

**CHAPTER NO. : 5**  
**:ANALYSIS AND**  
**INTERPRETATION OF DATA:**

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## **CHAPTER NO. : 5**

### **:ANALYSIS AND INTERPRETATION OF DATA:**

#### **5.1 INTRODUCTION :**

The first step in data analysis is to describe, or summarize, the data using descriptive statistics. In some studies, such as certain questionnaire surveys, the entire analysis procedure may consist solely of calculating and interpreting descriptive statistics. Descriptive statistics permit the researcher to meaningfully describe many, many scores with a small number of indices. The major types of descriptive statistics are measures of central tendency, measures of variability, measures of relationship and measures of relative position.

#### **5.2 PRESENTATION OF DATA :**

Data presentation is as important as data collection, for the researcher can't present true findings if the data presentation lacks accuracy and completeness. The investigator collected data with the help of a standardized attitude scale administered to a sample of 2950 students. The data thus gathered has been categorized as below :

#### **5.3 DATA OF ATTITUDE :**

In this segment the scores on the attitude scale measuring attitude of students towards are categorized.

**Data : 1**

**[Attitude of total students of standard 12th commerce]**

**TABLE : 5.1**

**Frequency Distribution of Total Students Standard 12**

<b>Interval</b>	<b>Frequencies</b>
30-39	4
40-49	12
50-59	12
60-69	25
70-79	35
80-89	55
90-99	40
100-109	470
110-119	700
120-129	710
130-139	695
140-149	181
150-159	11
<b>Total Students</b>	<b>2950</b>
Mean	119.65
Median	121.86
Std. de	12.56
Q1	100.58
Q3	134.36
Q	8.16
P90	122.06
P10	102.20
Sk	-0.0789
Std. SK	0.0456
SK (C.R.)	-4.333

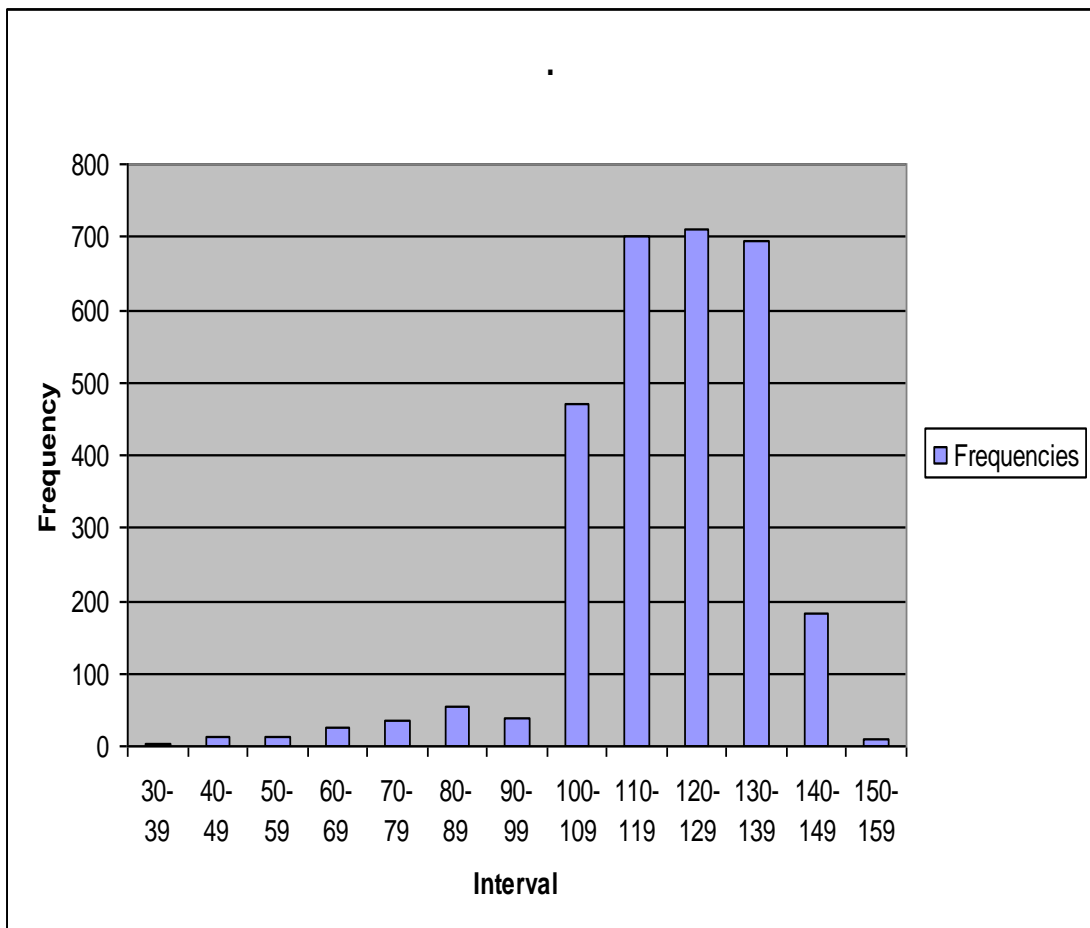
Ku	0.1258
Std. Ku	0.0099
Ku (C.R.)	-2.33

From table 5.1 it is observed that the mean attitude of total students of std. 12th is 119.65 and the median is 121.86. The distribution is negatively skewed. The C.R. of skewness is -4.333 which is more than 2.58 for 0.1 level, and therefore significant. So the distribution is significantly skewed.

The Kurtosis of the distribution is 0.1258, which is less than 0.263 and the distribution is leptokurtic. The C.R. (-2.33) is than 1.96 at 0.05 level. So Kurtosis is significant which means the distribution is significantly leptokurtic, which is shown in Graph 5.1

**Graph : 5.1**

**Frequency polygon of total students of 12th commerce**



**Data : 2**

**[Attitude of boys students of standard 12th commerce]**

**TABLE : 5.2**

**Frequency Distribution of Boys Students Standard 12**

<b>Interval</b>	<b>Frequencies</b>
30-39	2
40-49	5
50-59	6
60-69	15
70-79	12
80-89	40
90-99	25
100-109	235
110-119	325
120-129	370
130-139	284
140-149	64
150-159	07
<b>Total Students</b>	<b>1390</b>

Mean	121.21
Median	122.66
Std. de	14.57
Q1	102.59
Q3	136.66
Q	9.15
P90	124.23
P10	104.40
Sk	0.0235
Std. SK	0.0200

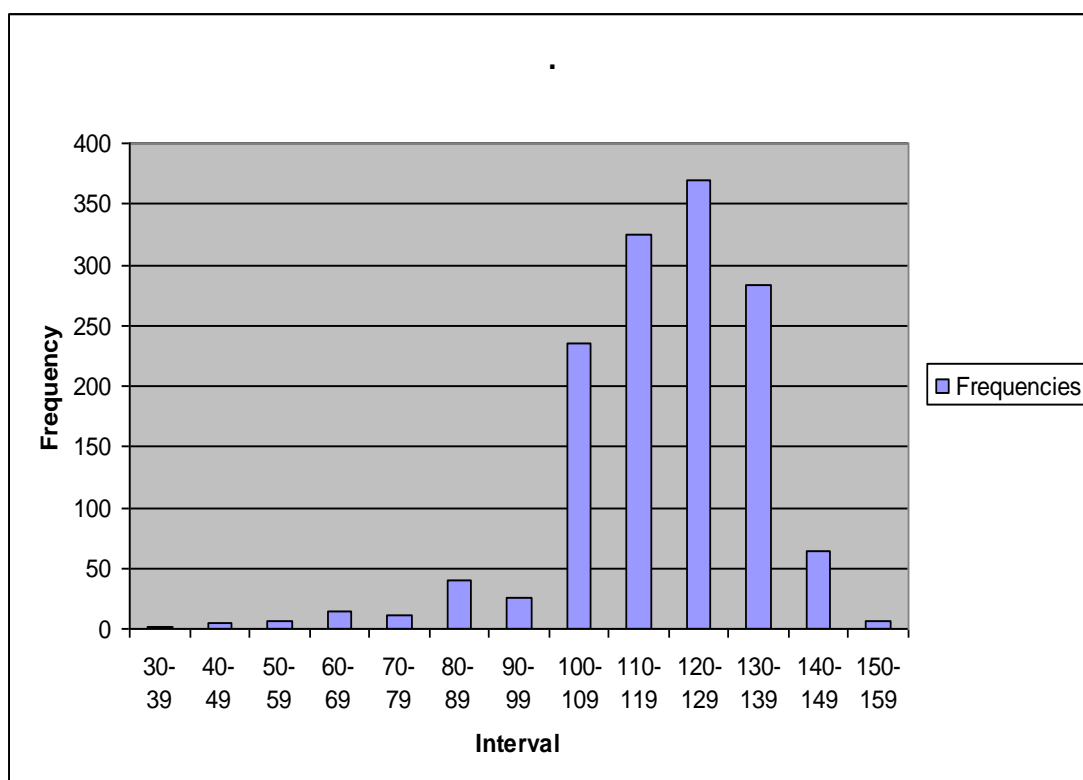
SK (C.R.)	-1.1750
Ku	0.2493
Std. Ku	0.0107
Ku (C.R.)	-1.30

From table 5.2 it is observed that the mean attitude score of total student of boys is 121.21 and the median is 122.66. The distribution is positively skewed. The C.R. of skewness is -1.1750 which is less than 2.58 for 0.01 level, and therefore not significant. So the distribution is normal.

The Kurtosis of the distribution is 0.2493, which is less than 0.263 and the distribution is leptokurtic. The C.R. (-1.30) is than 2.58, So Kurtosis is not significant which means the distribution is normal, which is shown in Graph 52.

**Graph : 5.2**

**Frequency polygon of Total Boys students of 12th commerce**



**Data : 3**

**[Attitude of girls students of standard 12th commerce]**

**TABLE : 5.3**

**Frequency Distribution of Girls Students Standard 12**

<b>Interval</b>	<b>Frequencies</b>
30-39	00
40-49	07
50-59	06
60-69	10
70-79	23
80-89	15
90-99	15
100-109	235
110-119	375
120-129	340
130-139	413
140-149	117
150-159	04
<b>Total Students</b>	<b>1560</b>

Mean	122.23
Median	123.10
Std. de	15.52
Q1	111.1
Q3	115.46
Q	7.29
P90	123.19
P10	93.96
S k	-0.1162
Std. SK	0.0156

