Table 1: Assess how much variance is explained by transect

Urbanization = Distance to the City Center

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

| Variable | Group | Variance | PVE | Ï‡2 | df | p |
| --- | --- | --- | --- | --- | --- | --- |
| Monarch butterfly: 2021 | Family | NA | NA | 0 | 1 | 0.5 |
| Monarch butterfly: 2021 | Population | NA | NA | 0 | 1 | 0.5 |

Table 2: Quantify variance explained by transect

| Variable | Predictor | Ï‡2 | p |
| --- | --- | --- | --- |
| Monarch butterfly: 2021 | Block | 14.807 | **0.002\*\*** |
| Subtransect | 0.117 | 0.732 |
| Distance to City Center | 4.354 | **0.037\*** |
| Subtransect x Distance to City Center | 1.913 | 0.167 |

Table 3: Assess how much variance is explained by transect

Urbanization = Urbanization Score

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

| Variable | Group | Variance | PVE | Ï‡2 | df | p |
| --- | --- | --- | --- | --- | --- | --- |
| Monarch butterfly: 2021 | Family | 0.009 | 0.766 | 0.044 | 1 | 0.4175 |
| Monarch butterfly: 2021 | Population | 0.021 | 1.676 | 0.017 | 1 | 0.4485 |

Table 4: Quantify variance explained by transect

| Variable | Predictor | Ï‡2 | p |
| --- | --- | --- | --- |
| Monarch butterfly: 2021 | Block | 15.184 | **0.002\*\*** |
| Subtransect | 0.018 | 0.895 |
| Urbanization Score | 0.054 | 0.815 |
| Subtransect x Urbanization Score | 2.294 | 0.13 |