Data Presentations (1)

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What is Data Presentation

- It is a process of organizing, summarizing, and visual representation of data

- Which is easy to understandable and interpretable

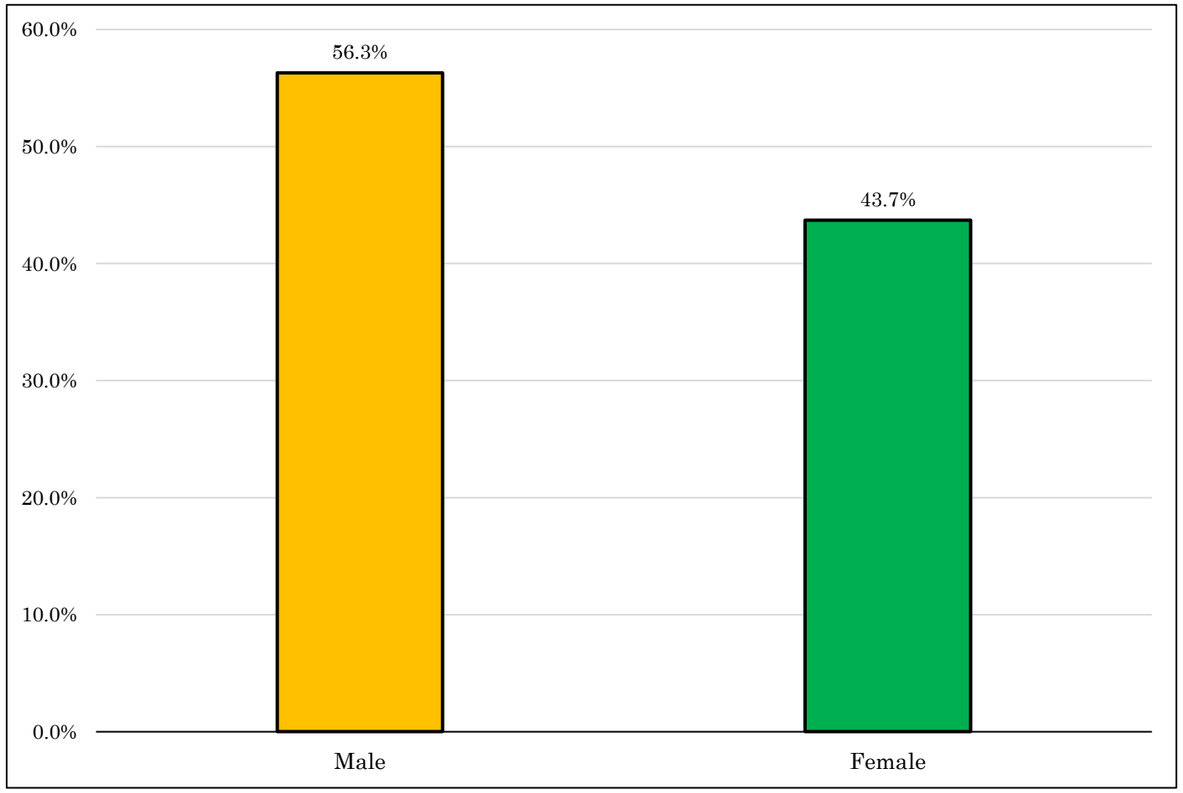
What is Data Presentation

Case ID	Gender	Wealth Status	Education
01	Male	Middle	No education
02	Female	Middle	Primary
03	Female	Poor	Primary
04	Male	Rich	Higher
…	…	…	…
…	…	…	…
8000	Male	Poor	No education

What is Data Presentation

Male	
Female	

Male	56.3%
Female	43.7%



How to present…

- Frequency distribution
- Graphical representation

Frequency distribution

- It is a statistical tabulated representation process
- of the number of occurrence
- of each class/category → Arranging data into homogeneous/similar group

Frequency distribution

- For example, collects blood group from 10 students,

O, A, B, O, AB, B, A, A, A, AB

- How many homogeneous groups are there in this data?

O	2
A	4
B	2
AB	2

FREQUENCY

Class Work

- Student, Student, Public service, Businessman, Day labor, Public service, Private service, Day labor, Student, Public service, Public service, Private service, Businessman, Day labor, Businessman, Private service, Businessman, Public service, Private service, Public service.

Businessman	4
Day Labor	3
Private service	4
Public service	6
Student	3
Total	20

Types of FD

- Frequency distribution of Quantitative data
- Frequency distribution of Qualitative data

FD for Quantitative

- There are five steps of constructing a frequency distribution table for quantitative data

1. Choose the number of classes ($k = \sqrt{n}$)
2. Class interval ($i = \frac{Highest\ value - Lowest\ value}{k}$)
3. Set the individual class/class limits
4. Tally
5. Frequency

কয়টি data?
if k = float, then take next integer. (round)

* 1-5 = 2 থেকে 5 এর ভিতরে (4.999)
* 5-10 = 5 এবং 5 এর পর থেকে 10 এর আগে 9.9999

প্রত্যেক ক্যাটাগরি কতগুলো element?

