DAFTAR ISI

HALAMAN JUDUL ........................................................................................................ i
PERNYATAAN KEASLIAN ......................................................................................... ii
SURAT PERNYATAAN SELESAI PENELITIAN ....................................................... iii
LEMBAR PENGESAHAN PEMBIMBING ................................................................ iv
LEMBAR PENGESAHAN PENGUJI .......................................................................... v
HALAMAN PERSEMAHAN ......................................................................................... vi
KATA PENGANTAR .................................................................................................. vii
DAFTAR ISI ................................................................................................................ ix
DAFTAR TABEL ......................................................................................................... xi
DAFTAR GAMBAR .................................................................................................... xii
ABSTRAK .................................................................................................................. xiv
BAB I ............................................................................................................................ 1
PENDAHULUAN ...................................................................................................... 1
  1.1 Latar Belakang .................................................................................................. 1
  1.2 Rumusan Masalah ......................................................................................... 3
  1.3 Tujuan Penelitian ....................................................................................... 4
  1.4 Manfaat Penelitian .................................................................................... 4
  1.5 Batasan Penelitian .................................................................................... 5
  1.6 Sistematika Penulisan Laporan ................................................................. 5
BAB II .......................................................................................................................... 7
KAJIAN LITERATUR .................................................................................................. 7
  2.1 Kajian Deduktif ........................................................................................... 7
  2.2 Kajian Induktif ............................................................................................ 14
BAB III ....................................................................................................................... 17
METODE PENELITIAN ......................................................................................... 17
  3.1 Subjek Penelitian ....................................................................................... 17
  3.2 Objek Penelitian ......................................................................................... 17
  3.3 Populasi dan Sampel ................................................................................ 18
  3.2 Jenis Data Penelitian ................................................................................ 20
  3.4 Metode Pengumpulan Data ..................................................................... 20
  3.5 Metode Pengolahan Data .......................................................................... 28
3.6 Metode Analisis Data ........................................................................................................... 29
3.7 Diagram Alir Penelitian ......................................................................................................... 33
BAB IV ......................................................................................................................................... 36
PENGUMPULAN DAN PENGOLAHAN DATA ........................................................................... 36
4.1 Profil Responden ...................................................................................................................... 36
4.2 Hasil Rekapitulasi Rata-Rata Performansi Gelombang Otak .............................................. 37
4.3 Hasil Rekapitulasi Kesalahan Mengemudi ........................................................................... 41
4.4 Hasil Uji Statistik Gelombang Otak ...................................................................................... 47
4.5 Hasil Uji Statistik Kesalahan Mengemudi ............................................................................ 56
BAB V .......................................................................................................................................... 61
PEMBAHASAN .............................................................................................................................. 61
5.1 Analisis Aktivitas Gelombang Otak ....................................................................................... 61
5.2 Analisis Kesalahan Mengemudi ............................................................................................ 66
5.3 Analisis Kognitif ....................................................................................................................... 73
BAB VI ......................................................................................................................................... 77
PENUTUP ...................................................................................................................................... 77
5.1 Kesimpulan .............................................................................................................................. 77
5.2 Saran ....................................................................................................................................... 78
DAFTAR PUSTAKA ....................................................................................................................... 79
LAMPIRAN ................................................................................................................................... 83
DAFTAR TABEL

Tabel 2.1 Bagian Otak Dan Letak Channel ......................................................... 13
Tabel 3.1 Pengaturan Kondisi Driving Simulator ............................................... 23
Tabel 3.2 Pengaturan Situasi Darurat Driving Simulator .................................... 23
Tabel 3.3 Uji Parametrik dan Non Parametrik ..................................................... 30
Tabel 4.1 Profil Responden .................................................................................. 36
Tabel 4.2 Rata-Rata Performansi Gelombang Otak .............................................. 38
Tabel 4.3 Rekapitulasi Jumlah Pelanggaran ......................................................... 41
Tabel 4.4 Hasil Rekapitulasi Jenis Pelanggaran dan Jumlahnya ......................... 43
Tabel 4.5 Hasil Rekapitulasi Jumlah Kecelakaan .................................................. 45
Tabel 4.6 Hasil Rekapitulasi Jumlah Kesalahan Pengemudi ................................. 46
DAFTAR GAMBAR

Gambar 1.1 Jumlah Kecelakaan Lalu Lintas Jumlah Korban di Indonesia ......................... 1
Gambar 2.1 Konseptual Ilustrasi Hubungan Antara Beban Kerja Mental dan Kesadaran ................................................................................................................................. 10
Gambar 2.2 Empat Ritme Normal Otak Dominan ................................................................. 13
Gambar 3.1 Letak Sensor Pendeteksi Gelombang Otak EEG .............................................. 18
Gambar 3.2 Letak Pemakaian EEG ........................................................................................ 18
Gambar 3.3 Ilustrasi Replikasi .............................................................................................. 19
Gambar 3.4 Layout Eksperimen .......................................................................................... 24
Gambar 3.5 Jalur Eksperimen Mengemudi Audio ............................................................... 25
Gambar 3.6 Jalur Eksperimen Mengemudi Stimulus Visual ............................................... 26
Gambar 3.7 Jalur Eksperimen Mengemudi Stimulus Visual-Auditori ............................... 26
Gambar 3.8 Langkah Uji Statistik ....................................................................................... 30
Gambar 3.9 Diagram Alir Penelitian .................................................................................. 33
Gambar 4.1 Uji Kruskal-Wallis Antar Aktivitas ................................................................. 48
Gambar 4.2 Uji Kruskal-Wallis Antar Aktivitas tambahan .................................................. 49
Gambar 4.3 Uji Mann Whitney U Antara Tanpa Navigasi dan Navigasi Auditori ............ 50
Gambar 4.4 Uji Mann Whitney U Antara Tanpa Navigasi dan Navigasi Visual ............... 51
Gambar 4.5 Uji Mann Whitney U Antara Tanpa Navigasi dan Navigasi Visual Auditori ............................................................................................................................. 53
Gambar 4.6 Uji Mann Whitney U Antara Navigasi Auditori dan Navigasi Visual .......... 54
Gambar 4.7 Uji Mann Whitney U Antara Navigasi Auditori dan Navigasi Visual Auditori ......................................................................................................................... 55
Gambar 4.8 Uji Mann Whitney U Antara Navigasi Visual dan Navigasi Visual Auditori ............................................................................................................................ 56
Gambar 4.9 Uji Kruskal-Wallis Jumlah Pelanggaran ........................................................... 57
Gambar 4.10 Uji Kruskal-Wallis Jumlah Kecelakaan ............................................................ 58
Gambar 4.11 Uji Kruskal-Wallis Jumlah Kesalahan Aktivitas Ttama dan Aktivitas Tambahan ..................................................................................................................... 59
Gambar 5.1 Grafik Rata-Rata Performansi Gelombang Responden ................................. 63
Gambar 5.2 Rata-Rata Performansi Gelombang Otak Antar Tugas ................................. 64
Gambar 5.3 Grafik Aktivitas tambahan................................................................. 66
Gambar 5.4 Presentase Pelanggaran................................................................. 68
Gambar 5.5 Diagram Pareto Pelanggaran yang Paling Sering Muncul......... 71
Gambar 5.6 Grafik Presentase Kecelakaan..................................................... 72
Gambar 5.7 Grafik Hubungan Performansi Mengemudi.............................. 73
Gambar 5.0.8 Grafik Engagement................................................................. 74
Gambar 5.0.9 Grafik Frustations...................................................................... 75