1. **Poisson GLM:**
   1. Fit the model

# Fit model

mod\_poisson <- glm(tick\_abundance ~ season \* grass\_sp,

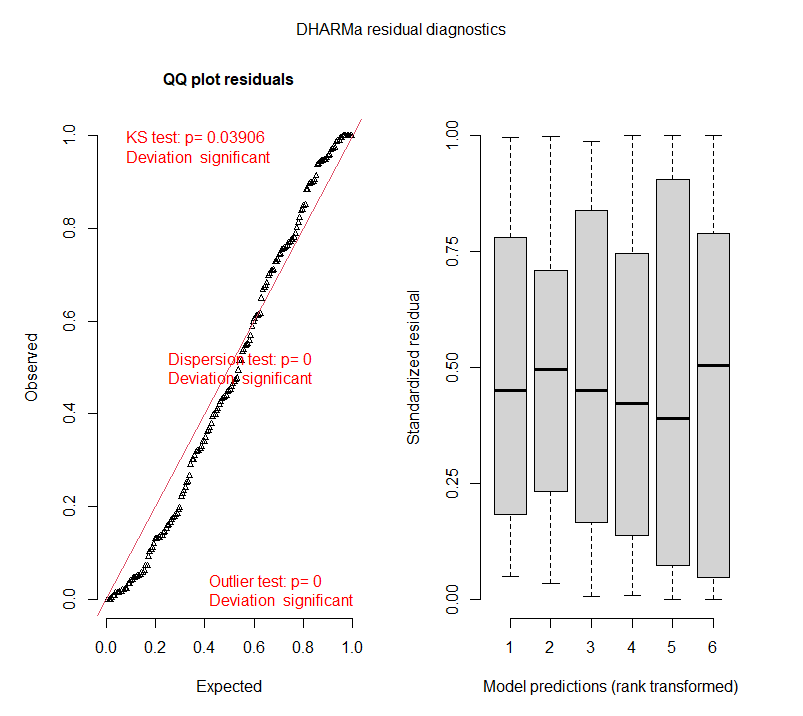
data = data,

family = poisson(link = "log"))

* 1. Check residuals

# Check residuals

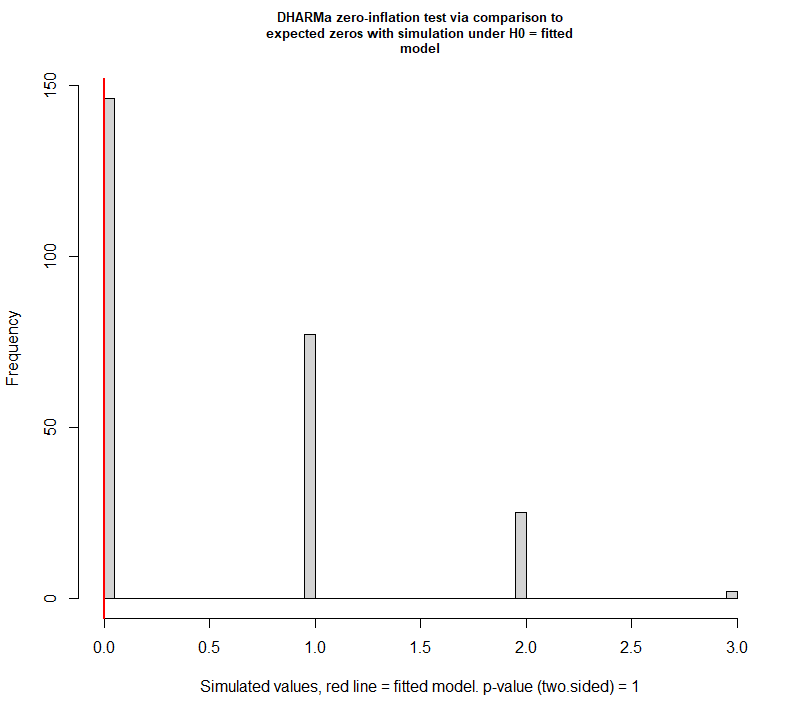
DHARMa::simulateResiduals(mod\_poisson, plot = TRUE)



