

Name: MOHAMMED UMAR HABEEB.

Register Number: 24BECS196.

Course / Subject: Design Thinking / Problem Discovery and Need Identification Lab.

Institution: Garden City University.

Semester: 4th semester.

Lab – 2 User Research Report.

Topic: Understanding Overcrowding Experience in Metro Stations During Rush Hours

Context:

Metro stations experience heavy overcrowding during rush hours (morning and evening peak time). While metro transport is fast and economical, passengers face challenges such as long waiting time, difficulty in boarding, safety concerns, and stress due to crowd pressure.

This lab focuses on understanding real commuter problems through interviews and applying empathy-based design methods to improve passenger experience in metro stations.

STEP 1: Define the Target Users.

Target User Groups

- **Age Group:** 15–60+ years
- **Occupation:** Students, Working Professionals, Senior Citizens, Daily Wage Workers
- **Travel Time:** 8–11 AM & 5–9 PM (Rush Hours)
- **Purpose:** Work, College, School, Business
- **Frequency:** Daily commuters

STEP 2: List Initial Assumptions.

Before interacting with users, the following assumptions were made:

- Overcrowding causes stress and frustration
- Elderly people face more difficulty
- Boarding and exiting trains is the biggest problem

- Safety risks increase during peak hours
- Poor crowd management is the main reason

Assumption Table:

ID	Assumption
A1	Overcrowding creates stress
A2	Senior citizens suffer more
A3	Boarding is difficult
A4	Safety is compromised
A5	Crowd control system is weak

STEP 3: Prepare Interview Questions:

1. How often do you travel by metro?
2. What problems do you face during rush hours?
3. Do you feel safe in crowded metro stations? Why or why not?
4. Which age group faces more difficulty?
5. What improvements would you suggest?
6. How does overcrowding affect your daily routine?

STEP 4: Conduct User Interview.

Interview Process

- 3 passengers were interviewed:
 - College student (20 years)
 - Working professional (32 years)
 - Senior citizen (65 years)
- Observed crowd movement and platform behavior
- Noted emotional reactions (stress, impatience, discomfort)
- Recorded user statements

Sample Observations & Quotes:

Student:

“Sometimes I miss my train because I cannot enter the compartment.”

Working Professional:

“It feels suffocating during peak hours.”

Senior Citizen:

“I am afraid of falling when people push.”

STEP 5: Create Empathy Map:



Empathy Map 2 – Working Professional (25–45 Years)



SAYS

- “I can’t afford to miss this train.”
- “This is wasting my time.”
- “There should be better management.”
- “This is affecting my work.”
- “Why is the platform so crowded?”
- “The system needs improvement.”

THINKS

- I have an important meeting.
- If I’m late, it will affect my image.
- Crowd control should be stricter.
- Why are trains delayed?
- This affects my productivity.
- I need a more reliable option.

DOES

- Stands near door early
- Pushes to secure space
- Looks at watch repeatedly
- Complains about delays

FEELS

- Stressed
- Impatient
- Frustrated
- Mentally exhausted

Empathy Map 3 – Senior Citizen (60+ Years)



SAYS

- “It is unsafe.”
- “People should not push.”
- “I need support.”
- “There is too much crowd.”
- “I feel uncomfortable.”
- “Traveling has become difficult.”

THINKS

- I might fall.
- No one will help if I get hurt.
- Traveling is becoming difficult.
- I should avoid peak hours.
- This is risky for my age.
- I wish it was less crowded.

