4th gretl Conference

June 12-13, 2015
Berlin, Germany
Hans Boeckler Foundation and
Free University of Berlin
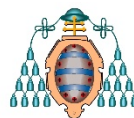
gretl Conference
Berlin 2015

FACING THE FOUR-F TEST: GRETL´S ACHIEVEMENTS AND CHALLENGES

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UNIVERSIDAD DE OVIEDO

4th gretl Conference

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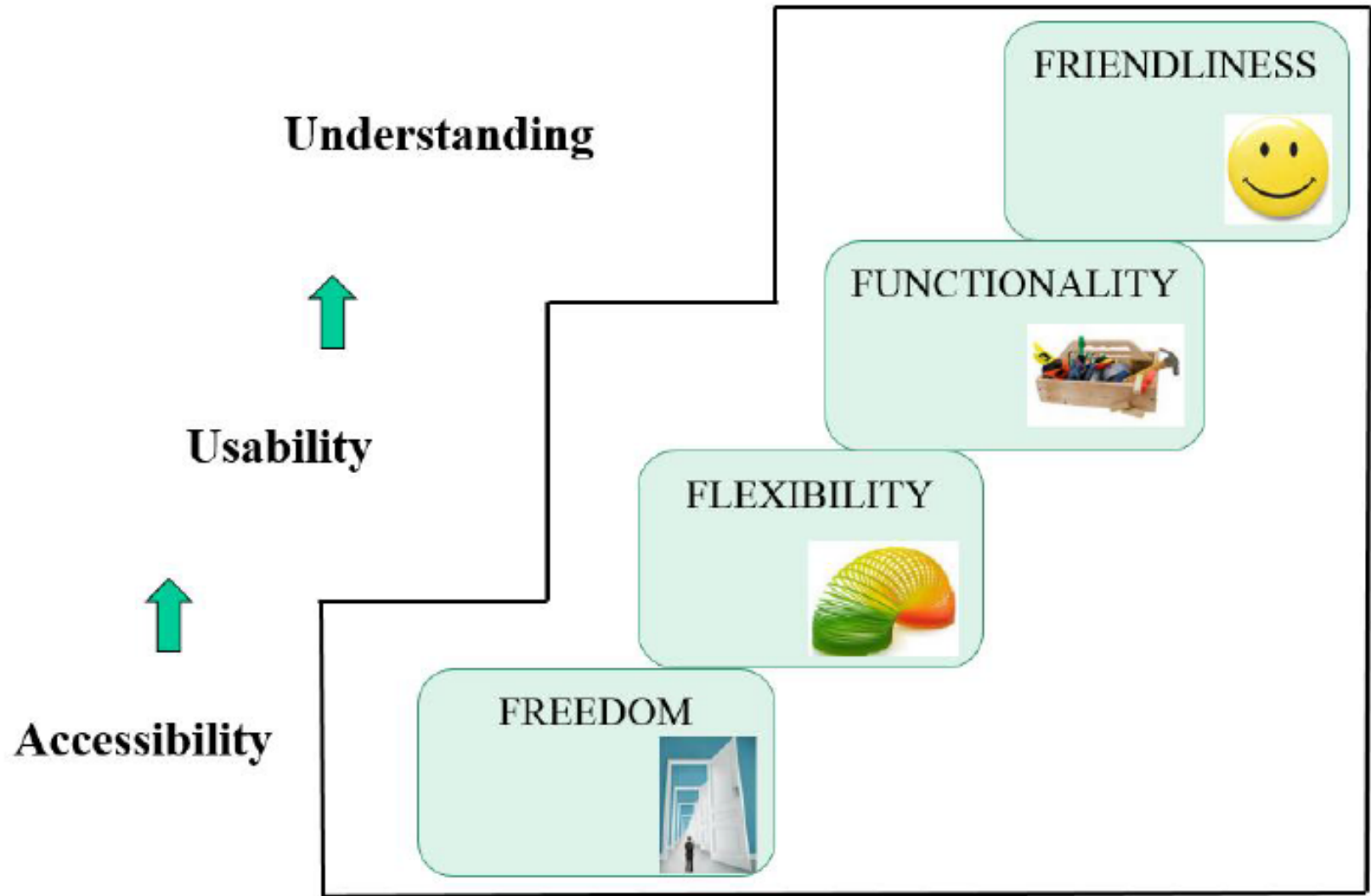Hans Boeckler Foundation and
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-**The Four-F Test**

