

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | Example | Type of Regression | R function / R function for mixed models |
| Continuous | Age, Quality of Life | linear | lm() |
| lmer(), glmmTMB() |
| Binary | Success yes/no | binary logistic | glm(family=binomial) |
| glmer(), glmmTMB() |
| Trials | 20 successes out of 30 trials | logistic | glm(cbind(trial,success), family=binomial) |
| glmer(), glmmTMB() |
| Count data | Number of usage, counts of events | Poisson | glm(family=poisson) |
| glmer(), glmmTMB() |
| Count data, with excess zeros | Number of usage, counts of events | negative binomial | glm.nb() |
| glmer.nb(), glmmTMB(family=nbinom1) |
| Count data with very many zeros (inflation) | see count data, but response is modelled as mixture of Bernoulli Poisson distribution | zero-inflated | zeroinfl() |
| glmmTMB(ziformula, family=poisson) |
| Count data with very many zeros | see count data, but Bernoulli probability governs whether response is zero or positive | hurdle | hurdle() |
| glmmTMB(family=truncated\_\*) |
| Proportion / Ratio (without zero and one) | Percentages, proportions | Beta | betareg() |
| glmmTMB(family=beta) |
| Ordinal | Likert scale, worse/ok/better | Ordinal, Proportional Odds | polr(), clm() |
| clmm(), mixor(), MCMCglmm() |
| Cumulative, multinomial | No natural order of categories, like red/green/blue | Cumulative link, multinomial | multinom(), clm(),bracl(), brmultinom() |
| clmm(), mixor(), MCMCglmm() |
| Continuous, right-skewed | Financial data, reaction times | Gamma | glm(family=Gamma) |
| glmer(), glmmTMB() |
| Proportion / Ratio (including zero and one) | Percentages, proportions | Beta-Binomial | BBreg(), betabin() |
| Continuous, but truncated or outliers |  | Truncated | censReg(), tobit(), vglm(tobit()) |
|  |  | Dirichlet |  |