

DAFTAR PUSTAKA

- Christianta, Yudit. (2012). *Usulan Penjadwalan Mesin Produksi Menggunakan Metode Campbell Dudek and Smith*. Palembang: Teknik Industri STT Palembang.
- Destiningrum, Mara. (2017). *Sistem Informasi Penjadwalan Dokter Berbasis Web Dengan Menggunakan Framework Codeigniter (Studi Kasus: Rumah Sakit Yukum Medical Centre)*. Bandar Lampung: Jurnal TEKNOINFO (Vol. 11).
- Ervil, Riko., & Nurmayuni, Dela. (2018). *Penjadwalan Produksi dengan Metode Campbell Dudek Smith (CDS) Untuk Meminimumkan Total Waktu Produksi (Makespan)*. Jurnal Sains dan Teknologi Sekolah Tinggi Teknologi Industri Padang Vol. 18 No.2.
- Febianti, Evi., Saeful, A. I., & Fitra, Junies. (2019). *Usulan Penjadwalan Produksi Baja Profil Menggunakan Metode Nawaz Enscore And Ham dan Algoritma Simulated Annealing*. Banten: Program Studi Teknik Industri, Fakultas Teknik, Universitas Sultan Ageng Tirtayasa.
- Harto, Setyo., Garside, A. K., & Utama, D. M. (2016). *Penjadwalan Produksi Menggunakan Algoritma Jadwal Non Delay untuk Meminimalkan Makespan Studi Kasus di CV. Bima Mebel*. Malang: Spektrum Industri 2016 Vol 14 No 1, 1-108.
- Hartono, Moh. (2001). *Penjadwalan Produksi n job m mesin Untuk Sistem Produksi Job Shop di Perusahaan dan Industri Mesin Aneka Mesin Malang*. Malang: Jurnal Optimumm; hal. 10- 18.
- Kiswah, Mohammad. (2020). *Penjadwalan Produksi Koran Menggunakan Metode Nawaz Enscore Ham, Algoritma Pour, dan Algoritma Palmer Untuk Meminimasi Makespan (Studi Kasus: PT Fajar Makassar Grafika)*. Makassar: Departemen Teknik Industri, Fakultas Teknik, Universitas Hasanuddin.
- Kurnia., Yasra, R., & Afma, V. M. (2013). *Penjadwalan Produksi Dengan Menggunakan Metode Campbell, Dudek & Smith Pada Mesin Laser Marking Jenis Evertech Untuk Meminimalisasi Makespan*. Batam: Universitas Riau Kepulauan Batam.
- Mashuri, C., Mujiyanto, A. H., & Sucipto, H. (2021). *Analisis Perbandingan Metode Campbell Dudek Smith (CDS) dan GUPTA untuk Optimasi Penjadwalan Produksi*. Jombang: Universitas Hasyim Asy'ari Jombang

- Masudin, I., Utama, D. M., & Susastro, F. (2014). *Penjadwalan Flowshop Menggunakan Algoritma Nawaz Enscore Ham*. Jurnal Ilmiah Teknik Industri, Universitas Muhammadiyah Surakarta, 13(1), 54–59.
- Morton, T. E., & Pentico, D. W. (2001). *Heuristic Scheduling Systems*. Canada: John Wiley & Sons, Inc.
- Pamungkas, S. D. (2019). *Analisis Penjadwalan Menggunakan Metode Dannenbring di PT. Sinar Sosro*. Malang: Program Studi Teknik Industri S.1, Institut Teknologi Nasional Malang.
- Patricia, E., & Suryono, H. (2015). *Analisis Penjadwalan Kegiatan Produksi Pada PT. Muliaglass Float Division Dengan Metode Forward Dan Backward*. *Journal of Industrial Engineering & Management Systems*, Universitas Bunda Mulia Indonesia, 43(1), 71–79.
- Philips, I. M. (2019). *Penjadwalan Produksi Butsudan dengan Membandingkan Algoritma Simulated Annealing, Algoritma Pour, dan Algoritma Gupta untuk Meminimasi Makespan*. Makassar: Departemen Teknik Industri, Fakultas Teknik, Universitas Hasanuddin.
- Sulaksmi, A., Garside, A. K., & Hadziqah, F. (2014). *Penjadwalan Produksi dengan Algoritma Heuristik Pour (Studi Kasus: Konveksi One Way - Malang)*. Jurnal Teknik Industri (JTI), Universitas Muhammadiyah Malang, 15(1), 35.
- Tannady, H. (2013). *Modifikasi Mekanisme Penentuan Penjadwalan Job pada Metode Dannenbring*. Jurnal Ilmiah Teknik Industri, Universitas Muhammadiyah Surakarta, Vol. 12 (1-9).
- Tannady, H., Steven, Limas, A. V. (2015). *Solusi Urutan Pengerjaan Job yang Tepat Dengan Metode Campbell Dudeck Smith (CDS)*. Jurnal Ilmiah Teknik Industri Universitas Diponegoro. Volume X No 1.
- Widodo, C. E. (2014). *Optimasi Penjadwalan Mesin Produksi dengan Menggunakan Metode Campbell Dudeck Smith (cds) pada Perusahaan Manufaktur*. Universitas Negeri Yogyakarta. Retrieved from [http://eprints.uny.ac.id/12779/ 1/](http://eprints.uny.ac.id/12779/1/)
- Yowiantoro, Ferry. (2018). *Penjadwalan Proyek Pembangunan Gedung Akuntansi Fakultas Ekonomi Universitas Jember Menggunakan Metode Gantt Chart*. Jember: Universitas Jember.

LAMPIRAN

Lampiran 1 Tabel Rincian Perbandingan Permintaan Produk *Butsudan* dengan Kapasitas Produksi Perusahaan

Bulan	Permintaan (Unit)	Kapasitas Produksi (Unit)
Juli-2020	802	320
Agustus-2020	853	408
September-2020	807	380
Oktober-2020	876	171
November-2020	995	448
Desember-2020	776	320
Januari-2021	1017	601
Februari-2021	758	460
Maret-2021	816	561
April-2021	673	510
Mei-2021	587	365
Juni-2021	793	313
Juli-2021	788	449
Total	10541	5306

Lampiran 2 Tabel Penyesuaian Menurut *Westinghouse*

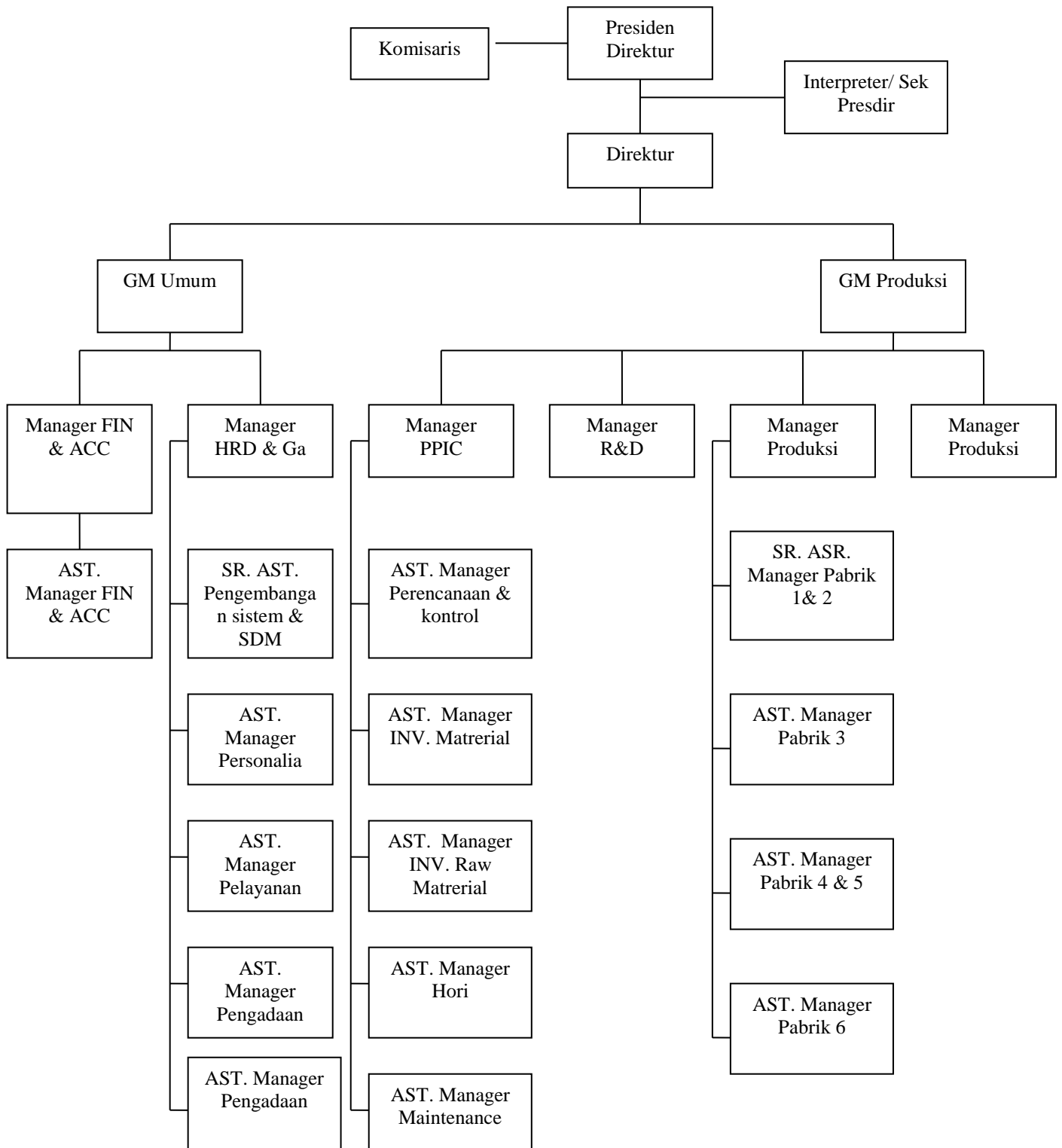
FAKTOR	KELAS	LAMBANG	PENYESUAIAN
<i>Skill</i>	<i>Super Skill</i>	A1	+0,15
		A2	+0,13
	<i>Excellent</i>	B1	+0,11
		B2	+0,08
	<i>Good</i>	C1	+0,06
		C2	+0,03
	<i>Average</i>	D	0,00
	<i>Fair</i>	E1	-0,05
		E2	-0,10
	<i>Poor</i>	F1	-0,16
F2		-0,22	
<i>Effort</i>	Excessive	A1	+0,13
		A2	+0,12
	Excellent	B1	+0,10
		B2	+0,08
	<i>Good</i>	C1	+0,05
		C2	+0,02
	<i>Average</i>	D	0,00
	<i>Fair</i>	E1	-0,04
		E2	-0,08
	<i>Poor</i>	F1	-0,12
F2		-0,17	
<i>Condition</i>	Ideal	A	+0,06
	Excellent	B	+0,04
	<i>Good</i>	C	+0,02
	<i>Average</i>	D	0,00
	<i>Fair</i>	E	-0,03
	<i>Poor</i>	F	-0,07
<i>Consistency</i>	Perfect	A	+0,04
	Excellent	B	+0,03
	<i>Good</i>	C	+0,01
	<i>Average</i>	D	0,00
	<i>Fair</i>	E	-0,02
	<i>Poor</i>	F	-0,04

Lampiran 3 Tabel Kelonggaran Berdasarkan Faktor yang Berpengaruh

FAKTOR	CONTOH PEKERJAAN	KELONGGARAN (%)	
A. TENAGA YANG DIKELUARKAN		Ekuivalen beban	Pria Wanita
1. Dapat diabaikan	Bekerja dimeja, duduk	Tanpa beban	0,00-6,0
2. Sangat ringan	Bekerja dimeja, duduk	0,00-2,25 kg	6,0-7,5
3. Ringan	Menyekop, ringan	2,25-9,00 kg	7,5-16,0
4. Sedang	Mencangkul	9,00-18,00 kg	12,0
5. Berat	Mengayun kayu yang berat	18,00-27,00 kg	12,0-
6. Sangat berat	Memanggul beban	kg	19,0
7. Luar biasa berat	Memanggul karung berat	27,00-50,00 kg	19,0-
		Diatas 50 kg	30,0-50,0
B. SIKAP KERJA			
1. Duduk	Bekerja duduk, ringan		0,0-1,0
2. Berdiri diatas dua kaki	Badan tegak, ditumpu dua kaki		1,0-2,5
3. Berdiri diatas satu kaki	Satu kaki mengerjakan alat control		2,5-4,0
4. Berbaring	Pada bagian sisi, belakang atau depan kaki		2,5-4,0
5. Membungkuk	Badan dibungkukkan bertumpu pada dua kaki		4,0-10,0
C. GERAKAN KERJA			
1. Normal	Ayunan bebas dari palu		0
2. Agak terbatas	Ayunan terbatas dari palu		0-5
3. Sulit	Membawa beban berat dengan satu tangan		0-5
4. Pada anggota-anggota badan terbatas	Bekerja dengan tangan diatas		5-10
5. Seluruh anggota badan terbatas	Bekeja dilorong-lorong pertambangan sempit		
D. KELELAHAN MATA *)		Pencahayaannya baik	Buruk
1. Pandangan yang terputus-putus	Membaca alat ukur Pekerjaan yang teliti	0	1
2. Pandangan yang hampir terus-menerus	Pemeriksaan cacat-cacat pada kain	2	5
3. Pandangan yang terus menerus dengan fokus berubah-ubah	Pemeriksaan yang teliti	2	8
4. Pandangan yang terus menerus dengan fokus tetap		4	
E. KEADAAN TEMPERATUR TEMPAT KERJA **)	Temperatur (°C)	Kelembaban normal	Kelebihan
1. Beku	Dibawah 0		Diatas 12
2. Rendah	0-13	Diatas 10	12-5
3. Sedang	13-22	10-0	8-0
4. Normal	22-28	5-0	0-8
5. Tinggi	28-38	0-5	8-100
6. Sangat tinggi	Diatas 38	8-100	Diatas 100
F. KEADAAN ATMOSFER ***)	Ruangan berventilasi baik		