FD for Quantitative

- Hypothetical data set:

17, 8, 12, 19, 14, 6, 10, 15, 7, 18, 11, 16, 8

Here, the number of classes, $k = \sqrt{n} = \sqrt{13} = 3.6 \sim 4$ next int Round.

Class interval is, $i = \frac{H-L}{K} = \frac{19-6}{4} = 3.25 \sim 4$

Class	Tally	Frequency
5-9	||||	4
9-13	|||	3
13-17	|||	3
17-21	|||	3

Class Work

- Below given the total monthly income (in thousand taka) of 30 randomly selected families-

30, 40, 5, 110, 11, 15, 55, 20, 120, 45, 30, 47, 52, 68, 105, 62, 52, 98, 76, 85, 83, 91, 49, 38, 57, 27, 23, 42, 9, 65

FD for Quantitative

Class	Tally	Frequency			
5-9	||||	4			
9-13	|||	3			
13-17	|||	3			
17-21	|||	3			

FD for Quantitative

Class	Tally	Frequency	Relative frequency		
5-9	||||	4			
9-13	|||	3			
13-17	|||	3			
17-21	|||	3			

FD for Quantitative

Class	Tally	Frequency	Relative frequency		
5-9	||||	4	$\frac{4}{13} = 0.31$		
9-13	|||	3	0.23		
13-17	|||	3	0.23		
17-21	|||	3	0.23		

FD for Quantitative

Class	Tally	Frequency	Relative frequency	Percentage frequency	
5-9	||||	4	$\frac{4}{13} = 0.31$		
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17-21	|||	3	0.23		

FD for Quantitative

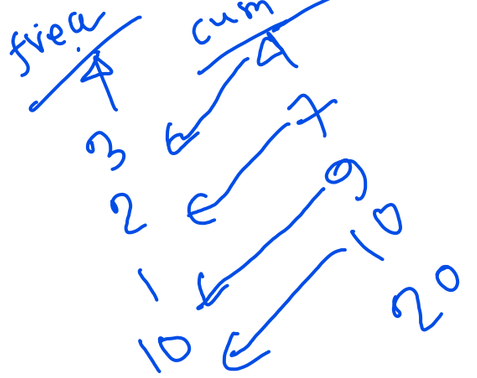
Relative freq x100%

Class	Tally	Frequency	Relative frequency	Percentage frequency	
5-9	||||	4	$\frac{4}{13} = 0.31$	$0.31 \times 100 = 31\%$	
9-13	|||	3	0.23	23%	
13-17	|||	3	0.23	23%	
17-21	|||	3	0.23	23%	

FD for Quantitative

Class	Tally	Frequency	Relative frequency	Percentage frequency	Cumulative frequency
5-9	||||	4	$\frac{4}{13} = 0.31$	$0.31 \times 100 = 31\%$	
9-13	|||	3	0.23	23%	
13-17	|||	3	0.23	23%	
17-21	|||	3	0.23	23%	

FD for Quantitative



Class	Tally	Frequency	Relative frequency	Percentage frequency	Cumulative frequency
5-9	||||	4	$\frac{4}{13} = 0.31$	$0.31 \times 100 = 31\%$	4
9-13	|||	3	0.23	23%	4+3=7
13-17	|||	3	0.23	23%	7+3=10
17-21	|||	3	0.23	23%	10+3=13

Class Work

$19 + x = 35$
$\therefore x = 16$

Weight (in KG)	Midpoint	Frequency	Relative frequency	Cumulative frequency	Relative Cumulative freq.
35-40	37.5	2	0.033	2	0.033
40-45	42.5	5	0.083	7	0.116
45-50	47.5	12	0.2	19	0.316
50-55	52.5	$x = 16$	0.266	35	0.582
55-60	57.5	12	0.2	47	0.782
60-65	62.5	6	0.1	53	0.882
65-70	67.5	4	0.06	57	0.942
70-75	72.5	3	0.050	60	0.992

$= 60$

$\frac{3}{60} = 0.05$

FD for Qualitative

- Student, Student, Public service, Businessman, Day labor, Public service, Private service, Day labor, Student, Public service, Public service, Private service, Businessman, Day labor, Businessman, Private service, Businessman, Public service, Private service, Public service.

Class	Tally	Frequency
Businessman	||||	4
Day Labor	|||	3
Private service	||||	4
Public service	𝍸	6
Student	|||	3
Total		20

Mathematical exercise

To access additional mathematical problems,

please refer to the PDF lecture notes.

Thank You