

Lampiran 1 Data *Time To Failure* dan *Time To Repair* Komponen Kritis1. *Brake Lining*

Mulai		Selesai		<i>Time To Failure</i>	<i>Time To Repair</i>
Tanggal	Jam	Tanggal	Jam		
13 Juni 2015	10:10	13 Juni 2015	14:00		3,84
28 Juli 2015	12:00	28 Juli 2015	16:00	250	4
14 September 2015	9:30	14 September 2015	13:15	299,5	3,75
23 Oktober 2015	12:15	23 Oktober 2015	15:55	245	3,67
02 Desember 2015	8:55	02 Desember 2015	13:05	253	4,17
04 Januari 2016	13:50	04 Januari 2016	17:20	190	3,5
20 Februari 2016	11:45	20 Februari 2016	15:20	303,75	3,59
04 April 2016	11:00	04 April 2016	14:00	255	3
11 Mei 2016	13:15	11 Mei 2016	16:35	237,25	3,34
15 Juni 2016	13:40	15 Juni 2016	17:20	227,67	3,67

2. *Kabel Push Button*

Mulai		Selesai		<i>Time To Failure</i>	<i>Time To Repair</i>
Tanggal	Jam	Tanggal	Jam		
15 Juni 2015	8:15	15 Juni 2015	11:15		3
31 Juli 2015	11:00	31 Juli 2015	13:45	269,75	2,75
12 September 2015	11:30	12 September 2015	14:10	273,75	2,67
14 Oktober 2015	10:20	14 Oktober 2015	12:35	194,3	2,25
24 November 2015	10:15	24 November 2015	13:05	257,67	2,84
05 Januari 2016	12:20	05 Januari 2016	15:45	251,25	3,42
23 Februari 2016	9:45	23 Februari 2016	13:05	308	3,34
12 April 2016	10:45	12 April 2016	12:45	295,67	2
13 Mei 2016	8:45	13 Mei 2016	11:40	196	2,92
23 Juni 2016	11:25	23 Juni 2016	14:15	267,75	2,84

3. *Bearing*

Mulai		Selesai		<i>Time To Failure</i>	<i>Time To Repair</i>
Tanggal	Jam	Tanggal	Jam		
18 Juni 2015	8:30	18 Juni 2015	12:20		3,84
03 September 2015	8:50	03 September 2015	13:25	456,5	4,59
08 Desember 2015	13:25	08 Desember 2015	18:05	612	4,67
10 Maret 2016	8:00	10 Maret 2016	12:30	558	4,5
10 Juni 2016	11:45	10 Juni 2016	16:05	589,25	4,34

4. *Wheel Trolley*

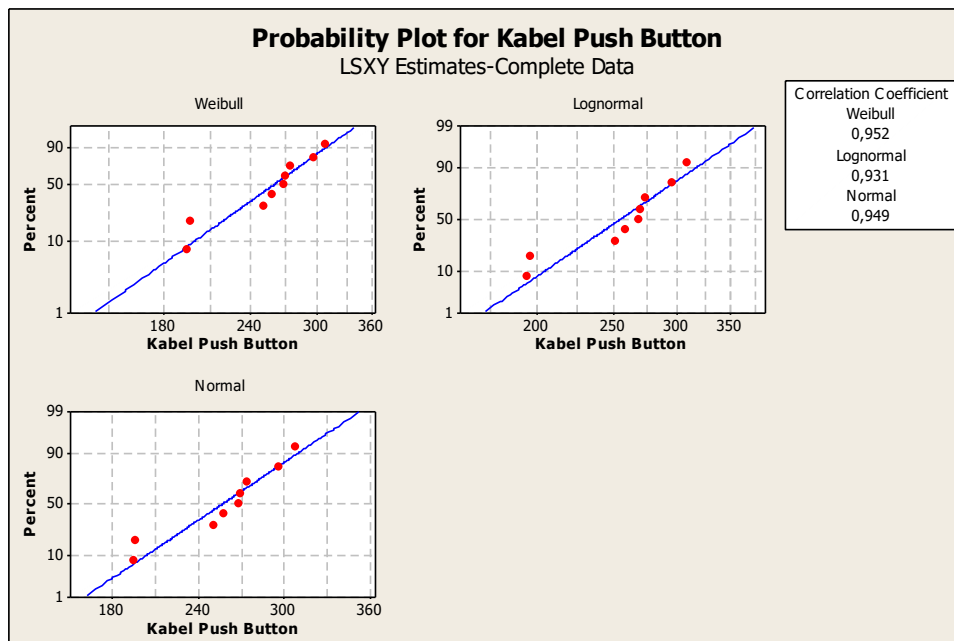
Mulai		Selesai		Time To Failure	Time To Repair
Tanggal	Jam	Tanggal	Jam		
03 Agustus 2015	12:00	03 Agustus 2015	16:00		4
19 November 2015	8:30	19 November 2015	12:55	682,5	4,42
13 Februari 2016	9:10	13 Februari 2016	13:40	532,25	4,5
25 Mei 2016	10:40	25 Mei 2016	14:50	635	4,17

5. *Wire Rope*

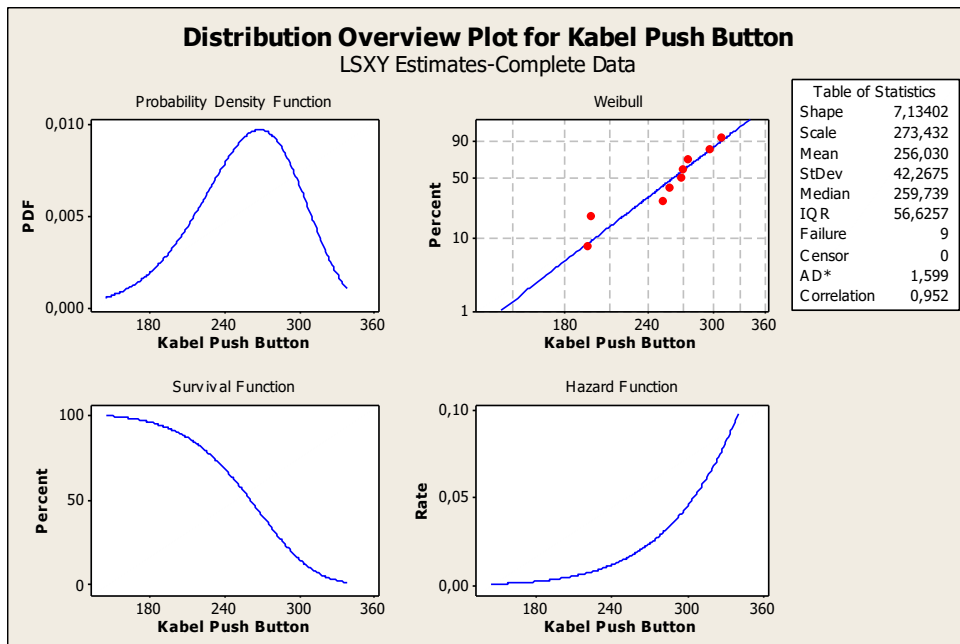
Mulai		Selesai		Time To Failure	Time To Repair
Tanggal	Jam	Tanggal	Jam		
01 Juli 2015	11:30	01 Juli 2015	14:05		2,59
01 Oktober 2015	8:25	01 Oktober 2015	10:45	546,33	2,34
08 Januari 2015	10:45	08 Januari 2015	13:20	628	2,59
15 Maret 2016	14:05	15 Maret 2016	16:50	412,75	2,75
13 Juni 2016	14:15	13 Juni 2016	16:25	566,25	2,17

Lampiran 2 Penentuan Distribusi *Time To Failure* (TTF) Komponen Kritis1. *Kabel Push Button*

