

## DAFTAR ISI

|                                                                   |             |
|-------------------------------------------------------------------|-------------|
| <b>HALAMAN NOMOR PERSOALAN .....</b>                              | <b>ii</b>   |
| <b>LEMBAR PENGESAHAN .....</b>                                    | <b>iii</b>  |
| <b>PERNYATAAN BEBAS PLAGIASI .....</b>                            | <b>iv</b>   |
| <b>SURAT PERNYATAAN KEBENARAN DOKUMEN.....</b>                    | <b>v</b>    |
| <b>KATA PENGANTAR.....</b>                                        | <b>vi</b>   |
| <b>ABSTRACT .....</b>                                             | <b>viii</b> |
| <b>INTISARI .....</b>                                             | <b>ix</b>   |
| <b>DAFTAR ISI.....</b>                                            | <b>x</b>    |
| <b>DAFTAR GAMBAR .....</b>                                        | <b>xiii</b> |
| <b>DAFTAR TABEL .....</b>                                         | <b>xiv</b>  |
| <b>BAB I PENDAHULUAN.....</b>                                     | <b>1</b>    |
| 1.1 Latar Belakang.....                                           | 1           |
| 1.2 Rumusan Masalah .....                                         | 4           |
| 1.3 Tujuan Penelitian .....                                       | 4           |
| 1.4 Batasan Masalah .....                                         | 5           |
| 1.5 Manfaat Penelitian.....                                       | 6           |
| 1.6 Sistematika Penulisan .....                                   | 6           |
| <b>BAB II DASAR TEORI.....</b>                                    | <b>8</b>    |
| 2.1 Penelitian Terdahulu .....                                    | 8           |
| 2.2 <i>Off The Road Tyre</i> .....                                | 10          |
| 2.2.1 Konstruksi <i>Tyre Radial</i> . ....                        | 10          |
| 2.2.2 Dimensi dan Aspek Rasio <i>Tyre</i> .....                   | 12          |
| 2.2.3 Klasifikasi <i>Tyre</i> .....                               | 13          |
| 2.2.4 Pola Kembangan Tapak <i>Tyre</i> .....                      | 15          |
| 2.2.5 Posisi <i>Tyre</i> pada Unit <i>Off-Highway Truck</i> ..... | 15          |
| 2.3 Inspeksi <i>Tyre</i> Konvensional.....                        | 16          |
| 2.4 <i>Tyre Management System</i> .....                           | 18          |
| 2.5 <i>Tyre Pressure Monitoring System (TPMS)</i> .....           | 20          |

|                                                        |           |
|--------------------------------------------------------|-----------|
| 2.5.1 Prinsip Kerja TPMS.....                          | 20        |
| 2.5.2 Komponen Utama TPMS .....                        | 21        |
| 2.5.3 Spesifikasi Teknis TPMS.....                     | 22        |
| 2.5.4 Keterbatasan TPMS .....                          | 23        |
| 2.6 <i>Key Performance Indicator</i> .....             | 23        |
| 2.6.1 <i>Ton Kilometer Per Hour</i> (TKPH) .....       | 23        |
| 2.6.2 <i>Tread Utilization Rate</i> (TUR).....         | 24        |
| 2.6.3 Umur Pakai Tyre ( <i>Service Life</i> ) .....    | 24        |
| 2.6.4 <i>Cost per Hour</i> (CPH).....                  | 25        |
| 2.7 Klasifikasi Kerusakan Tyre.....                    | 25        |
| 2.8 Faktor yang Mempengaruhi Kinerja Tyre.....         | 27        |
| 2.8.1 Muatan <i>Vessel</i> .....                       | 27        |
| 2.8.2 Kecepatan Kendaraan .....                        | 27        |
| 2.8.3 Tekanan Tyre ( <i>Inflation Pressure</i> ) ..... | 27        |
| 2.8.4 Pengoperasian Unit.....                          | 28        |
| 2.9 Metode Analisis Data .....                         | 28        |
| 2.9.1 Analisis Statistik Deskriptif.....               | 29        |
| 2.9.2 Analisis Statistik Inferensial .....             | 29        |
| 2.10 Rumusan Hipotesis Penelitian.....                 | 32        |
| <b>BAB III METODOLOGI PENELITIAN .....</b>             | <b>35</b> |
| 3.1 Diagram Alir Penelitian .....                      | 35        |
| 3.2 Pelaksanaan Penelitian .....                       | 36        |
| 3.3 Objek Penelitian .....                             | 37        |
| 3.4 Alat Penelitian .....                              | 37        |
| 3.5 Teknik Pengumpulan Data .....                      | 38        |
| 3.5.1 Data Primer .....                                | 38        |
| 3.5.2 Data Sekunder .....                              | 38        |
| 3.6 Pengolahan Data .....                              | 38        |
| 3.6.1 Analisis Statistik Deskriptif.....               | 38        |
| 3.6.2 Analisis Statistik Inferensial .....             | 39        |
| <b>BAB IV HASIL DAN PEMBAHASAN.....</b>                | <b>41</b> |

|                                                                       |           |
|-----------------------------------------------------------------------|-----------|
| 4.1 Analisis Ton Kilometer Per Hour .....                             | 41        |
| 4.1.1 Spesifikasi TKPH Manufaktur .....                               | 42        |
| 4.1.2 Distribusi Beban .....                                          | 42        |
| 4.1.3 Data Muatan dan Kecepatan.....                                  | 44        |
| 4.1.4 Perhitungan Nilai TKPH Tyre Aktual.....                         | 44        |
| 4.2 Analisis Deskriptif.....                                          | 45        |
| 4.2.1 Statistik Deskriptif Stabilitas <i>Inflation Pressure</i> ..... | 45        |
| 4.2.2 Statistik Deskriptif <i>Service Life</i> .....                  | 48        |
| 4.2.3 Statistik Deskriptif <i>Tread Utilization Rate</i> .....        | 49        |
| 4.2.4 Statistik Deskriptif <i>Cost per Hour</i> .....                 | 51        |
| 4.2.5 Ringkasan Deskriptif .....                                      | 51        |
| 4.3 Uji Normalitas .....                                              | 54        |
| 4.4 Uji Hipotesis.....                                                | 55        |
| 4.4.1 <i>Low Tyre Pressure</i> .....                                  | 55        |
| 4.4.2 <i>Service Life</i> .....                                       | 56        |
| 4.4.3 <i>Tread Utilization Rate</i> .....                             | 57        |
| 4.4.4 <i>Cost Per Hour</i> .....                                      | 57        |
| 4.5 Pembahasan .....                                                  | 58        |
| 4.5.1 Dampak TPMS terhadap Performa Tyre.....                         | 59        |
| 4.5.2 Implikasi Operasional.....                                      | 59        |
| 4.5.3 Implikasi Finansial .....                                       | 61        |
| 4.5.4 Batas Efektivitas TPMS.....                                     | 63        |
| <b>BAB V KESIMPULAN DAN SARAN .....</b>                               | <b>64</b> |
| 5.1 Kesimpulan.....                                                   | 64        |
| 5.2 Saran .....                                                       | 64        |
| <b>DAFTAR PUSTAKA.....</b>                                            | <b>66</b> |
| <b>LAMPIRAN.....</b>                                                  | <b>69</b> |
| Lampiran 1. Data <i>Pressure</i> Periode Konvensional.....            | 69        |
| Lampiran 2. Data <i>Pressure</i> Periode TPMS.....                    | 74        |
| Lampiran 3. Data Operasional Tyre .....                               | 77        |
| Lampiran 4. Data Uji Komparatif <i>Mann-Whitney U Test</i> .....      | 82        |