

**TUGAS AKHIR**  
**ANALISIS POSTUR KERJA KARYAWAN KANTOR CV.**  
**MARGI UTAMA MENGGUNAKAN METODE RAPID**  
**ENTIRE BODY ASSESSMENT (REBA) DAN ANALYTICAL**  
**HIERARCHY PROCESS (AHP)**



**DISUSUN OLEH:**

**NAMA: MUHAMMAD IRSYAD MAHDI MUBAROK**

**NIM: 220601147**

**PROGRAM STUDI TEKNIK INDUSTRI**  
**FAKULTAS TEKNIK**  
**UNIVERSITAS MUHAMMADIYAH GRESIK**

**2025**

**ANALISIS POSTUR KERJA KARYAWAN KANTOR CV. MARGI  
UTAMA MENGGUNAKAN METODE RAPID ENTIRE BODY  
ASSESSMENT (REBA) DAN ANALYTICAL HIERARCHY PROCESS  
(AHP)**

Disusun Sebagai Salah Satu Syarat Memperoleh Gelar Sarjana Teknik Program  
Studi Teknik Industri S-1 Fakultas Teknik  
Universitas Muhammadiyah Gresik

**DISUSUN OLEH:**

**NAMA: MUHAMMAD IRSYAD MAHDI MUBAROK**

**NIM: 220601147**

**PROGRAM STUDI TEKNIK INDUSTRI  
FAKULTAS TEKNIK  
UNIVERSITAS MUHAMMADIYAH GRESIK**

**2025**

**LATAR BELAKANG**

Puji syukur kehadiran Allah SWT atas limpahan rahmat dan karunia-Nya sehingga penulis dapat menyelesaikan tugas akhir skripsi ini dengan baik dan tepat waktu. Skripsi ini disusun untuk memenuhi salah satu syarat dalam mencapai gelar Sarjana (S1) pada Program Studi Teknik Industri, Fakultas Teknik, Universitas Muhammadiyah Gresik.

Penulis mengucapkan terima kasih yang sebesar-besarnya kepada Bapak/Ibu Dosen Pembimbing yang telah memberikan bimbingan, arahan, serta dukungan selama proses penyusunan skripsi ini. Ucapan terima kasih juga penulis sampaikan kepada keluarga tercinta yang selalu memberikan doa, dukungan moral, serta motivasi yang tiada henti.

Selanjutnya, penulis menyampaikan terima kasih kepada pihak perusahaan yang telah memberikan izin, kesempatan, dan bantuan selama proses pengumpulan data dan penelitian berlangsung. Terima kasih juga kepada seluruh dosen dan staf Fakultas Teknik Universitas Muhammadiyah Gresik yang telah memberikan ilmu, bimbingan, serta bantuan administrasi selama penyusunan tugas akhir ini.

Tugas akhir ini diharapkan dapat memberikan manfaat kepada seluruh pihak yang berkepentingan dan diharapkan memiliki kualitas yang cukup dan memuaskan sehingga dapat untuk dijadikan sebagai syarat kelulusan mahasiswa di universitas muhammadiyah gresik.