Output pengujian distribusi data TTF kabel *push button*

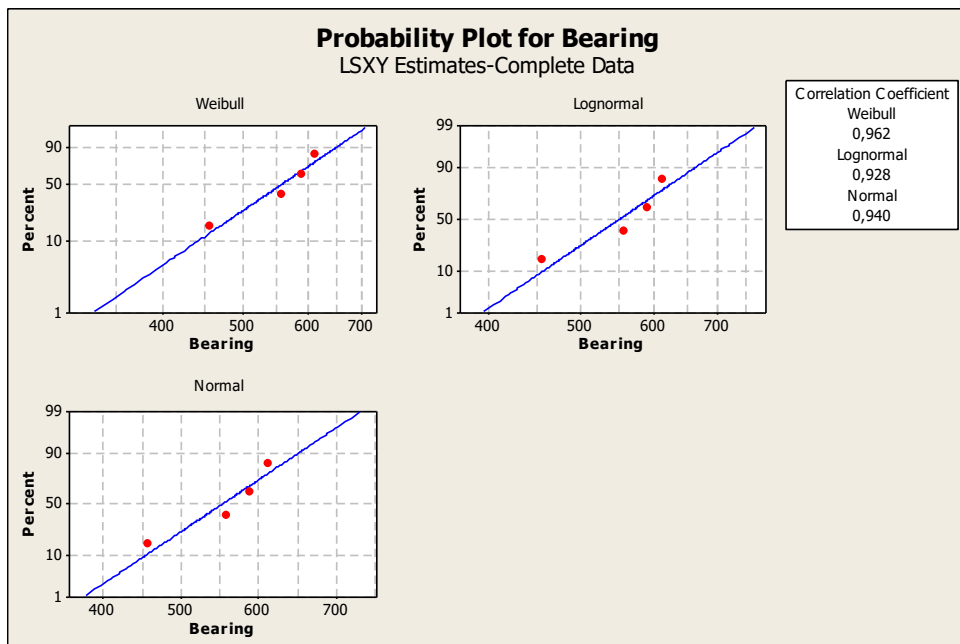


Output parameter pada data TTF kabel *push button*

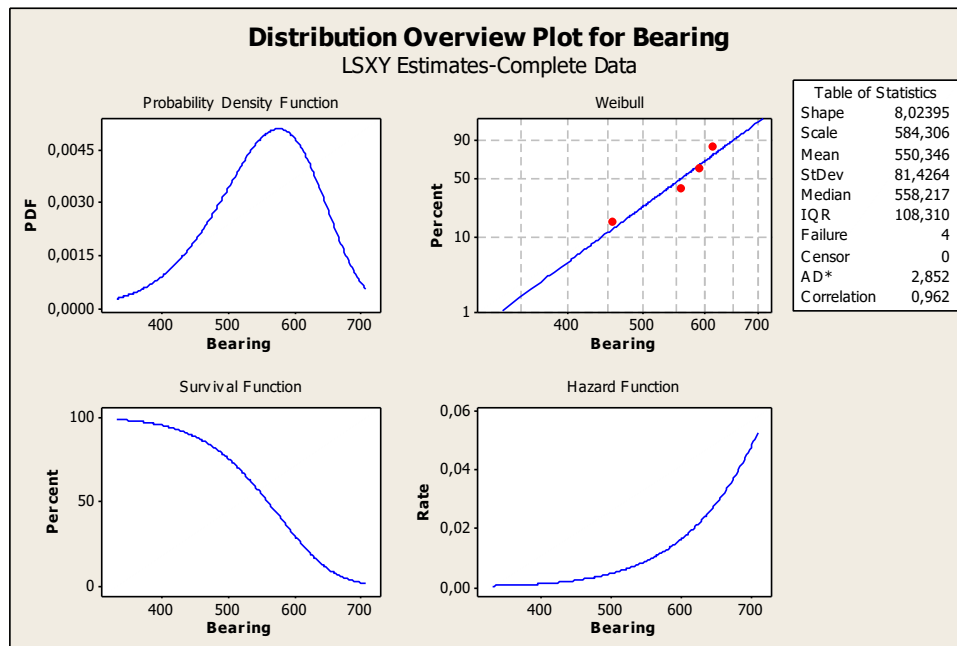


2. Bearing

Output pengujian distribusi data TTF *bearing*

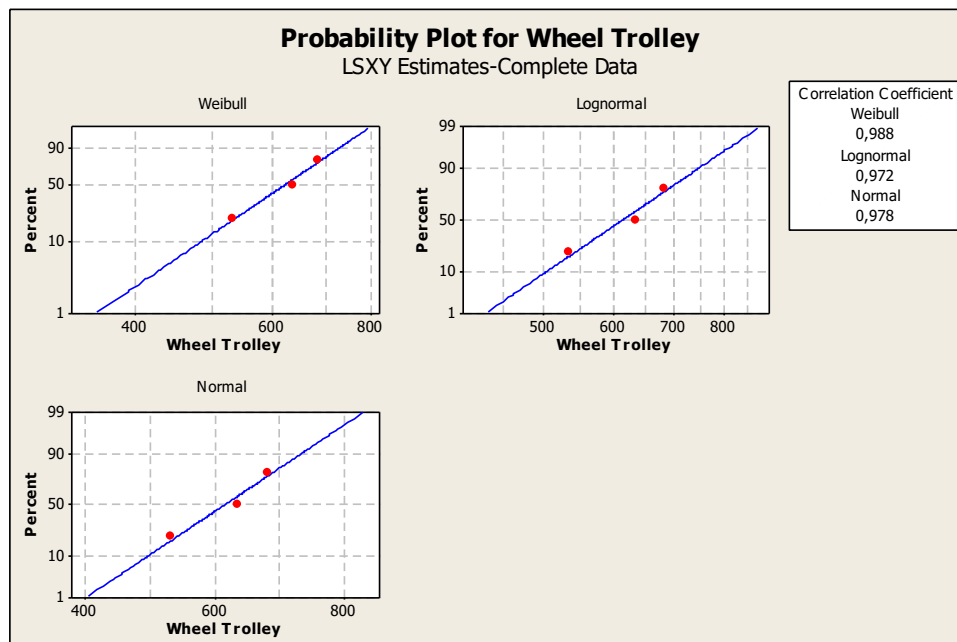


Output parameter pada data TTF *bearing*

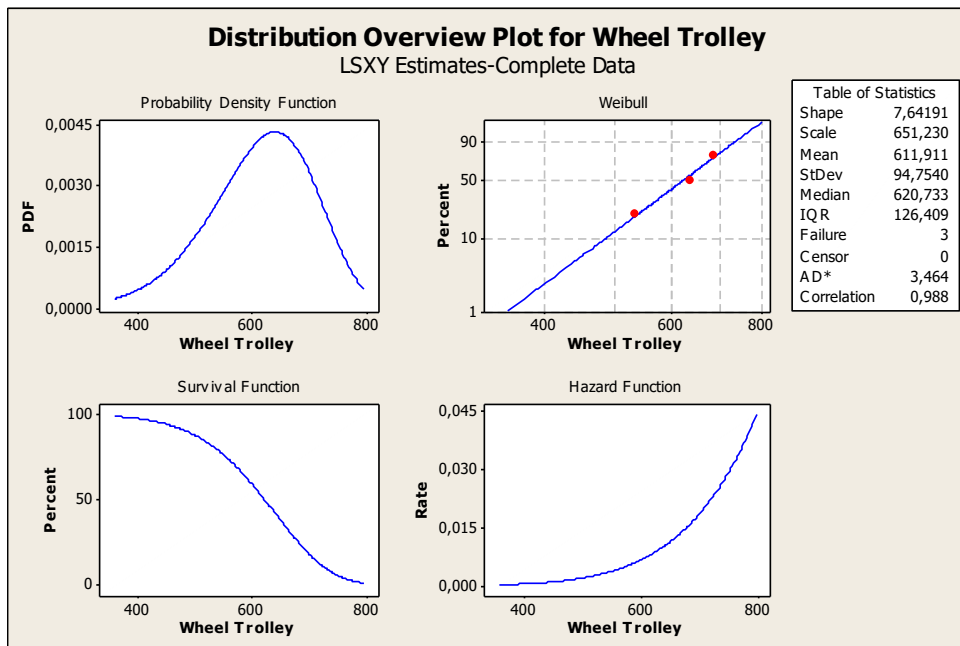


3. Wheel Trolley

