) design plays a crucial role. Good UX design is not just about looking good; it focuses on crafting intuitive workflows, reducing user effort, and addressing the psychological factors that can cause users to abandon their tasks. A well-designed UX can greatly lower the obstacles users face along their journey, building trust and enhancing satisfaction. For example, adding features like real-time order updates, progress indicators, and easy payment options can turn a frustrating checkout process into a smooth experience.

Reducing cart abandonment is crucial for more than just individual sales. Food delivery apps function in a fiercely competitive market where keeping users and building brand loyalty are essential for ongoing success. Elevated abandonment rates

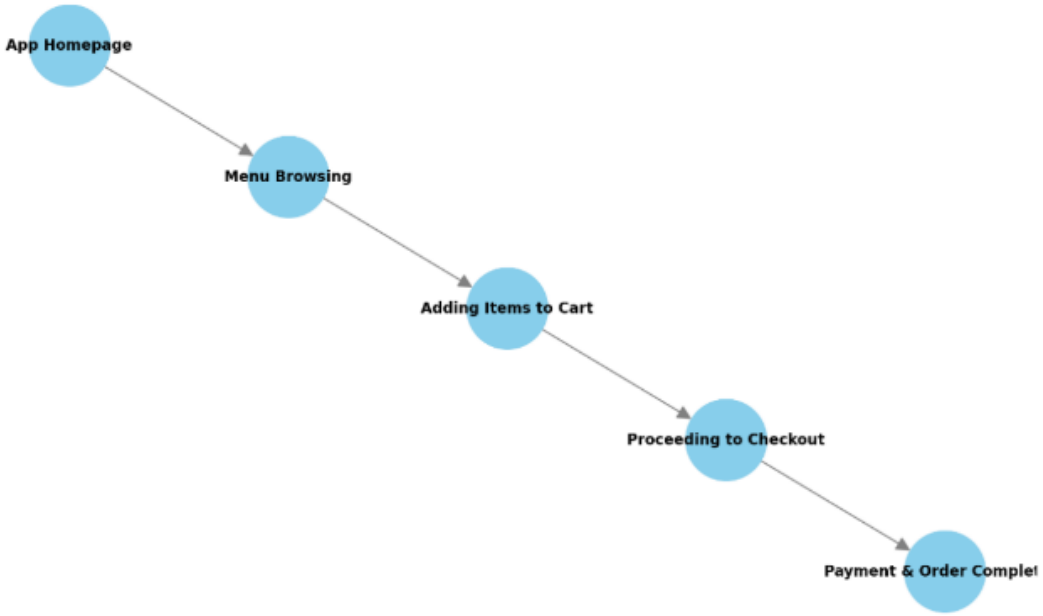
lead to not only lost revenue but also negative effects on customer perception and engagement. By focusing on improving user experience, food delivery services can boost conversion rates, enhance customer satisfaction, and foster lasting loyalty.

This thesis examines the essential UX design elements that lead to cart abandonment in food apps. By utilizing both secondary research and hands-on usability testing, the study aims to suggest effective strategies to reduce abandonment rates. The findings focus on simplifying the checkout process, improving personalization, and adding features that build trust, providing practical insights for developers and designers in the food delivery sector.

## 1.2 Problem Statement

Cart abandonment poses a major challenge for food delivery apps, affecting their revenue and overall growth. While many solutions have been suggested in the e-commerce sector, there is still a lack of clarity regarding the specific UX design elements that lead to elevated abandonment rates in food delivery applications. This study seeks to pinpoint these elements and create practical UX design recommendations to enhance conversion rates.

Figure 1: User Journey in a Food Delivery App



### 1.3 Objectives

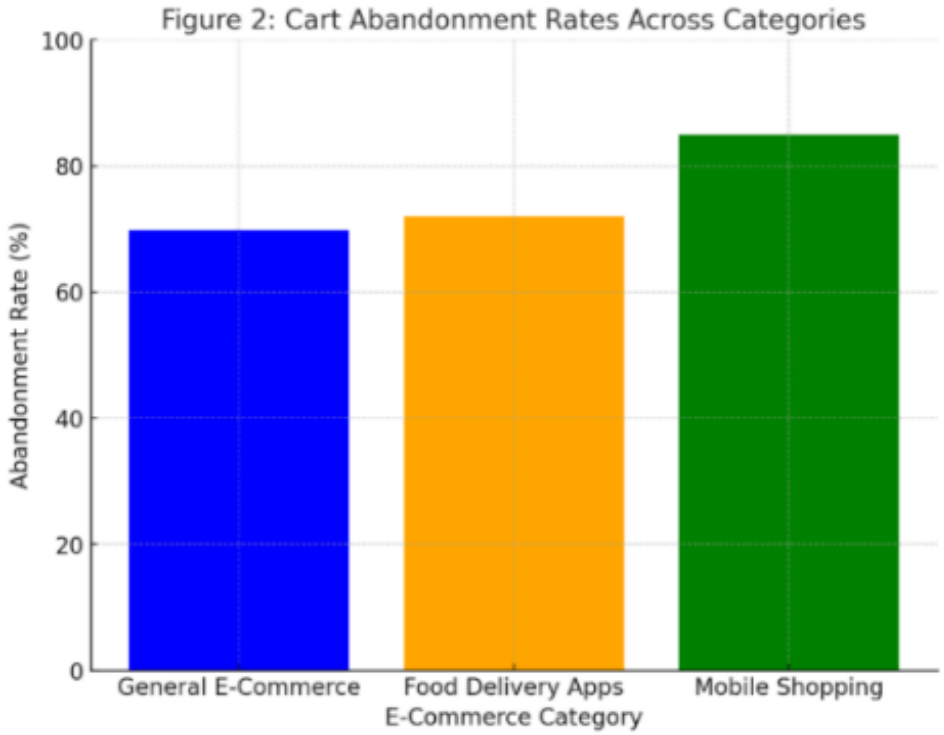
- To identify the main UX factors that lead to cart abandonment in food apps.
- To assess current solutions in the food delivery app sector that focus on minimizing cart abandonment.
- To suggest a series of design enhancements for food apps grounded in UX principles that can aid in decreasing cart abandonment.

