SAWA UNIVERSITY

الاحصاء - SPSS

المحاضرة الرابعة

جامعـــــــة ســـــــــاوة

الاهلية

كليـــــة التقنيـــات الصحيـة

والطبيـة

قسم تقنيات المختبرات

الطبية

المرحلـــــــــــــة

الثانية.

Sawa University

College of health and medical techniques

Department of Medical Laboratories

. 2nd Stage

تدريسي المادة : م.م سلام النجيب

محاضرة رقم ٤

Lecture No. 4

الجانب النظري

Theoretical

Exercise 1: Patient Ages

The ages of patients visiting a clinic are:45, 30, 60, 25, 50, 35, 40.

Arrange the data in ascending order.

Arrange the data in descending order.

The solution

Given ages: 45, 30, 60, 25, 50, 35, 40.

Ascending Order:25,30,35,40,45,50,60

Descending Order:60,50,45,40,35,30,25

Exercise 2: Blood Pressure

Readings (Systolic)The systolic blood pressure readings recorded are:140, 120, 135, 110, 150, 130, 125.

Sort the readings in ascending order.

Sort the readings in descending order.

Exercise 3: Monthly Clinic

Expenses (in USD)The monthly expenses for the clinic are:1500, 1200, 1000, 1750, 1300, 2000, 1400.

Organize the expenses in ascending order.Organize the expenses in descending order.

Exercise 4: Patient Wait Times (in minutes)

The recorded waiting times for patients are:25, 10, 15, 30, 5, 20, 40.

List the waiting times in ascending order.

List the waiting times in descending order.

Exercise 5: Number of Daily Appointments

The number of appointments scheduled for a week is:35, 20, 45, 30, 40, 25, 50.

Sort the appointments in ascending order.

Sort the appointments in descending order.

Exercise 1: Patient Ages

The ages of 50 patients are:22, 25, 30, 35, 42, 50, 60, 28, 32, 40, 45, 55, 33, 27, 38, 21, 29, 31, 43, 47, 51, 62, 39, 44, 46, 52, 24, 34, 36, 41, 48, 49, 53, 61, 20, 26, 37, 23, 56, 57, 58, 59, 54, 63, 64, 65, 66, 67, 68, 70.

Determine the number of classes (kk) using Sturges' Rule and the range and put it in table

Exercise 1: the solution

Step 1: Calculate the Number of Classes (k)

We use Sturges' Rule: $k = 1 + 3.322 \log(n)$

where $n = 50$ (number of data points). k

$= 1 + 3.322 \log(50) \approx 1 + 3.322 \times 1.69897 \approx 1 + 5.645 \approx 7$

So, the number of classes (k) is 7.

Step 2: Find the Range and Class Width (w)

The range of the data is: Range = Maximum − Minimum = 70 − 20 = 50

The class width (w) is calculated as: $w = \text{Range} / k = 50/7 \approx 7.14$

Round w up to the nearest whole number, so $w = 8$

Step 3: Construct the Grouped Frequency Table

PRESENTATION

Class Interval	Frequency (f)
20–27	9
28–35	9
36–43	8
44–51	8
52–59	8
60–67	8
68–75	3

Exercise 2: Patient Wait Times

The waiting times (in minutes) of 40 patients are:5, 10, 15, 20, 25, 30, 35, 40, 12, 18, 22, 28, 32, 37, 9, 14, 19, 24, 29, 34, 39, 11, 16, 21, 26, 31, 36, 7, 17, 27, 13, 23, 33, 8, 38, 6, 4, 3, 2,

1.Calculate the number of classes (k)

2. Determine the class width (w).

3. Construct the grouped frequency distribution table.

Exercise 3: Blood Pressure Readings (Systolic)

The systolic blood pressure readings (in mmHg) of 50 patients are:110, 120, 125, 130, 135, 140, 145, 150, 155, 160, 110, 112, 118, 123, 127, 132, 138, 142, 148, 153, 157, 163, 115, 121, 129, 134, 139, 144, 149, 152, 156, 159, 165, 170, 125, 135, 145, 155, 165, 175, 180, 115, 125, 140, 150, 130, 160, 175, 135, 155.

1.Calculate the number of classes (k)

2. Determine the class width (w).

3. Construct the grouped frequency distribution table.

Exercise 4: Daily Appointments

The number of daily appointments in a month is:12, 15, 18, 20, 22, 25, 28, 30, 35, 40, 12, 14, 16, 18, 22, 24, 26, 29, 32, 38, 42, 45, 50, 55, 60, 12, 20, 30, 40, 50.

1.Calculate the number of classes (k)

2. Determine the class width (w).

3. Construct the grouped frequency distribution table.