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# LAMPIRAN

**Lampiran 1.** Data Penelitian

| KABUPATEN/KOTA | IPM | X1 | X2 | X3 | X4 | Y |
|---|---|---|---|---|---|---|
| Jeneponto | 64.26 | 66.39 | 11.98 | 6.59 | 9114 | 1 |
| Bone | 66.06 | 67.07 | 12.88 | 7.15 | 8963 | 1 |
| Takalar | 67.31 | 67.18 | 12.41 | 7.29 | 10454 | 1 |
| Kepulauan Selayar | 67.38 | 68.46 | 12.65 | 7.88 | 8970 | 1 |
| Sinjai | 67.6 | 67.3 | 13.05 | 7.75 | 9439 | 1 |
| Soppeng | 68.67 | 69.65 | 12.9 | 7.81 | 9483 | 1 |
| Pangkajene dan Kepulauan | 68.72 | 66.66 | 12.76 | 7.66 | 11405 | 2 |
| Bantaeng | 68.73 | 70.54 | 12.04 | 6.72 | 11632 | 2 |
| Tana Toraja | 68.75 | 73.3 | 13.8 | 8.26 | 7217 | 2 |
| Bulukumba | 68.99 | 67.92 | 13.17 | 7.67 | 10513 | 2 |
| Wajo | 69.15 | 67.35 | 13.14 | 6.81 | 12386 | 2 |
| Toraja Utara | 69.33 | 73.39 | 13.38 | 7.96 | 8097 | 2 |
| Luwu Utara | 69.57 | 68.51 | 12.43 | 7.79 | 11562 | 2 |
| Maros | 69.86 | 69.02 | 13.04 | 7.73 | 10963 | 2 |
| Gowa | 70.14 | 70.43 | 13.64 | 8.19 | 9394 | 2 |
| Luwu | 70.51 | 70.34 | 13.33 | 8.24 | 10014 | 2 |
| Barru | 71 | 69.02 | 13.58 | 8.23 | 10923 | 2 |
| Sindereng Rappang | 71.21 | 69.83 | 12.94 | 7.84 | 12073 | 2 |
| Pinrang | 71.26 | 69.61 | 13.23 | 7.86 | 11844 | 3 |
| Enrekang | 72.76 | 70.91 | 13.7 | 8.9 | 10844 | 3 |
| Luwu Timur | 73.22 | 70.53 | 12.83 | 8.8 | 12814 | 3 |
| Parepare | 77.86 | 71.27 | 14.5 | 10.45 | 13663 | 3 |
| Palopo | 78.06 | 70.88 | 15.08 | 10.76 | 12995 | 3 |
| Makassar | 82.25 | 72.09 | 15.57 | 11.21 | 16873 | 3 |

**Lampiran 2.** Pengelompokan Data IPM Tahun 2020 Berdasarkan Perhitungan Kuartil

| Kabupaten/kota | IPM | Kelompok |
|---|---|---|
| Jeneponto | 64.26 | 1 |
| Bone | 66.06 | |
| Takalar | 67.31 | |
| Kepulauan Selayar | 67.38 | |
| Sinjai | 67.6 | |
| Soppeng | 68.67 | |
| Pangkajene dan Kepulauan | 68.72 | 2 |
| Bantaeng | 68.73 | |
| Tana Toraja | 68.75 | |
| Bulukumba | 68.99 | |
| Wajo | 69.15 | |
| Toraja Utara | 69.33 | |
| Luwu Utara | 69.57 | |
| Maros | 69.86 | |
| Gowa | 70.14 | |
| Luwu | 70.51 | |
| Barru | 71 | |
| Sindereng Rappang | 71.21 | |
| Pinrang | 71.26 | 3 |
| Enrekang | 72.76 | |
| Luwu Timur | 73.22 | |
| Parepare | 77.86 | |
| Palopo | 78.06 | |
| Makassar | 82.25 | |

