

## DAFTAR ISI

|                                                                                                            |           |
|------------------------------------------------------------------------------------------------------------|-----------|
| <b>TESIS .....</b>                                                                                         | <b>1</b>  |
| <b>THESIS .....</b>                                                                                        | <b>2</b>  |
| <b>EVALUASI LOKASI STIMULUS GETARAN PADA KURSI SEBAGAI<br/>PENINGAT WAKTU DUDUK BERLEBIH .....</b>         | <b>3</b>  |
| <b>EVALUATION OF VIBRATION STIMULUS PLACEMENT ON A CHAIR<br/>AS A REMINDER FOR PROLONGED SITTING .....</b> | <b>4</b>  |
| <b>PERNYATAAN BEBAS PLAGIASI .....</b>                                                                     | <b>5</b>  |
| <b>HALAMAN PERSEMBAHAN.....</b>                                                                            | <b>6</b>  |
| <b>KATA PENGANTAR.....</b>                                                                                 | <b>7</b>  |
| <b>UCAPAN TERIMA KASIH .....</b>                                                                           | <b>8</b>  |
| <b>DAFTAR ISI.....</b>                                                                                     | <b>10</b> |
| <b>DAFTAR TABEL .....</b>                                                                                  | <b>13</b> |
| <b>DAFTAR GAMBAR .....</b>                                                                                 | <b>15</b> |
| <b>DAFTAR LAMPIRAN .....</b>                                                                               | <b>16</b> |
| <b>DAFTAR NOTASI DAN SINGKATAN .....</b>                                                                   | <b>17</b> |
| <b>INTISARI.....</b>                                                                                       | <b>18</b> |
| <b>ABSTRACT .....</b>                                                                                      | <b>19</b> |
| <b>BAB I PENDAHULUAN.....</b>                                                                              | <b>20</b> |
| 1.1. Latar Belakang .....                                                                                  | 20        |
| 1.2. Rumusan Masalah.....                                                                                  | 24        |
| 1.3. Asumsi dan Batasan Masalah .....                                                                      | 24        |
| 1.3.1. Asumsi .....                                                                                        | 24        |
| 1.3.2. Batasan Masalah .....                                                                               | 25        |
| 1.4. Tujuan Penelitian .....                                                                               | 26        |
| 1.5. Manfaat Penelitian .....                                                                              | 26        |
| <b>BAB II TINJAUAN PUSTAKA .....</b>                                                                       | <b>28</b> |
| <b>BAB III LANDASAN TEORI.....</b>                                                                         | <b>37</b> |
| 3.1. Perilaku Sedentari dan Ketidakaktifan fisik.....                                                      | 37        |
| 3.2. Intervensi untuk mengurangi Perilaku Sedentari .....                                                  | 39        |
| 3.3. Perkembangan <i>Smart chair</i> .....                                                                 | 41        |

