

# Participant Information Sheet

**Study Title:** A study of indoor navigation behaviour by visually impaired and blind people.

**Investigator:** Watthanasak Jeamwatthanachai

**Ethics number:** ERGO/FEPS/23512

**Please read this information carefully before deciding to take part in this research. If you are happy to participate you will be asked to sign a consent form.**

## **What is the research about?**

This research is trying to help visually impaired and blind people to have a confident to navigate independently inside buildings with safety awareness. To help them, this study proposes a data representation of buildings which will be used towards the construction of indoor navigation systems. Consequently, this study is first to identify what important factors, obstacles, and useful information needed by visually impaired and blind people.

## **Why have I been chosen?**

At this stage, this study is trying to collect information about behaviour of indoor navigation by visually impaired and blind people. Thus, visually impaired and blind people including staff, who work closely with these people, are invited to participate in this study.

## **What will happen to me if I take part?**

If you are visually impaired or blind, you will be interviewed about indoor navigation behaviour inside buildings, which consists of five sections and will take 30-40 minutes to complete.

If you are staff, you will fill out a given questionnaire which will take no more than 25 minutes. The questionnaire is comprised of five sections regarding behaviour of indoor navigation by visually impaired and blind people.

## **Are there any benefits in my taking part?**

By taking part, you have the opportunity to help us development the technology to help visually impaired and blind people to have freedom and confidence in navigating inside buildings by themselves.

## **Are there any risks involved?**

There is no any risk involved for participants completing the questionnaires and interviews.

## **Will my participation be confidential?**

The name of the participants will not be taken and participation will be kept anonymous. All data will be safe in a protected computer. All will be destroyed once the research is completed.

## **What happens if I change my mind?**

You have the right to withdraw from doing the questionnaire or interview at any time.

## **What happens if something goes wrong?**

If you have any concern or complaint with this study, please contacts Watthanasak Jeamwatthanachai at [wj1g14@ecs.soton.ac.uk](mailto:wj1g14@ecs.soton.ac.uk)

**Where can I get more information?**

If you would like to get more information about this study, please feel free to contact Watthanasak Jeanwatthanachai at [wj1g14@ecs.soton.ac.uk](mailto:wj1g14@ecs.soton.ac.uk)

**Instruction:**

This questionnaire will take approximately 1.30 - 2 hours to finish.

Questions can be answered in 3 ways:

- Boxes: Insert an X mark in the appropriate box e.g.
- Letters: circle the appropriate letter e.g. (a.) important
- Spaces: Write the answer in the space provided e.g. 

|         |
|---------|
| 2 years |
|---------|

This study aims to help visually impaired and blind people to have the freedom and confidence to independently navigate unfamiliar spaces inside buildings.

In ALL cases, the questions refer ONLY to unfamiliar spaces inside buildings.

The questions do NOT refer to: Familiar spaces (regardless of whether these familiar spaces are inside or outside) Outdoor spaces (regardless of whether these outdoor spaces are familiar or unfamiliar)

**Section 1 Basic information**

1. How long have you been working closely with visually impaired and blind people?

\_\_\_\_\_ years (approximately)

## Section 2 Behavior and Indoor Navigation

2. Is a mobility training course (e.g. orientation and mobility) important to visually impaired and blind people?

- a. Important
- b. Important, but not necessary
- c. Not important

3. Which assistance do visually impaired and blind people use when they navigate inside buildings by themselves? How often do they use this assistance?

- White Cane

Frequency:  Everyday  
 Few times a week  
 Once a week  
 Once a month  
 Occasionally  
 Never , please give a reason: \_\_\_\_\_

- Guide Dog

Frequency:  Everyday  
 Few times a week  
 Once a week  
 Once a month  
 Occasionally  
 Never , please give a reason: \_\_\_\_\_

- Sighted Guide

Frequency:  Everyday  
 Few times a week  
 Once a week  
 Once a month  
 Occasionally  
 Never , please give a reason: \_\_\_\_\_

- Tactile Map

Frequency:  Everyday  
 Few times a week  
 Once a week  
 Once a month  
 Occasionally  
 Never , please give a reason: \_\_\_\_\_

• Other: \_\_\_\_\_

- Frequency:  Everyday  
 Few times a week  
 Once a week  
 Once a month  
 Occasionally  
 Never , please give a reason: \_\_\_\_\_

4. How do visually impaired and blind people estimate the distance while navigating inside buildings by themselves?

- a. By foot steps
- b. By length unit, e.g. feet or meter
- c. By time, e.g. 5 seconds
- d. Other, please specify \_\_\_\_\_

### Section 3 Unfamiliar Spaces

**Definition:** Unfamiliar spaces are places that visually impaired and blind people rarely visit or have not learnt to navigate by themselves. Examples of unfamiliar spaces could include the university, hospital, museum, department store or airport.

