Graphical Presentation

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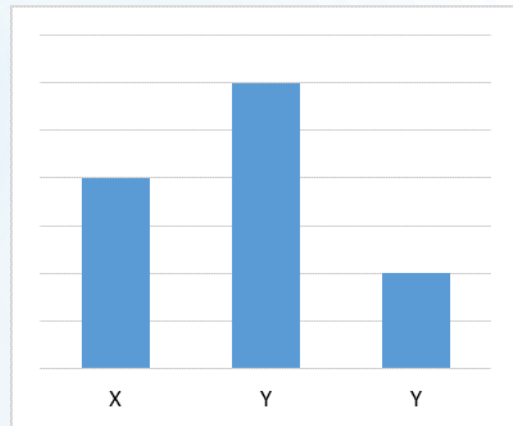
SENIOR LECTURER, DEPARTMENT OF MATHEMATICAL & PHYSICAL SCIENCES

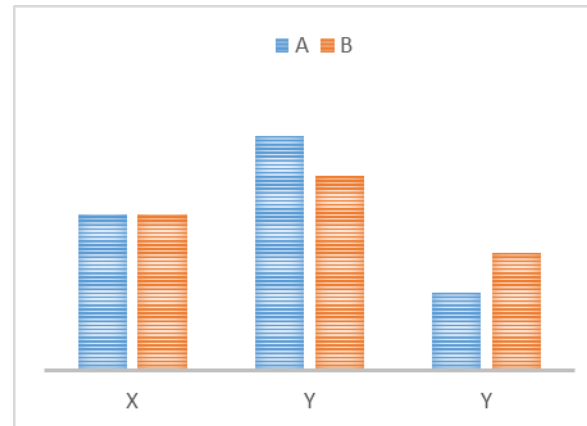# Contents

❑ **For qualitative data**

   ❑ Bar chart

   ❑ Pie chart

❑ **For quantitative data**

   ❑ Histogram

   ❑ Frequency polygon
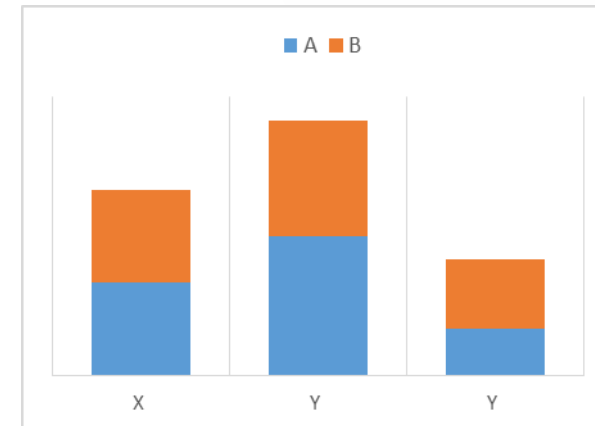
   ❑ Cumulative frequency curve (Ogive)

Bar Chart

Simple bar chart

Clustered/ Multiple Bar chart

Stacked/ Component bar chart

Pie Chart

Chart (Diagram) Example

❑ **Example**

The following is the frequency distribution table of highest education level of 145 randomly selected respondents-

