

Assignment 4

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## Assignment 4: New Jersey 2016 Graduation Rates

**Introduction**

Accountability in the delivery of a quality education is a recognized and necessary responsibility for teachers and administrators in the state of New Jersey. Students' graduation rates are one measure being used to determine if educators are meeting this responsibility. The dataset 2016GRADUATIONRATES, obtained from the State of New Jersey Department of Education, was used to evaluate the relationships between NJ 4-Year Adjusted Cohort Graduation rates for school type, school location, and cohort year. The independent variable, location, includes two levels: (a) Hudson, and (b) Essex counties. The independent variable, type, includes three levels: (a) Charter, (b) Vocational, and (c) Abbott schools. The independent variable, year, includes four levels, (a) 2016, (b) 2015, (c) 2014, and (d) 2013. The dependent variable was graduation rates. The researcher's hypothesis is that there is a positive correlation between the year of graduation, a school districts' locations in large urban areas and vocational schools exhibiting higher graduation rates. The null hypotheses: (a) there is no significant difference between the means of graduation rates of the years 2013 and 2016. The alternate hypothesis: (a) there is significant difference between the means of graduation rates of the years 2013 and 2016. The researcher expects for graduation rates to be larger in 2016 in vocational schools in Essex County. Therefore:

$$H_0: \mu_{2013} = \mu_{2016}$$

$$H_A: \mu_{2016} > \mu_{2013}$$

To better understand the phenomena, this researcher used a paired sample t-test to analyze a random sample of existing data from the State of New Jersey Department of Education on the adjusted graduation cohort rates for school year ending 2016.

### **Data Set**

This project used data from the set entitled 2016GRADUATIONRATES to run a paired sample t-test on variables within the set. The data set contains information on twenty-one NJ counties, in 2016 (N=102), with each case representing the High School graduation count per school. The data set contains 4 variables, including name of county, district, school and type of school. The statistics (Appendix A) was retrieved from the State of New Jersey Department of Education (NJDOE <http://www.nj.gov/education/data/grate/2016/>). The data was collected from 2013-2016. The researcher used random sampling.

### **Variables**

**Location.** The categorical variable, COUNTY, represents the locations for the collection of data used. Identifying the location data was gathered will provide a general over view of the demographics of population involved in relation to other New Jersey Counties. The information will be used to present descriptive data of frequency.

**Type.** The second categorical variable applied to this dataset is TYPE. Type identifies the category of school as identified by the state. Type levels included are Abbott, vocational, and charter.

**Cohort Year.** The quantifiable variable of COHORTYR is a continuous input variable that contains information of the year of graduation. This information provides a comparison of the results by type and location.

**Graduation Rates.** The continuous quantifiable variable, GRADRATES, was the dependent variable used for comparison of the independent variables, location, type, and cohort year.

#### Summary Statistics

Summary statistics for three variables under consideration in this study are as follow. With the N = 102 (see Table 1), with no missing values, the mean of 2013ADJUSTEDCOHORTGRADRATE is 84.41. The median is 89.58, and the mode is 100.00. 2013ADJUSTEDCOHORTGRADRATE has a standard deviation of 14.62 when rounded to the second decimal point pass zero. The maximum for the number of graduates is 100.00, and the minimum is 46.78. The 2013ADJUSTEDCOHORTGRADRATE results show a negatively skewed distribution of scores (see Figure 1). The mean (84.41) and the median (89.58) scores when compared show similar distribution. The data demonstrate that based on the reported measures of central tendency, there was a similarity between the distribution of graduates across all counties in 2013.

Table 1

*Descriptive Statistics of the 2013ADJUSTEDCOHORTGRADRATE of STUDENTS by Year(N=102)*

N	Mean	Median	Mode	Standard Deviation	Maximum	Minimum
102	84.41	89.58	100.00	14.62	100	53.22

With the N=102 and no missing values (see Table 2), the mean of 2014ADJUSTEDCOHORTGRADRATE is 85.60 when rounded to the second point pass zero. The median is 89.79, and the mode is 100.00. 2014ADJUSTEDCOHORTGRADRATE has a standard deviation of 14.267 when rounded to the second decimal point pass zero. The maximum for the number of graduates is 100.00, and the minimum 41,64. The 2014ADJUSTEDCOHORTGRADRATE results show a slight increase in the average graduation

Table 2

*Descriptive Statistics of the 2014ADJUSTEDCOHORTGRADRATE OF STUDENTS BY YEAR(N=102)*

Table 2	Mean	Median	Mode	Standard Deviation	Maximum	Minimum
102	85.60	89.79	100.00	14.27	100	41.64
N	Mean	Median	Mode	Standard Deviation	Maximum	Minimum
102	85.60	89.79	100.00	14.27	100	41.64

rates for counties.

With the N=102 (see Table 3) and no missing values, the mean of 2015ADJUSTEDCOHORTGRADRATE is 86.94 when rounded to the second point pass zero. The median is 89.94 and the mode is 100.00. 2015ADJUSTEDCOHORTGRADRATE has a standard deviation of 12.93 when rounded to the second point pass zero. The maximum number of graduates is 100.00, and the minimum was 35.69. When you look at the mean, it appears that there continues to be an overall increase in the average number of graduates.

