

# User research synthesis

# Ethnographic Study

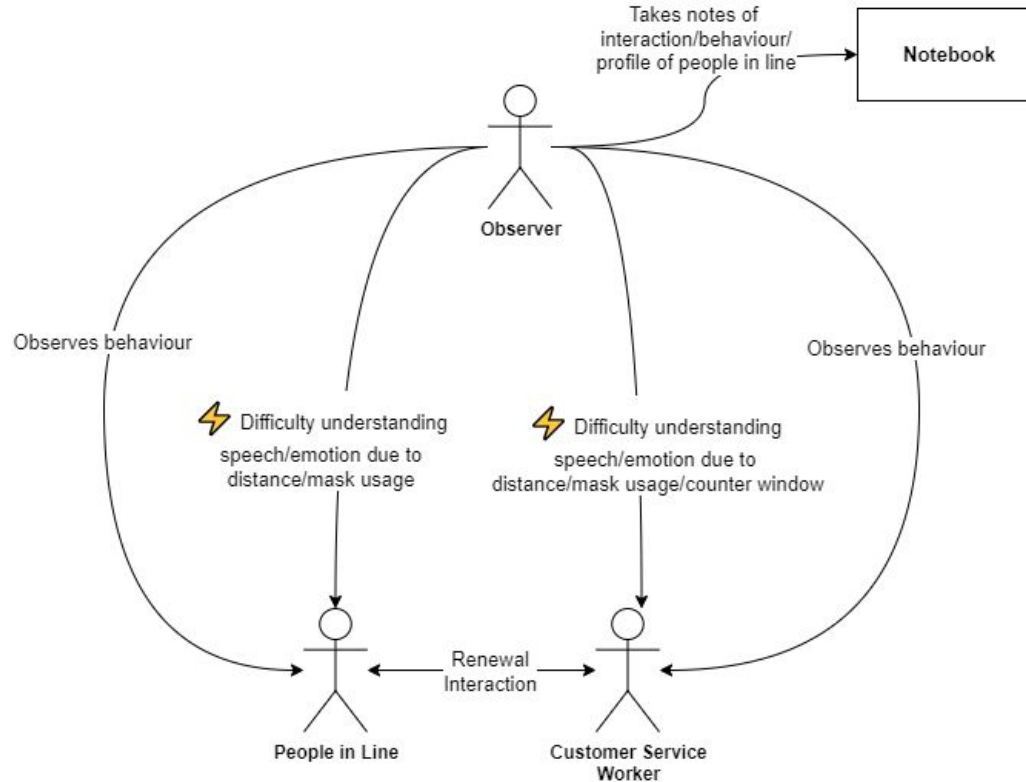
Tiago and João visited “Carris - Espaço Cliente Arco do Cego” on monday (13/12)

João took morning shifts (8h - 14h) and Tiago took evening shifts (14:15h - 18:40h)

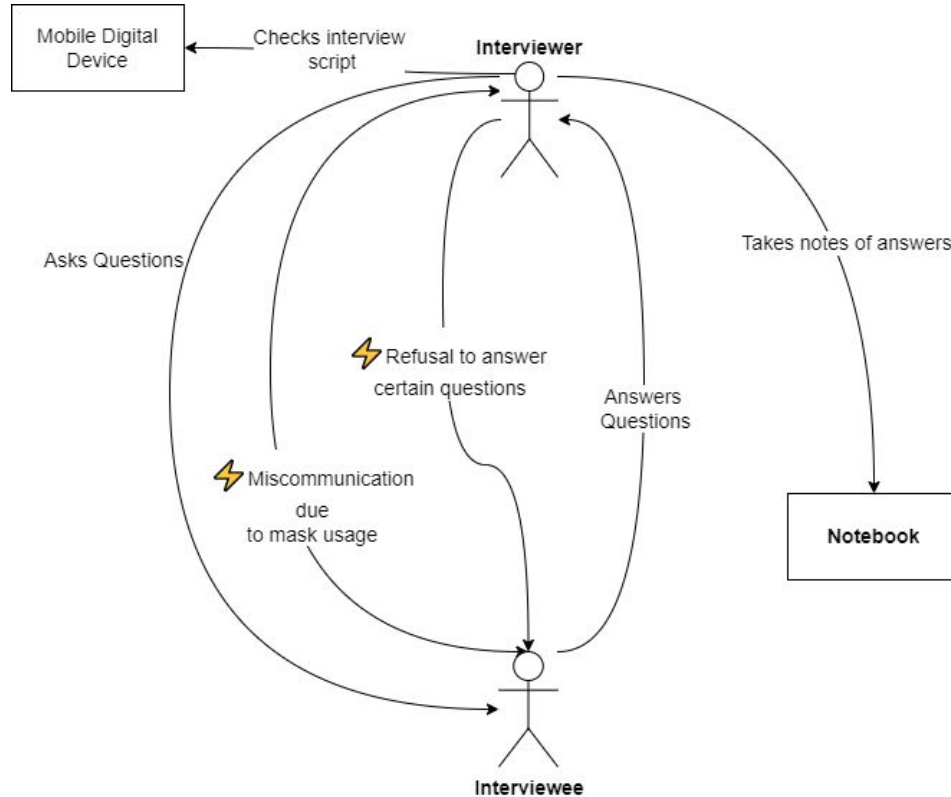
Most concurred hours:

- 8h - 9h
- 12h - 14h (lunch time)
- 17h - 19h

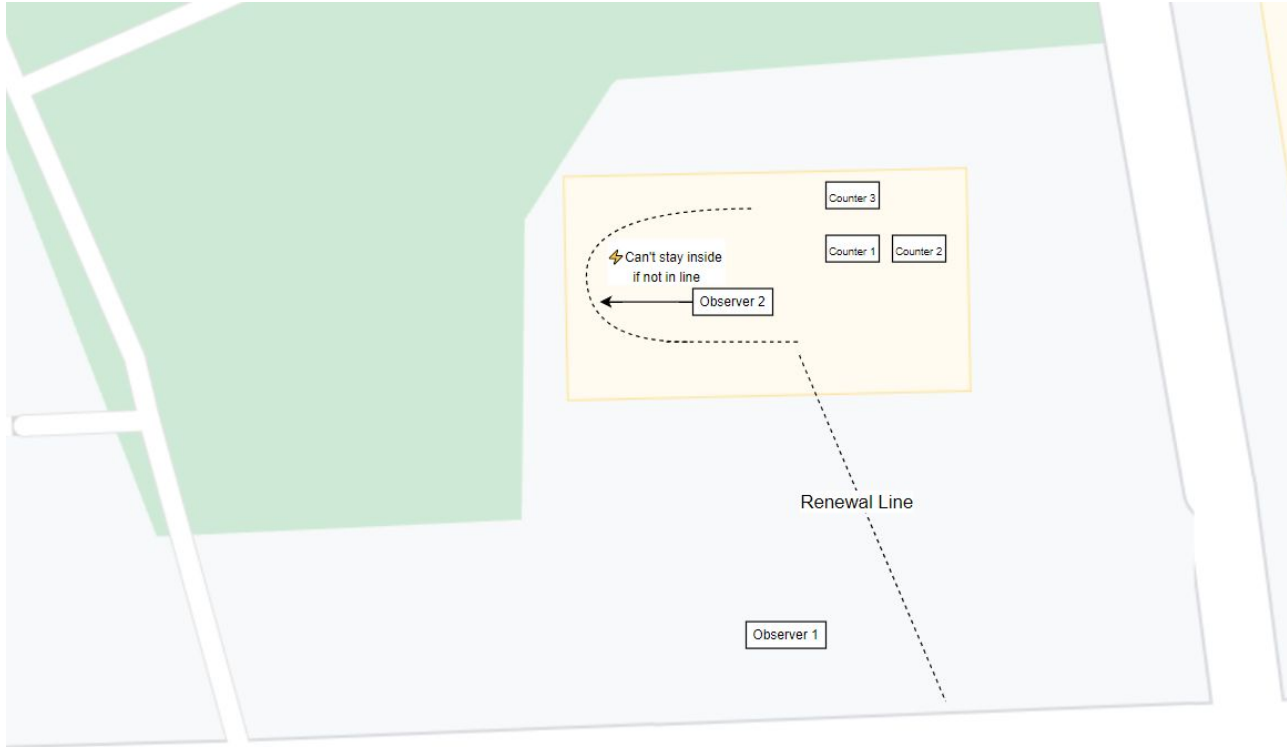
# Flow Model Observation



# Flow Model Interview



# Physical Model Observation



# Queue's Composition



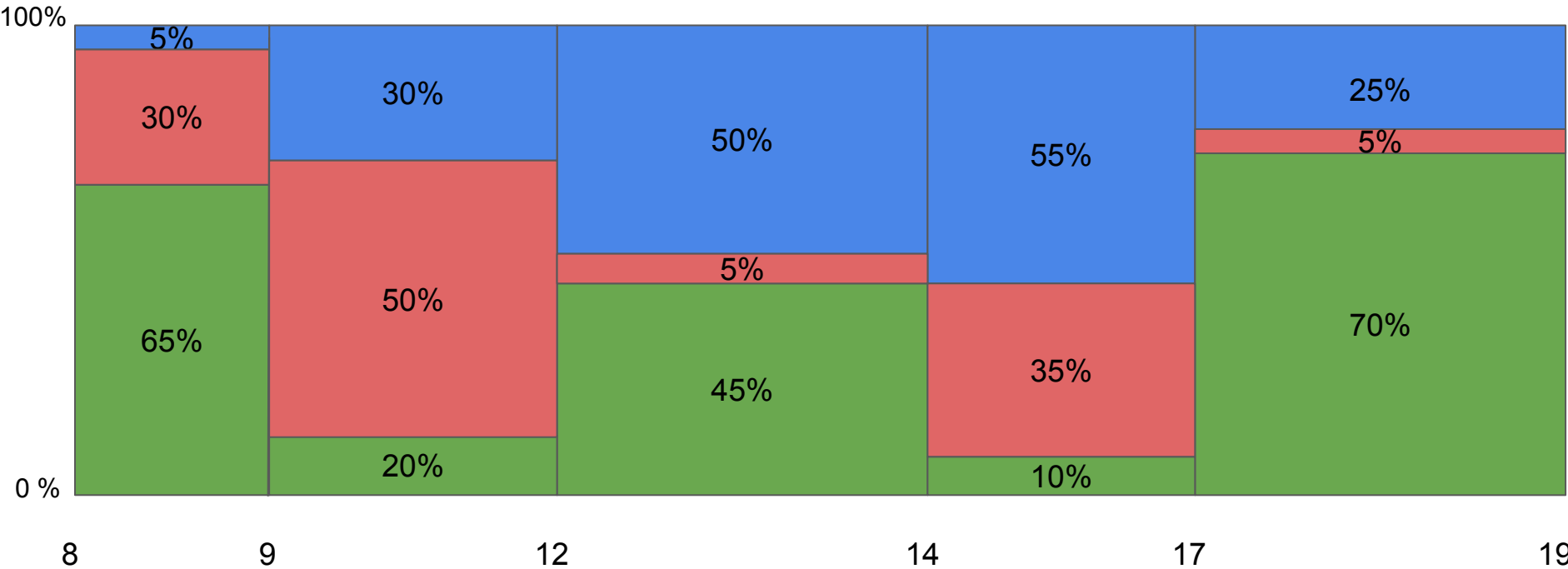
Student



Worker



Elderly



Collected Data

# Collected Data

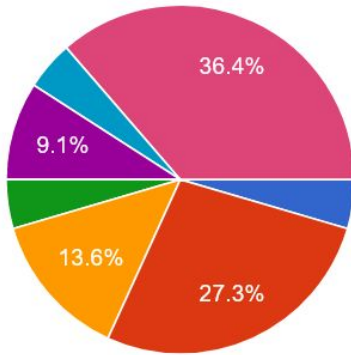
João and Tiago conducted a semi-structured interview where we asked people in line if they could answer our questions while they were waiting in queue