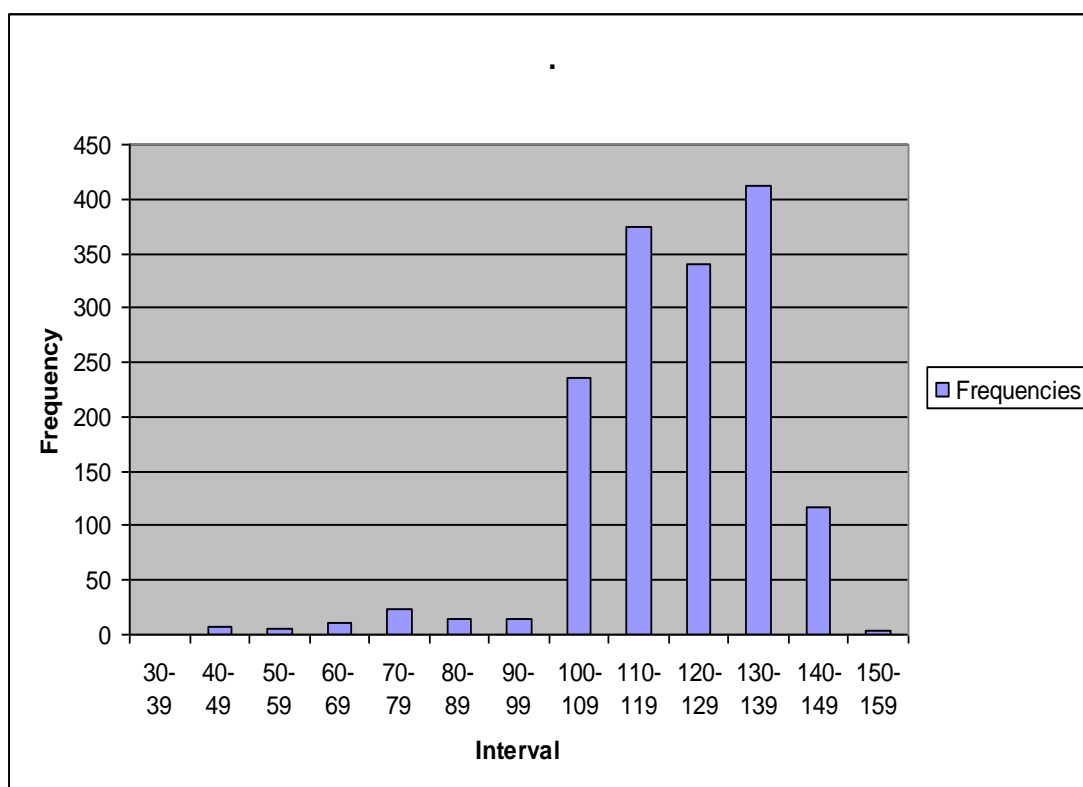
SK (C.R.)	-7.4487
Ku	0.2443
Std. Ku	0.0084
Ku (C.R.)	-2.25

From table 5.3 it is observed that the Mean attitude score of girls is 122.23 and the Median is 122.10. The distribution is negatively skewed. The C.R. of skewness is -7.4487 which is more than 2.58 for 0.01 level, and therefore significant. So the distribution is significantly skewed.

The Kurtosis of the distribution is 0.2443, which is less than 0.263 and the distribution is leptokurtic. the C.R. (-2.25) is greater than 1.96 at 0.05 level so the Kurtosis is significant which means the distribution is significantly leptokurtic, which is shown in Graph 5.3

**Graph : 5.3**

**Frequency polygon of Total Girls students of 12th commerce**





**Data : 4**

**[Attitude of urban students]**

**TABLE : 5.4**

**Frequency Distribution of Urban Students**

<b>Interval</b>	<b>Frequencies</b>
30-39	00
40-49	07
50-59	06
60-69	56
70-79	33
80-89	35
90-99	45
100-109	313
110-119	280
120-129	394
130-139	459
140-149	169
150-159	03
<b>Total</b>	<b>1800</b>

Mean	120.36
Median	115.25
Std. de	11.31
Q1	99.36
Q3	114.63
Q	8.52
P90	121.33
P10	93.06
Sk	0.1274
Std. SK	0.0187

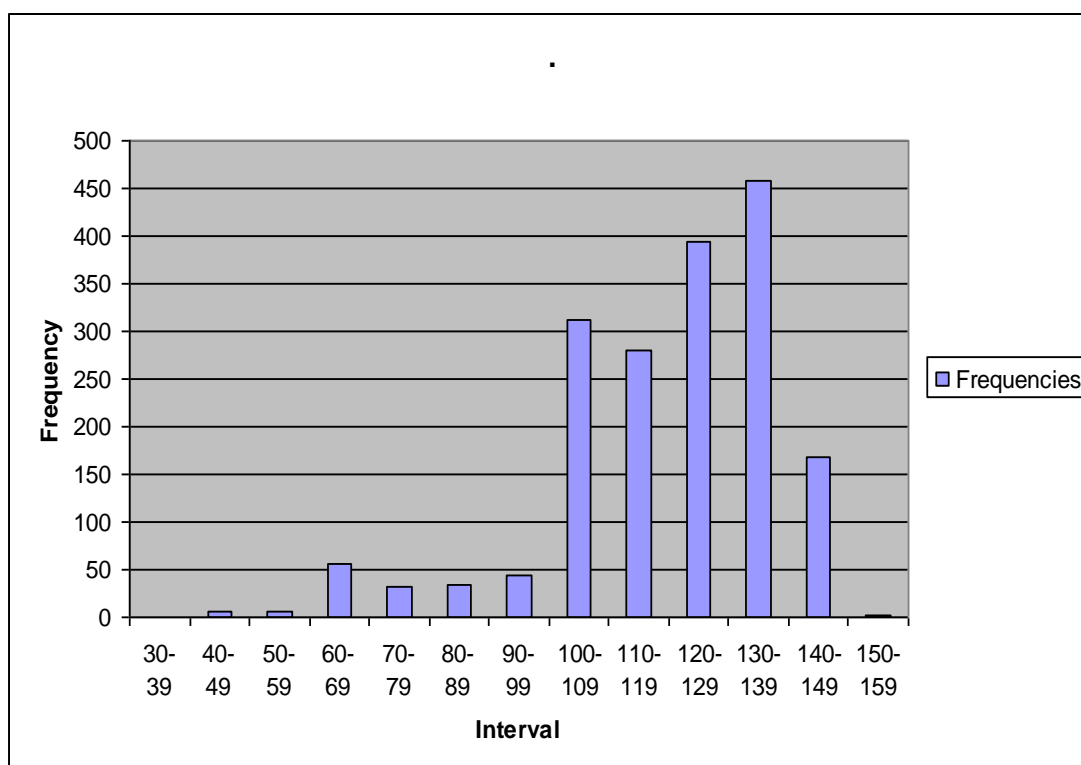
SK (C.R.)	6.8128
Ku	0.2505
Std. Ku	0.0100
Ku (C.R.)	-1.29

From table 5.4 it is observed that the Mean attitude score of urban students is 120.36 and the Median is 115.25. The distribution is positively skewed. The C.R. of skewness is 6.8128 which is more than 2.58 for 0.01 level, and therefore significant. So the distribution is significantly skewed.

The Kurtosis of the distribution is 0.2505, which is less than 0.263 and the distribution is leptokurtic. The C.R. (-1.29) is less than 2.58, So the kurtosis is significant which means the distribution is normal, which is shown in Graph 5.4

**Graph : 5.4**

**Frequency polygon of total Urban students of 12th commerce**



**Data : 5**

**[Attitude of rural students of standard 12th commerce]**

**TABLE : 5.5**

**Frequency Distribution of Rural Students Standard 12**

<b>Interval</b>	<b>Frequencies</b>
30-39	00
40-49	8
50-59	4
60-69	12
70-79	20
80-89	24
90-99	34
100-109	255
110-119	275
120-129	350
130-139	100
140-149	43
150-159	25
<b>Total students</b>	<b>1150</b>

Mean	116.72
Median	115.58
Std. de	11.93
Q1	99.55
Q3	114.36
Q	7.28
P90	121.95
P10	92.15
Sk	-01926
Std. SK	0.0163

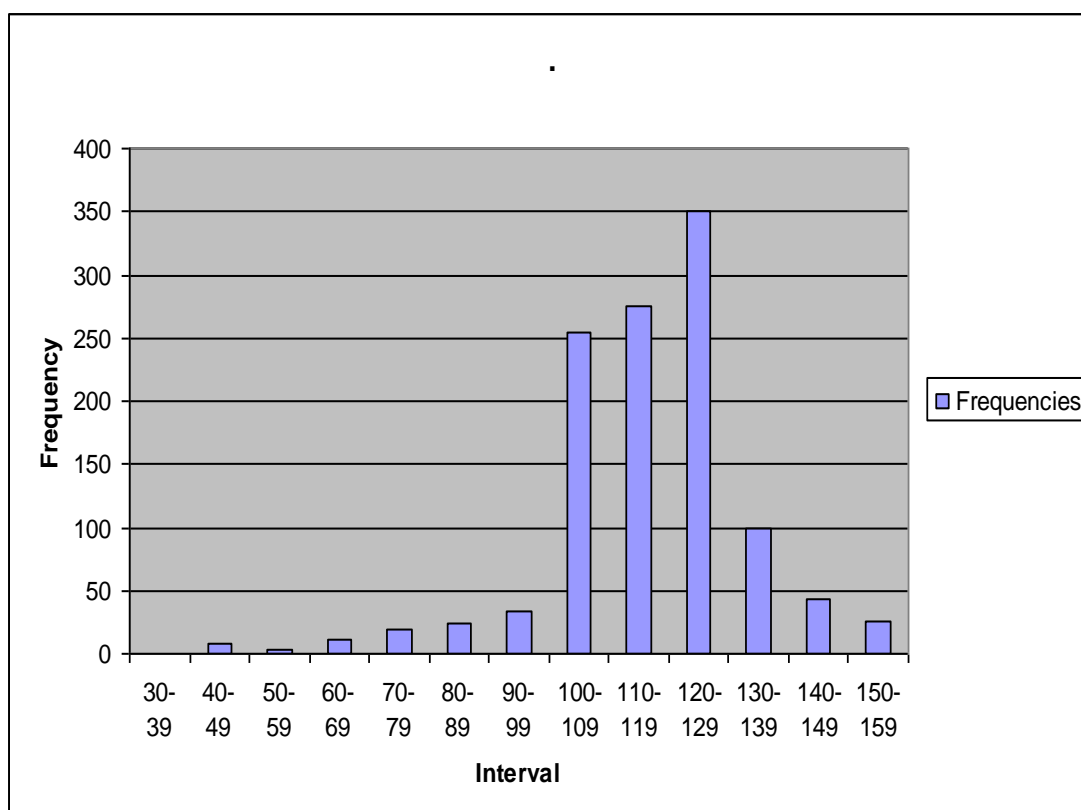
SK (C.R.)	-11.8160
Ku	0.2448
Std. Ku	0.0087
Ku (C.R.)	-2.11

From Table 5.5 it is observed that the Mean attitude score of rural students is 106.72 and Median is 107.54. The distribution is negatively skewed. The C.R. of skewness is -11.8160 which is more than 2.58 for 0.01 level, and therefore significant. So the distribution is significantly skewed.

