

# **LAMPIRAN 1**

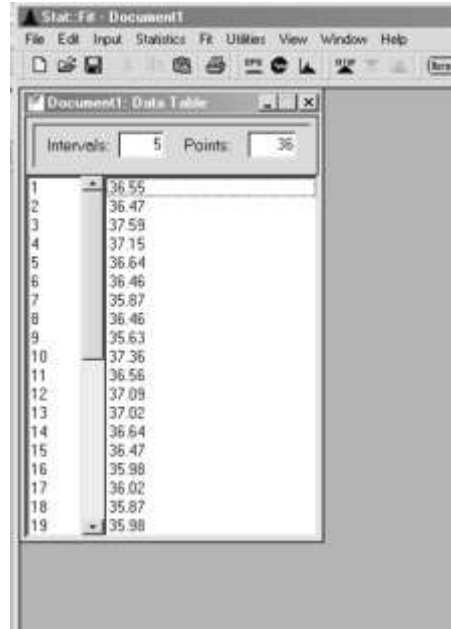
**(TABEL PERHITUNGAN ERGOPLUS)**

- **Stasiun 2**
- **Stasiun 3**
- **Stasiun 4**
- **Stasiun 5**
- **Waktu Proses 1 pada stasiun Jahit**
- **Waktu Proses 2 pada stasiun Jahit**
- **Waktu Proses 3 pada stasiun Jahit**

## UJI KENORMALAN STASIUN 2

Langkah-langkah :

- *Input* Data stasiun 2



StatCrunch - Document1

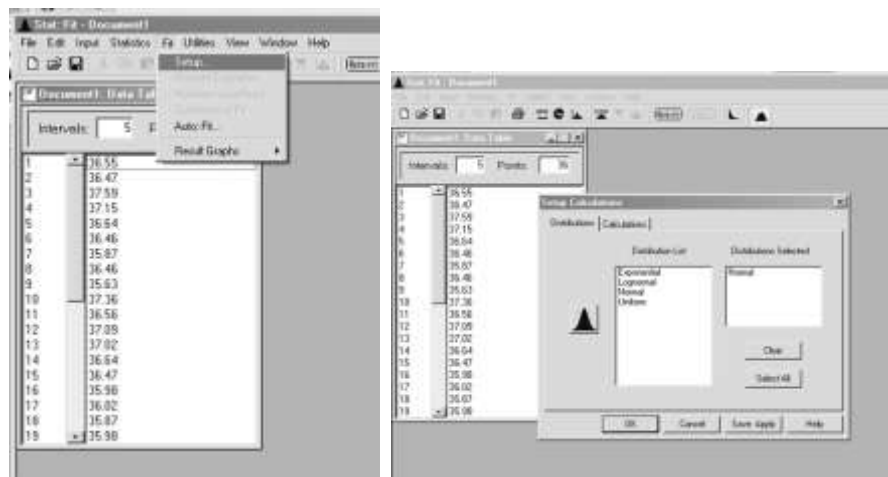
File Edit Input Statistics Fit Utilities View Window Help

Document1: Data Table

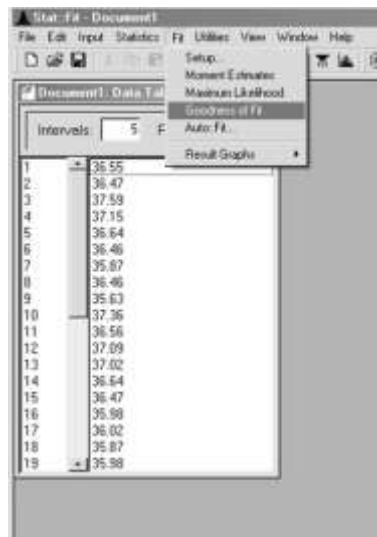
Intervals: 5 Points: 36

|    |       |
|----|-------|
| 1  | 36.55 |
| 2  | 36.47 |
| 3  | 37.59 |
| 4  | 37.15 |
| 5  | 36.64 |
| 6  | 36.46 |
| 7  | 35.87 |
| 8  | 36.46 |
| 9  | 35.63 |
| 10 | 37.36 |
| 11 | 36.56 |
| 12 | 37.09 |
| 13 | 37.02 |
| 14 | 36.64 |
| 15 | 36.47 |
| 16 | 35.98 |
| 17 | 36.02 |
| 18 | 35.87 |
| 19 | 35.98 |

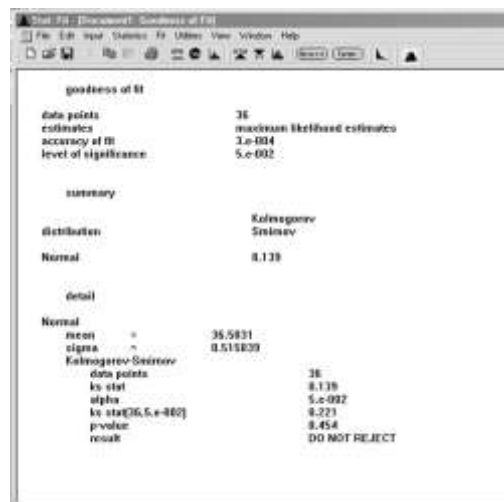
- Lalu klik toolbar *Fit, set up*, lalu pilih distribution Normal, lalau klik OK



- Lalu klik toolbar *Fit, goodness of Fit*



- Kemudian akan keluar hasil



| goodness of fit       |                              |
|-----------------------|------------------------------|
| data points           | 38                           |
| estimates             | maximum likelihood estimates |
| accuracy of fit       | 3.e-004                      |
| level of significance | 5.e-002                      |
| statistic             |                              |
| distribution          | Kolmogorov-Smirnov           |
| Normal                | 0.138                        |
| detail                |                              |
| Normal                |                              |
| mean                  | = 35.5831                    |
| sigma                 | = 0.515839                   |
| Kolmogorov-Smirnov    |                              |
| data points           | 38                           |
| ks stat               | 0.138                        |
| alpha                 | 5.e-002                      |
| ks stat(26, 5.e-002)  | 0.221                        |
| p-value               | 0.454                        |
| result                | DO NOT REJECT                |

Berdasarkan hasil result *DO NOT REJECT* maka data mengikuti distribusi normal.

**UJI KESERAGAMAN STASIUN 2**

| Subgrup<br>ke - | Data ke - |       |       |       |       |       | Data      |
|-----------------|-----------|-------|-------|-------|-------|-------|-----------|
|                 | 1         | 2     | 3     | 4     | 5     | 6     | Rata-rata |
| 1               | 36.55     | 36.47 | 37.59 | 37.15 | 36.64 | 36.46 | 36.81     |
| 2               | 35.87     | 36.46 | 35.63 | 37.36 | 36.56 | 37.09 | 36.50     |
| 3               | 37.02     | 36.64 | 36.47 | 35.98 | 36.02 | 35.87 | 36.33     |
| 4               | 35.98     | 37.15 | 36.82 | 35.68 | 36.68 | 36.79 | 36.52     |
| 5               | 35.98     | 37.15 | 36.82 | 35.68 | 36.68 | 37.02 | 36.56     |
| 6               | 36.68     | 36.55 | 35.87 | 36.82 | 35.87 | 36.06 | 36.31     |
|                 |           |       |       |       |       | Rata2 | 36.50     |

Rata-rata : 36.50

Std. Deviasi : 0.52

Std. Deviasi rata-rata : 0.21

Nilai BKB : 36.08

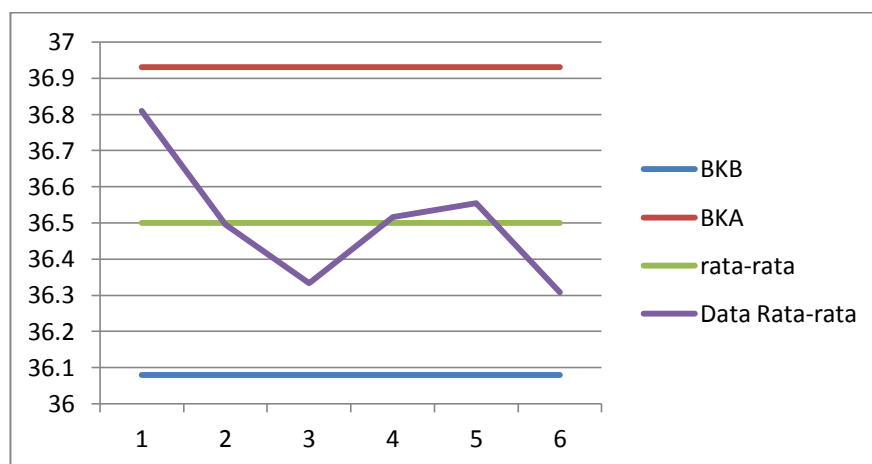
Nilai BKA : 36.93

**GRAFIK PETA BATAS KELAS STASIUN 2**

Rata-rata : 36.50

Nilai BKB : 36.08

Nilai BKA : 36.93



## **UJI KECUKUPAN STASIUN 2**

Nilai N Aksien : 0.32

Nilai N : 36

Uji Kecukupan : Data Cukup

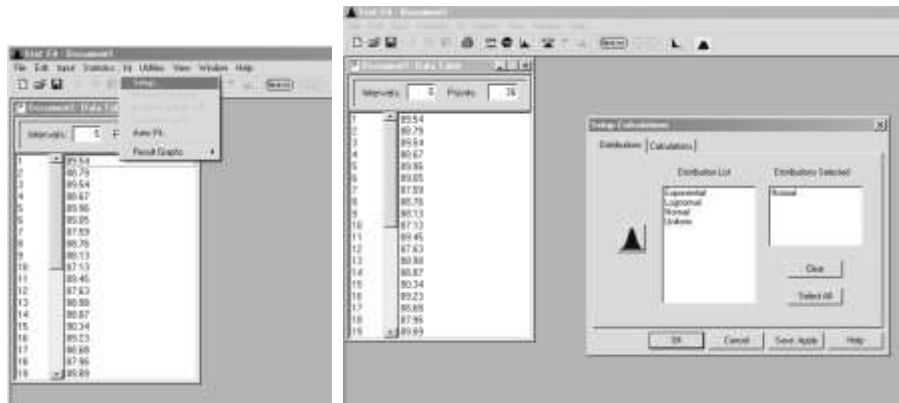
### UJI KENORMALAN STASIUN 3

Langkah-langkah :

- *Input* Data stasiun 3



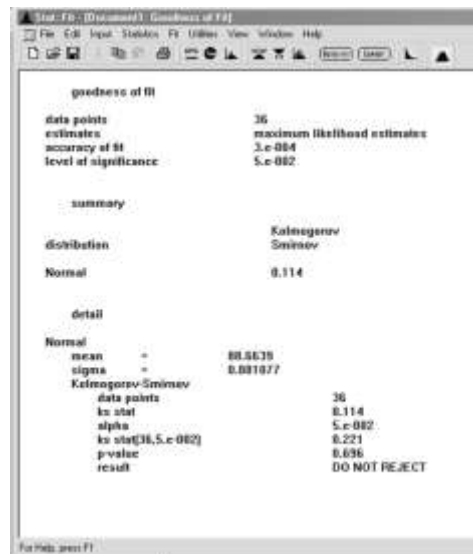
- Lalu klik toolbar *Fit, set up*, lalu pilih distribution Normal, lalu klik OK



- Lalu klik toolbar *Fit, goodness of Fit*



- Kemudian akan keluar hasil



Berdasarkan hasil result *DO NOT REJECT* maka data mengikuti distribusi normal.



