

# User Research: ReserveOut Mobile Application

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## Abstract

In this study, we propose a recommendation a redesign of existing restaurant reservations mobile application ReserveOut. Consumers use smartphone apps for finding restaurants, making reservations, and getting reviews and how to use them. As a result, the types of restaurants recommend service apps are increasing, and various contents are being newly added. This Research contains qualitative and quantitate user research methods, and insights and ideas for a redesign.

*Keywords:* restaurant reservations, delivery, eating out, UX research, user interview, user survey

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# 1. Introduction

Recent advances in information technology have led to the explosive growth of many apps because of the speed, portability, and accessibility of smartphone media, which turned out to be a progressive digital tool to appease the enjoyment and satisfaction of food and visiting restaurants. Consumers who enjoy eating out will visit restaurants online at any moment using restaurant-related smartphone app and make reservations. These restaurant recommendation service apps are convenient because users can easily get access and information on various local restaurants. From the user's point of view, they can get information on phone numbers, reviews, discount information, food menus and directions immediately through their smartphones. [3]

Restaurant reservations can take a variety of forms, from verbal agreements, such as a telephone request to reserve a restaurant table for a specific party size on a particular day, to conditional contracts that impose terms and penalties on the customer for cancellation or reneging. Restaurants use reservations to smooth demand, optimize capacity, and to minimize queues, which detract from the customer experience. Booking a restaurant reservation through the convenient app is by far the best solution for both the consumers and restaurateurs. [1] Online reservations make restaurants more accessible to customers and assist in attracting additional customers. Third-party vendors also provide customers with information on multiple restaurants, and customers often make reservations at restaurants that were previously unfamiliar to them. This additional distribution channel can help restaurants gain incremental business.

Online reservations can also help a restaurant provide a better and more consistent service experience to its guests since each time a reservation is made, the process is the same. Telephone reservation experiences may vary according to the training and commitment of the person taking the reservation.

Online reservations provide customers with the following benefits: increased convenience, increased control, and a more consistent and reliable user experience. Service convenience is related to customers' desire to preserve their time and effort, therefore an increase in convenience is associated with an increase in satisfaction. Online reservations increase convenience by giving customers information about reservation availability and by allowing them to make their reservation at any time and from anywhere. When customers perceive that they have substantial control over a service encounter, they are more likely to be satisfied with that encounter. In a reservation context, customers can exert control by choosing the time they make their reservation, by choosing the restaurant, and by selecting the time of the reservation. Online reservations may give customers more perceived control over the reservation process. The process of making an online reservation is typically the same each time and customers typically receive an email confirmation of their reservation. Service reliability has been shown to be a major component of perceived service quality. The online reservation system enables restaurants to expand their customer base while allowing customers to make reservations in a real-time environment. [2]

## 1.3 Motivation

The growth of the mobile app markets has made it popular among people to display and access relevant information about restaurants. The restaurant recommendation service apps can efficiently manage time and finances by making it easy for consumers to easily access the information they want anytime, anywhere.

The purpose of this study is to understand the major pain points users experience in using ReserveOut app and how these contribute to UX issues and low customer loyalty. I will be using usability testing to follow the user's experience of the app and the obstacles consumers encounter leading up to the point of making a reservation. I will also be using quantitative research techniques to better understand the customer's experience of the brand and the challenges and needs they face in making a reservation.

## **Objectives**

- Understand how users currently go about making reservations on the app
- Discover out how customers discover new restaurants
- Determine the best features for a restaurant booking platform
- Understand what actions customers take when making a restaurant reservation
- Learn about competitor apps customers are using to book reservations and get food delivery
- Evaluate pain points customers experience while using the app

## 2. Methods

### 2.1 Literature Overview

#### **Customers eating out behaviour in food consumption patterns**

The study conducted by the Department of Food Science and Service (Korea, 2021.), analysed the differences between groups of customers who prefer delivery food, and those who prefer the traditional practice of visiting a restaurant. The delivery service of companies is becoming an important means of consumption by adding convenience resulting in restaurants offering delivery services due to increased consumer demand. In the questionnaire, the survey respondents were asked to rate the use of delivery and visits, so that more than 50% of delivery purchases were made as delivery-preferred customers, and more than 50% of visited restaurant were made as visiting-preferred customers. The study of 201 participants found that taste, price and value, type of food, service, and nutrition are factors that influence the choice of restaurant when customers go eating out. The results showed that the group of customers who prefer to visit restaurants valued the atmosphere of the venue. While the customers who prefer delivery food valued the reputation of the restaurant and factors as quality of delivery service, responsiveness, accessibility, and capability. [6]