The Kurtosis of the distribution is 0.2448, which is less than 0.263 and the distribution is leptokurtic. The C.R. (-2.11) is more than 1.96, so the kurtosis is significant which means the distribution is significantly leptokurtic, which is shown in graph 5.5

**Graph : 5.5**

**Frequency polygon of Total Rural students of 12th commerce**



**Data : 6**  
**[Attitude of Granted School's students**  
**of standard 12th commerce]**

**TABLE : 5.6**  
**Frequency Distribution of Granted School's Students**

Interval	Frequencies
30-39	00
40-49	1
50-59	05
60-69	10
70-79	12
80-89	18
90-99	3
100-109	125
110-119	125
120-129	300
130-139	175
140-149	25
150-159	----
<b>Total Students</b>	<b>800</b>

Mean	106.24
Median	107.72
Std. de	12.76
Q1	100.00
Q3	114.88
Q	7.14
P90	121.55
P10	92.59
Sk	-0.1162

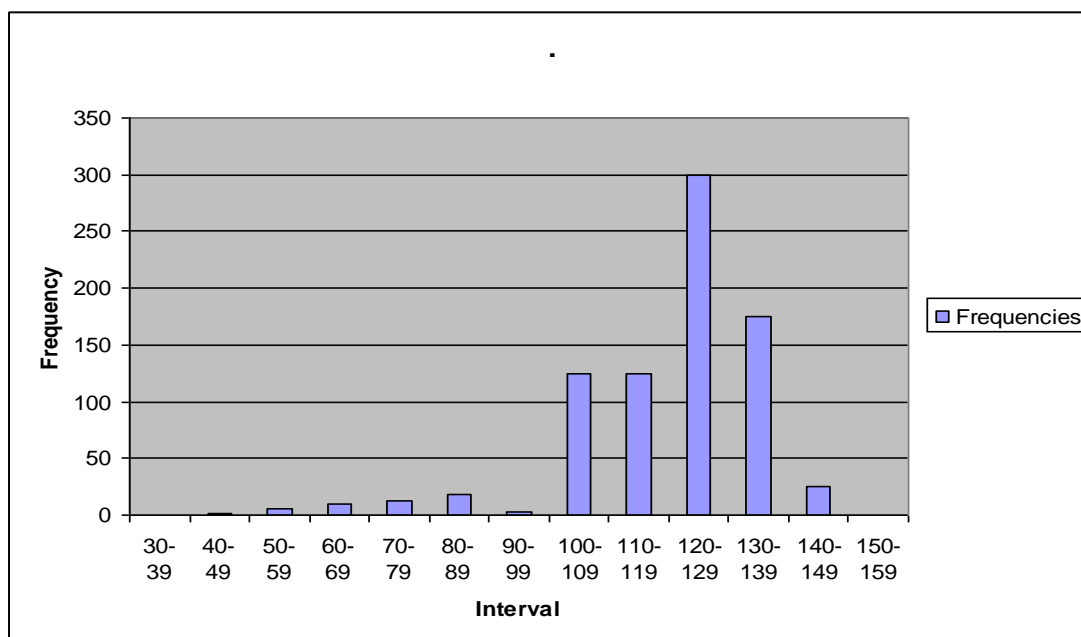
Std. SK	0.0156
SK (C.R.)	-7.4487
Ku	0.2443
Std. Ku	0.0084
Ku (C.R.)	-2.25

From Table 5.6 it is observed that the Mean attitude score of rural students is 106.24 and Median is 107.72. The distribution is negatively skewed. The C.R. of skewness is -7.4487 which is more than 2.58 for 0.01 level, and therefore significant. So the distribution is significantly skewed.

The Kurtosis of the distribution is 0.2443, which is less than 0.263 and the distribution is leptokurtic. The C.R. (-2.25) is more than 1.96, at 0.5 level so the kurtosis is significant which means the distribution is significantly leptokurtic, which is shown in graph 5.6

**Graph : 5.6**

**Frequency polygon of Granted school's students of  
12th commerce**



**Data : 7**

**[Attitude of Government Schools students of  
standard 12th commerce]**

**TABLE : 5.7**

**Frequency Distribution of Government School  
Students of Standard 12**

<b>Interval</b>	<b>Frequencies</b>
30-39	'---
40-49	'---
50-59	'---
60-69	01
70-79	02
80-89	03
90-99	06
100-109	45
110-119	42
120-129	32
130-139	10
140-149	09
150-159	'---
<b>Total Students</b>	<b>150</b>

Mean	101.93
Median	100.33
Std. de	11.87
Q1	99.02
Q3	113.40
Q	7.19
P90	121.13
P10	91.04

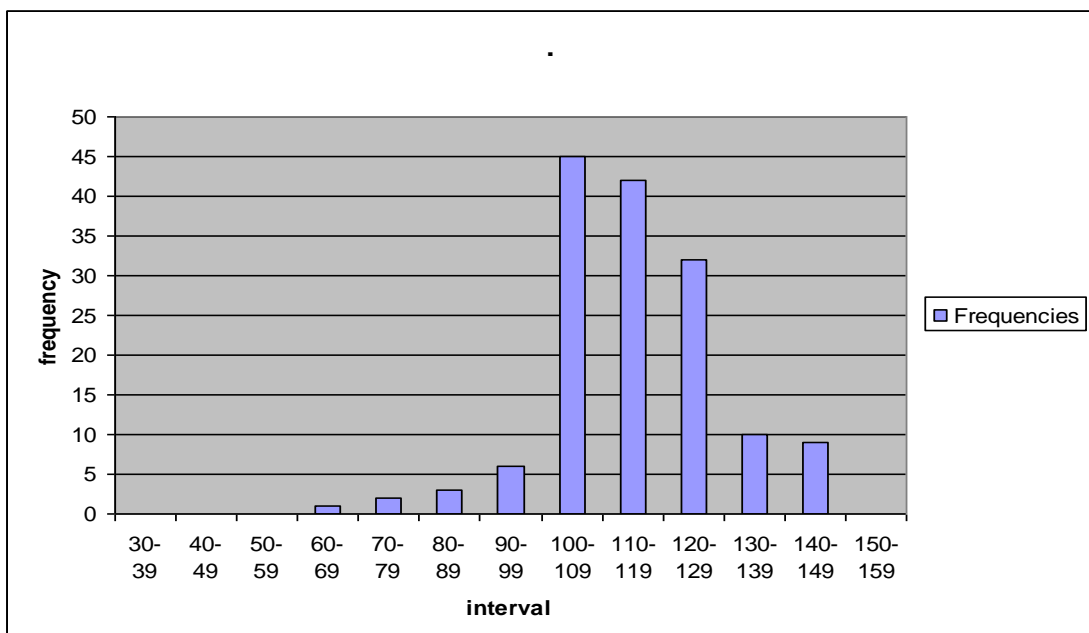
Sk	0.10
Std. SK	0.0311
SK (C.R.)	3.2154
Ku	0.02389
Std. Ku	0.0167
Ku (C.R.)	-1.4551

From Table 5.7 it is observed that the Mean attitude score of government schools students is 101.93 and Median is 103.33. The distribution is positively skewed. The C.R. of skewness is 3.2154 which is more than 2.58 for 0.01 level, and therefore significant. So the distribution is significantly skewed.

The Kurtosis of the distribution is 0.02389, which is less than 0.263 and the distribution is leptokurtic. The C.R. (-1.4551) is less than 1.96, at 0.5 level so the kurtosis is not significant which means the distribution is normal, which is shown in graph 5.7

**Graph : 5.7**

**Frequency polygon of government schools students of  
12th commerce**





**Data : 8**

**[Attitude of Private school's students of  
standard 12th commerce]**

**TABLE : 5.8**

**Frequency Distribution of private school's  
Students of Standard 12**

<b>Interval</b>	<b>Frequencies</b>
30-39	10
40-49	20
50-59	18
60-69	32
70-79	24
80-89	26
90-99	70
100-109	350
110-119	500
120-129	700
130-139	150
140-149	75
150-159	25
<b>Total Students</b>	<b>2000</b>

Mean	108.30
Median	108.58
Std. de	12.15
Q1	100.80
Q3	115.46
Q	7.29
P90	123.19
P10	93.96

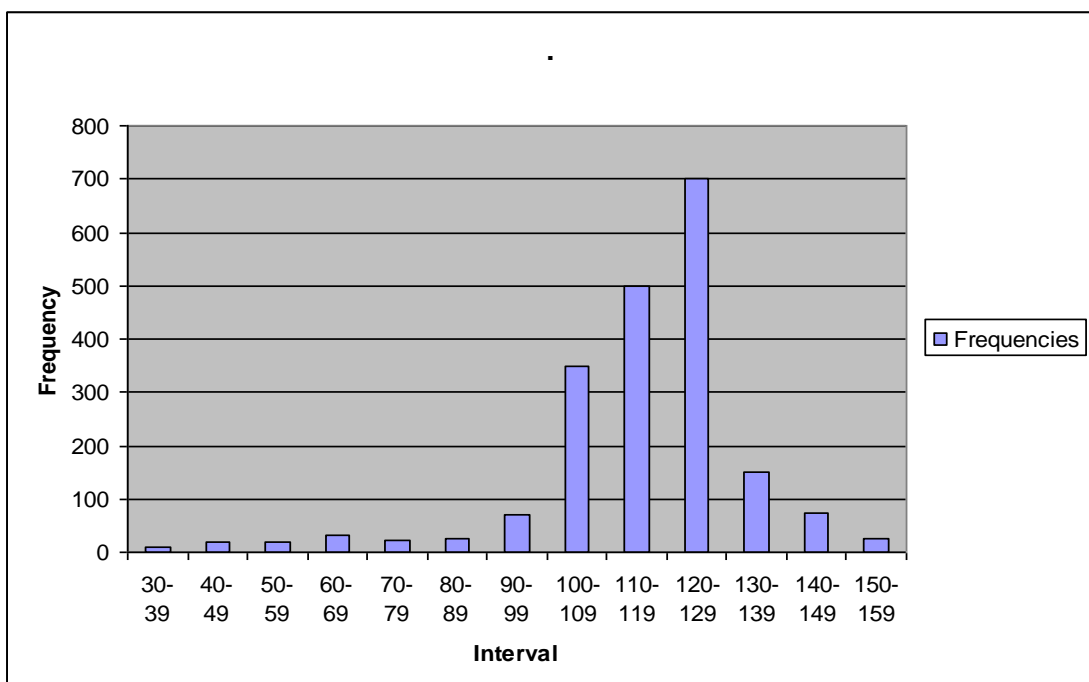
Sk	-0.0457
Std. SK	0.0195
SK (C.R.)	-2.3433
Ku	0.2494
Std. Ku	0.0105
Ku (C.R.)	-1.33

From Table 5.8 it is observed that the Mean attitude score of students of private schools is 108.30 and Median is 108.58. The distribution is negatively skewed. The C.R. of skewness is -2.3443 which is more than 1.96 for 0.05 level, and therefore significant. So the distribution is significantly skewed.

The Kurtosis of the distribution is 0.2494, which is less than 0.263 and the distribution is leptokurtic. The C.R. (-1.33) is less than 1.96, at 0.5 level so the kurtosis is not significant which means the distribution is normal, which is shown in graph 5.8

**Graph : 5.8**

**Frequency polygon of private school students of 12th commerce**



**Data : 9**

**[Attitude of English medium students of standard 12th  
commerce]**

**TABLE : 5.9**

**Frequency Distribution of English medium Students**

<b>Interval</b>	<b>Frequencies</b>
30-39	1
40-49	2
50-59	4
60-69	5
70-79	7
80-89	5
90-99	6
100-109	66
110-119	58
120-129	200
130-139	85
140-149	25
150-159	36
<b>Total Students</b>	<b>500</b>

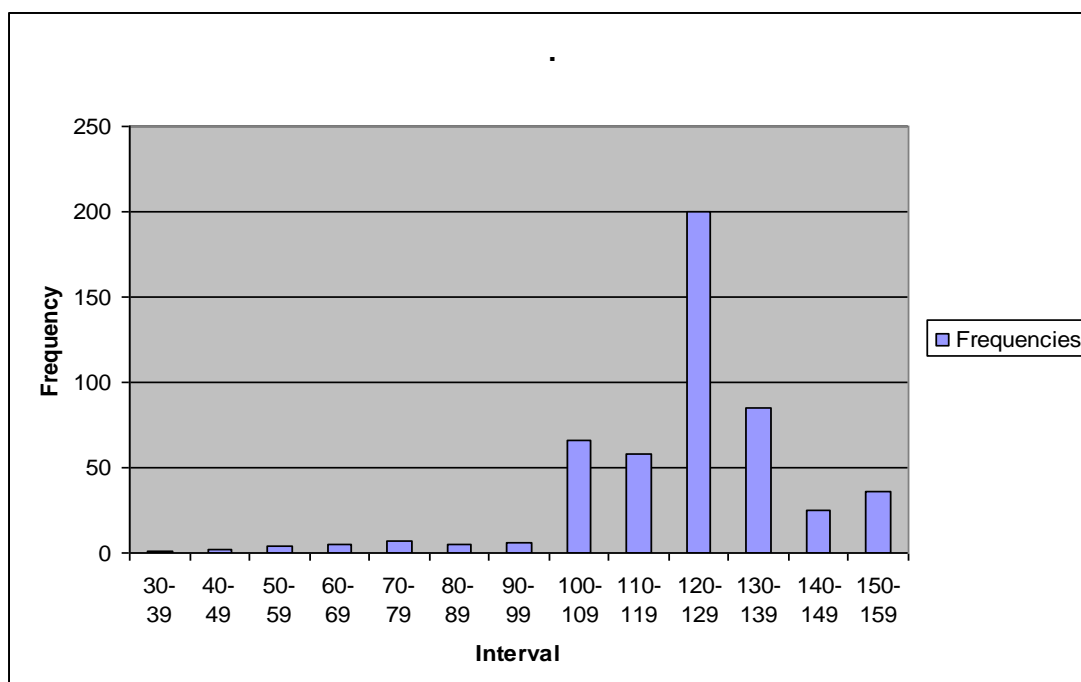
Mean	105.89
Median	106.75
Std. de	12.45
Q1	100.05
Q3	114.15
Q	7.05
P90	120.95
P10	92.85
Sk	0.08

Std. SK	0.0245
SK (C.R.)	1.6327
Ku	0.2490
Std. Ku	0.0131
Ku (C.R.)	-1.0840

From Table 5.9 it is observed that the Mean attitude score of English medium students is 106.89 and Median is 106.75. The distribution is positively skewed. The C.R. of skewness is 1.6327 which is less than 1.96 for 0.05 level, and therefore not significant. So the distribution is normal.