**UJI KESERAGAMAN STASIUN 3**

| Subgrup<br>ke - | Data ke - |       |       |       |       |       | Data<br>Rata-rata |
|-----------------|-----------|-------|-------|-------|-------|-------|-------------------|
|                 | 1         | 2     | 3     | 4     | 5     | 6     |                   |
| 1               | 89.54     | 88.79 | 89.54 | 88.67 | 89.96 | 89.05 | 89.26             |
| 2               | 87.59     | 88.76 | 88.13 | 87.13 | 89.45 | 87.63 | 88.12             |
| 3               | 88.98     | 88.87 | 90.34 | 89.23 | 88.68 | 87.96 | 89.01             |
| 4               | 89.89     | 87.64 | 87.56 | 88.51 | 89.23 | 88.68 | 88.59             |
| 5               | 89.96     | 87.39 | 88.68 | 87.86 | 89.97 | 89.22 | 88.85             |
| 6               | 87.59     | 87.85 | 88.77 | 88.13 | 87.13 | 89.54 | 88.17             |
|                 |           |       |       |       |       | Rata2 | 88.66             |

Rata-rata : 88.66

Std. Deviasi : 0.89

Std. Deviasi rata-rata : 0.36

Nilai BKB : 87.93

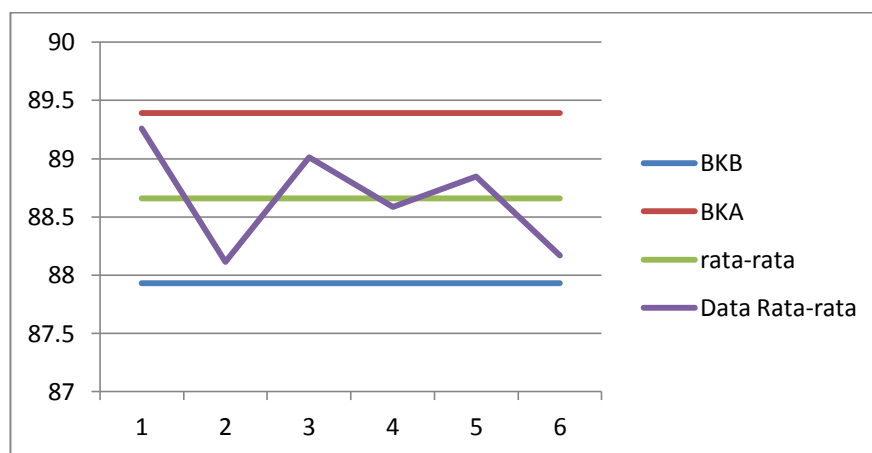
Nilai BKA : 89.39

**GRAFIK PETA BATAS KELAS STASIUN 3**

Rata-rata : 88.66

Nilai BKB : 87.93

Nilai BKA : 89.39



### **UJI KECUKUPAN STASIUN 3**

Nilai N Aksien : 0.16

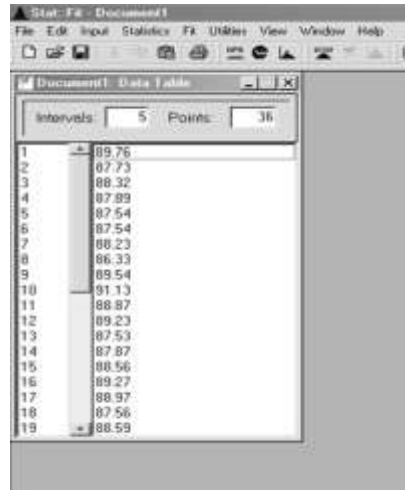
Nilai N : 36

Uji Kecukupan : Data Cukup

### UJI KENORMALAN STASIUN 4

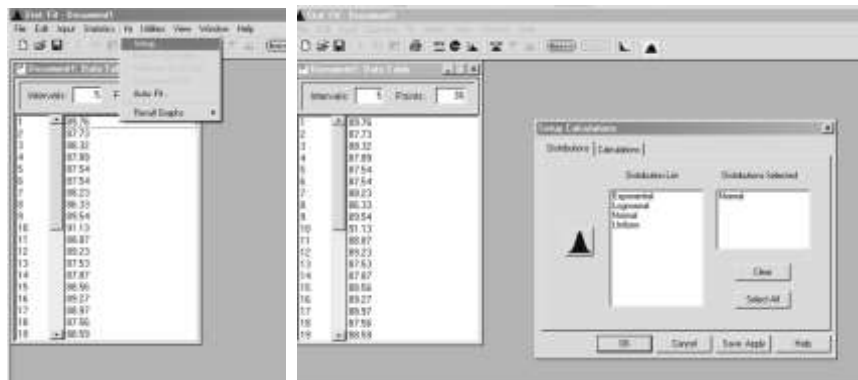
Langkah-langkah :

- *Input* Data stasiun 4

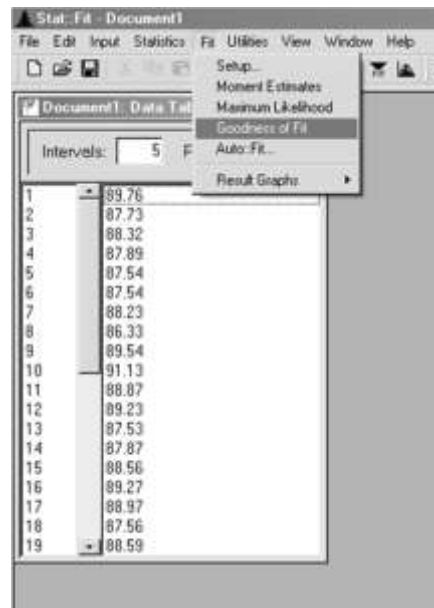


| Interval | Points |
|----------|--------|
| 1        | 89.76  |
| 2        | 87.73  |
| 3        | 88.32  |
| 4        | 87.89  |
| 5        | 87.54  |
| 6        | 87.54  |
| 7        | 88.23  |
| 8        | 86.33  |
| 9        | 89.54  |
| 10       | 91.13  |
| 11       | 88.87  |
| 12       | 89.23  |
| 13       | 87.53  |
| 14       | 87.87  |
| 15       | 88.56  |
| 16       | 89.27  |
| 17       | 88.97  |
| 18       | 87.56  |
| 19       | 88.59  |

- Lalu klik toolbar *Fit, set up*, lalu pilih distribution Normal, lalau klik OK



- Lalu klik toolbar *Fit, goodness of Fit*



- Kemudian akan keluar hasil

The screenshot shows the 'Goodness of Fit' results window in Minitab. The results are as follows:

| goodness of fit       |                              |
|-----------------------|------------------------------|
| data points           | 36                           |
| estimates             | maximum likelihood estimates |
| accuracy of fit       | 3.e-004                      |
| level of significance | 5.e-002                      |
| summary               |                              |
| distribution          | Kolmogorov-Smirnov           |
| Normal                | 0.158                        |
| detail                |                              |
| Normal                |                              |
| mean =                | 88.5388                      |
| sigma =               | 0.997261                     |
| Kolmogorov-Smirnov    |                              |
| data points           | 36                           |
| ks stat               | 0.158                        |
| alpha                 | 5.e-002                      |
| ks stat[36,5.e-002]   | 0.221                        |
| p-value               | 0.291                        |
| result                | DO NOT REJECT                |

Berdasarkan hasil result *DO NOT REJECT* maka data mengikuti distribusi normal.

**UJI KESERAGAMAN STASIUN 4**

| Subgrup<br>ke - | Data ke - |       |       |       |       |       | Data      |
|-----------------|-----------|-------|-------|-------|-------|-------|-----------|
|                 | 1         | 2     | 3     | 4     | 5     | 6     | Rata-rata |
| 1               | 89.76     | 87.73 | 88.32 | 87.89 | 87.54 | 87.54 | 88.13     |
| 2               | 88.23     | 86.33 | 89.54 | 91.13 | 88.87 | 89.23 | 88.89     |
| 3               | 87.53     | 87.87 | 88.56 | 89.27 | 88.97 | 87.56 | 88.29     |
| 4               | 88.59     | 87.67 | 89.2  | 87.63 | 89.98 | 88.77 | 88.64     |
| 5               | 87.58     | 89.98 | 90.34 | 89.33 | 87.78 | 87.89 | 88.82     |
| 6               | 88.97     | 87.46 | 88.96 | 89.05 | 87.58 | 88.76 | 88.46     |
|                 |           |       |       |       |       | Rata2 | 88.54     |

Rata-rata : 88.54

Std. Deviasi : 1.01

Std. Deviasi rata-rata : 0.41

Nilai BKB : 87.71

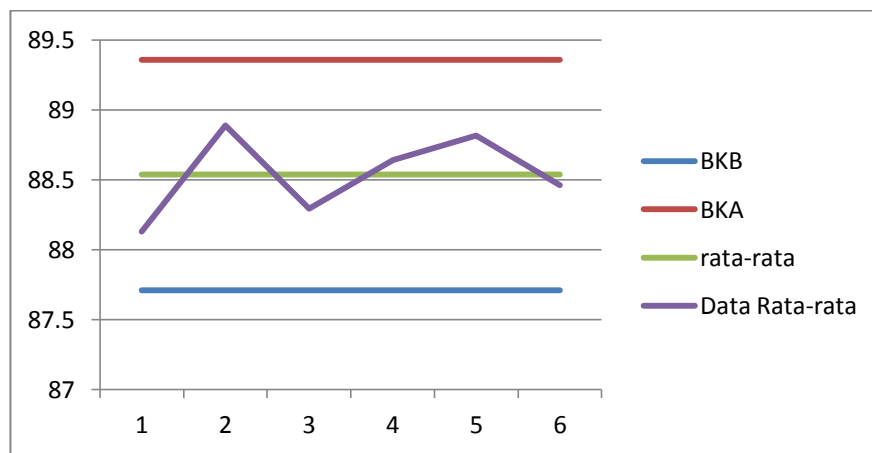
Nilai BKA : 89.36

**GRAFIK PETA BATAS KELAS STASIUN 4**

Rata-rata : 88.54

Nilai BKB : 87.71

Nilai BKA : 89.36



### **UJI KECUKUPAN STASIUN 4**

Nilai N Aksien : 0.20

Nilai N : 36

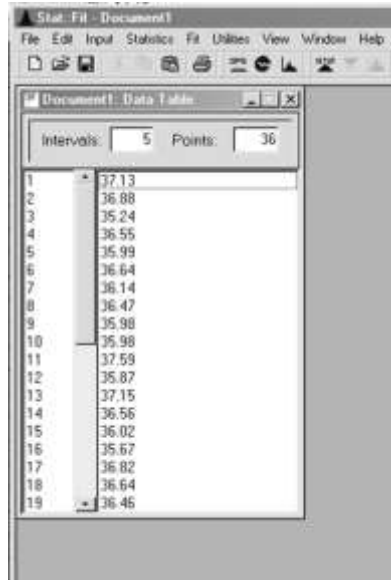
Uji Kecukupan : Data Cukup



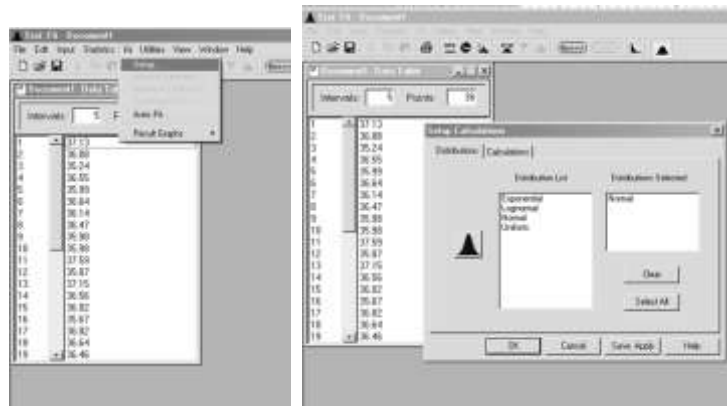
## UJI KENORMALAN STASIUN 5

Langkah-langkah :

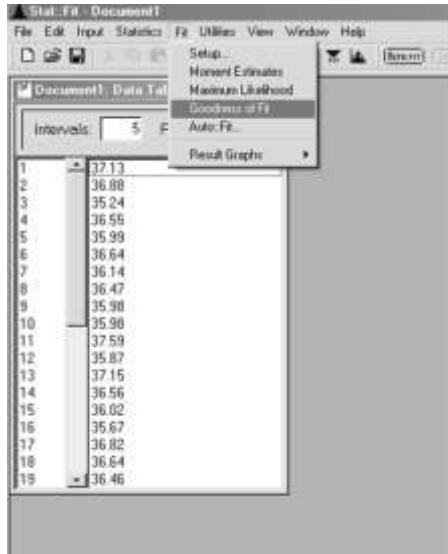
- *Input Data* stasiun 5



- Lalu klik toolbar *Fit, set up*, lalu pilih distribution Normal, lalu klik OK



- Lalu klik toolbar *Fit, goodness of Fit*



- Kemudian akan keluar hasil



Berdasarkan hasil result *DO NOT REJECT* maka data mengikuti distribusi normal.