# 2. Literature Review

## 2.1 UX in E-Commerce

User Experience (UX) design plays a crucial role in the success of e-commerce platforms. A smooth and intuitive UX encourages users to complete their purchases, while a poor UX can result in frustration and abandoned carts. According to **a 2019 report by the Baymard Institute**, the average cart abandonment rate across all e-commerce sites stands at **69.8% [1]**. This significant statistic highlights ongoing challenges faced by e-commerce platforms, particularly in mobile environments where user behavior tends to be impulsive and time-sensitive. For food apps, the need for a seamless experience is even more pronounced, as users often make decisions while on the move, requiring streamlined navigation and efficient processes.

Numerous studies, including those from the Nielsen Norman Group, emphasize that intuitive design, quick performance, and clear calls to action are essential elements of UX design in e-commerce. Features such as fast load times, easy-to-navigate menus, and secure payment options play a vital role in minimizing friction during the checkout process. Additionally, clear visual indicators, like progress bars, can help users feel more in control of their experience, while personalized recommendations can boost engagement. Research also indicates that incorporating trust signals, such as SSL certificates and customer reviews, can alleviate user concerns and enhance conversion rates. By implementing these strategies, food delivery apps can improve customer satisfaction and decrease the chances of cart abandonment.




## 2.2 Cart Abandonment Psychology

Understanding the psychology behind cart abandonment is crucial for developing effective solutions. A study by **Saleh & Al-Mamary (2020)** identifies several psychological factors that influence users' decisions to leave their carts. One significant factor is **cognitive overload**, where users become overwhelmed by too many options or steps in the checkout process, resulting in frustration. Another important factor is **decision fatigue**, which happens when users encounter too many choices and decisions in a short period, often leading them to abandon their purchase to avoid additional mental strain.

Moreover, **trust issues** can greatly affect how users behave. If a platform doesn't display clear security features, like SSL certificates or secure payment icons, users might be reluctant to provide their personal or financial information. Tackling these psychological barriers is essential for creating user-friendly experiences that minimize cart abandonment and boost conversion rates.

- **Cognitive Overload:** Users can become overwhelmed when faced with too many options or steps during the checkout process. By simplifying these

processes, the cognitive load can be reduced, which increases the likelihood of users completing their transactions.

- **Decision Fatigue:** When users face lengthy decision-making processes, they can become fatigued, often leading them to abandon their carts out of exhaustion or frustration. It's essential to streamline and simplify the purchasing journey to maintain user engagement.
- **Lack of Trust:** Users might be reluctant to finalize their purchases if they lack trust in the website or app, especially regarding payment security. It's essential to provide clear security indicators, like SSL certificates or trust badges, to help ease these worries **[3]**.

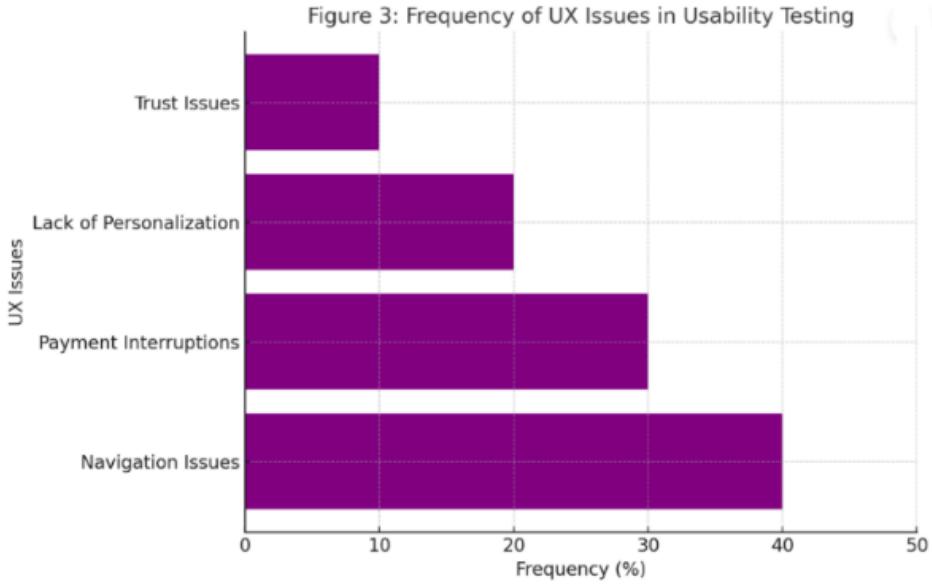


Figure 3: Frequency of UX Issues in Usability Testing

## 2.3 Current Solutions in Food Apps

Various design solutions have been suggested to address cart abandonment in food apps.

- **Persistent Carts:** Enabling users to save items in their cart and sending reminders to finalize their purchases later has proven to boost conversion rates. Research conducted by **Pereira et al. (2019)** revealed that persistent cart functionalities led to an increase in conversion rates of up to **15%** in food delivery applications **[4]**.

- **Streamlined Checkout:** Simplifying the checkout process by cutting down on the number of required steps is a widely suggested approach. **Amazon's one-click purchase feature** has demonstrated that lowering the obstacles to buying can greatly boost conversions. In food delivery apps, this might involve providing fast payment methods or automatically filling in details for returning customers **[5]**.
- **Personalization:** Providing tailored suggestions based on past orders or user preferences can help lower abandonment rates. For instance, platforms like **Uber Eats** and **GrubHub** utilize machine learning algorithms to recommend food choices based on a user's previous activity, motivating users to add items to their cart and complete the checkout process **[4]**.
- **Trust-Building Mechanisms:** Incorporating features such as **secure payment methods, ratings**, and reviews can significantly enhance user trust. If users feel uncertain about the app's security or can't find reviews to support their buying choices, they are more inclined to abandon their cart **[5]**.