30 → 22

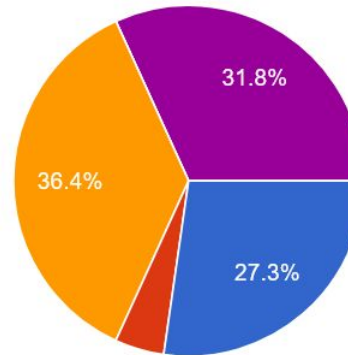


# User Interview Results - Demographics

Age

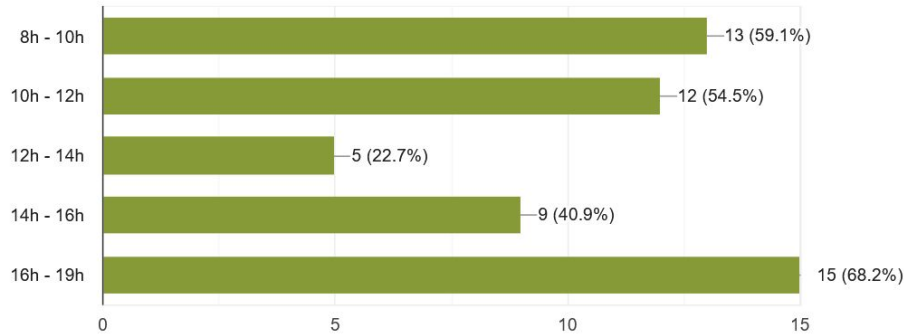


Occupation

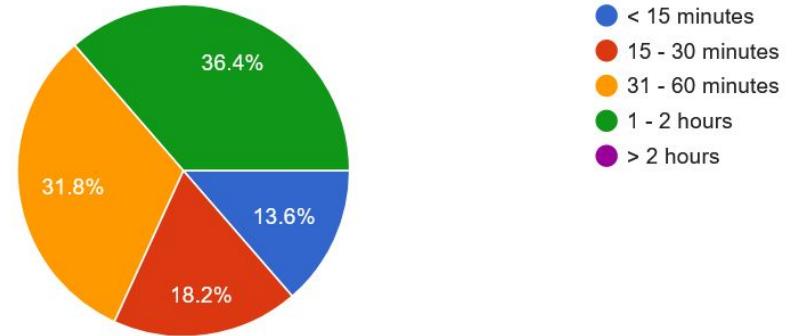


# User Ticket Renewal Experience - Time

## Time of Renewal

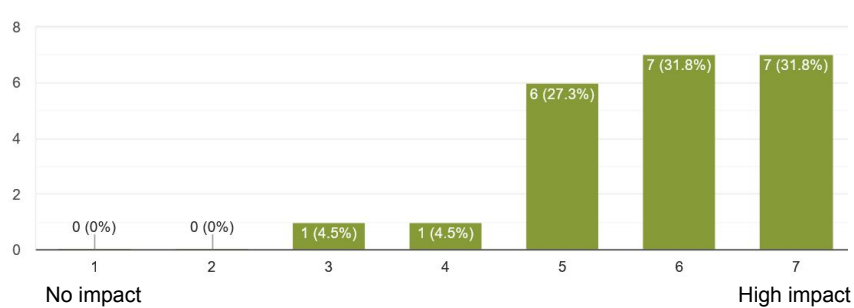


## Waiting Time

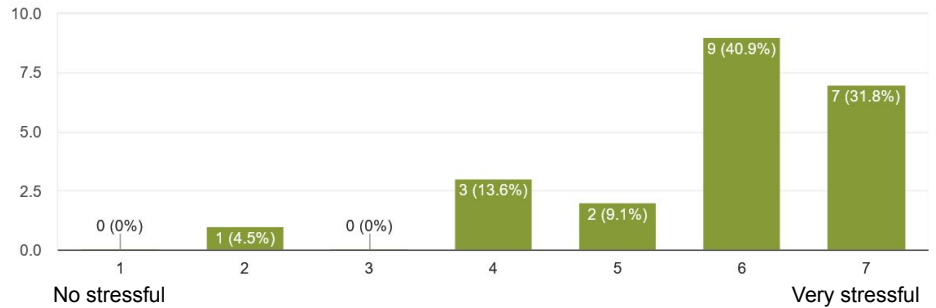


# User Ticket Renewal Experience - Impact and Stress

Impact on the day

