

## Chapter II

### Distribution Analysis (Exercises)

#### Part I:

##### 1.

During a particular summer month, the eight sales people in a heating and air-conditioning firm sold the following number of central air-conditioning units:

8, 11, 5, 14, 8, 11, 16, 11.

Find the relative frequencies of the numbers of central air-conditioning units and represent them as

- i) a bar chart,
- ii) a polygon.

##### 2.

A frequency distribution of weekly wages in € is shown in the following table:

Weekly wage	Number of workers
[240, 260[	7
[260, 280[	20
[280, 300[	33
[300, 320[	25
[320, 340[	11
[340, 360[	4

1. Find the relative frequencies of the weekly wages and represent them as

- i) a histogram,
- ii) a polygon.

2. Give the empirical distribution function of the variable “wages”

- i) analytically,
- ii) in tabular form,
- iii) graphically.

3. Find and interpret:

- i)  $F(296)$ ,
- ii)  $F(310) - F(275)$ .

## Part II (SPSS):

### 1.

**Data File:** *GSS2000R.sav* (Variable: *degree*)

1. How many cases are available for the analysis? How many are missing?
2. Plot the absolute frequencies as bar charts.
3. How many survey respondents had a junior college degree?
4. Find the proportion of survey respondents who had not graduated from high school.
5. Find the probability that a survey respondent had graduated from a high school.
6. Identify the category with the largest number or percentage.
7. Compute the odds of being in one category (graduated from high school) versus another (graduated from junior college).

(*Hint:* the odds are the ratio of the two percentages or numbers. We interpret odds as the likelihood of being in one category rather than the other.)

(*Last revised: 11.01.20*)