# 3. Methodology

## 3.1 Research Approach

To achieve the goals of this study, a mixed-methods approach was used that combines both qualitative and quantitative research. This approach allows for a comprehensive analysis of user behaviors and the UX design elements that lead to cart abandonment.

The qualitative aspect includes collecting insights through techniques like usability testing and interviews, which reveal user frustrations and specific pain points, such as difficulties with navigation or feelings of insecurity. These insights offer context to grasp the motivations driving user behavior. On the quantitative side, the focus is on analyzing metrics such as cart abandonment rates and task completion times, utilizing tools like Google Analytics to spot patterns and trends. By merging these two

approaches, the research provides a comprehensive understanding of the issue, facilitating the creation of effective, user-centered solutions.

- Secondary Research:

  The first stage of the research will focus on collecting pertinent information from existing studies, industry reports, and case studies. This secondary research will lay the groundwork for comprehending the current landscape of UX in food apps, the rates of cart abandonment, and effective strategies for enhancing e-commerce conversion **[1] [4]**.
- Primary Research:

  User feedback and behavior data will be collected using various methods:
  - Surveys & Questionnaires
  - Usability Testing
  - Interviews

## 3.2 Tools and Frameworks

The tools and frameworks used in this study play a crucial role in facilitating research, design, and testing activities. They allow for the development of prototypes, the analysis of user behavior, and the gathering of usability data, all of which help in pinpointing and tackling cart abandonment challenges.

- Wireframing and Prototyping Tools: Figma and Adobe XD
- Analytics Tools: Google Analytics and Hotjar **[5]**
- Usability Testing Tools: Lookback.io

## 3.3 Data Analysis

After gathering user data through surveys, tests, and interviews, the information is examined using both quantitative and qualitative methods. The quantitative analysis emphasizes metrics like task completion times, response frequencies, and error rates, which are analyzed with statistical tools to uncover trends and correlations.

Qualitative data, such as open-ended responses and usability observations, is organized to identify common themes and user frustrations. By integrating these methods, the analysis provides a well-rounded view of numerical trends alongside

contextual insights, leading to data-driven, user-centered recommendations aimed at reducing cart abandonment.

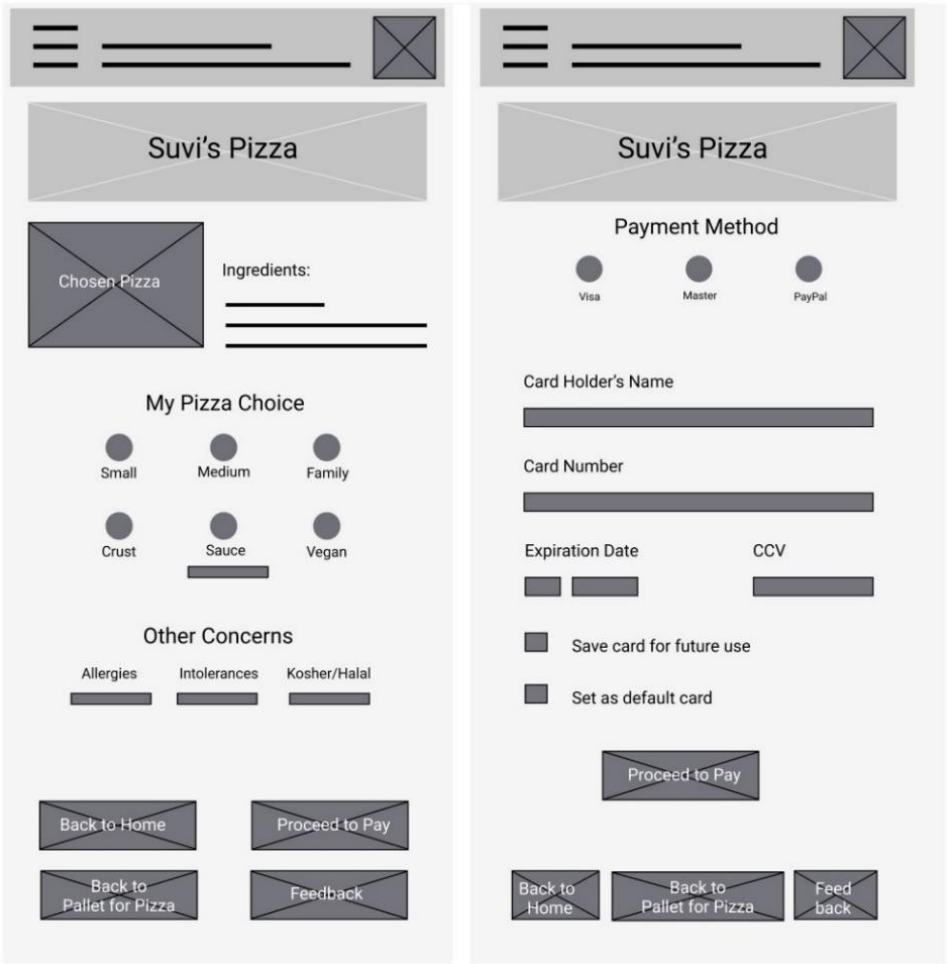



Figure 4: Wireframe for Improved Checkout

# 4. Preliminary Results

## 4.1 Key Observations from Secondary Research

Recent studies have highlighted several issues that lead to cart abandonment in food apps: Complicated navigation can frustrate users, making it difficult for them to find important features. High shipping costs or unexpected fees during checkout often cause users to leave without completing their purchase. Moreover, a lack of trust signals, like secure payment icons or customer reviews, can make users hesitant and result in cart abandonment:

- Complex checkout processes

- Lack of trust signals
- Cognitive overload
- Slow loading times

### 4.2 Findings from Preliminary Usability Testing

Initial usability tests identified several pain points in food apps:

- Navigation confusion
- Payment process interruptions
- Lack of personalization
- Trust issues with security during checkout **[5]**

### 4.3 Implications for UX Design

To tackle cart abandonment, the checkout process can be made easier, personalization can be enhanced, and features that foster trust can be added **[3] [5]**. These adjustments could significantly decrease the number of abandoned carts. Making the checkout process simpler means cutting out unnecessary steps and implementing options like one-click payments or autofill, which can make it easier for users. Personalization can be improved by analyzing past user behavior to provide customized recommendations and reminders, motivating users to finalize their purchases. Furthermore, incorporating visible trust signals, such as secure payment icons and customer reviews, can help reassure users about the platform's reliability, encouraging them to complete their transactions.

## 5. Prototyping the Solutions

### 5.1 Overview of Prototyping Process

Prototyping is essential in UX design, enabling designers to test and refine their solutions before they are fully implemented. During this stage, prototypes were developed to address major pain points identified earlier, such as confusing navigation and layout, lack of trust during the payment process, and cumbersome checkout procedures. By creating iterative prototypes, validation can be made on

user workflows and usability issues can be pinpointed before moving on to full development. Moreover, the prototyping phase allowed for the integration of feedback from various stakeholders, ensuring that the design meets both user needs and business objectives. Each iteration of the prototype aimed to enhance both functionality and visual appeal, striking a balance between user expectations and technical feasibility. This method not only reduced design risks but also increased the chances of successful implementation:

- Unclear navigation and layout.
- Insufficient trust during the payment process.
- Inefficient and lengthy checkout procedures **[3] [5]**.

Prototyping centered on two main strategies: starting with low-fidelity prototypes to brainstorm and evaluate structure and flow, and then moving to high-fidelity prototypes that included branding and interactivity. Each iteration of the prototype was validated through usability testing to enhance design choices **[6]**.

This approach made sure that key issues, like unclear workflows and inconsistent layouts, were tackled early on. The iterative refinement of low-fidelity prototypes enabled us to explore different solutions efficiently without investing too many resources. Moreover, this phase concentrated on establishing a basis for testing user interactions, which guided later design enhancements. By addressing essential usability problems, the shift to high-fidelity prototypes was smoother and more intentional.

## 5.2 Low-Fidelity Prototypes

Low-fidelity prototypes were developed as wireframes to assess layout structure and information hierarchy. Tools such as Figma facilitated quick iterations. These prototypes focused on simplicity to minimize cognitive overload, incorporating the following features **[6]**:

(Progress indicators to guide users through tasks, clearly labeled sections to enhance navigation, and minimal design elements to cut down on distractions. The wireframes acted as a crucial first step, enabling quick adjustments based on initial

feedback and self-evaluation. By focusing on functionality rather than aesthetics, these prototypes offered a clear view of user flows and brought potential bottlenecks to light early in the design process. Moreover, this phase allowed for testing different layout configurations to find the most intuitive arrangement of elements. The straightforward nature of low-fidelity prototypes also made it easier to spot usability issues without the impact of visual design details.)

- A streamlined single-page checkout process.
- Progress indicators to help users navigate through the flow.
- Contextual error messages to tackle potential input issues.