The Kurtosis of the distribution is 0.2490, which is less than 0.263 and the distribution is leptokurtic. The C.R. (-1.0840) is less than 1.96, so the kurtosis is not significant which means the distribution is normal, which is shown in graph 5.9

**Graph : 5.9**  
**Frequency polygon of English Medium students of**  
**12th commerce**



**Data : 10**  
**[Attitude of Gujarati Medium students of**  
**standard 12th commerce]**

**TABLE : 5.10**  
**Frequency Distribution of Gujarati Medium Students of**  
**Standard 12**

<b>Interval</b>	<b>Frequencies</b>
30-39	00
40-49	00
50-59	00
60-69	05
70-79	04
80-89	20
90-99	01
100-109	449
110-119	615
120-129	650
130-139	538
140-149	135
150-159	33
<b>Total Students</b>	<b>2450</b>

Mean	106.88
Median	107.06
Std. de	11.65
Q1	99.74
Q3	114.08
Q	7.17
P90	120.55
P10	92.62

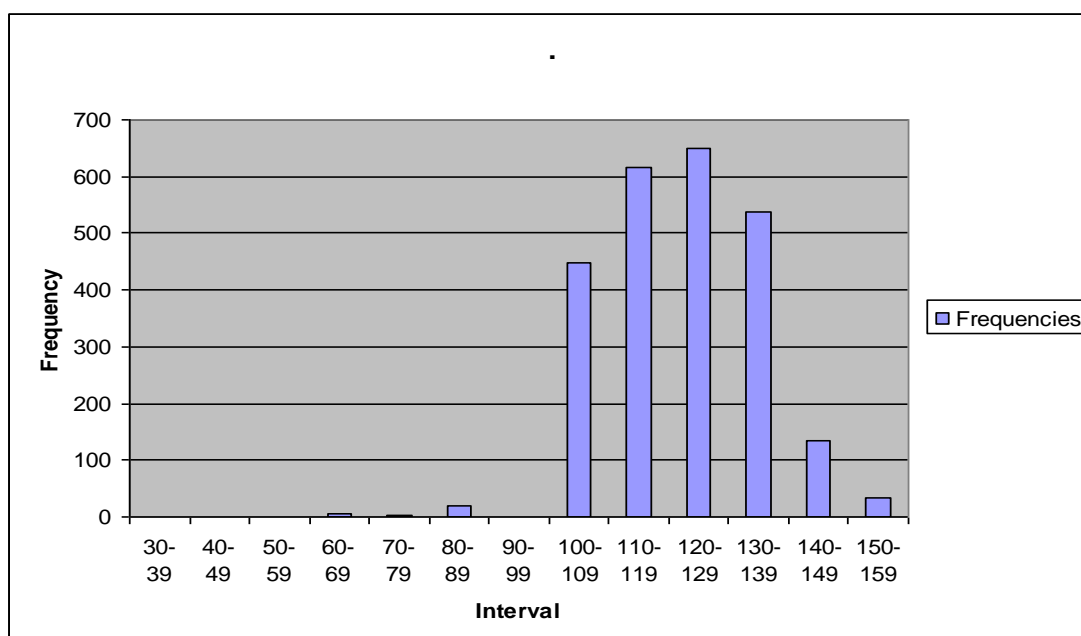
Sk	-0.0545
Std. SK	0.0124
SK (C.R.)	-4.3855
Ku	0.2479
Std. Ku	0.00789
Ku (C.R.)	-2.48

From Table 5.10 it is observed that the Mean attitude score of students of Gujarati medium students is 106.88 and Median is 107.06. The distribution is negatively skewed. The C.R. of skewness is -4.3855 which is more than 2.58 for 0.01 level, and therefore significant. So the distribution is significantly skewed.

The Kurtosis of the distribution is 0.2479, which is less than 0.263 and the distribution is leptokurtic. The C.R. (-2.48) is greater than 1.96, at 0.5 level so the kurtosis is significantly which means the distribution is leptokurtic, which is shown in graph 5.10

**Graph : 5.10**

**Frequency polygon of Gujarati medium students of 12th commerce**



**Data : 11**

**[Attitude as per Higher level Educational Achievement of students of standard 12th commerce]**

**TABLE : 5.11**

**Frequency Distribution of High level Educational Achievement**

<b>Interval</b>	<b>Frequencies</b>
30-39	00
40-49	01
50-59	06
60-69	04
70-79	05
80-89	14
90-99	36
100-109	465
110-119	335
120-129	334
130-139	58
140-149	33
150-159	34
<b>Total Students</b>	<b>1325</b>

Mean	110.77
Median	107.68
Std. de	12.99
Q1	99.45
Q3	114.19
Q	7.33
P90	121.78
P10	99.11
Sk	-0.1938

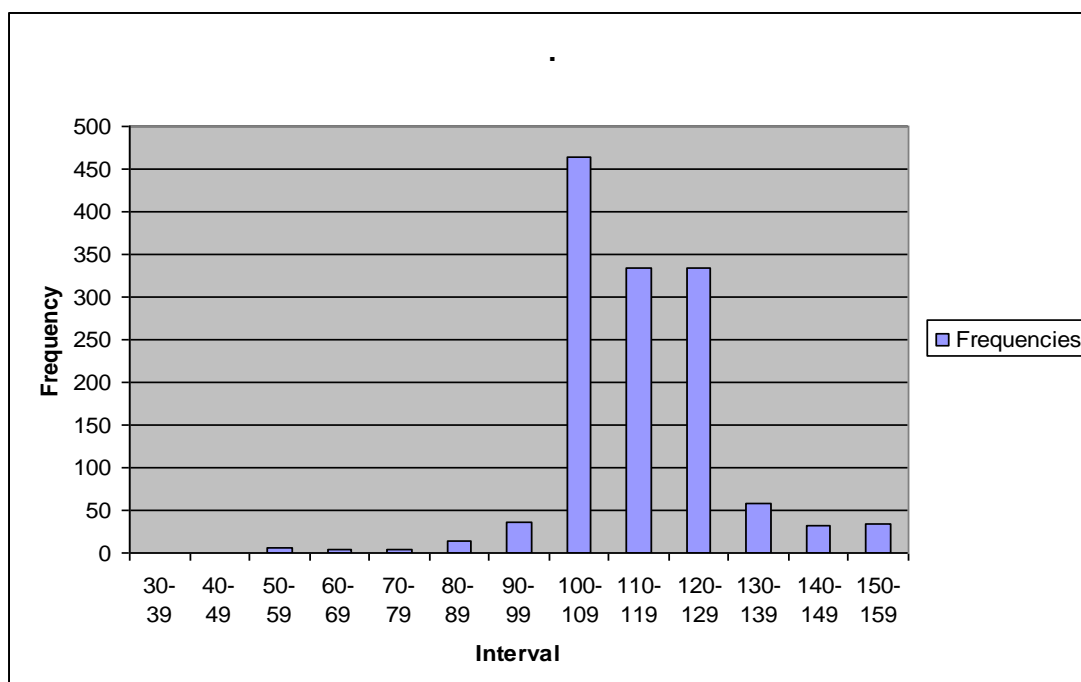
Std. SK	0.0163
SK (C.R.)	-11.9150
Ku	0.2489
Std. Ku	0.0099
Ku (C.R.)	-2.51

From Table 5.11 it is observed that the Mean attitude score of students who hold higher level educational achievement is 106.71 and the Median is 106.71. The distribution is negatively skewed. The C.R. of skewness is -11.9150 which is more than 2.58 for 0.01 level, and therefore significant. So the distribution is significantly skewed.

The Kurtosis of the distribution is 0.2489, and the distribution is leptokurtic. The C.R. (-2.51) is more than 1.96, at 0.5 level so the kurtosis is significant which means the distribution is significantly leptokurtic, which is shown in graph 5.11

**Graph : 5.11**

**Frequency polygon of high level educational achievement holder students of 12th commerce**





**Data : 12**

**[Attitude as per Middle level Educational Achievement of students of standard 12th commerce]**

**TABLE : 5.12**

**Frequency Distribution of Middle level Educational Achievement**

<b>Interval</b>	<b>Frequencies</b>
30-39	00
40-49	00
50-59	00
60-69	12
70-79	00
80-89	33
90-99	33
100-109	177
110-119	194
120-129	356
130-139	233
140-149	27
150-159	05
<b>Total Students</b>	<b>1070</b>

Mean	105.25
Median	108.36
Std. de	13.95
Q1	99.33
Q3	100.99
Q	87.23
P90	118.36
P10	10.36

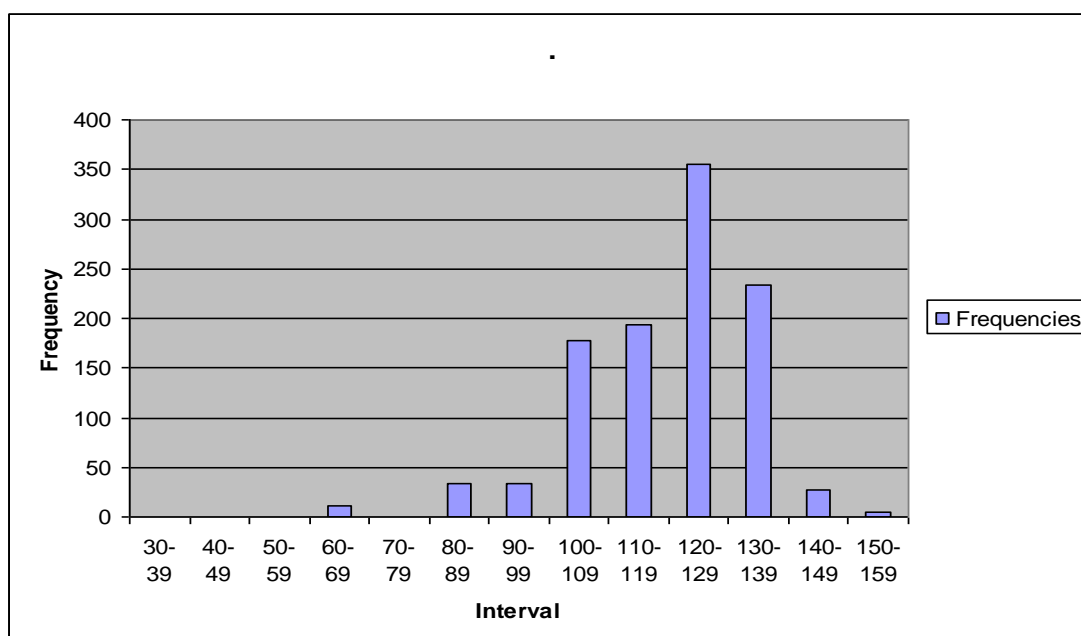
Sk	-0.6546
Std. SK	0.0323
SK (C.R.)	-0.72
Ku	0.3033
Std. Ku	0.0155
Ku (C.R.)	4.75

From Table 5.12 it is observed that the Mean attitude score of students who holds middle level educational achievement is 119.37 and the Median is 119.87. The distribution is negatively skewed. The C.R. of skewness is -0.72 which is less than 2.58 for 0.01 level, and therefore not significant. So the distribution is normal.

