As far as we know, there isn't a solid way to calculate percent variance explained for variables with a non-Gaussian distribution. The way that we handled this was to refit our non-Gaussian models (generalized linear mixed models) to general linear mixed models, then extract PVE for the last year of data collection. These new PVEs will be estimates. This is not a perfect solution but it will help us approximate PVE for these variables.

Table 1: Test for variance among families and populations

|  | **Danaus plexippus** | | **Liriomyza asclepiadis** | | **Labidomera clivicollis** | |
| --- | --- | --- | --- | --- | --- | --- |
| Group | Variance | PVE | Variance | PVE | Variance | PVE |
| Family | 0.000 | 0.000 | 0.276 | 2.727 | 0.000 | 0.000 |
| Population | 0.000 | 0.000 | 0.129 | 1.280 | 0.000 | 0.299 |
| Block | 0.019 | 1.462 | 0.227 | 2.244 | 0.000 | 0.260 |
| Residual | 1.295 | 98.538 | 9.483 | 93.749 | 0.015 | 99.442 |

Table 2: Assess how much variance is explained by urbanization

Urbanization = Distance to the City Center

|  | **Danaus plexippus** | | **Liriomyza asclepiadis** | | **Labidomera clivicollis** | |
| --- | --- | --- | --- | --- | --- | --- |
| Group | Variance | PVE | Variance | PVE | Variance | PVE |
| Family | 0.000 | 0.000 | 0.276 | 2.727 | 0.000 | 0.000 |
| Population | 0.000 | 0.000 | 0.138 | 1.367 | 0.000 | 0.347 |
| Block | 0.019 | 1.461 | 0.227 | 2.245 | 0.000 | 0.260 |
| Residual | 1.295 | 98.539 | 9.483 | 93.661 | 0.015 | 99.393 |

Table 3: Assess how much variance is explained by urbanization

Urbanization = Urbanization Score

|  | **Danaus plexippus** | | **Liriomyza asclepiadis** | | **Labidomera clivicollis** | |
| --- | --- | --- | --- | --- | --- | --- |
| Group | Variance | PVE | Variance | PVE | Variance | PVE |
| Family | 0.000 | 0.000 | 0.276 | 2.727 | 0.000 | 0.000 |
| Population | 0.000 | 0.000 | 0.132 | 1.306 | 0.000 | 0.326 |
| Block | 0.020 | 1.487 | 0.231 | 2.278 | 0.000 | 0.244 |
| Residual | 1.294 | 98.513 | 9.483 | 93.689 | 0.015 | 99.429 |