Democratic and Popular Republic of Aigeria

Mila university center
Institue of Informatic and Mathematic
Introduction to probability and descriptive statistics

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1st **Year**

Series N°1

Exercise 1

for each of the following variables indicate whether it is quantitative(discrete or continues) or qualitative (nominal or ordinal) variable:

(1) The blood type of some patient.
(2) Blood pressure level of patient.
(3) Weights of babies born in a hospital during a year.
(4) Gender of babies born in a hospital during a year.
(5)The distance between the hospital to the house.
(6) Under temperature of day-old infants born in a hospital

(7) Number of students at the class of statistics.
(8) Eye color of people.
(9)Whether or not a person is infected by influenza.
(10) Nationality of the workes in a factory.
(11) Languages spoken.
(12) Number of languages spoken.

Exercise 2

For each of the following situations, answer questions(a) through (d):
(a) What is the population?
(b What is the sample in the study?
(c)What is the variable of interest?
(d)What is the type of the variable?

Situation A: *A study of 300 households in a small south town revealed that if she has school-age child present.*

Situation B: Astudy of 250 patient admitted to a hospital during the past year reveald that, Distance the patient live away from the hospital.

Exercise 3

A 2005 survey on the distribution of blood groups gave the following results:

Blood groups	A	B	AB	O
Frequency	219	123	78	242

1. what is: the population, the sample in the study, the variable of intrest and its type?

2. Draw a circulair diagram.

Exercise 4

A survey with a view to reducing the amount of family allowances was carried out among a population of women aged 40.This survey gave the following results:

Number of children	0	1	2	3	4
Nomber of women	10	20	20	30	20

1. *Characterize the distribution (The population, the sample, the variable of intreset, the type of the variable)*

2. *Construct the summary table of this distribution (frequency, relative frequency, ICF DCF, ICRF, DCRF).*

3. *Trace: the bar chart, increasing cumultative frequency curve.*

4. *Give the percentage of women who have 2 children.*

5. *Give the percentage of women with less than 4 children.*

6. *Give the percentage of women with more than 3 children.*

<u>Exercise</u> **5**

A survey of the number of employees in 40 industrial companies. The analysis of the questionnaires gave the following results:

32	58	59	52	53	43	37	39	86	40
51	30	52	50	51	36	79	63	64	48
82	53	24	59	20	44	45	45	41	75
90	61	55	22	56	47	76	62	66	99

1. *Characterize the distribution (The population, the individuel, the variable of intreset, the type of the variable)*

2. *Grouping these measures in 5 classes of value of the variable of respective amplitudes: 20, 10,10,20,20.*

3. *Trace the frequency histogram.*

4. *Trace the relative frequency curve.*

<u>Exercise</u> **6**

The revision time per week, in hours, of a group of students is given in increasing order as follows:
4 7 8 9 10 11 12 12 12 13 14 14 14 15 16 16 17 17 19 23

1. *Determine the population studied, the population size, the variable studied and its type.*

2. *Using Sturge's rule, grouping the measures of the previous data set.*

3. *Complete the table by calculating: frequency, relative frequency, ICF DCF, ICRF, DCRF .*