Practice 1: Descriptive Analysis
Available Points: 10 points.
Weight over the final mark: 10%
Assistant Professor: Jordi López-Tamayo

Target of the activity

The activity will consist in computing some statistical results dealing with units 1 to 4. Read carefully the following instructions in order, not only to solve the exercise, but also to upload correctly to the virtual campus your solutions file.

Related Competencies

The competencies that will developed in this activity, as they are specified in the Teaching program of Statistics I are to *Acquire the capacity to use statistical inference tools for decision-making in theoretical and real situations* and to *Knowledge and understanding of basic statistical calculations and the software tools used for them*, in this case MicrosoftExcel.

Technical Instructions and Statement

Student must read this document carefully.

1. Student must download the file **data_pr1_ [Student's NIUB].xlsx**. This MicrosoftExcel WorkBook is composed by one sheet:

   1.1. **DataStudent.** In this sheet the Student will find his/her personal dataset that has been simulated specially for her/him. This database is formed by four variables Age, Wage, Gender (0 Man 1 Woman), Qualified (0 no 1 yes) and four Groups of workers: G1, G2, G3 and G4. Each **sample** of workers has a different size **n** and **different stochastic nature** for each Student**.** In **Figure 1** you can see the head of this file for Student **99999999.**

Figure 1. Head of the dataset sheet

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	AGE_G1	WAGE_G1	GENDER_G1	QUALIFIED_G1	AGE_G2	WAGE_G2	GENDER_G2	QUALIFIED_G2	AGE_G3	WAGE_G3	GENDER_G3	QUALIFIED_G3	AGE_G4	WAGE_G4	GENDER_G4	QUALIFIED_G4
2	16	2357.6	1	1	25	1869.51	0	0	20	2731.45	1	0	24	1591.39	1	1
3	16	2368.28	0	0	29	1029.88	0	0	21	2717.58	0	1	24	1764.61	0	0
4	16	2264.01	1	1	31	1743.08	0	1	23	2603.79	1	1	25	1808.31	0	1

2. Student must download the file **template_pr1_ [Studen'ts NIUB].xlsx.** This MicrosoftExcel WorkBook is composed by one sheet:
   2.1. **template**. In this sheet the Student will find his/her personal information and the conditions in which the Student will have to develop the activity. Here you have an example in **Figure 2**:

Figure 2. Personal Conditions of the Activity and Statement

	A	B
1	**STATEMENT**	**STUDENT**
2	Niub:	99999999
3	Alpha:	0,08
4	Class Group:	1
5	Workers Group:	1
6	Conditioning Gender:	0
7	Group for comparison:	2
8	01.- [0.5 points]. Number of observations for Group G1	
9	02.- [0.5 points]. Mean of Age for Group G1	
10	03.- [0.5 points]. Standard Deviation of Age for Group G1	
11	04.- [0.5 points]. Coefficient of Variation of Age for Group G1	
12	05.- [0.5 points]. Square Root of the Sum of the natural log of Wages for Group G1	
13	06.- [0.5 points]. Covariance betwwen Age and Wage for Group G1	
14	07.- [0.5 points]. Coefficient of Correlation between Age and Wage for Group G1	
15	08.- [0.5 points]. Percentage of Women in Group G1	
16	09.- [1 point]. Number of observations for Group G1 conditioned to Gender=0	
17	10.- [1 point]. Mean of Wage for Group G1 conditioned to Gender=0	
18	11.- [1 point]. Variance of Wage for Group G1 conditioned to Gender=0	
19	12.- [1 point]. Constant of the regression WAGE=a+b*AGE of Group G1	
20	13.- [1 point]. Slope of the regression WAGE=a+b*AGE of Group G1	
21	14.- [1 point]. Ratio of Mean Wage for Group G1 with respect to Group G2	
22	***A VERY IMPORTANT NOTE***	
23	***You must introduce NUMBERS in assigned cells.***	
24	***Neither FORMULAS nor STRING characters are allowed.***	
25	***Pay ATTENTION with the DECIMAL CHARACTER that you use.***	
26	***If you have any doubt type the following formula in cell C7***	
27	***=b8/2. If it works you have a number otherwise you have a string***	

As you can see, here there is information about the student **99999999.** This is his/her **niub** and is the same that the number that identifies the file **data_pr1_99999999.xlsx.** (You can download this demonstration file from virtual campus).

