**Complete Questionnaire**

### Orientation session questionnaire

Dear participants, thank you for agreeing to participate in our survey session!

Note: Dear participants please fill out the questionnaire below which contains participants handouts, participant consent, demographic and personality related questions followed by instructions related to installation of PEBL software and practice of cognitive task i.e. OSPAN.

*Participant handouts (Do's and Don'ts) for the main session*

1. You need to bring your laptop in fully charged condition.
2. Carefully read the instructions (at page No. 05 of this questionnaire) about installation of the PEBL software. Based on the provided instruction, please practice the one round of cognitive task before coming to the main session.
3. Mobile phones to be in silent/switched-off mode.
4. Talking or whispering during the session is not permitted.
5. No computer gaming and loud music allowed.
6. You will not be allowed to change your seating position during the session.
7. You will not be allowed to adjust the window, light, fan, or AC settings.
8. You will not be allowed to go outside the room for bio-break or any other reason except for emergency conditions. Once you go outside, the experiment ends for you.
9. Wear plain color comfortable clothing that you normally wear to the institute for classes; the same can be self-adjusted to ensure comfort.
10. Please do not use any strong-smelling cosmetics or personal hygiene products during the session.
11. No eatables allowed, but you can drink water.
12. Please don't engage yourself in any physically strenuous activity just before coming to the session.
13. Please do not to change your usual daily routine and sleep schedule around the session day.
14. Please reach 10 minutes before the scheduled start time of the session.

A diagram of a free time

Description automatically generated

*Participation consent (please read carefully):*

I have gone through the Do's and Don'ts in the recruitment email. I understand that my participation in this research is voluntary, and I may withdraw at any time from the study. The study will not expose me to any potentially harmful ambiance or any indoor environment that I do not come across during my regular life. My name or any other identifiable information, associated with me (like email, registration number etc.) will not be used as part of the study reports. While the researchers will make every effort to prevent any leak of personal data, there is always a small chance that this may happen.

I understand that the duration of this session is 55 minutes. During this session, I will be providing my feedback through questionnaires. I will not be stepping out of the room unless it is an emergency. If I do need to step out, my participation in the session ends there. My responses will all be processed anonymously.

If I have concerns or complaints regarding the way the research is or has been conducted, I can contact the institute management team, BITS Pilani, Pilani campus. I understand that information gathered will be used to work towards more energy efficient and comfortable indoors.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| I agree to participate in the studies described above. [If you do not agree, do not submit this form]   * Agree | | | | |
| 1. Participant ID number provided to you by our team? | | | | |
| 2. What is your weight (in kg e.g. 72)? | | | | |
| 3. During the past month, how would you rate your sleep quality, overall? | | | | |
| * Very good | * Fairly bad | | | |
| * Fairly good | * Very bad | | | |
| 4. What is your current state of health? | | | | |
| * Sick | | | * Good | |
| * Not too bad | | | | |
|  | | | | |
| 5. Have you been diagnosed with these health disorders? | | | | |
| * Asthma | * Sleep apnoea | | | * Diabetes |
| * Low/high blood pressure | * Any other chronic disease | | | * None |
| 6. Do you smoke? | | | | |
| * No, never smoked | | * Yes, < 10 a day | | |
| * No, give up within the last year | | * Yes, > 10 a day | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 7. How much do you usually perspire (sweat)? | | | | | | |
| * Not at all | | | * Somewhat | | | |
| * Very little | | | * Very much | | | |
| 8. How many minutes do you exercise per day? | | | | | | |
| 9. Is there any other information about yourself, which may affect your perception of an indoor space, that you would like the researchers to know? If so, please state in the space provided below: | | | | | | |
| 10. How well do the following statements describe your personality? | | | | | | |
| I see myself as someone who.. | **1** Disagree strongly | **2** Disagree a little | | **3** Neither agree nor disagree | **4** Agree a little | **5** Agree strongly |
| ..is generally trusting |  |  | |  |  |  |
| ..is outgoing, sociable |  |  | |  |  |  |
| ..does a thorough job |  |  | |  |  |  |
| ..gets nervous easily |  |  | |  |  |  |
| ..has an active imagination |  |  | |  |  |  |
| I see myself as someone who.. | **5** Disagree strongly | **4** Disagree a little | | **3** Neither agree nor disagree | **2** Agree a little | **1** Agree strongly |
| ..is reserved |  |  | |  |  |  |
| ..tends to be lazy |  |  | |  |  |  |
| ..is relaxed handles stress well |  |  | |  |  |  |
| ..has few artistic interests |  |  | |  |  |  |
| ..tends to fault with others |  |  | |  |  |  |

11. Please read below information about the cognitive task (OSPAN) that you have to practice before coming to the main session

“As part of the session, we will be using a cognitive task called OSPAN, which is a computer-based working memory task. To ensure that you are well-prepared for the session, we have provided some instructions and practice materials below.

