Variance in Condition vs Nest Size Instar As Number

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AIC Values of all possible models with instar included and sample size as weight

Rows removed with 0 or fewer data points data points

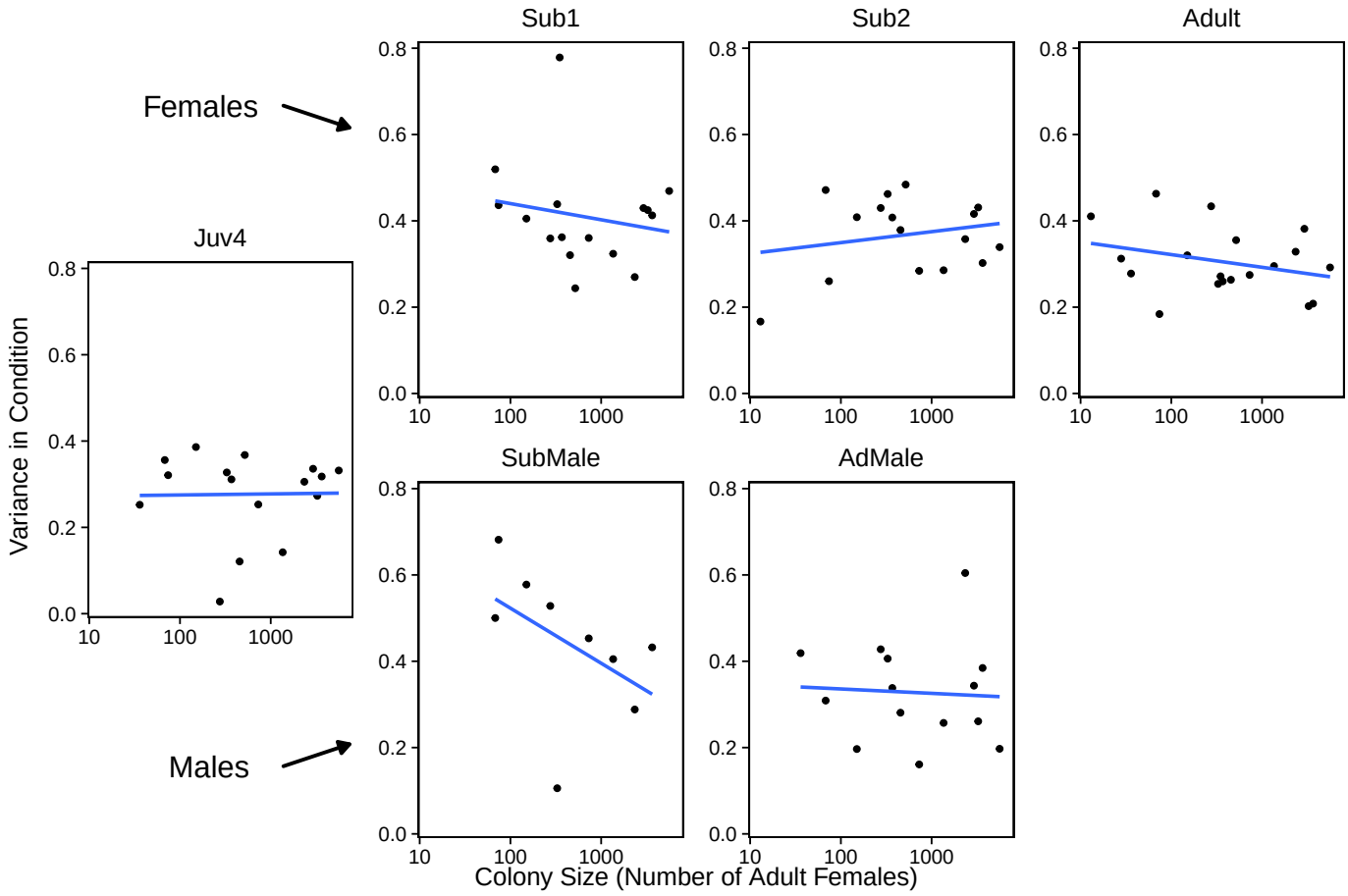
[1] "Using a standardized sample size as weight in model"

