

ST 623 Project Presentation

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Research Question

What affects the inheritance of eye colors?

| P_Light | P_Hazel | P_Dark | G_Light | G_Hazel | G_Dark | Total | Light |
|---------|---------|--------|---------|---------|--------|-------|-------|
| 2 | 0 | 0 | 4 | 0 | 0 | 6 | 6 |
| 2 | 0 | 0 | 4 | 0 | 0 | 6 | 6 |
| 2 | 0 | 0 | 4 | 0 | 0 | 6 | 6 |
| 2 | 0 | 0 | 4 | 0 | 0 | 6 | 5 |
| 2 | 0 | 0 | 4 | 0 | 0 | 7 | 7 |
| 2 | 0 | 0 | 4 | 0 | 0 | 7 | 7 |

| P_Light | P_Hazel | P_Dark | G_Light | G_Hazel | G_Dark | Total | Light |
|---------|---------|--------|---------|---------|--------|-------|-------|
| 1 | 0 | 1 | 1 | 0 | 3 | 8 | 3 |
| 1 | 0 | 1 | 0 | 1 | 3 | 6 | 3 |
| 0 | 1 | 1 | 2 | 0 | 2 | 6 | 3 |
| 0 | 1 | 1 | 2 | 1 | 1 | 9 | 4 |
| 0 | 1 | 1 | 1 | 0 | 3 | 13 | 8 |
| 0 | 1 | 1 | 0 | 4 | 0 | 7 | 2 |

Summary of Conclusions

| P | light_freq_sober | light_prob | light_prob_lo | light_prob_hi |
|-----|------------------|------------|---------------|---------------|
| 002 | 0.244 | 0.244 | 0.135 | 0.382 |
| 011 | 0.486 | 0.486 | 0.326 | 0.648 |
| 020 | 0.600 | 0.600 | 0.351 | 0.817 |
| 101 | 0.544 | 0.544 | 0.463 | 0.622 |
| 110 | 0.733 | 0.733 | 0.659 | 0.800 |
| 200 | 0.944 | 0.944 | 0.910 | 0.969 |

| | Estimate | Std. Error | z value | Pr(> z) |
|-------------|----------|------------|---------|-----------|
| P002 | -1.128 | 0.3469 | -3.253 | 0.001141 |
| P011 | -0.05716 | 0.3382 | -0.169 | 0.8658 |
| P020 | 0.4055 | 0.527 | 0.7693 | 0.4417 |
| P101 | 0.1749 | 0.1645 | 1.064 | 0.2875 |
| P110 | 1.012 | 0.1846 | 5.479 | 4.281e-08 |
| P200 | 2.829 | 0.2854 | 9.91 | 3.754e-23 |

(Dispersion parameter for binomial family taken to be 1)

| | |
|--------------------|--------------------------------|
| Null deviance: | 389.9 on 78 degrees of freedom |
| Residual deviance: | 119.1 on 72 degrees of freedom |

Analysis

Table 5: Analysis of Deviance Table

| Resid. Df | Resid. Dev | Df | Deviance | Pr(>Chi) |
|-----------|------------|----|----------|----------|
| 72 | 119.1 | NA | NA | NA |
| 61 | 106.6 | 11 | 12.54 | 0.3241 |

Table 6: Analysis of Deviance Table

| Resid. Df | Resid. Dev | Df | Deviance | Pr(>Chi) |
|-----------|------------|----|----------|-----------|
| 66 | 172.1 | NA | NA | NA |
| 61 | 106.6 | 5 | 65.5 | 8.824e-13 |

| Model P | Model G | Model PG |
|---------|---------|----------|
| 250.5 | 315.4 | 259.9 |