**Lampiran 3.** Perhitungan Jarak Mahalanobis

| **Kabupaten/kota** | **Jarak Mahalanobis** |
|---|---|
| Jeneponto | 6.067 |
| Bone | 5.635104 |
| Takalar | 3.958563 |
| Selayar | 3.034666 |
| Sinjai | 2.896792 |
| Soppeng | 3.449079 |
| Pangkep | -0.1464 |
| Bantaeng | 3.347659 |
| Tana Toraja | 9.747273 |
| Bulukumba | 1.883293 |
| Wajo | 1.734658 |
| Toraja Utara | 10.70874 |
| Luwu Utara | 4.160261 |
| Maros | 2.691236 |
| Gowa | 0.3875 |
| Luwu | 0.515315 |
| Barru | 0.01721 |
| Sidrap | 0.782563 |
| Pinrang | 1.119335 |
| Enrekang | 1.073459 |
| Luwu Timur | 1.261729 |
| Parepare | 6.175727 |
| Palopo | 5.878662 |
| Makassar | 8.374121 |

**Lampiran 4.** Klasifikasi Data Baru Tingkat Kesejahteraan Masyarakat Kabupaten/kota Sulawesi Selatan Tahun 2021

| **Kabupaten/ Kota** | **Skor Diskriminan ($Y_m$)** | $\bar{Y}_m$ | **Klasifikasi** | | | **Kelompok** |
|---|---|---|---|---|---|---|
| | | | **Rendah** | **Sedang** | **Tinggi** | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| Jeneponto | -49,100 | -50,5605 | 1,7875 | 12,8581 | 57,9919 | 1 |
| Bone | -49,586 | | 0,6577 | 2,0673 | 29,8906 | 1 |
| Takalar | -51,073 | | 0,6572 | 2,0681 | 29,8938 | 1 |
| Sinjai | -51,037 | | 0,0070 | 4,6874 | 38,3716 | 1 |
| Selayar | -50,519 | | 0,5462 | 2,2792 | 30,6821 | 1 |
| Bantaeng | -52,046 | | 3,4923 | 0,1444 | 19,4433 | 2 |
| Soppeng | -51,717 | -52,8093 | 10,1836 | 0,8880 | 9,5300 | 2 |
| Pangkep | -53,692 | | 0,0091 | 5,4968 | 40,6274 | 1 |
| Tana Toraja | -52,531 | | 13,4311 | 2,0051 | 6,8298 | 2 |
| Bulukumba | -51,661 | | 8,1902 | 0,3758 | 11,6716 | 2 |
| Wajo | -52,177 | | 0,6103 | 2,1537 | 30,2169 | 1 |
| Toraja Utara | -53,169 | | 16,1239 | 3,1209 | 5,1202 | 2 |
| Luwu Utara | -53,134 | | 8,0274 | 0,3415 | 11,8678 | 2 |
| Gowa | -52,760 | | 20,2895 | 5,0875 | 3,1465 | 3 |
| Maros | -52,545 | | 11,5194 | 1,3114 | 8,3186 | 2 |
| Luwu | -53,104 | | 24,8375 | 7,4796 | 1,6757 | 3 |
| Barru | -52,972 | | 10,7709 | 1,0672 | 8,9780 | 2 |
| Pinrang | -54,245 | | 4,1241 | 0,0475 | 18,0407 | 2 |
| Sidrap | -53,872 | -56,8387 | 8,9338 | 0,5477 | 10,8194 | 2 |
| Enrekang | -54,520 | | 1,5488 | 1,0086 | 25,3382 | 2 |
| Luwu Timur | -56,016 | | 3,1316 | 0,2296 | 20,3274 | 2 |
| Parepare | -57,975 | | 107,1795 | 65,6736 | 16,6015 | 3 |
| Palopo | -57,295 | | 56,7727 | 27,9411 | 1,5788 | 3 |
| Makassar | -61,351 | | 63,5514 | 32,7537 | 2,8685 | 3 |

**Lampiran 5.** Syntax dan Output Program SAS Studio

```
proc import out=datayuyu
      datafile="D:/Book66.xlsx"
      dbms=xlsx
      replace;
      getnames=YES;
      run;
proc print data=datayuyu;
run;
Proc iml;
use datayuyu;
read all var {X1 x2 x3 x4 y} into A;
print dataku;

A1=A[1:6, 1:4];
A2=A[7:18,1:4];
A3=A[19:24,1:4];
PRINT A1,A2,A3;
```

| A1 | | | |
|---|---|---|---|
| 66.39 | 11.98 | 6.59 | 9114 |
| 67.07 | 12.88 | 7.15 | 8963 |
| 67.18 | 12.41 | 7.29 | 10454 |
| 68.46 | 12.65 | 7.88 | 8970 |
| 67.3 | 13.05 | 7.75 | 9439 |
| 69.65 | 12.9 | 7.81 | 9483 |