Table 3

*Descriptive Statistics of the 2015ADJUSTEDCOHORTGRADRATE OF STUDENTS BY YEAR(N=102)*

N	Mean	Median	Mode	Standard Deviation	Maximum	Minimum
102	86.94	89.94	100.00	12.93	100	35.69

With the N=102 (see Table 4) and no missing values, the mean of 2016ADJUSTEDCOHORTGRADRATE is 88.13 when rounded to the second point pass zero. The median is 90.98 and the mode is 100.00. 2016ADJUSTEDCOHORTGRADRATE has a standard deviation of 11.60 when rounded to the second point pass zero. The maximum number of graduates is 100.00, and the minimum was 50.96. This means while the average number of students eligible for graduation remains constant from 2015ADJUSTEDCOHORTGRADRATE, more students graduated from 2016ADJUSTEDCOHORTGRADRATE.

Table 4

*Descriptive Statistics of the 2016ADJUSTEDCOHORTGRADRATE OF STUDENTS BY YEAR(N=102)*

N	Mean	Median	Mode	Standard Deviation	Maximum	Minimum
102	88.13	90.98	100.00	11.60	100	49.04

Measures of central tendency were computed to summarize the data for the 2016ADJUSTEDCOHORTGRADRATE data set (see Table 5). Measures of dispersion were computed to understand the variability of the scores for the 2016ADJUSTEDCOHORTGRADRATE data set. The following are the results of this analysis:  
 N=102, M= 88.13, SD= 11.60

Table 5  
*Statistics for Adjusted Cohort Graduation Rates Years 2013-2016*

		@2013Adjusted CohortGradRate	@2014Adjusted CohortGradRate	@2015AdjustedC ohortGradRate	@2016Adjusted CohortGradRate
N	Valid	102	102	102	102
	Missing	0	0	0	0
Mean		84.4114	85.6004	86.9429	88.1348
Median		89.5850	89.7900	89.9400	90.9750
Mode		100.00	100.00	100.00	100.00
Std. Deviation		14.62295	14.26616	12.92859	11.60172
Variance		213.831	203.523	167.149	134.600
Range		53.22	58.16	64.31	49.04
Minimum		46.78	41.84	35.69	50.96
Maximum		100.00	100.00	100.00	100.00
Percentiles	25	75.2325	77.8725	79.1600	80.8725
	50	89.5850	89.7900	89.9400	90.9750
	75	97.1400	97.6875	97.9650	98.3500

The researcher utilized stratified sampling of two similar New Jersey urban districts based on population size to determine correlation between the type, location, and year variables (see Table 6).

Table 6  
*Statistics*

		@2013AdjustedCohortGrad Rate	@2016AdjustedCohortGrad Rate
N	Valid	102	102
	Missing	0	0

A visual determination of central tendency for 2013ADJUSTEDCOHORTGRADRATE and 2016ADJUSTEDCOHORTGRADRATE identified the average for the set of data was negatively skewed suggesting outliers and extreme data values within the data set that affected the normal distribution of the data mean. Boxplots were used to further visually check for outliers and extreme values.