**UJI KESERAGAMAN STASIUN 5**

| Subgrup<br>ke - | Data ke - |       |       |       |       |       | Data      |
|-----------------|-----------|-------|-------|-------|-------|-------|-----------|
|                 | 1         | 2     | 3     | 4     | 5     | 6     | Rata-rata |
| 1               | 37.13     | 36.88 | 35.24 | 36.55 | 35.99 | 36.64 | 36.41     |
| 2               | 36.14     | 36.47 | 35.98 | 35.98 | 37.59 | 35.87 | 36.34     |
| 3               | 37.15     | 36.56 | 36.02 | 35.67 | 36.82 | 36.64 | 36.48     |
| 4               | 36.46     | 35.68 | 35.87 | 36.64 | 36.46 | 35.68 | 36.13     |
| 5               | 36.06     | 35.63 | 36.68 | 37.36 | 36.56 | 36.79 | 36.51     |
| 6               | 37.72     | 37.09 | 36.89 | 37.02 | 36.68 | 35.88 | 36.88     |
|                 |           |       |       |       |       | Rata2 | 36.46     |

Rata-rata : 36.46

Std. Deviasi : 0.59

Std. Deviasi rata-rata : 0.24

Nilai BKB : 35.97

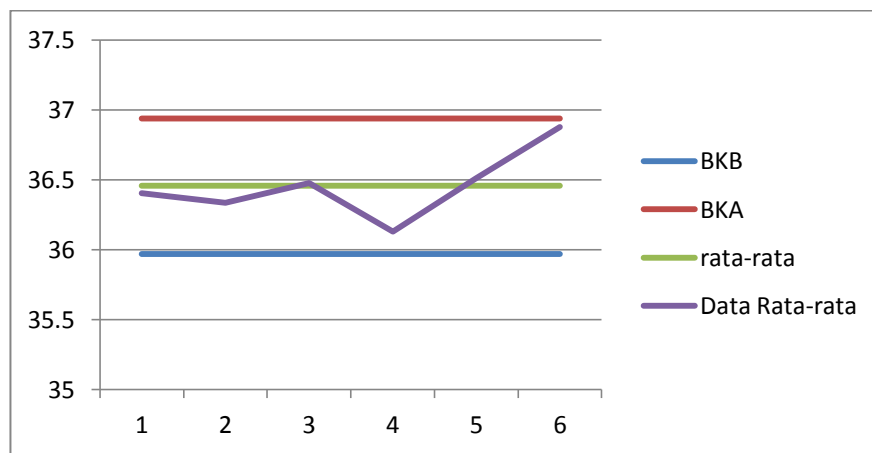
Nilai BKA : 36.94

**GRAFIK PETA BATAS KELAS STASIUN 5**

Rata-rata : 36.46

Nilai BKB : 35.97

Nilai BKA : 36.94



### **UJI KECUKUPAN STASIUN 5**

Nilai N Aksen : 0.41

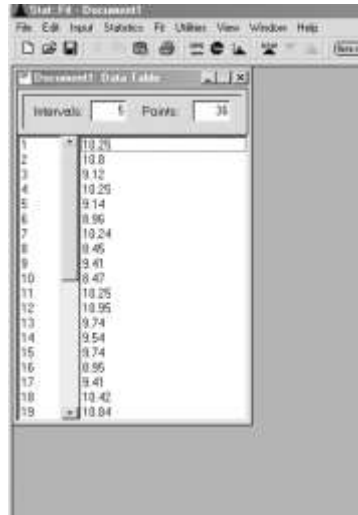
Nilai N : 36

Uji Kecukupan : Data Cukup

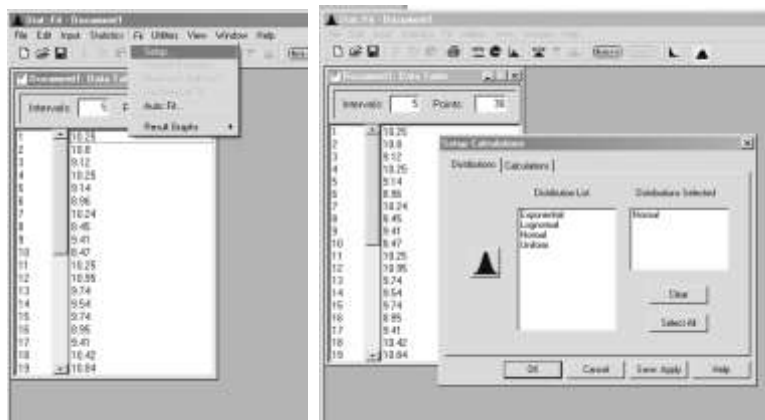
### UJI KENORMALAN Waktu Proses 1 pada stasiun Jahit

Langkah-langkah :

- *Input Data Waktu Proses 1 pada stasiun Jahit*



- Lalu klik toolbar *Fit, set up*, lalu pilih distribution Normal, lalu klik OK



- Lalu klik toolbar *Fit, goodness of Fit*



- Kemudian akan keluar hasil



The screenshot shows the 'goodness of fit' results window. The results are as follows:

| goodness of fit       |                              |
|-----------------------|------------------------------|
| data points           | 36                           |
| estimates             | maximum likelihood estimates |
| accuracy of fit       | 3.e-004                      |
| level of significance | 5.e-002                      |
| summary               |                              |
| distribution          | Kolmogorov-Smirnov           |
| Normal                | 0,112                        |
| detail                |                              |
| Normal                |                              |
| mean                  | = 5,58333                    |
| sigma                 | = 8,776363                   |
| Kolmogorov-Smirnov    |                              |
| data points           | 36                           |
| ks stat               | 0,112                        |
| alpha                 | 5.e-002                      |
| ks stat(36,5.e-002)   | 0,221                        |
| pnorm                 | 0,712                        |
| result                | DO NOT REJECT                |

Berdasarkan hasil result *DO NOT REJECT* maka data mengikuti distribusi normal.

**UJI KESERAGAMAN Waktu Proses 1 pada stasiun Jahit**

| Subgrup<br>ke - | Data ke - |       |       |       |       |       | Data<br>Rata-rata |
|-----------------|-----------|-------|-------|-------|-------|-------|-------------------|
|                 | 1         | 2     | 3     | 4     | 5     | 6     |                   |
| 1               | 10.25     | 10.80 | 9.12  | 10.25 | 9.14  | 8.96  | 9.75              |
| 2               | 10.24     | 8.45  | 9.41  | 8.47  | 10.25 | 10.95 | 9.63              |
| 3               | 9.74      | 9.54  | 9.74  | 8.95  | 9.41  | 10.42 | 9.63              |
| 4               | 10.84     | 9.16  | 8.71  | 8.23  | 10.89 | 10.14 | 9.66              |
| 5               | 9.85      | 9.26  | 9.11  | 8.15  | 9.52  | 9.16  | 9.18              |
| 6               | 10.45     | 10.25 | 10.11 | 9.12  | 9.54  | 8.42  | 9.65              |
|                 |           |       |       |       |       | Rata2 | 9.58              |

Rata-rata : 9.58

Std. Deviasi : 0.79

Std. Deviasi rata-rata : 0.32

Nilai BKB : 8.94

Nilai BKA : 10.23

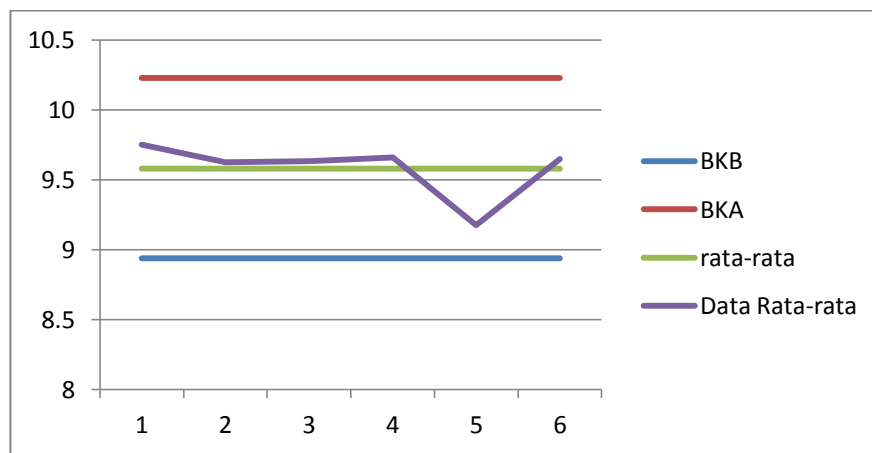


**GRAFIK PETA BATAS KELAS Waktu Proses 1 pada stasiun Jahit**

Rata-rata : 9.58

Nilai BKB : 8.94

Nilai BKA : 10.23



**UJI KECUKUPAN Waktu Proses 1 pada stasiun Jahit**

Nilai N Aksien : 10.56

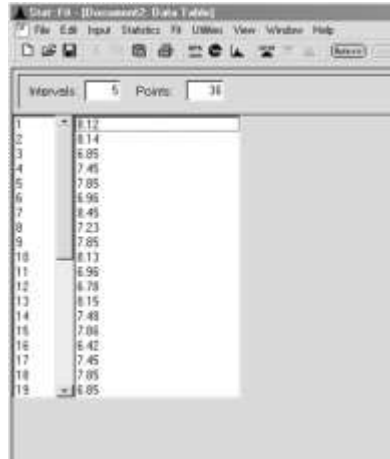
Nilai N : 36

Uji Kecukupan : Data Cukup

### UJI KENORMALAN Waktu Proses 2 pada stasiun Jahit

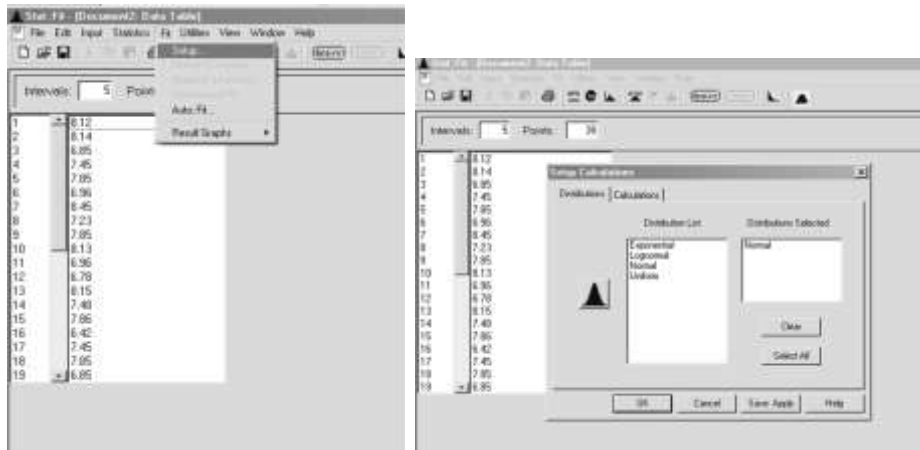
Langkah-langkah :

- *Input Data Waktu Proses 2 pada stasiun Jahit*



| Interval | Point |
|----------|-------|
| 1        | 8.12  |
| 2        | 8.14  |
| 3        | 8.85  |
| 4        | 7.45  |
| 5        | 7.85  |
| 6        | 6.96  |
| 7        | 8.45  |
| 8        | 7.23  |
| 9        | 7.85  |
| 10       | 8.13  |
| 11       | 6.96  |
| 12       | 6.78  |
| 13       | 8.15  |
| 14       | 7.48  |
| 15       | 7.08  |
| 16       | 6.42  |
| 17       | 7.45  |
| 18       | 7.85  |
| 19       | 8.85  |

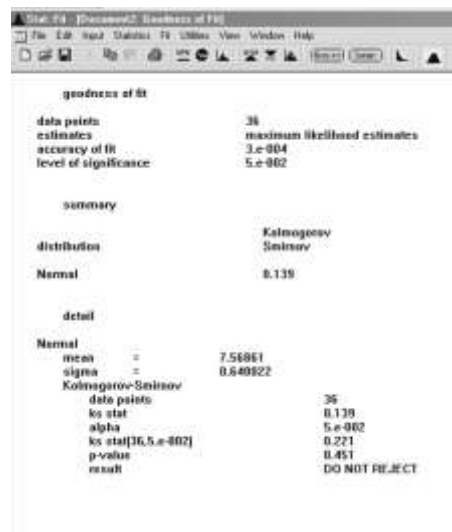
- *Lalu klik toolbar *Fit, set up*, lalu pilih distribution Normal, lalau klik OK*



- Lalu klik toolbar *Fit, goodness of Fit*



- Kemudian akan keluar hasil



Berdasarkan hasil result *DO NOT REJECT* maka data mengikuti distribusi normal.