The Kurtosis of the distribution is 0.3033, which is greater than 0.263 and the distribution is leptokurtic. The C.R. (4.75) is more than 2.58, so the kurtosis is significant which means the distribution is significantly leptokurtic, which is shown in graph 5.12

**Graph : 5.12**

**Frequency polygon of Middle level Educational Achievement holder students of 12th commerce**



**Data : 13**

**[Attitude as per Lower level Educational Achievement of students of standard 12th commerce]**

**TABLE : 5.13**

**Frequency Distribution of Lower level educational achievement of Students Standard 12**

<b>Interval</b>	<b>Frequencies</b>
30-39	00
40-49	00
50-59	00
60-69	00
70-79	12
80-89	18
90-99	106
100-109	128
110-119	99
120-129	159
130-139	21
140-149	11
150-159	01
<b>Total Students</b>	<b>555</b>

Mean	106.33
Median	106.25
Std. de	12.81
Q1	99.285
Q3	113.19
Q	6.36
P90	120.58
P10	92.66

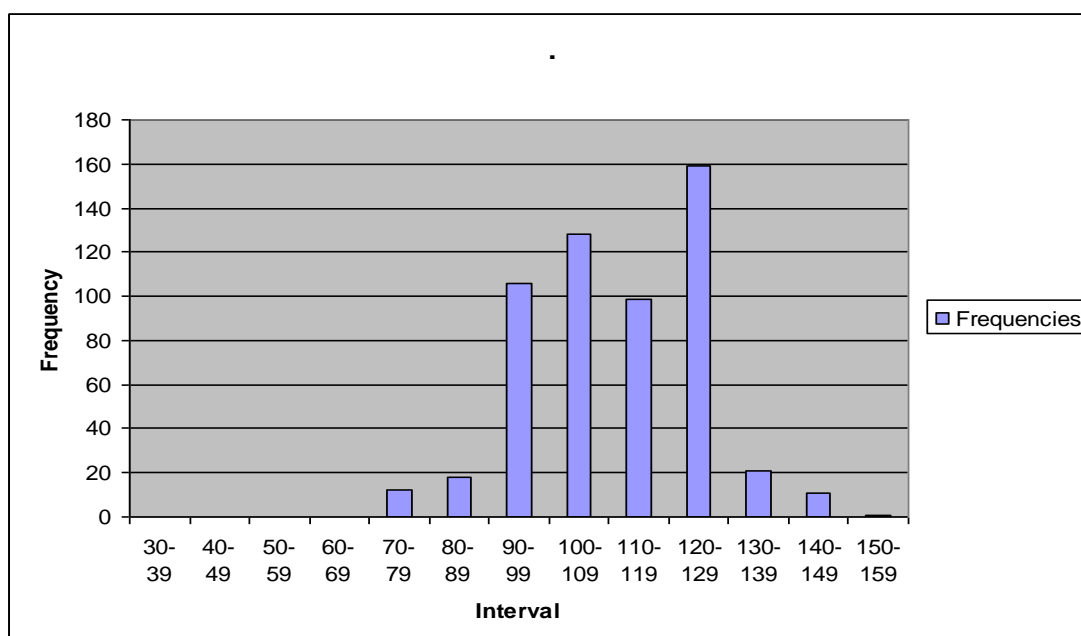
Sk	-0.05
Std. SK	0.0236
SK (C.R.)	-1.1858
Ku	0.2456
Std. Ku	0.0136
Ku (C.R.)	-1.0000

From Table 5.13 it is observed that the Mean attitude score of students who holds lower level educational achievement is 106.33 and the Median is 106.25. The distribution is negatively skewed. The C.R. of skewness is (-0.1858) which is less than 1.96 for 0.05 level, and therefore not significant. So the distribution is normal.

The Kurtosis of the distribution is 2.2456, which is less than 0.263 and the distribution is leptokurtic. The C.R. (-1.00) is less than 1.96, so the kurtosis is not significant which means the distribution is normal, which is shown in graph 5.13

**Graph : 5.13**

**Frequency polygon of Lower level Educational Achievement holder students of 12th commerce**



**Data : 14**

**[Attitude as per ill-literacy of student's father]**

**TABLE : 5.14**

**Frequency Distribution as per ill-literacy of student's father**

<b>Interval</b>	<b>Frequencies</b>
30-39	00
40-49	00
50-59	00
60-69	12
70-79	32
80-89	23
90-99	27
100-109	259
110-119	301
120-129	224
130-139	38
140-149	33
150-159	01
<b>Total Students</b>	<b>950</b>

Mean	105.88
Median	106.44
Std. de	13.81
Q1	98.55
Q3	113.19
Q	7.45
P90	129.32
P10	90.66
Sk	-0.52
Std. SK	0.0258

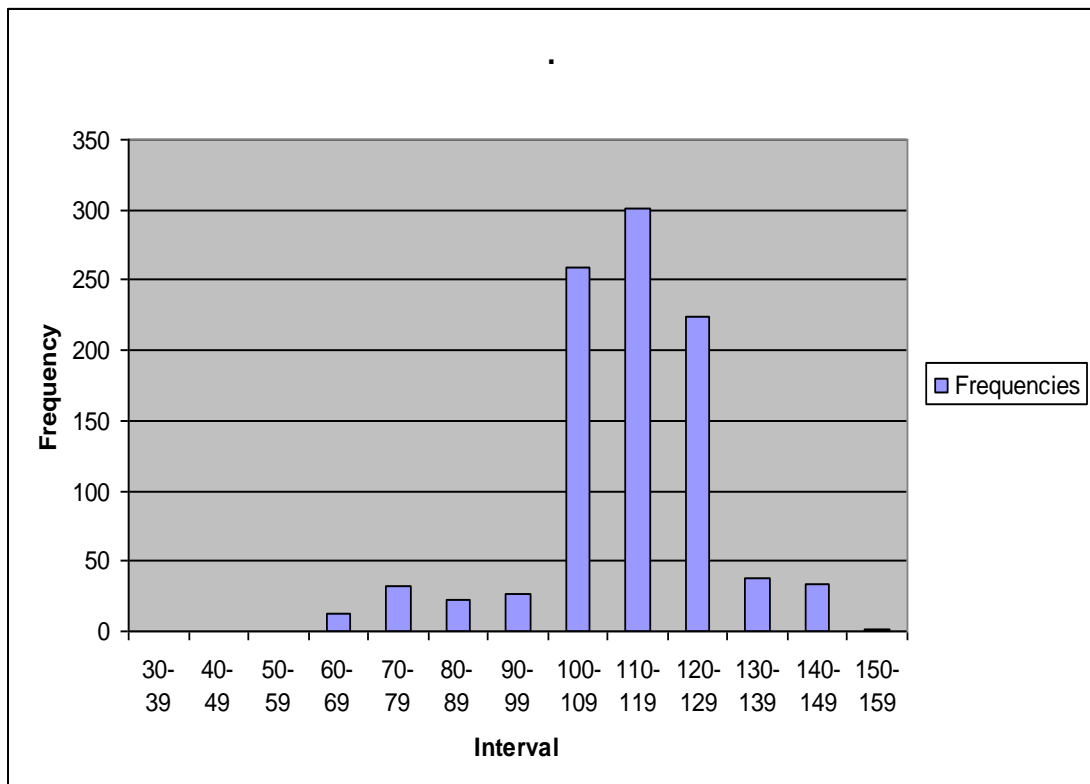
SK (C.R.)	-5.4258
Ku	0.2586
Std. Ku	0.0118
Ku (C.R.)	-1.4138

From Table 5.14 it is observed that the Mean attitude score of students whose father is less-literacy is 105.88 and the Median is 106.44. The distribution is negatively skewed. The C.R. of skewness is (-5.4258) which is more than 2.58 for 0.01 level, and therefore significant. So the distribution is significantly skewed.

The Kurtosis of the distribution is 0.2586, which is less than 0.263 and the distribution is leptokurtic. The C.R. (-1.4138) is less than 1.96, so the kurtosis is not significant, which means the distribution is normal, which is shown in Graph 5.14

**Graph : 5.14**

**Frequency polygon of ill-literacy of students father**



**Data : 15**

**[Attitude as per less-literacy of student's father]**

**TABLE : 5.15**

**Frequency Distribution as per less-literacy of Student's father**

<b>Interval</b>	<b>Frequency</b>
30-39	01
40-49	02
50-59	03
60-69	08
70-79	10
80-89	39
90-99	116
100-109	108
110-119	125
120-129	158
130-139	73
140-149	77
150-159	30
<b>Total Students</b>	<b>750</b>

Mean	106.80
Median	106.59
Std. de	12.89
Q1	99.98
Q3	113.56
Q	7.45
P90	120.96
P10	92.40
Sk	0.0270
Std. SK	0.0210

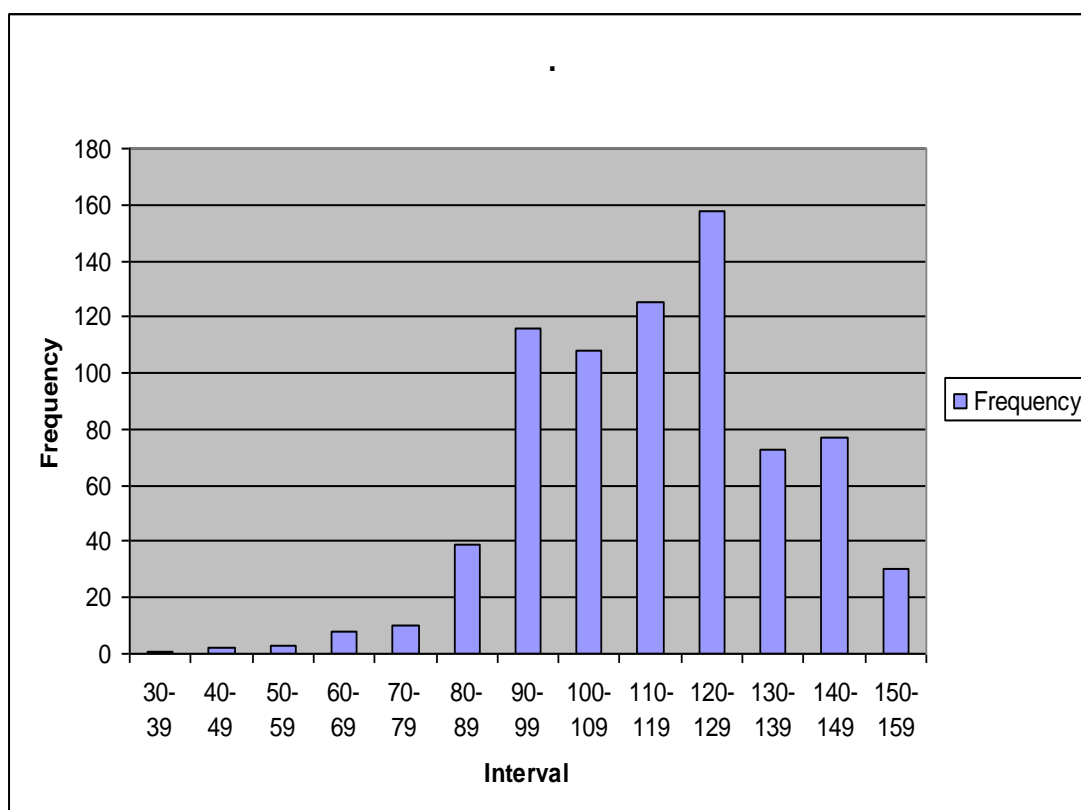
SK (C.R.)	-1.1255
Ku	0.2451
Std. Ku	0.0103
Ku (C.R.)	-1.38

From Table 5.15 it is observed that the Mean attitude score of students whose father is less literate is 106.80 and the Median is 106.59. The distribution is positively skewed. The C.R. of skewness is -1.1255, which is less than 2.58 for 0.01 level, and therefore not significant. So the distribution is normal .

