PATAN MULTIPLE CAMPUS

Practical – 6 Correlation and Regression

Roll No.: 23
Program: BIT
Subject: Basic Statistics

Date: 2081-05-30
Semester: 2nd
Section: A

Question: The following data gives the age and blood pressure (BP) of 10 sports persons.

Name	A	B	C	D	E	F	G	H	I	J
Age	42	36	55	58	35	65	60	50	48	51
Blood pressure	98	93	110	85	105	108	82	102	118	99

(i) Calculate Karl Pearson's correlation coefficient and test its significance and find the limits of population correlation coefficient. Find coefficient of determination and interpret it.

(ii) Find the regression equation of child blood pressure on age. Estimate the blood pressure when age is 50.

Working Expressions:

Calculation:

i. Data

Name	A	B	C	D	E	F	G	H	I	J
Age	42	36	55	58	35	65	60	50	48	51
Blood pressure	98	93	110	85	105	108	82	102	118	99

ii. Syntax

i. CORRELATIONS
/VARIABLES=age bp
/PRINT=TWOTAIL NOSIG FULL
/MISSING=PAIRWISE.

ii. REGRESSION
/MISSING LISTWISE
/STATISTICS COEFF OUTS R ANOVA CHANGE
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT bp
/METHOD=ENTER age.

iii. Output

Correlations

		age	bp
age	Pearson Correlation	1	-.127
	Sig. (2-tailed)		.726
	N	10	10
bp	Pearson Correlation	-.127	1
	Sig. (2-tailed)	.726	
	N	10	10

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.127[a]	.016	-.107	11.736	.016	.132	1	8	.726

a. Predictors: (Constant), age

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18.124	1	18.124	.132	.726[b]
	Residual	1101.876	8	137.735		
	Total	1120.000	9			

a. Dependent Variable: bp

b. Predictors: (Constant), age

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	107.080	19.866		5.390	.001
	age	-.142	.390	-.127	-.363	.726

a. Dependent Variable: bp