

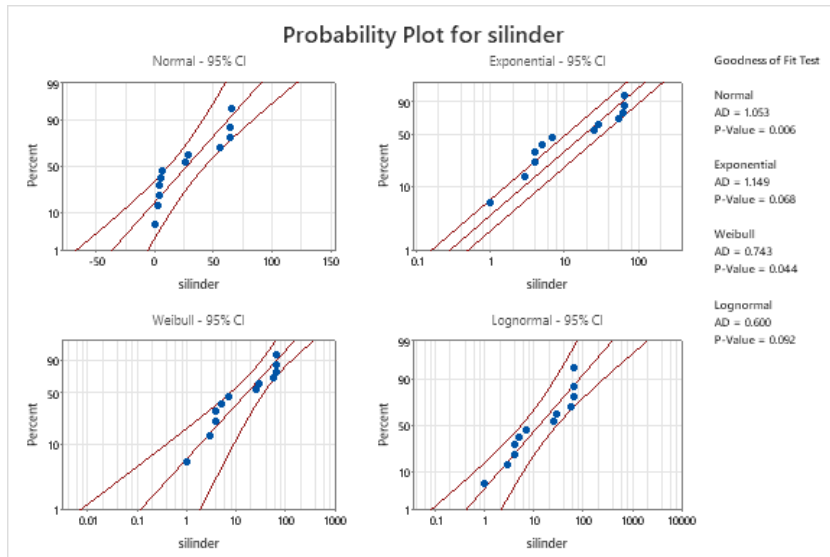
LAMPIRAN

Lampiran 1 Penentuan distribusi menggunakan minitab

Distribusi *Time To Failure*

1. Komponen silinder

Distribution Identification for silinder



Descriptive Statistics

N	N*	Mean	StDev	Median	Minimum	Maximum	Skewness	Kurtosis
12	0	27.5	27.5862	16.5	1	66	0.531603	-1.71901

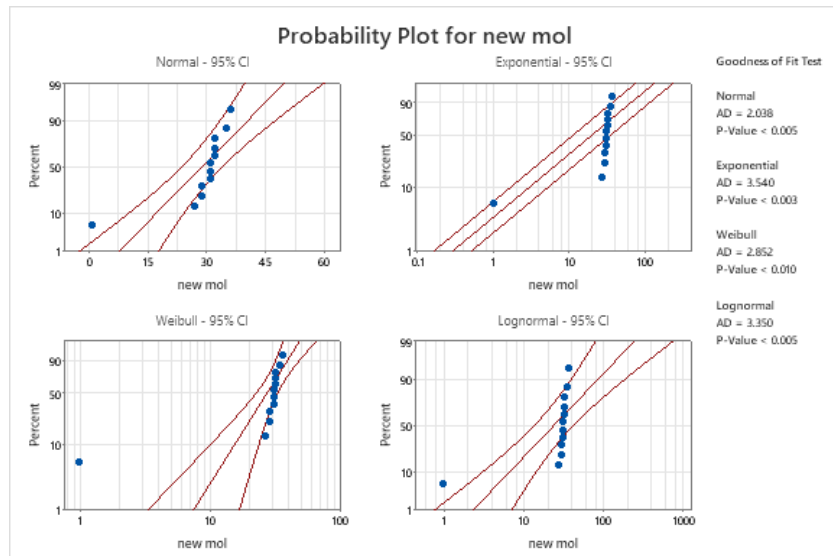
Goodness of Fit Test

Distribution	AD	P
Normal	1.053	0.006
Exponential	1.149	0.068
Weibull	0.743	0.044
Lognormal	0.600	0.092

ML Estimates of Distribution Parameters

Distribution	Location	Shape	Scale	Threshold
Normal*	27.50000		27.58623	
Exponential			27.50000	
Weibull		0.85295	25.42576	
Lognormal*	2.55002		1.47182	

2. Komponen new mol

Distribution Identification for new mol**Descriptive Statistics**

N	Media	Minimu	Maximu	Skewnes	Kurtosi			
N *	Mean	StDev	n	m	m	s	s	
1	0	28.833	9.1037	31	1	36	-3.01317	9.83682
2		3	8					

Goodness of Fit Test

Distribution	AD	P
Normal	2.038	<0.005
Exponential	3.540	<0.003
Weibull	2.852	<0.010
Lognormal	3.350	<0.005