| A2 | | | |
|---|---|---|---|
| 66.66 | 12.76 | 7.66 | 11405 |
| 70.54 | 12.04 | 6.72 | 11632 |
| 73.3 | 13.8 | 8.26 | 7217 |
| 67.92 | 13.17 | 7.67 | 10513 |
| 67.35 | 13.14 | 6.81 | 12386 |
| 73.39 | 13.38 | 7.96 | 8097 |
| 68.51 | 12.43 | 7.79 | 11562 |
| 69.02 | 13.04 | 7.73 | 10963 |
| 70.43 | 13.64 | 8.19 | 9394 |
| 70.34 | 13.33 | 8.24 | 10014 |
| 69.02 | 13.58 | 8.23 | 10923 |
| 69.83 | 12.94 | 7.84 | 12073 |

| A3 | | | |
|---|---|---|---|
| 69.61 | 13.23 | 7.86 | 11844 |
| 70.91 | 13.7 | 8.9 | 10844 |
| 70.53 | 12.83 | 8.8 | 12814 |
| 71.27 | 14.5 | 10.45 | 13663 |
| 70.88 | 15.08 | 10.76 | 12995 |
| 72.09 | 15.57 | 11.21 | 16873 |

```
N1=NROW(A1);
N2=NROW(A2);
N3=NROW(A3);
NN=N1+N2+N3;
print NN;
```

| NN |
|---|
| 24 |

```
*UJI ASUMSI;
DETS=DET(SG); PRINT DETS;
LNDET=LOG(DETS); PRINT LNDET;
DETK1=DET(S1);
DETK2=DET(S2);
DETK3=DET(S3);
LN1=LOG(DETK1); LN2=LOG(DETK2); LN3=LOG(DETK3);
PRINT LN1 LN2 LN3;
```

| DETS |
|---|
| 267648.05 |

| LNDET |
|---|
| 12.497428 |

| LN1 | LN2 | LN3 |
|---|---|---|
| 7.7959967 | 11.004693 | 11.15083 |

```
E1=(5*LNDET)+(11*LNDET)+(5*LNDET); PRINT E1;
E2=(5*LN1)+(11*LN2)+(5*LN3); PRINT E2;
MMM=E1-E2; PRINT MMM;
```

| DETS |
|---|
| 267648.05 |

| LNDET |
|---|
| 12.497428 |

| LN1 | LN2 | LN3 |
|---|---|---|
| 7.7959967 | 11.004693 | 11.15083 |

| E1 |
|---|
| 262.44599 |

| E2 |
|---|
| 215.78576 |

| MMM |
|---|
| 46.660231 |

```
UU1=(1/5)+(1/11)+(1/5); PRINT UU1;
UU2=1/(5+11+5); PRINT UU2;
UU3=UU1-UU2; PRINT UU3;
DD1=(2*8)+(3*4)-1; PRINT DD1;
DD2=(6*5)*(2);
DD3=DD1/DD2; PRINT DD3;
```

| UU1 |
|---|
| 0.4909091 |

| UU2 |
|---|
| 0.047619 |

| UU3 |
|---|
| 0.44329 |

| DD1 |
|---|
| 27 |

| DD3 |
|---|
| 0.45 |

```
BOX=(1-DD3)*MMM; PRINT BOX;
```

| BOX |
|---|
| 25.663127 |

```
*Uji V bartlet;
dW=DET(W);  print dw;
BW=Bn+W; PRINT BW;
dBW=det(BW);
hsl=DW/DBW; PRINT HSL;
Vbar=-((23)-(7/2))*(log(hsl)); print Vbar;
```

| dW |
|---|
| 5.2052E10 |

| BW | | | |
|---|---|---|---|
| 74.724727 | 16.047973 | 21.569569 | -6221.517 |
| 16.047973 | 13.108394 | 15.199781 | 11177.937 |
| 21.569569 | 15.199781 | 22.40749 | 19449.215 |
| -6221.517 | 11177.937 | 19449.215 | 73613868 |

