Individual Condition vs Nest Size with sex and instar as numeric value

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Contents

AIC Values of all possible models with instar always included

note: InstarNumber is numeric

AIC_Diff	AIC	model	num.predictors
0	-2084	condResiduals ~ logCtFm + InstarSex:logCtFm + InstarNumber + InstarSex + (1|NestID)	7
0.19	-2084	condResiduals ~ logCtFm + InstarNumber + InstarSex + (1|NestID)	6
0.59	-2083	condResiduals ~ logCtFm + logCtFm:InstarNumber:InstarSex + logCtFm:InstarNumber + InstarNumber + InstarSex + (1|NestID)	8
0.74	-2083	condResiduals ~ logCtFm + logCtFm:InstarNumber + InstarSex:logCtFm + InstarNumber + InstarSex + (1|NestID)	8
0.98	-2083	condResiduals ~ logCtFm + logCtFm:InstarNumber + InstarNumber + InstarSex + (1|NestID)	7
1.75	-2082	condResiduals ~ logCtFm + InstarSex:InstarNumber + InstarSex:logCtFm + InstarNumber + InstarSex + (1|NestID)	8
2.05	-2082	condResiduals ~ logCtFm + InstarSex:InstarNumber + InstarNumber + InstarSex + (1|NestID)	7
2.47	-2082	condResiduals ~ logCtFm + logCtFm:InstarNumber + InstarSex:InstarNumber + InstarSex:logCtFm + InstarNumber + InstarSex + (1|NestID)	9
2.57	-2081	condResiduals ~ logCtFm + logCtFm:InstarNumber:InstarSex + logCtFm:InstarNumber + InstarSex:logCtFm + InstarNumber + InstarSex + (1|NestID)	9
2.59	-2081	condResiduals ~ logCtFm + logCtFm:InstarNumber:InstarSex + logCtFm:InstarNumber + InstarSex:InstarNumber + InstarNumber + InstarSex + (1|NestID)	9
2.83	-2081	condResiduals ~ logCtFm + logCtFm:InstarNumber + InstarSex:InstarNumber + InstarNumber + InstarSex + (1|NestID)	8
3.6	-2080	condResiduals ~ logCtFm:InstarNumber:InstarSex + logCtFm:InstarNumber + InstarNumber + InstarSex + (1|NestID)	7
3.63	-2080	condResiduals ~ logCtFm:InstarNumber + InstarNumber + InstarSex + (1|NestID)	6
3.79	-2080	condResiduals ~ logCtFm:InstarNumber + InstarSex:logCtFm + InstarNumber + InstarSex + (1|NestID)	7
4.31	-2080	condResiduals ~ logCtFm + logCtFm:InstarNumber:InstarSex + logCtFm:InstarNumber + InstarSex:InstarNumber + InstarSex:logCtFm + InstarNumber + InstarSex + (1|NestID)	10

AIC_Diff	AIC	model	num.predictors
4.7	-2079	condResiduals ~ InstarSex:InstarNumber + InstarNumber + InstarSex + (1|NestID)	6
5.49	-2079	condResiduals ~ logCtFm:InstarNumber + InstarSex:InstarNumber + InstarNumber + InstarSex + (1|NestID)	7
5.54	-2079	condResiduals ~ logCtFm:InstarNumber + InstarSex:InstarNumber + InstarSex:logCtFm + InstarNumber + InstarSex + (1|NestID)	8
5.59	-2078	condResiduals ~ logCtFm:InstarNumber:InstarSex + logCtFm:InstarNumber + InstarSex:logCtFm + InstarNumber + InstarSex + (1|NestID)	8
5.6	-2078	condResiduals ~ logCtFm:InstarNumber:InstarSex + logCtFm:InstarNumber + InstarSex:InstarNumber + InstarNumber + InstarSex + (1|NestID)	8
7.5	-2077	condResiduals ~ logCtFm:InstarNumber:InstarSex + logCtFm:InstarNumber + InstarSex:InstarNumber + InstarSex:logCtFm + InstarNumber + InstarSex + (1|NestID)	9