Output pengujian distribusi data TTF *wheel trolley*

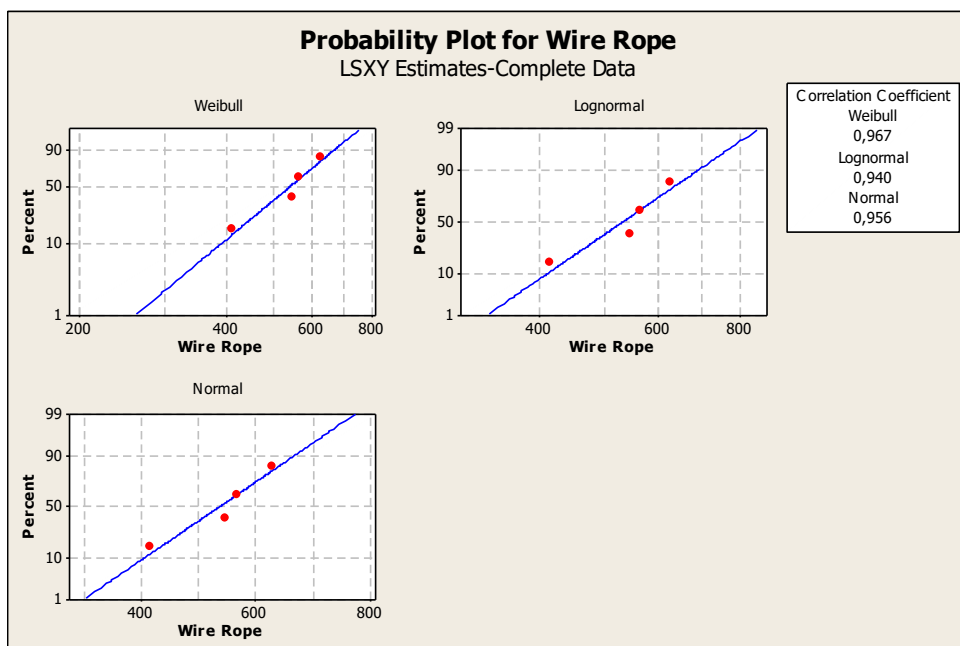


Output parameter pada data TTF *wheel trolley*

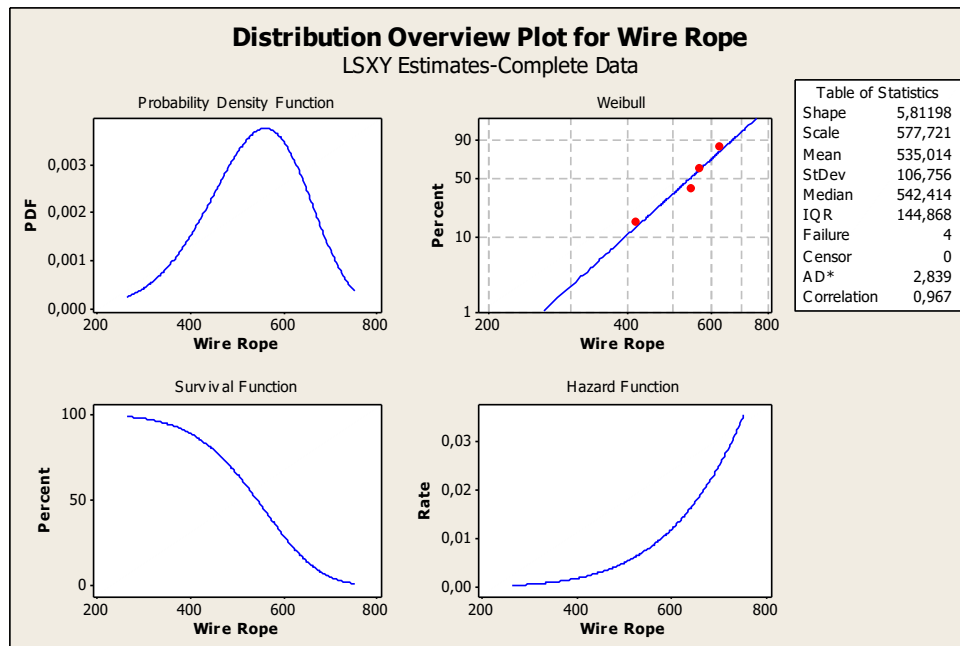


4. Wire Rope

Output pengujian distribusi data TTF *wire rope*



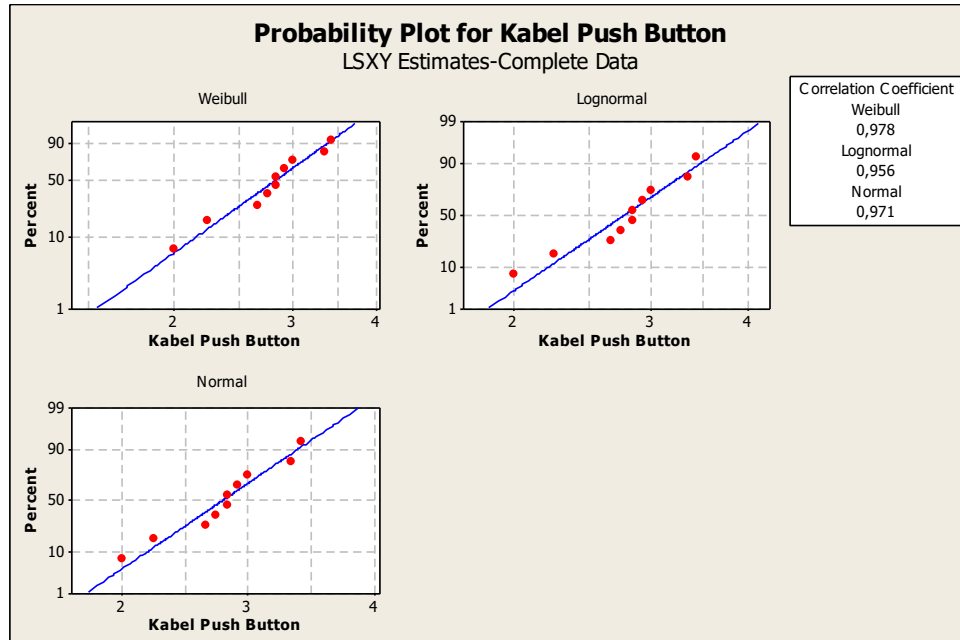
Output parameter pada data TTF *wire rope*



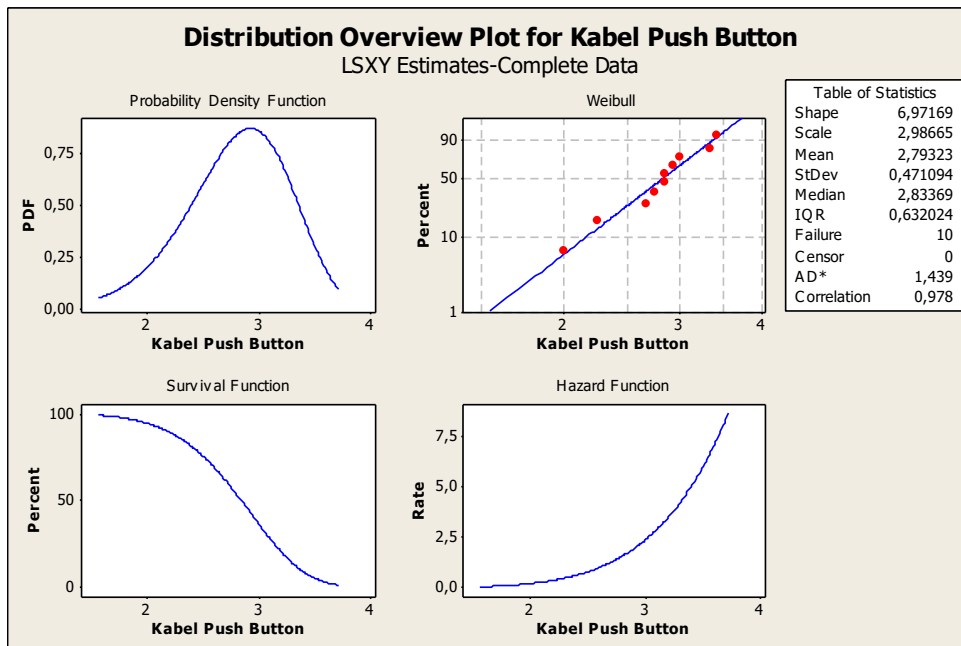
Lampiran 3 Penentuan Distribusi *Time To Repair* (TTR) Komponen Kritis

