

Individual Condition vs Nest Size

Ruth Sharpe

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AIC Values of all possible models with instar always included

note: InstarNumber is numeric

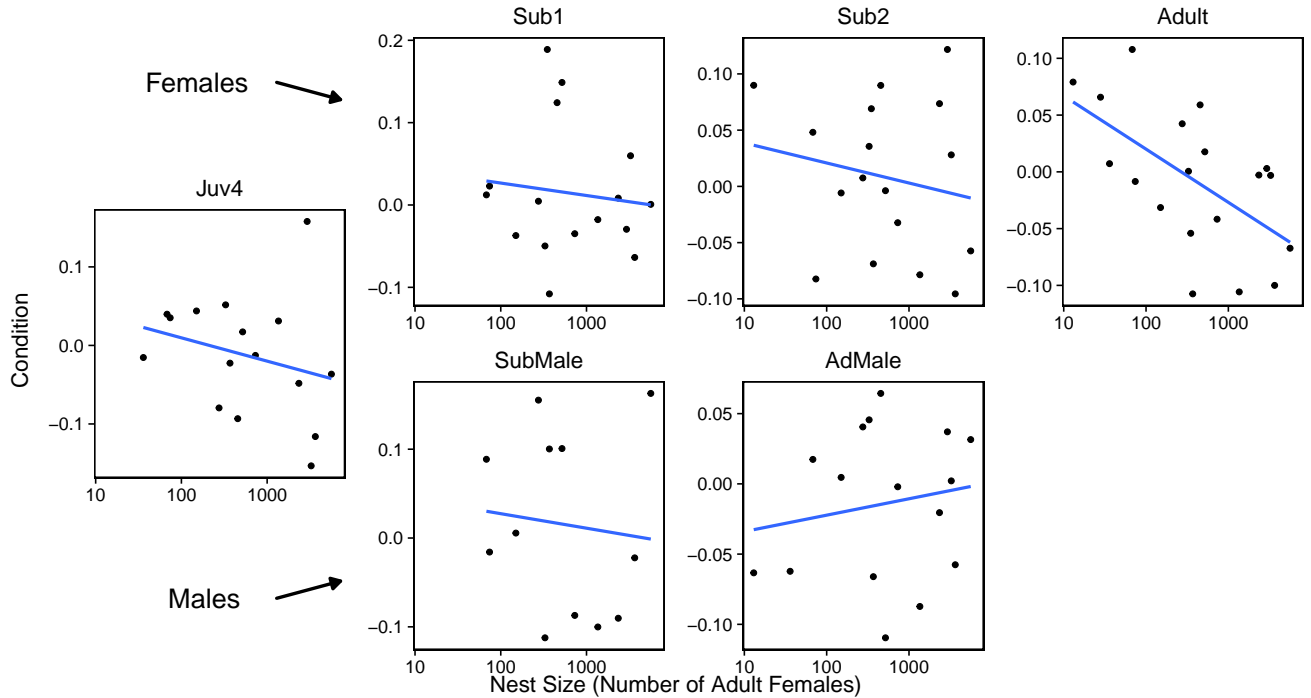
AIC_Diff	AIC	model	num.predictors
0	-2084	condResiduals ~ logCtFm + InstarSex:logCtFm + InstarNumber + InstarSex + (1 NestID)	7
0.19	-2084	condResiduals ~ logCtFm + InstarNumber + InstarSex + (1 NestID)	6
0.74	-2083	condResiduals ~ logCtFm + logCtFm:InstarNumber + InstarSex:logCtFm + InstarNumber + InstarSex + (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
2.83	-2081	condResiduals ~ logCtFm + logCtFm:InstarNumber + InstarSex:InstarNumber + InstarNumber + InstarSex + (1 NestID)	8
3.63	-2080	condResiduals ~ logCtFm:InstarNumber + InstarNumber + InstarSex + (1 NestID)	6
3.79	-2080	condResiduals ~ logCtFm:InstarNumber + InstarSex:logCtFm + InstarNumber + InstarSex + (1 NestID)	7
4.7	-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

