

# **Chapter 4:**

## **Data Analysis and Results**



This chapter is intended to summarize and group the collected data. This presentation of data in a systematic manner is an essential part of analysis of research for the better understanding and to draw conclusions properly.

## 4.1 Descriptive Quantitative Findings

### 4.1.1 Participating Institutes & Students

The total number of pupil teachers, Bed Med students, name of the institutions, and number of male and female candidates are clearly shown in the following table.

S.No.	Name of the institute	Number of Students		
		Male	Female	Total
1.	Sambalpur University	13	7	20
2.	PMIASE, Sambalpur	10	5	15
Grand Total		23	12	35

**Table 4.1- List of participating Institutes and students**

For educational outcome of the students, investigator had taken the performance of the students in the first two semesters i.e. first and second semester examinations. We have conducted the intelligence test for the above said students by using the intelligence test tool and the outcome of this test is give below

The following table indicates it:-

S.No.	Name of the Student (Sambalpur University)	Intelligence Test		Educational Outcome		
		Test Score	Percentage	1 <sup>st</sup> Yr.	2 <sup>nd</sup> Yr.	Average Outcom
1.	Subharanjan Pradhan	37	92.5	82.6	83.5	83.05
2.	Ritu Mishra	38	95.0	84.5	86.5	85.5
3.	Archana Nag	33	82.5	83.0	81.7	82.35
4.	Priti Sona	34	85.0	80.1	78.3	79.2
5.	Rajat Kumar	34	85.0	80.7	84.5	82.6
6.	Aiswarya Bhatta	31	77.5	82.3	87.3	84.8
7.	M.P. Jyotiprakash	37	92.5	74.0	79.2	76.6
8.	Banirupa Pradhan	36	90.0	83.5	81.6	82.55
9.	Swagatika Sethi	35	87.5	74.8	75.5	75.15
10.	Popular Mahanta	34	85.0	82.0	78.0	80.0
11.	Sangam	34	85.0	75.4	74.7	75.05
12.	Tileswar Dora	34	85.0	72.3	78.5	75.4
13.	Abhijit Panda	36	90.0	82.3	86.4	84.35
14.	Suryashikha Mohanty	31	77.5	81.3	80.0	80.65
15.	Binaya Maharana	26	65.0	74.6	78.4	76.50
16.	Abinash Mahapatra	35	87.5	82.6	87.3	84.95
17.	Alok Sahoo	29	72.5	81.3	78.5	79.90
18.	Biswajit Mohanty	30	75.0	83.5	82.5	83.00
19.	Amitav Chandan	28	70.0	78.0	76.4	77.20
20.	Biswajit Baliarsingh	33	82.5	78.5	78.2	78.35

Table 4.1- List of participating students

S.No.	Name of the student (PMIASE, Sambalpur)	Intelligence Test		Educational outcome		
		Test Score	Percentage	1 <sup>st</sup> Yr.	2 <sup>nd</sup> Yr.	Average Outcome
1.	Sonal Pradhan	26	65.0	65.6	72.6	69.1
2.	Punam Sahoo	35	87.5	64.7	68.2	66.45
3.	Shruti Mishra	28	70.0	70.0	68.8	69.4
4.	Priyanshu Pratik	29	72.5	63.5	62.5	63.00
5.	Pankaj Parida	27	67.5	70.1	70.9	70.50
6.	Kumudini Sethi	32	80.0	70.1	70.1	70.10
7.	Biswa Rath	35	87.5	72.5	74.5	73.50
8.	Basudev Das	29	72.5	72.8	76.5	74.65
9.	Abinash Hota	27	67.5	66.2	73.8	70.00
10.	Bishnu Prasad Sahoo	26	65.0	68.0	74.0	71.00
11.	Sujata Parida	24	60.0	72.8	76.5	74.65
12.	Banambar Das	31	77.5	72.6	74.5	73.55
13.	Dillip Acharya	34	85.0	78.5	76.5	77.50
14.	Jitu Parida	29	72.5	76.5	75.5	76.00
15.	Huka Sahu	27	67.5	75.8	76.5	76.15

**Table 4.2- List of participating students**

### 4.1.2 Statistical Calculations

To study the relation between Intelligence and Educational Outcome, investigator had calculated the Pearson's Coefficient of Correlation of the two groups and then calculated the p-value to check the significance level.