1. Kabel *Push Button*

Output pengujian distribusi data TTR kabel *push button*

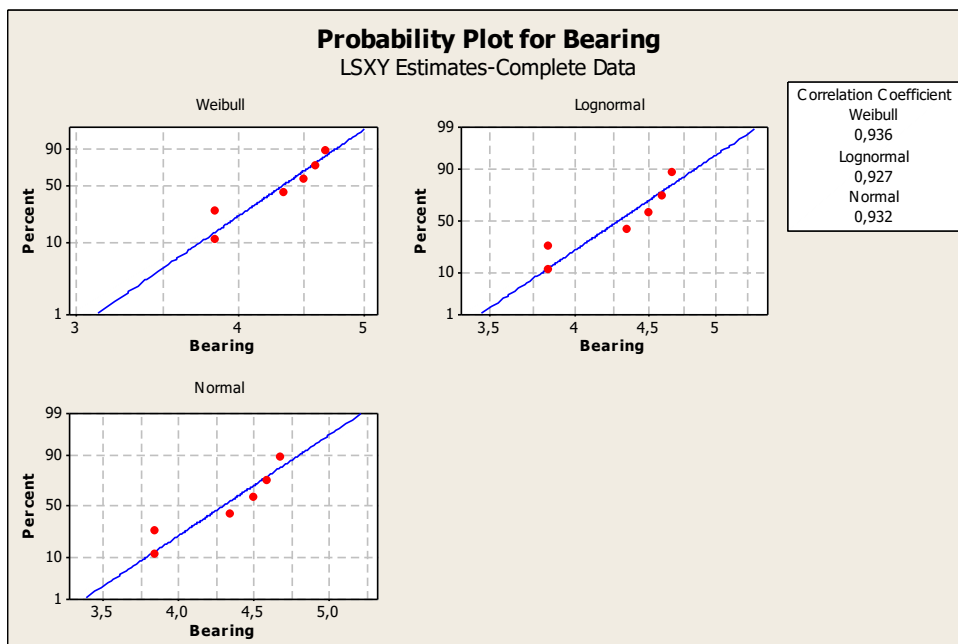


Output parameter pada data TTR kabel *push button*

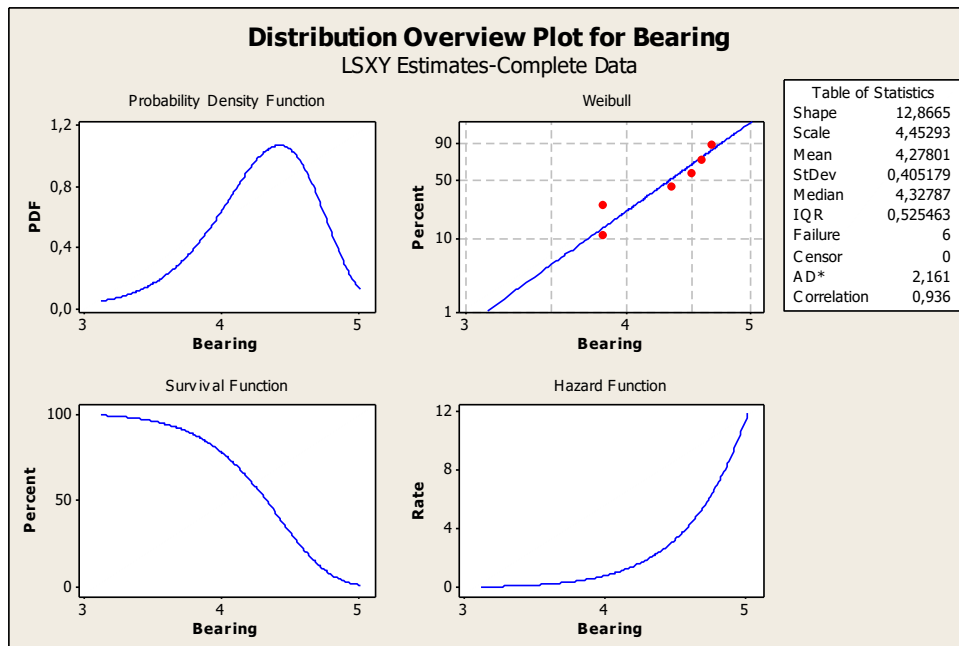


2. Bearing

Output pengujian distribusi data TTR *bearing*

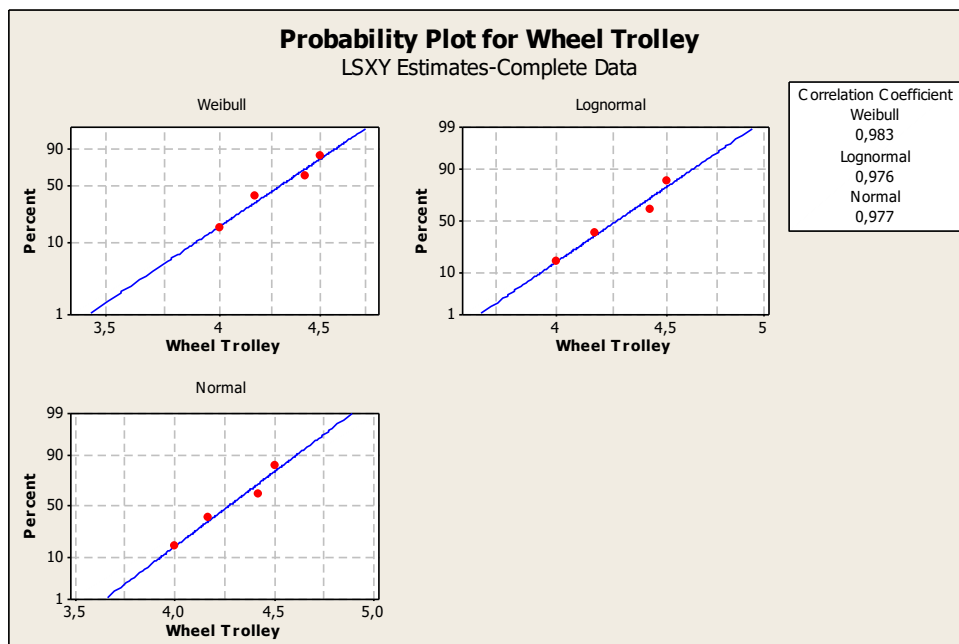


Output parameter pada data TTR *bearing*

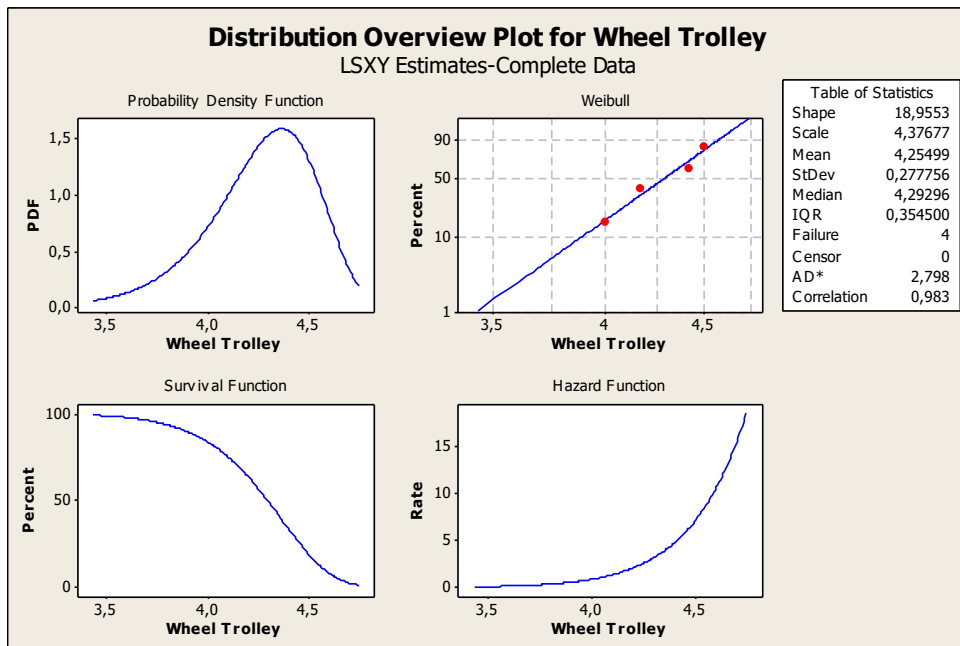


3. Wheel Trolley

Output pengujian distribusi data TTR *wheel trolley*

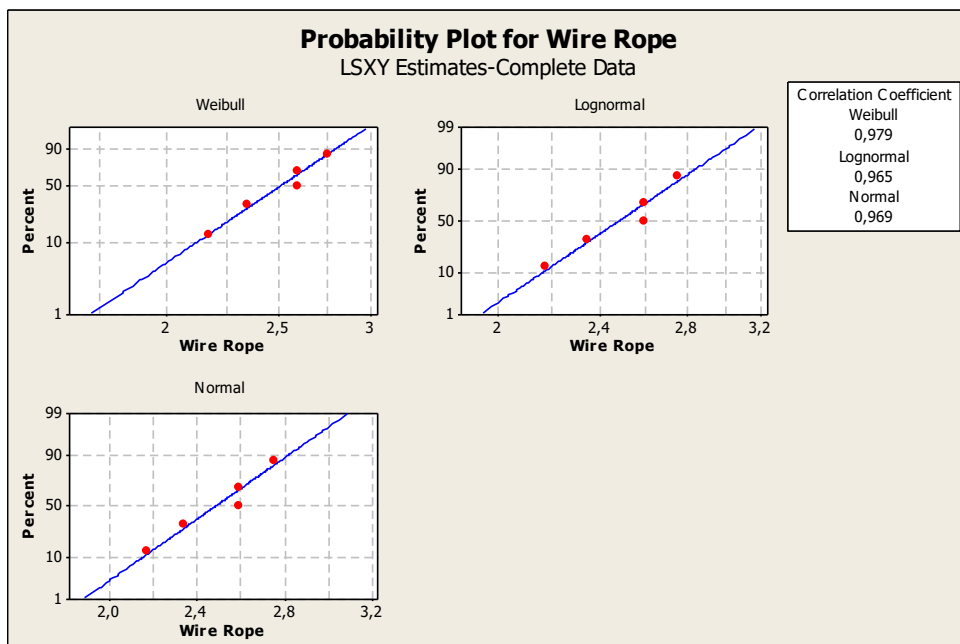


Output parameter pada data TTR *wheel trolley*

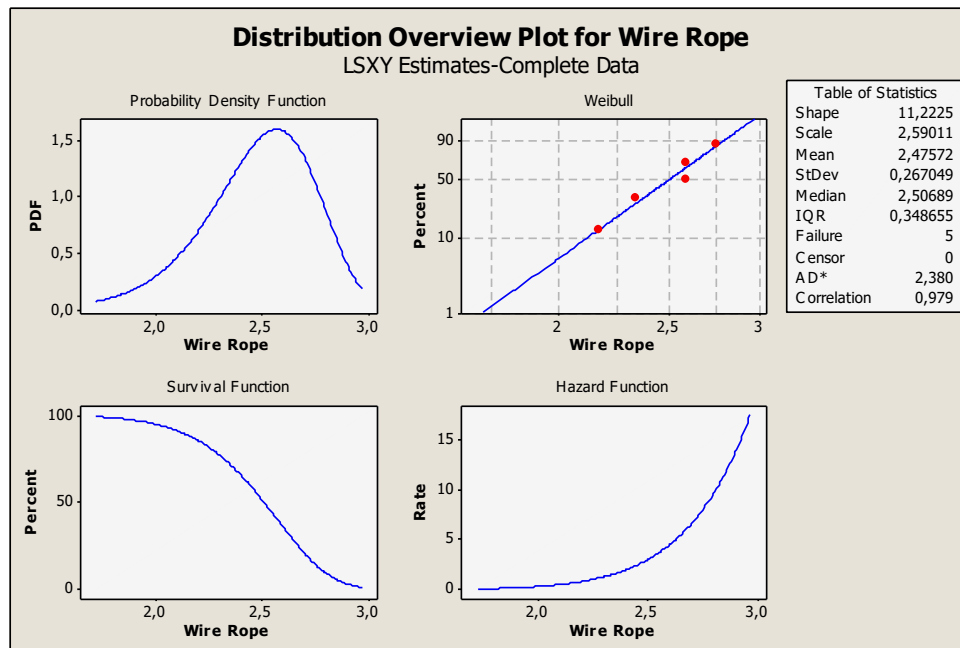


4. Wire Rope

Output pengujian distribusi data TTR *wire rope*



Output parameter pada data TTR *wire rope*



Lampiran 4 Perhitungan Total Biaya Perawatan

Berikut ini merupakan perhitungan total biaya perawatan masing-masing komponen kritis pada mesin *hoist crane* apabila menggunakan interval TM.

1. Kabel *Push Button*

a. Perhitungan Probabilitas Rusak

$$\begin{aligned}
 P(TTF \leq TM) &= \int_0^{TM} f(t) dt \\
 &= \int_0^{TM} \frac{\beta}{\alpha} \left(\frac{t}{\alpha}\right)^{\beta-1} \exp\left[-\left(\frac{t}{\alpha}\right)^{\beta}\right] dt \\
 &= \int_0^{205,793} \frac{7,13402}{273,432} \left(\frac{t}{273,432}\right)^{7,13402-1} \exp\left[-\left(\frac{t}{273,432}\right)^{7,13402}\right] dt \\
 &= 0,1234
 \end{aligned}$$

b. Perhitungan Probabilitas Masih Baik

$$\begin{aligned}
 P(TTF > TM) &= 1 - P(TTF \leq TM) \\
 &= 1 - 0,1234 \\
 &= 0,8766
 \end{aligned}$$

c. Perhitungan TC

$$\begin{aligned}
 TC &= ((P(TTF \leq TM) C_F) + (P(TTF > TM) C_M)) \times \frac{\text{durasi 1 tahun (jam)}}{TM} \\
 &= ((0,1234 \times \text{Rp } 2.993.505) + (0,8766 \times \text{Rp } 2.417.961)) \times \frac{2460}{205,793} \\
 &= \text{Rp } 2.488.972 \times 11 \\
 &= \text{Rp } 27.378.690
 \end{aligned}$$

2. Bearing

a. Perhitungan Probabilitas Rusak

$$\begin{aligned}
 P(\text{TTF} \leq \text{TM}) &= \int_0^{\text{TM}} f(t) dt \\
 &= \int_0^{\text{TM}} \frac{\beta}{\alpha} \left(\frac{t}{\alpha}\right)^{\beta-1} \exp\left[-\left(\frac{t}{\alpha}\right)^{\beta}\right] dt \\
 &= \int_0^{414,583} \frac{8,02395}{584,306} \left(\frac{t}{584,306}\right)^{8,02395-1} \exp\left[-\left(\frac{t}{584,306}\right)^{8,02395}\right] dt \\
 &= 0,0617
 \end{aligned}$$

b. Perhitungan Probabilitas Masih Baik

$$\begin{aligned}
 P(\text{TTF} > \text{TM}) &= 1 - P(\text{TTF} \leq \text{TM}) \\
 &= 1 - 0,0617 \\
 &= 0,9383
