Lampiran 1. Coding untuk Grafik Kurva Distribusi Log Normal

```
m<-1000
m <- 1000
n <- 1000
x <- array(0,c(n,1))
for (i in 1:n)
{
x[i] <- i/10
}
miu <- -3
ragam <- 5

fln <- array(0,c(n,1))

for (i in 1:n)
{
fln[i]<- 1/(x[i]*(sqrt(2*pi*ragam)))*(exp(-(1/(2*ragam))*((log(x[i])-miu)^2)))

}

plot(x,fln,type="l",ylim=range(0,1.8),xlim=range(0,10),ylab="Fungsi Log
Normal",xlab="x",col="dark blue")
```

Lampiran 2. Coding untuk Grafik Distribusi Log Normal pada Nilai $\mu = -5, \mu = 2, \mu = 5$ dan $\sigma^2 = 5$

```
m <- 1000
n <- 1000
x <- array(0,c(n,1))
for (i in 1:n)
{
x[i] <- i/10
}

miu1 <- -5
miu2 <- 2
miu3 <- 5
ragam <- 5

fln1 <- array(0,c(n,1))
fln2 <- array(0,c(n,1))
fln3 <- array(0,c(n,1))

for (i in 1:n)
{
fln1[i] <- 1/(x[i]*(sqrt(2*pi*ragam)))*(exp(-(1/(2*ragam))*((log(x[i])-miu1)^2)))
fln2[i] <- 1/(x[i]*(sqrt(2*pi*ragam)))*(exp(-(1/(2*ragam))*((log(x[i])-miu2)^2)))
fln3[i] <- 1/(x[i]*(sqrt(2*pi*ragam)))*(exp(-(1/(2*ragam))*((log(x[i])-miu3)^2)))
}

plot(x,fln1,type="l",xlim=range(0,100),ylim=range(0,0.9),xlab="x",ylab="Fungsi
        Log Normal", col="green",lty=1)
lines(x, fln2,col="red", lty=2)
lines(x, fln3, col="blue", lty=3)
legend("topright", c("miu1 = -5", "miu2 = 2", "miu3 = 5"), col = c("green", "red",
        "blue"),
    text.col = "black", lty = c(1,2,3),merge = TRUE, bg = 'white')
```

Lampiran 3. Coding untuk Grafik Distribusi Log Normal pada Nilai $\sigma^2 = 1$, $\sigma^2 = 10$, $\sigma^2 = 50$ dan $\mu = -3$

```
m <- 1000
n <- 1000
x <- array(0,c(n,1))
for (i in 1:n)
{
x[i] <- i/10
}

miu <- -3
ragam1 <- 1
ragam2 <- 10
ragam3 <- 50

fln1 <- array(0,c(n,1))
fln2 <- array(0,c(n,1))
fln3 <- array(0,c(n,1))

for (i in 1:n)
{
fln1[i] <- 1/(x[i]*(sqrt(2*pi*ragam1)))*(exp(-(1/(2*ragam1))*((log(x[i])-
miu)^2)))
fln2[i] <- 1/(x[i]*(sqrt(2*pi*ragam2)))*(exp(-(1/(2*ragam2))*((log(x[i])-
miu)^2)))
fln3[i] <- 1/(x[i]*(sqrt(2*pi*ragam3)))*(exp(-(1/(2*ragam3))*((log(x[i])-
miu)^2)))
}

plot(x,fln1,type="l",xlim=range(0,100),ylim=range(0,3.5),xlab="x",ylab="Fungsi
Log Normal", col="green",lty=1)
lines(x, fln2,col="red", lty=2)
lines(x, fln3, col="blue", lty=3)
```

```
legend("topright", c("ragam1 = 1", "ragam2 = 10", "ragam3 = 50"), col =
c("green", "red", "blue"),
    text.col = "black", lty = c(1,2,3),merge = TRUE, bg = 'white')
```

Lampiran 4. Coding untuk Grafik Kurva Distribusi *Generalized Gamma*

```
m <- 1000
n <- 1000
b <- 1
x <- array(0,c(n,1))
for (i in 1:m)
{
x[i] <- i/10
}

miu <- -3
ragam <- 5
a <- b
gam <-(ragam*(b^2))^(1/b)
m1 <- exp((b*miu)+((1/2)*(b^2)*ragam))/((b^2)*ragam)

fgg <- array(0,c(n,1))

for (i in 1:m)
{
fgg[i]<- (a/(x[i]*gamma(m1)))*((x[i]/gam)^(a*m1))*(exp(-((x[i])/gam)^a))
}

plot(x,fgg,type="l",ylim=range(0,0.8),xlim=range(0,10),ylab="Fungsi
Generalized Gamma",xlab="x",col="dark red")
```