-**Some Objective Evidence**

-**Online Surveys**

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Assesing Educational Software
The Four-F test

The Four F Test

HYPOTHESIS	REQUIREMENTS
FREEDOM	Openness: Free-Open Source Software (FOSS)
FLEXIBILITY	Available in different languages and platforms Supporting different data formats Suitable for different potential users
FUNCTIONALITY	Providing a wide range of operations Interacting with different statistical software Allowing different levels of use Providing functional output
FRIENDLINESS	Intuitive and Friendly interface Understanding facilitation through graphs, tables, database, … Learning materials available

Assesing Educational Software: Freedom

EUROPEAN HIGHER EDUCATION AREA (EHEA)	FREE OPEN SOURCE SOFTWARE (FOSS)
Student centered teaching-learning process	User / Customer centered development
Educative model based on the achievement of Competences (creativity, learning capacity, problem solving, team work,...)	Free, democratic, sustainable and technologically competitive educative model
University networks, Coopetition	Coopetition understood as improvement and evolution

EDUCATIONAL ADVANTAGES OF FOSS (CENATIC)	EHEA COMPETENCES

EDUCATIONAL ADVANTAGES OF FOSS (CENATIC)

1. Contributes to educate free, independent, critic and autonomous people.
2. Allows the use of educational tools adapted to students
3. Creates a community of shared knowledge
4. Facilitates the free election of technology
5. Changes rapidly, helping to efficiently solve problems
6. Success stories in the Spanish educational framework
7. Allows Costs savings
8. Provides students with the same educational tools at school and at home, 100% legally
9. Guarantees security
10. Facilitates the innovation of products and services