1. Baik	Udara segar	
2. Cukup	Ventilasi kurang baik, ada bau-bauan (tidak berbahaya)	5-10
3. Kurang baik	Adanya debu-debu beracun atau tidak beracun tetapi banyak.	
4. Baik	Adanya bau-bauan berbahaya yang mengharuskan menggunakan alat-alat pernafasan.	
G. KEADAAN LINGKUNGAN YANG BAIK		
1. Bersih, sehat, cerah dengan kebisingan rendah		0
2. Siklus kerja berulang-ulang antara 5-10 detik		0-1
3. Siklus kerja berulang-ulang antara 0-5 detik		1-3
4. Sangat bising		0-5
5. Jika faktor-faktor yang berpengaruh dapat menurunkan kualitas		0-5
6. Terasa adanya getaran lantai		5-10
7. Keadaan yang luar biasa		5-15

Lampiran 4 Struktur Organisasi Perusahaan



Lampiran 5 Foto Produk Butsudan

1. Cheriooto – L (18 – 18) (Job 1)



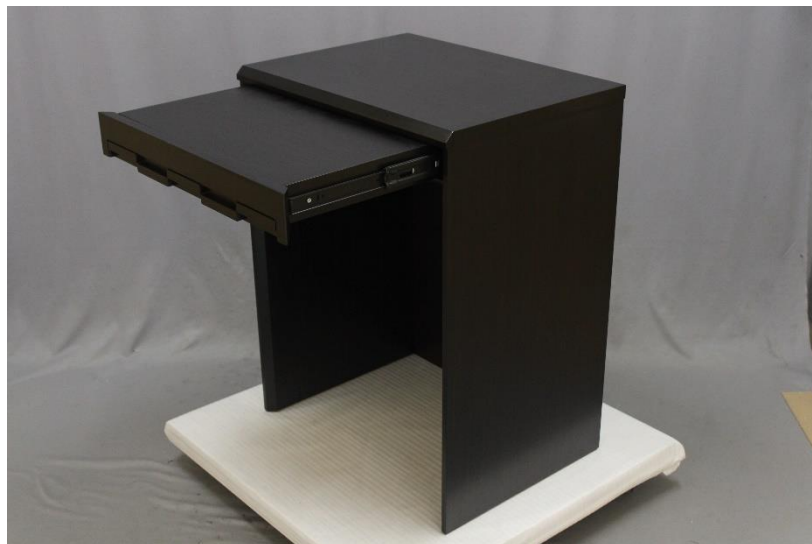
2. Ririimarureen N – L (14 – 45) (Job 2)



3. Saiga Rain – L (16 – 17) (Job 3)



4. Saiga Burokku – L (13 – 17) (Job 4)



5. Naito – L (14 – 18) (Job 5)



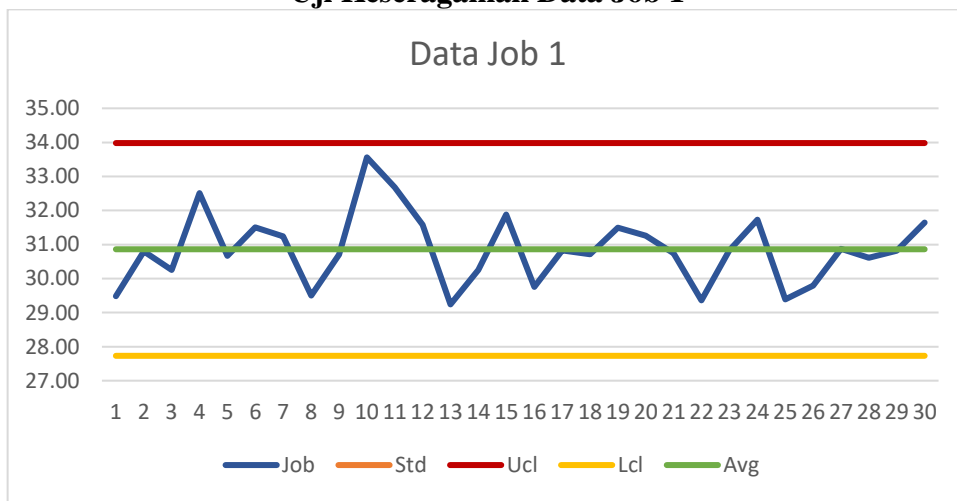
Lampiran 6 Data hasil uji kecukupan dan keseragaman data untuk setiap mesin (dalam satuan detik)

1. Uji Kecukupan Data Mesin *Cutting* (M1)

No.	Mesin <i>Cutting</i> (M1)				
	J1	J2	J3	J4	J5
1	29.48	47.91	32.54	35.42	40.28
2	30.80	46.19	32.75	35.29	40.41
3	30.25	46.55	33.47	34.38	40.37
4	32.51	45.75	32.14	33.36	42.48
5	30.67	44.87	34.28	35.28	42.38
6	31.50	46.25	34.72	35.86	42.71
7	31.24	45.34	35.43	34.21	42.38
8	29.50	45.57	32.74	34.61	42.37
9	30.70	47.62	35.54	34.29	41.27
10	33.56	45.71	34.21	35.38	41.59
11	32.68	45.32	32.91	35.48	42.94
12	31.58	46.45	33.82	33.73	41.89
13	29.24	46.75	33.82	33.25	42.37
14	30.25	43.15	35.27	34.10	41.28
15	31.88	44.64	33.49	35.43	41.63
16	29.75	45.82	33.27	33.35	41.27
17	30.83	45.24	34.61	35.64	42.39
18	30.71	44.65	35.91	35.61	42.94
19	31.49	46.83	35.28	34.74	42.58
20	31.26	46.21	32.31	35.15	41.74
21	30.74	45.32	34.82	35.41	42.36
22	29.36	46.29	35.58	35.27	42.31
23	30.83	47.21	35.49	33.71	43.47
24	31.73	47.28	32.29	34.48	42.38
25	29.39	45.23	32.31	35.47	42.41
26	29.79	46.85	34.92	35.19	42.31
27	30.87	46.98	33.45	35.37	40.47
28	30.61	44.37	33.71	34.53	41.29
29	30.82	47.61	34.61	34.59	41.29
30	31.64	47.31	35.28	34.82	41.27
Σx_i	925.66	1381.27	1020.97	1043.40	1256.83
$(\Sigma x_i)^2$	856846.44	1907906.81	1042379.74	1088683.56	1579621.65
Σx_i^2	28592.99	63632.81	34786.63	36306.06	52674.06
N	30	30	30	30	30

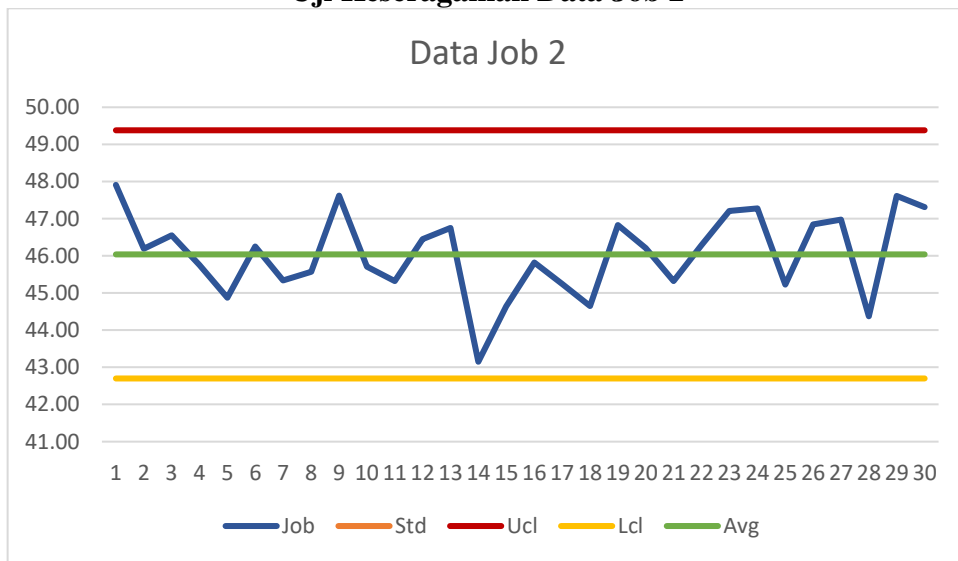
N(xi²)	857789.57	1908984.38	1043598.77	1089181.89	1580221.87
N(xi²) - (Xi)²	943.14	1077.56	1219.03	498.33	600.22
SQRT	30.71	32.83	34.91	22.32	24.50
K/S * N(xi²) - (Xi)²	614.2111689	656.52	698.29	446.47	489.99
(k/s)x(N(xi²) - (Xi)²) / Σxi	0.00	0.00	0.00	0.00	0.00
N'	0.00	0.00	0.00	0.00	0.00