AIC_Diff	AIC	model	num.predictors
0	-157.3	relativeVar ~ InstarSex:InstarNumber + InstarNumber + InstarSex + (1|NestID)	6
1.14	-156.2	relativeVar ~ logCtFm + InstarSex:InstarNumber + InstarNumber + InstarSex + (1|NestID)	7
1.31	-156	relativeVar ~ logCtFm:InstarNumber + InstarSex:InstarNumber + InstarNumber + InstarSex + (1|NestID)	7
3.07	-154.2	relativeVar ~ logCtFm + logCtFm:InstarNumber + InstarSex:InstarNumber + InstarNumber + InstarSex + (1|NestID)	8
3.12	-154.2	relativeVar ~ logCtFm + InstarSex:InstarNumber + InstarSex:logCtFm + InstarNumber + InstarSex + (1|NestID)	8
3.25	-154.1	relativeVar ~ logCtFm:InstarNumber:InstarSex + logCtFm:InstarNumber + InstarSex:InstarNumber + InstarNumber + InstarSex + (1|NestID)	8
3.28	-154	relativeVar ~ logCtFm:InstarNumber + InstarSex:InstarNumber + InstarSex:logCtFm + InstarNumber + InstarSex + (1|NestID)	8
3.53	-153.8	relativeVar ~ logCtFm + InstarNumber + InstarSex + (1|NestID)	6
3.7	-153.6	relativeVar ~ logCtFm:InstarNumber + InstarNumber + InstarSex + (1|NestID)	6
4.13	-153.2	relativeVar ~ logCtFm:InstarNumber:InstarSex + logCtFm:InstarNumber + InstarSex:InstarNumber + InstarSex:logCtFm + InstarNumber + InstarSex + (1|NestID)	9
4.43	-152.9	relativeVar ~ logCtFm:InstarNumber:InstarSex + logCtFm:InstarNumber + InstarSex:logCtFm + InstarNumber + InstarSex + (1|NestID)	8
5.03	-152.3	relativeVar ~ logCtFm + logCtFm:InstarNumber:InstarSex + logCtFm:InstarNumber + InstarSex:InstarNumber + InstarNumber + InstarSex + (1|NestID)	9
5.06	-152.2	relativeVar ~ logCtFm + logCtFm:InstarNumber + InstarSex:InstarNumber + InstarSex:logCtFm + InstarNumber + InstarSex + (1|NestID)	9
5.38	-151.9	relativeVar ~ logCtFm + InstarSex:logCtFm + InstarNumber + InstarSex + (1|NestID)	7
5.48	-151.8	relativeVar ~ logCtFm + logCtFm:InstarNumber + InstarNumber + InstarSex + (1|NestID)	7
5.53	-151.8	relativeVar ~ logCtFm:InstarNumber + InstarSex:logCtFm + InstarNumber + InstarSex + (1|NestID)	7
5.64	-151.7	relativeVar ~ logCtFm:InstarNumber:InstarSex + logCtFm:InstarNumber + InstarNumber + InstarSex + (1|NestID)	7
5.78	-151.5	relativeVar ~ logCtFm + logCtFm:InstarNumber:InstarSex + logCtFm:InstarNumber + InstarSex:InstarNumber + InstarSex:logCtFm + InstarNumber + InstarSex + (1|NestID)	10
6.24	-151.1	relativeVar ~ logCtFm + logCtFm:InstarNumber:InstarSex + logCtFm:InstarNumber + InstarSex:logCtFm + InstarNumber + InstarSex + (1|NestID)	9
7.33	-150	relativeVar ~ logCtFm + logCtFm:InstarNumber + InstarSex:logCtFm + InstarNumber + InstarSex + (1|NestID)	8
7.41	-149.9	relativeVar ~ logCtFm + logCtFm:InstarNumber:InstarSex + logCtFm:InstarNumber + InstarNumber + InstarSex + (1|NestID)	8

Graph

note: blue line just lm model

`Note: If line on graph is blue R could not plot the lmer, plotting a simple lm instead`



Statistics using model with the almost lowest AIC as full model

Full Model: relativeVar ~ InstarSex:InstarNumber + InstarNumber + InstarSex + logCtFm + (1 | NestID)

Table 2: Anova of full model alone

	Sum Sq	Mean Sq	NumDF	DenDF	F.value	Pr(>F)
InstarNumber	0.531	0.531	1	75.449	5.800	0.018
InstarSex	0.412	0.412	1	75.050	4.492	0.037
logCtFm	0.084	0.084	1	21.946	0.917	0.349
InstarNumber:InstarSex	0.414	0.414	1	75.025	4.515	0.037

Testing Individual Variables by preforming an Anova of full vs reduced model)

Table 3: Testing Instar Number against full model. - $p < 0.05$ SIGNIFICANT *

	Df	AIC	BIC	logLik	deviance	Chisq	Chi Df	Pr(>Chisq)
..1	5	-153.929	-141.430	81.965	-163.929			
object	7	-156.175	-138.677	85.088	-170.175	6.246	2	0.044

Reduced Model: relativeVar = logCtFm + InstarSex + (1 | NestID)

Table 4: Testing Sex against full model. - NOT significant

	Df	AIC	BIC	logLik	deviance	Chisq	Chi Df	Pr(>Chisq)
..1	5	-155.785	-143.286	82.892	-165.785			
object	7	-156.175	-138.677	85.088	-170.175	4.391	2	0.111

Reduced Model: relativeVar = logCtFm + InstarNumber + (1 | NestID)

Table 5: Testing NestSize against full model. - NOT significant

	Df	AIC	BIC	logLik	deviance	Chisq	Chi Df	Pr(>Chisq)
..1	6	-157.311	-142.312	84.655	-169.311			
object	7	-156.175	-138.677	85.088	-170.175	0.865	1	0.352

Reduced Model: relativeVar = InstarNumber + InstarSex + InstarNumber:InstarSex + (1 | NestID)

Note: See next page for graph

Graph of condition variance against instar