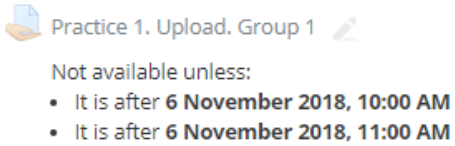
There is also some specific information related and how the student must to develop the activity **(rows 2 to 7)**.

a) If it is required, Student must to obtain his/her computations using a **level of significance (α) of 8%**.
b) This Students belongs to the Class Group 1
c) Must to use information of the group of workers **G1.**
d) In some questions he/she must to obtain conditioned computations by gender. In this case the gender assigned is **0**, so conditioning by **males.**
e) Finally, in some cases he/she must to compare groups, so in this case this student must **to compare his/her group G1 with the group G2.**
All values you enter in the template have to be **rounded to two decimals.**

As you can see in **Figure 2** there are 14 questions **(Rows 8 to 21)** to solve and the student must to enter his/her **numerical** results in the cells assigned . No other cells of this workbook can be edited or changed. There are clear restrictions in order to enter numerical results in these cells. Read carefully the statement and the ***VERY IMPORTANT NOTE (Rows 22 to 27)*.**

3. Once the Student has fill the cells with his/her results, he/she has to save the file with the **same name and format** and to upload it to the virtual campus using the corresponding activity link (**Figure 4**) depending on the group that the Student belongs to (A or B, depending on how the class group has been splited). In this case :

Figure 3. Link to upload the activity



VERY IMPORTANT NOTE (Rows 22 to 27)
If information entered by the Student in the assigned cells is not a number (BE AWARE WITH POINT DECIMAL CHARACTER), change the file name or change the computational format of the file (let's say change it to OpenScal or other Spreadsheets) will be his/her own responsability and his/her activity won't be technically selected and the FINAL MARK WILL BE ZERO.

4. Once the files have been received, the coordinator of the activity will download all files with the solutions of all Students and will correct them publishing a personal report **report_pr1_ [Student's NIUB].pdf** that Student will be able to download from the virtual campus**.** In case of Student **9999999**, in **Figure 4** you can see an example of this report: **report_99999999.xlsx**.

Figure 4. Student's Report of the activity.

DEPARTMENT OF ECONOMETRICS, STATISTICS AND APPLIED ECONOMY
Business Administration and Management Degree
Statistics I. Computing Practice 1. Descriptive Analysis
Correction Date: 2018-07-19 17:47:29
Final Mark: 10 [10 available points]

Student's Information
Niub: 99999999
Alpha: 0.08
Class Group: 1
Workers Group: G1
Conditioning Gender: 0
Group for comparison: G2

Statement	Student's Results	Computed Results	Mark(*)
01.- [0.5 points]. Number of observations for Group G1	427	427	0.5
02.- [0.5 points]. Mean of Age for Group G1	37	37	0.5
03.- [0.5 points]. Standard Deviation of Age for Group G1	14.49	14.49	0.5
04.- [0.5 points]. Coefficient of Variation of Age for Group G1	2.55	2.55	0.5
05.- [0.5 points]. Square Root of the Sum of the natural log of Wages for Group G1	0.44	0.44	0.5
06.- [0.5 points]. Covariance betwwen Age and Wage for Group G1	0.07	0.07	0.5
07.- [0.5 points]. Coefficient of Correlation between Age and Wage for Group G1	38.86	38.86	0.5
08.- [0.5 points]. Percentage of Women in Group G1	0.23	0.23	0.5
09.- [1 point]. Number of observations for Group G1 conditioned to Gender=0	330	330	1
10.- [1 point]. Mean of Wage for Group G1 conditioned to Gender=0	2213.02	2213.02	1
11.- [1 point]. Variance of Wage for Group G1 conditioned to Gender=0	100500.89	100500.89	1
12.- [1 point]. Constant of the regression WAGE=a+b*AGE of Group G1	0.149	0.149	1
13.- [1 point]. Slope of the regression WAGE=a+b*AGE of Group G1	0.002	0.002	1
14.- [1 point]. Ratio of Mean Wage for Group G1 with respect to Group G2	0.61	0.61	1

(*) A tolerance of +/- 5% has been applied.
State of the Practice: Final Mark [X] Checking [ ]
Revision of the practice: Use teacher's visiting hours. Emails dealing with the practice won't be answered. Thank you.
R-Script by Jordi López-Tamayo, - march 2018 -