Graph with lowest AIC model superimposed

Model:

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condResiduals ~ logCtFm + InstarNumber + InstarSex + logCtFm:InstarSex + (1 | NestID)
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Note: If line on graph is blue R could not plot the lmer, plotting a simple lm instead



Statistics using model with lowest AIC

Anova of full model alone

-Model: $\text{condResiduals} \sim \log\text{CtFm} + \text{InstarNumber} + \text{InstarSex} + \log\text{CtFm}:\text{InstarSex} + (1 | \text{NestID})$

	Sum Sq	Mean Sq	NumDF	DenDF	F.value	Pr(>F)
logCtFm	0.0228085	0.0228085	1	30.97521	2.113799	0.1560346
InstarNumber	0.0649627	0.0649627	1	1265.26064	6.020480	0.0142749
InstarSex	0.0199703	0.0199703	1	1255.41834	1.850766	0.1739386
logCtFm:InstarSex	0.0236898	0.0236898	1	1254.27990	2.195469	0.1386682

—Testing Individual Variables, (Anova of full vs reduced model)—

Testing Interaction Term nest size * sex

-Full Model: $\text{condResiduals} \sim \log\text{CtFm} + \text{InstarNumber} + \text{InstarSex} + \log\text{CtFm}:\text{InstarSex} + (1 | \text{NestID})$

-Reduced Model: $\text{condResiduals} \sim \log\text{CtFm} + \text{InstarNumber} + \text{InstarSex} + (1 | \text{NestID})$

	Df	AIC	BIC	logLik	deviance	Chisq	Chi Df	Pr(>Chisq)
..1	6	-2083.870	-2053.003	1047.935	-2095.870	NA	NA	NA
object	7	-2084.063	-2048.052	1049.032	-2098.063	2.193567	1	0.1385881

Testing Instar Number

-Full Model: $\text{condResiduals} \sim \log\text{CtFm} + \text{InstarNumber} + \text{InstarSex} + \log\text{CtFm}:\text{InstarSex} + (1 | \text{NestID})$

-Reduced Model: $\text{condResiduals} \sim \log\text{CtFm} + \text{InstarSex} + \log\text{CtFm}:\text{InstarSex} + (1 | \text{NestID})$

	Df	AIC	BIC	logLik	deviance	Chisq	Chi Df	Pr(>Chisq)
..1	6	-2080.069	-2049.203	1046.035	-2092.069	NA	NA	NA
object	7	-2084.063	-2048.052	1049.032	-2098.063	5.993929	1	0.0143552

Testing Instar Sex

-Full Model: $\text{condResiduals} \sim \log\text{CtFm} + \text{InstarNumber} + \text{InstarSex} + \log\text{CtFm}:\text{InstarSex} + (1 \mid \text{NestID})$

-Reduced Model: $\text{condResiduals} \sim \log\text{CtFm} + \text{InstarNumber} + (1 \mid \text{NestID})$

	Df	AIC	BIC	logLik	deviance	Chisq	Chi Df	Pr(>Chisq)
..1	5	-2085.730	-2060.008	1047.865	-2095.730	NA	NA	NA
object	7	-2084.063	-2048.052	1049.032	-2098.063	2.332741	2	0.3114954

Testing Nest Size

-Full Model: $\text{condResiduals} \sim \log\text{CtFm} + \text{InstarNumber} + \text{InstarSex} + \log\text{CtFm}:\text{InstarSex} + (1 \mid \text{NestID})$

-Reduced Model: $\text{condResiduals} \sim \text{InstarNumber} + \text{InstarSex} + (1 \mid \text{NestID})$

	Df	AIC	BIC	logLik	deviance	Chisq	Chi Df	Pr(>Chisq)
..1	5	-2081.199	-2055.477	1045.599	-2091.199	NA	NA	NA
object	7	-2084.063	-2048.052	1049.032	-2098.063	6.864243	2	0.0323183