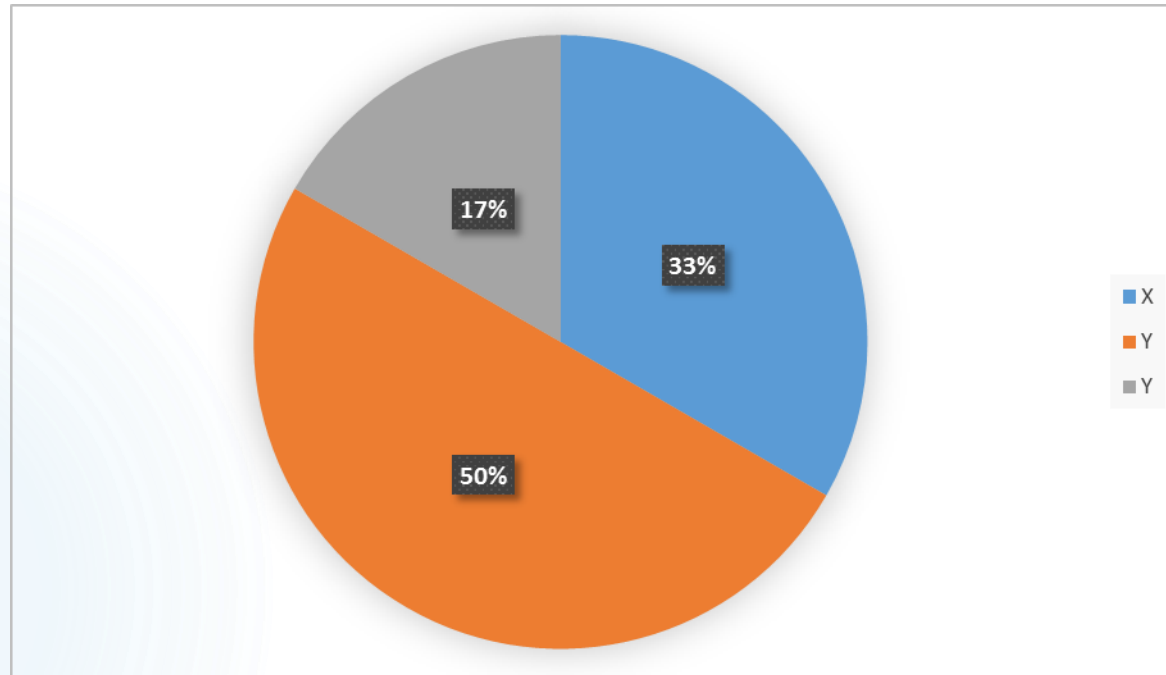| Education level	No. of respondents (frequency)
No education	40
Primary	30
Secondary	25
Higher	50

Represent this in a bar and a pie chart
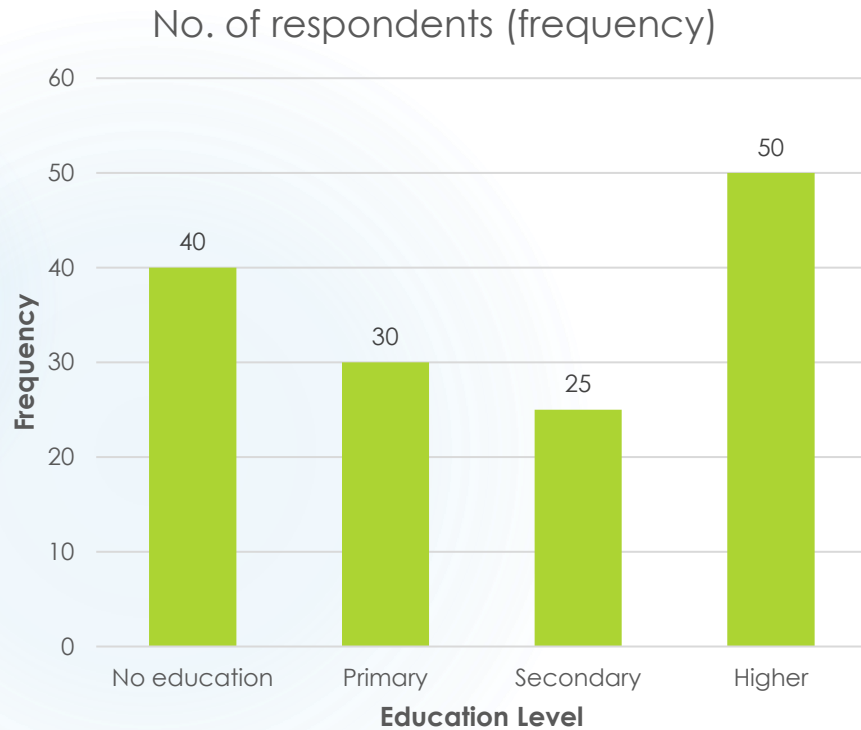
Chart (Diagram) Example