 \end{aligned}$$

c. Perhitungan TC

$$\begin{aligned}
 \text{TC} &= ((P(\text{TTF} \leq \text{TM}) C_F) + (P(\text{TTF} > \text{TM}) C_M)) \times \frac{\text{durasi 1 tahun (jam)}}{\text{TM}} \\
 &= ((0,0617 \times \text{Rp } 3.472.278) + (0,9383 \times \text{Rp } 1.553.799)) \times \frac{2460}{414,583} \\
 &= \text{Rp } 1.672.212 \times 5 \\
 &= \text{Rp } 8.361.060
 \end{aligned}$$

3. Wheel Trolley

a. Perhitungan Probabilitas Rusak

$$\begin{aligned}
 P(\text{TTF} \leq \text{TM}) &= \int_0^{\text{TM}} f(t) dt \\
 &= \int_0^{\text{TM}} \frac{\beta}{\alpha} \left(\frac{t}{\alpha}\right)^{\beta-1} \exp\left[-\left(\frac{t}{\alpha}\right)^{\beta}\right] dt \\
 &= \int_0^{474,147} \frac{7,62383}{652,687} \left(\frac{t}{652,687}\right)^{7,62383-1} \exp\left[-\left(\frac{t}{652,687}\right)^{7,62383}\right] dt \\
 &= 0,0838
 \end{aligned}$$

b. Perhitungan Probabilitas Masih Baik

$$\begin{aligned}
 P(\text{TTF} > \text{TM}) &= 1 - P(\text{TTF} \leq \text{TM}) \\
 &= 1 - 0,0838 \\
 &= 0,9162
 \end{aligned}$$

c. Perhitungan TC

$$\begin{aligned}
 \text{TC} &= ((P(\text{TTF} \leq \text{TM}) C_F) + (P(\text{TTF} > \text{TM}) C_M)) \times \frac{\text{durasi 1 tahun (jam)}}{\text{TM}} \\
 &= ((0,0838 \times \text{Rp } 4.105.240) + (0,9162 \times \text{Rp } 2.378.610)) \times \frac{2460}{474,147} \\
 &= \text{Rp } 2.523.228 \times 5
 \end{aligned}$$

$$TC = \text{Rp } 12.616.138$$

4. Wire Rope

a. Perhitungan Probabilitas Rusak

$$\begin{aligned} P(TTF \leq TM) &= \int_0^{TM} f(t) dt \\ &= \int_0^{TM} \frac{\beta}{\alpha} \left(\frac{t}{\alpha}\right)^{\beta-1} \exp\left[-\left(\frac{t}{\alpha}\right)^{\beta}\right] dt \\ &= \int_0^{427,646} \frac{5,81198}{577,721} \left(\frac{t}{577,721}\right)^{5,81198-1} \exp\left[-\left(\frac{t}{577,721}\right)^{5,81198}\right] dt \\ &= 0,1598 \end{aligned}$$

b. Perhitungan Probabilitas Masih Baik

$$\begin{aligned} P(TTF > TM) &= 1 - P(TTF \leq TM) \\ &= 1 - 0,1598 \\ &= 0,8402 \end{aligned}$$

c. Perhitungan TC

$$\begin{aligned} TC &= ((P(TTF \leq TM) C_F) + (P(TTF > TM) C_M)) \times \frac{\text{durasi 1 tahun (jam)}}{TM} \\ &= ((0,1598 \times \text{Rp } 3.939.843) + (0,8402 \times \text{Rp } 3.300.350)) \times \frac{2460}{427,646} \\ &= \text{Rp } 3.402.524 \times 5 \\ &= \text{Rp } 17.012.622 \end{aligned}$$

Berikut ini merupakan perhitungan total biaya perawatan masing-masing komponen kritis pada mesin *hoist crane* apabila menggunakan interval MTTF.