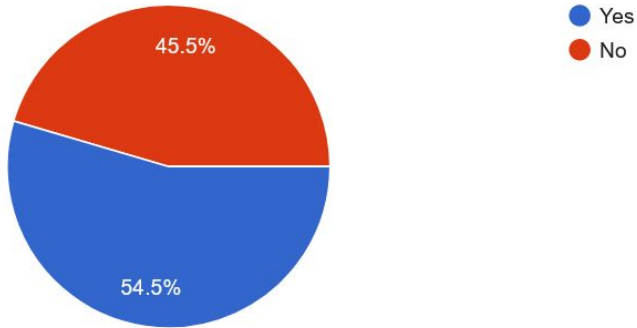


Stress induced by renewal

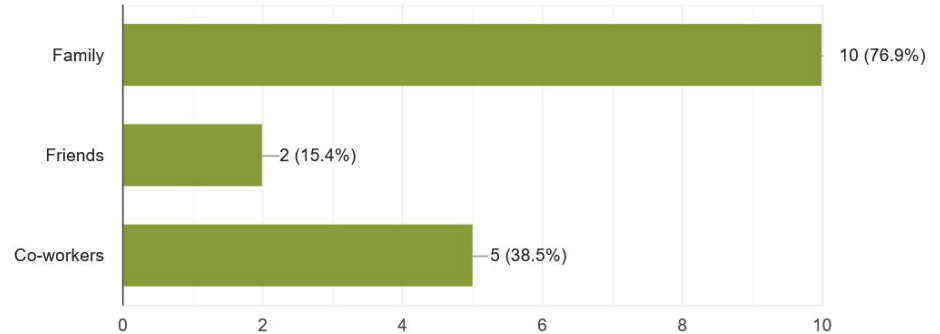


# User Ticket Renewal Experience - Social Impact

Does it affect other people?

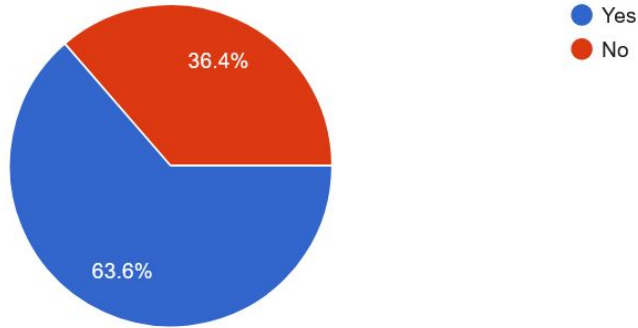


Who does it affect?

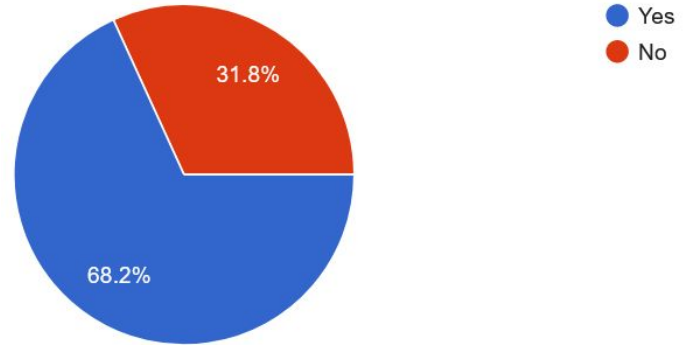


# User Ticket Renewal Experience - Planning

Comes in early to avoid waiting?

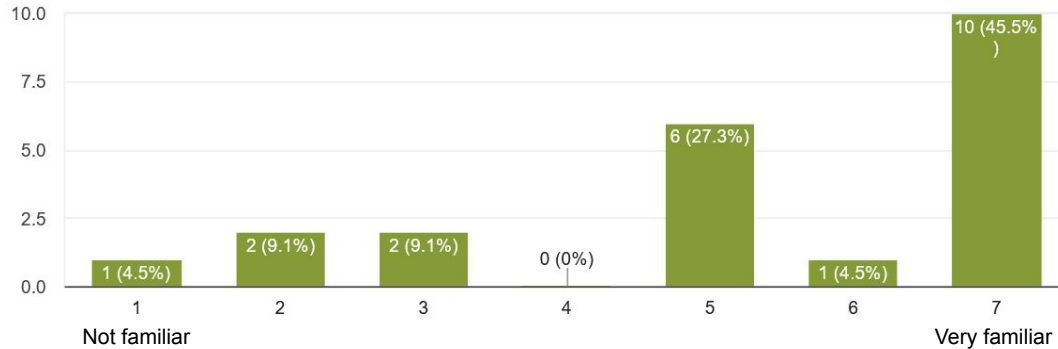


Plans day in advance to account for time lost?

