

Q1. What is the mean father's age?

28.9

Q2. What is the mean father's age for low birthweight babies?

24.83

Q3. Is the father's age normally distributed? Justify your answer.

No, sig value is less than 0.05 (0.039) ,moderate positive skewed with skewness of 0.51

Q4. If you apply the log transformation to the father's age, what is the mean score of the transformed variable?

1.45

Q5. Is the above mean score a good representation of the real value? Justify your answer.

No, we can't say that value 1.45 is hard to be believed as the mean of the father's age, transformation is used to present the values -corresponding to the real values- as normally distributed.

Q6. Is the new variable (log transform of father's age) normally distributed? Justify your answer.

Sig. value is 0.129 with skewness value 0.139 ; which is way better test values than the real values' test values

Q7. Is the variable "years father was in education" normally distributed?

No , it is negative skewed dist. with Sig. value is <0.001 with skewness value -0.384

Q8. What is the mean score for the variable "years father was in education" after you apply the Box-Cox transformation?

13.71

Q9. Is this new variable normally distributed?

No, it is negative skewed dist. still with Sig. value is <0.001 with skewness value -0.267 which is slightly less skewness than the real values

Q10. What is the mean score for this new variable (B-C transformed fathers' years in education) for mothers aged under 35?

13.55

Q11. Justify the above choice in terms of the distribution of data and the nature of the test.

After replacing Fage with its log transformation, both variables are normally distributed, the r coefficient is 0.18 which indicate negligible positive relation.

Q12. What is the direction of that relationship?

Positive

Q13. What is the form of that relationship?

Linear

Q14. What is the degree of that relationship?

Weak (negligible)

Q15. What test would you use to investigate the relationship between smoking and birth weight?

- Point-Biserial correlation

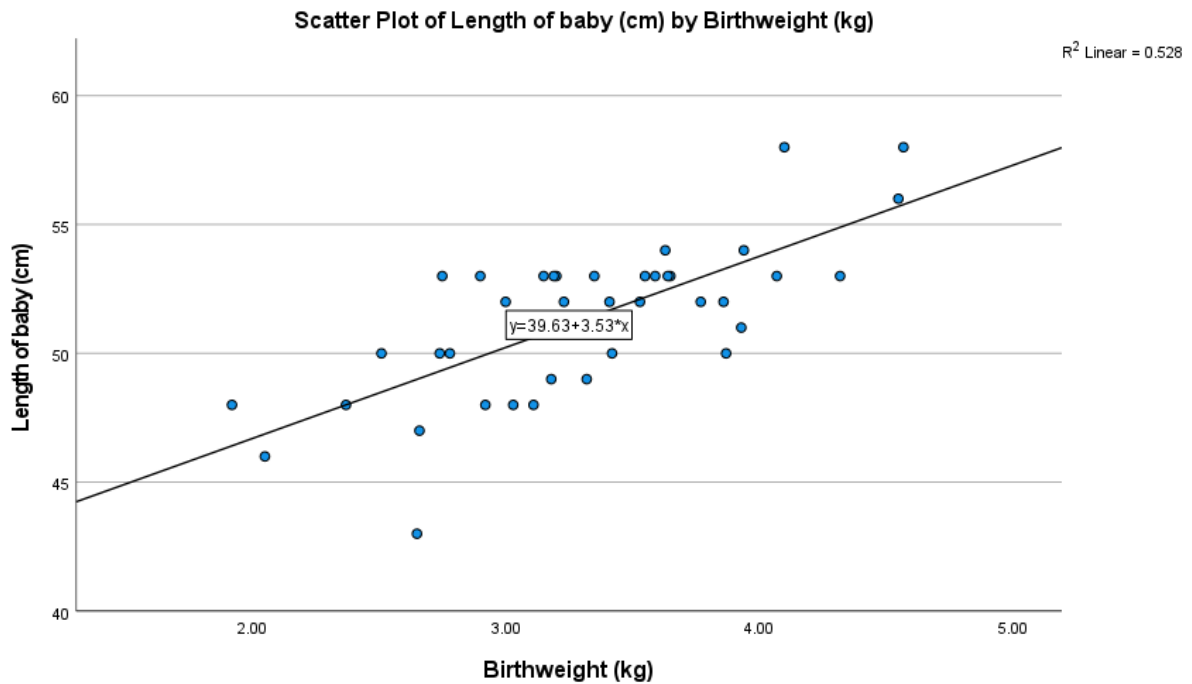
Q16. Report on the above results including information about direction/form/degree of the relationship.

Negative direction, nonlinear, weak degree

Q17. If you wanted to see the effect of the length of a baby on birthweight, what would your independent variable be?

length of a baby

Q18. In statistics, when creating a scatterplot, it is a common practice to put the independent variable on the x-axis and the dependent variable on the y-axis. With this in mind, create a scatterplot for the above case and provide the regression line.



Q19. Is the relationship between the length of baby and birthweight linear?

- Yes

Q20. Justify the above choice.

No need to try drawing nonlinear fit line on the graph and when looking to Pearson correlation coef.; it has a value of 0.727 which indicate a high positive correlation

Q21. Is there any evidence to suggest that the birth weight, length of baby, and head circumference are related?

- Yes

Q22. Justify the above choice.

Yes and no, because each 2 variables are positively correlated to each other but when using the partial correlation method we find the length of baby and head circ. is not that much related

Q23. Describe the above relationship in your own words and provide evidence for your claims.

We can find a high to moderate positive correlation coefficients between these 3 variables, but looking to the coef. of the partial correlation its not that high value which claims to say that there is no relation between the length, head circ and the weight of the baby