EHEA COMPETENCES

Creativity

Critical and self-critical capability

Learning capability
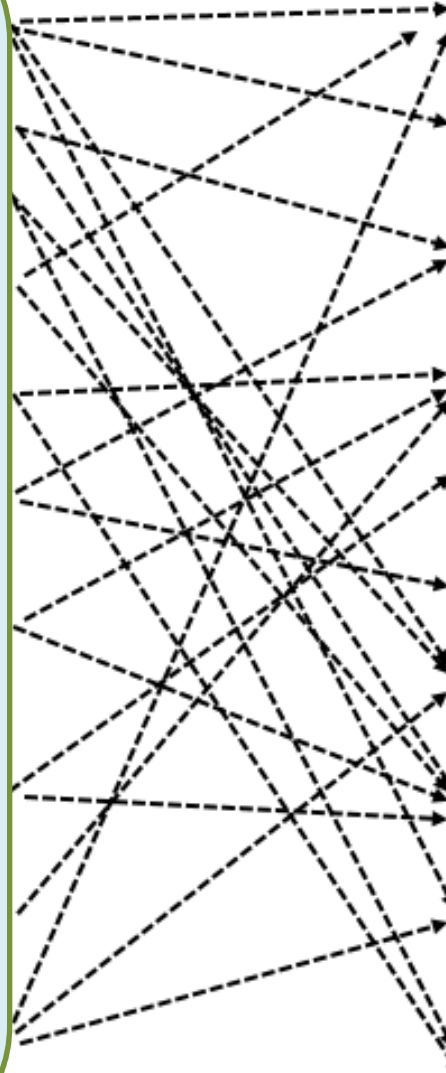
Problem Solving

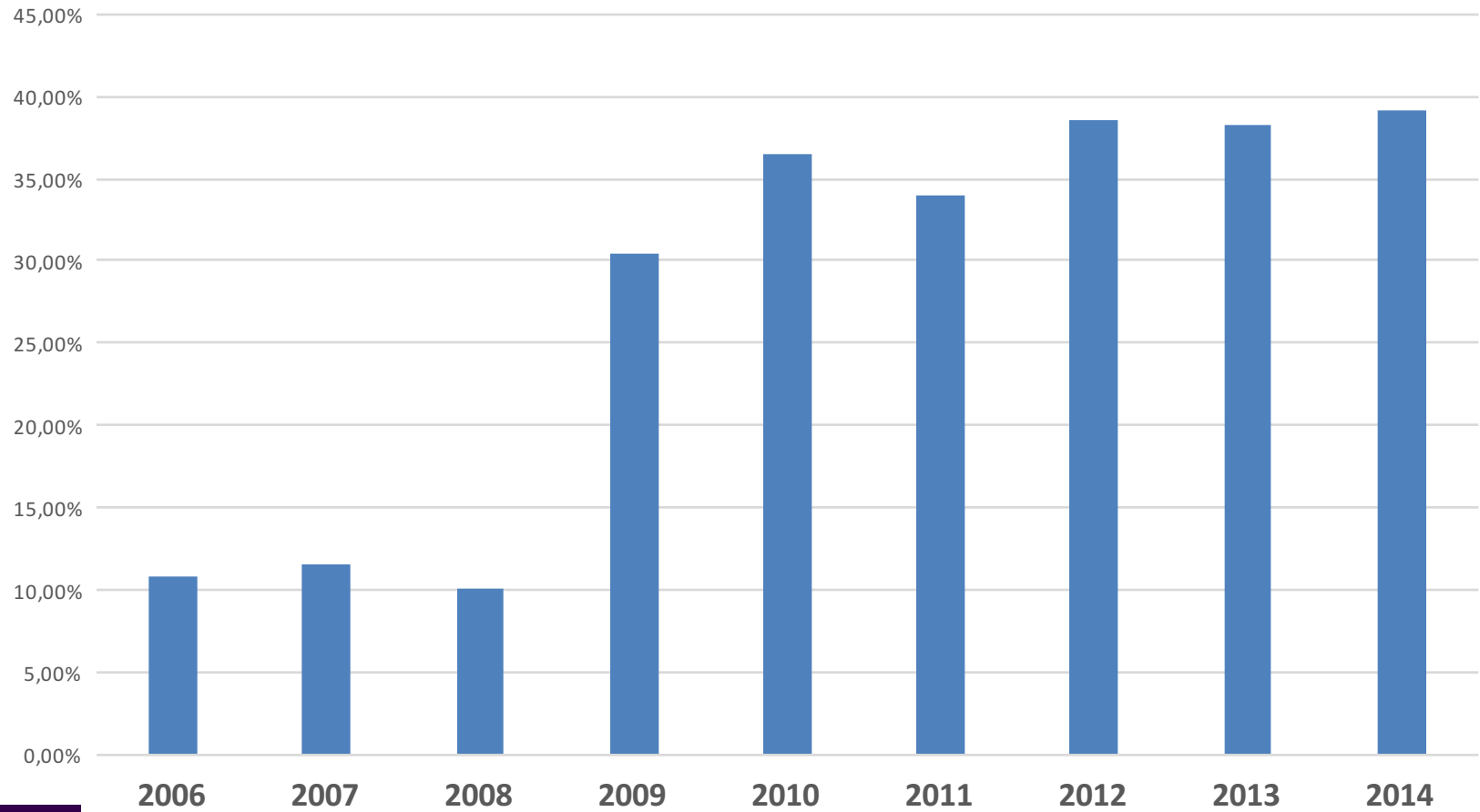Ethic compromise

Analysis and synthesis

Capability for Teamwork

Adaptability

Capability for working autonomously

Knowledge updating

FOSS Penetration in Spanish Universities

Four-F Test: Objective Evidence

Requirement	Evidences
Freedom	Open-source statistical software Developed in Linux. Available on Microsoft Windows and Mac OS X
Flexibility	Available in several languages (English French, Italian, Spanish, Polish, German, Basque, Catalan, Galician, Portuguese, Russian, Turkish, Czech, Traditional Chinese, Albanian, Bulgarian and Greek) Wide variety of supported data formats Tailored for a wide variety of potential users
Functionality	Command Line Interface and Gretl Console Integrated powerful scripting language Import data from several file formats Interaction with R Output models as LaTeX files, in tabular or equation format Command loop structure for simulations and iterative estimation procedures User's Guide available
Friendliness	Intuitive and Friendly interface Graphs and Icons facilities Large database and textbooks available

Online Survey: Econometrics Courses

Course	Description	Method	Gretl Use
Statistical and Econometric Methods	Compulsory, Second year, Degree in Economics	Blended Learning	Computer sessions Team Project
Econometrics	Compulsory, Third year, Degree in Economics	Blended Learning	Computer sessions Team Project
Economic Forecasting	Optional, Fourth year, Degree in Economics	Blended Learning	Computer sessions Personal Project
Forecasting for Business and Economics	Optional, Free-election course for different degrees of nine Spanish Universities (G9 Virtual Network)	E-Learning (G9 Shared Virtual Campus)	Online Materials Online Questionnaires
