| Variable | Predictor | χ2 | p |
| --- | --- | --- | --- |
| Monarch butterfly: 2020 | Block | 3.536 | 0.316 |
| Subtransect | 0.001 | 0.981 |
| Urbanization Score | 0.427 | 0.514 |
| Subtransect x Urbanization Score | 0.002 | 0.964 |

Table 4: Quantify variance explained by transect

| Variable | Group | Variance | PVE | χ2 | df | p |
| --- | --- | --- | --- | --- | --- | --- |
| Monarch butterfly: 2020 | Family | NA | NA | 0 | 1 | 0.5 |
| Monarch butterfly: 2020 | Population | NA | NA | 0 | 1 | 0.5 |

Model: Monarch\_Quantity\_Observed ~ Block + (1 | Population) + (1 | Population:Fam\_uniq) + Transect\_ID + Urb\_score + Transect\_ID:Urb\_score

Urbanization = Urbanization Score

Table 3: Assess how much variance is explained by transect

| Variable | Predictor | χ2 | p |
| --- | --- | --- | --- |
| Monarch butterfly: 2020 | Block | 3.499 | 0.321 |
| Subtransect | 0.010 | 0.92 |
| Distance to City Center | 0.279 | 0.597 |
| Subtransect x Distance to City Center | 0.549 | 0.459 |

Table 2: Quantify variance explained by transect

| Variable | Group | Variance | PVE | χ2 | df | p |
| --- | --- | --- | --- | --- | --- | --- |
| Monarch butterfly: 2020 | Family | NA | NA | 0 | 1 | 0.5 |
| Monarch butterfly: 2020 | Population | NA | NA | 0 | 1 | 0.5 |

Model: Monarch\_Quantity\_Observed ~ Block + (1 | Population) + (1 | Population:Fam\_uniq) + Transect\_ID + City\_dist + Transect\_ID:City\_dist

Urbanization = Distance to the City Center

Table 1: Assess how much variance is explained by transect