❑ **Example**

The following is the frequency distribution table of highest education level of 145 randomly selected respondents-

Education level	No. of respondents (frequency)	Percentages	Angle (°)
No education	40	27.6	=(40/145)*360=99.3
Primary	30	20.7	=(30/145)*360=74.5
Secondary	25	17.2	=(25/145)*360=62.1
Higher	50	34.5	=(50/145)*360=124.1
Total	**145**	**100**	**360**

Represent this in a bar and a pie chart

Chart (Diagram) Example

Bar Chart

No. of respondents (frequency)

Pie Chart

No. of respondents (frequency)

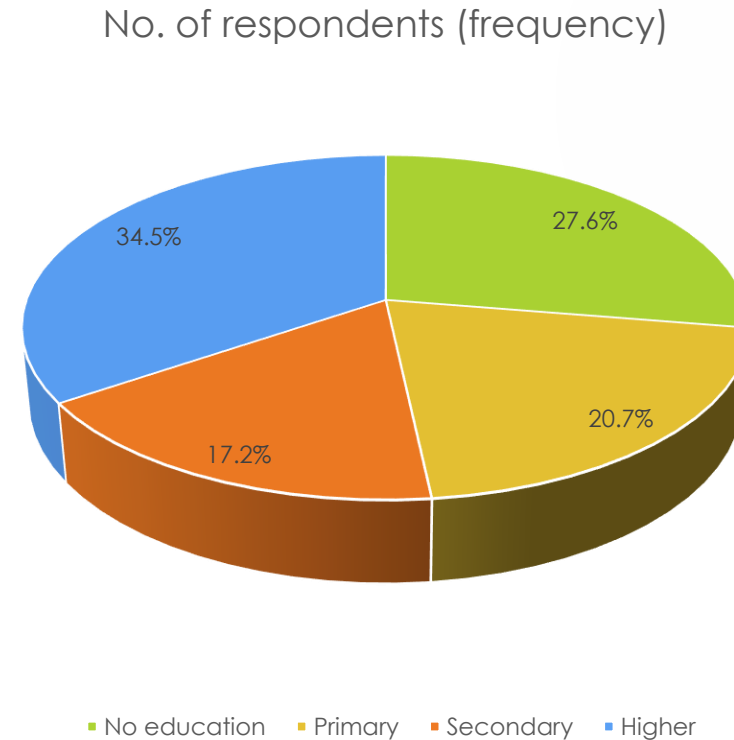No education   Primary   Secondary   Higher
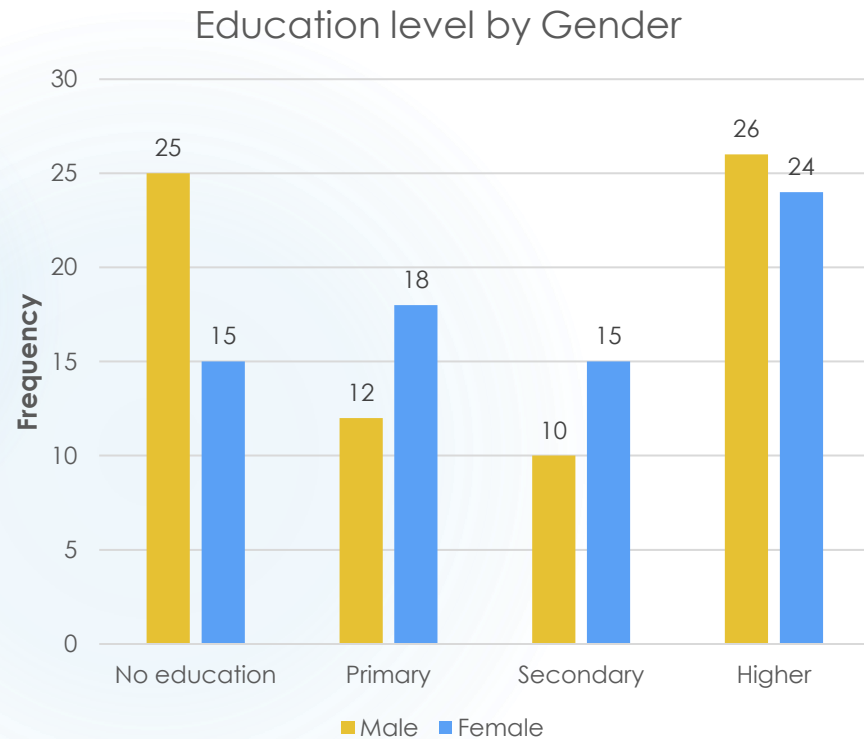
Chart (Diagram) Example