Time Series, Applied Econometrics	Master and Doctorate Courses, Economics and Finance (Universities of Oviedo and Leon)	Face to face	Practical Sessions Personal Project

Statistical and Econometric Methods

About Gretl

🌐 Gretl website

Aa FAQ about Gretl

💬 Gretl Forum

🌐 Gretl short guide

📕 Gretl User´s Guide

📁 Data files 2012-2013

📁 Data files

📁 Gretl Functions

📕 Practice 1. Introduction to Gretl

📕 Practice 2. Probability

📕 Practices 3&4. Probability models and CLT

📕 Practice 5. Samples and estimators

📄 Practice 10: Wages

📕 Table

</> Wages

📕 Wages: Worked solution in Spanish

📄 Practice 11: Productivity

📄 Practice 12: Migrations

📄 Practice 13: Campsoil

📕 Worked solution

Consumption

Learning objectives:

After solving this exercise students should be able to:

- Access statistical information on the National Statistics Institute (INE) website

- Import series from a spreadsheet into Gretl

- Carry out a joint analysis of Income and Consumption, using time series graphs and scatter plots

- Obtain an OLS estimation of the Consumption and provide an interpretation for the coefficients

- Analyse residuals tables and plots

- Test the significance of Income as an explanatory variable of Consumption

- Add new observations to an existing workfile.

- Compare alternative Consumption models.

Estimated time for this practice: 1,5 hours

Practice

The Spanish National Statistics Institute (www.ine.es) publishes National Accounts including the main Spanish macro-magnitudes (downloadable in spreadsheet format).

Consider the following information referred to Household Consumption Expenditure (consumption) and Net Disposable Income (income), expressed in billion euros:

Gretl in Statistical and Econometric Method

Continuous assessment and Team project

Continuous assessment activities score   NEW

Team Project Score   NEW

Gretl Functions

To install Gretl functions, we download them to the computer. We recommend copying the file to the Documents"; in Mac or Linux it is located in the user's main folder).