*Instructions for Downloading and Installing the PEBL Software:*

1. Please click on below link to see the instructional video to install and practice the software on your laptop.

https://drive.google.com/file/d/12Iv8ntlByCQrhisFdEGwO8gsNCxj94mW/view? usp=share\_link

2. If you face any issues with the installation or use of the PEBL software or the OSPAN task, contact us for assistance

If you have any questions about the OSPAN task or the PEBL software, please contact us at [mukesh.budaniya@pilani.bits-pilani.ac.in](mailto:mukesh.budaniya@pilani.bits-pilani.ac.in). We appreciate your participation and look forward to seeing you at the main session!

With best regards,   
Research Team (BITS Pilani, IIT Kanpur, and the University of Galway, Ireland)”

### **B.4.2. First round questionnaire of main session**

Note: This questionnaire is about the participant's sleep quality, followed by what the participant feels about the room noise level, layout, lighting, aesthetics, and overall indoor environment.

A diagram of a task

Description automatically generated

Participant ID number?

What you were doing in the most part of the last 30 minutes?

|  |  |
| --- | --- |
| * Walking | * Washing |
| * Running | * Eating |
| * Sitting | * Reading or writing |
| * Relaxing | |

The questionnaire is used to evaluate how well you slept last night. Please answer True or False to the best of your recollection.

|  |  |  |
| --- | --- | --- |
|  | **1** TRUE | **2** FALSE |
| I had a deep sleep last night |  |  |
| I feel like I slept poorly last night |  |  |
| It took me more than half an hour to fall asleep last night |  |  |
| I felt tired after waking up this morning |  |  |
| I woke up several times last night |  |  |
| I feel like I did not get enough sleep last night |  |  |
| I got up in the middle of the night |  |  |
| I felt rested after waking up this morning |  |  |
| I feel like I only had a couple of hours of sleep last night |  |  |
| I feel I slept well last night |  |  |
| I did not sleep a wink last night |  |  |
| I did not have any trouble falling asleep last night |  |  |
| After I woke up last night, I had trouble falling asleep again |  |  |
| I tossed and turned all night last night |  |  |
| I did not get more than 5 hours sleep last night |  |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4. In general, how satisfied are you with each of the following aspects of the room? | | | | | | | | | | | | | | | | | |
|  | | | **1** Dissatisfied | | | | **2** Slightly  dissatisfied | | | | | **3** Neutral | | **4** Slightly  satisfied | | | **5** Satisfied |
| Lighting | | |  | | | |  | | | | |  | |  | | |  |
| Glare and reflections | | |  | | | |  | | | | |  | |  | | |  |
| The amount of space available to you | | |  | | | |  | | | | |  | |  | | |  |
| The Furnishings (Chair desk, equipment, etc) | | |  | | | |  | | | | |  | |  | | |  |
| Room decoration | | |  | | | |  | | | | |  | |  | | |  |
| Room  cleanliness | | |  | | | |  | | | | |  | |  | | |  |
| 5. If you are dissatisfied with the lighting aspect of this room, which of the following do you think are (is) causing it? (Check all that apply) | | | | | | | | | | | | | | | | | |
| * Too dark | | | | * Without lighting control | | | | | | | | | | * Glare | | | |
| * Too bright | | | | * Reflections on the laptop screen | | | | | | | | | | * Not applicable | | | |
| * Not enough daylight | | | | * Shadows on the workspace | | | | | | | | | | * Flicker lighting | | | |
| * Too much daylight | | | | * Undesirable lighting colour | | | | | | | | | | * Other | | | |
|  | | | | | | | | | | | | | | | | | |
| 6. In general, how satisfied are you with noise level aspect of this room? | | | | | | | | | | | | | | | | | |
|  | **1** Dissatisfied | | | | | **2** Slightly  dissatisfied | | | | | **3** Neutral | | **4** Slightly  satisfied | | | **5** Satisfied | |
| Noise |  | | | | |  | | | | |  | |  | |  | | |
|  | | | | | | | | | | | | | | | | | |
| 7. If you are dissatisfied with the noise levels aspect of this room, which of the following do you think are (is) causing it? (Check all that apply) | | | | | | | | | | | | | | | | | |
| * Noise from equipment | | | | | * Noise from outdoor | | | | | | | | * Noise from people | | | | |
| * Noise from the air-conditioning system | | | | | | | | | * Not applicable | | | | | | | | |
|  | | | | | | | | | |  | | | | | | | |
| 8. If you are dissatisfied with room cleanliness or decoration, which of the following do you think are (is) causing it? (Check all that apply) | | | | | | | | | | | | | | | | | |
| * Surface dust on other surfaces you might touch like doorknobs & handles | | | | | | | | | | | | | | | | | |
| * Dust on table and chair surfaces | | | | | | | | * Dirty floors | | | | | | | | | |
| * Significant source of odor | | | | | | | | * Other, please specify | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | |
| 9. In general, how satisfied are you with each of the following aspect of this room? | | | | | | | | | | | | | | | | | |
|  | | **1** Dissatisfied | | | | **2** Slightly  dissatisfied | | | | | **3** Neutral | | **4** Slightly  satisfied | | | **5** Satisfied | |
| Overall visual comfort | |  | | | |  | | | | |  | |  | |  | | |
| Overall indoor environment quality | |  | | | |  | | | | |  | |  | |  | | |
|  | | | | | | | | | | | | | | | | | |
| 10. If you are feeling discomfort in this room, please describe about the sources of discomfort. | | | | | | | | | | | | | | | | | |