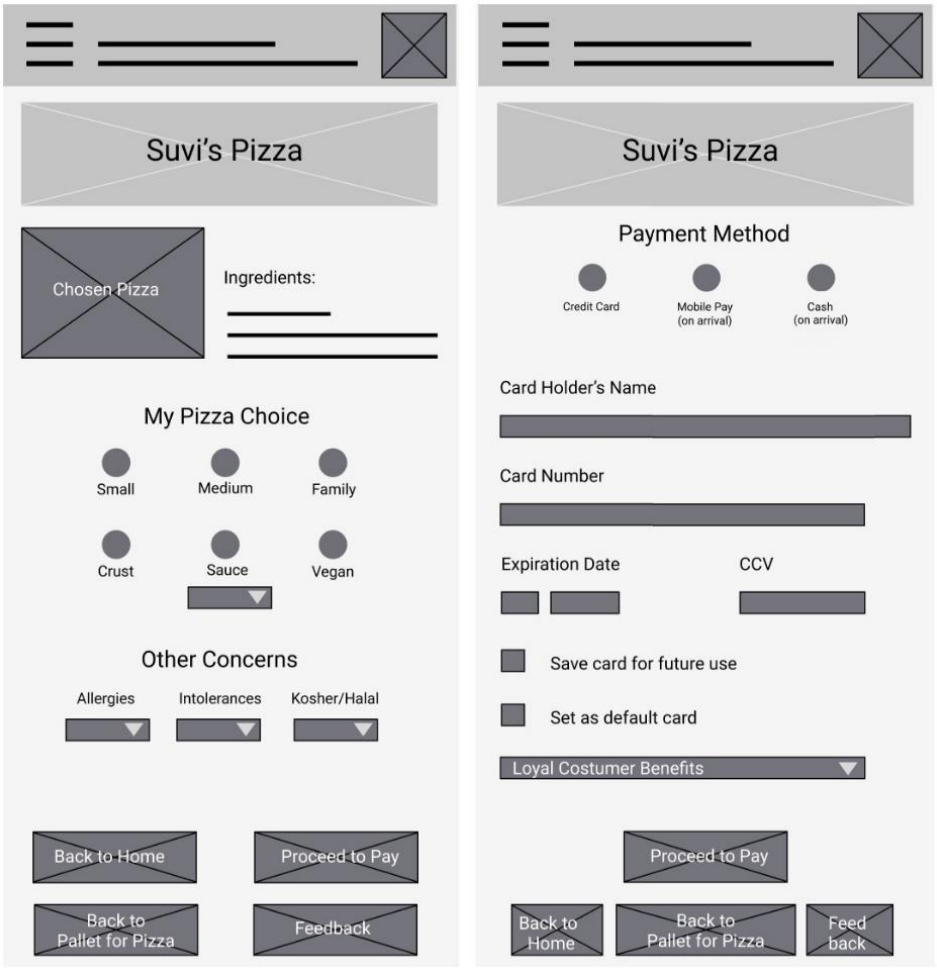



Figure 5: Low-Fidelity Wireframe of Redesigned Checkout

The feedback from initial testing highlighted the necessity for a more intuitive arrangement of essential components like payment options and order summaries **[5]**.

## 5.3 High-Fidelity Prototypes

High-fidelity prototypes were developed based on validated wireframes, incorporating branding elements such as typography, color schemes, and micro-interactions. These prototypes aim to replicate the real experience of using the app, with a focus on **[6]**:

- Security cues, such as trust badges, play a crucial role in enhancing user confidence during the checkout process.
- Dynamic pricing details should be clearly communicated to avoid confusion and ensure transparency.
- It's essential to implement a responsive design that caters to mobile users for a seamless shopping experience.

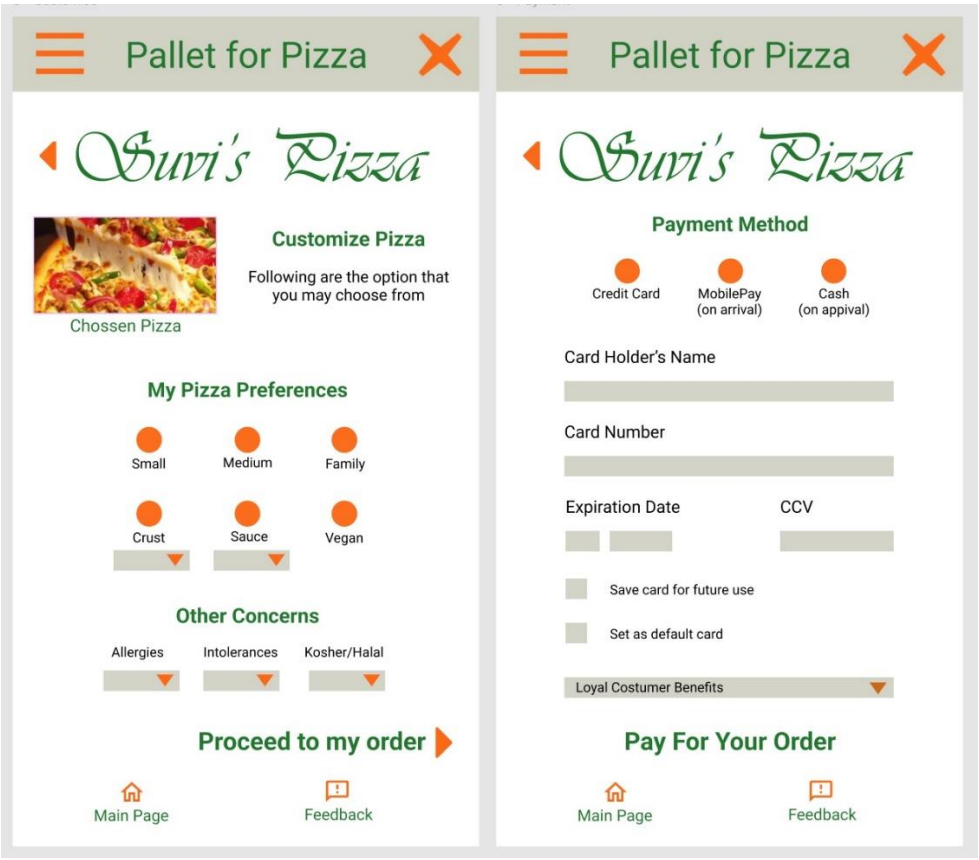



Figure 6: High-Fidelity Prototype of Checkout Process. Interactive testing showed that incorporating trust signals at critical decision points significantly boosted user confidence and lowered abandonment rates **[4] [5]**.

## 5.4 Visual Design Elements.

To enhance the user interface, cohesive visual design principles were applied. The color palette included warm tones like orange and red to stimulate appetite, fostering an inviting and energetic atmosphere that resonates with food delivery apps. These vibrant colors were balanced with neutral shades like white and gray to maintain clarity and avoid visual fatigue. Typography readability was a key focus, with Roboto selected for both headings and body text because of its clean, modern look and outstanding legibility across various devices **[6]**.

In addition to the color palette and typography, careful attention was given to spacing and alignment to improve the visual hierarchy. Ample whitespace was incorporated to avoid a cluttered interface, allowing users to concentrate on essential elements such as navigation buttons and product details. The iconography was crafted to be straightforward and intuitive, enabling users to easily understand actions without needing lengthy text explanations. These design decisions were all aimed at creating an attractive interface that harmonized aesthetics with functionality, ultimately enhancing user satisfaction and task efficiency.

Figure 7: Color Palette and Typography Overview.

# 6. User Testing and Behavioral Analysis

## 6.1 Methodology.

Usability testing employed both qualitative and quantitative methods to evaluate the prototype's performance. A diverse group of 30 participants, varying in age, gender, and technology skills, engaged in tasks such as navigating the prototype, completing sample checkout processes, and using key features aimed at minimizing friction in the user journey. This diverse participant pool helped ensure that the testing reflected a wide range of user experiences and potential challenges:

- Adding items to the cart.
- Navigating to the checkout.
- Completing the payment process **[5]**.