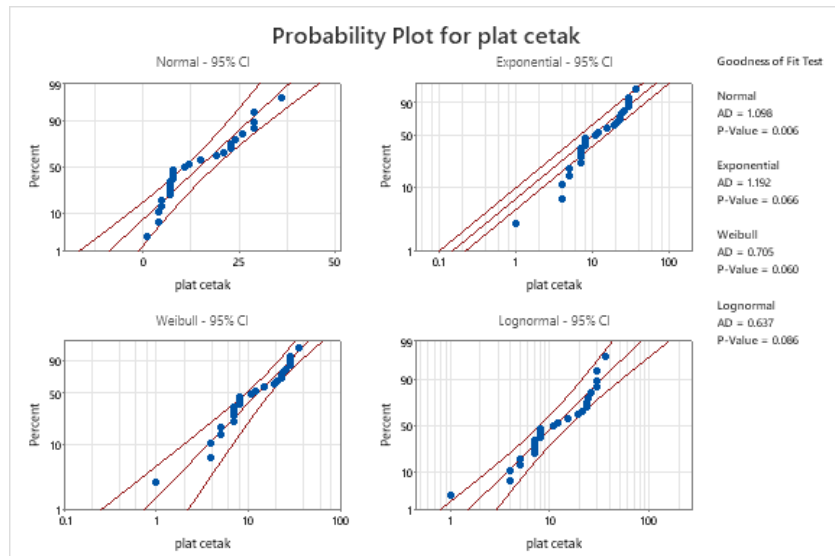
ML Estimates of Distribution Parameters

Distribution	Location	Shape	Scale	Threshold
Normal*	28.83333		9.10378	
Exponential			28.83333	
Weibull		3.25894	30.74954	

Lognormal* 3.15571 0.99686

3. Komponen Plat Cetak

Distribution Identification for plat cetak



Descriptive Statistics

N	N*	Mean	StDev	Median	Minimum	Maximum	Skewness	Kurtosis
25	0	14.72	10.1551	11	1	36	0.534630	-1.07488

Goodness of Fit Test

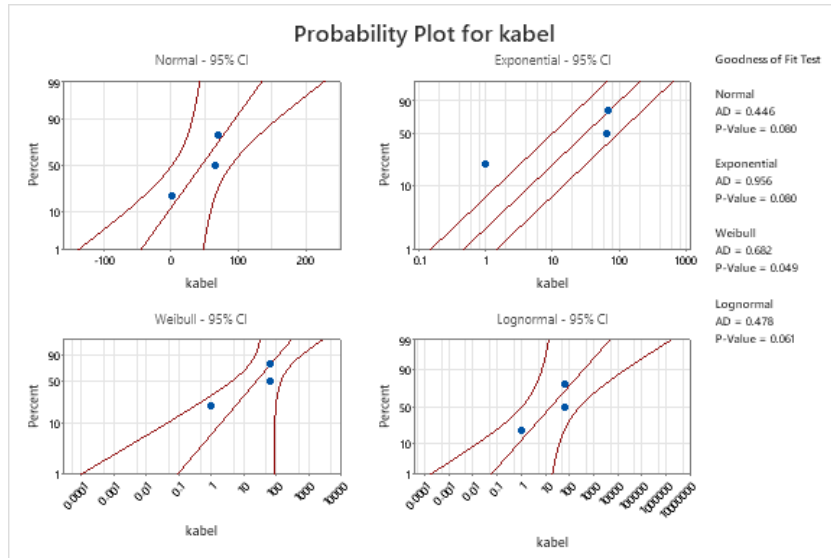
Distribution	AD	P
Normal	1.098	0.006
Exponential	1.192	0.066
Weibull	0.705	0.060
Lognormal	0.637	0.086

ML Estimates of Distribution Parameters

Distribution	Location	Shape	Scale	Threshold
Normal*	14.72000		10.15513	
Exponential			14.72000	
Weibull		1.48883	16.30931	
Lognormal*	2.39943		0.85741	

4. Komponen Kabel

Distribution Identification for kabel



Descriptive Statistics

N	N*	Mean	StDev	Median	Minimum	Maximum	Skewness	Kurtosis
3	0	46	39	67	1	70	-1.72053	*