Gresik, Oktober 2025

Penulis

**M.irsyad Mahdi Mubarak**

**Nim:220601147**

## DAFTAR ISI

COVER.....	Error! Bookmark not defined.
LEMBAR PERSETUJUAN TUGAS AKHIR.....	Error! Bookmark not defined.
LEMBAR PENGESAHAN TUGAS AKHIR .....	Error! Bookmark not defined.
LATAR BELAKANG .....	Error! Bookmark not defined.
DAFTAR ISI.....	3
DAFTAR TABEL .....	5
DAFTAR GAMBAR.....	7
BAB I PENDAHULUAN.....	Error! Bookmark not defined.
1.1 Latar Belakang Masalah .....	Error! Bookmark not defined.
1.2 Perumusan Masalah .....	Error! Bookmark not defined.
1.3 Tujuan Penelitian .....	Error! Bookmark not defined.
1.4 Manfaat Penelitian.....	Error! Bookmark not defined.
3.5 Batasan Masalah .....	Error! Bookmark not defined.
3.6 Asumsi-Asumsi .....	Error! Bookmark not defined.
3.7 Sistematika Penulisan .....	Error! Bookmark not defined.
BAB II TINJAUAN PUSTAKA.....	Error! Bookmark not defined.
2.1 Ergonomi .....	Error! Bookmark not defined.
2.1.1 Pengertian Ergonomi.....	Error! Bookmark not defined.
2.1.2 Ergonomi Perkantoran.....	Error! Bookmark not defined.
2.2 Postur Kerja.....	Error! Bookmark not defined.
2.2.1 Pengertian Postur Kerja.....	Error! Bookmark not defined.
2.2.2 Standar Postur Kerja.....	Error! Bookmark not defined.
2.3 Musculoskeletal disorders (MSDs).....	Error! Bookmark not defined.
2.3.1 Pengertian Musculoskeletal disorders.....	Error! Bookmark not defined.
2.3.2 Faktor Terjadinya Musculoskeletal disorders.....	Error! Bookmark not defined.
2.3.3 Dampak MSD Terhadap Produktivitas.....	Error! Bookmark not defined.
2.4 Rapid Entire Body Assesmen (REBA) .....	Error! Bookmark not defined.
2.4.1 Pengertian REBA .....	Error! Bookmark not defined.
2.4.2 Persiapan Perhitungan REBA .....	Error! Bookmark not defined.
2.4.3 Perhitungan REBA .....	Error! Bookmark not defined.
2.5 Nordic Body Map.....	Error! Bookmark not defined.
2.6 Analytical Hierarchy Process .....	Error! Bookmark not defined.
2.6.1 Pengertian AHP.....	Error! Bookmark not defined.

2.6.2 Kelebihan AHP .....	Error! Bookmark not defined.
2.6.3 Kekurangan AHP .....	Error! Bookmark not defined.
2.6.4 Tahapan AHP .....	Error! Bookmark not defined.
2.7 Geometrik Mean .....	Error! Bookmark not defined.
2.8 Penelitian Terdahulu.....	Error! Bookmark not defined.
<b>BAB III METODOLOGI PENELITIAN .....</b>	<b>Error! Bookmark not defined.</b>
3.1 Identifikasi Masalah .....	Error! Bookmark not defined.
3.2 Studi lapangan.....	Error! Bookmark not defined.
3.3 Studi Literatur .....	Error! Bookmark not defined.
3.4 Perumusan Masalah & Tujuan Penelitian.....	Error! Bookmark not defined.
3.4.1 Perumusan Masalah .....	Error! Bookmark not defined.
3.4.2 Tujuan Penelitian .....	Error! Bookmark not defined.
3.5 Pengumpulan & Pengolahan Data .....	Error! Bookmark not defined.
3.5.1 Pengumpul Data.....	Error! Bookmark not defined.
3.5.2 Pengolahan Data .....	Error! Bookmark not defined.
3.5.3 Jenis Data.....	Error! Bookmark not defined.
3.5.4 Instrumen Penelitian.....	Error! Bookmark not defined.
3.6 Analisa & Interpretasi Data .....	Error! Bookmark not defined.
3.7 Flowchart Penelitian .....	Error! Bookmark not defined.
<b>BAB IV PENGUMPULAN DAN PENGOLAHAN DATA.....</b>	<b>Error! Bookmark not defined.</b>
4.1 Pengumpulan Data Postur Tubuh .....	Error! Bookmark not defined.
4.1.1 Kuisisioner Biodata Koresponden.....	Error! Bookmark not defined.
4.1.2 Kuisisioner Keluhan Otot Koresponden.....	Error! Bookmark not defined.
4.1.3 Kuisisioner Nordic Body Map .....	Error! Bookmark not defined.
4.1.4 Observasi Postur Kegiatan Kerja.....	Error! Bookmark not defined.
4.2 Pengolahan Data Postur Tubuh .....	Error! Bookmark not defined.
4.2.1 Perhitungan Postur Tubuh.....	Error! Bookmark not defined.
4.2.2 Menghitung Nilai Reba.....	Error! Bookmark not defined.
4.3 Pengumpulan Data AHP .....	Error! Bookmark not defined.
4.2.2 Kuisisioner Perbandingan Kriteria.....	Error! Bookmark not defined.
4.2.2 Kuisisioner Perbandingan Kegiatan .....	Error! Bookmark not defined.
4.4 Pengolahan Data AHP .....	Error! Bookmark not defined.
4.4.1 Representasi Struktur Hirarki.....	Error! Bookmark not defined.
4.4.2 Geometrik Mean Koresponden.....	Error! Bookmark not defined.
4.4.3 Perbandingan Kriteria .....	Error! Bookmark not defined.
4.4.4 Perbandingan Kegiatan Kerja.....	Error! Bookmark not defined.