When you start Gretl all the available functions will be displayed in the menu: Tools -> Function Pacl the "Statistical Methods for Economics" package and add it using the "+" button on the top menu ba started, the downloaded package will appear in the Tools menu.

statistical_methods.gfn

Statistical_Methods.gfn
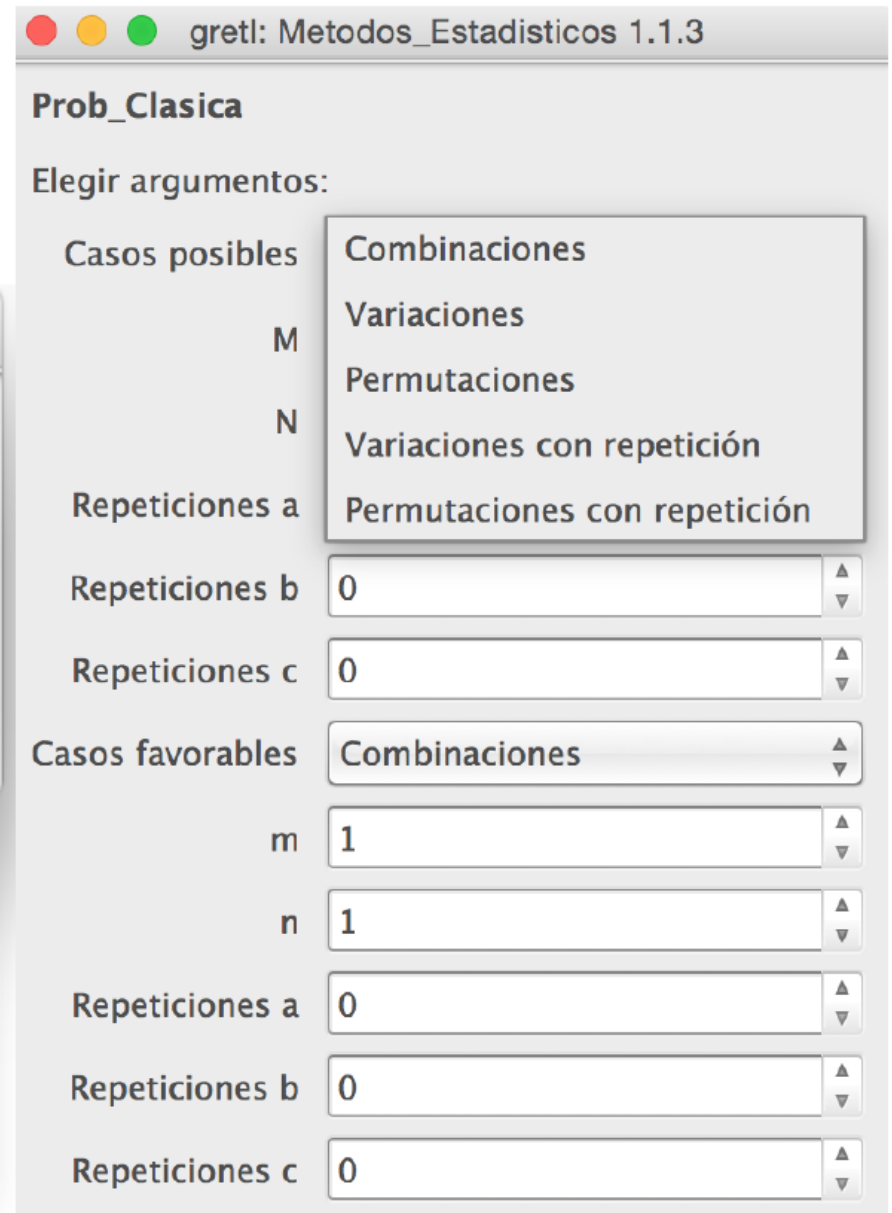
Confidence_Intervals.gfn

Intervalo_Confianza_Media

Elegir argumentos:

Utilizar una variable del conjunto de datos ☑

Seleccionar variable (series)	vuelos ▽
Introducir Media muestral (scalar)	50000 ▽
Introducir Desviación típica (scalar)	0 ▽
Introducir Tamaño muestral	20 ▲▼
Nivel de confianza (scalar)	0,95 ▽