5. How often do visually impaired and blind people navigate by themselves inside unfamiliar spaces, e.g. university, hospital, department store, museum, and airport?

- University

Frequency:  Everyday  
 Few times a week  
 Once a week  
 Once a month  
 Occasionally  
 Never

Please give a reason: \_\_\_\_\_

- Hospital

Frequency:  Everyday  
 Few times a week  
 Once a week  
 Once a month  
 Occasionally  
 Never

Please give a reason: \_\_\_\_\_

- Department Store

Frequency:  Everyday  
 Few times a week  
 Once a week  
 Once a month  
 Occasionally  
 Never

Please give a reason: \_\_\_\_\_

- Museum

Frequency:  Everyday  
 Few times a week  
 Once a week  
 Once a month  
 Occasionally  
 Never

Please give a reason: \_\_\_\_\_

- Airport

Frequency:  Everyday  
 Few times a week  
 Once a week  
 Once a month  
 Occasionally  
 Never

Please give a reason: \_\_\_\_\_

- Other: \_\_\_\_\_

Frequency:  Everyday  
 Few times a week  
 Once a week  
 Once a month  
 Occasionally  
 Never

Please give a reason: \_\_\_\_\_

6. While navigating inside buildings by visually impaired and blind people, what is the level of difficulty to navigate the following unfamiliar buildings?

- University

Level of Difficulty:  Easy  
 Moderate  
 Hard

Please give a reason: \_\_\_\_\_

- Hospital

Level of Difficulty:  Easy  
 Moderate  
 Hard

Please give a reason: \_\_\_\_\_

- Department Store

Level of Difficulty:  Easy  
 Moderate  
 Hard

Please give a reason: \_\_\_\_\_

- Museum

Level of Difficulty:  Easy  
 Moderate  
 Hard

Please give a reason: \_\_\_\_\_



- Airport

Level of Difficulty:  Easy  
 Moderate  
 Hard

Please give a reason: \_\_\_\_\_

- Other: \_\_\_\_\_

Level of Difficulty:  Easy  
 Moderate  
 Hard

Please give a reason: \_\_\_\_\_

7. Do visually impaired and blind people have confidence to navigate by themselves through the following unfamiliar spaces inside buildings?

- Wide open spaces without any landmarks

Level of Difficulty:  Yes  
 No  
 Not sure

Please give a reason: \_\_\_\_\_

- Hallway

Level of Difficulty:  Yes  
 No  
 Not sure

Please give a reason: \_\_\_\_\_

- Room (e.g. office)

Level of Difficulty:  Yes  
 No  
 Not sure

Please give a reason: \_\_\_\_\_

- Large room (e.g. auditorium, conference room, movie theatre, and exhibition)

Level of Difficulty:  Yes  
 No  
 Not sure

Please give a reason: \_\_\_\_\_

8. In unfamiliar spaces inside buildings, how do visually impaired and blind people know where they are?

9. In unfamiliar spaces inside buildings, how do visually impaired and blind people reach their destination?

10. How do visually impaired and blind people find their orientation or the direction they are heading to? Orientation means knowing which direction you are heading to, and where landmarks are located.

11. What landmarks are visually impaired and blind people looking for in order to help them to navigate by themselves through unfamiliar spaces?

12. Have visually impaired and blind people ever asked anybody (e.g. reception and local people) for directions or instructions to reach the destination?

- a. Yes, they have
- b. No, they have not

13. Have visually impaired and blind people ever found that directions or instructions from local people have been confusing or ambiguous?

- a. Yes
- b. No

If Yes, Please give example

## Section 4 Obstacles and Hazards

14. Have visually impaired and blind people experienced any problems or challenges while navigating inside buildings? For example, ground/body/head-level obstacles, noise, silent, or light.