1. Bearing

a. Perhitungan Probabilitas Rusak

$$\begin{aligned} P(TTF \leq MTTF) &= \int_0^{MTTF} f(t) dt \\ &= \int_0^{MTTF} \frac{\beta}{\alpha} \left(\frac{t}{\alpha}\right)^{\beta-1} \exp\left[-\left(\frac{t}{\alpha}\right)^{\beta}\right] dt \\ &= \int_0^{250,194} \frac{8,18434}{265,379} \left(\frac{t}{265,379}\right)^{8,18434-1} \exp\left[-\left(\frac{t}{265,379}\right)^{8,18434}\right] dt \\ &= 0,4607 \end{aligned}$$

b. Perhitungan Probabilitas Masih Baik

$$\begin{aligned} P(TTF > MTTF) &= 1 - P(TTF \leq MTTF) \\ &= 1 - 0,4607 \\ &= 0,5393 \end{aligned}$$

c. Perhitungan TC

$$\begin{aligned}
 TC &= ((P(TTF \leq MTTF) C_F) + (P(TTF > MTTF) C_M)) \times \frac{\text{durasi 1 tahun (jam)}}{MTTF} \\
 &= ((0,4607 \times \text{Rp } 3.075.162) + (0,5393 \times \text{Rp } 2.243.822)) \times \frac{2460}{250,194} \\
 &= \text{Rp } 2.626.780 \times 9 \\
 &= \text{Rp } 23.641.020
 \end{aligned}$$

2. Kabel *Push Button*

a. Perhitungan Probabilitas Rusak

$$\begin{aligned}
 P(TTF \leq MTTF) &= \int_0^{MTTF} f(t) dt \\
 &= \int_0^{MTTF} \frac{\beta}{\alpha} \left(\frac{t}{\alpha}\right)^{\beta-1} \exp\left[-\left(\frac{t}{\alpha}\right)^{\beta}\right] dt \\
 &= \int_0^{256,030} \frac{7,13402}{273,432} \left(\frac{t}{273,432}\right)^{7,13402-1} \exp\left[-\left(\frac{t}{273,432}\right)^{7,13402}\right] dt \\
 &= 0,4650
 \end{aligned}$$

b. Perhitungan Probabilitas Masih Baik

$$\begin{aligned}
 P(TTF > MTTF) &= 1 - P(TTF \leq MTTF) \\
 &= 1 - 0,4650 \\
 &= 0,5350
 \end{aligned}$$

c. Perhitungan TC

$$\begin{aligned}
 TC &= ((P(TTF \leq MTTF) C_F) + (P(TTF > MTTF) C_M)) \times \frac{\text{durasi 1 tahun (jam)}}{MTTF} \\
 &= ((0,4650 \times \text{Rp } 2.993.505) + (0,5350 \times \text{Rp } 2.417.961)) \times \frac{2460}{256,030} \\
 &= \text{Rp } 2.685.608 \times 9 \\
 &= \text{Rp } 24.170.472
 \end{aligned}$$

3. *Bearing*

a. Perhitungan Probabilitas Rusak

$$\begin{aligned}
 P(TTF \leq MTTF) &= \int_0^{MTTF} f(t) dt \\
 &= \int_0^{MTTF} \frac{\beta}{\alpha} \left(\frac{t}{\alpha}\right)^{\beta-1} \exp\left[-\left(\frac{t}{\alpha}\right)^{\beta}\right] dt \\
 &= \int_0^{550,346} \frac{8,02395}{584,306} \left(\frac{t}{584,306}\right)^{8,02395-1} \exp\left[-\left(\frac{t}{584,306}\right)^{8,02395}\right] dt \\
 &= 0,4612
 \end{aligned}$$

b. Perhitungan Probabilitas Masih Baik

$$\begin{aligned}
 P(TTF > MTTF) &= 1 - P(TTF \leq MTTF) \\
 &= 1 - 0,4612
 \end{aligned}$$

$$P(TTF > MTTF) = 0,5388$$

c. Perhitungan TC

$$\begin{aligned} TC &= ((P(TTF \leq MTTF) C_F) + (P(TTF > MTTF) C_M)) \times \frac{\text{durasi 1 tahun (jam)}}{MTTF} \\ &= ((0,4612 \times \text{Rp } 3.472.278) + (0,5388 \times \text{Rp } 1.553.799)) \times \frac{2460}{550,346} \\ &= \text{Rp } 2.438.693 \times 4 \\ &= \text{Rp } 9.754.772 \end{aligned}$$

4. *Wheel Trolley*

a. Perhitungan Probabilitas Rusak

$$\begin{aligned} P(TTF \leq MTTF) &= \int_0^{MTTF} f(t) dt \\ &= \int_0^{MTTF} \frac{\beta}{\alpha} \left(\frac{t}{\alpha}\right)^{\beta-1} \exp\left[-\left(\frac{t}{\alpha}\right)^{\beta}\right] dt \\ &= \int_0^{613,208} \frac{7,62383}{652,687} \left(\frac{t}{652,687}\right)^{7,62383-1} \exp\left[-\left(\frac{t}{652,687}\right)^{7,62383}\right] dt \\ P(TTF \leq MTTF) &= 0,4628 \end{aligned}$$

b. Perhitungan Probabilitas Masih Baik

$$\begin{aligned} P(TTF > MTTF) &= 1 - P(TTF \leq MTTF) \\ &= 1 - 0,4628 \\ &= 0,5372 \end{aligned}$$

c. Perhitungan TC

$$\begin{aligned} TC &= ((P(TTF \leq MTTF) C_F) + (P(TTF > MTTF) C_M)) \times \frac{\text{durasi 1 tahun (jam)}}{MTTF} \\ &= ((0,4628 \times \text{Rp } 4.105.240) + (0,5372 \times \text{Rp } 2.378.610)) \times \frac{2460}{613,208} \\ &= \text{Rp } 3.177.771 \times 4 \\ &= \text{Rp } 12.711.084 \end{aligned}$$

5. *Wire Rope*

a. Perhitungan Probabilitas Rusak

$$\begin{aligned} P(TTF \leq MTTF) &= \int_0^{MTTF} f(t) dt \\ &= \int_0^{MTTF} \frac{\beta}{\alpha} \left(\frac{t}{\alpha}\right)^{\beta-1} \exp\left[-\left(\frac{t}{\alpha}\right)^{\beta}\right] dt \\ &= \int_0^{535,014} \frac{5,81198}{577,721} \left(\frac{t}{577,721}\right)^{5,81198-1} \exp\left[-\left(\frac{t}{577,721}\right)^{5,81198}\right] dt \\ &= 0,4727 \end{aligned}$$

b. Perhitungan Probabilitas Masih Baik

$$\begin{aligned}
 P(TTF > MTTF) &= 1 - P(TTF \leq MTTF) \\
 &= 1 - 0,4727 \\
 &= 0,5273
 \end{aligned}$$

c. Perhitungan TC

$$\begin{aligned}
 TC &= ((P(TTF \leq MTTF) C_F) + (P(TTF > MTTF) C_M)) \times \frac{\text{durasi 1 tahun (jam)}}{MTTF} \\
 &= ((0,4727 \times \text{Rp } 3.939.843) + (0,5273 \times \text{Rp } 3.300.350)) \times \frac{2460}{535,014} \\
 &= \text{Rp } 3.602.631 \times 4 \\
 &= \text{Rp } 14.410.524
 \end{aligned}$$

Lampiran 5 Usulan Jadwal Perawatan Komponen Kritis

Berikut ini merupakan jadwal perawatan komponen kritis mulai dari bulan Januari 2018 sampai dengan Juli 2018

Jul-16							Tanggal	Keterangan
M	S	S	R	K	J	S	26-Jul-16	Jadwal perawatan brake lining
					1	2		Jadwal perawatan kabel push button
3	4	5	6	7	8	9		
10	11	12	13	14	15	16		
17	18	19	20	21	22	23		
24	25	26	27	28	29	30		
31								

Agu-16							Tanggal	Keterangan
M	S	S	R	K	J	S	08-Agu-16	Jadwal perawatan wheel trolley
	1	2	3	4	5	6	20-Agu-16	Jadwal perawatan wire rope
7	8	9	10	11	12	13	27-Agu-16	Jadwal perawatan bearing
14	15	16	17	18	19	20		Jadwal perawatan brake lining
21	22	23	24	25	26	27		Jadwal perawatan kabel push button
28	29	30	31					