Uji Keseragaman Data Job 1



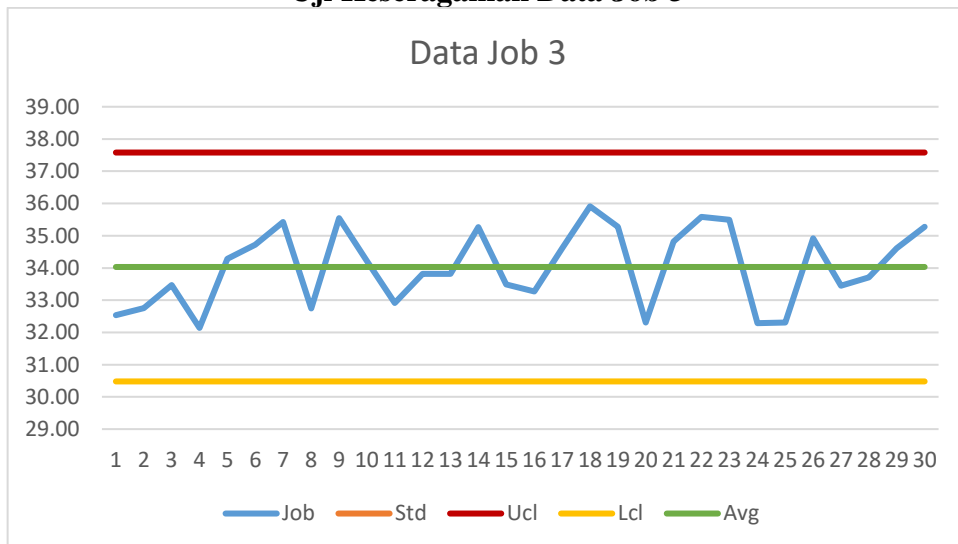
AVG	STD	UCL	LCL
30.86	1.04	33.98	27.73

Uji Keseragaman Data Job 2



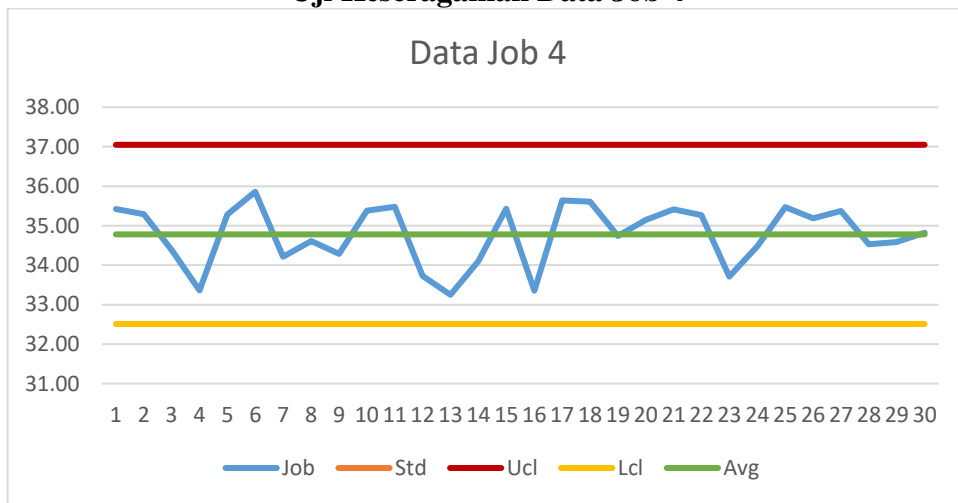
AVG	STD	UCL	LCL
46.04	1.11	49.38	42.70

Uji Keseragaman Data Job 3



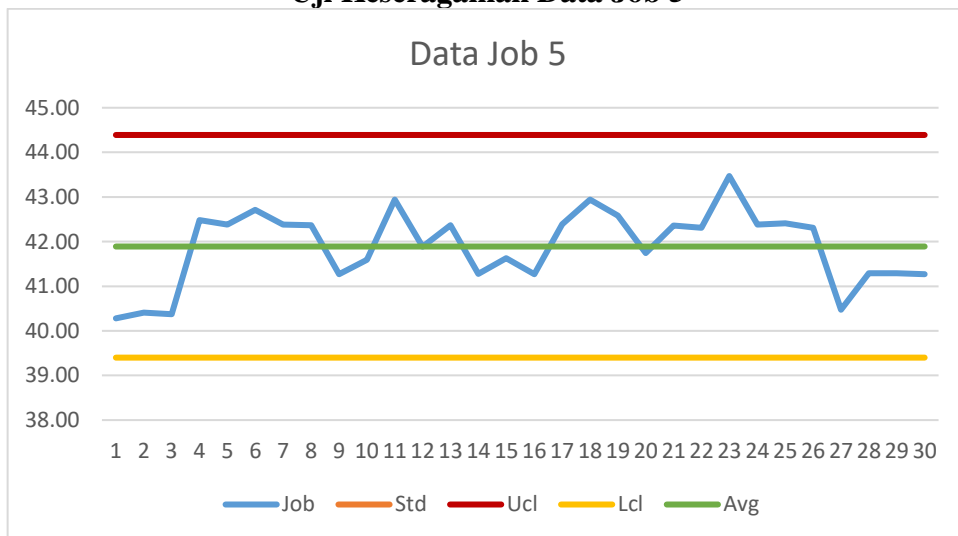
AVG	STD	UCL	LCL
34.03	1.18	37.58	30.48

Uji Keseragaman Data Job 4



AVG	STD	UCL	LCL
34.78	0.76	37.05	32.51

Uji Keseragaman Data Job 5



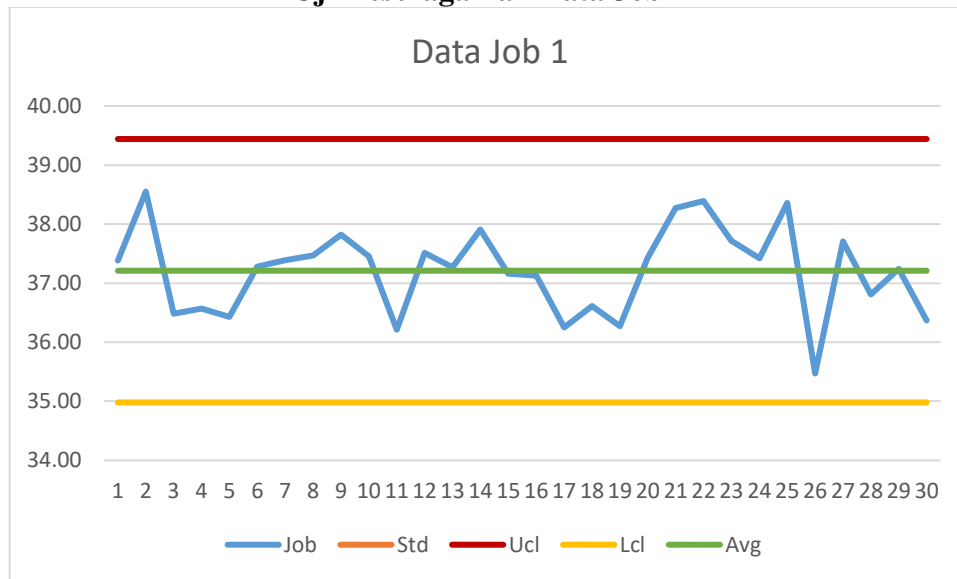
AVG	STD	UCL	LCL
41.89	0.83	44.39	39.40

2. Uji Kecukupan Data Mesin *Hot Press* (M2)

No.	Mesin <i>Hot Press</i> (M2)				
	J1	J2	J3	J4	J5
1	37.38	40.08	41.53	41.37	38.45
2	38.55	42.37	41.27	41.21	38.49
3	36.48	41.28	41.28	41.29	39.65
4	36.57	41.41	42.38	42.83	40.33
5	36.43	42.83	42.49	42.37	40.34
6	37.28	42.70	41.24	41.27	40.42
7	37.39	43.48	41.47	43.28	39.45
8	37.47	42.39	40.28	42.85	39.42
9	37.82	42.81	40.29	42.70	39.45
10	37.45	42.51	40.40	42.31	39.41
11	36.21	40.27	40.80	44.40	39.62
12	37.51	40.29	41.39	43.47	38.53
13	37.27	44.62	41.42	43.62	38.41
14	37.91	42.37	42.41	42.38	40.42
15	37.16	42.31	42.60	42.18	41.31
16	37.13	42.56	43.44	41.19	40.71
17	36.25	41.83	43.58	42.38	40.91
18	36.61	42.39	44.38	42.41	39.47
19	36.27	43.28	41.29	42.48	39.51
20	37.43	43.61	41.94	42.20	39.48
21	38.27	41.71	40.74	42.53	40.35
22	38.39	42.30	42.38	42.68	40.73
23	37.72	40.38	44.73	41.28	40.21
24	37.42	40.75	41.28	41.52	41.29
25	38.36	41.73	42.94	41.29	41.19
26	35.47	42.38	42.90	43.48	39.21
27	37.71	42.49	43.85	42.38	39.42
28	36.81	41.28	41.82	42.35	39.47
29	37.24	42.37	42.48	42.37	39.51
30	36.37	41.27	42.46	42.43	39.28
Σxi	1116.33	1262.05	1261.46	1270.50	1194.44
$(\Sigma xi)^2$	1246192.67	1592770.20	1591281.33	1614170.25	1426686.91
Σxi^2	41555.76	53125.07	53082.31	53824.57	47576.32
N	30	30	30	30	30
$N(xi^2)$	1246672.76	1593752.21	1592469.31	1614737.02	1427289.74
$N(xi^2) - (Xi)^2$	480.09	982.00	1187.97	566.77	602.82
SQRT	21.91	31.34	34.47	23.81	24.55

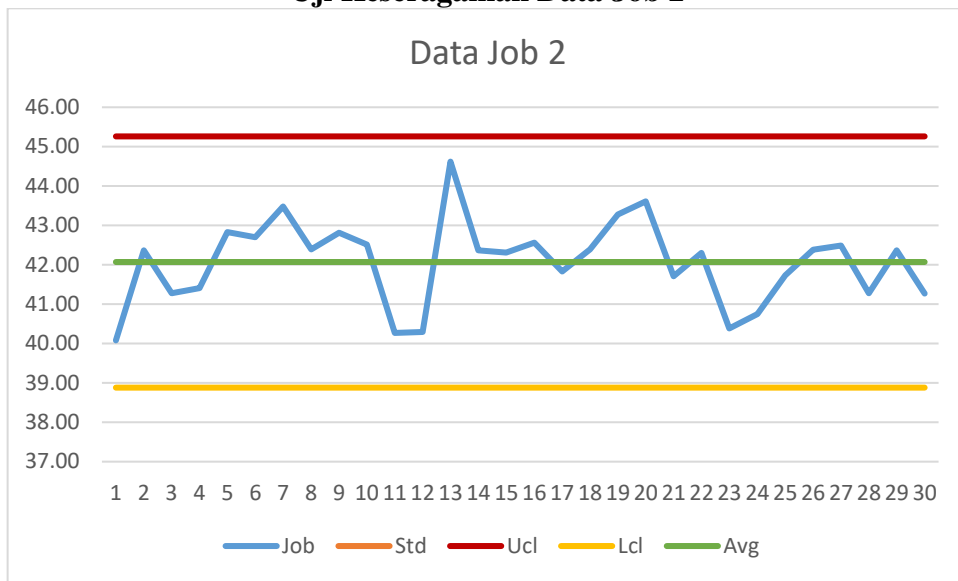
$K/S * N(xi^2) - (Xi)^2$	438.22	626.74	689.34	476.14	491.05
$(k/s)x(N(xi^2) - (Xi)^2) / \sum xi$	0.00	0.00	0.00	0.00	0.00
N'	0.00	0.00	0.00	0.00	0.00