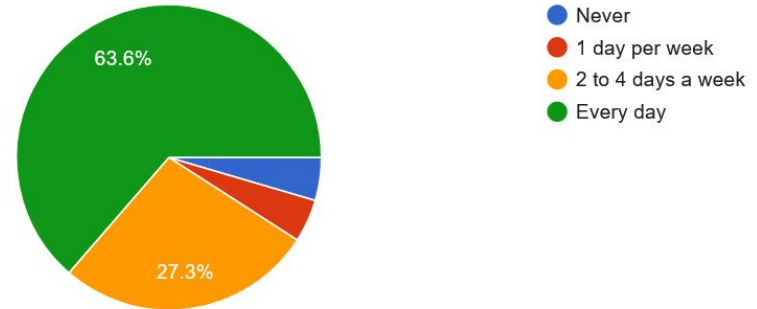


# Transportation Ticket Service App - Tech User Profile

## Familiarity with technology

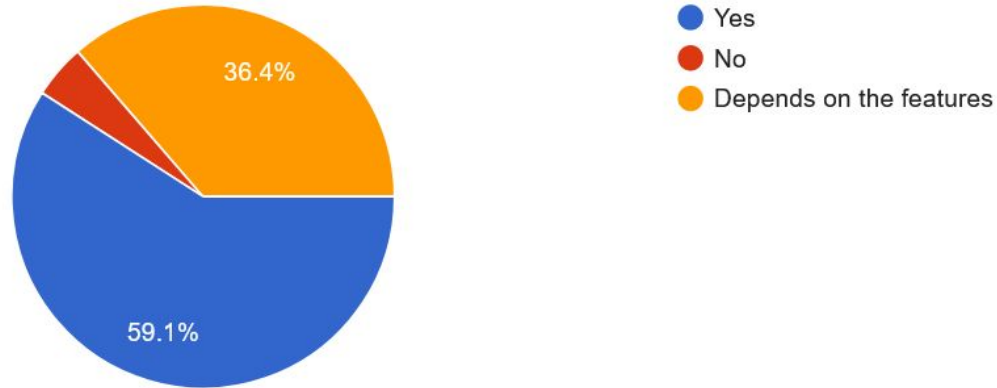


## Usage of mobile devices



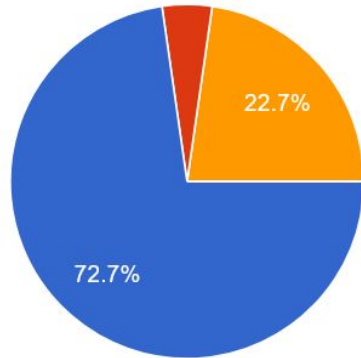
# Transportation Ticket Service App - Demand