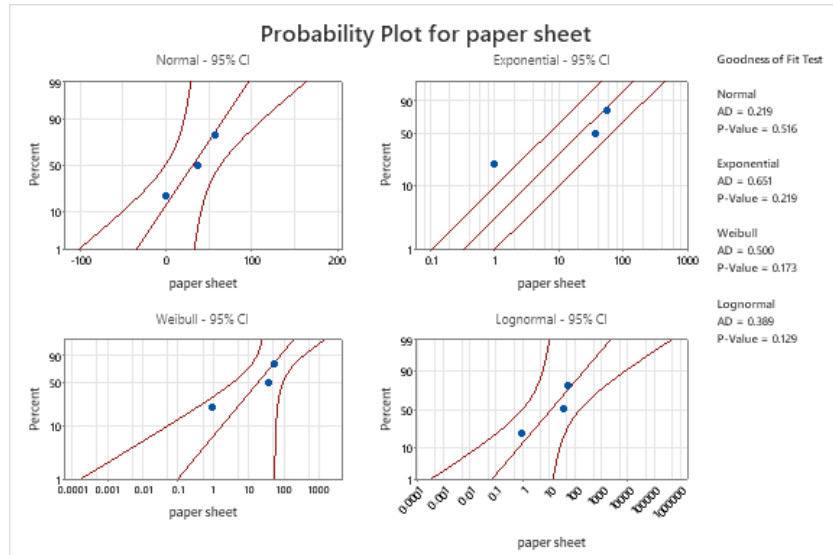
Goodness of Fit Test

Distribution	AD	P
Normal	0.446	0.080
Exponential	0.956	0.080
Weibull	0.682	0.049
Lognormal	0.478	0.061

ML Estimates of Distribution Parameters

Distribution	Location	Shape	Scale	Threshold
Normal*	46.00000		39.00000	
Exponential			46.00000	
Weibull		0.75521	41.13290	
Lognormal*	2.81773		2.44032	

5. Komponen Paper Sheet

Distribution Identification for paper sheet**Descriptive Statistics**

N	N*	Mean	StDev	Median	Minimum	Maximum	Skewness	Kurtosis
3	0	31.6667	28.3784	37	1	57	-	*
							0.815843	

Goodness of Fit Test

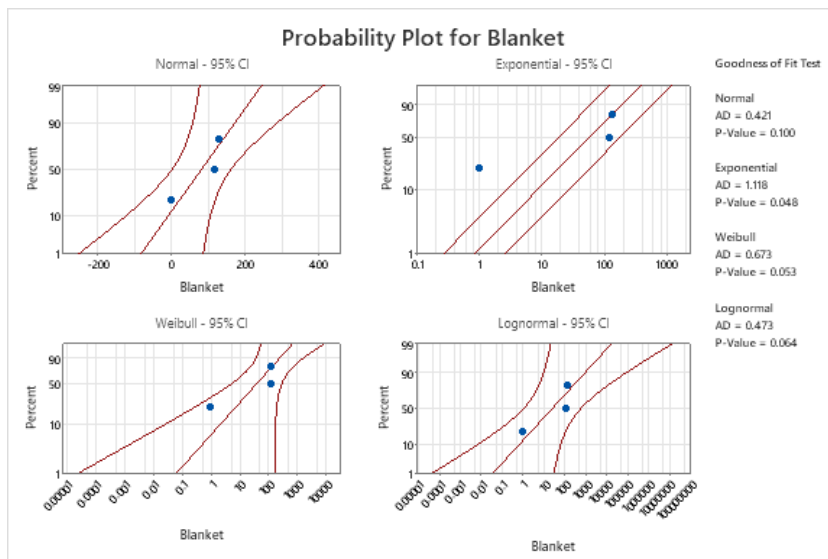
Distribution	AD	P
Normal	0.219	0.516
Exponential	0.651	0.219
Weibull	0.500	0.173
Lognormal	0.389	0.129

ML Estimates of Distribution Parameters

Distribution	Location	Shape	Scale	Threshold
Normal*	31.6667		28.37840	
Exponential			31.66667	
Weibull		0.81285	29.18768	
Lognormal*	2.55132		2.22005	

6. Komponen Blanket

Distribution Identification for Blanket



Descriptive Statistics

N	N*	Mean	StDev	Median	Minimum	Maximum	Skewness	Kurtosis
3	0	82.6667	70.8684	119	1	128	-1.70068	*

Goodness of Fit Test

Distribution	AD	P
Normal	0.421	0.100
Exponential	1.118	0.048
Weibull	0.673	0.053
Lognormal	0.473	0.064