| hsl |
|---|
| 0.3501668 |

| Vbar |
|---|
| 20.462242 |

```
*VEKTOR RATAAN TIAP KELOMPOK;
ABAR1=MEAN(A1);
ABAR2=MEAN(A2);
ABAR3=MEAN(A3);
Print ABAR1,ABAR2,ABAR3;
```

| ABAR1 | | | |
|---|---|---|---|
| 67.675 | 12.645 | 7.4116667 | 9403.8333 |

| ABAR2 | | | |
|---|---|---|---|
| 69.6925 | 13.104167 | 7.7583333 | 10514.917 |

| ABAR3 | | | |
|---|---|---|---|
| 70.881667 | 14.151667 | 9.6633333 | 13172.167 |

```
*VEKTOR RATAAN UMUM;
V=((N1/NN)*ABAR1)+((N2/NN)*ABAR2)+((N3/NN)*ABAR3);
PRINT V;
```

| V |
|---|

| V | | | |
|---|---|---|---|
| 69.485417 | 13.25125 | 8.1479167 | 10901.458 |

```
*VARIANSI SETIAP GROUP;
S1=COV(A1);                    /*VARIANSI GROUP 1*/
S2=COV(A2);               /*VARIANSI GROUP 2*/
S3=COV(A3);               /*VARIANSI GROUP 3*/
PRINT S1 S2 S3;
```

| S1 | | | | S2 | | | |
|---|---|---|---|---|---|---|---|
| 1.38395 | 0.23687 | 0.46037 | -15.617 | 4.4103477 | 0.4100432 | 0.4234136 | -2701.843 |
| 0.23687 | 0.15635 | 0.15089 | -25.077 | 0.4100432 | 0.2606265 | 0.1850258 | -536.3578 |
| 0.46037 | 0.15089 | 0.2501767 | 13.196333 | 0.4234136 | 0.1850258 | 0.2669606 | -504.4265 |
| -15.617 | -25.077 | 13.196333 | 315380.57 | -2701.843 | -536.3578 | -504.4265 | 2514758.6 |

| S3 | | | |
|---|---|---|---|
| 0.6704967 | 0.6943167 | 0.9495533 | 1282.3437 |
| 0.6943167 | 1.1590167 | 1.3267333 | 1600.9157 |
| 0.9495533 | 1.3267333 | 1.7587467 | 2079.4593 |
| 1282.3437 | 1600.9157 | 2079.4593 | 4256228.6 |

```
SG=(((N1-1)*S1)+((N2-1)*S2)+((N3-1)*S3))/(NN-3);
      /*VARIANSI GABUNGAN*/
PRINT SG;
```

| SG | | | |
|---|---|---|---|
| 2.7993361 | 0.4364956 | 0.5574841 | -1113.65 |
| 0.4364956 | 0.4497012 | 0.4487333 | 94.250357 |
| 0.5574841 | 0.4487333 | 0.6181516 | 234.02794 |
| -1113.65 | 94.250357 | 234.02794 | 2405732.9 |

```
INVS=INV(SG);
PRINT INVS;
```

| INVS | | | |
|---|---|---|---|
| 0.6501322 | 0.0612186 | -0.772239 | 0.0003737 |
| 0.0612186 | 8.2372828 | -6.14993 | 0.0003039 |
| -0.772239 | -6.14993 | 7.0835851 | -0.000806 |
| 0.0003737 | 0.0003039 | -0.000806 | 6.5512E-7 |

```
*VARKOV ANTAR KELOMPOK;
B1=ABAR1-V;
B2=ABAR2-V;
B3=ABAR3-V;
B=(N1*(B1`*B1))+(N2*(B2`*B2))+(N3*(B3`*B3));
Bn=0.5*B;
PRINT Bn;
```

| Bn | | | |
|---|---|---|---|
| 15.938669 | 6.8815646 | 9.8624021 | 17165.127 |
| 6.8815646 | 3.6646687 | 5.7763812 | 9198.6794 |
| 9.8624021 | 5.7763812 | 9.4263063 | 14534.628 |
| 17165.127 | 9198.6794 | 14534.628 | 23093478 |

```
*VARKOV DALAM KELOMPOK;
W=((N1-1)*S1)+((N2-1)*S2)+((N3-1)*S3);
PRINT W;
```