❑ **Example**

The following is the Cross-tabulation of **Highest education level** by **Gender** of 145 randomly selected respondents-

Education level	Gender		Total
	Male	Female	
No education	25	15	40
Primary	12	18	30
Secondary	10	15	25
Higher	26	24	50
Total	**73**	**72**	**145**

Represent this in a multiple bar chart and a component bar chart

Chart (Diagram) Example

Multiple Bar Chart

Education level by Gender
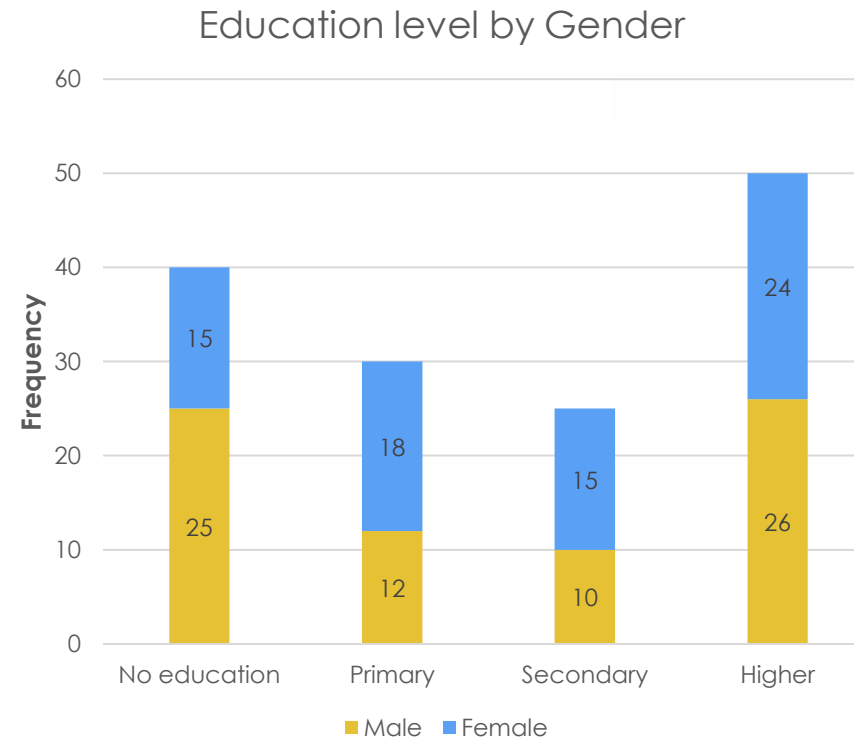

Component Bar Chart

Education level by Gender

Chart (Diagram) Example

Multiple Bar Chart

Component Bar Chart

Gender by Education level


Gender by Education level
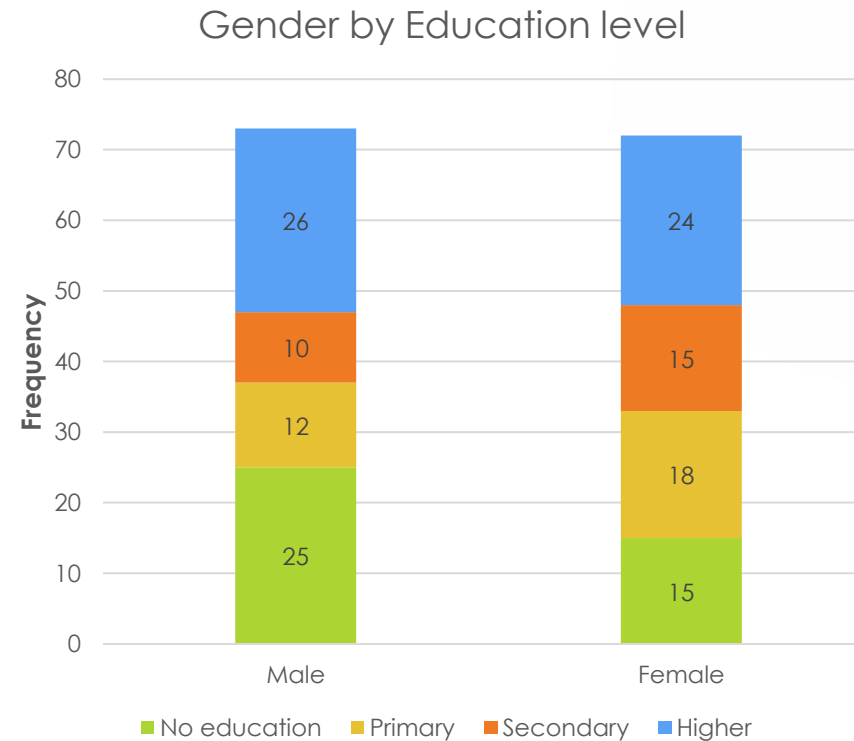
Chart (Diagram) Example

Multiple bar chart taking percentages for each x-axis category-

Education level	Gender	
	Male	Female
No education	=25/73*100%= 34.2%	=15/72*100%= 20.8%
Primary	=12/73*100%= 16.4%	=18/72*100%= 25.0%
Secondary	=10/73*100%= 13.7%	=15/72*100%= 20.8%
Higher	=26/73*100%= 35.6%	=24/72*100%= 33.3%
Total	**73**	**72**