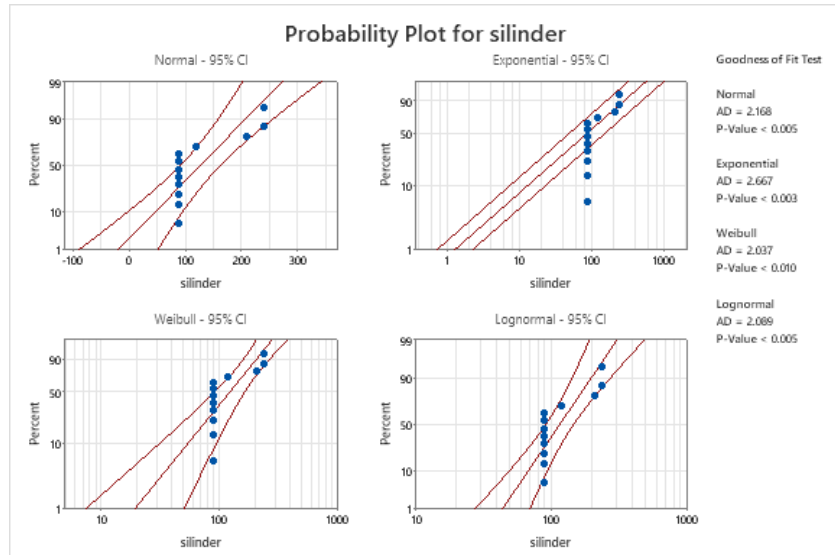
ML Estimates of Distribution Parameters

Distribution	Location	Shape	Scale	Threshold
Normal*	82.66667		70.86842	
Exponential			82.66667	
Weibull		0.66267	69.05164	
Lognormal*	3.21038		2.78051	

Distribusi *Time To Repair*

1. Komponen silinder

Distribution Identification for silinder



Descriptive Statistics

N	N*	Mean	StDev	Median	Minimum	Maximum	Skewness	Kurtosis
12	0	127.5	62.8309	90	90	240	1.31367	-
								0.165767

Goodness of Fit Test

Distribution	AD	P
Normal	2.168	<0.005
Exponential	2.667	<0.003
Weibull	2.037	<0.010
Lognormal	2.089	<0.005

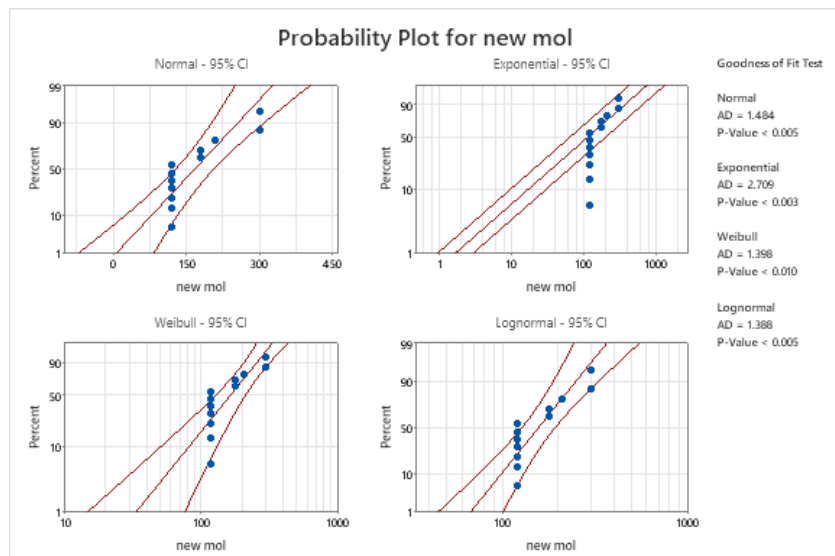
ML Estimates of Distribution Parameters

Distribution	Location	Shape	Scale	Threshold
Normal*	127.50000		62.83094	
Exponential			127.50000	
Weibull		2.28019	144.90983	
Lognormal*	4.75786		0.41840	

2. Komponen new mol

Distribution Identification for new mol

Descriptive Statistics



N	N*	Mean	StDev	Median	Minimum	Maximum	Skewness	Kurtosis
12	0	167.5	69.4295	120	120	300	1.29823	0.411067

Goodness of Fit Test

Distribution	AD	P
Normal	1.484	<0.005
Exponential	2.709	<0.003
Weibull	1.398	<0.010
Lognormal	1.388	<0.005