Uji Keseragaman Data Job 1



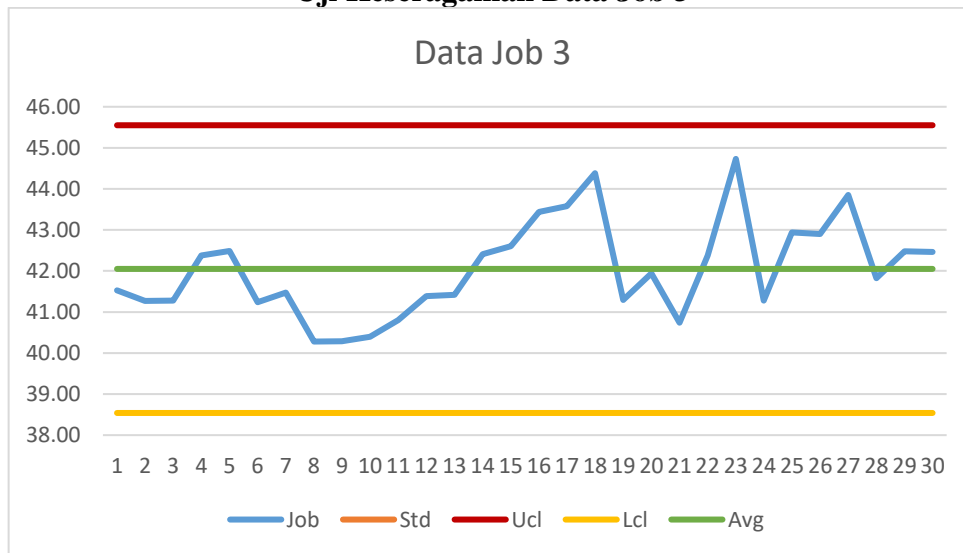
AVG	STD	UCL	LCL
37.21	0.74	39.44	34.98

Uji Keseragaman Data Job 2



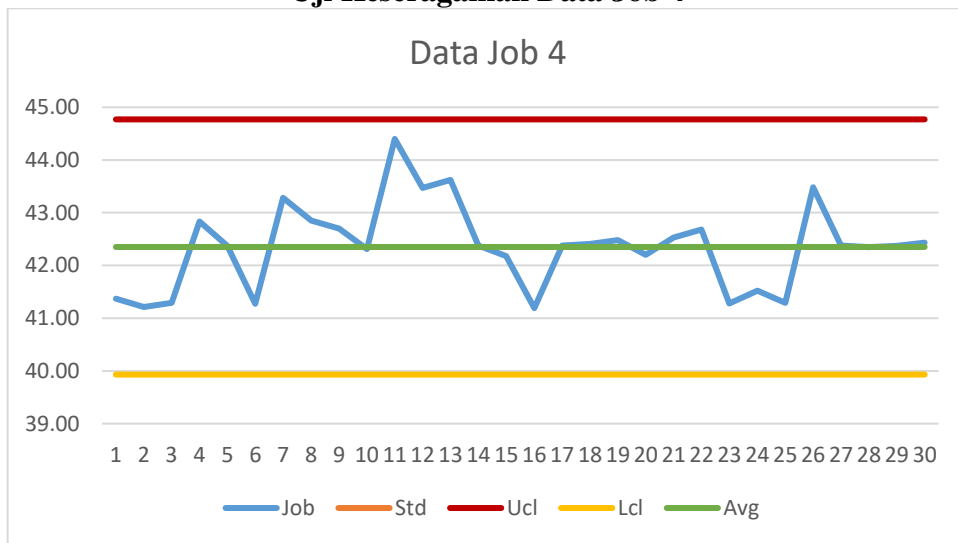
AVG	STD	UCL	LCL
42.07	1.06	45.26	38.88

Uji Keseragaman Data Job 3



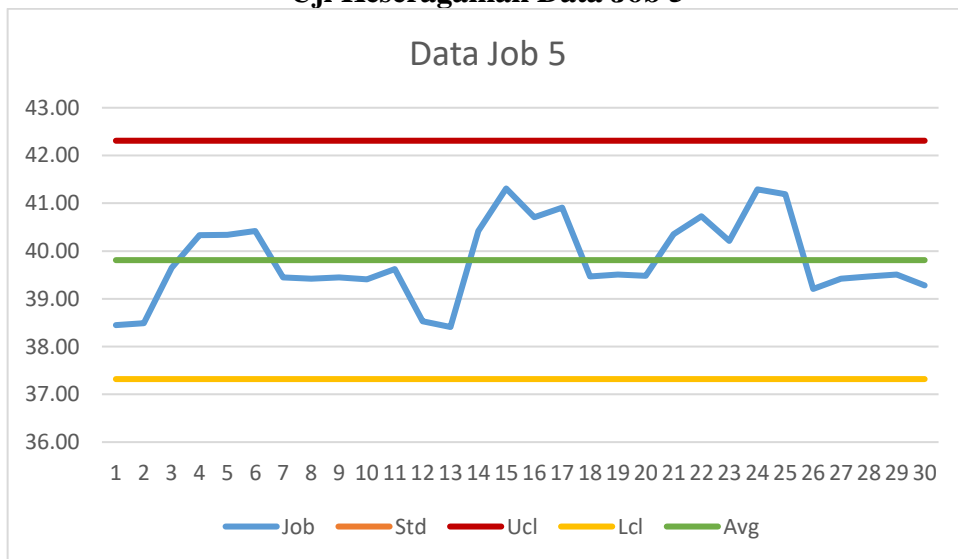
AVG	STD	UCL	LCL
42.05	1.17	45.55	38.54

Uji Keseragaman Data Job 4



AVG	STD	UCL	LCL
42.35	0.81	44.77	39.93

Uji Keseragaman Data Job 5



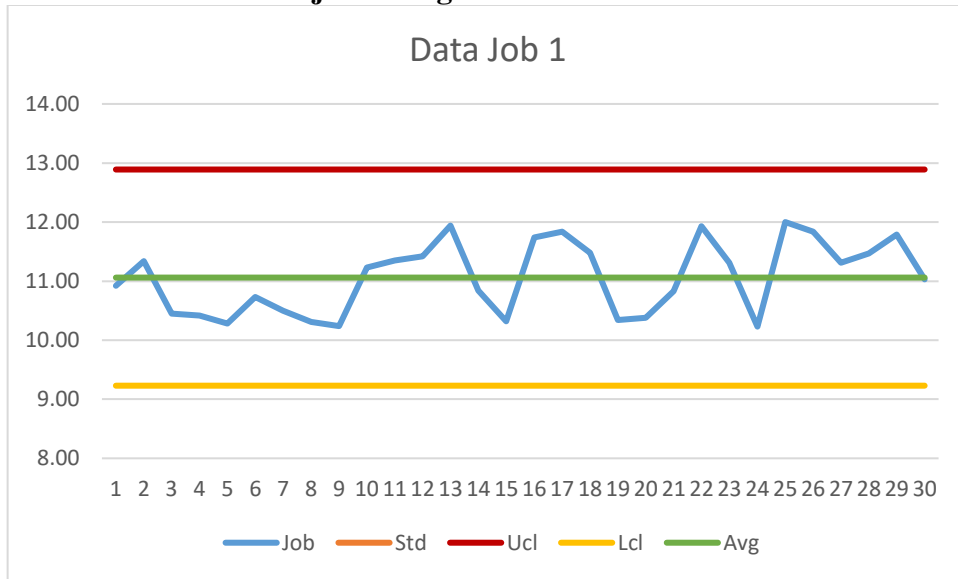
AVG	STD	UCL	LCL
39.81	0.83	42.31	37.32

3. Uji Kecukupan Data Mesin *Double Saw* (M3)

No.	M3				
	J1	J2	J3	J4	J5
1	10.92	13.45	8.29	6.35	8.37
2	11.34	13.24	7.85	6.29	8.27
3	10.45	12.41	8.49	6.10	8.51
4	10.42	12.32	8.27	6.53	7.39
5	10.28	12.21	8.36	6.42	7.62
6	10.73	12.79	6.80	7.36	7.36
7	10.50	11.97	6.19	6.70	9.28
8	10.31	10.18	6.53	6.88	9.37
9	10.24	11.85	8.39	7.36	8.88
10	11.23	11.37	7.72	7.48	8.74
11	11.35	12.49	7.36	7.73	8.83
12	11.42	12.84	7.89	7.98	8.28
13	11.94	13.64	7.70	8.10	8.57
14	10.84	14.26	8.21	8.00	7.29
15	10.32	12.43	8.43	7.26	10.21
16	11.74	12.51	8.88	7.72	9.28
17	11.84	12.46	8.45	8.37	9.71
18	11.48	12.73	8.60	6.39	10.30
19	10.34	12.49	7.36	6.72	9.73
20	10.38	11.95	7.67	6.38	8.27
21	10.83	12.88	7.64	6.98	9.80
22	11.93	12.82	7.83	7.25	8.28
23	11.31	12.56	6.95	7.63	8.95
24	10.23	12.66	6.80	7.81	8.83
25	12.00	12.78	7.50	7.37	7.26
26	11.84	13.23	7.38	6.38	8.41
27	11.31	11.40	7.82	6.49	8.59
28	11.47	11.48	8.91	6.80	9.74
29	11.79	12.39	8.77	7.28	9.29
30	11.03	12.64	8.36	7.38	9.16
Σxi	331.81	374.43	235.40	213.49	262.57
(ΣXi)²	110097.88	140197.82	55413.16	45577.98	68943.00
ΣXi²	3680.73	4690.32	1861.57	1530.91	2318.76
N	30	30	30	30	30
N(xi²)	110422.00	140709.48	55847.14	45927.27	69562.89
N(xi²) - (Xi)²	324.12	511.65	433.98	349.29	619.88
SQRT	18.00	22.62	20.83	18.69	24.90

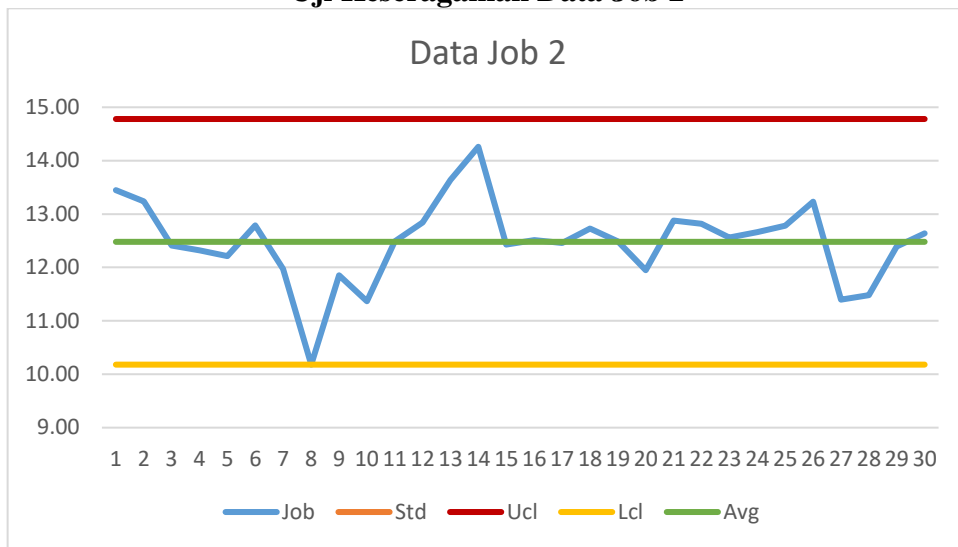
$K/S * N(xi^2) - (Xi)^2$	360.07	452.39	416.64	373.79	497.95
$(k/s)x(N(xi^2) - (Xi)^2) / \sum xi$	0.00	0.00	0.01	0.01	0.01
N'	0.00	0.00	0.00	0.00	0.00

Uji Keseragaman Data Job 1



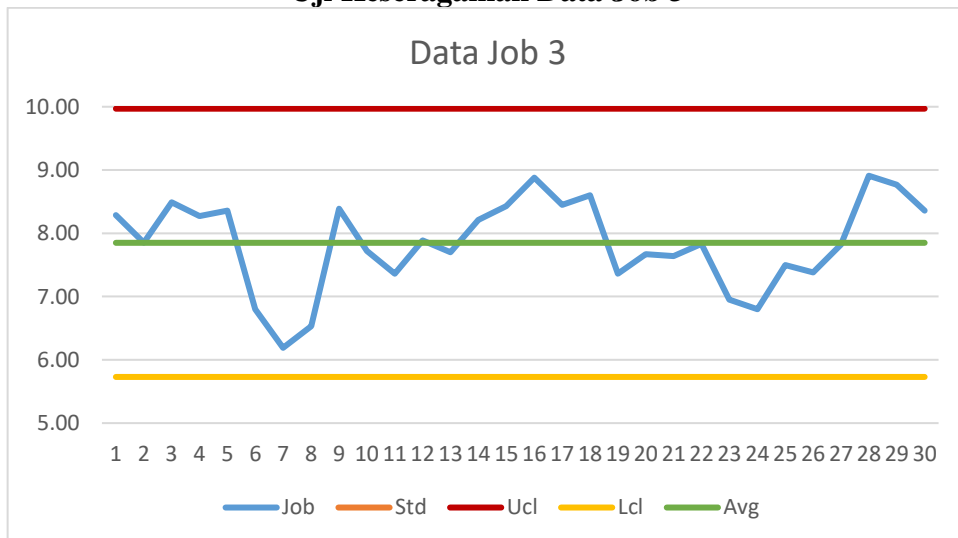
AVG	STD	UCL	LCL
11.06	0.61	12.89	9.23

Uji Keseragaman Data Job 2



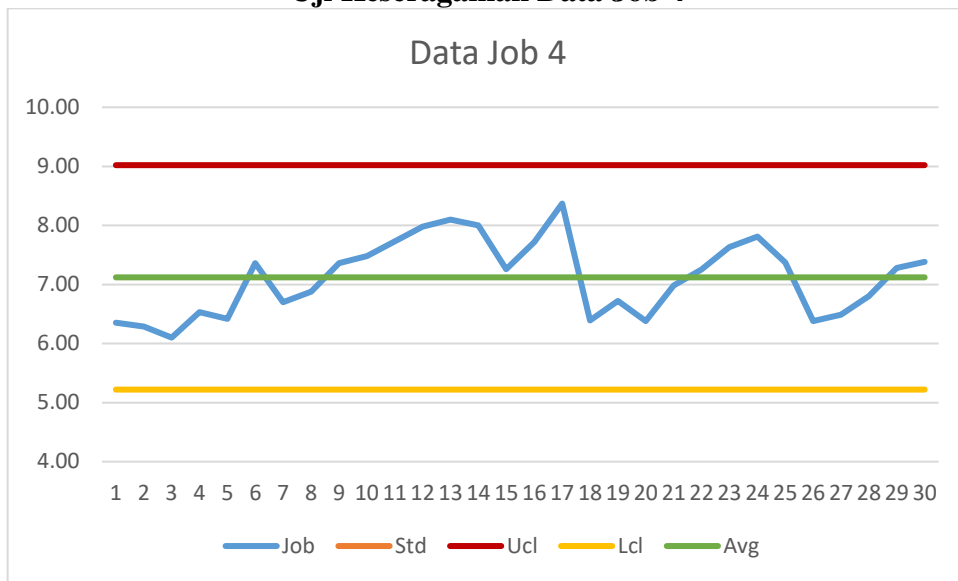
AVG	STD	UCL	LCL
12.48	0.77	14.78	10.18

Uji Keseragaman Data Job 3



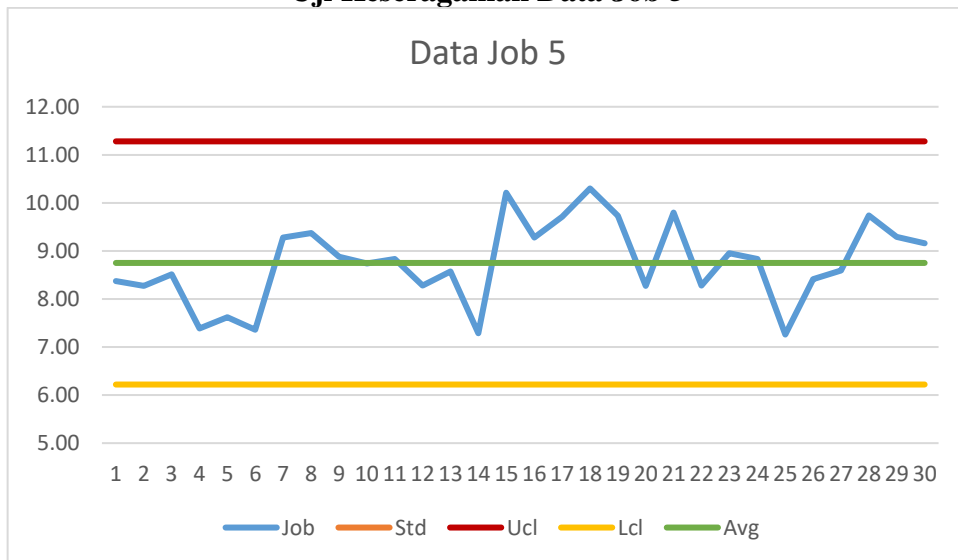
AVG	STD	UCL	LCL
7.85	0.71	9.97	5.73

Uji Keseragaman Data Job 4



AVG	STD	UCL	LCL
7.12	0.63	9.02	5.22

Uji Keseragaman Data Job 5



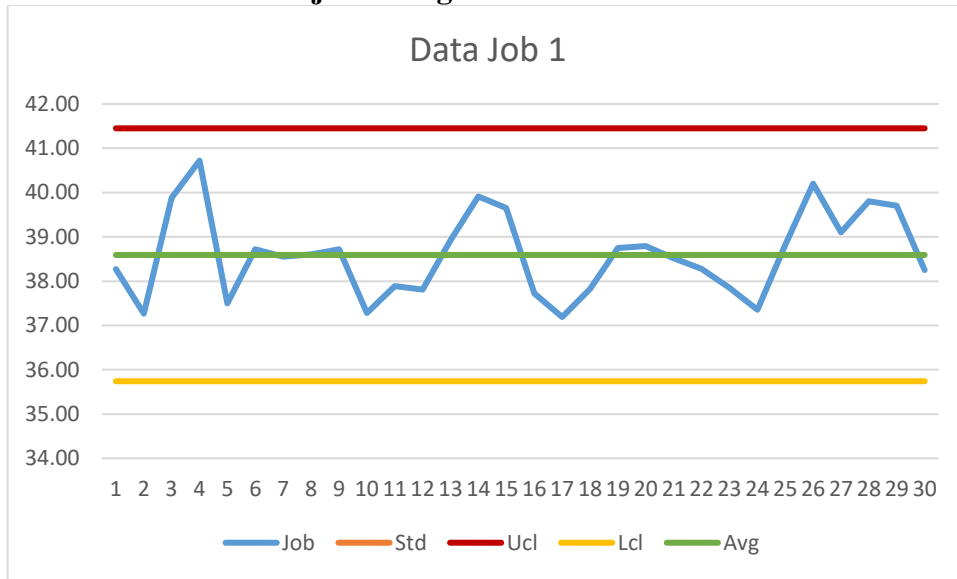
AVG	STD	UCL	LCL
8.75	0.84	11.28	6.22

4. Uji Kecukupan Data Mesin *Moulding* (M4)

No.	M4				
	J1	J2	J3	J4	J5
1	38.27	40.32	33.76	34.55	36.38
2	37.27	42.31	33.82	35.89	37.50
3	39.88	41.63	34.71	36.98	36.75
4	40.72	42.51	33.31	36.88	39.72
5	37.50	42.39	33.95	38.52	39.83
6	38.72	39.61	34.78	36.77	39.61
7	38.55	38.75	34.98	36.49	38.75
8	38.60	38.25	34.72	36.72	38.25
9	38.72	40.88	34.60	35.21	37.88
10	37.28	38.55	35.65	35.77	38.55
11	37.89	40.41	35.71	38.23	37.41
12	37.81	41.29	34.26	38.21	37.27
13	38.92	43.27	34.31	37.21	37.83
14	39.91	39.52	33.52	37.44	38.93
15	39.65	38.31	33.89	37.43	38.31
16	37.72	39.52	36.12	37.31	38.74
17	37.19	39.21	35.87	38.25	39.21
18	37.82	39.14	35.45	37.51	39.14
19	38.75	38.80	36.23	38.74	38.80
20	38.79	40.70	37.41	37.41	37.29
21	38.52	42.44	36.59	37.28	37.76
22	38.28	42.31	36.51	37.72	37.03
23	37.85	41.28	35.45	38.31	38.41
24	37.35	41.29	35.68	36.92	38.33
25	38.82	43.28	35.74	36.52	38.21
26	40.20	41.23	36.21	36.84	37.91
27	39.10	40.62	35.84	36.21	38.37
28	39.80	40.12	35.62	37.31	38.75
29	39.70	43.28	36.21	37.67	38.60
30	38.25	41.41	36.41	38.41	38.50
Σxi	1157.83	1222.63	1057.31	1114.71	1148.02
$(\Sigma xi)^2$	1340570.31	1494824.12	1117904.44	1242578.38	1317949.92
Σxi^2	44712.01	49897.31	37295.89	41447.45	43952.76
N	30	30	30	30	30
$N(xi^2)$	1341360.41	1496919.18	1118876.84	1243423.64	1318582.85
$N(xi^2) - (xi)^2$	790.10	2095.07	972.40	845.26	632.93
SQRT	28.11	45.77	31.18	29.07	25.16