|                                         |                                                                      |           |
|-----------------------------------------|----------------------------------------------------------------------|-----------|
| 3.4.                                    | Jenis stimulus pada <i>Smart chair</i> .....                         | 41        |
| 3.5.                                    | <i>Body Mass Index (BMI)</i> .....                                   | 42        |
| 3.6.                                    | Pemetaan Lokasi Getaran .....                                        | 42        |
| 3.7.                                    | Teori Peningat ( <i>Reminders</i> ) .....                            | 43        |
| 3.8.                                    | <i>Response times</i> .....                                          | 45        |
| 3.9.                                    | <i>Response rates</i> .....                                          | 45        |
| 3.10.                                   | <i>Compliance times</i> .....                                        | 46        |
| 3.11.                                   | <i>Compliance rates</i> .....                                        | 46        |
| 3.12.                                   | <i>User Preferences</i> .....                                        | 46        |
| <b>BAB IV METODE PENELITIAN.....</b>    |                                                                      | <b>48</b> |
| 4.1.                                    | Subjek Penelitian .....                                              | 48        |
| 4.2.                                    | <i>Desain of Experiment</i> .....                                    | 48        |
| 4.2.1.                                  | Independen Variabel.....                                             | 50        |
| 4.2.2.                                  | Dependen Variabel.....                                               | 51        |
| 4.3.                                    | Alat yang Digunakan .....                                            | 58        |
| 4.4                                     | <i>Flowchart</i> Penelitian .....                                    | 63        |
| 4.4.1.                                  | Perumusan Masalah dan Tujuan Masalah.....                            | 63        |
| 4.4.2.                                  | Studi Literatur .....                                                | 64        |
| 4.4.3.                                  | Persiapan Alat dan Bahan Penelitian.....                             | 64        |
| 4.4.4.                                  | <i>Pilot Test</i> .....                                              | 65        |
| 4.4.5.                                  | Pengambilan Data.....                                                | 66        |
| 4.4.6.                                  | Pengumpulan Data .....                                               | 68        |
| 4.4.7.                                  | Pengolahan dan Analisis Data .....                                   | 69        |
| 4.4.8.                                  | Hasil dan Pembahasan .....                                           | 70        |
| 4.4.9.                                  | Kesimpulan dan Saran .....                                           | 71        |
| <b>BAB V HASIL DAN PEMBAHASAN .....</b> |                                                                      | <b>72</b> |
| 5.1.                                    | Karakteristik Subjek .....                                           | 72        |
| 5.2.                                    | Analisis hasil <i>Repetead Measure ANOVA Response times</i> .....    | 73        |
| 5.3.                                    | Analisis hasil <i>Repetead Measures ANOVA Compliance times</i> ..... | 75        |
| 5.4.                                    | Analisis hasil <i>Repetead Measures ANOVA Response rates</i> .....   | 76        |
| 5.5.                                    | Analisis Deskriptif <i>Compliance Rates</i> .....                    | 78        |

|                            |                                                                                                              |            |
|----------------------------|--------------------------------------------------------------------------------------------------------------|------------|
| <b>5.6.</b>                | <b>Analisis hasil <i>User Preferences</i> .....</b>                                                          | <b>78</b>  |
| <b>5.6.1.</b>              | <b>Analisis Hasil <i>Repetead Measures</i> ANOVA Dimensi <i>Confirmation</i><br/>79</b>                      |            |
| <b>5.6.2</b>               | <b>Analisis Hasil <i>Repetead Measures</i> ANOVA Dimensi <i>Comfort</i>.....</b>                             | <b>81</b>  |
| <b>5.6.3.</b>              | <b>Analisis Hasil <i>Repetead Measures</i> ANOVA Dimensi <i>Device Annoyance</i> .....</b>                   | <b>83</b>  |
| <b>5.6.4.</b>              | <b>Analisis Hasil <i>Repetead Measures</i> ANOVA Dimensi <i>Continuance Intention</i> .....</b>              | <b>85</b>  |
| <b>5.7.</b>                | <b>Pembahasan .....</b>                                                                                      | <b>88</b>  |
| <b>BAB VI</b>              | <b>PENUTUP .....</b>                                                                                         | <b>97</b>  |
| <b>6.1.</b>                | <b>Kesimpulan .....</b>                                                                                      | <b>97</b>  |
| <b>6.2.</b>                | <b>Saran.....</b>                                                                                            | <b>98</b>  |
| <b>DAFTAR PUSTAKA.....</b> |                                                                                                              | <b>100</b> |
| <b>LAMPIRAN.....</b>       |                                                                                                              | <b>105</b> |
| Lampiran 1                 | Surat Persetujuan Komisi Etik .....                                                                          | 105        |
| Lampiran 2                 | <i>Informed Consent Form</i> .....                                                                           | 106        |
| Lampiran 3                 | Prosedur Pengambilan Data .....                                                                              | 110        |
| Lampiran 4                 | Kuesioner Data Diri .....                                                                                    | 112        |
| Lampiran 5                 | Kuesioner <i>User Preferences</i> .....                                                                      | 113        |
| Lampiran 6                 | Data Sebaran Subjek .....                                                                                    | 116        |
| Lampiran 7                 | Simulasi Pemberian Stimulus .....                                                                            | 118        |
| Lampiran 8                 | Data Response Time, Compliance Times, Response Rates,<br>Compliance Rates, dan <i>User Preferences</i> ..... | 120        |
| Lampiran 9                 | Hasil Uji Kecukupan Data .....                                                                               | 131        |
| Lampiran 10                | Uji Residual .....                                                                                           | 132        |
| Lampiran 11                | Uji Residual.....                                                                                            | 133        |