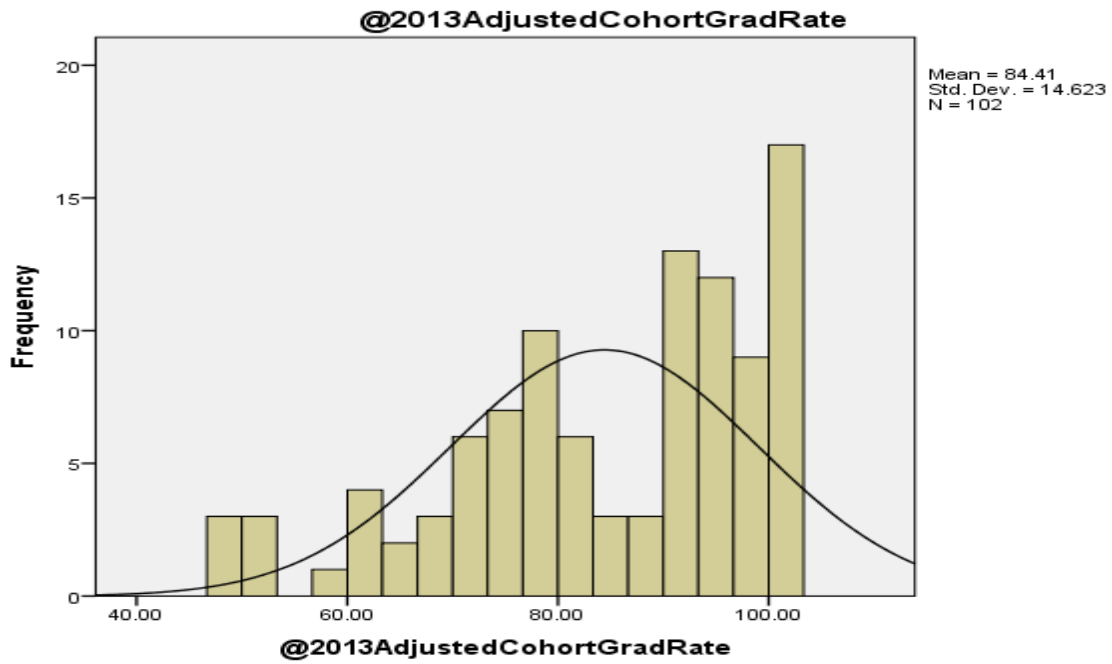


Figure 1. Histogram of 2013 Graduation Rates

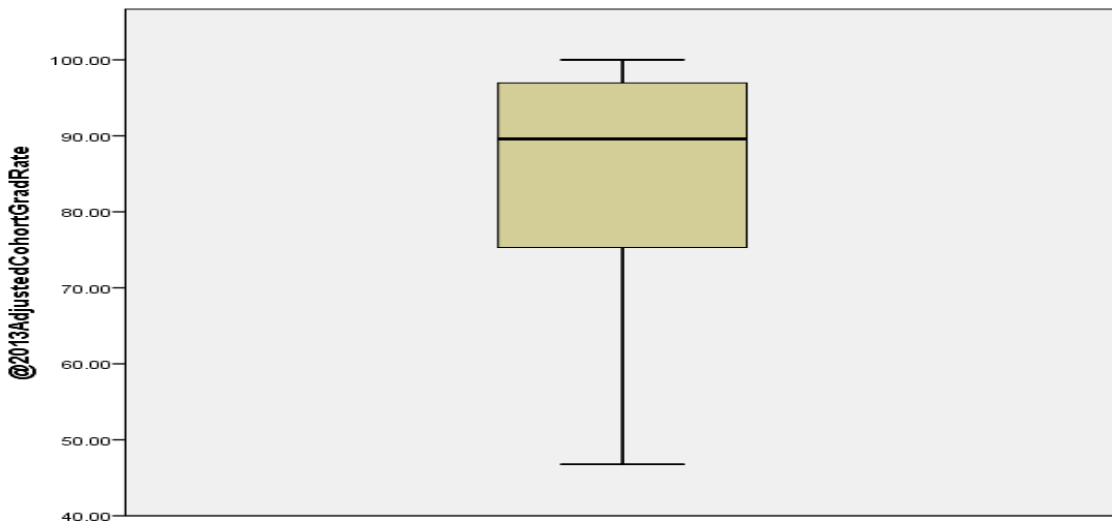


Figure 2. Boxplot of 2013 Cohort Graduation Rates



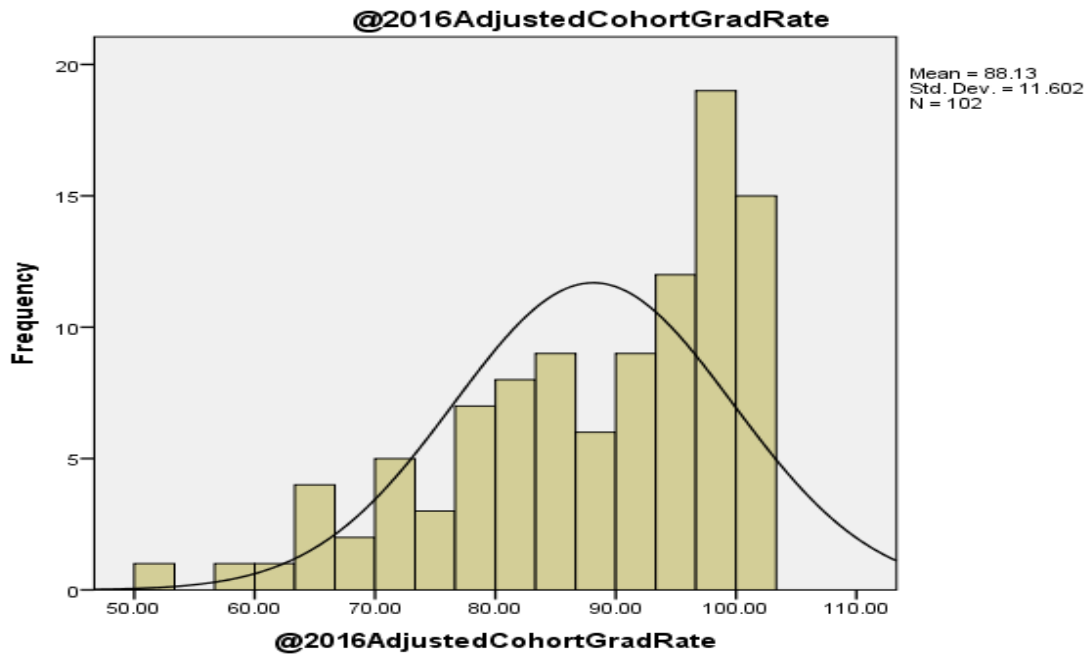


Figure 3 Histogram of 2016 Cohort Graduation Rates