#### **Customer e-satisfaction and continued intention to reuse mobile food ordering apps**

This study of customer e-satisfaction of mobile food ordering services (Jordan, 2020.) examines the structural relationship between motivation, usefulness, price saving, time saving, online purchase experience, consumer attitude and behavioural intention. The aim of the study was to identify and examine the main factors predicting the e-satisfaction, and customers' intention to reuse food delivery services. The main results are based on structural equation modelling and support the role of online review, rating, tracking, performance expectancy, hedonic motivation, and price value on e-satisfaction and continued intention to reuse them. The required data was collected from a convenience sample size of 500 smartphone users who had already adopted and used food delivery platforms.

Location-based food delivery services are one of the highly novel systems that enable both customers and sellers to determine their precise location and find new restaurants. These services usually comprise several features, such as find a friend, route guidance, navigation bar, payment status, tracking map, and tracking order. The availability of these features could lead the customer to be more motivated to reuse such apps in the future. The role of hedonic motivation was found to positively shape customers' perceptions of the convenience and usefulness of online food delivery systems. by using these, a customer can access any restaurant at any time and on any day of the week, browse a wide variety of food options, collect information, and place their orders without needing to physically move. This, in turn, makes the customers' purchasing process much easier and simpler, and, accordingly, customers could be more willing to use such apps. MFOAs are especially important given such problems as traffic, car parking, and long waiting times at restaurants. Therefore, it could be argued that a customer is more likely to be satisfied and pleased about their experience of using food delivery app and see a high level of value in using such innovative apps. [7]

## 2.2 Heuristic analysis

Heuristics measure the usability of user interfaces and reveal insights that can help enhance product usability early in the development stage. The main reason I decided to do heuristics is to improve the UI and usability of the app.

ReserveOut app has good visibility status, it keeps the user informed on what's always happening. Especially when booking a table. It shows messages like *"We found you a table"*, *"Reserve now"* and *"completed"*. When a user makes a mistake with the booking, there is an easy option to either cancel or edit reservation. The edit option is very beneficial, because allows users to keep the same reservation, but change the time or the number of guests when possible. The reservation process is straightforward, however could benefit from a pop-up screen where asked *"are you sure you want to proceed with the reservation?"*. App provides users with an error message expressed in a clear way, describing the problem and offering a constructive solution. At registration if password doesn't satisfy required standards, it describes the problem, and presents an exclamation point if a field is empty. Consistent language and form are used thought the app, and word and phrases presented in a friendly way. Important actions and options are visible and accessible under the dropdown menu. The search options like sort and filter are present at the bottom of the page, and accessible to the user, while scrolling through restaurant options. However, they are not visible enough for first time users. The interface is clean and straightforward, allows the user can go through the app first without committing to a registration.

## 2.3 Persona

Maya Young is an ambitious young woman who works as a personal assistant. Her goals are to impress her boss and get a promotion, while also finding free time for nights out with her friends. Her frustrations include long waiting times to get a table and lack of information on vegetarian options and allergens. Going forward with the project I will use this persona to help me better understand the target audience and define users pain points.



Figure 1: User persona

## 2.4 Competitor analysis

Through competitor analysis I identified several key features for food reservation and delivery platforms. I determined each competitor's business size, product offering, unique value proposition, UX, first impressions, and accessibility features. The comparison gave me an idea of the features users would expect from a restaurant service app.