- a. Yes, please give example \_\_\_\_\_  
b. No

15. When navigating unfamiliar spaces inside buildings, do visually impaired and blind people experience a collision by the following obstacles?

- Ground-Level Obstacles e.g. Curb, drop-off, sloped floor, hole

Frequency:  Always  
 Often  
 Sometimes  
 Rare  
 Never

Please give a reason: \_\_\_\_\_

- Body-Level Obstacles e.g. Furniture, wall-mounted equipment

Frequency:  Always  
 Often  
 Sometimes  
 Rare  
 Never

Please give a reason: \_\_\_\_\_

- Head-Level Obstacles e.g. Stairs and hanging objects

Frequency:  Always  
 Often  
 Sometimes  
 Rare  
 Never

Please give a reason: \_\_\_\_\_

- Noise Obstacles e.g. Too much noise in the area

Frequency:  Always  
 Often  
 Sometimes  
 Rare  
 Never

Please give a reason: \_\_\_\_\_

- Silence Obstacles e.g. Too silent in the area

Frequency:  Always  
 Often  
 Sometimes  
 Rare  
 Never

Please give a reason: \_\_\_\_\_

- Light Obstacles e.g. Too much lighting

Frequency:  Always  
 Often  
 Sometimes  
 Rare  
 Never

Please give a reason: \_\_\_\_\_

- Moving Obstacles e.g. People, pet, trolley

Frequency:  Always  
 Often  
 Sometimes  
 Rare  
 Never

Please give a reason: \_\_\_\_\_

- Other: \_\_\_\_\_

Frequency:  Always  
 Often  
 Sometimes  
 Rare  
 Never

Please give a reason: \_\_\_\_\_

16. What obstacles can they detect by their assistance (e.g. white cane, guide dog, tactile map)? Please select all that apply.

Objects on the floor  
 Edges and holes  
 Other, please specify \_\_\_\_\_

17. What obstacles are they not able to detect by their assistance (e.g. white cane, guide dog, tactile map)? Please select all that apply.

Slippery and sloped surfaces  
 Objects above waist (body and head level obstacles)  
 Other, please specify \_\_\_\_\_

18. While navigating inside buildings by visually impaired and blind people, how do they perceive any dangers in their way? Please select all that apply.

Using assistance (cane, guide dog, sighted guide, or tactile map)

Using hearing sense

Using odor sense

Other, please specify \_\_\_\_\_

19. Have they ever found that using stairs, escalators, or elevators is difficult and dangerous? For example, the handrail is difficult to find or installed at a level too high or too low. Another example is that the stair width is too wide and non-standard.

a. Yes, please give example \_\_\_\_\_

b. No

c. Not sure

**Section 5 Accessibility and Essential Information**

20. While navigating inside buildings, is any accessibility information available to visually impaired and blind people? For example, tactile maps, tactile pavements, Braille, audio or haptic feedback?
- a. Yes
  - b. No

If Yes, Please give example

21. Do you know that there is a tactile map available in some buildings for visually impaired and blind people which provides you with information about the buildings and spaces such as rooms, corridors, and landmark that help them to walk independently?
- a. Yes
  - b. No

22. Have they ever used a tactile map to help you find directions to your destination?

- a. Yes IF YES, GO TO QUESTION 23
- b. No IF NO, GO TO QUESTION 25

23. Did the tactile map take them to their destination?

- a. Always
- b. Sometimes, why \_\_\_\_\_
- c. Never, why \_\_\_\_\_

24. What is the most important information they look for while using a tactile map in order to reach their destination?



26. How important is it to visually impaired and blind people to know where landmarks are located while navigating inside buildings by themselves?

- a. Very important
- b. Important
- c. Somewhat important
- d. Not at all important
- e. No Opinion

27. While navigating inside buildings by visually impaired and blind people, which of the following are important to them in order to learn and remember layouts and environments inside the buildings? Please select all that apply.

- Landmarks (e.g. escalators, elevators, pillars, office plants, and statues)
- Sound and noise
- Floor texture
- Smell
- Other, please give example \_\_\_\_\_



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- a. Very important
- b. Important
- c. Somewhat important
- d. Not at all important
- e. No Opinion

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- Sound and noise
- Floor texture
- Smell
- Other, please give example \_\_\_\_\_