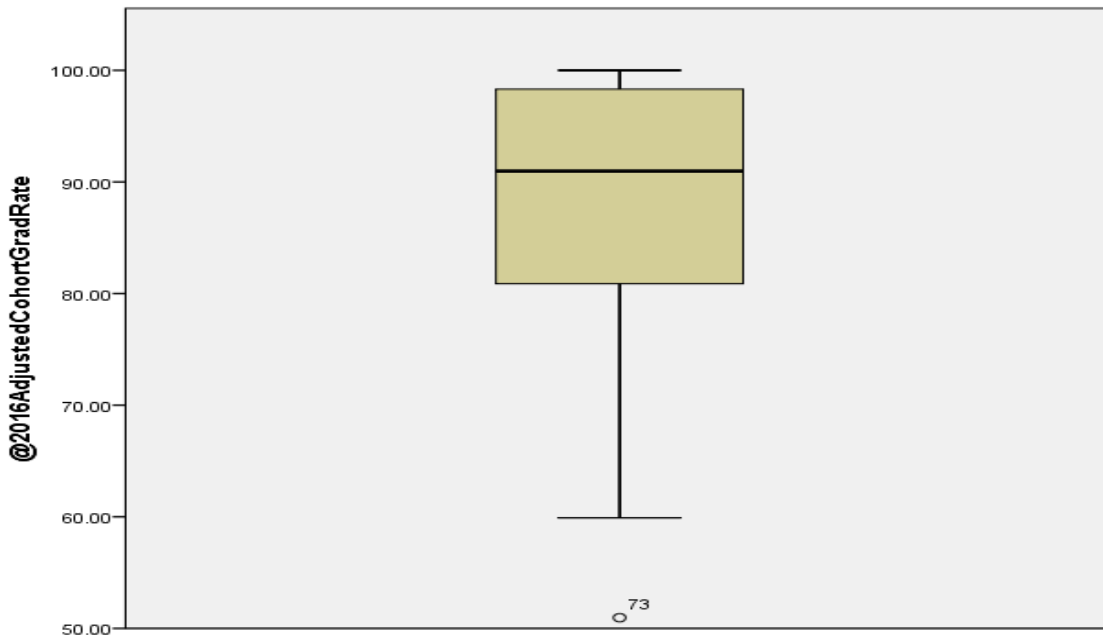


Figure 4 Boxplot of 2016 Cohort Graduation Rates with outlier

A new frequency measure was employed to demonstrate the corrected central tendency measure after omitting known outliers.