	Zomato	OpenTable	Just Eat	Tripadvisor
Website	<a href="https://www.zomato.com">zomato.com</a>	<a href="https://www.opentable.com">opentable.com</a>	<a href="https://www.just-eat.ie">just-eat.ie</a>	<a href="https://www.tripadvisor.com">tripadvisor.com</a>
Competitor type	direct	direct	indirect	indirect
Product offering	Table booking, delivery, in-app restaurant payments	Table booking, private dining, delivery	Delivery, pick up	Table booking, restaurant recommendations, hotel booking, car rentals, book a flight, travel & sightseeing recommendations
Business size	Large	Medium	Large	Large
Location	Developed in India, used in Asia, USA, Australia, south America and Europe (Italy, Ireland, Poland, Czech Republic)	Developed in USA, used in Australia, India, Europe	Developed in Netherlands, used in most countries in Europe, and also Mexico, Columbia and Brazil	Available in most countries
Unique value proposition	Platform that connects customers, restaurant partners and delivery partners, serving their multiple needs.	We love what can happen around the restaurant table. And since 1998 we've been committed to empowering that experience. Our story is one of human connection—among diners and restaurants, and between restaurants and their communities.	Just Eat is part of Just Eat Takeaway.com, a leading global online food delivery marketplace. The Company is focused on connecting consumers and restaurants through its platforms.	Tripadvisor, the world's largest travel guidance platform, helps hundreds of millions of people each month to become better travelers, from planning to booking to taking a trip.
UX - First impressions	+ Outstanding design + Good navigation + Developed and easy to use search filter	-- lacking help or about page -- Needs more filter and sort by options (only has browse by cuisine, explore the area) + Has a food menu and ratings of each dish	+ Extremely good search and sort by filter with many options suited for every need + Navigation menu with pictures + Delivery time and price featured on every restaurant option on homepage	+ Interactive map (with filters) + Sorted by preference (Michelin guide award, cheap eats, top restaurants) + Dietary options + Offers a list of features (takeout, private, accepts visa, full bar...) -- when click on menu it takes you to a browser homepage of a restaurant
Accessibility & features	• Can sort by kid friendly, live music, live sports screening, outdoor seating and more • Sort by your own price range • Offers 70+ cuisines to choose from	• Dress code • Parking • Payment options • Pricerange	• Allergen info • Opening times for delivery / pickup • Displayed prices of food and delivery • Delivery times	• Available in 22 languages • Dietary options & gluten free options • A list of features like wheelchair accessible, highchair available

Figure 2: Competitive analysis

## 2.2 User Interview

For the purpose of understanding our target audience, I conducted a user interview, to provide qualitative data that will contribute to understand user's pain points so we can alleviate them and improve overall UX experience. The objective was to determine how would a professional event planner benefit from our app. Participant was a 25-year-old woman, who works in a travel agency that specializes in organisation of congress events. We meet in her office for one-on-one in-depth user interview. I prepared a series of questions that are most likely to make the participant comfortable and actively engaged, while I gather valuable data for the study. I remained as neutral and unbiased as possible to keep the integrity of the interview. Through the interview I aimed to determine the nature of participant work, their everyday struggles, pain and gains, and how our target audience can benefit from the product and its features. [4, 8]



## Objective

- Identify what motivates people to make a restaurant reservation
- Determine what challenges people face while using booking platforms
- Understand how to make the experience easier

## Target audience

- Age 18 - 45
- Metropolitan area
- People who often eating out
- People who enjoy going to restaurants
- People who own restaurants
- People who make restaurant reservations as part of their job

## 2.3 User survey

To gather qualitative data and user insights we focused our survey questions to help identify users' pain points and discover the issues they're experiencing while using restaurant reservations and food delivery platforms. For the questionnaire we used online survey tool *Google forms*, distributed through social media, messaging services like *WhatsApp* and e-mail.

The survey has 22 questions, divided into categories for a specific part of the app. We start by asking about participants age and how often do they eat out, make reservations, order delivery and collect food. In this section we want to find out how big is the need for our product, and how implemented these services are in participants everyday life. Next section focuses on restaurant reservations, how do participants book restaurant reservations, which device do they use and their overall satisfaction with online booking. Through questions on food delivery, we intend to determine the most popular competitor apps, and if users prefer restaurants having the option to deliver. We also asked our users about food allergy, dietary restriction listing on the app, waiting times to get a table, and venue preference like live music or overcrowded exc., and finally is there any information that the existing apps don't offer that they would like to see. These questions focus on users' preference and accessibility. [11]

Schedule
<p><b>T - 5 days</b> Determine and write survey goals. Review research to create an average user and target audience.</p> <p><b>T - 5 days</b> Write down 10 questions to start. Review the questions with a few people. Rewrite as necessary and add more questions based on participants answers.</p> <p><b>T - 3 days</b> Find the best online survey provider and create a questionnaire. Test the functionality of a survey and review for mistakes before the final draft is done.</p> <p><b>T - 3 week</b> release the survey. Advertise on multiple platforms to reach as many participants as possible.</p> <p><b>T - 1 week</b> Remove the online survey. Do analysis and create a report. Present research findings and discuss on next team meeting. Discuss how to implement these in the app. Make notes for further research.</p>

*Figure 3: User survey schedule*

## Objectives

- Find out how customers discover new restaurants
- Determine how do they prefer to make a reservation
- Determine the best features for a booking platform
- Learn about competitor apps customers are using to book reservations and get food delivery

## 2.4 Usability testing

The following usability testing method involves testing and monitoring user behaviour as they interact with the product and complete a series of specific tasks. The main benefit and purpose of this usability testing is to be able to see how real users interact with the product, what problems they face and their thinking process. For this purpose, I encouraged the participants to talk aloud, describing the steps they take, the reasoning behind them, their experience and frustrations. [9]

Participants:

**Mark** is 32 years old and works as a security guard. His hobbies include video games and sports. He loves technology and rated himself as tech-savvy. He eats out at least once a week.