Demand for an App that improves renewal experience

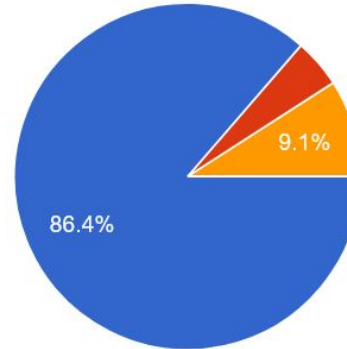


# Transportation Ticket Service App - Features

Amount of people in line



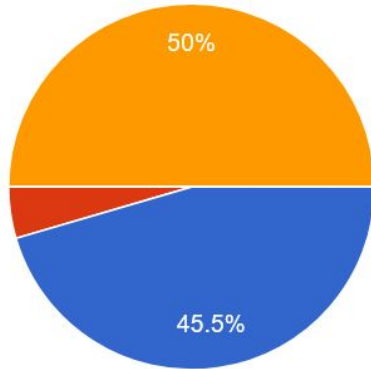
Estimation of current waiting time



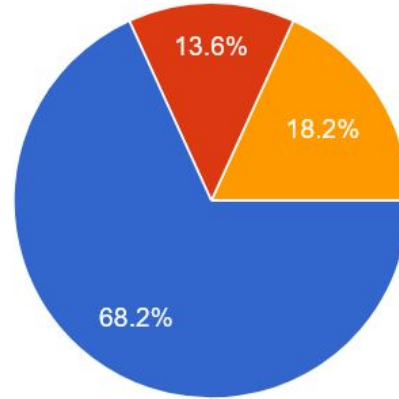


# Transportation Ticket Service App - Features

Average waiting time per ticket

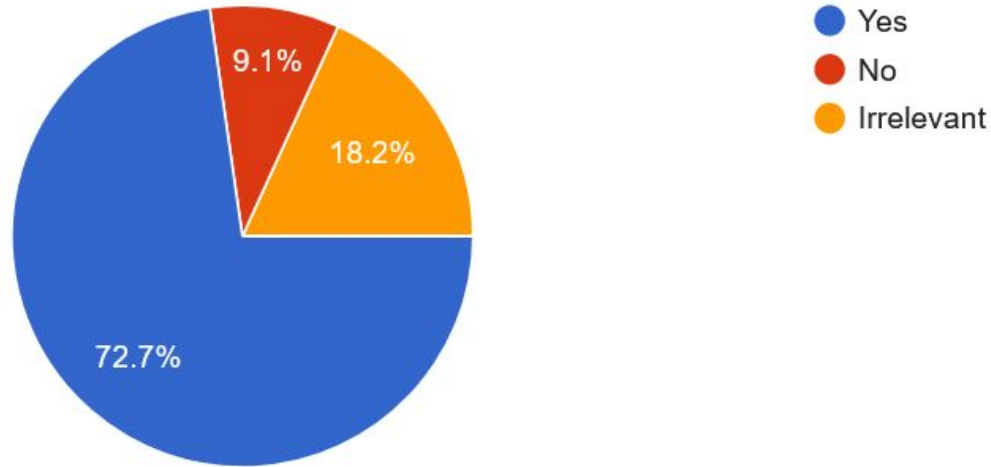


Notified when line is small



# Transportation Ticket Service App - Features

Prediction of most/least busy times



# Personas

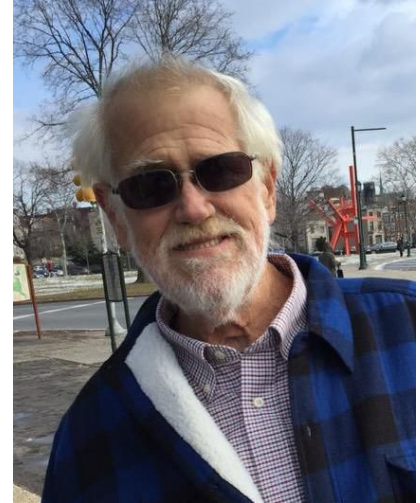
# Personas



Student



Worker



Elderly

# Nádia Fernandes - Student

Descriptor - student focused on achieving the best possible grades

Who - 21 years old, female, Computer Science student at IST

Quote - “I always travel on a bus to get to college. My schedule is pretty good and has a lot of gaps which I take advantage of to study, or deal with boring stuff like renewing my transportation ticket.”

## Goals

- Renew transportation ticket
- Spend <15 minutes renewing her card

Attitude - Try to predict the “dead” hours for renewing her card

## Behaviour

- Focused student that tries to achieve the best grades and spend as little time as possible dealing with bureaucratic matters, like renewing her transportation card
- Frequently uses mobile devices and is aware of new technologies, such as apps and websites



# Nádia Fernandes - Student

## **Ticket renewal routine:**

- Wakes up at 7h in order to go to the gym
- Eats breakfast at 9h and goes to college at 10h
- Has classes until 13:30h
- Grabs a sandwich and goes to the Transportation Ticket Store
- Waits around 30 minutes there
- Goes back to classes or study



# Pedro Lamego - Worker

Descriptor - average 9h to 18h worker

Who - 42 years old, male, Bank Administrator

Quote - “My daily schedule is always the same. I get up in the morning to catch my bus in order to avoid a lot of transit. I have 1 hour lunch break and I always leave the office at 18h. I hate when I still have to spend more time in queues to renew my transportation card.”