### **B.4.3. Second round questionnaire of main session**

Note: This questionnaire about what you feel about the thermal environment, indoor air quality, mood, and sick building syndrome.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| A diagram of a task  Description automatically generated | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. Participant ID number? | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. How do you feel about room air temperature right now? | | | | | | | | | | | | | | | | | | | | | | | | |
|  | **3** Hot | | | | | **2** Warm | | | 1 Slightly warm | | | | | **0** Neutral | | | **-1** Slightly cool | | | | **-2** Cool | | | **-3** Cold |
| Air temperature |  | | | | |  | | |  | | | |  | | | |  | | | |  | | |  |
|  | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. How do you feel about room air humidity right now? | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | **2** Extremely dry | | | | | **1** Dry | | | | | **0** Neutral | | | **-1** Humid | | | | **-2** Extremely humid | | |
| Room air humidity | | | | |  | | | |  | | | | | |  | | |  | | | |  | | |
|  | | | | |  | | | |  | | | | | |  | | |  | | | |  | | |
| 4. Would you prefer to feel? | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | | | **-1** Cooler | | | | | | | | | | | **0** No change | | | | | **1** Warmer | | | | |
| Room air temperature | | | |  | | | | | | | | | | |  | | | | |  | | | | |
| 5. How satisfied are you with the following aspects of this room right now? | | | | | | | | | | | | | | | | | | | | | | | | |
|  | **1** Very dissatisfied | | | **2** Dissatisfied | | | | | **3** Slightly dissatisfied | | | | | | **4** Neutral | | **5** Slightly satisfied | | | **6** Satisfied | | | **7** Highly satisfied | |
| Air Temperature | |  | |  | | | | |  | | | | | |  | |  | | |  | | |  | |
| Air movement | |  | |  | | | | |  | | | | | |  | |  | | |  | | |  | |
| Air freshness | |  | |  | | | | |  | | | | | |  | |  | | |  | | |  | |
| Odors |  | | |  | | | | |  | | | | | |  | |  | | |  | | |  | |
| Humidity |  | | |  | | | | |  | | | | | |  | |  | | |  | | |  | |
| Overall air quality |  | | |  | | | | |  | | | | | |  | |  | | |  | | |  | |
|  | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. If you are dissatisfied with the temperature and/or air movement in this room. Which of the following contribute to your dissatisfaction? (Check all that apply) | | | | | | | | | | | | | | | | | | | | | | | | |
| * My area is too hot | | | | | | | | | | | | * Air movement too weak | | | | | | | | | | | | |
| * My area is too cold | | | | | | | | | | | | * Not applicable | | | | | | | | | | | | |
| * Humidity too high (damp) | | | | | | | | | | | | * Other | | | | | | | | | | | | |
| * Air movement too strong | | | | | | | | | | | |  | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. If you feel any unpleasant odor in the room air, which of the following do you think is the reason? (Check all that apply) | | | | | | | | | | | | | | | | | | | | | | | | |
| * Furniture | | | | | | | | | | | | * Mold | | | | | | | | | | | | |
| * Other people | | | | | | | | | | | | * Odors from outdoor | | | | | | | | | | | | |
| * Perfumes/Deodorants | | | | | | | | | | | | * Not applicable | | | | | | | | | | | | |
| * Cleaning products | | | | | | | | | | | | * Other | | | | | | | | | | | | |
| 7. If you feel any unpleasant odor in the room air, which of the following do you think is the reason? (Check all that apply) | | | | | | | | | | | | | | | | | | | | | | | | |
| * Furniture | | | | | | | | | | | | * Mold | | | | | | | | | | | | |
| * Other people | | | | | | | | | | | | * Odors from outdoor | | | | | | | | | | | | |
| * Perfumes/Deodorants | | | | | | | | | | | | * Not applicable | | | | | | | | | | | | |