**Jemma** is an undergraduate chemistry student, and she just turned 24. She doesn't have a lot of free time and goes out to eat or orders delivery from the few places in her neighbourhood that she likes. She knows her way around the smartphone and has basic computer skills.

**Chloe** is 25 years old, and she works as a customer service representative. She likes going out, and discovering new restaurants, although most of the times she just orders delivery. She is not very good with technology but enjoys using a smartphone and mobile applications.

## 3. Results

### 3.1 User Interview

**Adriana**

Age: 25

Education: undergraduate degree in hospitality and tourism

Occupation: junior event planner in a travel agency

Tell me about your role at work.	Our office is responsible for coordinating all the details before and on the day of the event, entertainment, transportation, location, guest list, special guests, equipment, promotional material and more. We must ensure all part of the event go smoothly and our clients are happy and satisfied.
Where do you start?	My job includes conducting research, gathering information and negotiate contracts prior to closing any deals. To prepare event budgets and processing invoices, researching and booking of the venues. Organizing suppliers, caterers, staff...
What are some of the common problems you face?	Coordinating the client budget, hidden expenses such as room drop out charges, early-check-in charges for hotel and many more additional costs in venue bookings. Any last-minute changes are always difficult to deal with. Also finding an appropriate available event space within the client's timeframe and many more.
Can you describe the process of how you would make a restaurant reservation.	Most often we write a proposal that includes our budget, group number, requests, special requirements and send an email to a hotel, venue or a restaurant. Within few days, they get back to us with their offer and availability. We negotiate from there.
Are you aware that the ReserveOut app offers an easy way to find and book a restaurant reservation?  Would you ever use it in your private life?	I have never used a ReserveOut app, but I have used once or twice a similar app, to explore local offers. Although I have never made a reservation like that.  Most likely I'd use it in private life, if there was an app I liked. But I would still call the restaurant on the day to confirm.
What would keep you from using this product?	Our responsibility is great, because we are usually dealing with a large group of people, or important business clients and we need to consider that our actions reflect the agency's reputation. We cannot afford a bad client experience, so booking through a third-party service is too risky. We prefer to deal with venues directly.

What haven't I asked you today, that you think would be valuable for me to know?

Like I mentioned earlier agencies will always strive to deal with restaurants directly. It being more secure that way. The only reason I would consider using an app you are describing if I had complete trust in that app and I had open communication channel with the manager of the venue. And of course, a document or proof of our agreement.

### 3.1 Survey analysis

In-depth analysis from 76 responses indicates the following:

#### Finding a new restaurant

Our participants answered they would most likely find a new restaurant through their friends and family recommendations (64%), with social media being a close second choice (54%). These statistics tell us that we put a value on opinions of those around us and our peers. Our redesign would greatly benefit from a rating and review section, with the option to share on social media.

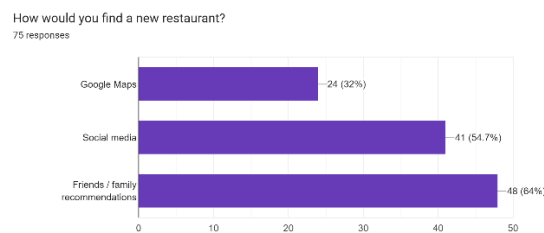


Figure 4: Survey question - How do you find new restaurants?

#### Users need for a booking app on the market

Intriguing is that even though most of the participants (66%) have never used an app to make a restaurant reservation, when asked about their preferred way of making a reservation, the majority (48%) answered booking application, with restaurant website, being a strong second choice (46%). These statistics clearly indicate a user's need for a restaurant booking service. Today's existing mobile booking apps are less known, or focus on a small target audience, for example a specific area. If given the choice users would choose a quick and convenient way of booking through an app.