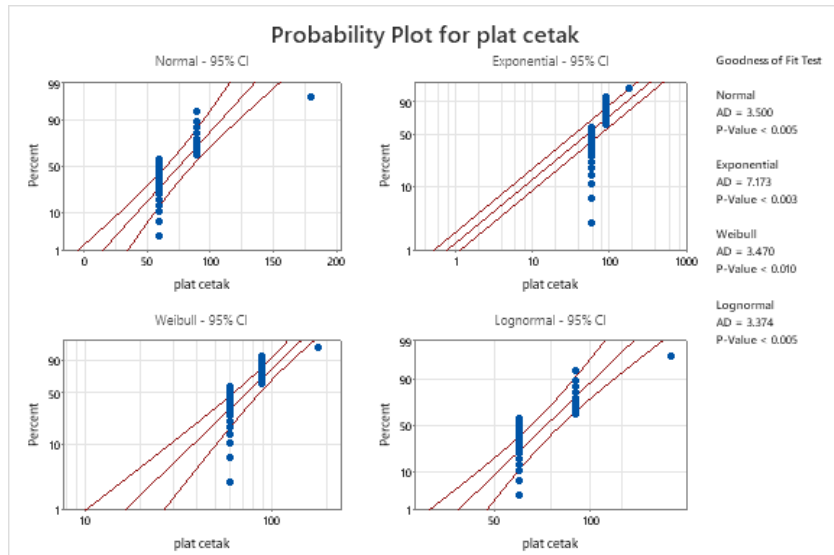
ML Estimates of Distribution Parameters

Distribution	Location	Shape	Scale	Threshold
Normal*	167.50000		69.42949	
Exponential			167.50000	
Weibull		2.66073	189.04915	
Lognormal*	5.05442		0.36508	

3. Komponen Plat Cetak

Distribution Identification for plat cetak

Descriptive Statistics



N	N*	Mean	StDev	Median	Minimum	Maximum	Skewness	Kurtosis
25	0	75.6	26.1534	60	60	180	2.80470	10.3216

Goodness of Fit Test

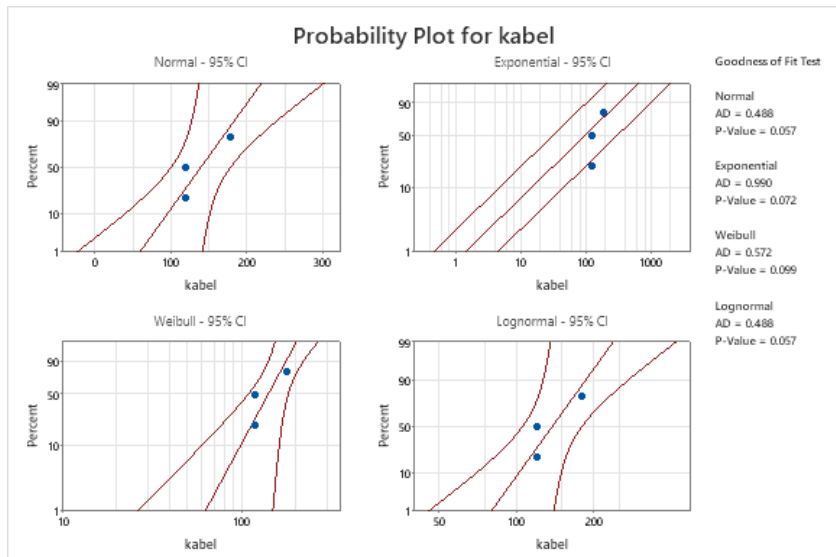
Distribution	AD	P
Normal	3.500	<0.005
Exponential	7.173	<0.003
Weibull	3.470	<0.010
Lognormal	3.374	<0.005

ML Estimates of Distribution Parameters

Distribution	Location	Shape	Scale	Threshold
Normal*	75.60000		26.15339	
Exponential			75.60000	
Weibull		2.81093	84.32266	
Lognormal*	4.28426		0.27271	

4. Komponen kabel

Distribution Identification for kabel



Descriptive Statistics

N	N*	Mean	StDev	Median	Minimum	Maximum	Skewness	Kurtosis
3	0	140	34.6410	120	120	180	1.73205	*

Goodness of Fit Test

Distribution	AD	P
Normal	0.488	0.057
Exponential	0.990	0.072
Weibull	0.572	0.099
Lognormal	0.488	0.057

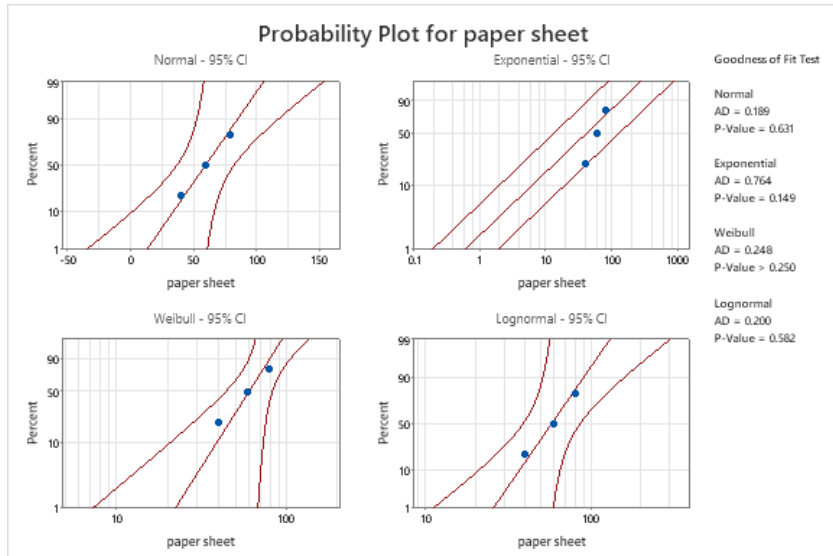
ML Estimates of Distribution Parameters

Distribution	Location	Shape	Scale	Threshold
Normal*	140.00000		34.64102	
Exponential			140.00000	
Weibull		5.21959	151.99315	
Lognormal*	4.92265		0.23410	