Suponer que la desv. típica es un valor poblacional ☐

Confidence_Intervals.gfn

INTERVALO DE CONFIANZA PARA LA MEDIA

Variable seleccionada: vuelos no sigue el modelo normal

Aplicamos desigualdad de Chebyshev

Nivel de confianza: 0,95

Aplicamos desigualdad de Chebyshev, k= 4,4721

Media muestral= 68801,1788

Desviacion Tipica= 12225,2836

————————————————-

Intervalo de confianza: (64351,9426 , 73250,415065)

Sobre Gretl

Gretl in Econometrics

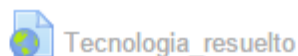## Enunciados y ficheros de datos
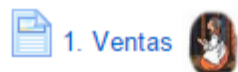
1. Ventas

    Ventas - Resuelto

2. Cultura

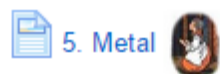   Cultura_Resuelto

3. Tecnología

    Tecnologia_resuelto

4. Tabaco
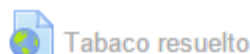
    Tabaco resuelto

5. Metal

    Metal resuelto

6. Energia

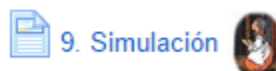   Energía Resuelto

7. Sanidad USA

    sanidad_usa.gdt

8. Viajeros

    Viajeros Resuelto

9. Simulación

    Función Gretl para Simulación

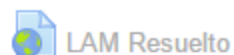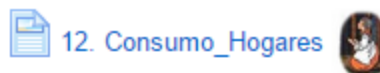   Función: Test de raíz unitaria estacional (DHF)

    Series

10. IPI

    IPI Resuelto

11. LAM

    LAM Resuelto

12. Consumo_Hogares

Forecasting.gfn

gretl

Elegir Función

Alisado_simple

Desestacionalizacion

Tendencia_Polinomica

Test_Rachas_Rangos

Test_Estacionalidad

Medias_Moviles

Outliers

Alisado_Holt_Winters

Alisado_Doble_Holt

Comprarar_Predicciones

DHF_test

Correlograma

Periodograma

Filtrar

Análisis ARIMA−X−12

Análisis TRAMO

Exponente de Hurst

Linearization by Tramo

Poblacion Logistica

Shift−Share

Predicción
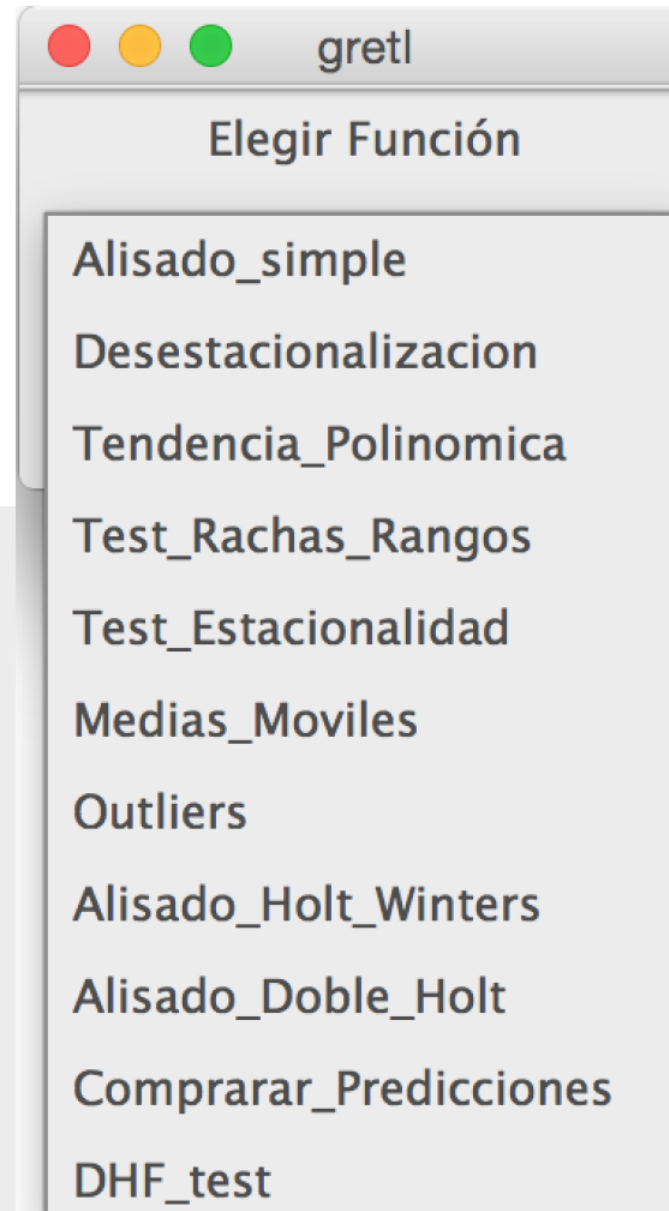
Four-F Test: Online Questionnaire