Graph with lowest AIC model superimposed

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

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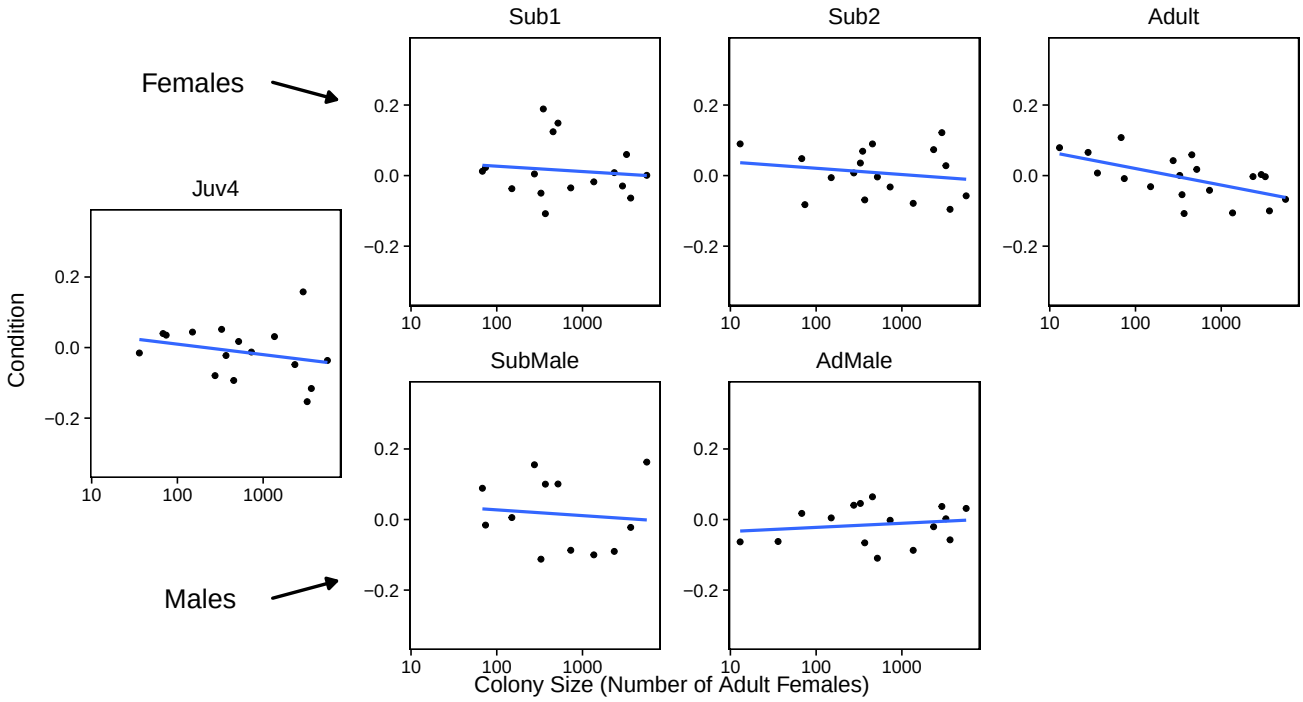

Statistics using model with lowest AIC

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

Anova of full model alone

	Sum Sq	Mean Sq	NumDF	DenDF	F.value	Pr(>F)
logCtFm	0.023	0.023	1	30.975	2.114	0.156
InstarNumber	0.065	0.065	1	1,265.261	6.020	0.014
InstarSex	0.020	0.020	1	1,255.418	1.851	0.174
logCtFm:InstarSex	0.024	0.024	1	1,254.280	2.195	0.139

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

Testing Interaction Term nest size * sex against full model. - NOT significant

	Df	AIC	BIC	logLik	deviance	Chisq	Chi Df	Pr(>Chisq)
..1	6	-2,083.870	-2,053.003	1,047.935	-2,095.870			
object	7	-2,084.063	-2,048.052	1,049.032	-2,098.063	2.194	1	0.139

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

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

	Df	AIC	BIC	logLik	deviance	Chisq	Chi Df	Pr(>Chisq)
..1	6	-2,080.069	-2,049.203	1,046.035	-2,092.069			
object	7	-2,084.063	-2,048.052	1,049.032	-2,098.063	5.994	1	0.014

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

Testing Instar Sex against full model. - NOT significant

	Df	AIC	BIC	logLik	deviance	Chisq	Chi Df	Pr(>Chisq)
..1	5	-2,085.730	-2,060.008	1,047.865	-2,095.730			
object	7	-2,084.063	-2,048.052	1,049.032	-2,098.063	2.333	2	0.311

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

Testing Nest Size against full model. - $p < 0.05$ SIGNIFICANT *

	Df	AIC	BIC	logLik	deviance	Chisq	Chi Df	Pr(>Chisq)
..1	5	-2,081.199	-2,055.477	1,045.599	-2,091.199			
object	7	-2,084.063	-2,048.052	1,049.032	-2,098.063	6.864	2	0.032

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