DOES

- Avoids peak hours
- Stands away from crowd
- Holds railing tightly
- Waits for less crowded train
- Looks for seating immediately
- Moves slowly and carefully

FEELS

- Fearful
- Uncomfortable
- Vulnerable
- Helpless
- Nervous
- Unsafe

STEP 6: Validate Assumptions:

Assumption	Validated?	Reason
Overcrowding creates stress	Yes	All users reported stress
Senior citizens suffer more	Yes	Safety concern was highest
Boarding is difficult	Yes	Major pain point
Safety is compromised	Partially	Depends on station management
Crowd control is weak	Yes	No proper queue system

STEP 7: Identify User Insights:

- Time pressure increases frustration
- Elderly need safety assistance
- Clear queue system is missing
- Real-time crowd information could help
- People prefer organized entry/exit system

STEP 8: Create User Persona:



Rahul

20 years old

Undergraduate Engineering Student

Daily Metro Commuter

gg

"I just want to reach college on time without struggling in the rush every day."

Background

Third-year engineering student who travels daily by metro to attend college. Rahul depends on metro transportation because it is affordable and fast. However, overcrowding during rush hours makes boarding difficult and increases stress, sometimes causing delays in reaching classes on time.

Goals

- Reach college on time consistently
- Board metro safely without pushing
- Reduce daily travel stress
- Experience smoother commuting during peak hours

Motivations

- Maintaining good attendance in college
- Saving travel cost using public transport
- Completing daily schedule efficiently
- Comfortable and reliable travel experience

Pain Points

- Heavy overcrowding during rush hours
- Difficulty entering and exiting trains
- Fear of missing trains due to crowd
- Physical discomfort while standing in packed compartments

Frustrations

- Lack of proper crowd management at stations
- Long waiting time during peak hours
- Stress caused by daily commuting pressure
- No dedicated system to manage student commuters



Meera

32 years old

🎓 Software Professional

🚍 Daily Office Commuter

gg

"Every minute matters — delays affect my entire work schedule."

📘 Background

IT professional working in the city who relies on the metro for daily office travel. She depends on the metro because it is the fastest and most practical means of transport. However, heavy crowding during rush hours leads to delays, pushing, and mental stress, affecting her work productivity and causing frustration.

⌚ Goals

- Reach office on time every day
- Maintain work productivity
- Have smooth and easy commute
- Avoid unnecessary delays

❤️ Motivations

- Professional responsibility
- Efficient time management
- Reliable and timely transportation
- Stress-free start to the workday

❗ Pain Points

- Overcrowded platforms and trains
- Difficulty entering and finding standing space inside compartments
- Trains often delayed, causing missed meetings
- Physical and mental fatigue during commute

❗ Frustrations

- Poor crowd management on platforms
- Insufficient train frequency during peak hours
- Lack of real-time crowd information
- Daily commuting stress due to uncertainty



Mr. Sharma

65 years old

Retired Government Employee

Occasional Metro User



"I feel unsafe traveling when people push during rush hours."

Background

Retired individual who uses metro occasionally for hospital visits and personal work. Mr. Sharma avoids peak hours due to safety concerns and difficulty managing the crowd pressure.

Goals

- Safe and comfortable travel
- Easy boarding and seating access
- Stress-free commuting experience
- Secure mobility at older age.

Motivations

- Independence in travel
- Affordable transportation
- Safe public infrastructure
- Comfortable journey

Pain Points

- Fear of falling in crowd
- Lack of assistance for elderly passengers
- Difficulty standing for long periods
- Fast-moving crowd pressure.

Frustrations

- No dedicated senior citizen space during rush
- Insufficient support staff at metro stations
- Unsafe boarding situations for elderly
- Difficulty balancing in crowded trains.

STEP 9: Translate Insights to Software / System Needs:

Insight	Solution Requirement
Need crowd control	Smart queue management system
Safety concern	Dedicated elderly assistance zone
Time pressure	Real-time crowd density display
Boarding issues	Separate entry and exit markings
Stress levels	Increased train frequency in peak hours

STEP 10: Reflection & Documentation:

1. What surprised you during the interview?

Senior citizens face serious safety fears compared to other groups.

2. Which assumption was wrong?

Safety is not always compromised; some stations manage well.

3. How did empathy change your thinking?

It helped understand emotional stress, not just physical crowding.

4. How will this affect your design approach?

Future solutions will focus on safety, organization, and real-time crowd monitoring.