The Kurtosis of the distribution is 0.2451, which is less and the distribution is leptokurtic. The C.R. (-1.38) is less than 2.58, so the kurtosis is not significant, which means the distribution is normal, which is shown in Graph 5.15

**Graph : 5.15**

**Frequency polygon of less-literacy students**





**Data : 16**

**[Attitude as per High-literacy of student's father]**

**TABLE : 5.16**

**Frequency Distribution as per High-Literacy Student's father**

<b>Interval</b>	<b>Frequency</b>
30-39	01
40-49	03
50-59	05
60-69	08
70-79	32
80-89	21
90-99	65
100-109	316
110-119	306
120-129	251
130-139	155
140-149	62
150-159	25
<b>Total Students</b>	<b>1250</b>

Mean	109.23
Median	105.24
Std. de	12.63
Q1	98.36
Q3	113.62
Q	7.14
P90	121.36
P10	91.85
Sk	-0.0965
Std. SK	0.0176

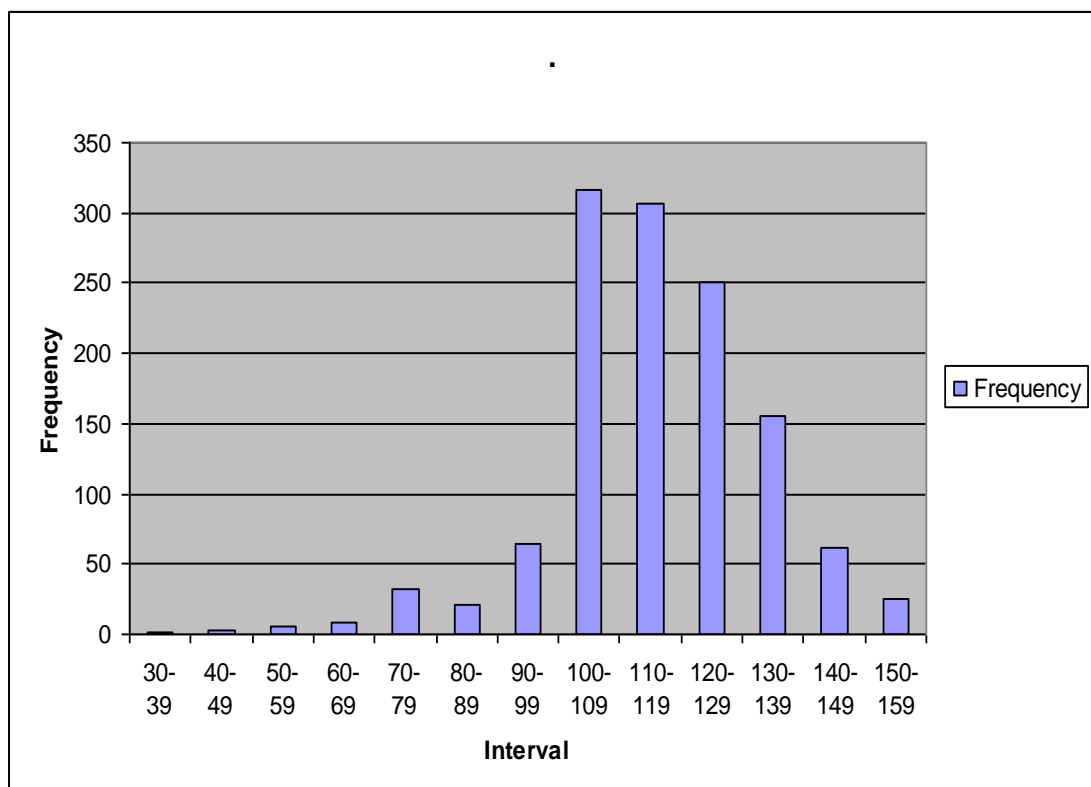
SK (C.R.)	-5.4500
Ku	0.2786
Std. Ku	0.0095
Ku (C.R.)	-1.82

From Table 5.16 it is observed that the Mean attitude score of students whose father is high-literate is 104.52 and the Median is 105.24. The distribution is negatively skewed. The C.R. of skewness is -5.4500, which is greater than 2.58 for 0.01 level, and therefore significant. So the distribution is significantly skewed.

The Kurtosis of the distribution is 0.2786, which is less than 0.263 and the distribution is leptokurtic. The C.R.(-1.82) is less than 1.96, so the kurtosis is not significant, which means the distribution is normal, which is shown in Graph 5.16.

**Graph : 5.16**

**Frequency polygon of high-literacy of student's father**



**Data : 17**

**[Attitude as per ill-literacy of student's mother]**

**TABLE : 5.17**

**Frequency Distribution as per ill-literacy of Student's mother**

<b>Interval</b>	<b>Frequency</b>
30-39	02
40-49	02
50-59	03
60-69	05
70-79	03
80-89	45
90-99	52
100-109	288
110-119	301
120-129	191
130-139	54
140-149	21
150-159	08
<b>Total Students</b>	<b>975</b>

Mean	107.65
Median	108.78
Std. de	13.88
Q1	100.98
Q3	114.36
Q	7.59
P90	122.78
P10	92.58
Sk	-0.55
Std. SK	0.0409

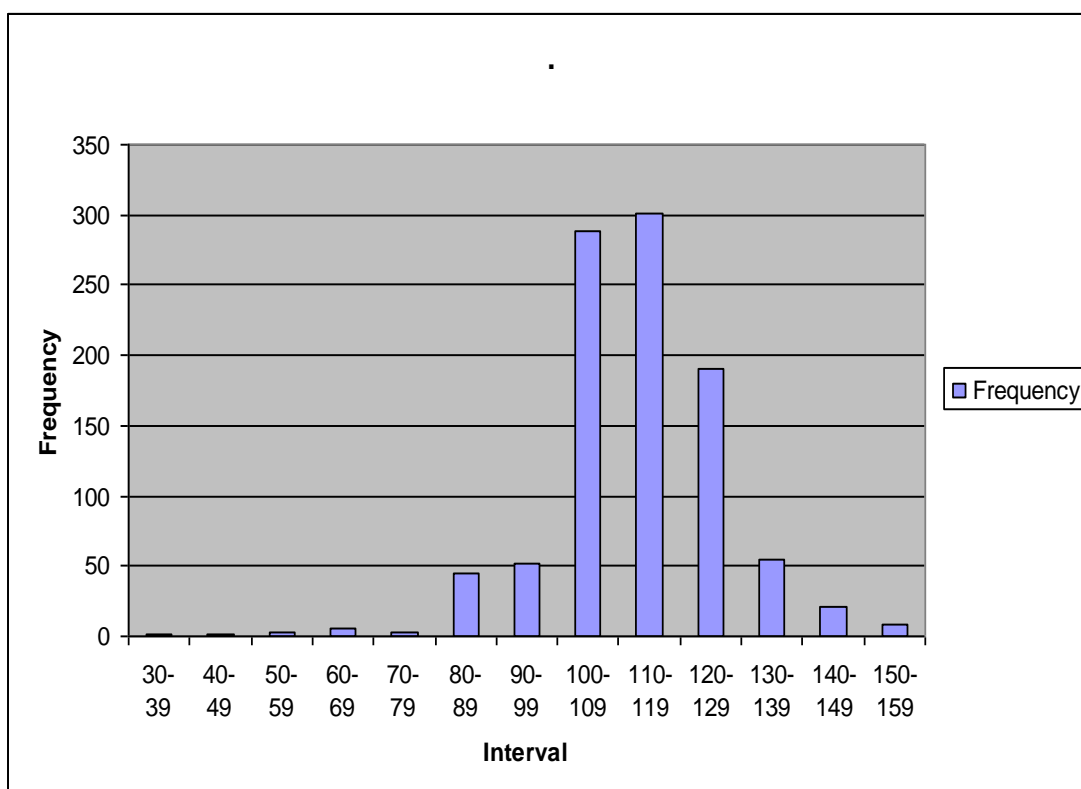
SK (C.R.)	-12.4152
Ku	0.2536
Std. Ku	0.0110
Ku (C.R.)	-1.8985

From Table 5.17 it is observed that the Mean attitude score of students whose mother is ill-literate is 107.65 and the Median is 108.78. The distribution is negatively skewed. The C.R. of skewness is -12.4152, which is greater than 2.58 for 0.01 level, and therefore significant. So the distribution is significantly skewed.