Lampiran 5. Coding untuk Grafik Distribusi *Generalized Gamma* pada Nilai $\boldsymbol{a = 1,\ a = 10,\ a = 30, \gamma = 2,\ \gamma = 5\ dan\ m_1 = 0.1213061}$

```
m <- 1000
n <- 1000
b <- 1
x <- array(0,c(n,1))
for (i in 1:m)
{
x[i] <- i/10
}

miu <- -3
ragam <- 5
a1 <- 1
a2 <- 10
a3 <- 30
gam <-(ragam*(b^2))^(1/b)
m1 <- exp((b*miu)+((1/2)*(b^2)*ragam))/((b^2)*ragam)

fgg1 <- array(0,c(n,1))
fgg2 <- array(0,c(n,1))
fgg3 <- array(0,c(n,1))

for (i in 1:m)
{
fgg1[i]<- (a1/(x[i]*gamma(m1)))*((x[i]/gam)^(a1*m1))*(exp(-((x[i])/gam)^a1))
fgg2[i]<- (a2/(x[i]*gamma(m1)))*((x[i]/gam)^(a2*m1))*(exp(-((x[i])/gam)^a2))
fgg3[i]<- (a3/(x[i]*gamma(m1)))*((x[i]/gam)^(a3*m1))*(exp(-((x[i])/gam)^a3))
}

plot(x,fgg1,type="l",xlim=range(0,10),ylim=range(0,1),xlab="x",ylab="Fungsi
        Generalized Gamma", col="green",lty=1)
lines(x, fgg2,col="red", lty=2)
```

```
lines(x, fgg3, col="blue", lty=3)
legend("topright", c("a1 = 1", "a2 = 10", "a3 = 30"), col = c("green", "red",
                    "blue"),
       text.col = "black", lty = c(1,2,3),merge = TRUE, bg = 'white')
```

Lampiran 6. Coding untuk Grafik Distribusi *Generalized Gamma* pada Nilai $\gamma = 1, \gamma = 10, \gamma = 30, a = 1$ dan $m_1 = 0.1213061$

```
m <- 1000
n <- 1000
b <- 1
x <- array(0,c(n,1))
for (i in 1:m)
{
x[i] <- i/10
}

miu <- -3
ragam <- 5
a <- b
gam1 <- 1
gam2 <- 10
gam3 <- 30
m1 <- exp((b*miu)+((1/2)*(b^2)*ragam))/((b^2)*ragam)

fgg1 <- array(0,c(n,1))
fgg2 <- array(0,c(n,1))
fgg3 <- array(0,c(n,1))

for (i in 1:m)
{
fgg1[i]<- (a/(x[i]*gamma(m1)))*((x[i]/gam1)^(a*m1))*(exp(-((x[i])/gam1)^a))
fgg2[i]<- (a/(x[i]*gamma(m1)))*((x[i]/gam2)^(a*m1))*(exp(-((x[i])/gam2)^a))
fgg3[i]<- (a/(x[i]*gamma(m1)))*((x[i]/gam3)^(a*m1))*(exp(-((x[i])/gam3)^a))
}

plot(x,fgg1,type="l",xlim=range(0,10),ylim=range(0,1),xlab="x",ylab="Fungsi
Generalized Gamma", col="green",lty=1)
lines(x, fgg2,col="red", lty=2)
```

```
lines(x, fgg3, col="blue", lty=3)
legend("topright", c("gam1 = 1", "gam2 = 10", "gam3 = 30"), col = c("green",
"red", "blue"),
       text.col = "black", lty = c(1,2,3),merge = TRUE, bg = 'white')
```

Lampiran 7. Coding untuk Grafik Distribusi *Generalized Gamma* pada Nilai $\boldsymbol{m_1 = 1, m_1 = 3, m_1 = 7, a = 1}$ dan $\boldsymbol{m_1 = 0.1213061}$

```
m <- 1000
n <- 1000
b <- 1
x <- array(0,c(n,1))
for (i in 1:m)
{
x[i] <- i/10
}

miu <- -3
ragam <- 5
a <- b
gam <- (ragam*(b^2))^(1/b)
m1_1 <- 1
m1_2 <- 3
m1_3 <- 8

fgg1 <- array(0,c(n,1))
fgg2 <- array(0,c(n,1))
fgg3 <- array(0,c(n,1))

for (i in 1:m)
{
fgg1[i]<- (a/(x[i]*gamma(m1_1)))*((x[i]/gam)^(a*m1_1))*(exp(-((x[i])/gam)^a))
fgg2[i]<- (a/(x[i]*gamma(m1_2)))*((x[i]/gam)^(a*m1_2))*(exp(-((x[i])/gam)^a))
fgg3[i]<- (a/(x[i]*gamma(m1_3)))*((x[i]/gam)^(a*m1_3))*(exp(-((x[i])/gam)^a))
}

plot(x,fgg1,type="l",xlim=range(0,100),ylim=range(0,0.5),xlab="x",ylab="Fungsi
Generalized Gamma", col="green",lty=1)
lines(x, fgg2,col="red", lty=2)
```

```
lines(x, fgg3, col="blue", lty=3)
legend("topright", c("m1_1 = 1", "m1_2 = 3", "m1_3 = 7"), col = c("green", "red",
"blue"),
       text.col = "black", lty = c(1,2,3),merge = TRUE, bg = 'white')
```