**UJI KESERAGAMAN Waktu Proses 2 pada stasiun Jahit**

| Subgrup<br>ke - | Data ke - |      |      |      |      |       | Data      |
|-----------------|-----------|------|------|------|------|-------|-----------|
|                 | 1         | 2    | 3    | 4    | 5    | 6     | Rata-rata |
| 1               | 8.12      | 8.14 | 6.85 | 7.45 | 7.85 | 6.96  | 7.56      |
| 2               | 8.45      | 7.23 | 7.85 | 8.13 | 6.96 | 6.78  | 7.57      |
| 3               | 8.15      | 7.48 | 7.86 | 6.42 | 7.45 | 7.85  | 7.54      |
| 4               | 6.85      | 8.12 | 6.35 | 7.62 | 7.12 | 8.63  | 7.45      |
| 5               | 7.75      | 6.98 | 6.74 | 8.12 | 7.63 | 7.45  | 7.45      |
| 6               | 8.56      | 8.45 | 6.52 | 8.12 | 8.36 | 7.12  | 7.86      |
|                 |           |      |      |      |      | Rata2 | 7.57      |

Rata-rata : 7.57

Std. Deviasi : 0.65

Std. Deviasi rata-rata : 0.26

Nilai BKB : 7.04

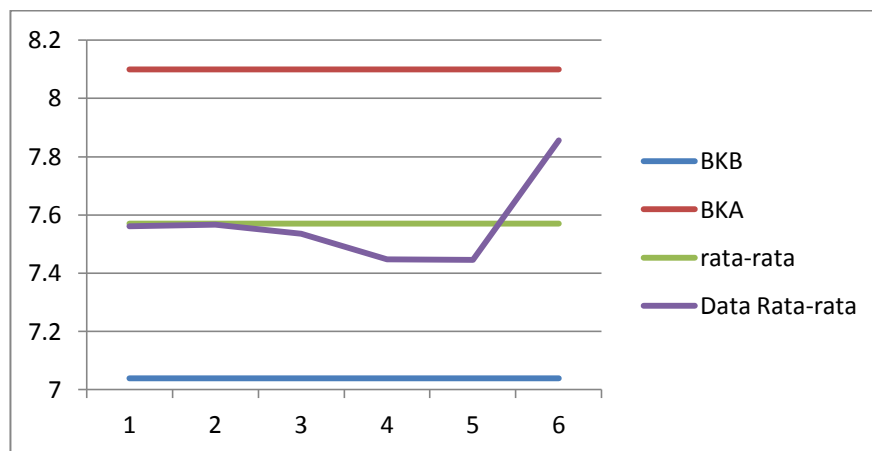
Nilai BKA : 8.10

**GRAFIK PETA BATAS KELAS Waktu Proses 2 pada stasiun Jahit**

Rata-rata : 7.57

Nilai BKB : 7.04

Nilai BKA : 8.10



**UJI KECUKUPAN Waktu Proses 2 pada stasiun Jahit**

Nilai N Aksien : 11.44

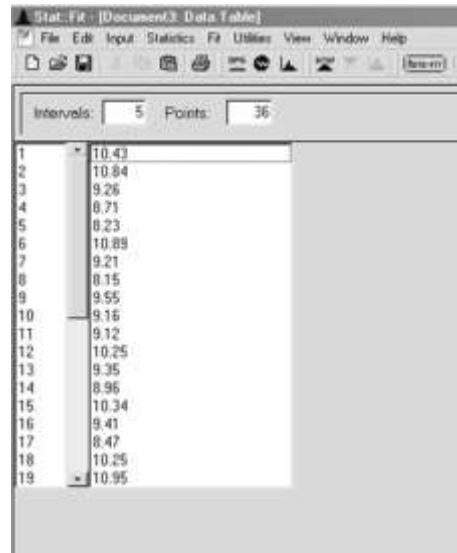
Nilai N : 36

Uji Kecukupan : Data Cukup

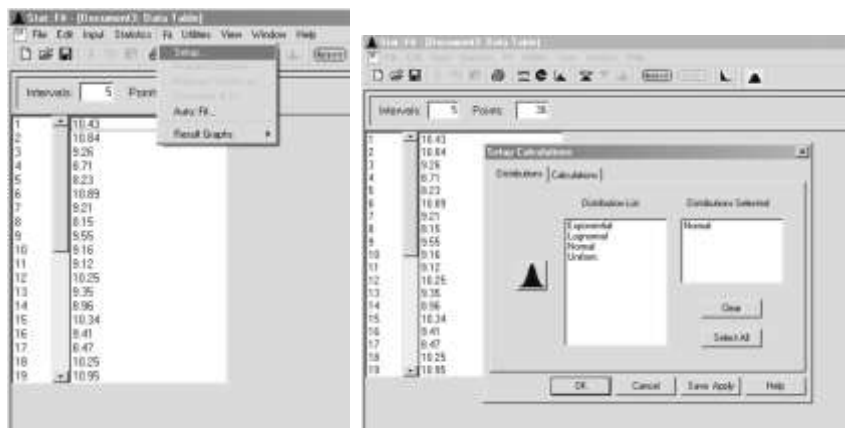
### UJI KENORMALAN Waktu Proses 3 pada stasiun Jahit

Langkah-langkah :

- *Input* Data Waktu Proses 3 pada stasiun Jahit

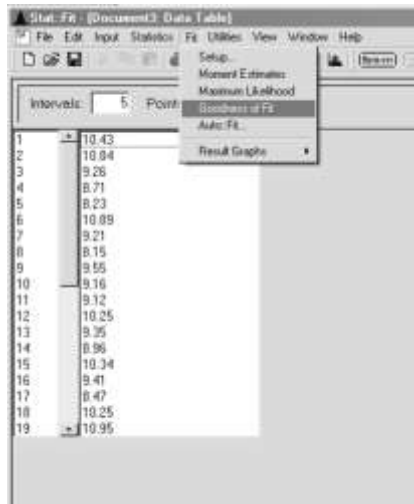


- Lalu klik toolbar *Fit, set up*, lalu pilih distribution Normal, lalau klik OK

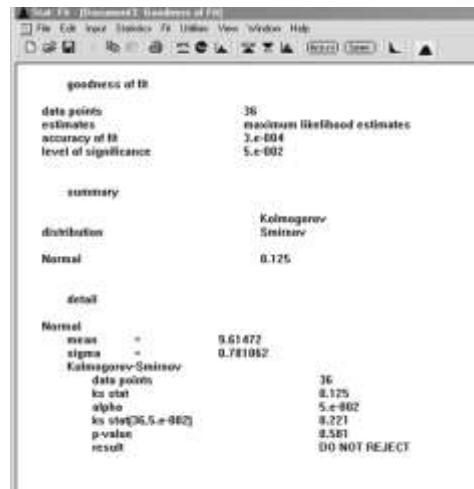




- Lalu klik toolbar *Fit, goodness of Fit*



- Kemudian akan keluar hasil



goodness of fit

|                       |                              |
|-----------------------|------------------------------|
| data points           | 36                           |
| estimates             | maximum likelihood estimates |
| accuracy of fit       | 3.e-004                      |
| level of significance | 5.e-002                      |

summary

|              |                    |
|--------------|--------------------|
| distribution | Kolmogorov-Smirnov |
| Normal       | 0.125              |

detail

|                    |   |               |
|--------------------|---|---------------|
| Normal             |   |               |
| mean               | = | 9.61477       |
| sigma              | = | 0.781062      |
| Kolmogorov-Smirnov |   |               |
| data points        |   | 36            |
| ks stat            |   | 0.125         |
| alpha              |   | 5.e-002       |
| ks sig(5.e-002)    |   | 0.221         |
| p-value            |   | 0.561         |
| result             |   | DO NOT REJECT |

Berdasarkan hasil result *DO NOT REJECT* maka data mengikuti distribusi normal.

**UJI KESERAGAMAN Waktu Proses 3 pada stasiun Jahit**

| Subgrup<br>ke - | Data ke - |       |       |      |       |       | Data<br>Rata-rata |
|-----------------|-----------|-------|-------|------|-------|-------|-------------------|
|                 | 1         | 2     | 3     | 4    | 5     | 6     |                   |
| 1               | 10.43     | 10.84 | 9.26  | 8.71 | 8.23  | 10.89 | 9.73              |
| 2               | 9.21      | 8.15  | 9.55  | 9.16 | 9.12  | 10.25 | 9.24              |
| 3               | 9.35      | 8.96  | 10.34 | 9.41 | 8.47  | 10.25 | 9.46              |
| 4               | 10.95     | 9.77  | 9.54  | 9.73 | 8.95  | 9.35  | 9.72              |
| 5               | 10.42     | 10.84 | 9.55  | 9.26 | 10.45 | 10.35 | 10.15             |
| 6               | 10.11     | 9.12  | 9.53  | 8.12 | 10.36 | 9.15  | 9.40              |
|                 |           |       |       |      |       | Rata2 | 9.61              |