The kurtosis of the distribution is 0.2536, which is less than 0.263 and the distribution is leptokurtic. The C.R.(-1.8385) is less than 1.96, so the kurtosis is not significant, which means the distribution is normal, which is shown in Graph 5.17

**Graph : 5.17**

**Frequency polygon of ill-literacy of student's mother**



**Data : 18**

**[Attitude as per less-literacy of student's mother]**

**TABLE : 5.18**

**Frequency Distribution as per less-literacy of student's mother**

<b>Interval</b>	<b>Frequency</b>
30-39	00
40-49	02
50-59	03
60-69	15
70-79	25
80-89	38
90-99	78
100-109	222
110-119	253
120-129	177
130-139	237
140-149	29
150-159	21
<b>Total Students</b>	<b>1100</b>

Mean	108.52
Median	107.44
Std. de	12.99
Q1	98.52
Q3	114.19
Q	7.53
P90	121.77
P10	92.88
Sk	-0.1726
Std. SK	0.0193

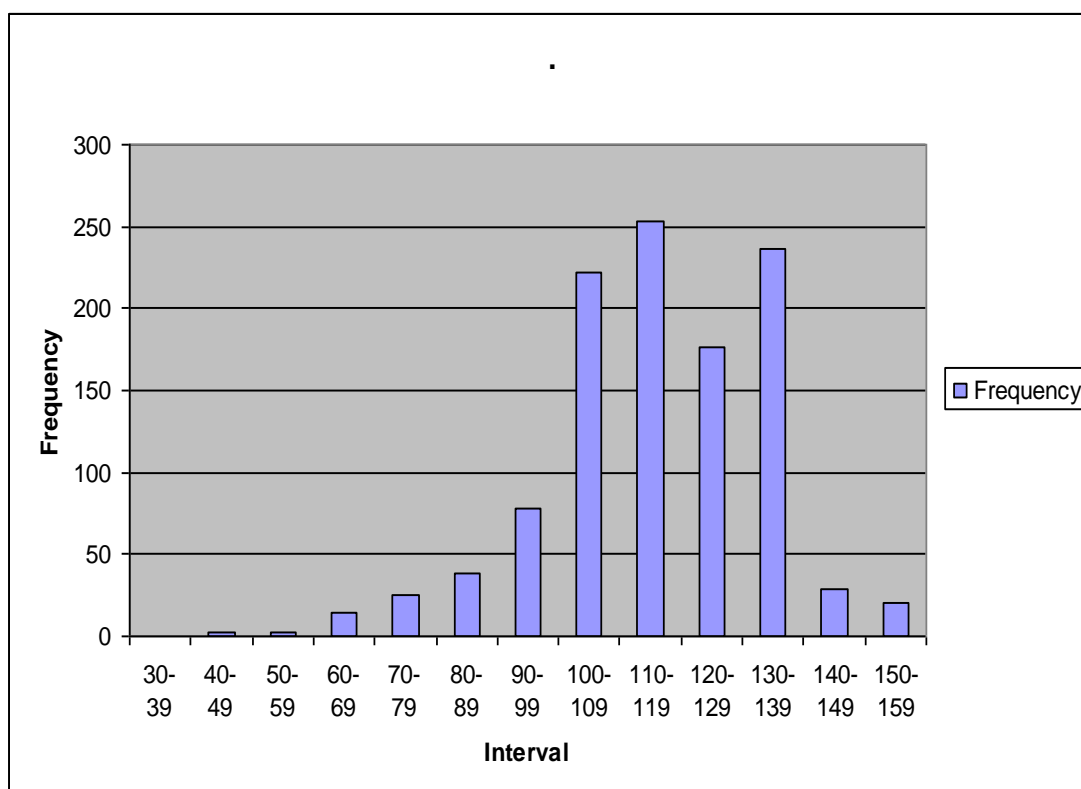
SK (C.R.)	-11.9162
Ku	0.2558
Std. Ku	0.0098
Ku (C.R.)	-2.33

From Table 5.18 it is observed that the Mean attitude score of students whose mother is less-literate is 106.91 and the Median is 107.44. The distribution is negatively skewed. The C.R. of skewness is -11.9162, which is greater than 2.58 for 0.01 level, and therefore significant. So the distribution is significantly skewed.

The Kurtosis of the distribution is 0.2558, which is less than 0.263 and the distribution is leptokurtic. The C.R.(-2.33) is more than 1.96, so the kurtosis is significant, which means the distribution is significantly leptokurtic, which is shown in Graph 5.18

**Graph : 5.18**

**Frequency polygon of less-literacy of student's mother**



**Data : 19**

**[Attitude of as per High-literacy of Student's mother]**

**TABLE : 5.19**

**Frequency Distribution as per High-literacy of Student's Mother**

<b>Interval</b>	<b>Frequency</b>
30-39	01
40-49	00
50-59	02
60-69	06
70-79	04
80-89	29
90-99	67
100-109	200
110-119	150
120-129	205
130-139	163
140-149	23
150-159	25
<b>Total Students</b>	<b>875</b>

Mean	110.20
Median	106.82
Std. de	11.51
Q1	99.36
Q3	112.52
Q	7.55
P90	120.36
P10	92.36
Sk	0.1385
Std. SK	0.0180

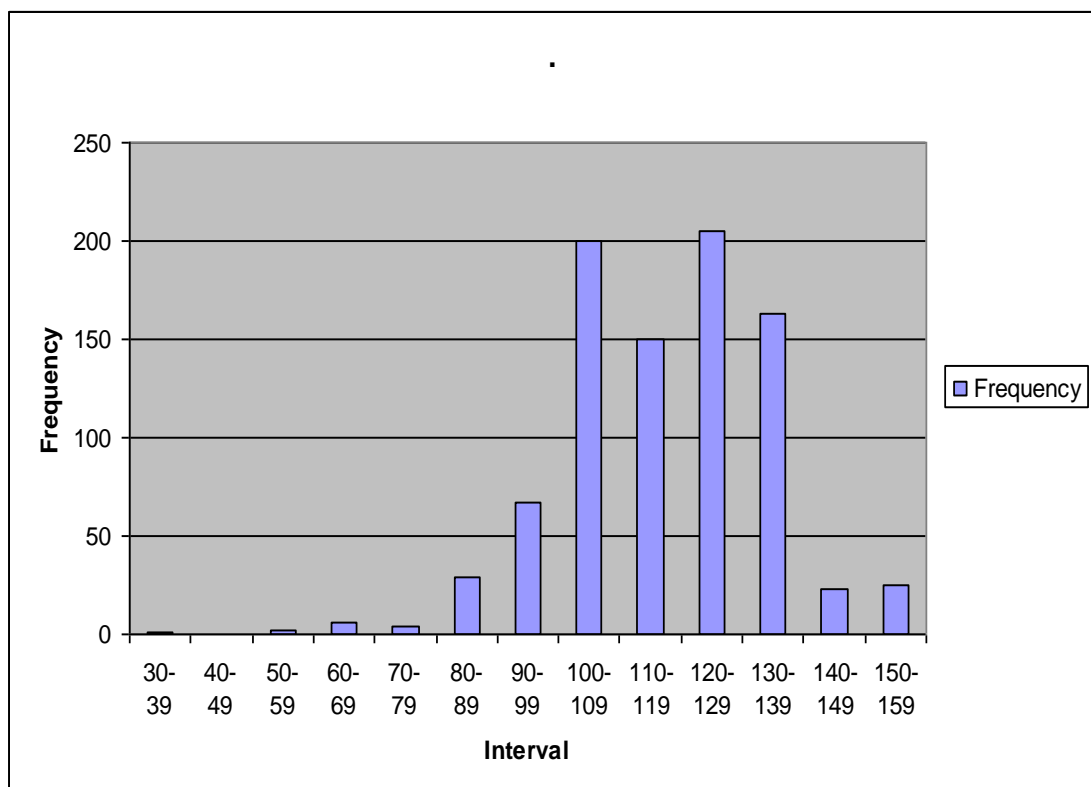
SK (C.R.)	6.9250
Ku	0.3520
Std. Ku	0.0123
Ku (C.R.)	-1.79

From Table 5.19 it is observed that the Mean attitude score of students whose mother is High-literacy is 107.33 and the Median is 106.82. The distribution is positively skewed. The C.R. of skewness is 6.9250, which is greater than 2.58 for 0.01 level, and therefore significant. So the distribution is significantly skewed.

The Kurtosis of the distribution is 0.3520, which is less than 0.263 and the distribution is leptokurtic. The C.R.(-1.79) is less than 2.58, so the kurtosis is not significant, which means the distribution is normal, which is shown in Graph 5.19

**Graph : 5.19**

**Frequency polygon of hig-literacy of students mother**





## 5.4 TESTING OF HYPOTHESES :

### Hypotheses of Attitude :

#### Study – 1

#### (Total Boys V/s. Total Girls)

Gender play an important role in our likes and dislikes, preferences etc, there is difference in the attitude of boys and girls is a general belief. Girls have less favorable attitude for learning of maths than boys statistics is a part of maths. Also many researches have prove it. So the question comes up ----'Do the girls have a less favorable attitudes towards Statistics than boys? To seek an answer to this question the following null hypothesis was formulated and put to 't' test.

#### Hypothesis 1:

No significant difference will be obtained in the mean score of attitudes towards the subject of statistics between boys and girls students of 12th commerce.

**Table- 5.20**

#### **Variances of Boys and Girls of Standard 12th Commerce**

<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>D</b>	<b>Std. Deviation</b>	<b>C.R.</b>
Girls	1560	122.23	15.52	1.02	0.272	4.109
Boys	1390	121.21	14.57			

Observing Table 5.20 the value of C.R. is 4.109 which is greater than 2.58 at 0.01 level. So the null-hypothesis is not accepted. This shows there is significant mean difference between the attitude of boys and girls of 12th commerce. The difference of 1.02 in the

mean score is in favor of girls. The difference is significant at 0.01 level and not accidental.

Sex difference is observed. The attitude score of girls is different significantly from the attitude score of boys. The difference in the attitude scores of boys and girls in general is quite high and significant and in favor of girls, indicating a more favorable attitude towards statistics of girl student.

### **Study – 2**

**(Total Gujarati Medium students V/s.  
Total English Medium students.)**

#### **Hypothesis :**

No significant difference will be obtained in the mean score of attitudes towards the subject of statistics between Gujarati medium and English Medium student of 12th Commerce.

**Table- 5.21**

**Variances of Gujarati medium students and English Medium students of Standard 12th Commerce**

<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>D</b>	<b>Std. Deviation</b>	<b>C.R.</b>
Gujarati Medium Students	2450	106.88	12.45	0.99	0.690	0.875
English Medium Students	500	105.89	11.65			

Observing Table 5.21 the value of C.R. is 0.875 which is less than 1.96 at 0.05 level. So the null-hypothesis is not rejected. This shows there is no significant mean difference in the mean of Gujarati and English medium Students..

The mean score of Gujarati medium and English medium is 106.88 and 105.89. The difference is 0.99 in the mean score is in favor of Gujarati medium students but not significant. So the difference is accidental.

Medium difference is observed. The attitude score of Gujarati medium students is different significantly from the attitude score of English medium students. The difference in the attitude scores of Gujarati medium students and English medium students in general is quite high and significant and in favor of Gujarati medium students, indicating more favorable attitude towards statistics of Gujarati medium students.

### **Study – 3**

**(Total Rural students V/s. Total Urban Students.)**

#### **Hypothesis :**

No significant differences will be obtained in the mean score of attitudes towards the subject of statistics between rural and urban area's student of 12th commerce.

**Table- 5.22**

**Variances of Rural students and Urban Students of Standard 12th Commerce**

<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>D</b>	<b>Std. Deviation</b>	<b>C.R.</b>
Rural Students	1150	116.52	11.93	3.84	1.180	1.873
Urban Students	1800	120.36	11.91			

Observing Tables 5.22 the value of C.R. is 1.873 which is less than 1.96 at 0.05 level. So the null-hypothesis is not rejected. This shows there is no significant mean difference between the rural and urban area students of std.12th commerce.

The mean score of rural students of 12th std. is 116.52 and the urban students of std. 12 is 120.36. The difference of 3.84 in the mean score is in favor of urban students. The difference is not significant at 0.05 level and therefore accidental.

Area difference is observed. The attitude score of rural student is different significantly from the attitude score of urban students. The difference in the attitude scores of urban area students and rural area students in general is quite high and significant and in favor of urban area students, indicating a more favorable attitude towards statistics of urban area students.

#### **Study – 4**

#### **(Total Granted School students V/s. Total Government School Students)**

No significant differences will be obtained in the mean score of attitudes towards the subject of statistics between government and granted schools students of 12th commerce.

**Table- 5.23**

#### **Variances of Granted School and Government School students of Standard 12th Commerce**

<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>D</b>	<b>Std. Deviation</b>	<b>C.R.</b>
Granted School Students	800	106.24	12.76	4.31	0.556	8.529
Government School Students	150	101.93	11.87			

Observing Table 5.23, the value of C.R. is 8.529, which is greater than 2.58 at 0.01 level. So the null-hypothesis is not rejected. This shows there is significant difference in the mean score of Granted and Government school students.