4.4.5 Prioritas Global .....	Error! Bookmark not defined.
<b>BAB V ANALISA DAN INTERPRETASI</b> .....	Error! Bookmark not defined.
5.1 Analisa Nordic Body Map .....	Error! Bookmark not defined.
5.1.1 Safiqwi Indrawan .....	Error! Bookmark not defined.
5.1.2 Haris Tajuddin Bahaqi .....	Error! Bookmark not defined.
5.1.3 Muhammad Fakhri Rifqi azhar .....	Error! Bookmark not defined.
5.1.4 Amirul aziz.....	Error! Bookmark not defined.
5.2 Analisa Nilai REBA.....	Error! Bookmark not defined.
5.3 Analisa Korelasi REBA dengan NBM.....	Error! Bookmark not defined.
5.4 Analisa Perhitungan AHP .....	Error! Bookmark not defined.
<b>BAB VI KESIMPULAN DAN SARAN</b> .....	Error! Bookmark not defined.
<b>TINJAUAN PUSTAKA</b> .....	Error! Bookmark not defined.
<b>LAMPIRAN</b> .....	Error! Bookmark not defined.

## DAFTAR TABEL

Tabel 1. 1 Kesimpulan Kuisioner Form Wawancara .....	Error! Bookmark not defined.
Tabel 2. 1 Table A .....	Error! Bookmark not defined.
Tabel 2. 2 Table B .....	Error! Bookmark not defined.
Tabel 2. 3 Table C .....	Error! Bookmark not defined.
Tabel 2. 4 Skala perbandingan prioritas.....	Error! Bookmark not defined.
Tabel 3. 1 Resiko MSD REBA.....	Error! Bookmark not defined.
Tabel 3. 2 Interpretasi Korelasi REBA Dan NBM .....	Error! Bookmark not defined.
Tabel 4. 2 Survey Biodata .....	Error! Bookmark not defined.
Tabel 4. 3 Survey Keluhan Otot Dan kegiatan Kerja .....	Error! Bookmark not defined.
Tabel 4. 4 NBM Safiqwi Indrawan .....	Error! Bookmark not defined.
Tabel 4. 5 NBM Haris Tajuddin Bahaqi.....	Error! Bookmark not defined.
Tabel 4. 6 NBM Muhammad Fakhri Rifqi azhar.....	Error! Bookmark not defined.
Tabel 4. 7 NBM Amirul aziz .....	Error! Bookmark not defined.
Tabel 4. 8 Foto Postur Karyawan .....	Error! Bookmark not defined.
Tabel 4. 9 Perhitungan nilai A Safiqwi Indrawan .....	Error! Bookmark not defined.
Tabel 4. 10 Perhitungan Nilai B Safiqwi Indrawan .....	Error! Bookmark not defined.
Tabel 4. 11 Perhitungan nilai C Safiqwi Indrawan .....	Error! Bookmark not defined.
Tabel 4. 12 Perhitungan Nilai A Haris Tajuddin Bahaqi .....	Error! Bookmark not defined.
Tabel 4. 13 Perhitungan Nilai B Haris Tajuddin Bahaqi.....	Error! Bookmark not defined.
Tabel 4. 14 Perhitungan Nilai C Haris Tajuddin Bahaqi.....	Error! Bookmark not defined.