Rata-rata : 9.61

Std. Deviasi : 0.79

Std. Deviasi rata-rata : 0.32

Nilai BKB : 8.97

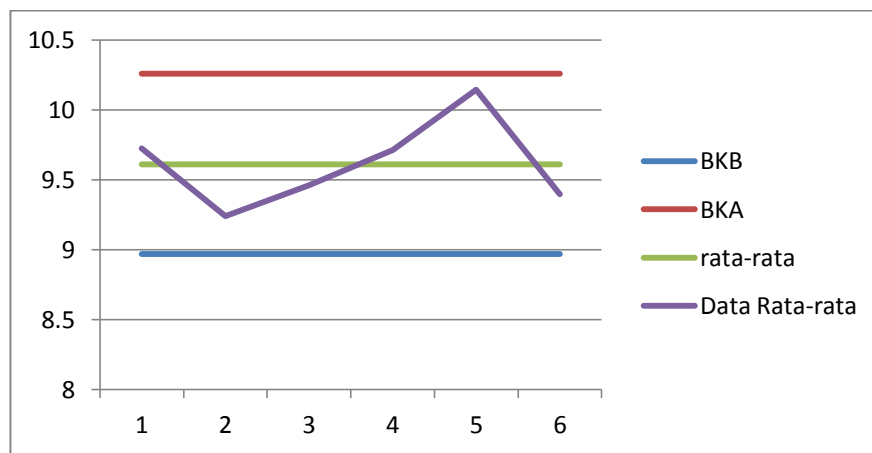
Nilai BKA : 10.26

**GRAFIK PETA BATAS KELAS Waktu Proses 3 pada stasiun Jahit**

Rata-rata : 9.61

Nilai BKB : 8.97

Nilai BKA : 10.26



**UJI KECUKUPAN Waktu Proses 3 pada stasiun Jahit**

Nilai N Aksien : 10.56

Nilai N : 36

Uji Kecukupan : Data Cukup

# **LAMPIRAN 2**

**(BAGAN ANALISA MTM-1 AKTUAL)**

- **Stasiun 1**
- **Stasiun 2**
- **Stasiun 3**
- **Stasiun 4**
- **Stasiun 5**

## Bagan Analisa Stasiun 1

| BAGAN ANALISA               |                           |                              |                 |             |                    |                               |                     |
|-----------------------------|---------------------------|------------------------------|-----------------|-------------|--------------------|-------------------------------|---------------------|
| Bagian : Stasiun 1          |                           | Tanggal : 01 Mei 2011        |                 |             | No : 1             |                               |                     |
| Operasi : Pola              |                           | Analisis : Yelli Carmelita T |                 |             | Lembar ke 1 dari 1 |                               |                     |
| Keterangan Tangan Kiri      | No                        | LH                           | TMU             | RH          | No                 | Keterangan Tangan Kanan       |                     |
| 1. Mengambil kain           |                           |                              |                 |             |                    |                               |                     |
| Menjangkau kain dari WIP in |                           | R28A                         | 16.7            | R28A        |                    | Menjangkau kain dari WIP in   |                     |
| Memegang kain               |                           | G1B                          | 3.5             | G1B         |                    | Memegang kain                 |                     |
| Membawa kain                |                           | M28A                         | 25.5            | M28A        |                    | Membawa kain                  |                     |
| Mengarahkan kain            |                           | P1SE                         | 5.6             | P1SE        |                    | Mengarahkan kain              |                     |
| Melepas kain                |                           | RL1                          | 2               | RL1         |                    | Melepas kain                  |                     |
| 2. Mengambil Mal            |                           |                              |                 |             |                    |                               |                     |
| Menjangkau mal              |                           | R28A                         | 16.7            | R28A        |                    | Menjangkau mal                |                     |
| Memegang mal                |                           | G1B                          | 3.5             | G1B         |                    | Memegang mal                  |                     |
| Membawa mal                 |                           | M28A                         | 25.5            | M28A        |                    | Membawa mal                   |                     |
| Mengarahkan mal             |                           | P1SE                         | 5.6             | P1SE        |                    | Mengarahkan mal               |                     |
| Memegang mal                |                           | G1B                          | 3.5             | RL1         |                    | Melepas mal                   |                     |
| 3. Mengambil Pinsil         |                           |                              |                 |             |                    |                               |                     |
|                             |                           |                              | 14.9            | R24A        |                    | Menjangkau pinsil             |                     |
|                             |                           |                              | 8.7             | G1C2        |                    | Memegang pinsil               |                     |
|                             |                           |                              | 22.4            | M24A        |                    | Membawa pinsil                |                     |
|                             |                           |                              | 5.6             | P1SE        |                    | Mengarahkan pinsil            |                     |
|                             |                           |                              | 54.3            | M64A        |                    | Membawa pinsil (membuat pola) |                     |
| 4. Proses Akhir             |                           |                              |                 |             |                    |                               |                     |
|                             |                           |                              | 22.4            | M24A        |                    | Membawa pinsil                |                     |
|                             |                           |                              | 2               | RL1         |                    | Melepas pinsil                |                     |
|                             |                           |                              | 6.1             | R4A         |                    | Menjangkau mal                |                     |
|                             |                           |                              | 3.5             | G1B         |                    | Memegang mal                  |                     |
| Membawa mal                 |                           | M28A                         | 25.5            | M28A        |                    | Membawa mal                   |                     |
| Mengarahkan mal             |                           | P1SE                         | 5.6             | P1SE        |                    | Mengarahkan mal               |                     |
| Melepas mal                 |                           | RL1                          | 2               | RL1         |                    | Melepas mal                   |                     |
| Tangan Kembali              |                           | R28A                         | 16.7            | R28A        |                    | Tangan Kembali                |                     |
| No                          | Keterangan Elemen Gerakan | TMU                          | Faktor Konversi | Kelonggaran | Waktu (detik)      | Jumlah ulang per siklus       | Total Waktu (detik) |
| 1                           | Mengambil kain            | 53.3                         | 1.919           | 0.518       | 2.437              | 1                             | 2.437               |
| 2                           | Mengambil mal             | 54.8                         | 1.973           | 0.533       | 2.506              | 1                             | 2.506               |
| 3                           | Mengambil Pinsil          | 105.9                        | 3.812           | 1.029       | 4.841              | 1                             | 4.841               |
| 4                           | Proses Akhir              | 83.8                         | 3.017           | 0.815       | 3.832              | 1                             | 3.832               |
|                             |                           |                              |                 |             |                    | Total                         | 13.616              |

## Bagan Analisa Stasiun 2

| BAGAN ANALISA               |                   |                              |                 |             |                    |                             |             |
|-----------------------------|-------------------|------------------------------|-----------------|-------------|--------------------|-----------------------------|-------------|
| Bagian : Stasiun 2          |                   | Tanggal : 01 Mei 2011        |                 |             | No : 1             |                             |             |
| Operasi : Potong            |                   | Analisis : Yelli Carmelita T |                 |             | Lembar ke 1 dari 1 |                             |             |
| Keterangan Tangan Kiri      | No                | LH                           | TMU             | RH          | No                 | Keterangan Tangan Kanan     |             |
| 1. Mengambil kain           |                   |                              |                 |             |                    |                             |             |
| Menjangkau kain dari WIP in |                   | R28A                         | 16.7            | R28A        |                    | Menjangkau kain dari WIP in |             |
| Memegang kain               |                   | G1B                          | 3.5             | G1B         |                    | Memegang kain               |             |
| Membawa kain                |                   | M28A                         | 25.5            | M28A        |                    | Membawa kain                |             |
| Mengarahkan kain            |                   | P1SE                         | 5.6             | P1SE        |                    | Mengarahkan kain            |             |
| Melepas kain                |                   | RL1                          | 2               | RL1         |                    | Melepas kain                |             |
| 2. Mengambil Gunting        |                   |                              |                 |             |                    |                             |             |
|                             |                   |                              | 13.1            | R20A        |                    | Menjangkau gunting          |             |
| Menjangkau kain             |                   | R6A                          | 7               | G1A         |                    | Memegang gunting            |             |
| Memegang kain               |                   | G1B                          | 19.2            | M20A        |                    | Membawa gunting             |             |
|                             |                   |                              | 5.6             | P1SE        |                    | Mengarahkan gunting         |             |
|                             |                   |                              | 16              | M16A        |                    | Membawa gunting             |             |
|                             |                   |                              | 5.4             | T90S        |                    | Memutar gunting             |             |
|                             |                   |                              | 16              | M16A        |                    | Membawa gunting             |             |
|                             |                   |                              | 5.4             | T90S        |                    | Memutar gunting             |             |
|                             |                   |                              | 16              | M16A        |                    | Membawa gunting             |             |
| 3. Proses Akhir             |                   |                              |                 |             |                    |                             |             |
|                             |                   |                              | 22.4            | M24A        |                    | Membawa gunting             |             |
|                             |                   |                              | 5.6             | P1SE        |                    | Mengarahkan gunting         |             |
|                             |                   |                              | 2               | RL1         |                    | Melepas gunting             |             |
|                             |                   |                              | 6.1             | R4A         |                    | Menjangkau kain jadi        |             |
|                             |                   |                              | 3.5             | G1B         |                    | Memegang kain jadi          |             |
| Membawa kain sisa           |                   | M28A                         | 25.5            | M28A        |                    | Membawa kain jadi           |             |
| Mengarahkan kain sisa       |                   | P1SE                         | 5.6             | P1SE        |                    | Mengarahkan kain jadi       |             |
| Melepas kain sisa           |                   | RL1                          | 2               | RL1         |                    | Melepas kain jadi           |             |
| Tangan Kembali              |                   | R28A                         | 16.7            | R28A        |                    | Tangan Kembali              |             |
| No                          | Keterangan        | TMU                          | Faktor Konversi | Kelonggaran | Waktu              | Jumlah ulang                | Total Waktu |
|                             | Elemen Gerakan    |                              | 0.036           | 29.00%      | (detik)            | per siklus                  | (detik)     |
| 1                           | Mengambil kain    | 51.8                         | 1.865           | 0.541       | 2.406              | 1                           | 2.406       |
| 2                           | Mengambil gunting | 103.7                        | 3.733           | 1.083       | 4.816              | 1                           | 4.816       |
| 3                           | Proses Akhir      | 87.9                         | 3.164           | 0.918       | 4.082              | 1                           | 4.082       |
|                             |                   |                              |                 |             |                    | Total                       | 11.304      |

## Bagan Analisa Stasiun 3

| BAGAN ANALISA                    |                           |                              |                 |             |                    |                         |                      |
|----------------------------------|---------------------------|------------------------------|-----------------|-------------|--------------------|-------------------------|----------------------|
| Bagian : Stasiun 3               |                           | Tanggal : 01 Mei 2011        |                 |             | No : 3             |                         |                      |
| Operasi : Menjahit boneka bantal |                           | Analisis : Yelli Carmelita T |                 |             | Lembar ke 1 dari 1 |                         |                      |
| Keterangan Tangan Kiri           | No                        | LH                           | TMU             | RH          | No                 | Keterangan Tangan Kanan |                      |
| 1. Menyiapkan bahan              |                           |                              |                 |             |                    |                         |                      |
| Menjangkau kain dari WIP in      |                           | R26A                         | 15.8            |             |                    |                         |                      |
| Memegang kain                    |                           | G1A                          | 2               |             |                    |                         |                      |
| Membawa kain                     |                           | M16A                         | 16              | R4A         |                    |                         | Menjangkau kain      |
| Melepas kain                     |                           | RL1                          | 3.5             | G1B         |                    |                         | Memegang kain        |
| Menjangkau kain dari WIP in      |                           | R26A                         | 15.8            |             |                    |                         |                      |
| Memegang kain                    |                           | G1A                          | 2               |             |                    |                         |                      |
| Membawa kain                     |                           | M16A                         | 16              |             |                    |                         |                      |
| Mengarahkan kain                 |                           | P1SSE                        | 9.1             | P1SSE       |                    |                         | Mengarahkan kain     |
| Pemegangan kembali               |                           | G2                           | 5.6             | G2          |                    |                         | Pemegangan kembali   |
| Membawa kain                     |                           | M8C                          | 11.8            | M8C         |                    |                         | Membawa kain         |
| Mengarahkan kain ke mesin        |                           | P1SSD                        | 14.7            | P1SSD       |                    |                         | Mengarahkan ke mesin |
|                                  |                           |                              | 19.1            | FMP         |                    |                         | Menginjak pedal      |
| 2. Waktu Proses                  |                           |                              |                 |             |                    |                         |                      |
| 3. Memutar kain 1                |                           |                              |                 |             |                    |                         |                      |
|                                  |                           |                              | 8.5             | FM          |                    |                         | Melepas pedal        |
| Memutar kain                     |                           | T90S                         | 5.4             | T90S        |                    |                         | Memutar kain         |
|                                  |                           |                              | 19.1            | FMP         |                    |                         | Menginjak pedal      |
| 4. Waktu Proses                  |                           |                              |                 |             |                    |                         |                      |
| 5. Memutar kain 2                |                           |                              |                 |             |                    |                         |                      |
|                                  |                           |                              | 8.5             | FM          |                    |                         | Melepas pedal        |
| Memutar kain                     |                           | T90S                         | 5.4             | T90S        |                    |                         | Memutar kain         |
|                                  |                           |                              | 19.1            | FMP         |                    |                         | Menginjak pedal      |
| 6. Waktu Proses                  |                           |                              |                 |             |                    |                         |                      |
| 7. Proses akhir                  |                           |                              |                 |             |                    |                         |                      |
|                                  |                           |                              | 8.5             | FM          |                    |                         | Melepas pedal        |
|                                  |                           |                              | 2               | RL1         |                    |                         | Melepas kain         |
|                                  |                           |                              | 15.8            | R12B        |                    |                         | Menjangkau gunting   |
|                                  |                           |                              | 2               | G1A         |                    |                         | Memegang gunting     |
|                                  |                           |                              | 11.1            | M6C         |                    |                         | Membawa gunting      |
|                                  |                           |                              | 9.1             | P1SSE       |                    |                         | Mengarahkan gunting  |
|                                  |                           |                              | 5.6             | G2          |                    |                         | Menggunakan gunting  |
|                                  |                           |                              | 2               | RL1         |                    |                         | Membuka gunting      |
| Membawa kain ke WIP out          |                           | M28B                         | 23.1            | M6B         |                    |                         | Membawa gunting      |
| Melepas kain                     |                           | RL1                          | 2               | RL1         |                    |                         | Melepas gunting      |
| Tangan kembali                   |                           | R28A                         | 16.7            | R12A        |                    |                         | Tangan kembali       |
| No                               | Keterangan Elemen Gerakan | TMU                          | Faktor Konversi | Kelonggaran | Waktu (detik)      | Jumlah ulang per siklus | Total Waktu (detik)  |
| 1                                | Menyiapkan bahan          | 131.4                        | 4.730           | 1.277       | 6.007              | 1                       | 6.007                |
| 2                                | Waktu Proses              |                              |                 |             |                    |                         | 13.139               |
| 3                                | Memutar Kain 1            | 33.0                         | 1.188           | 0.321       | 1.509              | 1                       | 1.509                |
| 4                                | Waktu Proses              |                              |                 |             |                    |                         | 10.384               |
| 5                                | Memutar Kain 2            | 33.0                         | 1.188           | 0.321       | 1.509              | 1                       | 1.509                |
| 6                                | Waktu Proses              |                              |                 |             |                    |                         | 13.181               |
| 7                                | Proses Akhir              | 97.9                         | 3.524           | 0.951       | 4.475              | 1                       | 4.475                |
|                                  | Total                     |                              |                 |             |                    |                         | 50.205               |



