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ECo 634: Micahel France Nelson

Lab 5

1. exp\_fun =function(x, a, b)

{

return(a \* exp(-b \* x))

}

curve(

exp\_fun(x, 2.2, 1/15), add = FALSE, from = 0, to = 50,

ann = FALSE, axes = TRUE, ylab = "f(x)"); box()

1. Histogram

   Description automatically generated
2. When you change the parameter a, it changes the height (y-intercept) of the curve.
3. When you change the parameter, it changes the rate of decay of the curve.
4. Chart

   Description automatically generated
5. The initial slope is the parameter a.
6. The parameter b indicates that the highest point of the curve occurs at an x value of 1/b.
7. x1= 800, y1= 0.20068, slope= -0.003

I chose the x and y values based on the locator. I trialed with a negative slope because the data points trend downward, and I changed the value until I felt it was a good fit based on the data points.

1. Chart, scatter chart

   Description automatically generated
2. a = 0.8, b= 0.002

I chose 0.8 for a because that is the height of the y-value axis. I chose 0.002 because this represents the rate of decay in the model, and if you consider the y-axis increments and x-value increments, the decay rate is very low.

1. Chart

   Description automatically generated
2. a= 0.015, b= 0.01

I chose the a and b parameters based on trial and error.

1. Chart

   Description automatically generated

1. dispersal\_dat$resids= dispersal\_dat$disp.rate.ftb - predicted\_line

dispersal\_dat$resids

1. Chart, histogram

   Description automatically generated