## DAFTAR TABEL

|                                                                                                                     |                              |
|---------------------------------------------------------------------------------------------------------------------|------------------------------|
| Tabel 2.1 Posisi penelitian.....                                                                                    | 36                           |
| Tabel 4.1 Desain eksperimen .....                                                                                   | 51                           |
| Tabel 4.2 <i>Dependen Variabel</i> .....                                                                            | 51                           |
| Tabel 4.3 Pertanyaan kuesioner preferensi dimensi <i>confirmation</i> .....                                         | 54                           |
| Tabel 4.4 Pertanyaan kuesioner preferensi dimensi Device Annoyance.....                                             | 55                           |
| Tabel 4.5 Pertanyaan kuesioner preferensi dimensi <i>comfort</i> .....                                              | 56                           |
| Tabel 4.6 Pertanyaan kuesioner preferensi variabel <i>continuance intention</i> .....                               | 57                           |
| Tabel 4.7 Tabel hasil pengukuran <i>vibration motor (time domain)</i> .....                                         | 60                           |
| Tabel 4.8 Hipotesis uji <i>repeated measures</i> ANOVA .....                                                        | 69                           |
| Tabel 4.9 Hipotesis uji uji repeated measures ANOVA                                                                 | Error! Bookmark not defined. |
| <b>Error! Bookmark not defined.</b>                                                                                 |                              |
| Tabel 5.1 Informasi karakteristik subjek.....                                                                       | 72                           |
| Tabel 5.2 Hasil uji <i>repeated measure</i> ANOVA <i>response times</i> berdasarkan lokasi stimulus dan BMI .....   | 74                           |
| Tabel 5.3 Hasil uji <i>post hoc pairwise (bonferroni)</i> pada <i>response times</i> kategori lokasi stimulus ..... | 74                           |
| Tabel 5.4 Hasil uji <i>repeated measure</i> ANOVA <i>compliance times</i> berdasarkan lokasi stimulus dan BMI ..... | 76                           |
| Tabel 5.5 Hasil uji repeated measure ANOVA lokasi stimulus dan BMI terhadap <i>response rates</i> .....             | 77                           |
| Tabel 5.7 Hasil Uji repeated measure ANOVA dimensi <i>confirmation</i> berdasarkan BMI dan lokasi stimulus.....     | 80                           |
| Tabel 5.8 Hasil uji <i>post hoc pairwise (bonferroni)</i> pada dimensi <i>confirmation</i> kategori interaksi ..... | 80                           |
| Tabel 5.9 Hasil Uji repeated measure ANOVA dimensi <i>comfort</i> berdasarkan lokasi stimulus dan BMI .....         | 82                           |

|                                                                                                                                    |    |
|------------------------------------------------------------------------------------------------------------------------------------|----|
| Tabel 5.10 Hasil uji <i>post hoc pairwise (bonferroni)</i> pada dimensi <i>confirmation</i><br>kategori interaksi .....            | 83 |
| Tabel 5.11 Hasil uji uji repetead measures ANOVA dimensi <i>device annoyance</i><br>berdasarkan lokasi stimulus dan BMI .....      | 84 |
| Tabel 5.12 Hasil uji <i>post hoc pairwise (bonferroni)</i> pada skor dimensi <i>device annoyance</i> kategori lokasi stimulus..... | 85 |
| Tabel 5.13 Hasil uji uji repetead measures ANOVA dimensi <i>continuance intention</i><br>berdasarkan lokasi stimulus dan BMI ..... | 86 |
| Tabel 5.14 Hasil uji <i>post hoc pairwise (bonferroni)</i> pada skor dimensi <i>continuance intention</i> kategori interaksi ..... | 87 |