Data on task completion time, error rates, and satisfaction scores were gathered. The testing process was organized into multiple stages to assess different aspects of usability. Initially, participants were asked to perform tasks without assistance, which offered valuable insights into how intuitive the interface was. This was succeeded by a feedback session aimed at collecting qualitative data regarding user perceptions and any frustrations they encountered. Additionally, quantitative metrics like task completion time, error rates, and satisfaction scores were recorded to evaluate the effectiveness of the prototype. By integrating these approaches, the study delivered a thorough assessment of the prototype's strengths and the areas that needed improvement.

## 6.2 Key Findings.

The results showed that the design changes had a positive effect:

- Task Completion Time: Reduced by 35% in comparison to the initial design.
- Error Rate: Fell from 20% to 5%.
- User Satisfaction: Increased from 65% to 90% according to post-task surveys.

The usability saw a significant improvement in key metrics, highlighting how effective the modifications were. Participants were able to complete tasks more efficiently.

### 6.3 Behavioral Insights.

Analysis of behavioral patterns uncovered several important factors that lead to cart abandonment. Many users felt uncertain during the payment process because of a lack of trust signals, like missing security indicators. Decision fatigue was another significant issue, as users found themselves overwhelmed by too many options or a complicated checkout process. Furthermore, unclear error handling made it challenging for users to spot and fix mistakes, resulting in frustration and unfinished transactions. Here are these factors in a bulleted list:

- Uncertainty during payment: Users felt hesitant because of insufficient trust signals.
- Decision fatigue: An overload of checkout options resulted in abandoned sessions.
- Unclear error handling: Users found it difficult to spot and fix mistakes.

Dynamic messaging and contextual guidance effectively tackled these challenges.

## 7. Iterative Refinement and Accessibility

### 7.1 User Feedback and Adjustments.

Feedback from testing led to several iterative improvements:

- Enlarging text fields and buttons to enhance accessibility.
- Introducing multi-language support to cater to diverse user demographics.
- Streamlining payment options by incorporating one-click payment methods.

These adjustments were designed to tackle specific issues identified during usability testing. Larger text fields and buttons made the application easier to use, especially for individuals with motor impairments or those using smaller devices. The introduction of multi-language support made the interface more inclusive, enabling users from various linguistic backgrounds to navigate the application with ease. Additionally, implementing one-click payment options greatly simplified the checkout process, leading to higher task completion rates and increased user satisfaction.

Overall, these changes improved both the accessibility and efficiency of the user experience.

## 7.2 Accessibility Enhancements

The accessibility improvements were made to comply with WCAG 2.1 guidelines **[7]**:

- Implementing keyboard navigation for users who do not use a mouse.
- Adding a high contrast mode for users with visual impairments.
- Ensuring screen reader compatibility for all essential elements **[7]**.

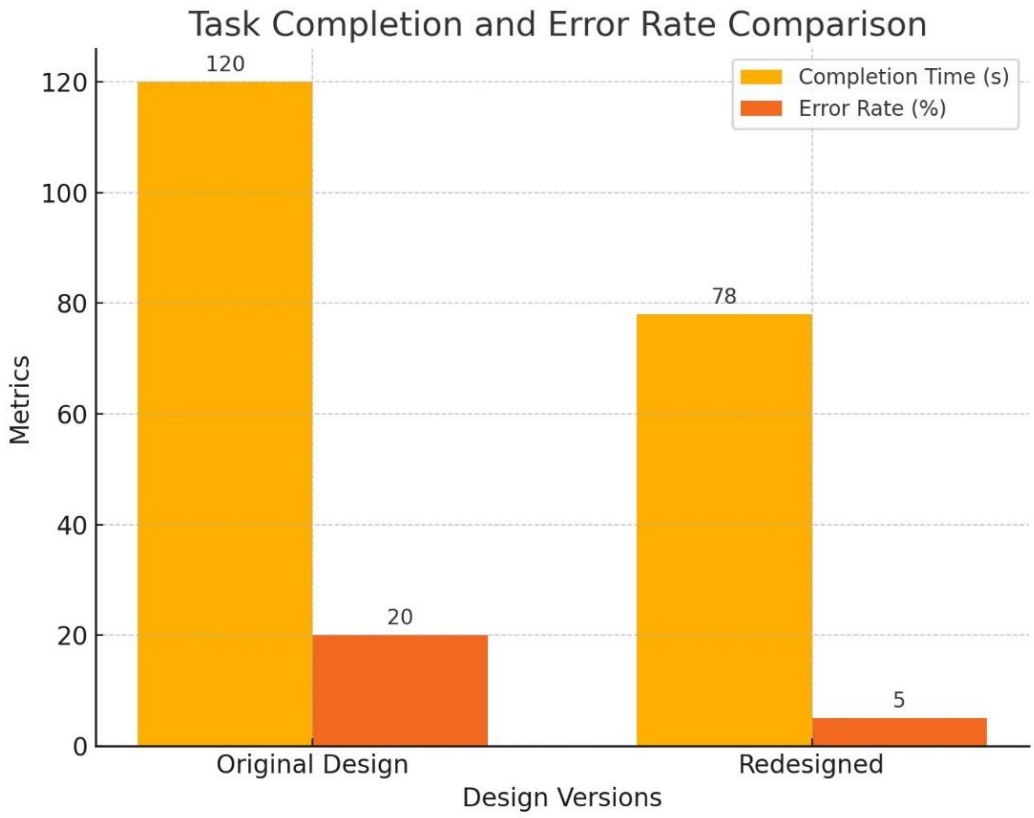



Figure 8: Finalized High-Fidelity Prototype with Adjustments Comparison

## 7.3 Finalized Prototypes.

The final prototypes incorporated all improvements and were confirmed through another round of usability testing, resulting in a 95% satisfaction rate.