Frequency statistics for 2013ADJUSTEDCOHORTGRADRATE and 2016ADJUSTEDCOHORTGRADRATE after the removal of the outliers are displayed in the table below (see Table 7), which demonstrates new frequency statistics. The new histograms (see Figures 5 & 6) demonstrate the corrected central tendency with outliers removed for 2013ADJUSTEDCOHORTGRADRATE and 2016ADJUSTEDCOHORTGRADRATE. The removal of outliers brought the central tendency of data closer to a normal distribution.

Table 7  
*Statistics*

		@2013AdjustedCohort GradRate	@2016AdjustedCohortG radRate
N	Valid	101	101
	Missing	0	0
Mean		84.7245	88.5029
Median		90.2800	91.0400
Mode		100.00	100.00
Std. Deviation		14.34820	11.04489
Variance		205.871	121.990
Skewness		-.829	-.812
Std. Error of Skewness		.240	.240
Range		53.22	40.09
Minimum		46.78	59.91
Maximum		100.00	100.00
Percentiles	25	75.3900	80.9650
	50	90.2800	91.0400
	75	97.3300	98.3800

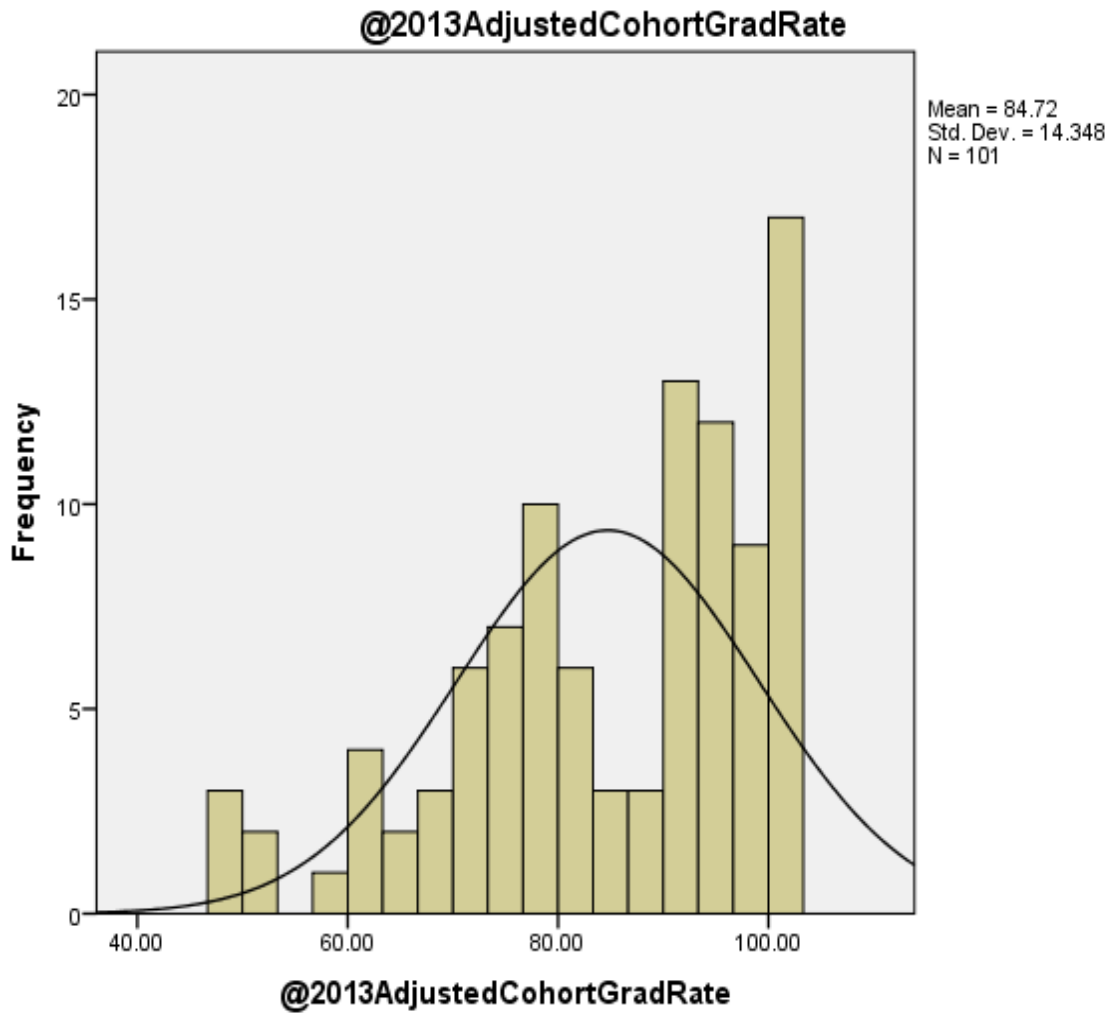
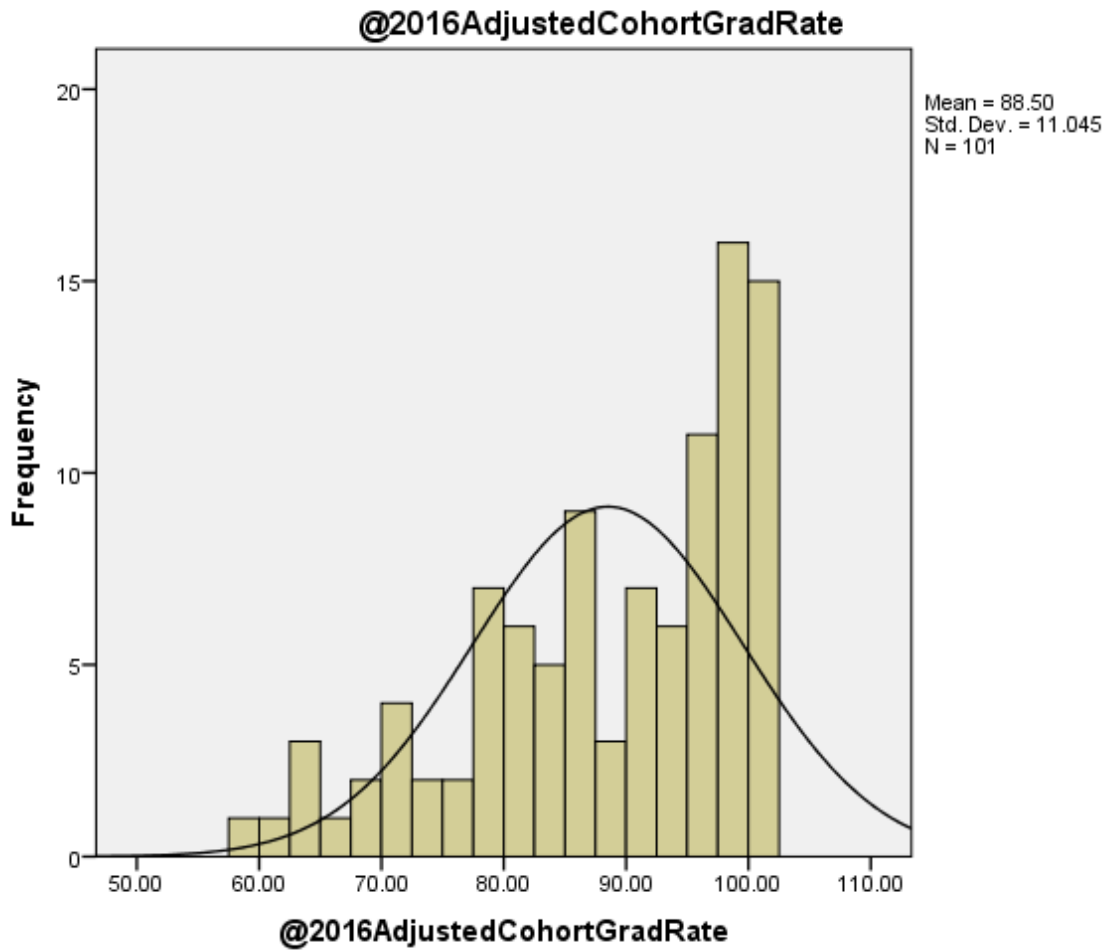