* 1. Test for zero-inflation

# Test for zero inflation

DHARMa::testZeroInflation(mod\_poisson)



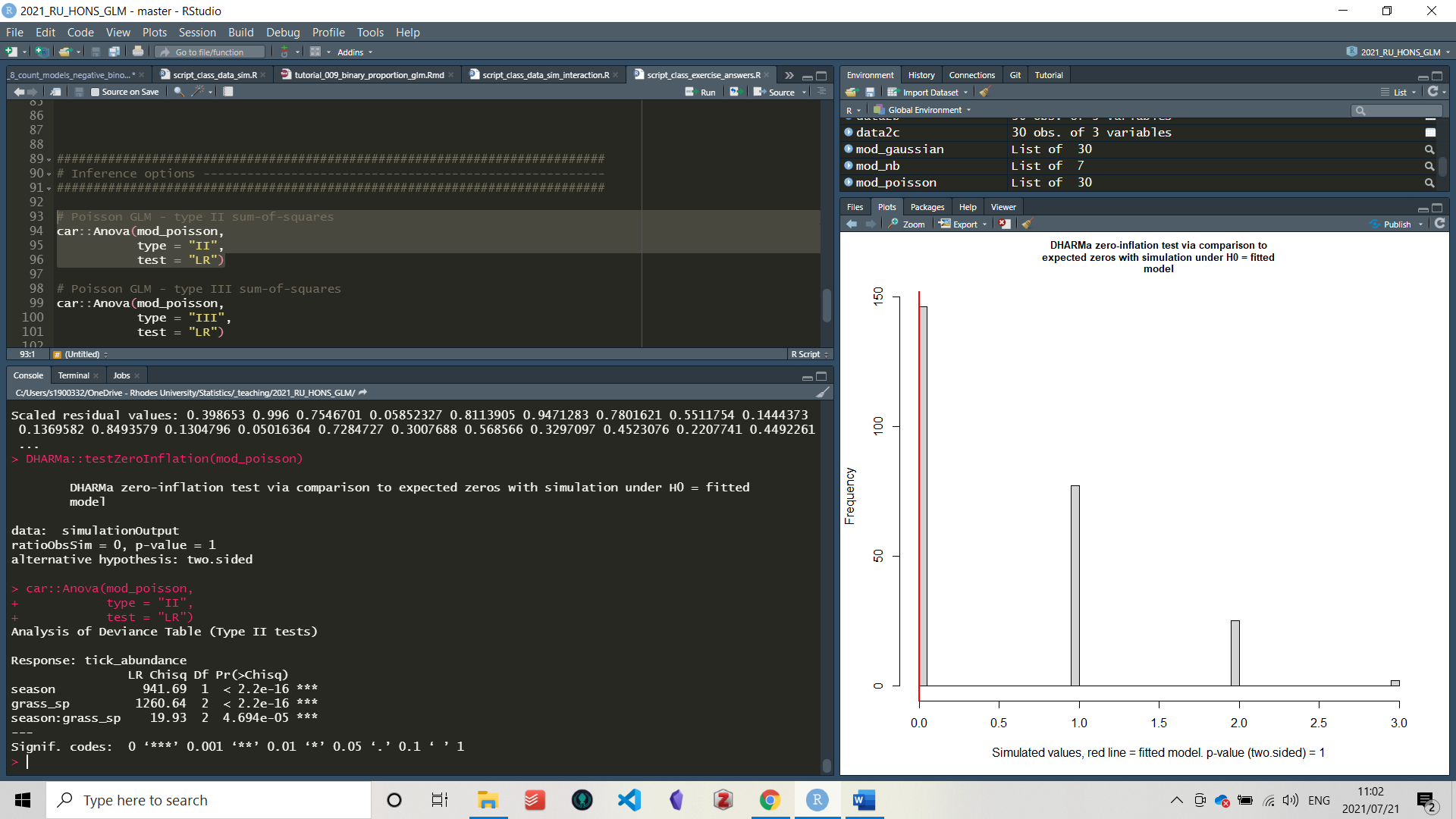
* 1. Test for parameter significance

# Poisson GLM - type II sum-of-squares

car::Anova(mod\_poisson,

type = "II",

test = "LR")