The mean score of granted and government school students is 106.24 and 101.93 respectively. The difference in mean is 4.31 which quite high and significant and in favor of granted school students, indicating more favorable attitude towards statistics of Granted school students.

**Study – 5**  
**(Total Granted School students V/s.**  
**Total Private School Students)**

No significant differences will be obtained in the mean score of attitudes towards the subject of statistics between granted and private schools students of 12th commerce.

**Table- 5.24**  
**Variances of Granted School and Government School students**  
**of Standard 12th Commerce**

<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>D</b>	<b>Std. Deviation</b>	<b>C.R.</b>
Granted School Students	800	106.24	12.76	2.06	0.322	6.250
Private School Students	2000	108.30	12.15			

Observing Table 5.24, the value of C.R. is 6.250, which is greater than 2.58 at 0.01 level. So the null-hypothesis is not accepted. This shows there is significant difference in the mean score of Granted and private school students.

The mean score of granted and private school students is 106.24 and 108.30 respectively. The difference in mean is 2.06 which quite high and significant and in favor of private school students, indicating more favorable attitude towards statistics of private school students.

**Study – 6**  
**(Total Government School students V/s.**  
**Total Private School Students)**

No significant differences will be obtained in the mean score of attitudes towards the subject of statistics between government and private schools students of 12th commerce.

**Table- 5.25**  
**Variances of Government School students and**  
**Private School students of Standard 12th Commerce**

<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>D</b>	<b>Std. Deviation</b>	<b>C.R.</b>
Government School Students	150	101.93	11.87	6.37	0.184	34.921
Private School Students	2000	108.30	12.15			

Observing Table 5.25, the value of C.R. is 34.921, which is greater than 2.58 at 0.01 level. So the null-hypothesis is not accepted. This shows there is significant difference in the mean score of Government and Private school students.

The mean score of government and private school students is 101.93 and 108.30 respectively. The difference in mean is 6.37 which quite high and significant and in favor of private school students, indicating more favorable attitude towards statistics of private school students. The difference is quite noticeable.

### Study – 7

**(Total High Level Educational achievement holder students V/s. Total Lower level educational achievement holder Students)**

No significant differences will be obtained in the mean score of attitudes towards the subject of statistics between high level of educational achievement and Lower level of educational achievement of students of 12th commerce.

**Table- 5.26**

**Variances of High level educational achievement holder students and Lower level educational achievement students of 12th Commerce**

<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>D</b>	<b>Std. Deviation</b>	<b>C.R.</b>
High level educational achievement	1325	110.77	12.99	4.44	0.192	8.795
Lower level educational achievement	555	106.33	12.81			

Observing Table 5.26, the value of C.R. is 8.795, which is greater than 2.58 at 0.01 level. So the null-hypothesis is not accepted. This shows there is significant difference in the mean score of High level educational achievement and lower level educational achievement of students.

The mean score of high level educational achievement and lower level educational achievement of students of std. 12 commerce is 110.77 and 106.33 respectively. The difference in mean is 4.44 which is quite high and significant and in favor of high level educational achievement students, indicating more favorable attitude towards statistics of high level educational achievement holder students. The difference is quite noticeable.

### **Study – 8**

**(Total High Level Educational achievement holder students V/s. Total middle level educational achievement holder Students)**

No significant differences will be obtained in the mean score of attitudes towards the subject of statistics between high level of educational achievement and middle level of educational achievement of students of 12th commerce.



**Table- 5.27**  
**Variiances of High level educational achievement holder**  
**and middle level educational achievement students of**  
**12th Commerce**

<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>D</b>	<b>Std. Deviation</b>	<b>C.R.</b>
High level educational achievement	1325	110.77	12.99	5.52	0.652	10.2653
Middle level educational achievement	1070	105.25	13.95			

Observing Table 5.26, the value of C.R. is 10.2653, which is greater than 2.58 at 0.01 level. So the null-hypothesis is not rejected. This shows there is significant difference in the mean score of High level educational achievement and middle level educational achievement of students.

The mean score of high level educational achievement and lower level educational achievement of students of std. 12 commerce is 110.77 and 105.25 respectively. The difference in mean is 5.52 which quite high and significant and in favor of high level educational achievement students, indicating more favorable attitude towards statistics of high level educational achievement holder students. The difference is quite noticeable.

### Study – 9

**(Total Middle Level Educational achievement holder students**  
**V/s. Total Lower level educational achievement holder Students)**

No significant differences will be obtained in the mean score of attitudes towards the subject of statistics between lower level of educational achievement and middle level of educational achievement of students of 12th commerce.

**Table- 5.28**  
**Variances of Middle level educational achievement holder students and Lower level educational achievement holder students of 12th Commerce**

<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>D</b>	<b>Std. Deviation</b>	<b>C.R.</b>
Middle level educational achievement	1070	105.25	13.95	1.08	0.253	4.136
Lower level educational achievement	555	106.33	12.81			

Observing Table 5.27, the value of C.R. is 4.136, which is greater than 2.58 at 0.01 level. So the null-hypothesis is not accepted. This shows there is significant difference in the mean score of Lower level educational achievement and middle level educational achievement of students.

The mean score of middle level educational achievement and lower level educational achievement of students of std. 12 commerce is 106.33 and 105.25 respectively. The difference in mean is 1.06 which quite lower and significant and in favor of lower level educational achievement students, indicating more favorable attitude

towards statistics of lower level educational achievement holder students. The difference is quite noticeable.

### Study – 10

#### (Total students whose father is ill-literate V/s. Total students whose father is highly-literate)

No significant differences will be obtained in the mean score of attitudes towards the subject of statistics between ill-literacy and high literacy of student's father.

**Table- 5.29**  
**Variances of students whose father is ill-literate and highly literate**

Variables	N	Mean	S.D.	D	Std. Deviation	C.R.
Ill-literacy of father	950	105.88	13.81	3.35	0.503	7.863
High-literacy of father	1250	109.23	12.63			

Observing Table 5.28, the value of C.R. is 7.863, which is greater than 2.58 at 0.01 level, So the null-hypothesis is not accepted. This shows there is significant difference in the mean score of Students whose father is ill-literate and whose Father is Highly-literate.

The mean score of ill-literate father and highly literate father of students of Std.12th commerce is 105.88 and 109.23 respectively. The difference is mean is 3.35 which is quite significant and in favor

of statistics of students whose father is highly literate, indicating more favorable attitude towards statistics of students whose father is highly literate. The difference is quite noticeable.

### **Study – 11**

**(Total students whose father is ill-literate  
V/s. Total students whose father is less-literate)**

No significant differences will be obtained in the mean score of attitudes towards the subject of statistics between ill-literacy and less-literacy of student's father.

**Table- 5.30**  
**Variances of students whose father is ill-literate  
and less literate**

<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>D</b>	<b>Std. Deviation</b>	<b>C.R.</b>
Ill-literacy of father	950	105.88	13.81	0.92	0.523	1.782
Less-literacy of father	750	106.80	12.89			

Observing Table 5.29, the value of C.R. is 1.782, which is less than 2.58 at 0.01 level, So the null-hypothesis is not rejected. This shows there is no significant difference in the mean score of Students whose father is ill-literate and whose Father is Less-literate.

The mean score of ill-literate father and less-literate father of students of Std.12th commerce is 105.88 and 106.80 respectively. The difference in mean is .92 which significant and in favor of

literacy of father, indicating more favorable attitude towards statistics of students whose father is less literate. The difference is quite noticeable.

### **Study – 12**

**(Total students whose father is high-literate  
V/s. Total students whose father is less-literate)**

No significant differences will be obtained in the mean score of attitudes towards the subject of statistics between less-literacy and high-literacy of student's father.

**Table- 5.31**

**Variances of students whose father is high-literate  
and less literate**

<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>D</b>	<b>Std. Deviation</b>	<b>C.R.</b>
Less- literacy of father	750	106.80	12.89	2.43	0.242	10.870
High literacy of father	1250	109.23	12.63			

Observing Table 5.30, the value of C.R. is 10.870, which is greater than 2.58 at 0.01 level, so the null-hypothesis is not rejected. This shows there is significant difference in the mean score of Students whose father is less-literate and whose Father is Highly-literate.

The mean score of less-literate father and high-literate father of students of Std.12th commerce is 106.80 and 109.23 respectively. The difference in mean is 2.43 which is quite significant and in favor of highly-literate father, indicating more favorable attitude towards statistics of students whose father is highly literate. The difference is quite noticeable.

### Study – 13

#### (Total students whose mother is less-literate V/s. Total students whose mother is highly-literate)

No significant differences will be obtained in the mean score of attitudes towards the subject of statistics between less-literacy and high-literacy of student's mother.

**Table- 5.32**

#### Variances of students whose mother is ill-literate and highly literate

Variables	N	Mean	S.D.	D	Std. Deviation	C.R.
Ill-literacy of mother	975	107.65	13.88	2.55	0.513	6.123
High-literacy of mother	875	110.20	11.51			

Observing Table 5.31, the value of C.R. is 6.123, which is greater than 2.58 at 0.01 level, So the null-hypothesis is not accepted. This shows there is significant difference in the mean of Students whose mother is ill-literate and whose mother is highly-literate.

The mean score of ill-literate mother and highly literate mother of students of std. 12th commerce is 107.65 and 110.20 respectively. The difference in mean is 2.55 which is quite significant and in favor of highly literate mother, indicating more favorable attitude towards

statistics of students whose mother is highly literate. The difference is quite noticeable.

#### **Study – 14**

**(Total students whose mother is less-literate  
V/s. Total students whose mother is ill-literate)**

No significant differences will be obtained in the mean score of attitudes towards the subject of statistics between less-literacy and ill-literacy of student's mother.

**Table- 5.33**

**Variances of students whose mother is ill-literate  
and less literate**

<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>D</b>	<b>Std. Deviation</b>	<b>C.R.</b>
Ill-literacy of mother	975	107.65	13.88	0.87	0.513	6.123
Less-literacy of mother	1100	108.52	12.99			

Observing Table 5.32, the value of C.R. is 6.123, which is greater than 2.58 at 0.01 level, So the null-hypothesis is not accepted. This shows there is significant difference in the mean score of Students whose mother is ill-literate and whose mother is highly-literate.

The mean score of ill-literate mother and less literate mother of students of std. 12th commerce is 107.65 and 108.52 respectively. The difference in mean is 0.87 which is quite significant and in favor of highly literate mother, indicating more favorable attitude towards

statistics of students whose mother is highly literate. The difference is quite noticeable.

### Study – 15

**(Total students whose mother is less-literate**

**V/s. Total Students whose mother is highly literate)**

No significant differences will be obtained in the mean score of attitudes towards the subject of statistics between less-literacy and highly-literacy of student's mother.

**Table- 5.34**

**Variances of students whose mother is highly-literate  
and less literate**

<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>D</b>	<b>Std. Deviation</b>	<b>C.R.</b>
Highly-literacy of mother	875	110.20	11.51	01.68	0.243	6.582
Less-literacy of mother	1100	108.52	12.99			

Observing Table 5.33, the value of C.R. is 6.582, which is greater than 2.58 at 0.01 level, So the null-hypothesis is not accepted. This shows there is significant difference in the mean of Students whose mother is less-literate and whose mother is highly-literate.

The mean score of less-literate mother and highly literate mother of students of std. 12th commerce is 108.52 and 110.20 respectively. The difference in mean is 1.68 which is quite significant and in favor of highly literate mother, indicating more favorable attitude towards statistics of students whose mother is highly literate. The difference is quite noticeable.

The next chapter [chapter-6] presents the summary and the conclusions drawn from the present data analysis.



**CHAPTER NO. : 5**  
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