Figure 5 2013Cohort Graduation Rates with outliers removed



*Figure 6 20163Cohort Graduation Rates with outliers removed*

Pearson Product Moment Correlation (see Table 8) was utilized to determine if there was a correlation between graduation rates by year. According to the Pearson Correlations, it was determined that Graduation rates for 2013Cohort and 2016 Cohort were positively correlated, Pearson's  $r(101) = .861, p < 0.001$ .

Table 8  
**Correlations**

		@2013Adjusted CohortGradRate	@2016Adjusted CohortGradRate
@2013AdjustedCohortGrad Rate	Pearson Correlation	1	.856**
	Sig. (1-tailed)		.000
	N	101	101
@2016AdjustedCohortGrad Rate	Pearson Correlation	.856**	1
	Sig. (1-tailed)	.000	
	N	101	101

\*\* . Correlation is significant at the 0.01 level (1-tailed).

A scatterplot for the data for 2013ADJUSTEDCOHORTGRADRATE and 2016ADJUSTEDCOHORTGRADRATE suggest a positive linear relationship between the two sets of values.

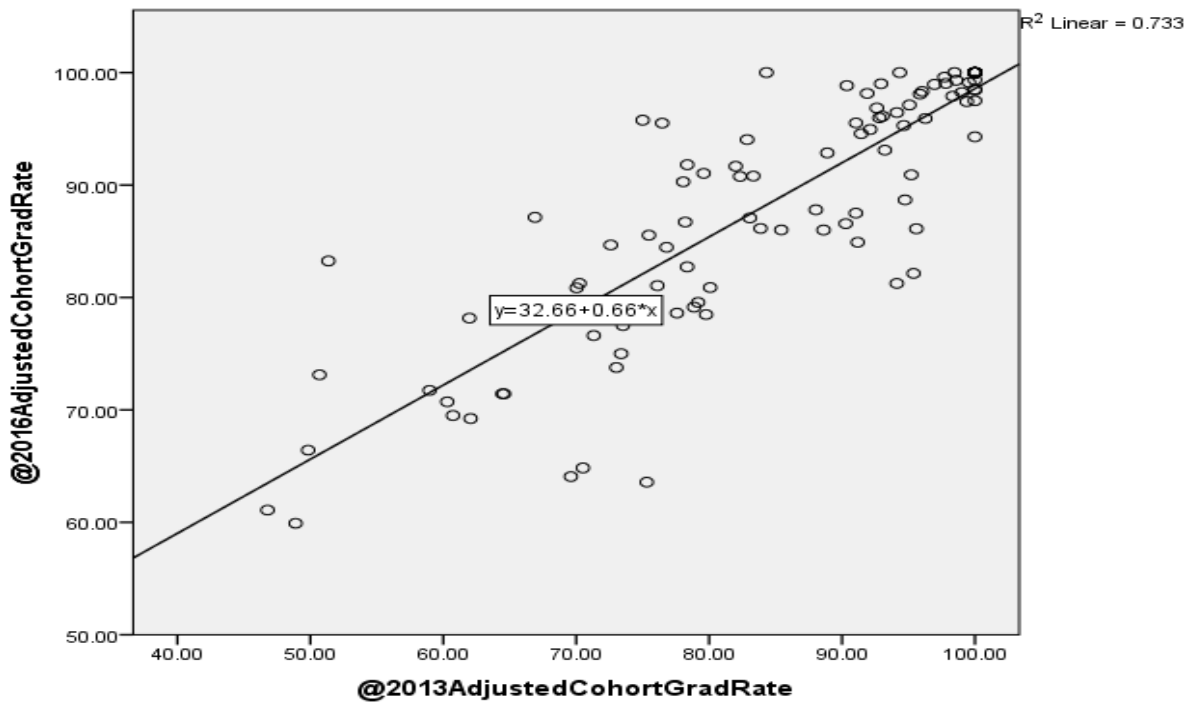


Figure 7

A paired-samples t-test indicated that graduation rates were significantly higher for the 2016 Cohort ( $M=88.50, SD=11.04$ ) than for the 2013 Cohort ( $M=84.72, SD=14.35$ ),  $t(101)=-5.05, p=.001$ .

Table 9  
*Paired Samples Statistics*

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	@2013AdjustedCohort GradRate	84.7245	101	14.34820	1.42770
	@2016AdjustedCohort GradRate	88.5029	101	11.04489	1.09901

Table 10  
*Paired Samples Correlations*

		N	Correlation	Sig.
Pair 1	@2013AdjustedCohortG radRate & @2016AdjustedCohortG radRate	101	.856	.000

Table 11

**Paired Samples Test**

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 @2013AdjustedCohortGradRate - @2016AdjustedCohortGradRate	-3.77842	7.51355	.74763	-5.26169	-2.29515	-5.054	100	.000

Independent -samples t-test indicated that scores were significantly higher for vocational type schools (M= 96. 6, SD = 6.57) than for charter (M= 90.0, SD = 6.90),  $t(43) = -2.62, p = .012$ .

Table 12

*Group Statistics*

	Type	N	Mean	Std. Deviation	Std. Error Mean
@2016AdjustedCohort GradRate	CHARTER	9	90.0778	6.90101	2.30034
	VOCATION	36	96.5558	6.56708	1.09451
	AL				

Table 13

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
@2016AdjustedCohortGradRate	Equal variances assumed	1.163	.287	-2.622	43	.012	-6.47806	2.47103	-11.46137	-1.49474
	Equal variances not assumed			-2.543	11.893	.026	-6.47806	2.54745	-12.03402	-.92209

Independent -samples t-test indicated that scores were significantly higher for Essex County (M= 83.09, SD = 14.26) than for Hudson County (M= 85.03, SD = 11.03), t (43) =-.262, p= .012.

Table 14

Group Statistics

	CountyCode	N	Mean	Std. Deviation	Std. Error Mean
@2016AdjustedCohortGradRate	ESSEX	18	83.0878	14.26382	3.36202
	HUDSON	9	85.0278	11.02763	3.67588



Table 15

		Independent Samples Test								
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
@2016AdjustedCohortGradRate	Equal variances assumed	1.163	.287	-2.622	43	.012	-6.47806	2.47103	-11.46137	-1.49474
	Equal variances not assumed			-2.543	11.893	.026	-6.47806	2.54745	-12.03402	-.92209

### Conclusion

There was statistically significant difference in graduation rates between Cohort2013 ( $M=84.41$ ,  $SD = 14.62$ ) and Cohort2016, ( $M= 88.13$ ,  $SD=11.60$ ) conditions;  $t(43) = -2.62$ ,  $p=0.012$ . These results suggest that more students graduated during 2016 then 2013. The researcher rejects the null hypothesis that there is no statistically significant difference between the means of graduation rates of the years 2013 and 2016. The type of school and location both effected the means of graduation rates for Cohort2016 which suggest that districts serving students in large urban settings may advance the need for further research on the possible benefits of employing Vocational/Technical schools for their populations.

