**Quantitative analysis of eye color genotype expression using machine learning techniques**

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Variables:

Using the Personal Genome Project (PGP) survey data we will perform a study to find association between eye color phenotype and the tiled genome. We will take a quantitative approach to eye color and convert the categorical eye color responses into hue values and RGB values. We will then run machine learning algorithms to compare the values with the sequenced genomes provided by the PGP.

Sample Population:

The PGP survey results yielded an overlap of 80 patients with the tiled genome set.

Interval scale measurement

Quantitative Eye Color:

Referring to the study conducted by ….

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Eye Color/RGB/Hue Value

1. (38, 42, 46)/(210, 10%, 16%)

2. (67, 69, 72)/(216, 4%, 27%)

3. (47, 48, 53)/(230, 6%, 20%)

4. (49, 51, 59)/(228, 9%, 21%)

5. (68, 70, 69)/(150, 1%, 27%)

6. (48, 48, 48)/(0, 0%, 19%)

7. (55, 57, 60)/(216, 4%, 23%)

8. (59, 60, 58)/(90, 2%, 23%)

9. (57, 53, 46)/(38, 11%, 20%)

10. (88, 86, 77)/(49, 7%, 32%)

11. (62, 59, 51)/(44, 10%, 22%)

12. (62, 59, 54)/(38, 7%, 23%)

13. (71, 69, 56)/(52, 12%, 25%)

14. (62, 45, 26)/(32, 41%, 17%)

15. (52, 38, 23)/(31, 39%, 15%)

16. (52, 36, 21)/(29, 42%, 14%)

17. (59, 36, 22)/(23, 46%, 16%)

18. (49, 25, 13)/(20, 58%, 12%)

19. (51, 27, 16)/(19, 52%, 13%)

20. (44, 25, 14)/(22, 52%, 11%)

21. (37, 22, 14)/(21, 45%, 10%)

22. (31, 20, 14)/(21, 38%, 9%)

23. (24, 13, 9)/(16, 45%, 6%)

24. (27, 19, 15)/(20, 29%, 8%)

Estimations of Population Size: 300,000,000

Margin of Error: 5%

Confidence Level: 90%

Standard Deviation: unknown (0.5 approximation)

( (1.645)^2 \* 0.5(0.5) ) / (0.05)^2

= 270.6

=271 Participants