

## Research Methods Quantitative (F710353)

Due to Covid 19, the education and assessment methods may vary from the information displayed in the schedules and course details. Any changes will be communicated on Ufora.

Course size		(nominal values; actual values may depend on programme)			
Credits	5.0	Study time	150 h	Contact hrs	45.0h
Course offerings and teaching methods in academic year 2021-2022					
A (semester 1)	Dutch	Gent	lecture		30.0h
			group work		15.0h
Lecturers in academic year 2021-2022					
Smolders, Carine		EB25	lecturer-in-charge		
Verlet, Dries		EB25	co-lecturer		
Offered in the following programmes in 2021-2022				crdts	offering
Bachelor of Science in Public Administration and Management				5	A

### Teaching languages

Dutch

### Keywords

Survey methodology, quantitative content analysis, aggregated data. Univariate, bivariate, multivariate statistical analysis, complex research questions, regression, scale construction, binary logistic regression

### Position of the course

During this course the attention shifts from descriptive to explanatory research problems, in order to cover multiple factors in the data analysis. Our priority is to further develop the necessary basic skills in terms of data analysis. The focus is on practical skills. Our objective is to enable students to understand research questions, enabling them to use independently a number of basic procedures, implement and interpret them. In short, it is expected that students have mastered the different types of data analysis, so they have a solid base in order to analyzing complex research problems.

The course primarily focuses on complex problems in social sciences (for example evaluation research. Besides, common bivariate and multivariate analysis of survey data and administrative data are treated. A minimal knowledge of such analysis is relevant for passive users of research (e.g. understanding policy-supporting scientific publications, ...) and for graduates who will be actively involved in designing and conducting empirical research.

### Contents

The course focuses on examples of public policy and management research, on transforming policy problems in research questions and specific hypotheses. In addition experimental designs and sampling strategies are discussed. Attention is given to the design of surveys and scale construction.

Students get acquainted with SPSS-software as a tool for data analysis. Next to an exploration of the software, students are introduced in the construction of databases, data cleaning and data transformation.

Several current analysis techniques are discussed in detail and applied to specific research questions:

- univariate description of data
- bivariate analysis (taking into account the different levels of measurement of variables)
- classical regression (single, multiple, hierarchical)

d) binary logistic regression (single, multiple and hierarchical, including interpretation of "odds") and

e) scale construction (factor analysis and reliability analysis).

For each analysis technique, a theoretical background is supplemented by practical applications on the computer. Also during the more theoretical classes, the starting point each time is a specific political / managerial problem.

Finally, big data and GDPR guidelines to be respected when constructing survey research are discussed.

### **Initial competences**

Final competences of the introduction to Research methods.

### **Final competences**

- 1
- 2
- 3
- 4
- 5
- 6
- 7

### **Conditions for credit contract**

Access to this course unit via a credit contract is determined after successful competences assessment

### **Conditions for exam contract**

This course unit cannot be taken via an exam contract

### **Teaching methods**

Practicum, Online group work, Online lecture, Group work, Lecture, Self-reliant study activities, Lecture: response lecture

### **Extra information on the teaching methods**

A detailed overview of the didactical approach is shared on Ufora.

### **Learning materials and price**

The following learning material is available via the electronic teaching environment:

1) detailed slides of the presentations during the courses and texts in the form of a syllabus.

2) for the initiation on data analysis, in addition to the slides and the documentation on the electronic learning environment, there are extensive exercises (specifically per topic and integrated) with the annotated solutions placed on the electronic learning environment.

SPSS software is available on Athena.

In addition students should buy the following book: De Pelsmacker, P. & Van Kenhove, P. (2019). Marktonderzoek, Methoden en toepassingen, 5de editie, Pearson editors

### **References**

### **Course content-related study coaching**

The course consists of several topics (see above). For each topic there are detailed slides of the presentations during the courses and texts in the form of a syllabus.

For the initiation on data analysis, in addition to the slides and the documentation on the electronic learning environment, there are extensive exercises (specifically per topic and integrated) with the annotated solutions placed on the electronic learning environment. Besides, there are several opportunities for personal feedback.

Students are encouraged to participate actively and ask questions during or after lectures. Questions are also possible via email or by appointment and during the feedback sessions. Towards the end of the course, there is also a 2 hours session during which students are faced with an extra exercise, similar to the one during the final tests

### **Assessment moments**

end-of-term and continuous assessment

**Examination methods in case of periodic assessment during the first examination period**

Written examination with open questions

**Examination methods in case of periodic assessment during the second examination period**

Written examination with open questions

**Examination methods in case of permanent assessment**

Skills test

**Possibilities of retake in case of permanent assessment**

examination during the second examination period is possible in modified form

**Extra information on the examination methods**

The end-of-term evaluation is about the theory of quantitative research methods. It is a written examination with open questions, accounts for 30% of the points.

The permanent evaluation is based on exercises in which students test the different analytical techniques applied to existing datasets, depending on concrete research.

The focus is on correct interpretation and reporting.

For the exercise, different data sets are available for the students in which a wide range of research topics are covered. This area accounts for 70% of the points.

Assignments in Ufora will be part of the evaluation of this course.

To pass, a student should pass both the end-of-term and the permanent part of the evaluation.

Second examination session: depending on the deficit a written exam and/or exercise.

**Calculation of the examination mark**

written exam: 30%

permanent evaluation: 70%