## Bagan Analisa Stasiun 4

| BAGAN ANALISA                   |                           |                              |                 |             |                    |                         |                         |
|---------------------------------|---------------------------|------------------------------|-----------------|-------------|--------------------|-------------------------|-------------------------|
| Bagian : Stasiun 4              |                           | Tanggal : 01 Mei 2011        |                 |             | No : 4             |                         |                         |
| Operasi : Mengisi boneka bantal |                           | Analisis : Yelli Carmelita T |                 |             | Lembar ke 1 dari 2 |                         |                         |
| Keterangan Tangan Kiri          |                           | No                           | LH              | TMU         | RH                 | No                      | Keterangan Tangan Kanan |
| 1. Mengambil Boneka Bantal      |                           |                              |                 |             |                    |                         |                         |
| Menjangkau boneka bantal        |                           |                              | R22B            | 20.1        |                    |                         |                         |
| Memegang boneka bantal          |                           |                              | G1A             | 2           |                    |                         |                         |
| Membawa boneka bantal           |                           |                              | M22B            | 19.4        |                    |                         |                         |
| Melepas boneka bantal           |                           |                              | RL1             | 2           |                    |                         |                         |
| 2. Mempersiapkan Wolly          |                           |                              |                 |             |                    |                         |                         |
|                                 |                           |                              |                 | 12.9        | R12B               |                         | Menjangkau wolly        |
|                                 |                           |                              |                 | 2           | G1A                |                         | Memegang wolly          |
|                                 |                           |                              |                 | 9.7         | M7B                |                         | Membawa wolly           |
| Menjangkau wolly                |                           |                              | R12B            | 12.9        | RL1                |                         | Melepas wolly           |
| Membawa wolly                   |                           |                              | M7B             | 9.7         |                    |                         |                         |
| Memegang wolly                  |                           |                              | G1A             | 2           |                    |                         |                         |
|                                 |                           |                              |                 | 14.2        | R12B               |                         | Menjangkau wolly        |
|                                 |                           |                              |                 | 2           | G1A                |                         | Memegang wolly          |
|                                 |                           |                              |                 | 9.7         | M7B                |                         | Membawa wolly           |
| Membawa wolly                   |                           |                              | M12B            | 13.4        | RL1                |                         | Melepas wolly           |
| Membawa wolly                   |                           |                              | M7B             | 9.7         |                    |                         |                         |
| Memegang wolly                  |                           |                              | G1A             | 2           |                    |                         |                         |
| 3. Menggunting Wolly            |                           |                              |                 |             |                    |                         |                         |
|                                 |                           |                              |                 | 11.5        | R10B               |                         | Menjangkau gunting      |
|                                 |                           |                              |                 | 3.5         | G1B                |                         | Memegang gunting        |
|                                 |                           |                              |                 | 12.2        | M10B               |                         | Membawa gunting         |
|                                 |                           |                              |                 | 10.4        | P1NSE              |                         | Mengarahkan gunting     |
|                                 |                           |                              |                 | 2           | G1A                |                         | Menggunting wolly       |
|                                 |                           |                              |                 | 10.6        | APA                |                         | Apply pressure          |
|                                 |                           |                              |                 | 2           | RL1                |                         | Membuka gunting         |
|                                 |                           |                              |                 | 2           | MfB                |                         | Membawa gunting         |
|                                 |                           |                              |                 | 2           | G1A                |                         | Menggunting wolly       |
|                                 |                           |                              |                 | 10.6        | APA                |                         | Apply pressure          |
|                                 |                           |                              |                 | 2           | RL1                |                         | Membuka gunting         |
|                                 |                           |                              |                 | 2           | MfB                |                         | Membawa gunting         |
|                                 |                           |                              |                 | 2           | G1A                |                         | Menggunting wolly       |
|                                 |                           |                              |                 | 10.6        | APA                |                         | Apply pressure          |
|                                 |                           |                              |                 | 12.2        | M10B               |                         | Membawa gunting         |
| Melepas wolly                   |                           |                              | RL1             | 2           | RL1                |                         | Melepas gunting         |
| No                              | Keterangan Elemen Gerakan | TMU                          | Faktor Konversi | Kelonggaran | Waktu (detik)      | Jumlah ulang per siklus | Total Waktu (detik)     |
| 1                               | Mengambil boneka bantal   | 43.50                        | 1.566           | 0.423       | 1.989              | 1                       | 1.989                   |
| 2                               | Mempersiapkan Wolly       | 100.2                        | 3.607           | 0.974       | 4.581              | 5                       | 22.905                  |
| 3                               | Menggunting wolly         | 114.2                        | 4.111           | 1.109       | 5.220              | 1                       | 5.220                   |
|                                 |                           |                              |                 |             |                    | Total                   | 30.114                  |

| BAGAN ANALISA                             |                            |                              |                          |                       |                    |                                 |                        |
|---|----------------------------|------------------------------|--------------------------|-----------------------|--------------------|---------------------------------|------------------------|
| Bagian : Stasiun 4                        |                            | Tanggal : 01 Mei 2011        |                          |                       | No : 4             |                                 |                        |
| Operasi : Mengisi boneka bantal           |                            | Analisis : Yelli Carmelita T |                          |                       | Lembar ke 2 dari 2 |                                 |                        |
| Keterangan Tangan Kiri                    | No                         | LH                           | TMU                      | RH                    | No                 | Keterangan Tangan Kanan         |                        |
| 3. Memasukkan Wolly kedalam Boneka Bantal |                            |                              |                          |                       |                    |                                 |                        |
|   |                            |                              | 11.5                     | R10B                  |                    | Menjangkau wolly                |                        |
|   |                            |                              | 5.6                      | G3                    |                    | Memegang wolly                  |                        |
| Menjangkau boneka bantal                  |                            | R5B                          | 8                        | M5B                   |                    | Membawa wolly                   |                        |
| Memegang boneka bantal                    |                            | G1A                          | 5.6                      | P1SE                  |                    | Mengarahkan wolly               |                        |
|   |                            |                              | 2                        | MfB                   |                    | Membawa wolly                   |                        |
|   |                            |                              | 16.2                     | APB                   |                    | Apply pressure                  |                        |
| Melepas boneka bantal                     |                            | RL1                          | 2                        | RL1                   |                    | Melepas wolly                   |                        |
|   |                            |                              | 12.9                     | R12B                  |                    | Menjangkau kayu                 |                        |
| Menjangkau bagian yang akan diisi         |                            | R5A                          | 10.1                     | G1C2                  |                    | Memegang kayu                   |                        |
| Memegang bagian yang akan diisi           |                            | G1A                          | 13.4                     | M12B                  |                    | Membawa kayu                    |                        |
|   |                            |                              | 5.6                      | P1SE                  |                    | Mengarahkan kayu kedalam boneka |                        |
|   |                            |                              | 10.6                     | M5B                   |                    | Membawa kayu (mendorong wolly)  |                        |
|   |                            |                              | 1.06                     | APA                   |                    | Apply pressure                  |                        |
|   |                            |                              | 5.6                      | G2                    |                    | Pengubahan pegangan             |                        |
|   |                            |                              | 10.6                     | APA                   |                    | Apply pressure                  |                        |
|   |                            |                              | 17.2                     | M18B                  |                    | Membawa kayu                    |                        |
| Melepas boneka bantal                     |                            | RL1                          | 2                        | RL1                   |                    | Melepas kayu                    |                        |
| No  | Keterangan Elemen Gerakan  | TMU                          | Faktor Konversi<br>0.036 | Kelonggaran<br>27.00% | Waktu<br>(detik)   | Jumlah ulang<br>per siklus      | Total Waktu<br>(detik) |
|   |                            |                              |                          |                       |                    |                                 | 30.114                 |
| 3   | Memasukkan wolly ke boneka | 139.96                       | 5.039                    | 1.361                 | 6.400              | 5                               | 32.000                 |
|   |                            |                              |                          |                       |                    | Total                           | 62.114                 |

## Bagan Analisa Stasiun 5

| BAGAN ANALISA                     |                           |                              |                 |             |                    |                         |                             |
|-----------------------------------|---------------------------|------------------------------|-----------------|-------------|--------------------|-------------------------|-----------------------------|
| Bagian : Stasiun 5                |                           | Tanggal : 01 Mei 2011        |                 |             | No : 5             |                         |                             |
| Operasi : Penjahitan Kembali      |                           | Analisis : Yelli Carmelita T |                 |             | Lembar ke 1 dari 1 |                         |                             |
| Keterangan Tangan Kiri            | No                        | LH                           | TMU             | RH          | No                 | Keterangan Tangan Kanan |                             |
| 1. Mengambil Jarum                |                           |                              |                 |             |                    |                         |                             |
| Menjangkau boneka bantal          |                           | R28A                         | 16.7            |             |                    |                         |                             |
| Memegang boneka bantal            |                           | G1A                          | 2               |             |                    |                         |                             |
| Membawa boneka bantal             |                           | M24C                         | 25.5            |             |                    |                         |                             |
|                                   |                           |                              | 9.6             | R12A        |                    |                         | Menjangkau jarum            |
|                                   |                           |                              | 3.5             | G1B         |                    |                         | Memegang jarum              |
| Melepas boneka bantal             |                           | RL1                          | 20.4            | M18C        |                    |                         | Membawa jarum               |
| Tangan pindah                     |                           | R16A                         | 11.4            |             |                    |                         |                             |
| Memegang boneka bantal            |                           | G1A                          | 2               |             |                    |                         |                             |
| 2. Menjahit Boneka Bantal         |                           |                              |                 |             |                    |                         |                             |
| Memegang bagian yang akan dijahit |                           | G2                           | 5.6             | P2SE        |                    |                         | Mengarahkan jarum ke bantal |
|                                   |                           |                              | 2               | RL1         |                    |                         | Melepas jarum               |
|                                   |                           |                              | 2.5             | R1A         |                    |                         | Menjangkau jarum            |
|                                   |                           |                              | 3.5             | G1B         |                    |                         | Memegang jarum              |
|                                   |                           |                              | 2.5             | M1C         |                    |                         | Membawa jarum               |
| 3. Mengikat benang                |                           |                              |                 |             |                    |                         |                             |
|                                   |                           |                              | 2               | RL1         |                    |                         | Melepas jarum               |
|                                   |                           |                              | 15.8            | R12B        |                    |                         | Menjangkau gunting          |
|                                   |                           |                              | 2               | G1A         |                    |                         | Memegang gunting            |
|                                   |                           |                              | 11.1            | M6C         |                    |                         | Membawa gunting             |
|                                   |                           |                              | 9.1             | P1SSE       |                    |                         | Mengarahkan gunting         |
|                                   |                           |                              | 2               | G1A         |                    |                         | Menggunakan gunting         |
|                                   |                           |                              | 2               | RL1         |                    |                         | Membuka gunting             |
|                                   |                           |                              | 8.9             | M6B         |                    |                         | Membawa gunting             |
| Melepas bantal                    |                           | RL1                          | 2               | RL1         |                    |                         | Melepas gunting             |
| Menjangkau bantal                 |                           | R12A                         | 9.6             | R12A        |                    |                         | Menjangkau bantal           |
| Memegang bantal                   |                           | G1A                          | 2               | G1A         |                    |                         | Memegang bantal             |
| Membawa bantal ke WIP Out         |                           | M24C                         | 25.5            | M20C        |                    |                         | Membawa bantal ke WIP Out   |
| Melepas bantal                    |                           | RL1                          | 2               | RL1         |                    |                         | Melepas bantal              |
| Tangan kembali                    |                           | R28A                         | 16.7            | R20A        |                    |                         | Tangan kembali              |
| No                                | Keterangan Elemen Gerakan | TMU                          | Faktor Konversi | Kelonggaran | Waktu (detik)      | Jumlah ulang per siklus | Total Waktu (detik)         |
| 1                                 | Mengambil Jarum           | 91.1                         | 3.280           | 0.918       | 4.198              | 1                       | 4.198                       |
| 2                                 | Menjahit Boneka Bantal    | 16.1                         | 0.580           | 0.162       | 0.742              | 20                      | 14.832                      |
| 3                                 | Mengikat Benang           | 110.7                        | 3.985           | 1.116       | 5.101              | 1                       | 5.101                       |
|                                   |                           |                              |                 |             |                    | Total                   | 24.131                      |