Multiple Bar Chart

Percentage distribution for educational level
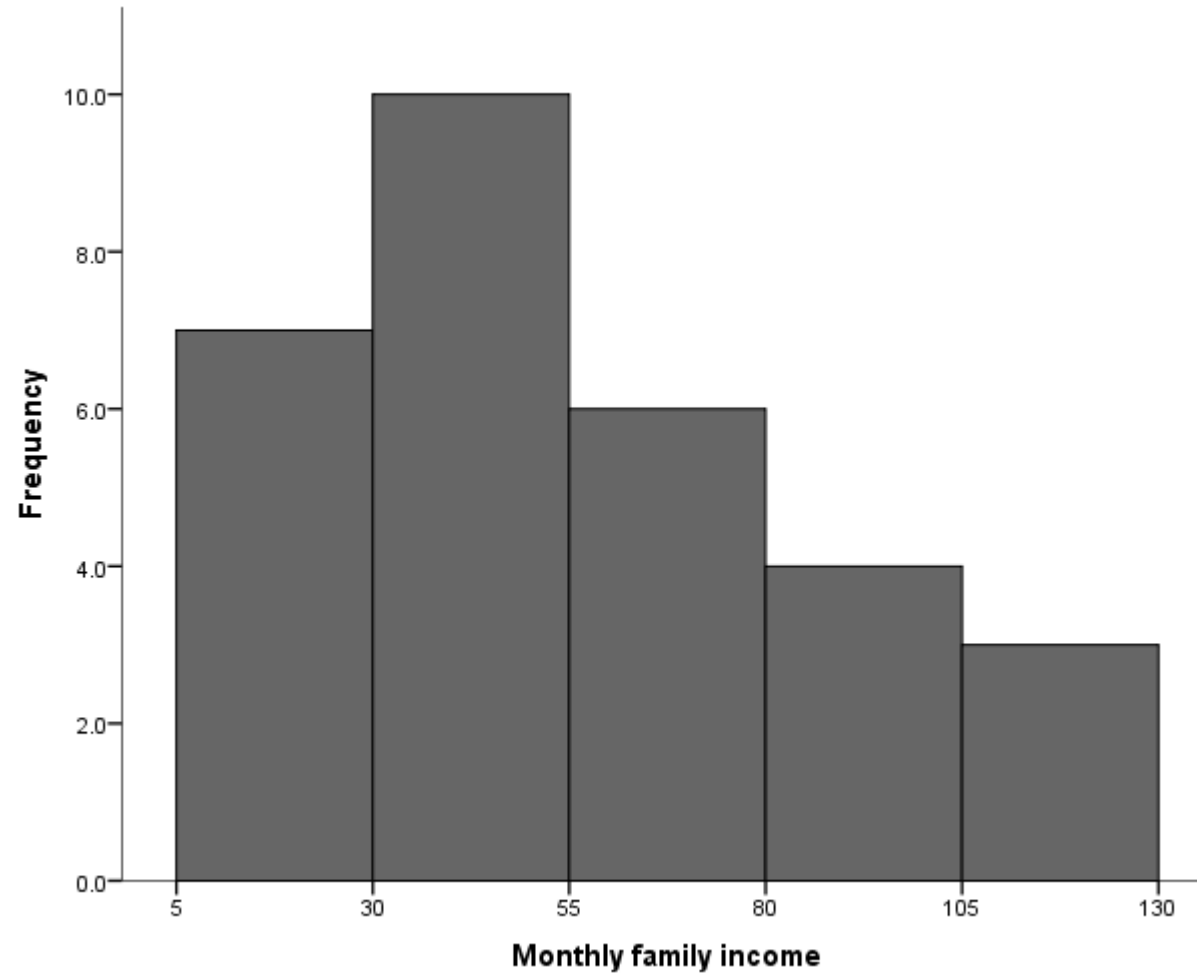(Percentages