

Correlation Analysis

Dataset Background:

This dataset contains information on newborn babies and their mothers. The goal is to analyze whether there is a relationship between the weight of the baby and the age of the mother.

Dataset Glimpse:

ID	Length	Birthweight	Gestation	mage
1360	56	4.55	44	20
1016	53	4.32	40	19
462	58	4.1	41	35
1187	53	4.07	44	20
553	54	3.94	42	24
1636	51	3.93	38	29
820	52	3.77	40	24
1191	53	3.65	42	21
1081	54	3.63	38	18
822	50	3.42	38	20

Total Number of Rows: 42

Total Number of Columns: 5

Column Details:

- ID: Identifier to identify the baby.
- Length: Length of the baby (in cm).
- Birthweight: Weight of the baby (in kg).
- Gestation: Gestation period of the baby (in weeks).
- Mage: Age of the mother.

Main Dependent Variable: Birthweight (kg).

Using SPSS Software EViews, we have analysed the data:

Descriptive Statistics:

	LENGTH	BIRTHWEI...	GESTATION	MAGE
Mean	51.33333	3.312857	39.19048	25.54762
Median	52.00000	3.295000	39.50000	24.00000
Maximum	58.00000	4.570000	45.00000	41.00000
Minimum	43.00000	1.920000	33.00000	18.00000
Std. Dev.	2.935624	0.603895	2.643336	5.666342
Skewness	-0.238955	-0.053526	-0.392940	0.774429
Kurtosis	3.800335	2.894231	3.466492	2.957888
Jarque-Bera	1.520635	0.039632	1.461637	4.201286
Probability	0.467518	0.980379	0.481515	0.122378
Sum	2156.000	139.1400	1646.000	1073.000
Sum Sq. Dev.	353.3333	14.95226	286.4762	1316.405
Observations	42	42	42	42

Inferences:

- The variable length is slightly left skewed, ranging between 43 cm and 58 cm.
- The variable birthweight is very slightly left skewed, ranging between 1.92 kg and 4.57 kg.
- The variable gestation is slightly left skewed, ranging between 33 weeks and 45 weeks.
- The variable mage is right skewed ranging between 18 and 45.
- There is no missing data.

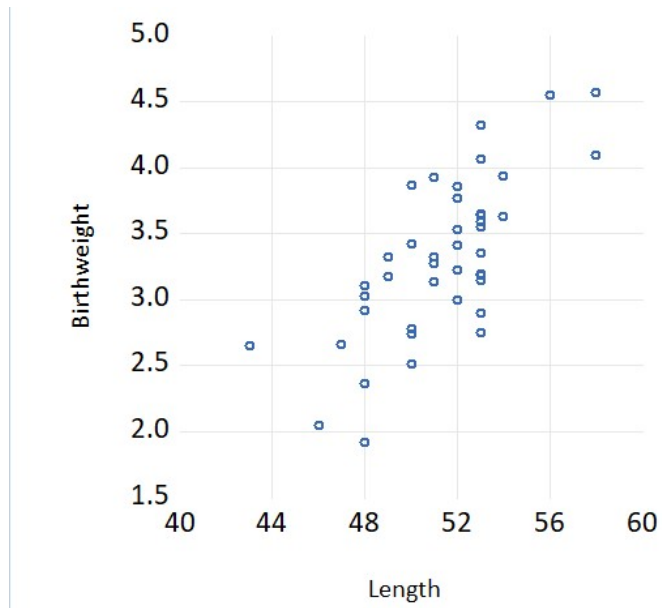
Correlation Analysis:

	LENGTH	BIRTHWEI...	GESTATION	MAGE
LENGTH	1.000000	0.726833	0.705111	0.075268
BIRT...	0.726833	1.000000	0.708303	0.000173
GEST...	0.705111	0.708303	1.000000	0.010778
MAGE	0.075268	0.000173	0.010778	1.000000

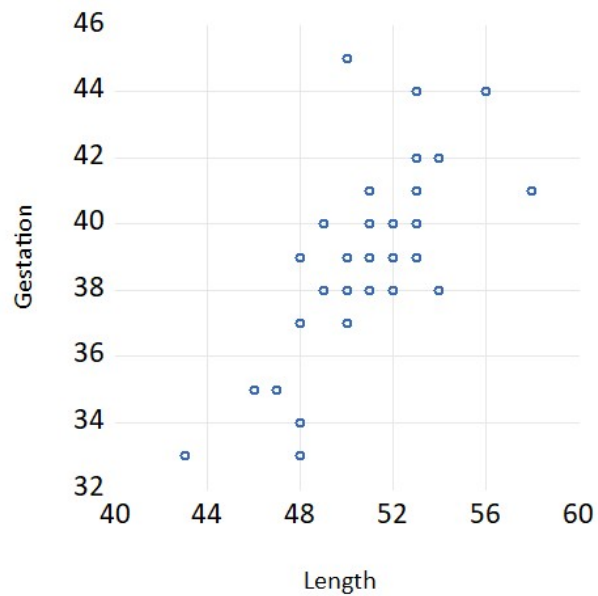
Inferences:

- Variables Length and Birthweight have a moderate positive linear correlation, having correlation coefficient 0.73.
- Variables Length and Gestation have a moderate positive linear correlation, having correlation coefficient 0.71.
- Variables Length and Mage have possibly no linear correlation, having correlation coefficient 0.08.
- Variables Birthweight and Gestation have moderate positive linear correlation, having correlation coefficient 0.71.
- Variables Birthweight and Mage have possibly no linear correlation, having correlation coefficient 0.0002.
- Variables Gestation and Mage have possibly no linear correlation, having correlation coefficient 0.01.