Coefficient of correlation of students of Sambalpur University

Educational Outcome (X)	Intelligence (Y)	$X - M_x$	$Y - M_y$	$(X - M_x)^2$	$(Y - M_y)^2$	$(X - M_x)(Y - M_y)$
83.05	92.5	2.692	9.375	7.250	87.891	25.242
85.50	95.0	5.142	11.875	26.445	141.016	61.067
82.35	82.5	1.992	-0.625	3.970	0.391	-1.245
79.20	85.0	-1.157	1.875	1.340	3.516	-2.170
82.60	85.0	2.242	1.875	5.029	3.516	4.205
84.80	77.5	4.442	-5.625	19.736	31.641	-24.989
76.60	92.5	-3.758	9.375	14.119	87.891	-35.227
82.55	90.0	2.192	6.875	4.807	47.266	15.073
75.15	87.5	-5.207	4.375	27.118	19.141	-22.783
80.00	85.0	-0.358	1.875	0.128	3.516	-0.670
75.05	85.0	-5.308	1.875	28.170	3.516	-9.952
75.40	85.0	-4.957	1.875	24.577	3.516	-9.295
84.35	90.0	3.992	6.875	15.940	47.266	27.448
80.65	77.5	0.293	-5.625	0.086	31.641	-1.645
76.50	65.0	-3.858	-18.125	14.880	328.516	69.917
84.95	87.5	4.593	4.375	21.091	19.141	20.092
79.90	72.5	-0.457	-10.625	0.209	112.891	4.861
83.00	75.0	2.642	-8.125	6.983	66.016	-21.470
77.20	70.0	-3.157	-13.125	9.970	172.266	41.442
78.35	82.5	-2.008	-0.625	4.030	0.391	1.255
$\bar{X}=1607.15$	$\sum Y=1662.50$			$\sum(X - M_x)^2 =$	$\sum(Y - M_y)^2 =$	$\sum(X - M_x)(Y - M_y)$
$\sqrt{X}=80.385$	$M_Y=83.125$			$SS_x =$ 235.876	$SS_y =$ 1210.938	$= 141.156$

*R Calculation*

$$r = \frac{\sum((X - M_x)(Y - M_y))}{\sqrt{(\sum SS_x)(\sum SS_y)}}$$

$$r = 141.156 / \sqrt{(235.876)(1210.938)} = 0.2641$$

The value of R is 0.2641.

Although technically a positive correlation, the relationship between two variables is weak (*nb.* the nearer the value is to zero, the weaker the relationship).

The value of  $R^2$ , the coefficient of determination, is 0.0697

The P-Value is .26052. The result is *not* significant at  $p < .05$

We can say by this that null hypothesis fails over here and conclude that there is significant relationship between Educational Outcome and Intelligence.

Coefficient of correlation of students of PMIASE

Educational Outcome (X)	Intelligence (Y)	X - $M_x$	Y - $M_y$	(X - $M_x$ ) <sup>2</sup>	(Y - $M_y$ ) <sup>2</sup>	(X - $M_x$ )(Y - $M_y$ )
69.10	65.0	-2.603	-8.167	6.777	66.694	21.261
66.45	87.5	-5.253	14.333	27.598	205.444	-75.298
69.40	70.0	-2.303	-3.167	5.305	10.028	7.294
63.00	72.5	-8.703	-0.667	75.748	0.444	5.802
70.50	67.5	-1.203	-5.667	1.448	32.111	6.819
70.10	80.0	-1.603	6.833	2.571	46.694	-10.956
73.50	87.5	1.797	14.333	3.228	205.444	25.752
74.65	72.5	2.947	-0.667	8.683	0.444	-1.964
70.00	67.5	-1.703	-5.667	2.901	32.111	9.652
71.00	65.0	-0.703	-8.167	0.495	66.694	5.744
74.65	60.0	2.947	-13.167	8.683	173.361	-38.798
73.55	77.5	1.847	4.333	3.410	18.778	8.002
77.50	85.0	5.797	11.833	33.601	140.028	68.594
76.00	72.5	4.297	-0.667	18.461	0.444	-2.864
76.15	67.5	4.447	-5.667	19.773	32.111	-25.198
$\bar{X}=1075.75$	$\sum Y=1097.50$			$\sum(X - M_x)^2 =$	$\sum(Y - M_y)^2 =$	$\sum(X - M_x)(Y - M_y)$
$M_x=71.703$	$M_y=73.167$			$SS_x =$	$SS_y =$	$= 3.842$
				218.682	1030.833	

*R Calculation*

$$r = \frac{\sum((X - M_x)(Y - M_y))}{\sqrt{(\sum SS_x)(\sum SS_y)}}$$

$$r = 3.842 / \sqrt{(218.682)(1030.833)} = 0.0081$$

The value of R is 0.0081.

Although technically a positive correlation, the relationship between two variables is weak (*nb.* the nearer the value is to zero, the weaker the relationship).

The value of  $R^2$ , the coefficient of determination, is 0.0697

The P-Value is .977144. The result is *not* significant at  $p < .05$

We can say by this that null hypothesis fails over here and conclude that there is significant relationship between Educational Outcome and Intelligence.

## Findings:

With reference to Table, there is positive correlation between educational outcome and intelligence and the values are significant at **0.05 alpha level** i.e., Null Hypothesis is rejected. p-value is greater than critical value; hence, investigator concludes that there is relation between the learning outcome and intelligence of learners. And this difference is considered significant.

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