Tabel 4. 15 Perhitungan Nilai A Fakhri Rifqi Azhar .....Error! Bookmark not defined.  
Tabel 4. 16 Perhitungan Nilai B Fakhri Rifqi Azhar .....Error! Bookmark not defined.  
Tabel 4. 17 Perhitungan Nilai C Fakhri Rifqi Azhar .....Error! Bookmark not defined.  
Tabel 4. 18 Perhitungan Nilai A Amirul Aziz.....Error! Bookmark not defined.  
Tabel 4. 19 Perhitungan Nilai B Amirul Aziz.....Error! Bookmark not defined.  
Tabel 4. 20 Perhitungan Nilai Amirul Aziz .....Error! Bookmark not defined.  
Tabel 4. 21 Perbandingan Kriteria Safiqwi Indrawan ....Error! Bookmark not defined.  
Tabel 4. 22 Perbandingan Kriteria Haris Tajuddin BahaqiError! Bookmark not defined.  
Tabel 4. 23 Perbandingan Kriteria Muhammad Fakhri Rifqi AzharError! Bookmark not defined.  
Tabel 4. 24 Perbandingan Kriteria Amirul Aziz .....Error! Bookmark not defined.  
Tabel 4. 26 Perbandingan Kegiatan Berdasarkan Kriteria 1 (Safiqwi Indrawan)Error! Bookmark not defined.  
Tabel 4. 27 Perbandingan Kegiatan Berdasarkan Kriteria 1Error! Bookmark not defined.  
Tabel 4. 28 Perbandingan Kegiatan Berdasarkan Kriteria 1Error! Bookmark not defined.  
Tabel 4. 29 Perbandingan Kegiatan Berdasarkan Kriteria 1Error! Bookmark not defined.  
Tabel 4. 30 Perbandingan Kegiatan Berdasarkan Kriteria 2Error! Bookmark not defined.  
Tabel 4. 31 Perbandingan Kegiatan Berdasarkan Kriteria 2 (Haris Tajuddin Bahaqi)  
.....Error! Bookmark not defined.  
Tabel 4. 32 Perbandingan Kegiatan Berdasarkan Kriteria 2 (Muhammad Fakhri Rifqi azhar)  
.....Error! Bookmark not defined.  
Tabel 4. 33 Perbandingan Kegiatan Berdasarkan Kriteria 2 (Amirul Aziz)Error! Bookmark not defined.  
Tabel 4. 34 Perbandingan Kegiatan Berdasarkan Kriteria 3 (Safiqwi Indrawan)Error! Bookmark not defined.  
Tabel 4. 35 Perbandingan Kegiatan Berdasarkan Kriteria 3 (Haris Tajuddin Bahaqi)  
.....Error! Bookmark not defined.  
Tabel 4. 36 Perbandingan Kegiatan Berdasarkan Kriteria 3 (Muhammad Fakhri Rifqi azhar)  
.....Error! Bookmark not defined.  
Tabel 4. 37 Perbandingan Kegiatan Berdasarkan Kriteria 3 (Amirul Aziz)Error! Bookmark not defined.  
Tabel 4. 38 Perbandingan Kegiatan Berdasarkan Kriteria 4 (Safiqwi Indrawan)Error! Bookmark not defined.  
Tabel 4. 39 Perbandingan Kegiatan Berdasarkan Kriteria 4 (Haris Tajuddin Bahaqi)  
.....Error! Bookmark not defined.  
Tabel 4. 40 Perbandingan Kegiatan Berdasarkan Kriteria 4 (Muhammad Fakhri Rifqi azhar)  
.....Error! Bookmark not defined.  
Tabel 4. 41 Perbandingan Kegiatan Berdasarkan Kriteria 4 (Amirul Aziz)Error! Bookmark not defined.  
Tabel 4. 42 Perbandingan Kegiatan Berdasarkan Kriteria 5 (Safiqwi Indrawan)Error! Bookmark not defined.  
Tabel 4. 43 Perbandingan Kegiatan Alternatif Berdasarkan Kriteria 5 (Haris Tajuddin Bahaqi)  
.....Error! Bookmark not defined.  
Tabel 4. 44 Perbandingan Kegiatan Berdasarkan Kriteria 5 (Muhammad Fakhri Rifqi azhar)  
.....Error! Bookmark not defined.  
Tabel 4. 45 Perbandingan Kegiatan Berdasarkan Kriteria 5 (Amirul Aziz)Error! Bookmark not defined.  
Tabel 4. 46 Perbandingan Kriteria (Geometrik Mean) ...Error! Bookmark not defined.