| W | | | |
|---|---|---|---|
| 58.786058 | 9.1664083 | 11.707167 | -23386.64 |
| 9.1664083 | 9.443725 | 9.4234 | 1979.2575 |
| 11.707167 | 9.4234 | 12.981183 | 4914.5867 |
| -23386.64 | 1979.2575 | 4914.5867 | 50520391 |

```
*INVERS W;
INVW=INV(W);
PRINT INVW;
```

| INVW | | | |
|---|---|---|---|
| 0.0309587 | 0.0029152 | -0.036773 | 0.0000178 |
| 0.0029152 | 0.3922516 | -0.292854 | 0.0000145 |
| -0.036773 | -0.292854 | 0.3373136 | -0.000038 |
| 0.0000178 | 0.0000145 | -0.000038 | 3.1196E-8 |

```
P=INVW*Bn;`
PRINT P;
determ=det(p); print determ;
CALL EIGEN(NE,VE,P);
PRINT NE,VE;
```

| NE | |
|---|---|
| 1.2617263 | 0 |
| 0.2626559 | 0 |
| -6.46E-17 | 0 |

| NE | |
|---|---|
| -1.39E-16 | 0 |

| VE | | | |
|---|---|---|---|
| -0.599364 | -0.207841 | -0.236198 | -0.207163 |
| 0.2515189 | -0.539954 | 0.5923113 | -0.650524 |
| -0.759934 | 0.8156295 | -0.77031 | -0.730685 |
| -0.000803 | -0.000129 | 0.0004245 | 0.000873 |

```
peng=A[,1:4]; print peng;
ne1=VE[,1]; print ne1;
hslpeng=peng*ne1; print hslpeng;
RP1=hslpeng[1:6,];
RP2=hslpeng[7:18,];
RP3=hslpeng[19:24,];
MM1=mean(RP1); print mm1;
MM2=mean(RP2); print mm2;
MM3=mean(RP3); print mm3;

GH11=RP1-MM1;
GH12=RP1-MM2;
GH13=RP1-MM3;

PRINT GH11 GH12 GH13;

GH21=RP2-MM1;
GH22=RP2-MM2;
GH23=RP2-MM3; PRINT GH21 GH22 GH23;

GH31=RP3-MM1;
GH32=RP3-MM2;
GH33=RP3-MM3; PRINT GH31 GH32 GH33;

VE1={-0.599364, 0.2515189, -0.759934,-0.000803}; print ve1;
klpm=AA*VE1; print klpm;
jj1=SHAPE(-50.56054,24,1);
jj2=SHAPE(-52.80937,24,1);
jj3=SHAPE(-56.83879,24,1);
klp1=(klpm-jj1)#(klpm-jj1);
klp2=(klpm-jj2)#(klpm-jj2);
klp3=(klpm-jj3)#(klpm-jj3);
print klp1 klp2 klp3;
```

| klp1 | klp2 | klp3 |
|---|---|---|
| 1.7875608 | 12.858155 | 57.991986 |
| 0.6577501 | 2.0673035 | 29.890626 |
| 0.6572785 | 2.0681399 | 29.893806 |

| klp1 | klp2 | klp3 |
|---|---|---|
| 0.0070171 | 4.6874934 | 38.371607 |
| 0.5462669 | 2.2792885 | 30.682197 |
| 3.4923605 | 0.1444336 | 19.443374 |
| 10.18363 | 0.8880237 | 9.5300007 |
| 0.0091616 | 5.4968967 | 40.627445 |
| 13.431155 | 2.0051239 | 6.8298387 |
| 8.1902989 | 0.3758178 | 11.671653 |
| 0.6103592 | 2.1537767 | 30.216955 |
| 16.12394 | 3.120991 | 5.1202065 |
| 8.02749 | 0.3415848 | 11.867801 |
| 20.289571 | 5.0875717 | 3.1465629 |
| 11.519482 | 1.3114972 | 8.3186894 |
| 24.837555 | 7.4796725 | 1.6757846 |
| 10.770958 | 1.0672621 | 8.9780307 |
| 4.1241674 | 0.0475351 | 18.040792 |
| 8.933875 | 0.5477907 | 10.819436 |
| 1.5488757 | 1.0086017 | 25.338253 |
| 3.1316865 | 0.2296066 | 20.327409 |
| 107.17955 | 65.673612 | 16.601597 |
| 56.772769 | 27.941168 | 1.5788441 |
| 63.551468 | 32.75373 | 2.8685095 |