Appendix A

County Code	County Name	Type	District Name	2013 Grad Rates	2014 Grad Rates	2015 Grad Rates	2016 Grad Rates
4.00	CHARTERS	1.00	CENTRAL JERSEY	100.00	100.00	100.00	100.00
4.00	CHARTERS	1.00	COLLEGE PREP	94.74	95.56	97.03	88.68
4.00	CHARTERS	1.00	CHARTER SCHOOL	82.00	82.35	88.89	91.67
4.00	CHARTERS	1.00	CAMDEN ACADEMY	93.22	98.33	98.17	93.10
4.00	CHARTERS	1.00	CHARTER HS	95.38	83.08	87.01	82.14
4.00	CHARTERS	1.00	ACADEMY CHARTER	94.64	91.89	86.67	95.29
4.00	CHARTERS	1.00	HIGH SCHOOL	78.87	81.40	74.44	79.14
4.00	CHARTERS	1.00	LEAP ACADEMY	75.00	91.36	93.15	95.77
4.00	CHARTERS	1.00	UNIVERSITY CS	91.18	91.67	88.04	84.91
5.00	CHARTERS	1.00	CHARTER~TECH	97.81	97.48	98.08	99.04
6.00	ATLANTIC	2.00	HIGH SCHOOL	97.71	100.00	99.46	99.60
6.00	BERGEN	2.00	NORTH STAR	100.00	99.15	100.00	99.35
7.00	BERGEN	2.00	ACADEMY CHARTER	96.03	95.40	97.02	98.32
7.00	BURLINGTON	2.00	SCHOOL	91.05	94.67	96.63	95.52
8.00	BURLINGTON	2.00	TEAM ACADEMY	92.81	91.71	92.90	95.98
8.00	CAMDEN	2.00	CHARTER SCHOOL	92.12	93.95	96.48	94.94
9.00	CAMDEN	2.00	PATERSON CS FOR	95.07	86.75	93.71	97.12
10.00	CAPE MAY	2.00	SCI/TECH	99.02	99.21	98.23	98.23
10.00	ESSEX	2.00	UNIVERSITY	75.31	48.05	64.09	63.57
10.00	ESSEX	2.00	ACADEMY CS	94.12	95.65	93.30	96.45
10.00	ESSEX	2.00	ATLANTIC CO	88.89	84.44	90.16	92.86
11.00	ESSEX	2.00	VOCATIONAL	99.55	97.74	97.94	99.12
12.00	GLOUCESTER	2.00	BERGEN COUNTY	100.00	97.67	100.00	100.00
12.00	MIDDLESEX	2.00	VOCATIONAL	90.36	90.00	85.53	98.84
12.00	MIDDLESEX	2.00	BERGEN COUNTY	90.28	98.53	91.43	86.57
12.00	MIDDLESEX	2.00	VOCATIONAL	76.47	88.89	96.10	95.51

12.00	MIDDLESEX	2.00	BURLINGTON CO	100.00	100.00	97.87	98.51
13.00	MIDDLESEX	2.00	VOCATIONAL	100.00	100.00	100.00	100.00
13.00	MIDDLESEX	2.00	BURLINGTON CO	100.00	100.00	98.41	98.44
13.00	MONMOUTH	2.00	VOCATIONAL	100.00	97.30	96.61	94.29
13.00	MONMOUTH	2.00	CAMDEN COUNTY	100.00	100.00	100.00	100.00
13.00	MONMOUTH	2.00	VOCATIONAL	100.00	100.00	100.00	100.00
14.00	MONMOUTH	2.00	CAMDEN COUNTY	98.59	100.00	99.26	99.32
15.00	MONMOUTH	2.00	VOCATIONAL	100.00	98.31	98.57	100.00
15.00	MORRIS	2.00	CAPE MAY CO	100.00	100.00	98.15	100.00
16.00	OCEAN	2.00	VOCATIONAL	98.33	98.08	98.45	97.91
17.00	OCEAN	2.00	ESSEX CO VOC-TECH	96.27	96.82	98.65	95.92
18.00	OCEAN	2.00	NEWARK CITY	88.61	85.23	85.00	86.00
19.00	PASSAIC	2.00	ESSEX CO VOC-TECH	96.95	98.06	97.88	98.95
20.00	SALEM	2.00	ESSEX CO VOC-TECH	100.00	100.00	100.00	100.00
20.00	SOMERSET	2.00	GLOUCESTER CO	100.00	100.00	100.00	100.00
20.00	SUSSEX	2.00	VOCATIONAL	100.00	100.00	100.00	100.00
20.00	UNION	2.00	MIDDLESEX CO	100.00	100.00	100.00	100.00
20.00	UNION	2.00	VOCATIONAL	100.00	96.92	97.01	97.50
21.00	UNION	2.00	MIDDLESEX CO	91.89	98.91	95.04	98.15
5.00	UNION	2.00	VOCATIONAL	70.03	75.98	81.36	80.85
6.00	UNION	2.00	MIDDLESEX CO	78.05	87.32	85.71	90.29
7.00	WARREN	2.00	VOCATIONAL	78.20	82.22	78.47	86.71
7.00	ATLANTIC	3.00	MIDDLESEX CO	83.87	84.27	89.72	86.14
8.00	BERGEN	3.00	VOCATIONAL	94.34	95.92	98.04	100.00
8.00	BURLINGTON	3.00	MIDDLESEX CO	46.78	52.35	46.61	61.09
8.00	BURLINGTON	3.00	VOCATIONAL	49.83	60.46	63.39	66.42
8.00	CAMDEN	3.00	MONMOUTH CO	82.86	86.21	82.47	94.04
24.00	CAMDEN	3.00	VOCATIONAL	68.38	71.01	76.33	78.78
24.00	CAMDEN	3.00	MONMOUTH CO	82.33	86.17	90.22	90.77
24.00	CAMDEN	3.00	VOCATIONAL	73.52	78.28	77.98	77.50
10.00	CAMDEN	3.00	MONMOUTH CO	95.21	96.97	90.20	90.91
10.00	CUMBERLAND	3.00	VOCATIONAL	48.89	52.35	35.69	59.91
10.00	CUMBERLAND	3.00	MONMOUTH CO	80.08	80.95	71.62	80.88
10.00	CUMBERLAND	3.00	VOCATIONAL	69.60	63.39	66.33	64.07