# **LAMPIRAN 3**

**(BAGAN ANALISA MTM-1 USULAN)**

- **Stasiun 1**
- **Stasiun 2**
- **Stasiun 3**
- **Stasiun 4**
- **Stasiun 5**

## Bagan Analisa Stasiun 1 usulan

| BAGAN ANALISA               |                  |                              |      |                 |                    |                               |              |             |
|-----------------------------|------------------|------------------------------|------|-----------------|--------------------|-------------------------------|--------------|-------------|
| Bagian : Stasiun 1          |                  | Tanggal : 01 Mei 2011        |      |                 | No : 1             |                               |              |             |
| Operasi : Pola              |                  | Analisis : Yelli Carmelita T |      |                 | Lembar ke 1 dari 1 |                               |              |             |
| Keterangan Tangan Kiri      | No               | LH                           | TMU  | RH              | No                 | Keterangan Tangan Kanan       |              |             |
| 1. Mengambil kain           |                  |                              |      |                 |                    |                               |              |             |
| Menjangkau kain dari WIP in |                  | R8A                          | 7.9  | R8A             |                    | Menjangkau kain dari WIP in   |              |             |
| Memegang kain               |                  | G1B                          | 3.5  | G1B             |                    | Memegang kain                 |              |             |
| Membawa kain                |                  | M8A                          | 9.7  | M8A             |                    | Membawa kain                  |              |             |
| Mengarahkan kain            |                  | P1SE                         | 5.6  | P1SE            |                    | Mengarahkan kain              |              |             |
| Melepas kain                |                  | RL1                          | 2    | RL1             |                    | Melepas kain                  |              |             |
| 2. Mengambil Mal            |                  |                              |      |                 |                    |                               |              |             |
| Menjangkau mal              |                  | R8A                          | 7.9  | R8A             |                    | Menjangkau mal                |              |             |
| Memegang mal                |                  | G1B                          | 3.5  | G1B             |                    | Memegang mal                  |              |             |
| Membawa mal                 |                  | M8A                          | 9.7  | M8A             |                    | Membawa mal                   |              |             |
| Mengarahkan mal             |                  | P1SE                         | 5.6  | P1SE            |                    | Mengarahkan mal               |              |             |
| Melepas mal                 |                  | G1B                          | 3.5  | RL1             |                    | Melepas mal                   |              |             |
| 3. Mengambil Pinsil         |                  |                              |      |                 |                    |                               |              |             |
|                             |                  |                              | 6.1  | R4A             |                    | Menjangkau pinsil             |              |             |
|                             |                  |                              | 8.7  | G1C2            |                    | Memegang pinsil               |              |             |
|                             |                  |                              | 6.1  | M4A             |                    | Membawa pinsil                |              |             |
|                             |                  |                              | 5.6  | P1SE            |                    | Mengarahkan pinsil            |              |             |
|                             |                  |                              | 54.3 | M64A            |                    | Membawa pinsil (membuat pola) |              |             |
| 4. Proses Akhir             |                  |                              |      |                 |                    |                               |              |             |
|                             |                  |                              | 6.1  | M4A             |                    | Membawa pinsil                |              |             |
|                             |                  |                              | 2    | RL1             |                    | Melepas pinsil                |              |             |
|                             |                  |                              | 6.1  | R4A             |                    | Menjangkau mal                |              |             |
|                             |                  |                              | 3.5  | G1B             |                    | Memegang mal                  |              |             |
| Membawa mal                 |                  | M8A                          | 9.7  | M8A             |                    | Membawa mal                   |              |             |
| Mengarahkan mal             |                  | P1SE                         | 5.6  | P1SE            |                    | Mengarahkan mal               |              |             |
| Melepas mal                 |                  | RL1                          | 2    | RL1             |                    | Melepas mal                   |              |             |
| Tangan Kembali              |                  | R8A                          | 7.9  | R8A             |                    | Tangan Kembali                |              |             |
| No                          | Keterangan       |                              | TMU  | Faktor Konversi | Kelonggaran        | Waktu                         | Jumlah ulang | Total Waktu |
|                             | Elemen Gerakan   |                              |      |                 |                    |                               |              |             |
| 1                           | Mengambil kain   |                              | 28.7 | 1.033           | 0.155              | 1.188                         | 1            | 1.188       |
| 2                           | Mengambil mal    |                              | 30.2 | 1.087           | 0.163              | 1.250                         | 1            | 1.250       |
| 3                           | Mengambil Pinsil |                              | 80.8 | 2.909           | 0.436              | 3.345                         | 1            | 3.345       |
| 4                           | Proses Akhir     |                              | 42.9 | 1.544           | 0.232              | 1.776                         | 1            | 1.776       |
|                             |                  |                              |      |                 |                    |                               | Total        | 7.560       |

## Bagan Analisa Stasiun 2 usulan

| BAGAN ANALISA               |                           |                              |                 |             |                    |                             |             |
|-----------------------------|---------------------------|------------------------------|-----------------|-------------|--------------------|-----------------------------|-------------|
| Bagian : Stasiun 2          |                           | Tanggal : 01 Mei 2011        |                 |             | No : 1             |                             |             |
| Operasi : Potong            |                           | Analisis : Yelli Carmelita T |                 |             | Lembar ke 1 dari 1 |                             |             |
| Keterangan Tangan Kiri      | No                        | LH                           | TMU             | RH          | No                 | Keterangan Tangan Kanan     |             |
| 1. Mengambil kain           |                           |                              |                 |             |                    |                             |             |
| Menjangkau kain dari WIP in |                           | R6A                          | 7               | R6A         |                    | Menjangkau kain dari WIP in |             |
| Memegang kain               |                           | G1B                          | 3.5             | G1B         |                    | Memegang kain               |             |
| Membawa kain                |                           | M6A                          | 8.1             | M6A         |                    | Membawa kain                |             |
| Mengarahkan kain            |                           | P1SE                         | 5.6             | P1SE        |                    | Mengarahkan kain            |             |
| Melepas kain                |                           | RL1                          | 2               | RL1         |                    | Melepas kain                |             |
| 2. Mengambil Gunting        |                           |                              |                 |             |                    |                             |             |
|                             |                           |                              | 6.1             | R4A         |                    | Menjangkau gunting          |             |
| Menjangkau kain             |                           | R6A                          | 7               | G1A         |                    | Memegang gunting            |             |
| Memegang kain               |                           | G1B                          | 6.1             | M4A         |                    | Membawa gunting             |             |
|                             |                           |                              | 5.6             | P1SE        |                    | Mengarahkan gunting         |             |
|                             |                           |                              | 16              | M16A        |                    | Membawa gunting             |             |
|                             |                           |                              | 5.4             | T90S        |                    | Memutar gunting             |             |
|                             |                           |                              | 16              | M16A        |                    | Membawa gunting             |             |
|                             |                           |                              | 5.4             | T90S        |                    | Memutar gunting             |             |
|                             |                           |                              | 16              | M16A        |                    | Membawa gunting             |             |
| 3. Proses Akhir             |                           |                              |                 |             |                    |                             |             |
|                             |                           |                              | 22.4            | M24A        |                    | Membawa gunting             |             |
|                             |                           |                              | 5.6             | P1SE        |                    | Mengarahkan gunting         |             |
|                             |                           |                              | 2               | RL1         |                    | Melepas gunting             |             |
|                             |                           |                              | 6.1             | R4A         |                    | Menjangkau kain jadi        |             |
|                             |                           |                              | 3.5             | G1B         |                    | Memegang kain jadi          |             |
| Membawa kain sisa           |                           | M6A                          | 8.1             | M6A         |                    | Membawa kain jadi           |             |
| Mengarahkan kain sisa       |                           | P1SE                         | 5.6             | P1SE        |                    | Mengarahkan kain jadi       |             |
| Melepas kain sisa           |                           | RL1                          | 2               | RL1         |                    | Melepas kain jadi           |             |
| Tangan Kembali              |                           | R6A                          | 7               | R6A         |                    | Tangan Kembali              |             |
| No                          | Keterangan Elemen Gerakan | TMU                          | Faktor Konversi | Kelonggaran | Waktu              | Jumlah ulang                | Total Waktu |
|                             |                           |                              | 0.036           | 13.50%      | (detik)            | per siklus                  | (detik)     |
| 1                           | Mengambil kain            | 26.2                         | 0.943           | 0.127       | 1.070              | 1                           | 1.070       |
| 2                           | Mengambil gunting         | 83.6                         | 3.010           | 0.406       | 3.416              | 1                           | 3.416       |
| 3                           | Proses Akhir              | 62.3                         | 2.243           | 0.303       | 2.546              | 1                           | 2.546       |
|                             |                           |                              |                 |             |                    | Total                       | 7.032       |

## Bagan Analisa Stasiun 3 usulan

| BAGAN ANALISA                    |                           |                              |                 |             |               |                         |                      |
|----------------------------------|---------------------------|------------------------------|-----------------|-------------|---------------|-------------------------|----------------------|
| Bagian : Stasiun 3               |                           | Tanggal : 01 Mei 2011        |                 |             |               | No : 3                  |                      |
| Operasi : Menjahit boneka bantal |                           | Analisis : Yelli Carmelita T |                 |             |               | Lembar ke 1 dari 1      |                      |
| Keterangan Tangan Kiri           | No                        | LH                           | TMU             | RH          | No            | Keterangan Tangan Kanan |                      |
| 1. Menyiapkan bahan              |                           |                              |                 |             |               |                         |                      |
| Menjangkau kain dari WIP in      |                           | R14A                         | 10.5            |             |               |                         |                      |
| Memegang kain                    |                           | G1A                          | 2               |             |               |                         |                      |
| Membawa kain                     |                           | M16A                         | 16              | R4A         |               |                         | Menjangkau kain      |
| Melepas kain                     |                           | RL1                          | 3.5             | G1B         |               |                         | Memegang kain        |
| Menjangkau kain dari WIP in      |                           | R14A                         | 10.5            |             |               |                         |                      |
| Memegang kain                    |                           | G1A                          | 2               |             |               |                         |                      |
| Membawa kain                     |                           | M16A                         | 16              |             |               |                         |                      |
| Mengarahkan kain                 |                           | P1SSE                        | 9.1             | P1SSE       |               |                         | Mengarahkan kain     |
| Pemegangan kembali               |                           | G2                           | 5.6             | G2          |               |                         | Pemegangan kembali   |
| Membawa kain                     |                           | M8C                          | 11.8            | M8C         |               |                         | Membawa kain         |
| Mengarahkan kain ke mesin        |                           | P1SSD                        | 14.7            | P1SSD       |               |                         | Mengarahkan ke mesin |
|                                  |                           |                              | 19.1            | FMP         |               |                         | Menginjak pedal      |
| 2. Waktu Proses                  |                           |                              |                 |             |               |                         |                      |
| 3. Memutar kain 1                |                           |                              |                 |             |               |                         |                      |
|                                  |                           |                              | 8.5             | FM          |               |                         | Melepas pedal        |
| Memutar kain                     |                           | T90S                         | 5.4             | T90S        |               |                         | Memutar kain         |
|                                  |                           |                              | 19.1            | FMP         |               |                         | Menginjak pedal      |
| 4. Waktu Proses                  |                           |                              |                 |             |               |                         |                      |
| 5. Memutar kain 2                |                           |                              |                 |             |               |                         |                      |
|                                  |                           |                              | 8.5             | FM          |               |                         | Melepas pedal        |
| Memutar kain                     |                           | T90S                         | 5.4             | T90S        |               |                         | Memutar kain         |
|                                  |                           |                              | 19.1            | FMP         |               |                         | Menginjak pedal      |
| 6. Waktu Proses                  |                           |                              |                 |             |               |                         |                      |
| 7. Proses akhir                  |                           |                              |                 |             |               |                         |                      |
|                                  |                           |                              | 8.5             | FM          |               |                         | Melepas pedal        |
|                                  |                           |                              | 2               | RL1         |               |                         | Melepas kain         |
|                                  |                           |                              | 15.8            | R12B        |               |                         | Menjangkau gunting   |
|                                  |                           |                              | 2               | G1A         |               |                         | Memegang gunting     |
|                                  |                           |                              | 11.1            | M6C         |               |                         | Membawa gunting      |
|                                  |                           |                              | 9.1             | P1SSE       |               |                         | Mengarahkan gunting  |
|                                  |                           |                              | 5.6             | G2          |               |                         | Menggunakan gunting  |
|                                  |                           |                              | 2               | RL1         |               |                         | Membuka gunting      |
| Membawa kain ke WIP out          |                           | M10B                         | 12.2            | M6B         |               |                         | Membawa gunting      |
| Melepas kain                     |                           | RL1                          | 2               | RL1         |               |                         | Melepas gunting      |
| Tangan kembali                   |                           | R10A                         | 8.7             | R12A        |               |                         | Tangan kembali       |
| No                               | Keterangan Elemen Gerakan | TMU                          | Faktor Konversi | Kelonggaran | Waktu (detik) | Jumlah ulang per siklus | Total Waktu (detik)  |
| 1                                | Menyiapkan bahan          | 120.8                        | 4.349           | 0.609       | 4.958         | 1                       | 4.958                |
| 2                                | Waktu Proses              |                              |                 |             |               |                         | 13.191               |
| 3                                | Memutar Kain 1            | 33.0                         | 1.188           | 0.166       | 1.354         | 1                       | 1.354                |
| 4                                | Waktu Proses              |                              |                 |             |               |                         | 10.424               |
| 5                                | Memutar Kain 2            | 33.0                         | 1.188           | 0.166       | 1.354         | 1                       | 1.354                |
| 6                                | Waktu Proses              |                              |                 |             |               |                         | 13.233               |
| 7                                | Proses Akhir              | 79                           | 2.844           | 0.398       | 3.242         | 1                       | 3.242                |
|                                  |                           |                              |                 |             |               | Total                   | 47.756               |