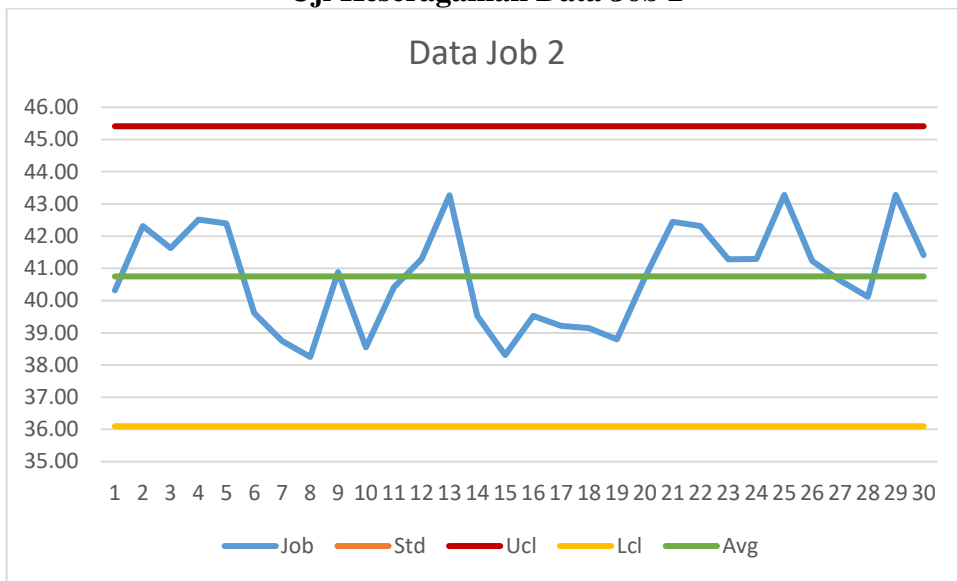
$K/S * N(xi^2) - (Xi)^2$	562.18	915.44	623.67	581.47	503.16
$(k/s)x(N(xi^2) - (Xi)^2) / \sum xi$	0.00	0.00	0.00	0.00	0.00
N'	0.00	0.00	0.00	0.00	0.00

Uji Keseragaman Data Job 1



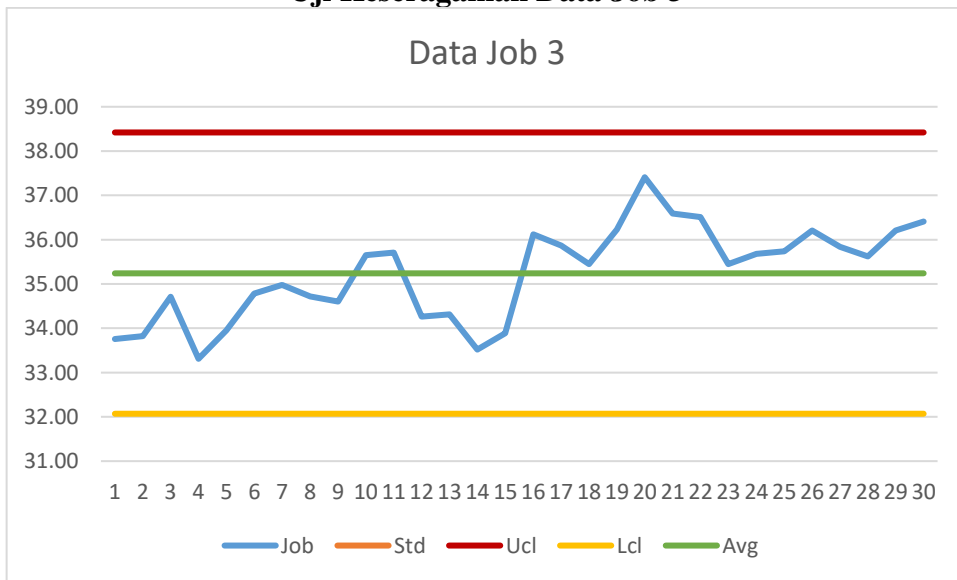
AVG	STD	UCL	LCL
38.59	0.95	41.45	35.74

Uji Keseragaman Data Job 2



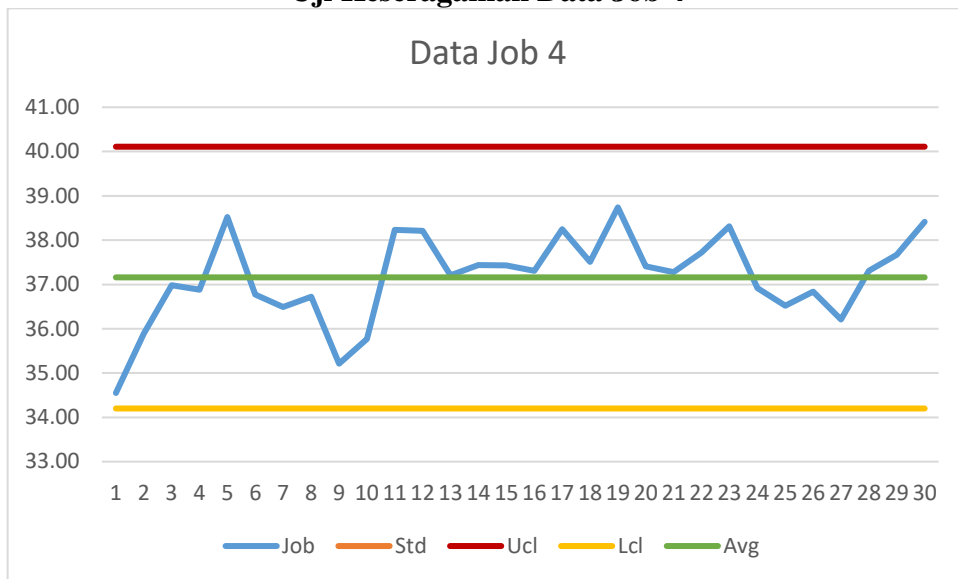
AVG	STD	UCL	LCL
40.75	1.55	45.41	36.10

Uji Keseragaman Data Job 3



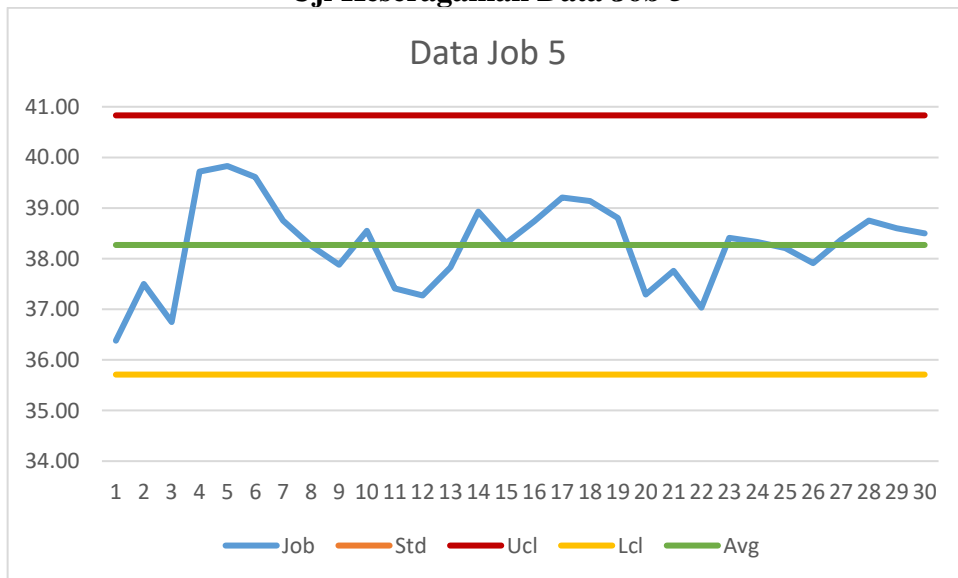
AVG	STD	UCL	LCL
35.24	1.06	38.42	32.07

Uji Keseragaman Data Job 4



AVG	STD	UCL	LCL
37.16	0.99	40.11	34.20

Uji Keseragaman Data Job 5



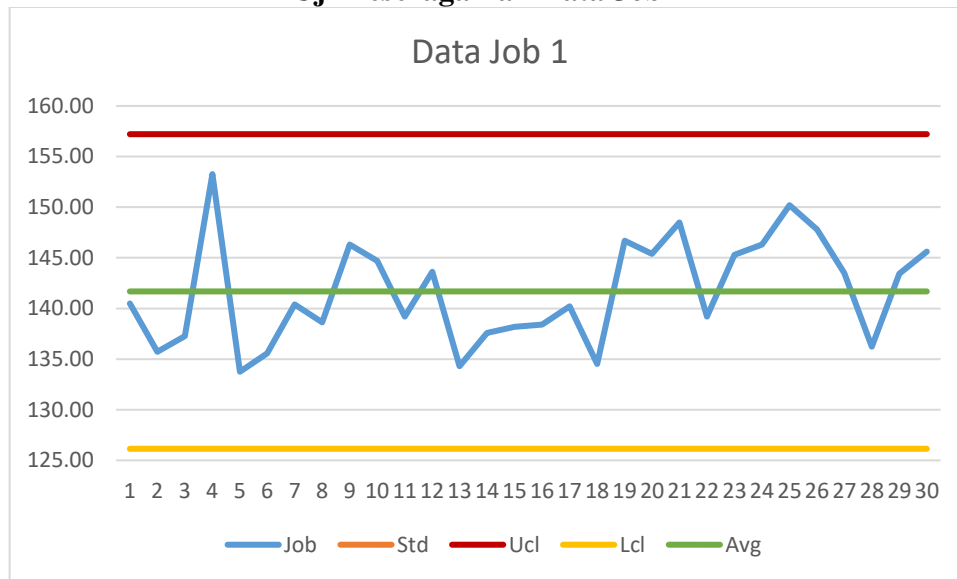
AVG	STD	UCL	LCL
38.27	0.85	40.83	35.71

5. Uji Kecukupan Data Mesin *NC Router* (M5)

No.	M5				
	J1	J2	J3	J4	J5
1	140.50	218.25	147.20	150.37	155.23
2	135.72	223.54	142.35	155.27	158.60
3	137.28	215.23	141.20	153.72	160.26
4	153.27	228.34	144.27	145.39	158.27
5	133.75	225.00	144.70	157.27	158.20
6	135.55	220.43	140.30	152.30	154.32
7	140.41	215.31	147.30	155.43	150.43
8	138.62	217.52	149.20	156.30	152.38
9	146.32	220.72	150.41	149.45	156.32
10	144.70	227.35	152.34	148.56	158.39
11	139.21	218.34	147.32	150.53	161.31
12	143.62	224.32	144.30	147.32	157.17
13	134.30	225.60	150.30	150.55	152.43
14	137.57	216.41	139.88	152.34	155.21
15	138.20	214.50	142.70	155.48	155.50
16	138.40	218.45	138.38	157.43	157.31
17	140.21	227.40	147.32	155.32	163.25
18	134.52	225.50	145.20	152.49	162.34
19	146.70	221.34	146.50	153.86	158.43
20	145.38	214.70	148.32	150.37	157.29
21	148.50	217.43	140.20	147.63	160.43
22	139.20	218.50	142.50	150.52	154.20
23	145.30	220.43	142.70	152.70	156.47
24	146.30	221.80	139.98	155.80	155.31
25	150.20	224.30	138.60	148.72	164.41
26	147.80	216.45	136.78	147.27	166.21
27	143.50	218.30	140.40	150.65	159.21
28	136.21	220.60	140.20	152.63	157.31
29	143.42	217.34	143.50	154.32	160.20
30	145.61	216.30	139.40	150.30	155.32
Σxi	4250.27	6609.70	4313.75	4560.29	4731.71
$(\Sigma Xi)^2$	18064795.07	43688134.09	18608439.06	20796244.88	22389079.52
ΣXi^2	602937.79	1456764.38	620766.69	693509.71	746675.66
N	30	30	30	30	30
$N(xi^2)$	18088133.84	43702931.31	18623000.82	20805291.31	22400269.91
$N(xi^2) - (Xi)^2$	23338.76	14797.22	14561.75	9046.42	11190.38
SQRT	152.77	121.64	120.67	95.11	105.78

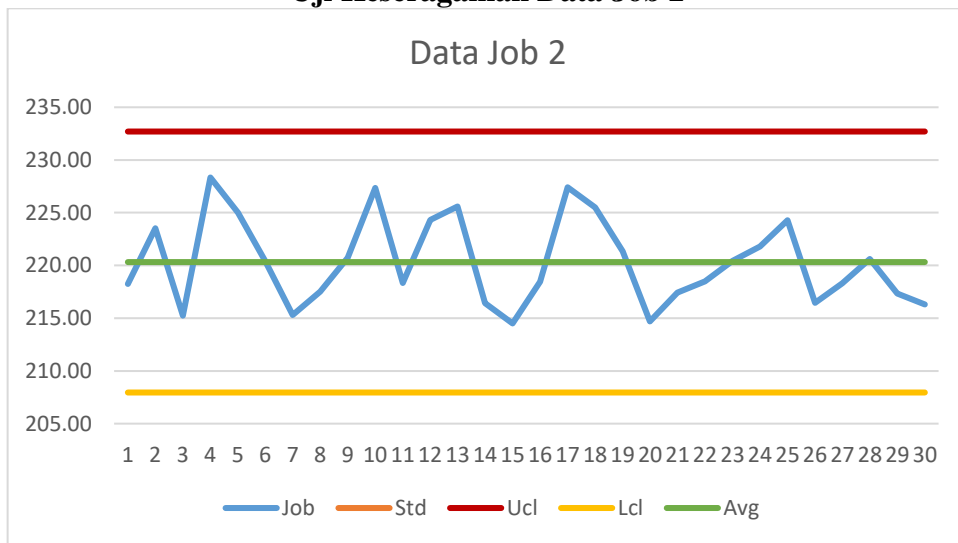
$K/S * N(xi^2) - (Xi)^2$	3055.41	2432.88	2413.44	1902.25	2115.69
$(k/s)x(N(xi^2) - (Xi)^2) / \sum xi$	0.00	0.00	0.00	0.00	0.00
N'	0.00	0.00	0.00	0.00	0.00