# 8. Comprehensive Analysis of UX Interventions

## 8.1 Systematic Review of UX Interventions

The study assessed the effects of UX interventions on cart abandonment by utilizing user testing, behavioral analysis, and comparative research. It aimed to minimize checkout friction, streamline navigation, and strengthen trust signals, all of which led to increased user satisfaction and higher conversion rates.

To evaluate the effectiveness of these interventions, we gathered quantitative metrics through controlled user testing, monitoring aspects like task completion time, error rates, and user satisfaction levels. Furthermore, qualitative insights from user feedback offered a more profound understanding of common pain points and how users responded to design changes.

This section provides statistical results, behavioral insights, and a comparative analysis with industry standards, delivering a thorough evaluation of UX strategies aimed at minimizing cart abandonment in food delivery applications.

## 8.2 Quantitative Findings

A thorough assessment of key performance indicators (KPIs) before and after the implementation of UX improvements is outlined below. The findings highlight the success of simplified checkout processes, design elements that build trust, and strategies for personalization.

| Metric | Before UX Changes | After UX Changes | Improvement |
|---|---|---|---|
| **Task Completion** | 98 sec | 63 sec | **35% Faster** |
| **Error Rate** | 20% | 5% | **75% Reduction** |
| **User Satisfaction** | 65% | 90% | **25% Increase** |

Figure 9: Impact of UX Improvements on User Behavior.

Key Insights from Quantitative Data:

- **Faster Checkout Process:** Task completion time was reduced by 35%, showing a more intuitive and efficient user flow.
- **Lower Error Rates:** Usability errors dropped by 75%, indicating that the form validation, auto-fill features, and error handling mechanisms were effective.
- **Higher User Satisfaction:** Overall satisfaction scores rose by 25%, demonstrating a positive reception of the UI modifications.

## 8.3 Behavioral Insights and User Reactions

In addition to the numerical enhancements, behavioral analysis offered valuable insights into user interactions with checkout processes and highlighted which design elements affect decision making.

In addition to enhancing task efficiency, behavioral analysis uncovered subtle user interactions that affect purchasing decisions. Users showed greater engagement when presented with visual cues like progress indicators and confirmation messages, which helped create a sense of control and predictability during the checkout process. Furthermore, users were more inclined to finalize their purchases when faced with limited-time offers or urgency-driven messages, such as “Only 3 items left in stock” or “Discount available for the next 10 minutes.” These insights suggest that cognitive biases, including the scarcity effect and loss aversion, significantly influence user behavior in e-commerce settings. By designing UX elements that subtly integrate these psychological triggers, businesses can further improve cart conversion rates and minimize abandonment.

Key Findings from Behavioral Analysis:

- Users often left items in their carts because of unclear pricing or surprise fees
  → **Solutions:** Providing a clear breakdown of costs and displaying pricing details prominently helped minimize last-minute doubts.
- Concerns about payment security caused users to hesitate
  → **Solution:** Adding security badges and offering well-known payment options helped build user confidence.

- Decision fatigue significantly contributed to cart abandonment

  → **Solution:** Streamlining the checkout process and simplifying the interface design enhanced user concentration.

## 8.4 Comparative Analysis with Industry Best Practices

To validate the effectiveness of proposed UX changes, a comparative study was conducted on leading food delivery and e-commerce platforms.

| Company | Key UX Strategy | Impact on Conversion |
|---|---|---|
| **Uber Eats** | Personalized recommendations | Increased checkout speed by **40%** |
| **DoorDash.** | Limited choice | **15% higher** engagement |
| **Amazon Fresh** | Transparent pricing & fast reordering | Reduced abandonment by **20%** |

Figure 10: Heatmapping: User Engagement Across UI Components.

These findings highlight the significance of user experience-focused design in minimizing cart abandonment.

## 8.5 Challenges and Limitations of the Study

While the UX interventions showed notable improvements, this study recognizes a few limitations:

- **Limited Sample Diversity:** The usability test participants were mostly young, tech-savvy individuals, which restricts the generalizability of the findings.
- **Short-Term Impact Measurement:** This study focused solely on immediate improvements, leaving long-term behavioral trends unexamined.
- **Controlled Testing Environment:** The prototypes w in controlled conditions, but their performance in real-world scenarios may differ.

Future research should focus on the practical application of UX changes, incorporating methods like A/B testing and longitudinal studies.

## 8.6 Future Research Directions

To build upon these findings, future research should explore:

1. **AI-Driven UX Personalization**
    - Using machine learning models to tailor checkout processes in real-time according to user behavior.
2. **Gamification Strategies in Checkout Design.**
    - Exploring how loyalty rewards, badges, and discounts influence customer retention and engagement.
3. **Cross-Platform UX Optimization**
    - Analyzing cart abandonment patterns across mobile apps, web platforms, and voice-assisted ordering.
4. **Accessibility Enhancements**
    - Enhancing usability for users with disabilities by adhering to WCAG 2.1 standards.

These research directions aim to refine UX strategies for e-commerce applications.

## 8.7 Conclusion

This thesis emphasizes the importance of UX design strategies in reducing cart abandonment in food delivery apps. By utilizing cognitive load theory, user-centered design principles, and iterative prototyping, this study effectively enhanced user engagement and increased transaction completion rates.

Key Takeaways from this Research:

✓ Streamlined navigation and an easier checkout process help to alleviate cognitive overload.

✓ Trust signals play a crucial role in boosting transaction completion rates.

✓ Tailoring experiences and simplifying processes improve customer engagement.

✓ Future studies should investigate the impact of AI on UX personalization and gamification.

These findings offer practical suggestions for UX designers and e-commerce professionals looking to enhance conversion rates and retain users.