calculated for each x-axis category)
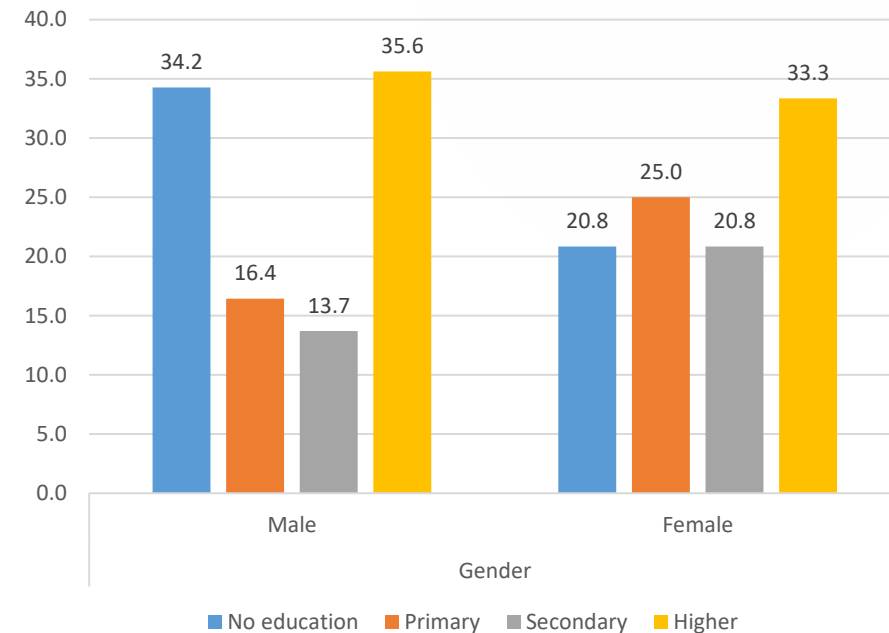
Graphs (Plots)