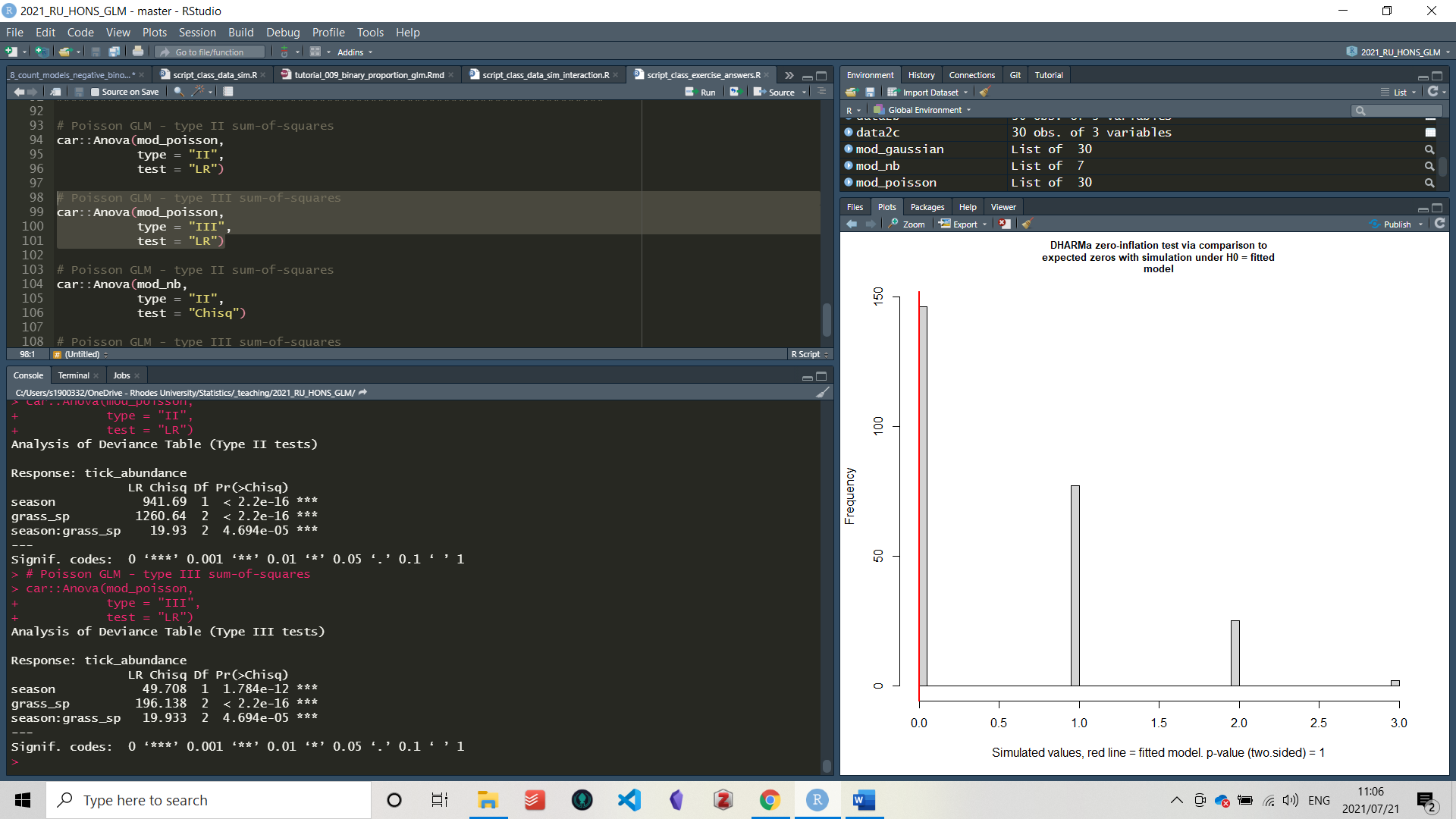


# Poisson GLM - type III sum-of-squares

car::Anova(mod\_poisson,

type = "III",

test = "LR")