## Goals

- Renew transportation ticket
- Spend as little time as possible to enjoy his few free time

Attitude - Renew transportation ticket on free time

## Behaviour

- Focused on his work during the entire day
- Tries to rest when he leaves work
- Is aware of new technologies, and consumes internet sometimes



# Pedro Lamego - Worker

## **Ticket renewal routine:**

- Wakes up at 7h in order to take a shower and go to work
- Gets in the office at 9h
- Lunch break from 13h to 14h
- Leaves the office at 18h
- Goes to the Transportation Ticket Store
- Waits around 1 hour
- Goes back home





# Francisco Teotónio - Elderly

Descriptor - enjoys spending time with his grandchildren

Who - 69 years old, male, former bar owner

Quote - “I usually enjoy walking on the garden, but I never give up on taking the bus to my old bar. There is where I usually see some of my best friends and I hate when I am late because there was a huge line to renew my card.”



## Goals

- Renew transportation ticket
- Enjoy life as much as possible

Attitude - Try to get up early and do things in the morning

## Behaviour

- Love waking up early to enjoy the morning sun
- Likes to read a newspaper on the bus
- Not familiar with new technologies neither mobile devices

# Francisco Teotónio - Elderly

## **Ticket renewal routine:**

- Wakes up at 6h
- Goes for a walk in the garden
- At 8h buys the newspaper and goes to the coffee for breakfast
- At 8:30 goes to the Transportation Ticket Store
- Waits around 30 minutes there
- Goes to the bus and stops on a store to buy some toys for his grandchildren
- Around 12h goes to his favourite restaurant to take lunch
- In the afternoon, goes to his old bar and hangs out with his friends



# Scenarios

# Scenario 1 - Problem - Nádia Fernandes - Student

Nádia has classes during her day. She is very busy since she will have an exam later this week. Her Calculus professor was sick so he couldn't teach today's class at 10h. Since she is so busy, she decided to use the available time to study. Later that day, after she finished her last class around 17h, she went to the transportation renewal facilities to renew her card. She was faced with a huge queue. The process ended up wasting her 1:30h of her day.



# Scenario 1 - Solution - Nádia Fernandes - Student

Nádia has classes during her day. She is very busy since she will have an exam later this week. Her Calculus professor was sick so he couldn't teach today's class at 10h. She got notified by the TicketChain application saying that the waiting time was less than 15 minutes. She went to the transportation renewal facilities to renew her card and got it done in 5 minutes. She went back to her classes and finished her last class around 17h. The process ended up wasting her 20 minutes of her day.



# Scenario 1 - Problem - Pedro Lamego - Worker

Pedro's days all follow a very common routine. He works from 9h to 17h, with one hour lunch in between. He finds it a bummer that he always has to waste so much time on queues in every beginning of the month to renew his transportation card. There really isn't anything he can do about it, since his transportation ticket is essential for him to get to work and home. He finds it hard to enjoy his time with his children after such a tiring day of working, and even more so when he has to renew his card.



# Scenario 1 - Solution - Pedro Lamego - Worker

Pedro's days all follow a very common routine. He works from 9h to 17h, with one hour lunch in between at 13h. At around 12:40h, he opens TicketChain application and sees that the waiting time is around 25 minutes. Since his working place is right on the corner of the transportation renewal facilities, he requests a ticket and goes there to renew his card. After 30 minutes he is done with the process and can still enjoy almost all of his lunch time. At 18h he can go directly to his home when he finishes his job, meaning that he can still go to the park with his kids and make dinner for his family.



# Scenario 1 - Problem - Francisco Teotónio - Elderly

Francisco is the typical stubborn elder that does not give up on his old habits for nothing. He loves going to his old bar every time he has the chance to do so. He loves meeting with his old friends, and all the attention he always receives from going to the bar. Francisco, like every other person of his age, wakes up in the morning very early, to go to the bakery, to read the newspaper on the local cafe or to go to the store to buy goods for his wife. He doesn't particularly follow any order on these events, so he ends up going to the first place he sees. The transportation renewal facilities is the closest place to his house, so he usually ends up going there first wasting a lot of time in the queue, since there are the first hours of the day when everyone tries to renew their card before going to work.





# Scenario 1 - Solution - Francisco Teotónio - Elderly

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# Features

# Features

## Customer

- Notification System (student)
- Prediction of waiting time (worker)
- Best hours to renew the card (elderly)

## Transportation Facility Worker

- Scan QR Code of customer's ticket
- Update the system with information regarding the current state of the line
- Inform the prediction system that a problem occurred and can affect the time of each customer to be attended