## DAFTAR GAMBAR

|                                                                                                          |    |
|----------------------------------------------------------------------------------------------------------|----|
| Gambar 3.1 Ilustrasi model pergerakan dalam periode 24 jam Tremblay et al. (2017).....                   | 38 |
| Gambar 3.3 Peta sensitivitas stimulus getaran Hirao and Yoshida (2024) .....                             | 43 |
| Gambar 4.1 <i>Design of experiment</i> .....                                                             | 49 |
| Gambar 4.2 Kursi dengan stimulus getaran di lokasi PA, PB dan AD .....                                   | 59 |
| Gambar 4.3 <i>Modul kontrol aktuator dan vibration motor</i> .....                                       | 59 |
| Gambar 4.4 <i>Time-domain signal</i> lokasi PA, PB, dan AD .....                                         | 61 |
| Gambar 4.5 Grafik superposisi sinyal <i>time-domain</i> .....                                            | 62 |
| Gambar 4.6 <i>Flowchart</i> penelitian .....                                                             | 63 |
| Gambar 4.7 <i>Layout</i> penempatan kursi dan modul kontrol aktuator.....                                | 65 |
| Gambar 4.8 Alur pengambilan data .....                                                                   | 67 |
| Gambar 4.9 Simulasi skenario pemberian stimulus getaran .....                                            | 67 |
| Gambar 5.1 Rata-rata nilai <i>response times</i> menurut BMI dan lokasi stimulus.....                    | 73 |
| Gambar 5.2 Rata-rata nilai <i>compliance times</i> menurut BMI dan lokasi stimulus .                     | 75 |
| Gambar 5.3 Rata-rata presentase <i>response rates</i> menurut BMI dan lokasi stimulus .....              | 77 |
| Gambar 5.4 Rata-rata presentase <i>compliance rates</i> menurut BMI dan lokasi stimulus.....             | 78 |
| Gambar 5.5 <i>Rata-rata skor dimensi confirmation berdasarkan BMI dan lokasi stimulus</i> .....          | 79 |
| Gambar 5.6 Rata-rata skor dimensi <i>comfort</i> berdasarkan lokasi stimulus dan BMI .....               | 81 |
| Gambar 5.7 Rata-rata skor dimensi <i>device annoyance</i> berdasarkan BMI dan lokasi stimulus.....       | 84 |
| Gambar 5.8 Rata-rata skor dimensi <i>continuance intention</i> berdasarkan BMI dan lokasi stimulus ..... | 86 |
| Gambar 5.9 Dokumensi postur responden.....                                                               | 92 |

## DAFTAR LAMPIRAN

|                                                                                                                      |     |
|----------------------------------------------------------------------------------------------------------------------|-----|
| Lampiran 1 Surat Persetujuan Komisi Etik.....                                                                        | 105 |
| Lampiran 2 <i>Informed Consent Form</i> .....                                                                        | 106 |
| Lampiran 3 Prosedur Pengambilan Data.....                                                                            | 110 |
| Lampiran 4 Kuesioner Data Diri.....                                                                                  | 112 |
| Lampiran 5 Kuesioner <i>User Preferences</i> .....                                                                   | 113 |
| Lampiran 6 Data Sebaran Subjek.....                                                                                  | 116 |
| Lampiran 7 Simulasi Pemberian Stimulus .....                                                                         | 118 |
| Lampiran 8 Data <i>Response Time, Compliance Times, Response Rates, Compliance Rates, dan User Preferences</i> ..... | 120 |
| Lampiran 9 Hasil Uji Kecukupan Data.....                                                                             | 131 |
| Lampiran 11 Uji Residual .....                                                                                       | 132 |
| Lampiran 12 Uji Residual .....                                                                                       | 133 |