❑ **Example**

Below given a frequency distribution table of monthly family income of the respondent-

Monthly family income	No. of respondents
05-30	7
30-55	10
55-80	6
80-105	4
105-130	3

Show this in a histogram, a frequency polygon and an Ogive

Histogram

Frequency Polygon

Monthly family income	Class Midpoints	No. of respondents
05-30	17.5	7
30-55	42.5	10
55-80	67.5	6
80-105	92.5	4
105-130	117.5	3

Frequency Polygon
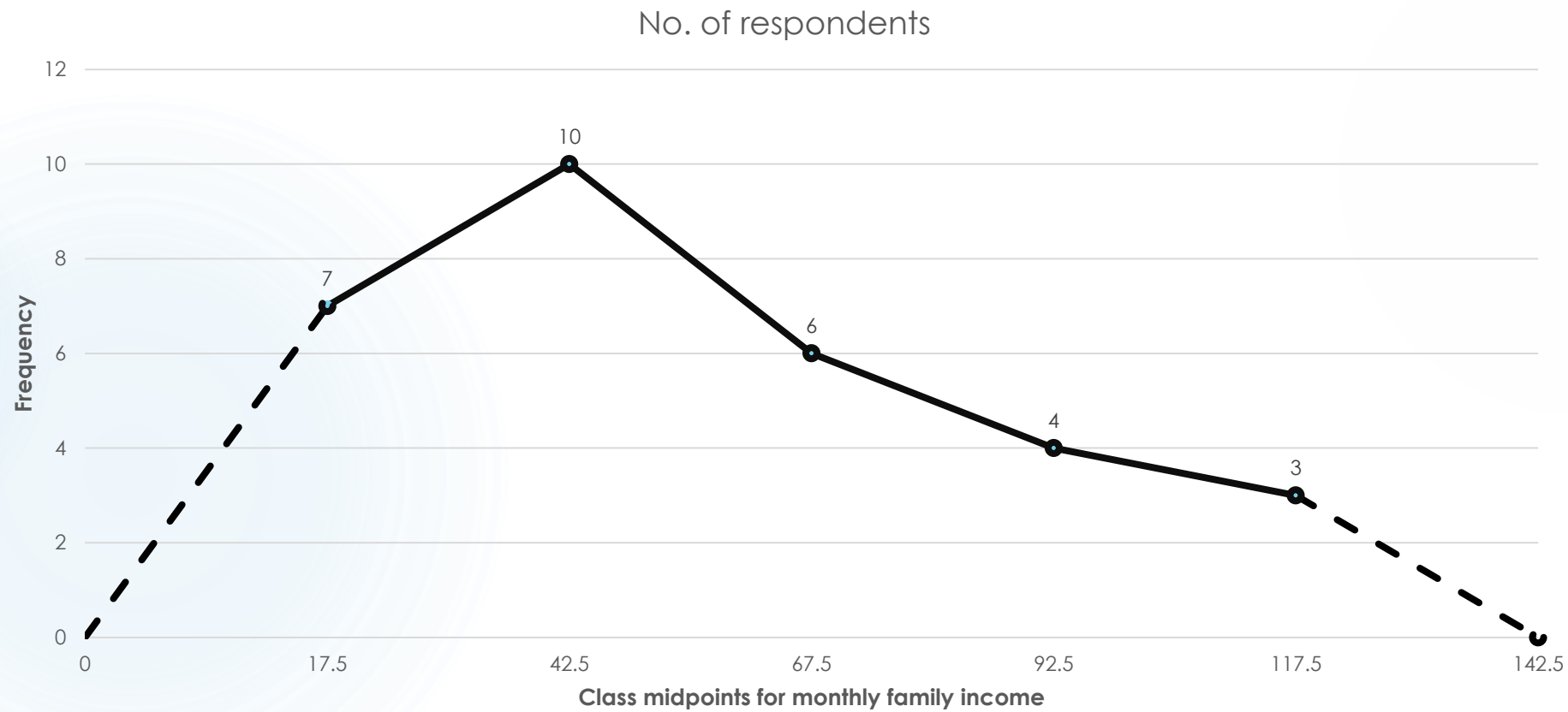
No. of respondents

Cumulative Frequency Curve (Ogive)

Monthly family income	No. of respondents	Cumulative Frequency	
		Less than type	Greater than type
05-30	7	7	30
30-55	10	17	23
55-80	6	23	13
80-105	4	27	7
105-130	3	30	3

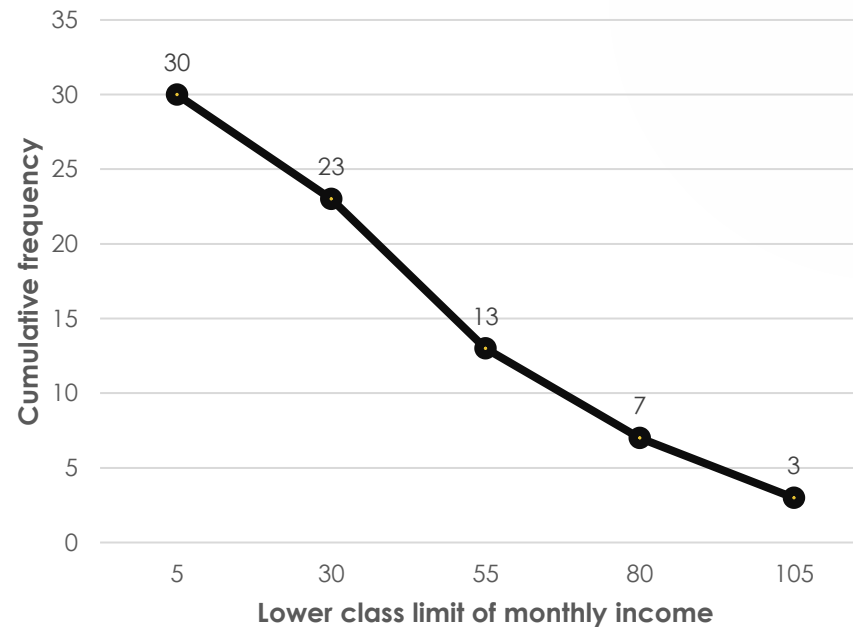# Cumulative Frequency Curve (Ogive)

Less Than Type Ogive

Less than type Ogive for monthly family income

Greater Than type Ogive

Greater than type Ogive for monthly family income

Assignment

Question 1: Below given the frequency distribution of wealth status of the respondents of a sample of size 200.

Wealth Status	Frequency (Number of respondents)
Poorest	45+ last 1 digit of ID
Poor	35+ last 1 digit of ID
Middle	60+ last 1 digit of ID
Rich	40+ last 1 digit of ID
Richest	20+ last 1 digit of ID
Total	**200**

Draw a Bar chart showing the above information. What can you interpret from the chart?

Assignment

Question 2: Below given the age distribution of 150 respondents

Age Groups	Frequency (Number of respondents)
0-20	25+ last 1 digit of ID
20-40	35+ last 1 digit of ID
40-60	45+ last 1 digit of ID
60-80	30+ last 1 digit of ID
80-100	15+ last 1 digit of ID
Total	**150**

Draw a Histogram and a less than type Ogive. What can you say from these graphs?