	Items	Hypotheses
Personal Characteristics	Level of expertise using Gretl (time) Language Operating System Location (home, work, university, …) Purpose (individual work, team project, research)	Freedom-Flexibility
Level of specific agreement	Workfile options Output facilities Console Functions User´s Guide and Help facilities	Functionality
	Icons Graphs	Friendliness
Level of global agreement	Ease of use Preference to alternative software	

Activities

- Assignments
- Forums
- Glossaries
- OU blogs
- Questionnaires
- Quizzes
- Resources

Navigation

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    - Topics
- My courses

Administration

Statistical and Econometric Methods

Cuaderno Coordinación

Foro de Profesores

INTERNATIONAL YEAR OF
STATISTICS

News

Link to Gretl (V.1.9.92)

Course Guide

Comentarios, anécdotas e historias sobre la estadística y la econometria

Online Survey about Gretl   NEW

Online Survey about Gretl NEW

We would be very grateful if you could answer this online survey (in Spanish) about Gretl. It will only take a few minutes and your answers will help us to improve. Thank you!

Encuesta sobre Gretl

Estamos realizando una encuesta sobre Gretl en la que te animamos a participar. Te agradecemos que dediques unos minutos a responder a las siguientes cuestiones:

¿Cuánto tiempo hace que usas Gretl?

○ Menos de 1 año

○ Entre 1 y 2 años

○ Más de 2 años

¿Desde dónde usas Gretl?
(es posible seleccionar varias opciones)

☐ Desde mi casa

☐ Desde la Facultad

☐ Desde un ordenador portátil
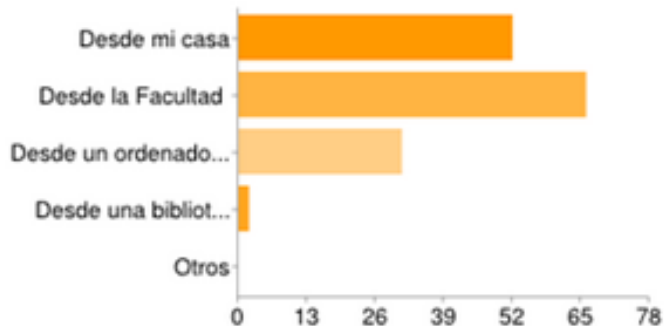
☐ Desde una biblioteca o cibercentro