Uji Keseragaman Data Job 1



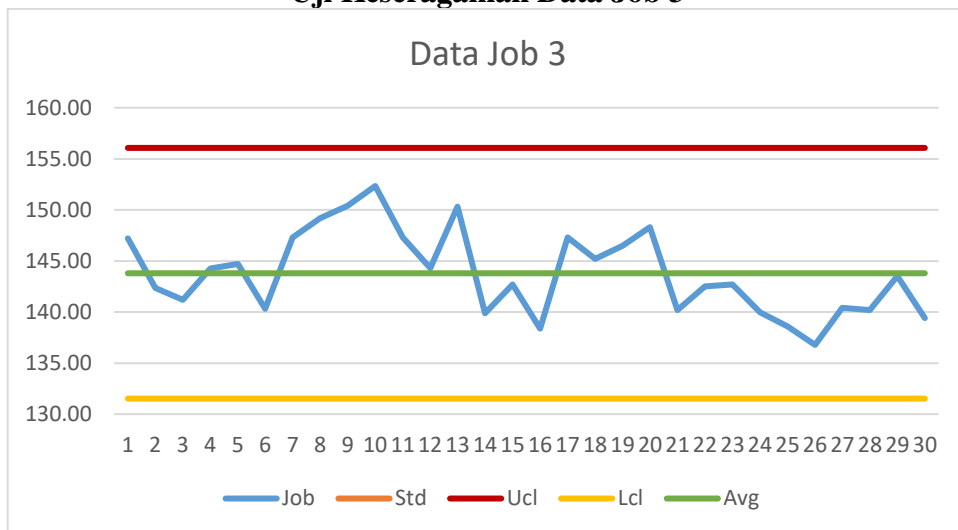
AVG	STD	UCL	LCL
141.68	5.18	157.21	126.14

Uji Keseragaman Data Job 2



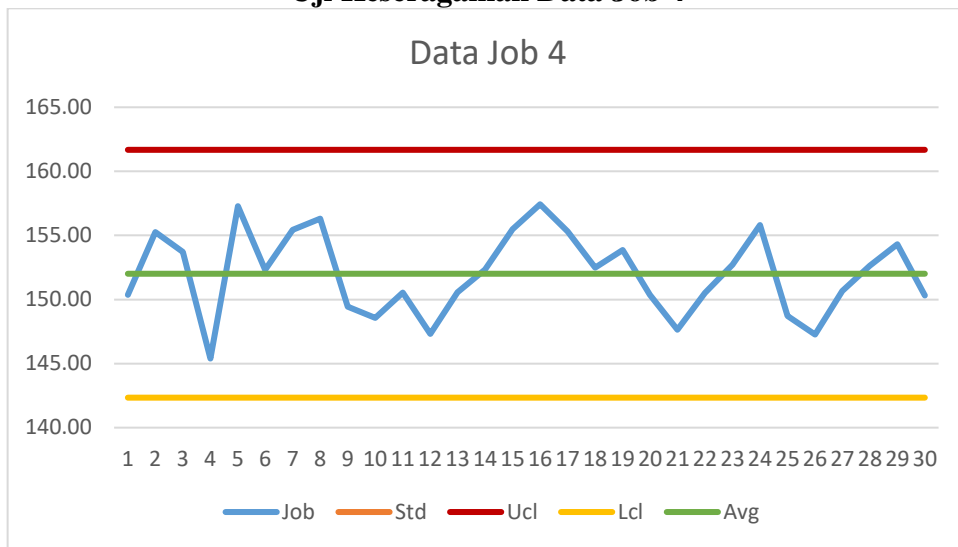
AVG	STD	UCL	LCL
220.32	4.12	232.70	207.95

Uji Keseragaman Data Job 3



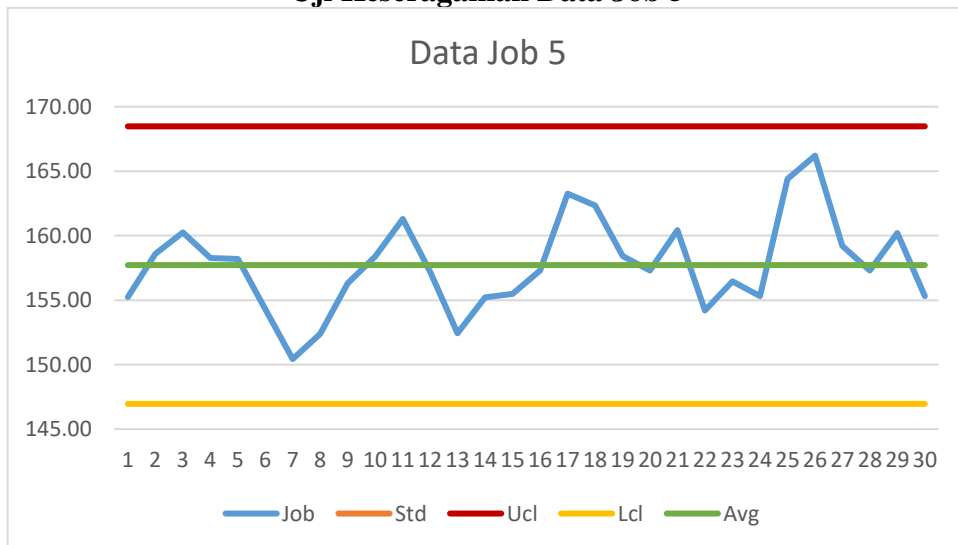
AVG	STD	UCL	LCL
143.79	4.09	156.07	131.52

Uji Keseragaman Data Job 4



AVG	STD	UCL	LCL
152.01	3.22	161.68	142.34

Uji Keseragaman Data Job 5



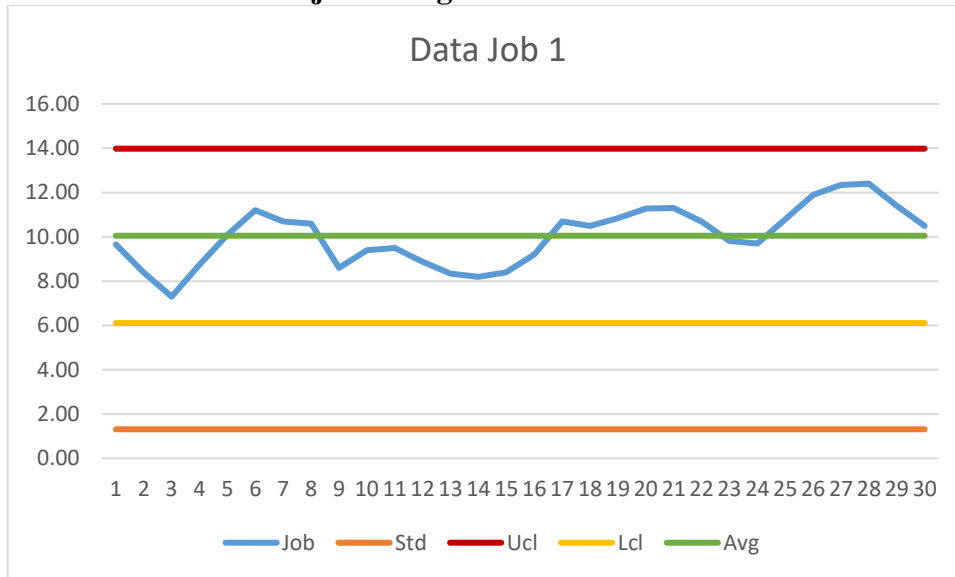
AVG	STD	UCL	LCL
157.72	3.59	168.48	146.96

6. Uji Kecukupan Data Mesin *Wide Belt Sander* (M6)

No.	M6				
	J1	J2	J3	J4	J5
1	9.65	12.34	11.37	8.34	7.80
2	8.39	10.30	12.06	8.50	7.39
3	7.30	13.77	14.00	9.21	9.20
4	8.74	12.69	10.79	8.20	9.34
5	10.09	13.23	10.56	9.80	8.25
6	11.20	11.25	11.24	10.32	10.50
7	10.70	11.50	13.28	8.90	8.52
8	10.60	11.87	13.80	9.29	8.31
9	8.60	9.57	13.78	9.75	8.52
10	9.40	9.90	14.31	10.23	9.52
11	9.50	10.23	15.76	11.53	9.73
12	8.87	10.70	14.62	11.62	9.18
13	8.34	9.25	14.52	10.84	9.53
14	8.19	9.41	13.21	10.32	8.71
15	8.40	10.30	11.87	9.76	8.28
16	9.20	10.25	12.55	9.62	9.91
17	10.70	11.41	15.67	10.72	10.16
18	10.50	11.25	15.20	10.21	10.71
19	10.84	10.44	13.70	10.17	8.36
20	11.28	9.29	13.82	10.23	8.78
21	11.31	8.98	13.27	9.63	8.63
22	10.70	9.29	14.42	9.26	8.29
23	9.81	10.36	11.78	9.92	9.16
24	9.70	10.25	10.42	11.12	9.74
25	10.80	10.76	14.32	12.10	8.71
26	11.90	10.41	15.26	9.43	10.21
27	12.34	11.41	13.72	9.52	10.62
28	12.40	10.36	13.82	9.67	8.31
29	11.40	12.21	14.72	11.42	9.25
30	10.50	11.25	15.79	11.20	8.75
Σxi	301.35	324.23	403.63	300.83	272.37
(Σxi)²	90811.82	105125.09	162917.18	90498.69	74185.42
ΣXi²	3077.08	3546.45	5502.12	3044.54	2493.86
N	30	30	30	30	30
N(xi²)	92312.42	106393.58	165063.70	91336.11	74815.80
N(xi²) - (Xi)²	1500.60	1268.49	2146.52	837.42	630.38
SQRT	38.74	35.62	46.33	28.94	25.11

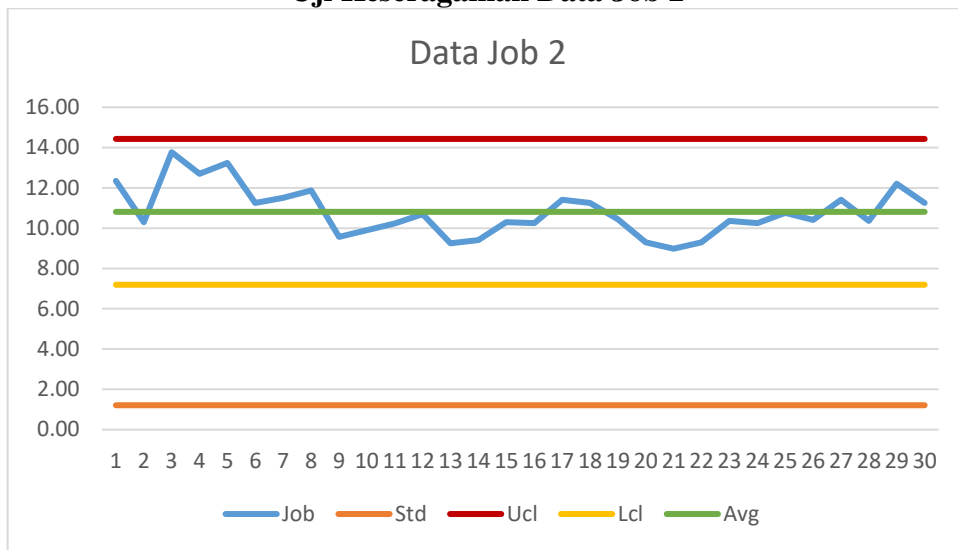
$\frac{K/S * N(xi^2)}{-(Xi)^2}$	774.75	712.32	926.61	578.77	502.15
$\frac{(k/s)x(N(xi^2) - (Xi)^2)}{\sum xi}$	0.01	0.01	0.01	0.01	0.01
N'	0.00	0.00	0.00	0.00	0.00