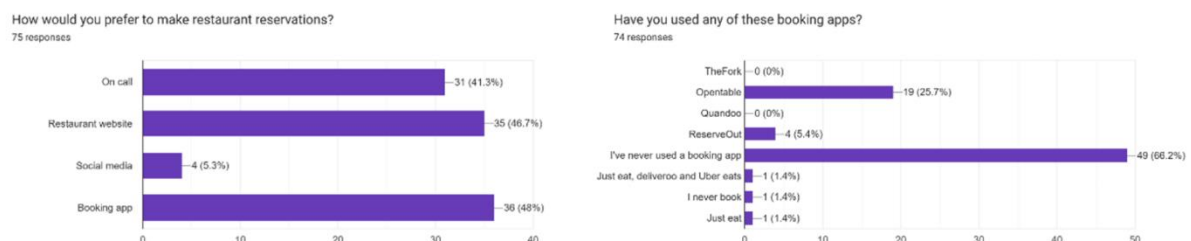


Figure 5: Survey questions - comparison

### 3.2 Usability data analysis

**Task:** use ReserveOut to book a reservation in a vegetarian restaurant this Saturday at 7:30 PM

Participant	Time	Satisfaction rating	Goal fulfilment	User comments	Observations
Mark	43 seconds	4/5  The beginning is a bit confusing, but the app gets better later	Task completed	"Which city do I go into"  "Why are these restaurants showing-up if they are unavailable?"	Homepage is confusing, and location unclear
Jemma	87 seconds	4/5  It's good, wasn't too hard to get a booking	Task completed	"Are these all cities available, or are there more?"  "Which date is this Saturday?"  "Why it won't allow me to search by food, okay here it is."	When choosing a date and time, participant didn't know which date is Saturday, because the app doesn't display names of the days of the week.
Chloe	96 seconds	3/5  Was confusing at times	Task failed	"It's not showing if I type in vegetarian"  "I don't think this search filter work properly"	Participant didn't manage to set the filter parameters, the button for "Appy filters" is at the top right corner and not visible enough. Task failed when the participant chooses a meat restaurant with one vegetarian option on the menu.

[10]

#### Average and standard deviation

$\mu$  – 75.33

$\sigma$  – 28.36

### Completion times

NORMINV (p,  $\mu$ ,  $\sigma$ )

NORMINV (0.025, 75, 28)

NORMINV (0.975, 75, 28)

95% of the user task completion times will be between about 20 seconds and 130 seconds.

### Probabilities of completion times

$\mu = 75.33$ ,  $\sigma = 28.36$ ,  $X = 85$

NORMDIST (X,  $\mu$ ,  $\sigma$ , 1)

NORMDIST (85, 75, 28, 1)

63.95% of the users will make a reservation within 85 seconds or less, and 36.05% of user would require more than 85 seconds. [12]

### Efficiency and effectiveness

N = 1, R = 3

$$\text{Time based efficiency} = \frac{\frac{1}{43} + \frac{1}{87} + \frac{0}{96}}{1 \times 3} = 0.01 \text{ goals/sec}$$

$$\text{Overall relative efficiency} = \left[ \frac{((1 \times 43) + (1 \times 87) + (0 \times 96))}{43 + 87 + 96} \right] \times 100 = 57\%$$

[13]

## 4. Discussion

From a research perspective, ReserveOut app requires in-depth redesign approach, to make it more user friendly and accessible. New system will allow users to quickly and easily find the information they need by selecting information that meets the needs and preferences.

### Insights

- Consumers value opinions of those close to them and their peers
- Improve accessibility by adding features section
- Users benefit from a well-designed search and sort filter for restaurant options
- Existing platforms lack information on allergens and dietary restrictions
- Loyalty points or a reward system for loyal customers would be beneficial

### Design ideas

- Present users with the choice to enable location or enter location manually
- Allow the user to proceed to the end of the reservation or purchase before registering
- Add option to share on social media
- Add option to share a menu with friends
- Add features section (example: wheelchair accessible, street parking)
- Interactive map with restaurant close by
- Make the filter icon easily noticeable and accessible
- Option to send an e-mail to the venue, or get a call back
- Option to add special request or requirements for reservations
- Confirm booking through e-mail and display confirmation message in the app
- Display an estimate price icon for every venue
- Display icons for available options for every restaurant (table booking, collections, delivery)
- Save restaurants under “favourites”

## 5. Conclusion

Online ordering food services platforms have been growing in popularity and have forever changed the restaurant business industry. These services allow for new opportunities, easier and more accessible food ordering and a new approach to restaurants.

While there are numerous platforms offering mentioned services, they mostly focus on providing one service, and on specific area. Through ReserveOut app redesign we are aiming to create a platform that will combine them, with an advanced search and filter system that improves search performance through personalization. New personalized recommendation system will enhance the satisfaction and create loyal customers.



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