| * Cleaning products | | | | | | | | | | | | * Other | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. Right now, do you feel any? | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | | **1** Not at all | | | | **2** Light | | | | **3** Moderate | | | | | **4**  Strong | | | **5**  Very strong | | | **6**  Overwhelming | | |
| Eye dryness, Itchy or watery eyes | | |  | | | |  | | | |  | | | | |  | | |  | | |  | | |
| Nose/throat irritation or dryness | | |  | | | |  | | | |  | | | | |  | | |  | | |  | | |
| Difficulty breathing | | |  | | | |  | | | |  | | | | |  | | |  | | |  | | |
| Lethargy and/or tiredness | | |  | | | |  | | | |  | | | | |  | | |  | | |  | | |
| Headache | | |  | | | |  | | | |  | | | | |  | | |  | | |  | | |
| Dry, itching or irritated skin | | |  | | | |  | | | |  | | | | |  | | |  | | |  | | |
| Dizziness | | |  | | | |  | | | |  | | | | |  | | |  | | |  | | |
| Difficulty concentrating | | |  | | | |  | | | |  | | | | |  | | |  | | |  | | |
| Sleepiness | | |  | | | |  | | | |  | | | | |  | | |  | | |  | | |
| 9. Read each item and indicate to what extent you feel this way right now. | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | | **1** Very slightly or not at all | | | | | **2** A little | | | | | **3** Moderately | | | | | **4** Quite a bit | | | | **5** Extremely | | |
| Enthusiastic | | |  | | | | |  | | | | |  | | | | |  | | | |  | | |
| Sleepy | | |  | | | | |  | | | | |  | | | | |  | | | |  | | |
| Happy | | |  | | | | |  | | | | |  | | | | |  | | | |  | | |
| Sad | | |  | | | | |  | | | | |  | | | | |  | | | |  | | |
| Calm | | |  | | | | |  | | | | |  | | | | |  | | | |  | | |
| Fearful | | |  | | | | |  | | | | |  | | | | |  | | | |  | | |
| Quiet | | |  | | | | |  | | | | |  | | | | |  | | | |  | | |
| Aroused | | |  | | | | |  | | | | |  | | | | |  | | | |  | | |
| Excited | | |  | | | | |  | | | | |  | | | | |  | | | |  | | |
| Dull | | |  | | | | |  | | | | |  | | | | |  | | | |  | | |
| Satisfied | | |  | | | | |  | | | | |  | | | | |  | | | |  | | |
| Lonely | | |  | | | | |  | | | | |  | | | | |  | | | |  | | |
| Relaxed | | |  | | | | |  | | | | |  | | | | |  | | | |  | | |
| Hostile | | |  | | | | |  | | | | |  | | | | |  | | | |  | | |
| Still | | |  | | | | |  | | | | |  | | | | |  | | | |  | | |
| Surprised | | |  | | | | |  | | | | |  | | | | |  | | | |  | | |
| Elated | | |  | | | | |  | | | | |  | | | | |  | | | |  | | |
| Drowsy | | |  | | | | |  | | | | |  | | | | |  | | | |  | | |
| Content | | |  | | | | |  | | | | |  | | | | |  | | | |  | | |
| Unhappy | | |  | | | | |  | | | | |  | | | | |  | | | |  | | |
| Peaceful | | |  | | | | |  | | | | |  | | | | |  | | | |  | | |
| Nervous | | |  | | | | |  | | | | |  | | | | |  | | | |  | | |
| Passive | | |  | | | | |  | | | | |  | | | | |  | | | |  | | |
| Astonished | | |  | | | | |  | | | | |  | | | | |  | | | |  | | |
| Alert | | |  | | | | |  | | | | |  | | | | |  | | | |  | | |
| Stressed | | |  | | | | |  | | | | |  | | | | |  | | | |  | | |

### **B.4.4. Third round questionnaire of main session**

A diagram of a task

Description automatically generated

Note: This questionnaire is about what you feel about the cognitive task you just performed.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **1**Strongly agree | **2** Agree | **3** Neither agree nor disagree | **4** Disagree | **5** Strongly disagree |
| They were very easy |  |  |  |  |  |
| Your effort level was very low |  |  |  |  |  |
| There was no time pressure |  |  |  |  |  |
| You worked at 0% of your capacity |  |  |  |  |  |
| Your performance was poor |  |  |  |  |  |

### **B.4.5. Fourth round questionnaire of main session**

Note: The fourth round of the questionnaire was a duplicate of the second round of the questionnaire and hence has not been repeated here.