Uji Keseragaman Data Job 1



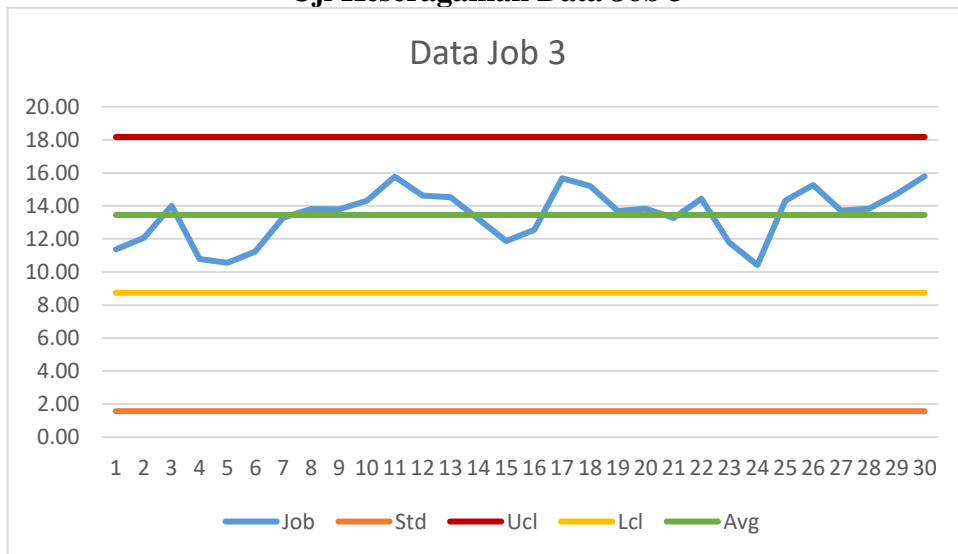
AVG	STD	UCL	LCL
10.05	1.31	13.98	6.11

Uji Keseragaman Data Job 2



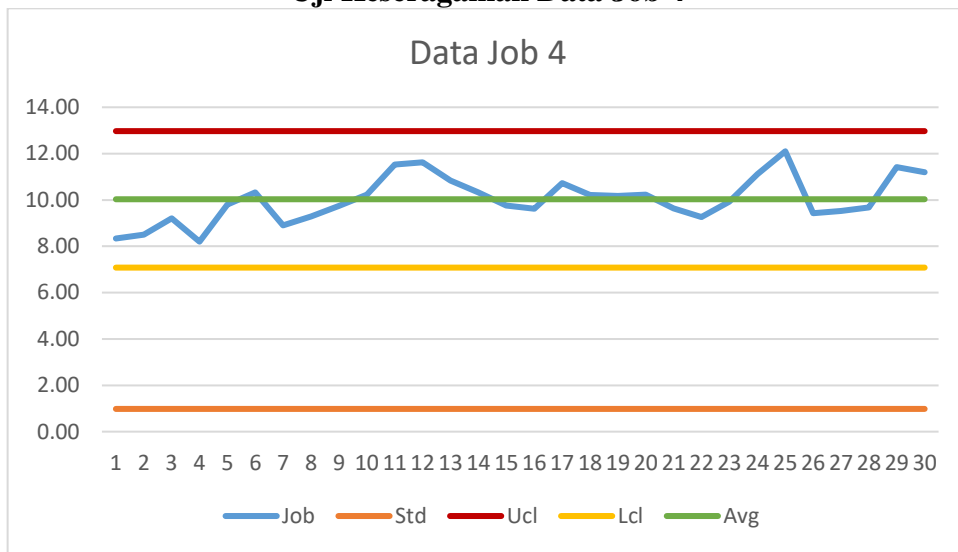
AVG	STD	UCL	LCL
10.81	1.21	14.43	7.19

Uji Keseragaman Data Job 3



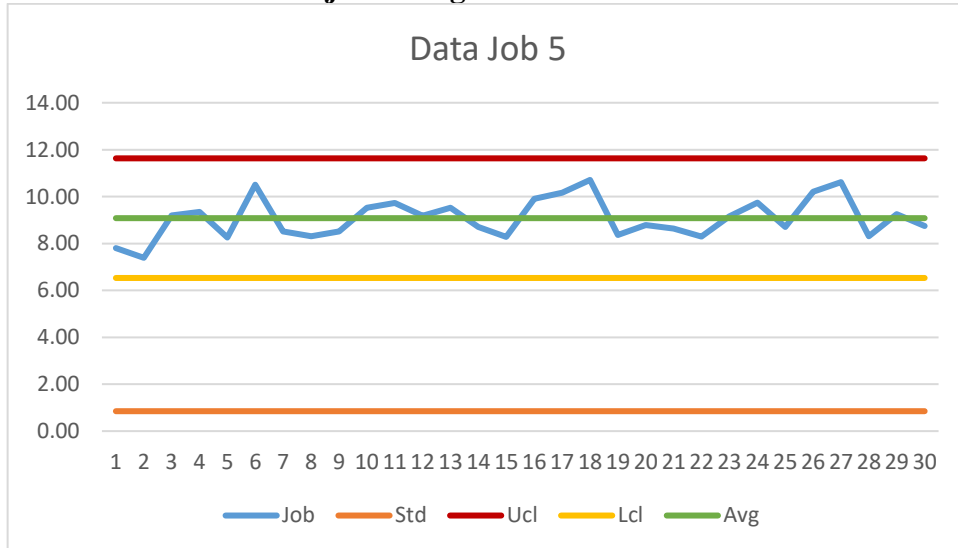
AVG	STD	UCL	LCL
13.45	1.57	18.17	8.74

Uji Keseragaman Data Job 4



AVG	STD	UCL	LCL
10.03	0.98	12.97	7.08

Uji Keseragaan Data Job 5



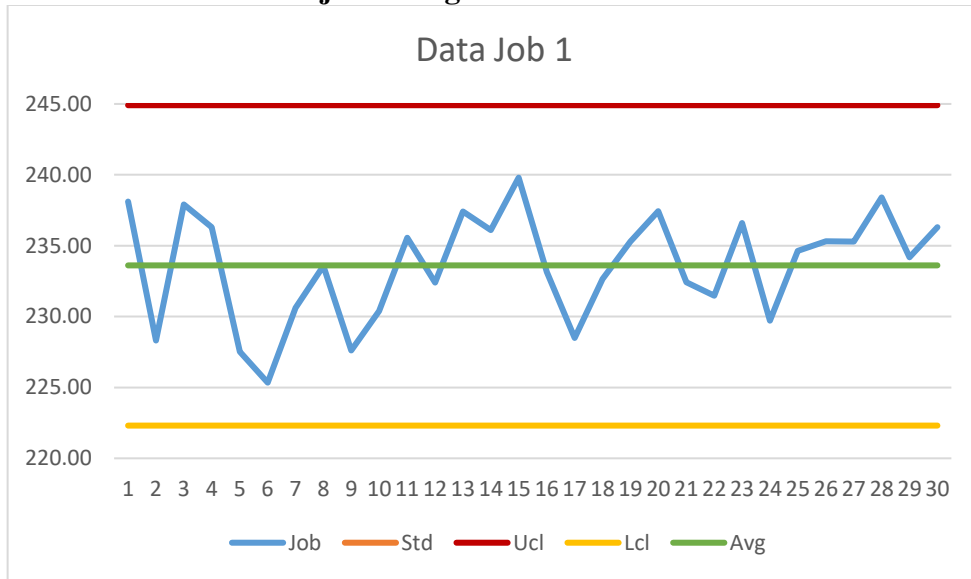
AVG	STD	UCL	LCL
9.08	0.85	11.63	6.53

7. Uji Kecukupan Data Mesin *Spray Gun Painter* (M7)

No.	M7				
	J1	J2	J3	J4	J5
1	238.12	240.52	235.51	235.12	237.31
2	228.30	243.71	237.10	237.21	239.31
3	237.91	258.31	237.71	236.61	235.70
4	236.30	244.61	240.61	236.10	239.13
5	227.51	247.41	242.51	231.63	229.31
6	225.34	250.31	237.43	238.31	230.41
7	230.61	255.31	242.29	239.31	232.50
8	233.57	252.74	243.50	235.31	235.71
9	227.61	247.34	240.30	228.31	232.60
10	230.38	245.34	238.43	227.45	229.50
11	235.55	247.40	241.32	228.43	233.60
12	232.40	246.90	244.35	225.32	235.71
13	237.41	250.31	239.45	223.90	232.90
14	236.10	251.43	237.80	228.36	230.41
15	239.80	248.60	240.41	230.31	227.31
16	233.15	250.32	242.35	230.53	228.30
17	228.49	253.16	238.34	228.41	225.90
18	232.65	252.31	235.21	232.52	227.41
19	235.30	247.80	232.30	233.43	230.30
20	237.43	245.00	232.50	235.71	235.53
21	232.43	258.49	230.60	230.40	233.50
22	231.47	253.50	234.76	232.96	239.40
23	236.60	250.41	238.41	229.20	238.51
24	229.71	252.17	240.41	230.40	230.40
25	234.63	249.31	242.90	232.70	232.50
26	235.31	250.62	241.53	234.50	228.43
27	235.30	254.37	239.51	228.52	230.31
28	238.40	252.52	239.34	230.75	232.50
29	234.18	247.37	245.31	233.42	235.31
30	236.30	250.50	243.80	232.50	233.40
Σxi	7008.26	7498.09	7175.99	6957.63	6983.11
(ΣXi)²	49115708.23	56221353.65	51494846.83	48408615.22	48763825.27
ΣXi²	1637601.97	1874532.26	1716888.13	1614040.70	1625879.53
N	30	30	30	30	30
N(xi²)	49128059.03	56235967.76	51506644.00	48421220.90	48776385.96
N(xi²) - (Xi)²	12350.80	14614.11	11797.16	12605.68	12560.68
SQRT	111.13	120.89	108.61	112.28	112.07

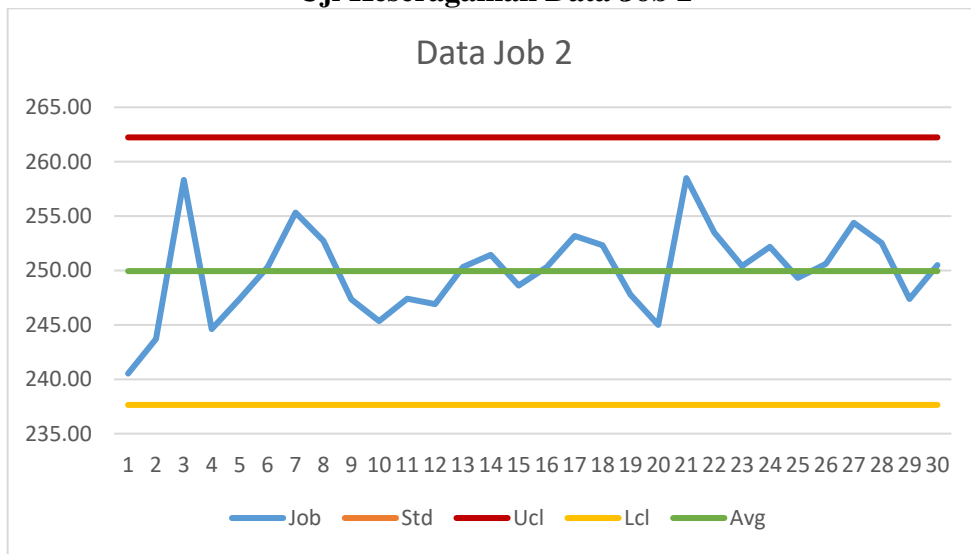
$K/S * N(x_i^2) - (X_i)^2$	2222.68	2417.78	2172.29	2245.50	2241.49
$(k/s)x(N(x_i^2) - (X_i)^2) / \sum x_i$	0.00	0.00	0.00	0.00	0.00
N'	0.00	0.00	0.00	0.00	0.00

Uji Keseragaman Data Job 1



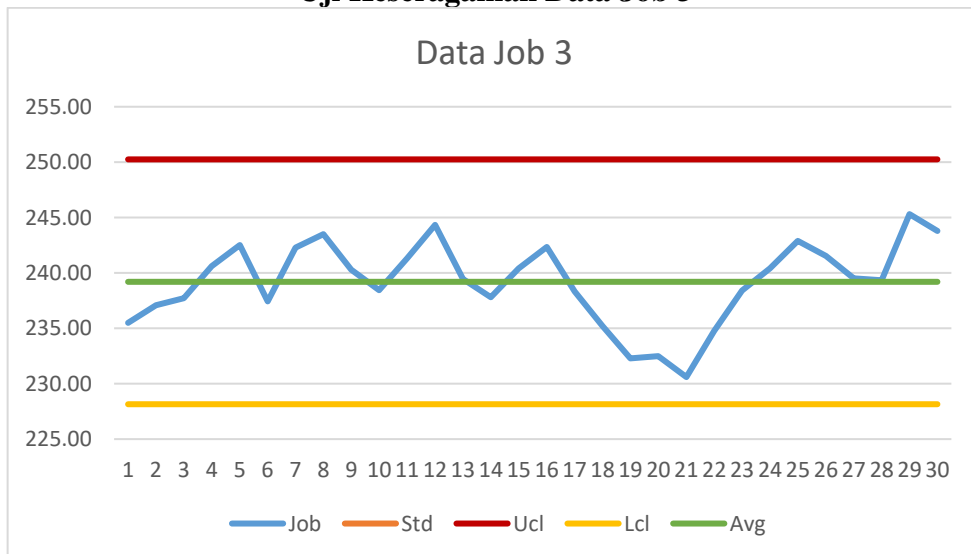
AVG	STD	UCL	LCL
233.61	3.77	244.91	222.31

Uji Keseragaman Data Job 2



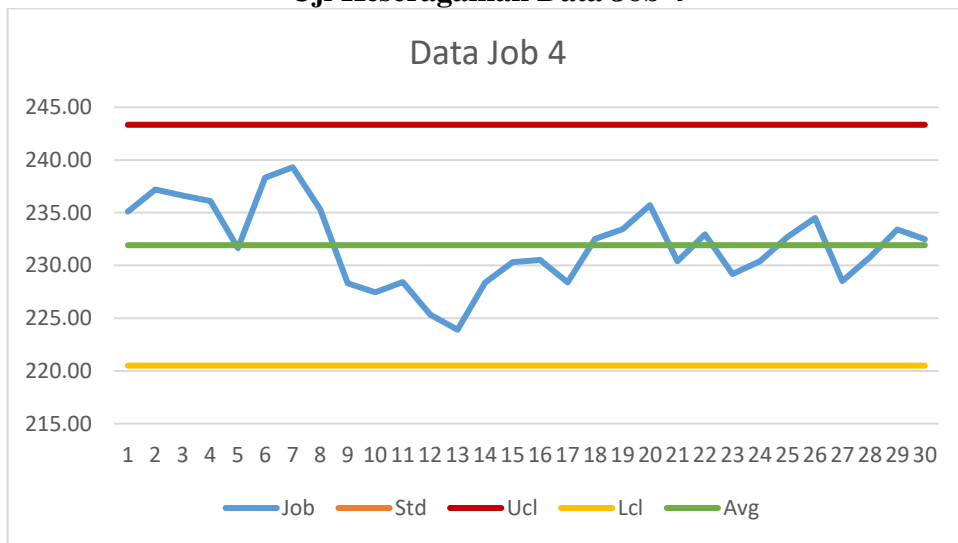
AVG	STD	UCL	LCL
249.94	4.1	262.23	237.64