☐ Otros

¿Con qué sistema/s operativo/s trabajas?
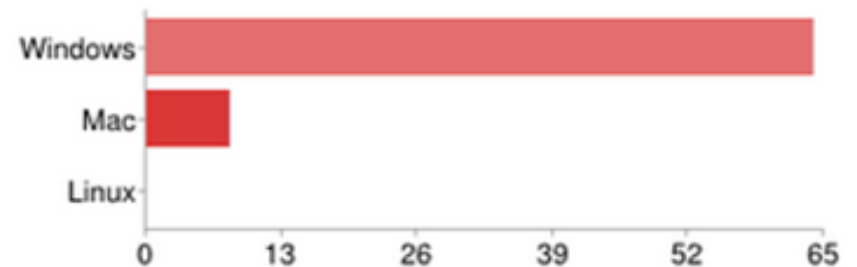(es posible seleccionar varias opciones)
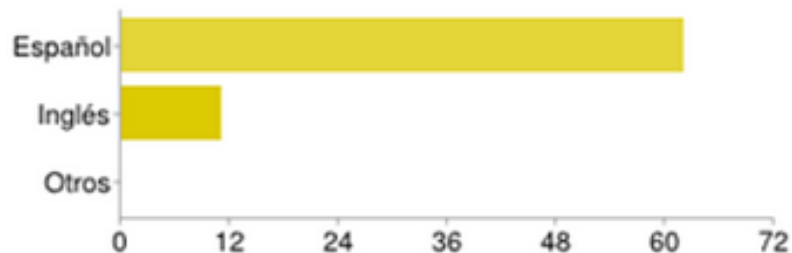
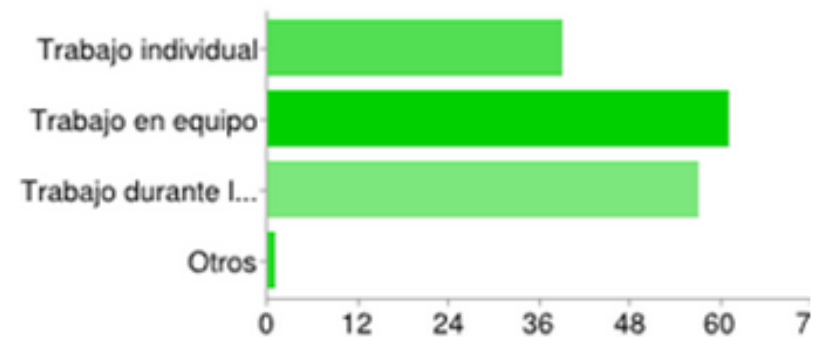☐ Windows

☐ Mac

☐ Linux

Four-F Test: Flexibility

Four-F Test

Binary answers from students´ online surveys (n=145)

$$H_0: p > 0.5$$

Students´ level of satisfaction with different aspects, according to a Lickert scale from 1 to 5 (n=145)

$$H_0: \mu > 3$$

Four-F Test: Results

Hypothesis	Item	Critical level (p-value)	
		$H_0: p > 0.5$	$H_0: \mu > 3$
FREE-FLEXIBLE	Use from different locations	1	
	Use for different purposes	1	
FUNCTIONAL	Agreement with workfile options	0.01	0
	Agreement with output facilities	1	1
	Agreement with Gretl console	0	0
	Agreement with Gretl functions	0.4	0.42
	Agreement with Gretl User's guide and help facilities	0.5	0
FRIENDLY	Agreement with Gretl icons	0.98	0.99
	Agreement with graphs	1	1
	Ease of use	0.2	0.08
	Preference to alternative software	1	1

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CONCLUDING REMARKS

-The Four-F test includes the requirements of Freedom, Flexibility, Functionality and Friendliness.

-Empirical evidence provided by online surveys confirm that students perceive Gretl as a free, flexible and friendly tool.

-Concernin functionality, some difficulties are found with regard to the most demanding aspects such as the console or workfile management.

-The most positive results correspond to the flexibility, the perceived usefulness and the perceived ease of use which are expected to positively influence learning.

-Further efforts are needed in order to improve Gretl´s use.

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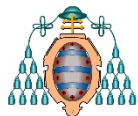Hans Boeckler Foundation and
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Thanks!

Campus of International Excellence of the University of Oviedo