Lampiran 8. Coding untuk Grafik Kurva Distribusi *Generalized Log-Logistic*

```
m <- 1000
n <- 1000
b <- 1
x <- array(0,c(n,1))
for (i in 1:m)
{
x[i] <- i/10
}
miu <- -3
ragam <- 5
a <- b
gam <-(ragam*(b^2))^(1/b)
m1 <- exp((b*miu)+((1/2)*(b^2)*ragam))/((b^2)*ragam)
m2 <- 10
alpha <- b
bta <- log((((ragam*(b^2))^(1/b))*(m2^(1/b)))^(-b)

F <- array(0,c(n,1))
fgll <- array(0,c(n,1))

for(i in 1:n)
{
F[i] <- 1/(1+(exp(-(bta+(alpha*log(x[i]))))))
fgll[i] <-
(alpha/(x[i]*(gamma(m1)*gamma(m2))/gamma(m1+m2)))*(F[i]^m1)*((1-
F[i])^m2)
}

plot(x,fgll,type="l",ylim=range(0,0.4),xlim=range(0,10),ylab="Fungsi
Generalized Log-Logistik",xlab="x",col="green")
```

Lampiran 9. Coding untuk Grafik Distribusi *Generalized Log-Logistic* pada Nilai $\alpha = 1,\ \alpha = 3,\ \alpha = 8, \beta = 0.2556222,\ m_1 = 0.1213061$ dan $m_2 = 10$

```
m <- 1000
n <- 1000
b <- 1
x <- array(0,c(n,1))
for (i in 1:m)
{
x[i] <- i/10
}
miu <- -3
ragam <- 5
a <- b
gam <-(ragam*(b^2))^(1/b)
m1 <- exp((b*miu)+((1/2)*(b^2)*ragam))/((b^2)*ragam)
m2 <- 10
alpha1 <- 1
alpha2 <- 5
alpha3 <- 8
bta <- log(((ragam*(b^2))^(1/b))*(m2^(1/b)))^(-b)

F1 <- array(0,c(n,1))
F2 <- array(0,c(n,1))
F3 <- array(0,c(n,1))
fgll1 <- array(0,c(n,1))
fgll2 <- array(0,c(n,1))
fgll3 <- array(0,c(n,1))

for(i in 1:n)
{
F1[i] <- 1/(1+(exp(-(bta+(alpha1*log(x[i]))))))
```

```
fgll1[i] <-
(alpha1/(x[i]*(gamma(m1)*gamma(m2))/gamma(m1+m2)))*(F1[i]^m1)*((1-
F1[i])^m2)
F2[i] <- 1/(1+(exp(-(bta+(alpha2*log(x[i]))))))
fgll2[i] <-
(alpha2/(x[i]*(gamma(m1)*gamma(m2))/gamma(m1+m2)))*(F2[i]^m1)*((1-
F2[i])^m2)
F3[i] <- 1/(1+(exp(-(bta+(alpha3*log(x[i]))))))
fgll3[i] <-
(alpha3/(x[i]*(gamma(m1)*gamma(m2))/gamma(m1+m2)))*(F3[i]^m1)*((1-
F3[i])^m2)
}

plot(x,fgll1,type="l",xlim=range(0,100),ylim=range(0,2.5),xlab="x",ylab="Fungsi
Generalized Log Logistik", col="green",lty=1)
lines(x, fgll2,col="red", lty=2)
lines(x, fgll3, col="blue", lty=3)
legend("topright", c("alpha1 = 1", "alpha2 = 3", "alpha3 = 8"), col = c("green",
"red", "blue"),
       text.col = "black", lty = c(1,2,3),merge = TRUE, bg = 'white')
```