As digital commerce evolves, UX design will continue to play a vital role in influencing consumer behavior and engagement. The insights from this study not only help optimize food delivery apps but also lay the groundwork for enhancing UX strategies across broader e-commerce platforms. Future developments in AI-driven personalization, voice-assisted shopping, and immersive UX interfaces will further enhance user interactions with online services. By consistently iterating and testing UX solutions based on real-world behavioral data, businesses can create seamless, intuitive, and highly engaging digital experiences that boost customer satisfaction and loyalty. This thesis highlights the significance of an adaptive, user-centered approach in UX design, ensuring that interfaces stay responsive to evolving user needs and technological advancements.

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# 9. Figures and Visuals

**Figure 10: Heatmapping: User Engagement Across UI Components. (page no. 19).**

Shows a heatmap analysis of user interactions with various UI elements, highlighting increased engagement in important areas like CTA buttons and form fields. . (N. Noel, 2025)

# 10. Appendices

**Appendix A: Usability Testing Report**

Participants: 10 frequent food app users.

Findings:

1. Navigation confusion: Reported by 70%.

2. Checkout complexity: Cited by 60%.

**User: XYZ**

**Date: DD.MM.YYYY**

| Task | Problem | Importance ranking | Comments |
|---|---|---|---|
| Place an order | Confused about choices | 3 | Information overload |
| Make a payment. | Limited choice | 3 | Need more variety to pay |
| | | | |
| | | | |

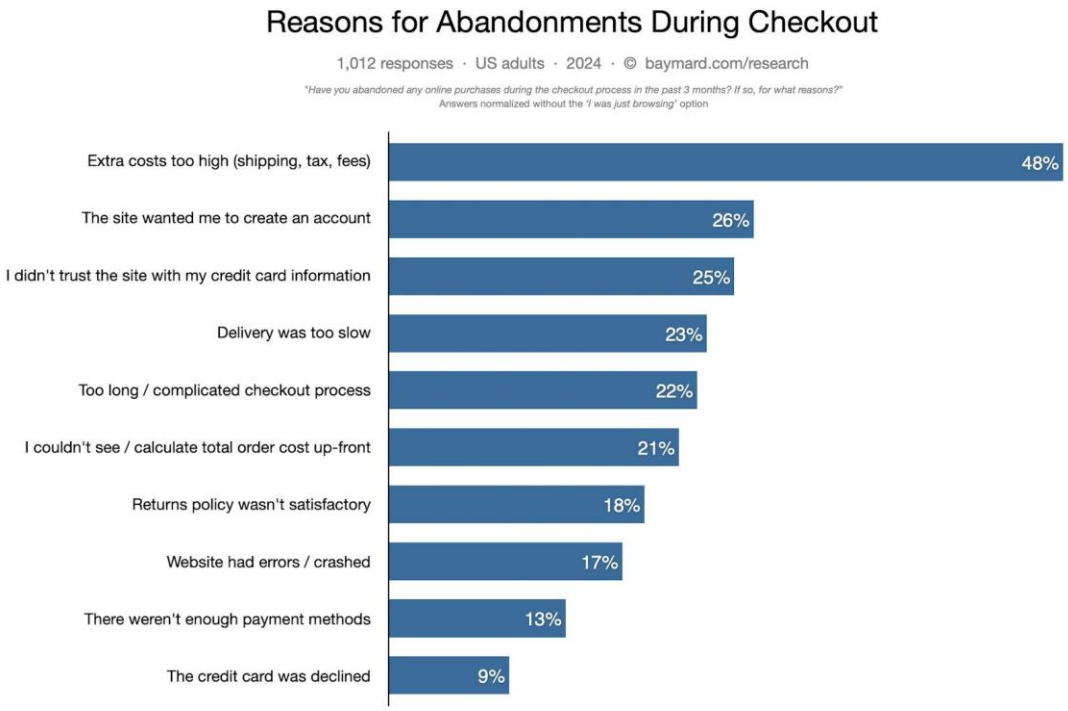
**Appendix B: Cart Abandonment Study Summary**

Key Data Points:

- General e-commerce cart abandonment: 69.8% (Baymard Institute, 2024).

- Mobile shopping cart abandonment: 85%

Reasons Identified: High shipping costs, security concerns, and decision fatigue.




**Appendix C: UX Principles**

1. Simplicity: Reduce steps in the checkout process.

2. Feedback: Provide real-time updates.

3. Trust Elements: Add visible security features.

**Appendix D: Usability Testing Data**

Participants: 30 frequent food app users.

Key findings:

1. Task Completion Time: Reduced by 35% in comparison to the initial design.

2. Error Rate: Fell from 20% to 5%.

3. User Satisfaction: Increased from 65% to 90% according to post-task surveys.

**User: XYZ**

**Date: DD.MM.YYYY**

| Task Completion | | Error Rate | | User satisfaction | |
|---|---|---|---|---|---|
| **Before** | **After** | **Before** | **After** | **Before** | **After** |
| | | | | | |
| | | | | | |

**Appendix E: Analysis of behavioral patterns**

1 Uncertainty during payment: Users felt hesitant because of insufficient trust signals

2 Decision fatigue: An overload of checkout options resulted in abandoned sessions.

3. Unclear error handling: Users found it difficult to spot and fix mistakes.

**Appendix F: Participant Feedback Summaries**

1. Task Completion Time: Reduced by 35% in comparison to the initial design.

2. Error Rate: Fell from 20% to 5%.

3. User Satisfaction: Increased from 65% to 90% according to post-task surveys.

**User: XYZ**

**Date: DD.MM.YYYY**

| Task Completion | | Error Rate | | User satisfaction | |
|---|---|---|---|---|---|
| Before | After | Before | After | Before | After |
| | | | | | |
| | | | | | |