1. **Negative binomial GLM**
   1. Fit the model

# Fit model

mod\_nb <- glmmTMB::glmmTMB(tick\_abundance ~ season \* grass\_sp,

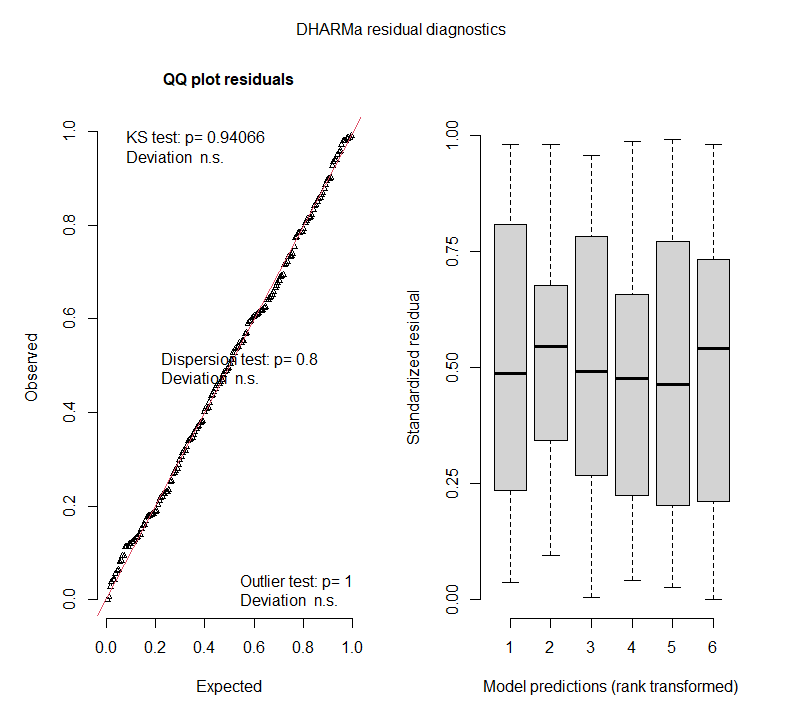
data = data,

family = "nbinom2")

* 1. Check residuals

# Check residuals

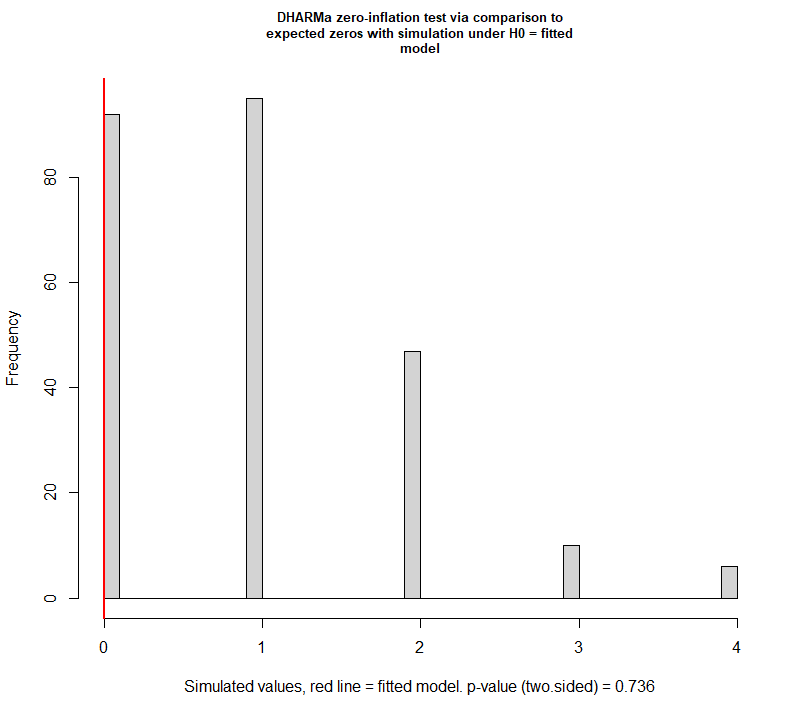
DHARMa::simulateResiduals(mod\_nb, plot = TRUE)



* 1. Test for zero inflation

# Test for zero inflation

DHARMa::testZeroInflation(mod\_nb)