Sep-16							Tanggal	Keterangan
M	S	S	R	K	J	S	29-Sep-16	Jadwal perawatan brake lining
				1	2	3		Jadwal perawatan kabel push button
4	5	6	7	8	9	10		
11	12	13	14	15	16	17		
18	19	20	21	22	23	24		
25	26	27	28	29	30			

Okt-16							Tanggal	Keterangan
M	S	S	R	K	J	S	26-Okt-16	Jadwal perawatan wire rope
						1		Jadwal perawatan wheel trolley
2	3	4	5	6	7	8	31-Okt-16	Jadwal perawatan bearing
9	10	11	12	13	14	15		Jadwal perawatan brake lining
16	17	18	19	20	21	22		Jadwal perawatan kabel push button
23	24	25	26	27	28	29		
30	31							

Nov-16						
M	S	S	R	K	J	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

Des-16							Tanggal	Keterangan
M	S	S	R	K	J	S	01-Des-16	Jadwal perawatan brake lining
				1	2	3		Jadwal perawatan kabel push button
4	5	6	7	8	9	10	31-Des-16	Jadwal perawatan wire rope
11	12	13	14	15	16	17		
18	19	20	21	22	23	24		
25	26	27	28	29	30	31		

Jan-17							Tanggal	Keterangan
M	S	S	R	K	J	S	04-Jan-17	Jadwal perawatan bearing
1	2	3	4	5	6	7		Jadwal perawatan brake lining
8	9	10	11	12	13	14		Jadwal perawatan kabel push button
15	16	17	18	19	20	21	10-Jan-17	Jadwal perawatan wheel trolley
22	23	24	25	26	27	28		
29	30	31						

Feb-17							Tanggal	Keterangan
M	S	S	R	K	J	S	06-Feb-17	Jadwal perawatan brake lining
			1	2	3	4		Jadwal perawatan kabel push button
5	6	7	8	9	10	11		
12	13	14	15	16	17	18		
19	20	21	22	23	24	25		
26	27	28						

Mar-17							Tanggal	Keterangan
M	S	S	R	K	J	S	09-Mar-17	Jadwal perawatan kabel push button
			1	2	3	4		Jadwal perawatan wire rope
5	6	7	8	9	10	11	15-Mar-17	Jadwal perawatan bearing
12	13	14	15	16	17	18		Jadwal perawatan brake lining
19	20	21	22	23	24	25	24-Mar-17	Jadwal perawatan wheel trolley
26	27	28	29	30	31			

Apr-17							Tanggal	Keterangan
M	S	S	R	K	J	S	18-Apr-17	Jadwal perawatan brake lining
						1		Jadwal perawatan kabel push button
2	3	4	5	6	7	8		
9	10	11	12	13	14	15		
16	17	18	19	20	21	22		
23	24	25	26	27	28	29		
30								

Mei-17							Tanggal	Keterangan
M	S	S	R	K	J	S	18-Mei-17	Jadwal perawatan wire rope
	1	2	3	4	5	6	24-Mei-17	Jadwal perawatan bearing
7	8	9	10	11	12	13		Jadwal perawatan brake lining
14	15	16	17	18	19	20		Jadwal perawatan kabel push button
21	22	23	24	25	26	27		
28	29	30	31					

Juni						
M	S	S	R	K	J	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

Jul-17							Tanggal	Keterangan
M	S	S	R	K	J	S	04-Jul-17	Jadwal perawatan brake lining
						1		Jadwal perawatan wheel trolley
2	3	4	5	6	7	8		Jadwal perawatan kabel push button
9	10	11	12	13	14	15		
16	17	18	19	20	21	22		
23	24	25	26	27	28	29		
30	31							

Agu-17							Tanggal	Keterangan
M	S	S	R	K	J	S	01-Agu-17	Jadwal perawatan wire rope
		1	2	3	4	5		Jadwal perawatan bearing
6	7	8	9	10	11	12	04-Agu-17	Jadwal perawatan brake lining
13	14	15	16	17	18	19		Jadwal perawatan kabel push button
20	21	22	23	24	25	26		
27	28	29	30	31				

Sep-17							Tanggal	Keterangan
M	S	S	R	K	J	S	07-Sep-17	Jadwal perawatan brake lining
					1	2		Jadwal perawatan kabel push button
3	4	5	6	7	8	9		
10	11	12	13	14	15	16		
17	18	19	20	21	22	23		
24	25	26	27	28	29	30		

Okt-17							Tanggal	Keterangan
M	S	S	R	K	J	S	09-Okt-17	Jadwal perawatan wire rope
1	2	3	4	5	6	7		Jadwal perawatan wheel trolley
8	9	10	11	12	13	14		Jadwal perawatan bearing
15	16	17	18	19	20	21	11-Okt-17	Jadwal perawatan brake lining
22	23	24	25	26	27	28		Jadwal perawatan kabel push button
29	30	31						

Nov-17							Tanggal	Keterangan
M	S	S	R	K	J	S	11-Nov-17	Jadwal perawatan brake lining
			1	2	3	4		Jadwal perawatan kabel push button
5	6	7	8	9	10	11		
12	13	14	15	16	17	18		
19	20	21	22	23	24	25		
26	27	28	29	30				

Des-17							Tanggal	Keterangan
M	S	S	R	K	J	S	15-Des-17	Jadwal perawatan bearing
					1	2		Jadwal perawatan brake lining
3	4	5	6	7	8	9		Jadwal perawatan kabel push button
10	11	12	13	14	15	16	21-Des-17	Jadwal perawatan wire rope
17	18	19	20	21	22	23		Jadwal perawatan wheel trolley
24	25	26	27	28	29	30		
31								

Jan-18							Tanggal	Keterangan
M	S	S	R	K	J	S	19-Jan-18	Jadwal perawatan brake lining
	1	2	3	4	5	6		Jadwal perawatan kabel push button
7	8	9	10	11	12	13		
14	15	16	17	18	19	20		
21	22	23	24	25	26	27		
28	29	30	31					

Feb-18							Tanggal	Keterangan
M	S	S	R	K	J	S	22-Feb-18	Jadwal perawatan bearing
				1	2	3		Jadwal perawatan brake lining
4	5	6	7	8	9	10		Jadwal perawatan kabel push button
11	12	13	14	15	16	17		
18	19	20	21	22	23	24		
25	26	27	28					

Mar-18							Tanggal	Keterangan
M	S	S	R	K	J	S	02-Mar-18	Jadwal perawatan wire rope
				1	2	3	27-Mar-18	Jadwal perawatan brake lining
4	5	6	7	8	9	10		Jadwal perawatan kabel push button
11	12	13	14	15	16	17		Jadwal perawatan wheel trolley
18	19	20	21	22	23	24		
25	26	27	28	29	30	31		

Apr-18							Tanggal	Keterangan
M	S	S	R	K	J	S	30-Apr-18	Jadwal perawatan bearing
1	2	3	4	5	6	7		Jadwal perawatan brake lining
8	9	10	11	12	13	14		Jadwal perawatan kabel push button
15	16	17	18	19	20	21		
22	23	24	25	26	27	28		
29	30							

Mei-18							Tanggal	Keterangan
M	S	S	R	K	J	S	14-Mei-18	Jadwal perawatan wire rope
		1	2	3	4	5		
6	7	8	9	10	11	12		
13	14	15	16	17	18	19		
20	21	22	23	24	25	26		
27	28	29	30	31				

Jun-18							Tanggal	Keterangan
M	S	S	R	K	J	S	05-Jun-18	Jadwal perawatan brake lining
					1	2		Jadwal perawatan kabel push button
3	4	5	6	7	8	9	21-Jun-18	Jadwal perawatan wheel trolley
10	11	12	13	14	15	16		
17	18	19	20	21	22	23		
24	25	26	27	28	29	30		

Jul-18							Tanggal	Keterangan
M	S	S	R	K	J	S	13-Jul-18	Jadwal perawatan bearing
1	2	3	4	5	6	7		Jadwal perawatan brake lining
8	9	10	11	12	13	14		Jadwal perawatan kabel push button
15	16	17	18	19	20	21		
22	23	24	25	26	27	28		
29	30	31						

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Jul-16							Tanggal	Keterangan
M	S	S	R	K	J	S	20-Jul-16	Perawatan brake lining
					1	2	27-Jul-16	Perawatan Kabel push button
3	4	5	6	7	8	9		
10	11	12	13	14	15	16		
17	18	19	20	21	22	23		
24	25	26	27	28	29	30		
31								

Agu-16							Tanggal	Keterangan
M	S	S	R	K	J	S	08-Agu-16	Perawatan wheel trolley
	1	2	3	4	5	6	16-Agu-16	Perawatan bearing
7	8	9	10	11	12	13	20-Agu-16	Perawatan wire rope
14	15	16	17	18	19	20	22-Agu-16	Perawatan brake lining
21	22	23	24	25	26	27	29-Agu-16	Perawatan Kabel push button
28	29	30	31					