5. Komponen Paper Sheet

Distribution Identification for paper sheet

Descriptive Statistics



N	Mean	StDev	Median	Minimum	Maximum	Skewness	Kurtosis
3	0	60	20	60	40	80	0

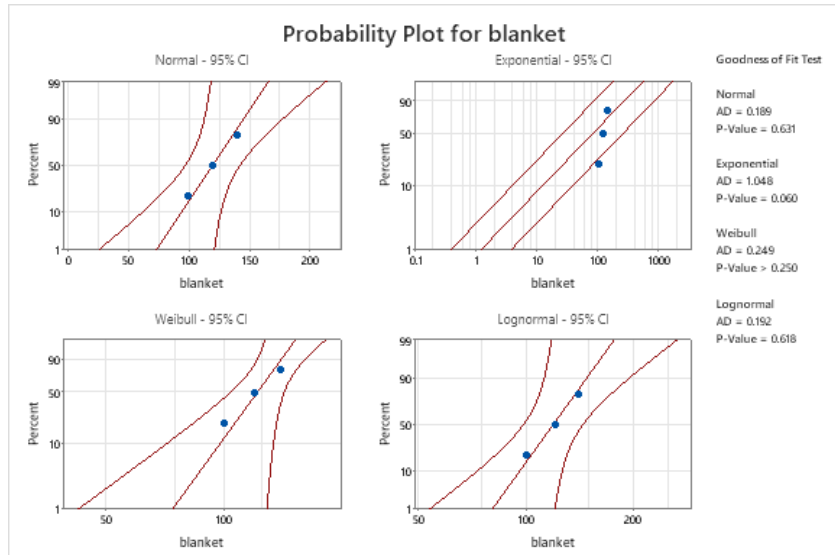
Goodness of Fit Test

Distribution	AD	P
Normal	0.189	0.631
Exponential	0.764	0.149
Weibull	0.248	>0.250
Lognormal	0.200	0.582

ML Estimates of Distribution Parameters

Distribution	Location	Shape	Scale	Threshold
Normal*	60.00000		20.00000	
Exponential			60.00000	
Weibull		4.22966	66.23094	
Lognormal*	4.05508		0.34824	

6. **Komponen Blanket**
Distribution Identification for blanket



Descriptive Statistics

N	N*	Mean	StDev	Median	Minimum	Maximum	Skewness	Kurtosis
3	0	120	20	120	100	140	0	*

Goodness of Fit Test

Distribution	AD	P
Normal	0.189	0.631
Exponential	1.048	0.060
Weibull	0.249	>0.250
Lognormal	0.192	0.618

ML Estimates of Distribution Parameters

Distribution	Location	Shape	Scale	Threshold
Normal*	120.00000		20.00000	
Exponential			120.00000	
Weibull		8.49819	127.18836	
Lognormal*	4.77810		0.16843	

Lampiran 2 Perhitungan Nilai MTTF

1. Komponen Silinder
Distribusi Lognormal

$$MTTF = t_{med} \times e^{\left(\frac{s^2}{2}\right)}$$

$$MTTF = 16.5 \times e^{\left(\frac{(1.47182)^2}{2}\right)}$$

$$MTTF = 16.5 \times 2.953902$$

$$MTTF = 48.73938 \approx \mathbf{50 \text{ hari}}$$
2. Komponen New Mol
Distribusi Normal

$$MTTF = \text{mean} = 28.8333 \approx \mathbf{28 \text{ hari}}$$
3. Komponen Plat Cetak
Distribusi Lognormal

$$MTTF = t_{med} \times e^{\left(\frac{s^2}{2}\right)}$$

$$MTTF = 11 \times e^{\left(\frac{(0.85741)^2}{2}\right)}$$

$$MTTF = 11 \times 1.444229$$

$$MTTF = 15.88652 \approx \mathbf{16 \text{ hari}}$$
4. Komponen Kabel
Distribusi Normal