Lampiran 10. Coding untuk Grafik Distribusi *Generalized Log-Logistic* pada Nilai $\boldsymbol{\beta = 1,\ \beta = 3,\ \beta = 8, \alpha = 1, m_1 = 0.1213061}$ dan $\boldsymbol{m_2 = 10}$

```
m <- 1000
n <- 1000
b <- 1
x <- array(0,c(n,1))
for (i in 1:m)
{
x[i] <- i/10
}
miu <- -3
ragam <- 5
a <- b
gam <-(ragam*(b^2))^(1/b)
m1 <- exp((b*miu)+((1/2)*(b^2)*ragam))/((b^2)*ragam)
m2 <- 10
alpha <- b
bta1 <- -1
bta2 <- 1
bta3 <- 3

F1 <- array(0,c(n,1))
F2 <- array(0,c(n,1))
F3 <- array(0,c(n,1))
fgll1 <- array(0,c(n,1))
fgll2 <- array(0,c(n,1))
fgll3 <- array(0,c(n,1))
for(i in 1:n)
{
F1[i] <- 1/(1+(exp(-(bta1+(alpha*log(x[i]))))))
```

```
fgll1[i] <-
(alpha/(x[i]*(gamma(m1)*gamma(m2))/gamma(m1+m2)))*(F1[i]^m1)*((1-
F1[i])^m2)
F2[i] <- 1/(1+(exp(-(bta2+(alpha*log(x[i]))))))
fgll2[i] <-
(alpha/(x[i]*(gamma(m1)*gamma(m2))/gamma(m1+m2)))*(F2[i]^m1)*((1-
F2[i])^m2)
F3[i] <- 1/(1+(exp(-(bta3+(alpha*log(x[i]))))))
fgll3[i] <-
(alpha/(x[i]*(gamma(m1)*gamma(m2))/gamma(m1+m2)))*(F3[i]^m1)*((1-
F3[i])^m2)
}

plot(x,fgll1,type="l",xlim=range(0,100),ylim=range(0,0.8),xlab="x",ylab="Fungsi
Generalized Log Logistik", col="green",lty=1)
lines(x, fgll2,col="red", lty=2)
lines(x, fgll3, col="blue", lty=3)
legend("topright", c("bta1 = 1", "bta2 = 3", "bta3 = 8"), col = c("green", "red",
"blue"),
    text.col = "black", lty = c(1,2,3),merge = TRUE, bg = 'white')
```

Lampiran 11. Coding untuk Grafik Distribusi *Generalized Log-Logistic* pada Nilai $m_1 = 0.00005$, $m_1 = 0.95$, $m_1 = 5, \alpha = 1, \beta = 0.2556222$, dan $m_2 = 10$

```
m <- 1000
n <- 1000
b <- 1
x <- array(0,c(n,1))
for (i in 1:m)
{
x[i] <- i/10
}
miu <- -3
ragam <- 5
a <- b
gam <-(ragam*(b^2))^(1/b)
m1_1 <- 0.00005
m1_2 <- 0.95
m1_3 <- 5
m2 <- 10
alpha <- b
bta <- log(((ragam*(b^2))^(1/b))*(m2^(1/b)))^(-b)

F1 <- array(0,c(n,1))
F2 <- array(0,c(n,1))
F3 <- array(0,c(n,1))
fgll1 <- array(0,c(n,1))
fgll2 <- array(0,c(n,1))
fgll3 <- array(0,c(n,1))


for(i in 1:n)
{
F1[i] <- 1/(1+(exp(-(bta+(alpha*log(x[i]))))))
```

```
fgll1[i] <- (alpha/(x[i] * (gamma(m1_1) * gamma(m2))/gamma((m1_1)+m2))) *
        (F[i]^(m1_1))*((1-F[i])^m2)
F2[i] <- 1/(1+(exp(-(bta+(alpha*log(x[i]))))))
fgll2[i] <- (alpha/(x[i] * (gamma(m1_2) * gamma(m2))/gamma((m1_2)+m2))) *
        (F[i]^(m1_2))*((1-F[i])^m2)
F3[i] <- 1/(1+(exp(-(bta+(alpha*log(x[i]))))))
fgll3[i] <- (alpha/(x[i] * (gamma(m1_3) * gamma(m2))/gamma((m1_3)+m2))) *
        (F[i]^(m1_3))*((1-F[i])^m2)
}

plot(x,fgll1,type="l",xlim=range(0,100),ylim=range(0,4),xlab="x",ylab="Fungsi
            Generalized Log Logistik", col="green",lty=1)
lines(x, fgll2,col="red", lty=2)
lines(x, fgll3, col="blue", lty=3)
legend("topright", c("m1_1 = 0.00005", "m1_2 = 0.95", "m1_3 = 5"), col =
            c("green", "red", "blue"),
    text.col = "black", lty = c(1,2,3),merge = TRUE, bg = 'white')
```