Sep-16							Tanggal	Keterangan
M	S	S	R	K	J	S	22-Sep-16	Perawatan brake lining
				1	2	3	30-Sep-16	Perawatan Kabel push button
4	5	6	7	8	9	10		
11	12	13	14	15	16	17		
18	19	20	21	22	23	24		
25	26	27	28	29	30			

Okt-16							Tanggal	Keterangan
M	S	S	R	K	J	S	20-Okt-16	Perawatan bearing
						1	21-Okt-16	Perawatan wheel trolley
2	3	4	5	6	7	8	24-Okt-16	Perawatan brake lining
9	10	11	12	13	14	15	26-Okt-16	Perawatan wire rope
16	17	18	19	20	21	22		
23	24	25	26	27	28	29		
30	31							

Nov-16							Tanggal	Keterangan
M	S	S	R	K	J	S	01-Nov-16	Perawatan Kabel push button
		1	2	3	4	5	23-Nov-16	Perawatan brake lining
6	7	8	9	10	11	12		
13	14	15	16	17	18	19		
20	21	22	23	24	25	26		
27	28	29	30					

Des-16							Tanggal	Keterangan
M	S	S	R	K	J	S	02-Des-16	Perawatan Kabel push button
				1	2	3	20-Des-16	Perawatan brake lining
4	5	6	7	8	9	10	23-Des-16	Perawatan bearing
11	12	13	14	15	16	17	31-Des-16	Perawatan wire rope
18	19	20	21	22	23	24		
25	26	27	28	29	30	31		

Jan-17							Tanggal	Keterangan
M	S	S	R	K	J	S	04-Jan-17	Perawatan wheel trolley
1	2	3	4	5	6	7	05-Jan-17	Perawatan Kabel push button
8	9	10	11	12	13	14	20-Jan-17	Perawatan brake lining
15	16	17	18	19	20	21		
22	23	24	25	26	27	28		
29	30	31						

Feb-17							Tanggal	Keterangan
M	S	S	R	K	J	S	07-Feb-17	Perawatan Kabel push button
			1	2	3	4	21-Feb-17	Perawatan brake lining
5	6	7	8	9	10	11	27-Feb-17	Perawatan bearing
12	13	14	15	16	17	18		
19	20	21	22	23	24	25		
26	27	28						

Mar-17							Tanggal	Keterangan
M	S	S	R	K	J	S	09-Mar-17	Perawatan wire rope
			1	2	3	4	10-Mar-17	Perawatan Kabel push button
5	6	7	8	9	10	11	17-Mar-17	Perawatan wheel trolley
12	13	14	15	16	17	18	23-Mar-17	Perawatan brake lining
19	20	21	22	23	24	25		
26	27	28	29	30	31			

Apr-17							Tanggal	Keterangan
M	S	S	R	K	J	S	12-Apr-17	Perawatan Kabel push button
						1	27-Apr-17	Perawatan brake lining
2	3	4	5	6	7	8		
9	10	11	12	13	14	15		
16	17	18	19	20	21	22		
23	24	25	26	27	28	29		
30								

Mei-17							Tanggal	Keterangan
M	S	S	R	K	J	S	05-Mei-17	Perawatan bearing
	1	2	3	4	5	6	18-Mei-17	Perawatan wire rope
7	8	9	10	11	12	13		Perawatan Kabel push button
14	15	16	17	18	19	20		
21	22	23	24	25	26	27		
28	29	30	31					

Jun-17							Tanggal	Keterangan
M	S	S	R	K	J	S	02-Jun-17	Perawatan brake lining
				1	2	3	07-Jun-17	Perawatan wheel trolley
4	5	6	7	8	9	10	21-Jun-17	Perawatan Kabel push button
11	12	13	14	15	16	17		
18	19	20	21	22	23	24		
25	26	27	28	29	30			

Jul-17							Tanggal	Keterangan
M	S	S	R	K	J	S	10-Jul-17	Perawatan brake lining
						1	17-Jul-17	Perawatan bearing
2	3	4	5	6	7	8	28-Jul-17	Perawatan Kabel push button
9	10	11	12	13	14	15		
16	17	18	19	20	21	22		
23	24	25	26	27	28	29		
30	31							

Agu-17							Tanggal	Keterangan
M	S	S	R	K	J	S	01-Agu-17	Perawatan wire rope
		1	2	3	4	5	09-Agu-17	Perawatan brake lining
6	7	8	9	10	11	12	25-Agu-17	Perawatan wheel trolley
13	14	15	16	17	18	19	30-Agu-17	Perawatan Kabel push button
20	21	22	23	24	25	26		
27	28	29	30	31				

Sep-17							Tanggal	Keterangan
M	S	S	R	K	J	S	12-Sep-17	Perawatan brake lining
					1	2	20-Sep-17	Perawatan bearing
3	4	5	6	7	8	9		
10	11	12	13	14	15	16		
17	18	19	20	21	22	23		
24	25	26	27	28	29	30		

Okt-17							Tanggal	Keterangan
M	S	S	R	K	J	S	03-Okt-17	Perawatan Kabel push button
1	2	3	4	5	6	7	09-Okt-17	Perawatan wire rope
8	9	10	11	12	13	14	13-Okt-17	Perawatan brake lining
15	16	17	18	19	20	21		
22	23	24	25	26	27	28		
29	30	31						

Nov-17							Tanggal	Keterangan
M	S	S	R	K	J	S	03-Nov-17	Perawatan Kabel push button
			1	2	3	4	08-Nov-17	Perawatan wheel trolley
5	6	7	8	9	10	11	14-Nov-17	Perawatan brake lining
12	13	14	15	16	17	18		
19	20	21	22	23	24	25		
26	27	28	29	30				

Des-17							Tanggal	Keterangan
M	S	S	R	K	J	S	06-Des-17	Perawatan Kabel push button
					1	2	14-Des-17	Perawatan wire rope
3	4	5	6	7	8	9	15-Des-17	Perawatan brake lining
10	11	12	13	14	15	16		
17	18	19	20	21	22	23		
24	25	26	27	28	29	30		
31								

Jan-18							Tanggal	Keterangan
M	S	S	R	K	J	S	10-Jan-18	Perawatan Kabel push button
	1	2	3	4	5	6	19-Jan-18	Perawatan brake lining
7	8	9	10	11	12	13	24-Jan-18	Perawatan wheel trolley
14	15	16	17	18	19	20	31-Jan-18	Perawatan bearing
21	22	23	24	25	26	27		
28	29	30	31					

Feb-18							Tanggal	Keterangan
M	S	S	R	K	J	S	10-Feb-18	Perawatan Kabel push button
				1	2	3	21-Feb-18	Perawatan brake lining
4	5	6	7	8	9	10	22-Feb-18	Perawatan wire rope
11	12	13	14	15	16	17		
18	19	20	21	22	23	24		
25	26	27	28					

Mar-18							Tanggal	Keterangan
M	S	S	R	K	J	S	15-Mar-18	Perawatan Kabel push button
				1	2	3	24-Mar-18	Perawatan brake lining
4	5	6	7	8	9	10		
11	12	13	14	15	16	17		
18	19	20	21	22	23	24		
25	26	27	28	29	30	31		

Apr-18							Tanggal	Keterangan
M	S	S	R	K	J	S	07-Apr-18	Perawatan bearing
1	2	3	4	5	6	7	10-Apr-18	Perawatan wheel trolley
8	9	10	11	12	13	14	19-Apr-18	Perawatan Kabel push button
15	16	17	18	19	20	21		
22	23	24	25	26	27	28		
29	30							

Mei-18							Tanggal	Keterangan
M	S	S	R	K	J	S	02-Mei-18	Perawatan brake lining
		1	2	3	4	5	03-Mei-18	Perawatan wire rope
6	7	8	9	10	11	12	23-Mei-18	Perawatan Kabel push button
13	14	15	16	17	18	19		
20	21	22	23	24	25	26		
27	28	29	30	31				

Juni							Tanggal	Keterangan
M	S	S	R	K	J	S	06-Jun-18	Perawatan brake lining
					1	2	22-Jun-18	Perawatan bearing
3	4	5	6	7	8	9		
10	11	12	13	14	15	16		
17	18	19	20	21	22	23		
24	25	26	27	28	29	30		

Jul-18							Tanggal	Keterangan
M	S	S	R	K	J	S	03-Jul-18	Perawatan Kabel push button
1	2	3	4	5	6	7	04-Jul-18	Perawatan wheel trolley
8	9	10	11	12	13	14	13-Jul-18	Perawatan brake lining
15	16	17	18	19	20	21	18-Jul-18	Perawatan wire rope
22	23	24	25	26	27	28		
29	30	31						