$$MTTF = \text{mean} = 46 \approx \mathbf{46 \text{ hari}}$$
5. Komponen Paper Sheet
Distribusi Normal

$$MTTF = \text{mean} = 28.3784 \approx \mathbf{28 \text{ hari}}$$
6. Komponen Blanket
Distribusi Normal

$$MTTF = \text{mean} = 82.6667 \approx \mathbf{83 \text{ hari}}$$

Lampiran 3 Perhitungan Nilai MTTR

1. Komponen Silinder

Distribusi Weibull

$$MTTR = \theta \Gamma \left(1 + \frac{1}{\beta}\right)$$

$$MTTR = 144.90983 \Gamma \left(1 + \frac{1}{2.28019}\right)$$

$$MTTR = 144.90983 \times 4.2146$$

$$MTTR = 610.7402 \text{ menit} \approx 10.18 \text{ jam}$$

2. Komponen New Mol

Distribusi Lognormal

$$MTTF = t_{med} \times e^{\left(\frac{s^2}{2}\right)}$$

$$MTTF = 120 \times e^{\left(\frac{(0.36508)^2}{2}\right)}$$

$$MTTF = 120 \times 1.068912$$

$$MTTF = 128.2695 \text{ menit} \approx 2.14 \text{ jam}$$

3. Komponen Plat Cetak

Distribusi Lognormal

$$MTTF = t_{med} \times e^{\left(\frac{s^2}{2}\right)}$$

$$MTTF = 60 \times e^{\left(\frac{(0.27271)^2}{2}\right)}$$

$$MTTF = 60 \times 1.037885$$

$$MTTF = 62.27312 \text{ menit} \approx 1.04 \text{ jam}$$

4. Komponen Kabel

Distribusi Normal

$$MTTF = \text{mean} = 140 \text{ menit} \approx 2.33 \text{ jam}$$

5. Komponen Paper Sheet

Distribusi Normal

$$MTTF = \text{mean} = 60 \text{ menit} \approx 1 \text{ jam}$$

6. Komponen Paper Sheet

Distribusi Normal

$$MTTF = \text{mean} = 120 \text{ menit} \approx 2 \text{ jam}$$

Lampiran 4 Tabel Peluang Kumulatif Normal Z

Z	0,00	0,01	0,02	0,03	0,04	0,05	0,06	0,07	0,08	0,09
-3,8	0,0001	0,0001	0,0001	0,0001	0,0001	0,0001	0,0001	0,0001	0,0001	0,0001
-3,7	0,0001	0,0001	0,0001	0,0001	0,0001	0,0001	0,0001	0,0001	0,0001	0,0001
-3,6	0,0002	0,0002	0,0001	0,0001	0,0001	0,0001	0,0001	0,0001	0,0001	0,0001
-3,5	0,0002	0,0002	0,0002	0,0002	0,0002	0,0002	0,0002	0,0002	0,0002	0,0002
-3,4	0,0003	0,0003	0,0003	0,0003	0,0003	0,0003	0,0003	0,0003	0,0003	0,0002
-3,3	0,0005	0,0005	0,0005	0,0004	0,0004	0,0004	0,0004	0,0004	0,0004	0,0003
-3,2	0,0007	0,0007	0,0006	0,0006	0,0006	0,0006	0,0006	0,0005	0,0005	0,0005
-3,1	0,0010	0,0009	0,0009	0,0009	0,0008	0,0008	0,0008	0,0008	0,0007	0,0007
-3,0	0,0013	0,0013	0,0013	0,0012	0,0012	0,0011	0,0011	0,0011	0,0010	0,0010
-2,9	0,0019	0,0018	0,0018	0,0017	0,0016	0,0016	0,0015	0,0015	0,0014	0,0014
-2,8	0,0026	0,0025	0,0024	0,0023	0,0023	0,0022	0,0021	0,0021	0,0020	0,0019
-2,7	0,0035	0,0034	0,0033	0,0032	0,0031	0,0030	0,0029	0,0028	0,0027	0,0026
-2,6	0,0047	0,0045	0,0044	0,0043	0,0041	0,0040	0,0039	0,0038	0,0037	0,0036
-2,5	0,0062	0,0060	0,0059	0,0057	0,0055	0,0054	0,0052	0,0051	0,0049	0,0048
-2,4	0,0082	0,0080	0,0078	0,0075	0,0073	0,0071	0,0069	0,0068	0,0066	0,0064
-2,3	0,0107	0,0104	0,0102	0,0099	0,0096	0,0094	0,0091	0,0089	0,0087	0,0084
-2,2	0,0139	0,0136	0,0132	0,0129	0,0125	0,0122	0,0119	0,0116	0,0113	0,0110