10.00	ESSEX	3.00	MONMOUTH CO	73.02	75.00	69.63	73.77
10.00	ESSEX	3.00	VOCATIONAL	70.51	64.25	68.87	64.84
10.00	ESSEX	3.00	MORRIS COUNTY	79.59	86.17	86.58	91.04
10.00	ESSEX	3.00	VOCATIONAL	99.38	100.00	96.32	97.42
10.00	ESSEX	3.00	OCEAN COUNTY	92.62	93.58	91.41	96.85
10.00	ESSEX	3.00	VOCATIONAL	93.04	92.41	95.49	96.12
10.00	ESSEX	3.00	OCEAN COUNTY	64.46	67.05	66.18	71.43
10.00	ESSEX	3.00	VOCATIONAL	91.04	90.24	93.41	87.50
10.00	ESSEX	3.00	PASSAIC COUNTY	92.93	94.12	100.00	99.01
10.00	ESSEX	3.00	VOCATIONAL	60.30	62.31	70.33	70.72
22.00	ESSEX	3.00	SALEM COUNTY	85.43	86.78	83.33	86.01
22.00	ESSEX	3.00	VOCATIONAL	91.44	90.48	91.71	94.57
22.00	ESSEX	3.00	SOMERSET CO	79.17	80.63	87.47	79.56
22.00	ESSEX	3.00	VOCATIONAL	73.38	66.67	71.21	75.00
22.00	ESSEX	3.00	SUSSEX COUNTY	62.06	55.08	61.26	69.23
22.00	HUDSON	3.00	VOCATIONAL	100.00	98.73	100.00	100.00
22.00	HUDSON	3.00	UNION COUNTY	61.97	73.01	77.04	78.16
22.00	HUDSON	3.00	VOCATIONAL	84.31	89.58	96.00	100.00
22.00	HUDSON	3.00	UNION COUNTY	78.35	84.58	84.70	82.72
23.00	HUDSON	3.00	VOCATIONAL	51.36	67.23	79.66	83.25
23.00	HUDSON	3.00	UNION COUNTY	78.36	83.80	83.67	91.81
12.00	HUDSON	3.00	VOCATIONAL	60.73	62.98	68.50	69.50
12.00	HUDSON	3.00	UNION COUNTY	58.97	59.73	73.38	71.74
13.00	HUDSON	3.00	VOCATIONAL	50.69	49.26	66.04	73.12
13.00	HUDSON	3.00	UNION COUNTY	76.11	80.41	87.76	81.05
13.00	MERCER	3.00	VOCATIONAL	76.80	78.33	80.73	84.46
16.00	MERCER	3.00	WARREN COUNTY	77.58	76.39	84.82	78.61
16.00	MIDDLESEX	3.00	VOCATIONAL	66.90	76.60	78.21	87.13
16.00	MIDDLESEX	3.00	PLEASANTVILLE	88.03	76.65	85.90	87.80
16.00	MONMOUTH	3.00	CITY	95.59	97.06	100.00	86.11
16.00	MONMOUTH	3.00	GARFIELD CITY	98.46	100.00	100.00	100.00
16.00	MONMOUTH	3.00	BURLINGTON CITY	94.12	92.59	84.38	81.25
16.00	PASSAIC	3.00	PEMBERTON TWP	71.32	76.32	78.31	76.61
16.00	PASSAIC	3.00	CAMDEN CITY	83.06	83.33	86.33	87.07

16.00	PASSAIC	3.00	CAMDEN CITY	72.60	83.56	79.39	84.67
16.00	PASSAIC	3.00	CAMDEN CITY	64.57	79.82	82.78	71.43
16.00	PASSAIC	3.00	GLOUCESTER CITY	70.25	74.77	78.13	81.25
17.00	PASSAIC	3.00	BRIDGETON CITY	75.47	69.44	77.33	85.54
20.00	PASSAIC	3.00	MILLVILLE CITY	95.86	94.90	97.54	98.09
20.00	PASSAIC	3.00	VINELAND CITY	79.77	90.69	80.49	78.48
21.00	PASSAIC	3.00	NEWARK CITY	83.33	86.46	87.88	90.80
	PASSAIC	3.00	NEWARK CITY				
	PASSAIC	3.00	NEWARK CITY				
	PASSAIC	3.00	EAST ORANGE				
	SALEM	3.00	NEWARK CITY				
	UNION	3.00	NEWARK CITY				
	UNION	3.00	CITY OF ORANGE				
	WARREN	3.00	TWP				
			NEWARK CITY				
			NEWARK CITY				
			NEWARK CITY				
			NEWARK CITY				
			NEWARK CITY				
			EAST ORANGE				
			IRVINGTON				
			TOWNSHIP				
			HOBOKEN CITY				
			HARRISON TOWN				
			UNION CITY				
			JERSEY CITY				
			JERSEY CITY				
			JERSEY CITY				
			JERSEY CITY				
			JERSEY CITY				
			WEST NEW YORK				
			TOWN				
			TRENTON CITY				
			TRENTON CITY				

			NEW BRUNSWICK CITY				
			PERTH AMBOY CITY				
			ASBURY PARK CITY				
			KEANSBURG BORO				
			NEPTUNE TWP				
			PATERSON CITY				
			PATERSON CITY				
			PATERSON CITY				
			PATERSON CITY				
			PATERSON CITY				
			PATERSON CITY				
			PASSAIC CITY				
			PATERSON CITY				
			PATERSON CITY				
			PATERSON CITY				
			PATERSON CITY				
			SALEM CITY				
			ELIZABETH CITY				
			PLAINFIELD CITY				
			PHILLIPSBURG TOWN				

Reference

2016 Graduation Rates. (2017). State.nj.us. [Data file]. Retrieved from <https://www.state.nj.us/education/data/grate/2016/>