## Bagan Analisa Stasiun 4 usulan

| BAGAN ANALISA                   |                           |                              |                 |             |                    |                         |                         |
|---------------------------------|---------------------------|------------------------------|-----------------|-------------|--------------------|-------------------------|-------------------------|
| Bagian : Stasiun 4              |                           | Tanggal : 01 Mei 2011        |                 |             | No : 4             |                         |                         |
| Operasi : Mengisi boneka bantal |                           | Analisis : Yelli Carmelita T |                 |             | Lembar ke 1 dari 2 |                         |                         |
| Keterangan Tangan Kiri          |                           | No                           | LH              | TMU         | RH                 | No                      | Keterangan Tangan Kanan |
| 1. Mengambil Boneka bantal      |                           |                              |                 |             |                    |                         |                         |
| Menjangkau boneka bantal        |                           |                              | R8B             | 10.1        |                    |                         |                         |
| Memegang boneka bantal          |                           |                              | G1A             | 2           |                    |                         |                         |
| Membawa boneka bantal           |                           |                              | M8B             | 9.6         |                    |                         |                         |
| Melepas boneka bantal           |                           |                              | RL1             | 2           |                    |                         |                         |
| 2. Mempersiapkan Wolly          |                           |                              |                 |             |                    |                         |                         |
|                                 |                           |                              |                 | 8.6         | R6B                |                         | Menjangkau wolly        |
|                                 |                           |                              |                 | 2           | G1A                |                         | Memegang wolly          |
|                                 |                           |                              |                 | 9.7         | M7B                |                         | Membawa wolly           |
| Menjangkau wolly                |                           |                              | R6B             | 8.6         | RL1                |                         | Melepas wolly           |
| Membawa wolly                   |                           |                              | M7B             | 9.7         |                    |                         |                         |
| Memegang wolly                  |                           |                              | G1A             | 2           |                    |                         |                         |
|                                 |                           |                              |                 | 8.6         | R6B                |                         | Menjangkau wolly        |
|                                 |                           |                              |                 | 2           | G1A                |                         | Memegang wolly          |
|                                 |                           |                              |                 | 9.7         | M7B                |                         | Membawa wolly           |
| Membawa wolly                   |                           |                              | M6B             | 8.9         | RL1                |                         | Melepas wolly           |
| Membawa wolly                   |                           |                              | M7B             | 9.7         |                    |                         |                         |
| Memegang wolly                  |                           |                              | G1A             | 2           |                    |                         |                         |
| 3. Menggantung Wolly            |                           |                              |                 |             |                    |                         |                         |
|                                 |                           |                              |                 | 6.4         | R4B                |                         | Menjangkau gunting      |
|                                 |                           |                              |                 | 3.5         | G1B                |                         | Memegang gunting        |
|                                 |                           |                              |                 | 6.9         | M4B                |                         | Membawa gunting         |
|                                 |                           |                              |                 | 10.4        | P1NSE              |                         | Mengarahkan gunting     |
|                                 |                           |                              |                 | 2           | G1A                |                         | Menggantung wolly       |
|                                 |                           |                              |                 | 10.6        | APA                |                         | Apply preasure          |
|                                 |                           |                              |                 | 2           | RL1                |                         | Membuka gunting         |
|                                 |                           |                              |                 | 2           | MfB                |                         | Membawa gunting         |
|                                 |                           |                              |                 | 2           | G1A                |                         | Menggantung wolly       |
|                                 |                           |                              |                 | 10.6        | APA                |                         | Apply preasure          |
|                                 |                           |                              |                 | 2           | RL1                |                         | Membuka gunting         |
|                                 |                           |                              |                 | 2           | MfB                |                         | Membawa gunting         |
|                                 |                           |                              |                 | 2           | G1A                |                         | Menggantung wolly       |
|                                 |                           |                              |                 | 10.6        | APA                |                         | Apply preasure          |
|                                 |                           |                              |                 | 6.9         | M4B                |                         | Membawa gunting         |
| Melepas wolly                   |                           |                              | RL1             | 2           | RL1                |                         | Melepas gunting         |
| No                              | Keterangan Elemen Gerakan | TMU                          | Faktor Konversi | Kelonggaran | Waktu (detik)      | Jumlah ulang per siklus | Total Waktu (detik)     |
| 1                               | Mengambil Boneka bantal   | 23.70                        | 0.853           | 0.115       | 0.968              | 1                       | 0.968                   |
| 2                               | Mempersiapkan Wolly       | 81.5                         | 2.934           | 0.396       | 3.330              | 5                       | 16.650                  |
| 3                               | Menggantung wolly         | 104.5                        | 3.762           | 0.508       | 4.270              | 1                       | 4.270                   |
| Total                           |                           |                              |                 |             |                    |                         | 21.888                  |



| BAGAN ANALISA                             |                            |                              |                          |                       |                    |                                 |                        |
|---|----------------------------|------------------------------|--------------------------|-----------------------|--------------------|---------------------------------|------------------------|
| Bagian : Stasiun 4                        |                            | Tanggal : 01 Mei 2011        |                          |                       | No : 4             |                                 |                        |
| Operasi : Mengisi boneka bantal           |                            | Analisis : Yelli Carmelita T |                          |                       | Lembar ke 2 dari 2 |                                 |                        |
| Keterangan Tangan Kiri                    | No                         | LH                           | TMU                      | RH                    | No                 | Keterangan Tangan Kanan         |                        |
| 3. Memasukkan Wolly kedalam Boneka Bantal |                            |                              |                          |                       |                    |                                 |                        |
|   |                            |                              | 11.5                     | R10B                  |                    | Menjangkau wolly                |                        |
|   |                            |                              | 5.6                      | G3                    |                    | Memegang wolly                  |                        |
| Menjangkau boneka bantal                  |                            | R5B                          | 8                        | M5B                   |                    | Membawa wolly                   |                        |
| Memegang boneka bantal                    |                            | G1A                          | 5.6                      | P1SE                  |                    | Mengarahkan wolly               |                        |
|   |                            |                              | 2                        | MfB                   |                    | Membawa wolly                   |                        |
|   |                            |                              | 16.2                     | APB                   |                    | Apply preasure                  |                        |
| Melepas boneka bantal                     |                            | RL1                          | 2                        | RL1                   |                    | Melepas wolly                   |                        |
|   |                            |                              | 8.6                      | R6B                   |                    | Menjangkau kayu                 |                        |
| Menjangkau bagian yang akan diisi         |                            | R5A                          | 10.1                     | G1C2                  |                    | Memegang kayu                   |                        |
| Memegang bagian yang akan diisi           |                            | G1A                          | 8.9                      | M6B                   |                    | Membawa kayu                    |                        |
|   |                            |                              | 5.6                      | P1SE                  |                    | Mengarahkan kayu kedalam boneka |                        |
|   |                            |                              | 10.6                     | M5B                   |                    | Membawa kayu (mendorong wolly)  |                        |
|   |                            |                              | 1.06                     | APA                   |                    | Apply preasure                  |                        |
|   |                            |                              | 5.6                      | G2                    |                    | Pengubahan pegangan             |                        |
|   |                            |                              | 10.6                     | APA                   |                    | Apply preasure                  |                        |
|   |                            |                              | 17.2                     | M18B                  |                    | Membawa kayu                    |                        |
| Melepas boneka bantal                     |                            | RL1                          | 2                        | RL1                   |                    | Melepas kayu                    |                        |
| No  | Keterangan Elemen Gerakan  | TMU                          | Faktor Konversi<br>0.036 | Kelonggaran<br>13.50% | Waktu<br>(detik)   | Jumlah ulang<br>per siklus      | Total Waktu<br>(detik) |
|   |                            |                              |                          |                       |                    |                                 | 21.888                 |
| 3   | Memasukkan wolly ke boneka | 131.16                       | 4.722                    | 0.637                 | 5.359              | 5                               | 26.795                 |
|   |                            |                              |                          |                       |                    | Total                           | 48.683                 |

## Bagan Analisa Stasiun 5 usulan

| BAGAN ANALISA                     |                           |                              |                 |             |                    |                         |                             |
|-----------------------------------|---------------------------|------------------------------|-----------------|-------------|--------------------|-------------------------|-----------------------------|
| Bagian : Stasiun 5                |                           | Tanggal : 01 Mei 2011        |                 |             | No : 5             |                         |                             |
| Operasi : Penjahitan Kembali      |                           | Analisis : Yelli Carmelita T |                 |             | Lembar ke 1 dari 1 |                         |                             |
| Keterangan Tangan Kiri            | No                        | LH                           | TMU             | RH          | No                 | Keterangan Tangan Kanan |                             |
| 1. Mengambil Jarum                |                           |                              |                 |             |                    |                         |                             |
| Menjangkau boneka bantal          |                           | R8A                          | 7.9             |             |                    |                         |                             |
| Memegang boneka bantal            |                           | G1A                          | 2               |             |                    |                         |                             |
| Membawa boneka bantal             |                           | M6C                          | 10.3            |             |                    |                         |                             |
|                                   |                           |                              | 7               | R6A         |                    |                         | Menjangkau jarum            |
|                                   |                           |                              | 3.5             | G1B         |                    |                         | Memegang jarum              |
| Melepas boneka bantal             |                           | RL1                          | 10.3            | M6C         |                    |                         | Membawa jarum               |
| Tangan pindah                     |                           | R16A                         | 11.4            |             |                    |                         |                             |
| Memegang boneka bantal            |                           | G1A                          | 2               |             |                    |                         |                             |
| 2. Menjahit Boneka Bantal         |                           |                              |                 |             |                    |                         |                             |
| Memegang bagian yang akan dijahit |                           | G2                           | 5.6             | P2SE        |                    |                         | Mengarahkan jarum ke bantal |
|                                   |                           |                              | 2               | RL1         |                    |                         | Melepas jarum               |
|                                   |                           |                              | 2.5             | R1A         |                    |                         | Menjangkau jarum            |
|                                   |                           |                              | 3.5             | G1B         |                    |                         | Memegang jarum              |
|                                   |                           |                              | 2.5             | M1C         |                    |                         | Membawa jarum               |
| 3. Mengikat benang                |                           |                              |                 |             |                    |                         |                             |
|                                   |                           |                              | 2               | RL1         |                    |                         | Melepas jarum               |
|                                   |                           |                              | 8.6             | R6B         |                    |                         | Menjangkau gunting          |
|                                   |                           |                              | 2               | G1A         |                    |                         | Memegang gunting            |
|                                   |                           |                              | 11.1            | M6C         |                    |                         | Membawa gunting             |
|                                   |                           |                              | 9.1             | P1SSE       |                    |                         | Mengarahkan gunting         |
|                                   |                           |                              | 2               | G1A         |                    |                         | Menggunakan gunting         |
|                                   |                           |                              | 2               | RL1         |                    |                         | Melepas gunting             |
|                                   |                           |                              | 8.9             | M6B         |                    |                         | Membawa gunting             |
| Melepas bantal                    |                           | RL1                          | 2               | RL1         |                    |                         | Membuka gunting             |
| Menjangkau bantal                 |                           | R8A                          | 7.9             | R8A         |                    |                         | Menjangkau bantal           |
| Memegang bantal                   |                           | G1A                          | 2               | G1A         |                    |                         | Memegang bantal             |
| Membawa bantal ke WIP Out         |                           | M4C                          | 8               | M4C         |                    |                         | Membawa bantal ke WIP Out   |
| Melepas bantal                    |                           | RL1                          | 2               | RL1         |                    |                         | Melepas bantal              |
| Tangan kembali                    |                           | R8A                          | 7.9             | R4A         |                    |                         | Tangan kembali              |
| No                                | Keterangan Elemen Gerakan | TMU                          | Faktor Konversi | Kelonggaran | Waktu (detik)      | Jumlah ulang per siklus | Total Waktu (detik)         |
| 1                                 | Mengambil Jarum           | 54.4                         | 1.958           | 0.264       | 2.222              | 1                       | 2.222                       |
| 2                                 | Menjahit Boneka Bantal    | 16.1                         | 0.580           | 0.078       | 0.658              | 20                      | 13.152                      |
| 3                                 | Mengikat Benang           | 75.5                         | 2.718           | 0.367       | 3.085              | 1                       | 3.085                       |
|                                   |                           |                              |                 |             |                    | Total                   | 18.459                      |