Tabel 4. 47 Perbandingan Kegiatan Berdasarkan kriteria 1 (Geometrik Mean)Error! Bookmark not defined.  
Tabel 4. 48 Perbandingan Kegiatan Berdasarkan Kriteria 2 (Geometrik Mean)Error! Bookmark not defined.  
Tabel 4. 49 Perbandingan Kegiatan Berdasarkan Kriteria 3 (Geometrik Mean)Error! Bookmark not defined.  
Tabel 4. 50 Perbandingan Kegiatan Berdasarkan Kriteria 4 (Geometrik Mean)Error! Bookmark not defined.  
Tabel 4. 51 Perbandingan Kegiatan Berdasarkan Kriteria 5 (Geometrik Mean)Error! Bookmark not defined.  
Tabel 4. 52 Penjumlahan Tiap kolom.....Error! Bookmark not defined.  
Tabel 4. 53 Pembagian Elemen Dengan Nilai Total KolomError! Bookmark not defined.  
Tabel 4. 54 Penjumlahan Baris Dibagi jumlah Elemen (n = 5)Error! Bookmark not defined.  
Tabel 4. 55 Perkalian Setiap Elemen Dengan Nilai PrioritasError! Bookmark not defined.  
Tabel 4. 56 Perhitungan Nilai CR Perbandingan Kriteria 1Error! Bookmark not defined.  
Tabel 4. 57 Perhitungan Nilai CR Perbandingan Kriteria 2Error! Bookmark not defined.  
Tabel 4. 58 Perhitungan Nilai CR Perbandingan Kriteria 3Error! Bookmark not defined.  
Tabel 4. 59 Perhitungan Nilai CR Perbandingan Kriteria 4Error! Bookmark not defined.  
Tabel 4. 60 Perhitungan Nilai CR Perbandingan Kriteria 5Error! Bookmark not defined.  
Tabel 4. 61 Tabel Prioritas Global .....Error! Bookmark not defined.

Tabel 5. 1 Analisa Nilai REBA.....Error! Bookmark not defined.  
Tabel 5. 2 Korelasi REBA Dengan NBM.....Error! Bookmark not defined.

## DAFTAR GAMBAR

Gambar 2. 1 REBA Worksheet.....Error! Bookmark not defined.  
Gambar 2. 2 Alur Diagram Penilaian REBA .....Error! Bookmark not defined.  
Gambar 2. 3 Analisa Grup A.....Error! Bookmark not defined.  
Gambar 2. 4 Analisa Grup B.....Error! Bookmark not defined.  
Gambar 2. 5 Kuisisioner Nordic Body Map.....Error! Bookmark not defined.  
Gambar 2. 6 Tahapan AHP .....Error! Bookmark not defined.  
Gambar 2. 7 Rumus Geometrik Mean.....Error! Bookmark not defined.

Gambar 3. 1 Flowchart Penelitian.....Error! Bookmark not defined.

Gambar 4. 1 Perhitungan Postur Tubuh Safiqwi IndrawanError! Bookmark not defined.  
Gambar 4. 2 Perhitungan Postur Haris Tajuddin BahaqiError! Bookmark not defined.  
Gambar 4. 3 Perhitungan Postur Fakhri rifki azhar.....Error! Bookmark not defined.  
Gambar 4. 4 Perhitungan Postur Amirul aziz.....Error! Bookmark not defined.  
Gambar 4. 5 Struktur Hirarki.....Error! Bookmark not defined.