Uji Keseragaman Data Job 3



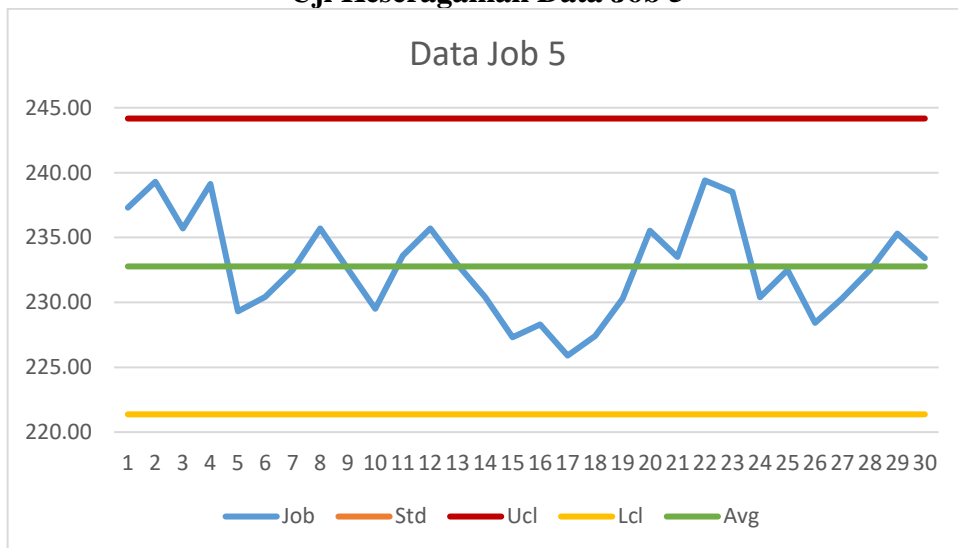
AVG	STD	UCL	LCL
239.20	3.68	250.25	228.15

Uji Keseragaman Data Job 4



AVG	STD	UCL	LCL
231.92	3.81	243.34	220.50

Uji Keseragaman Data Job 5



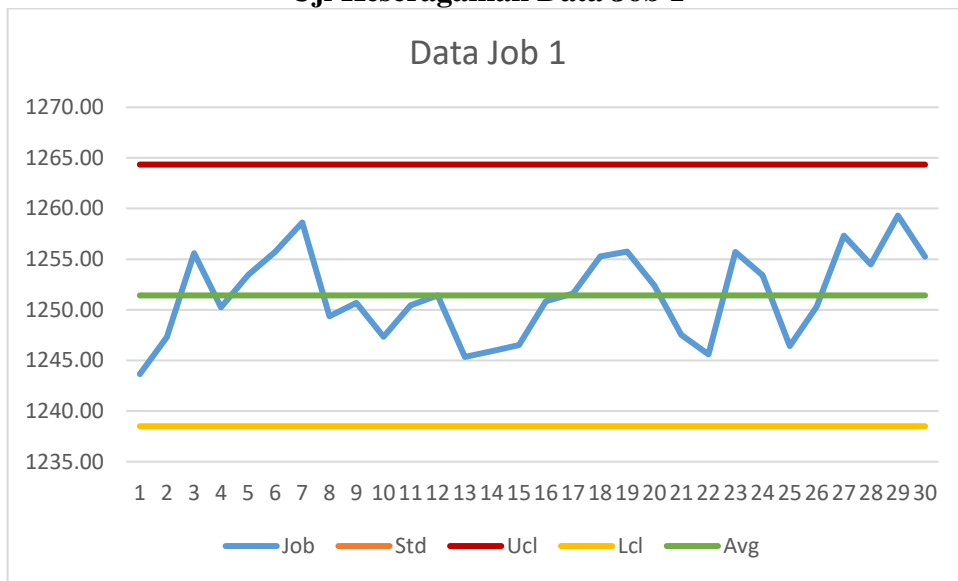
AVG	STD	UCL	LCL
232.77	3.8	244.17	221.37

8. Uji Kecukupan Data Mesin *Body Press* (M8)

No.	M8				
	J1	J2	J3	J4	J5
1	1243.65	1360.40	1334.54	1264.30	1255.21
2	1247.30	1365.31	1330.45	1267.50	1256.38
3	1255.60	1358.25	1333.62	1270.31	1255.73
4	1250.23	1360.25	1329.45	1265.20	1260.39
5	1253.45	1367.79	1330.35	1266.48	1253.48
6	1255.70	1365.20	1333.70	1271.49	1258.50
7	1258.61	1365.51	1335.27	1272.39	1261.28
8	1249.36	1359.23	1339.76	1270.29	1262.40
9	1250.70	1362.37	1338.74	1268.38	1260.74
10	1247.34	1363.35	1328.54	1272.19	1261.50
11	1250.43	1367.31	1329.90	1269.40	1258.39
12	1251.40	1359.61	1328.39	1267.38	1256.47
13	1245.34	1359.10	1327.48	1268.41	1257.83
14	1245.90	1357.53	1330.72	1263.48	1252.38
15	1246.50	1358.40	1332.82	1269.70	1254.37
16	1250.84	1357.70	1335.61	1267.26	1256.80
17	1251.62	1360.50	1339.65	1267.40	1258.40
18	1255.27	1362.46	1340.75	1266.34	1260.30
19	1255.75	1362.38	1340.53	1265.39	1262.48
20	1252.40	1365.27	1338.45	1268.65	1263.74
21	1247.54	1368.32	1340.62	1268.45	1263.80
22	1245.60	1360.30	1336.72	1270.82	1257.31
23	1255.72	1362.31	1333.49	1270.61	1260.39
24	1253.41	1358.47	1335.62	1271.29	1259.35
25	1246.41	1357.43	1330.28	1271.69	1257.31
26	1250.32	1359.25	1333.37	1268.38	1258.37
27	1257.32	1360.29	1334.80	1269.75	1257.84
28	1254.47	1362.50	1335.76	1271.30	1253.50
29	1259.31	1364.42	1338.70	1272.39	1254.75
30	1255.23	1362.70	1336.60	1270.30	1255.34
Σxi	37542.72	40853.91	40034.68	38066.92	37744.73
$(\Sigma xi)^2$	1409455825.00	1669041962.29	1602775602.70	1449090398.29	1424664642.77
Σxi^2	46982398.71	55635027.60	53426326.86	48303187.74	47489099.88
N	30	30	30	30	30
$N(xi^2)$	1409471961.36	1669050828.09	1602789805.72	1449095632.21	1424672996.36
$N(xi^2) - (Xi)^2$	16136.36	8865.80	14203.01	5233.92	8353.58

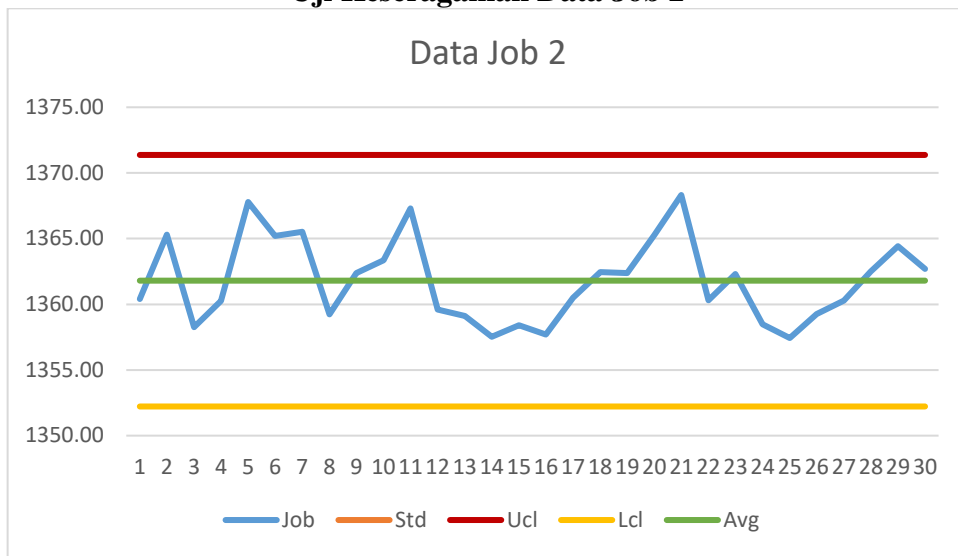
SQRT	127.03	94.16	119.18	72.35	91.40
K/S * N(xi2) - (Xi)2	2540.58	1883.17	2383.53	1446.92	1827.96
(k/s)x(N(xi2) - (Xi)2) / Σxi	0.00	0.00	0.00	0.00	0.00
N'	0.00	0.00	0.00	0.00	0.00

Uji Keseragaman Data Job 1



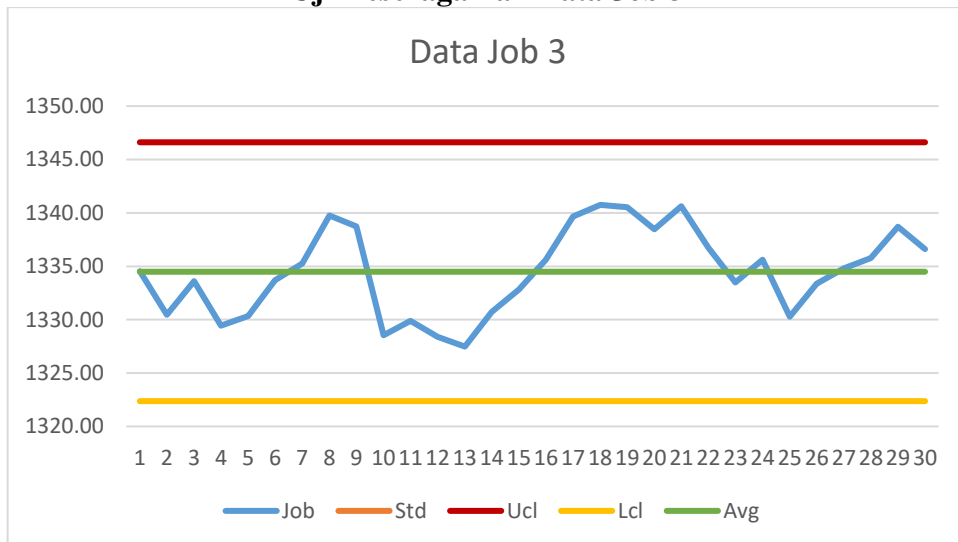
AVG	STD	UCL	LCL
1251.42	4.31	1264.34	1238.5

Uji Keseragaman Data Job 2



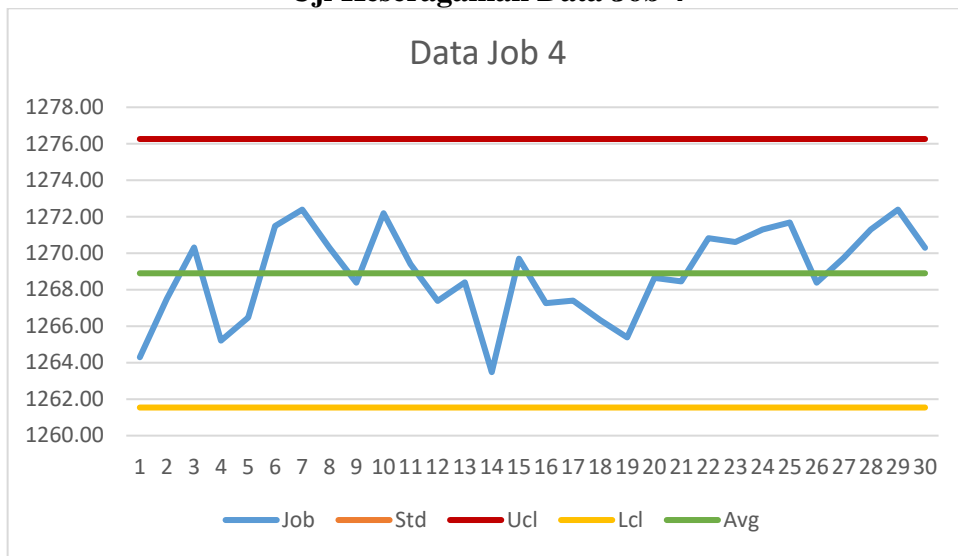
AVG	STD	UCL	LCL
1361.8	3.19	1371.37	1352.22

Uji Keseragaman Data Job 3



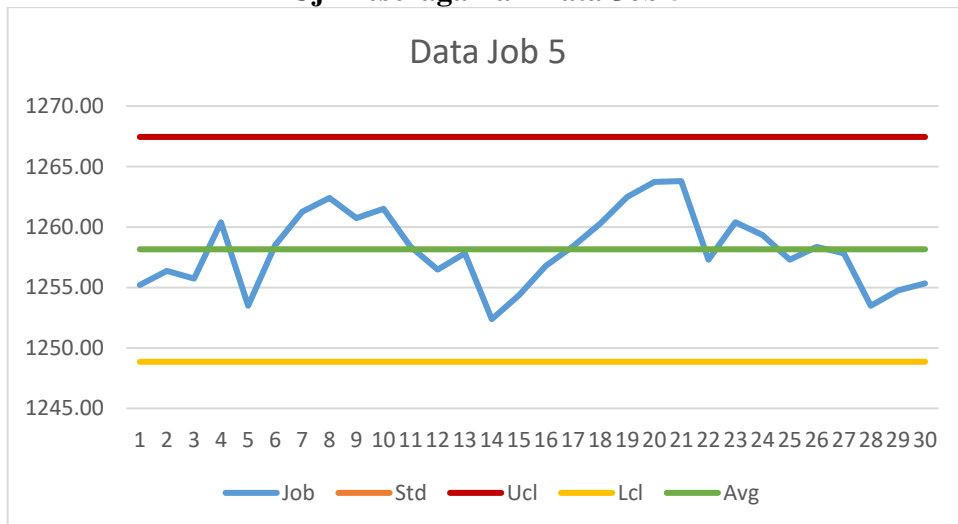
AVG	STD	UCL	LCL
1334.49	4.04	1346.61	1322.37

Uji Keseragaman Data Job 4



AVG	STD	UCL	LCL
1268.9	2.45	1276.26	1261.54

Uji Keseragaman Data Job 5



AVG	STD	UCL	LCL
1258.16	3.1	1267.45	1248.86