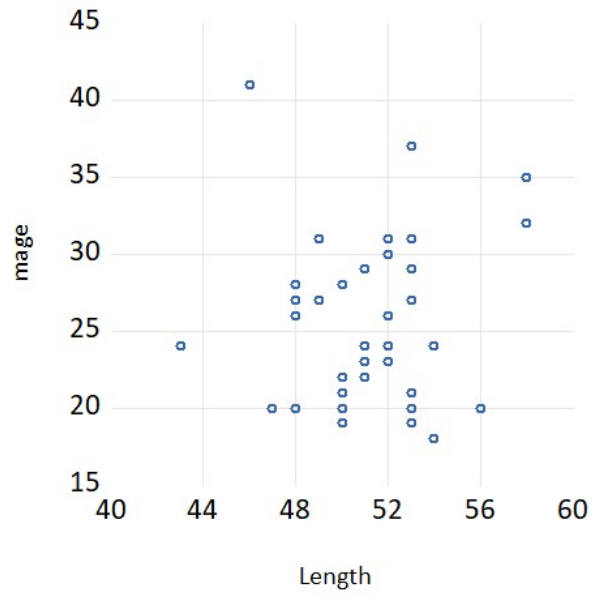
Scatter Plots:



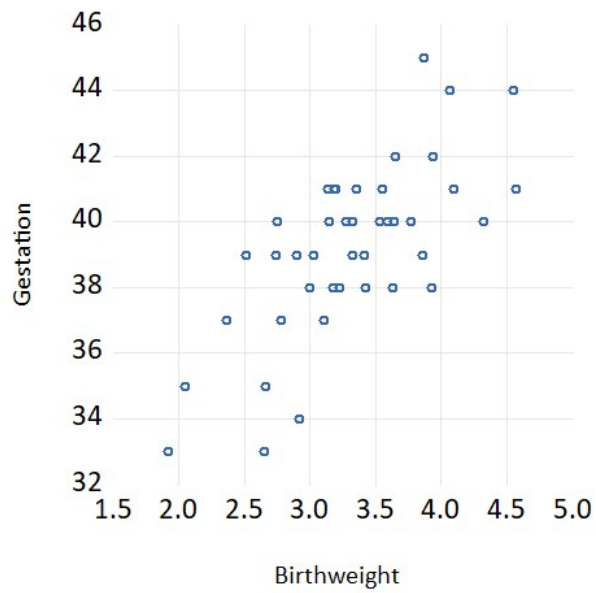
Inference: the variables length and birthweight have moderate positive linear correlation.



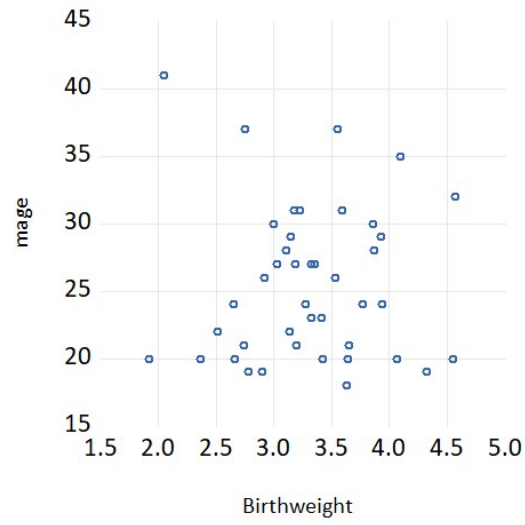
Inference: the variables length and gestation have moderate positive linear correlation.



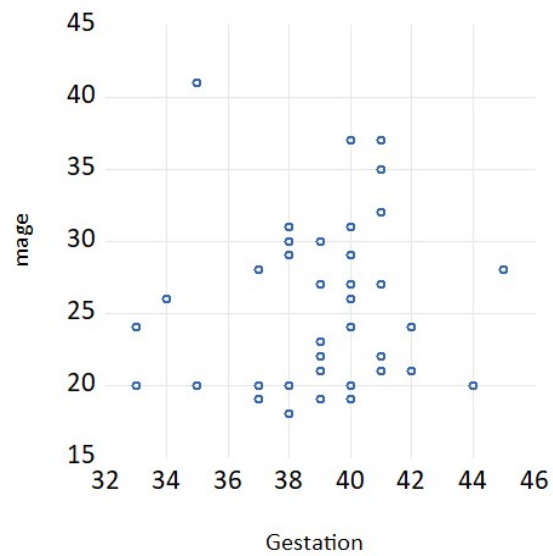
Inference: the variables length and mage have possibly linear no correlation.



Inference: the variables birthweight and gestation have moderate positive linear correlation.



Inference: the variables birthweight and mage have possibly no linear correlation.



Inference: the variables gestation and mage have possible no linear correlation.