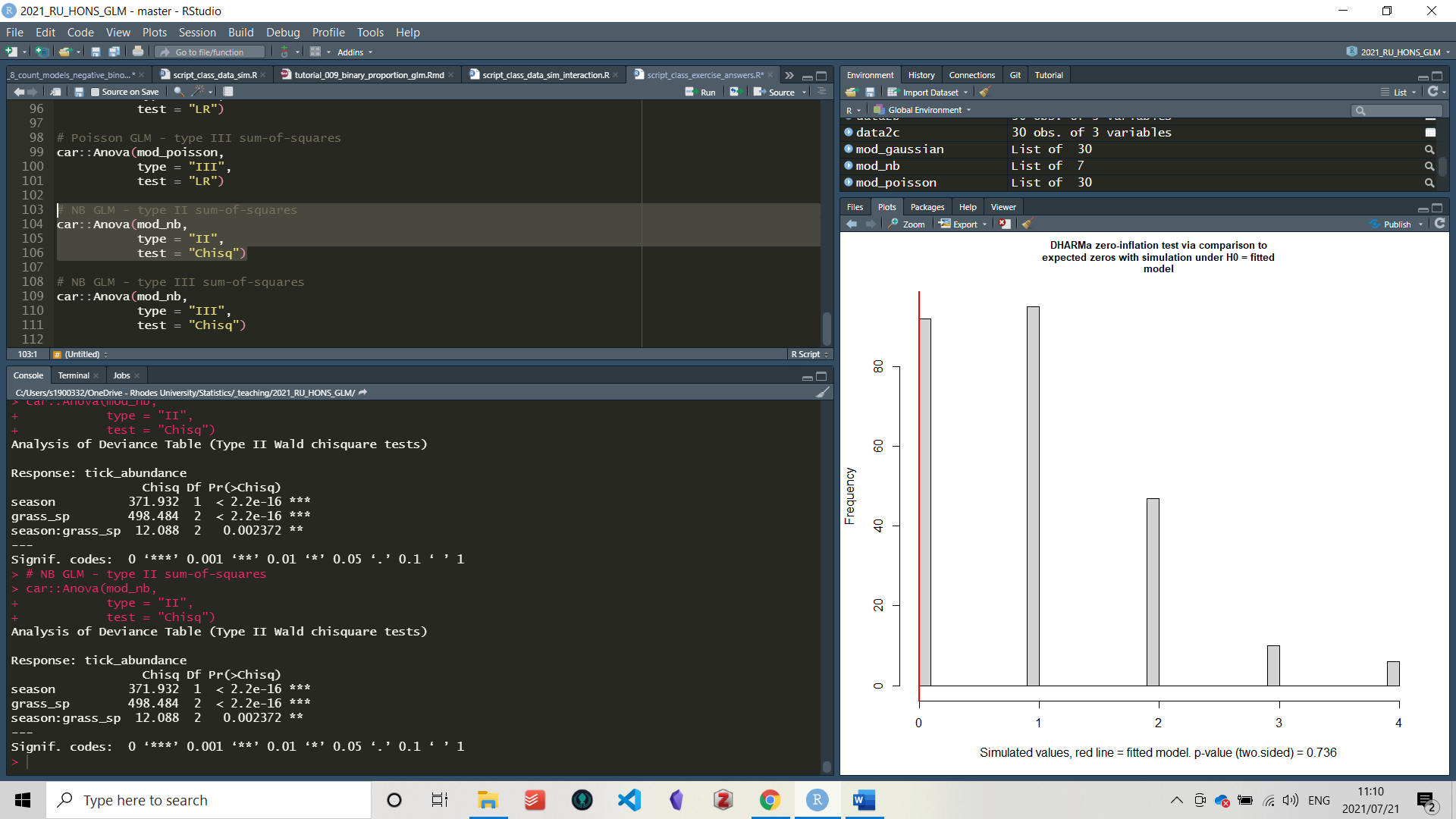
* 1. Test parameter significance

# Negative binomial GLM - type II sum-of-squares

car::Anova(mod\_nb,

type = "II",

test = "Chisq")



# Negative binomial GLM - type III sum-of-squares

car::Anova(mod\_nb,

type = "III",

test = "Chisq")