-2,1	0,0179	0,0174	0,0170	0,0166	0,0162	0,0158	0,0154	0,0150	0,0146	0,0143
-2,0	0,0228	0,0222	0,0217	0,0212	0,0207	0,0202	0,0197	0,0192	0,0188	0,0183
-1,9	0,0287	0,0281	0,0274	0,0268	0,0262	0,0256	0,0250	0,0244	0,0239	0,0233
-1,8	0,0359	0,0351	0,0344	0,0336	0,0329	0,0322	0,0314	0,0307	0,0301	0,0294
-1,7	0,0446	0,0436	0,0427	0,0418	0,0409	0,0401	0,0392	0,0384	0,0375	0,0367
-1,6	0,0548	0,0537	0,0526	0,0516	0,0505	0,0495	0,0485	0,0475	0,0465	0,0455
-1,5	0,0668	0,0655	0,0643	0,0630	0,0618	0,0606	0,0594	0,0582	0,0571	0,0559
-1,4	0,0808	0,0793	0,0778	0,0764	0,0749	0,0735	0,0721	0,0708	0,0694	0,0681
-1,3	0,0968	0,0951	0,0934	0,0918	0,0901	0,0885	0,0869	0,0853	0,0838	0,0823
-1,2	0,1151	0,1131	0,1112	0,1093	0,1075	0,1056	0,1038	0,1020	0,1003	0,0985
-1,1	0,1357	0,1335	0,1314	0,1292	0,1271	0,1251	0,1230	0,1210	0,1190	0,1170
-1,0	0,1587	0,1562	0,1539	0,1515	0,1492	0,1469	0,1446	0,1423	0,1401	0,1379
-0,9	0,1841	0,1814	0,1788	0,1762	0,1736	0,1711	0,1685	0,1660	0,1635	0,1611
-0,8	0,2119	0,2090	0,2061	0,2033	0,2005	0,1977	0,1949	0,1922	0,1894	0,1867
-0,7	0,2420	0,2389	0,2358	0,2327	0,2296	0,2266	0,2236	0,2206	0,2177	0,2148
-0,6	0,2743	0,2709	0,2676	0,2643	0,2611	0,2578	0,2546	0,2514	0,2483	0,2451
-0,5	0,3085	0,3050	0,3015	0,2981	0,2946	0,2912	0,2877	0,2843	0,2810	0,2776
-0,4	0,3446	0,3409	0,3372	0,3336	0,3300	0,3264	0,3228	0,3192	0,3156	0,3121
-0,3	0,3821	0,3783	0,3745	0,3707	0,3669	0,3632	0,3594	0,3557	0,3520	0,3483
-0,2	0,4207	0,4168	0,4129	0,4090	0,4052	0,4013	0,3974	0,3936	0,3897	0,3859
-0,1	0,4602	0,4562	0,4522	0,4483	0,4443	0,4404	0,4364	0,4325	0,4286	0,4247
0,0	0,5000	0,5040	0,5080	0,5120	0,5160	0,5199	0,5239	0,5279	0,5319	0,5359

BIOGRAFI



Peneliti atas nama Shofyatul Ummaroh seorang mahasiswa Universitas 17 Agustus 1945 Surabaya yang lahir pada tanggal 12 Agustus 2001 di Kediri. Bertempat tinggal di Dsn. Kedungsari, Ds. Sebet, Kec. Plemahan, Kab. Kediri, Jawa Timur. Anak pertama dari pasangan Matjuri dan Suamah. Peneliti menyelesaikan pendidikan di SDN Ngin Plemahan Kediri pada tahun 2013, kemudian melanjutkan pendidikan di MTs. Al-Muttaqin Plemahan Kediri dan tamat pada tahun 2016. Peneliti melanjutkan jenjang pendidikan nya di Madrasah Aliyah Negri 2 Kabupaten Kediri dan tamat pada tahun 2018 dan kemudian peneliti melanjutkan ke jenjang yang lebih tinggi yaitu pada Universitas 17 Agustus 1945 Surabaya Program Studi Teknik Industri dan tamat pada tahun 2022. Saat berada di kampus peneliti sangat bersyukur karena dipertemukan dengan kerabat yang sangat baik dan tidak sombong serta menerima semua perilaku yang peneliti lakukan saat perkuliahan berlangsung.

Peneliti berhasil menyelesaikan Tugas Akhir dengan judul “Analisis Perawatan guna Meningkatkan Kinerja Mesin Oliver-66”. Semoga dengan adanya penelitian Tugas Akhir ini dapat memberikan kontribusi yang positif dalam pendidikan dan kehidupan sehari-hari.